TRANSTECNO®

THE MODULAR GEARMOTOR

# DC

TRANSTECNO · GENUINE · PRODUCTS ·

# Indice — Index

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## Generalità — *General information*

Per avere una migliore comprensione degli argomenti e dei dati esposti in questo catalogo proponiamo la simbologia utilizzata corredandola delle informazioni di base per giungere ad una corretta selezione dei motoriduttori e variatori.

*Information in this manual is provided with symbols in order to understand the subject matter and data. These symbols are intended to aid the user in selecting the right gearmotors and variators.*

## Velocità entrata — $n_1$ [$min^{-1}$] — *Input speed*

Rappresenta la velocità riferita al tipo di motorizzazione prescelta ed è applicata in entrata al riduttore.

Per selezioni a velocità diverse da quelle riportate consultare il ns. Servizio Tecnico.

*This is the input speed at the gearbox related to the type of drive unit selected.*

*When different speeds are required, contact our Technical Service.*

## Rapporto di riduzione — i — *Gear ratio*

È una grandezza adimensionale ed è in funzione del numero dei denti degli ingranaggi interni al riduttore.
Nei riduttori a vite senza fine si ottiene dividendo il numero di denti della corona per il numero dei filetti (Z) della vite senza fine.
Dai dati di catalogo si può ottenere con la relazione:

*This value is strictly related to the size and number of teeth gears inside the gearbox.*
*This value is obtained in wormgearboxes by dividing the number of wheel teeth by the number of starts (Z) of the worm.*
*From the data given in the catalogue, the value can be calculated using the following formula:*

$$i = \frac{n_1}{n_2}$$

## Velocità in uscita — $n_2$ [$min^{-1}$] — *Output speed*

È la velocità risultante sull' asse di uscita del riduttore e viene ricavata dalla relazione precedente:

*This is the gearbox output speed calculated using the formula given above:*

$$n_2 = \frac{n_1}{i}$$

## Coppia richiesta — $Mr_2$ [Nm] — *Requested torque*

È la coppia richiesta dall'applicazione ed è indispensabile per la selezione di una motorizzazione.
Essa può essere comunicata dall'utente oppure calcolata in base ai dati di applicazione (se forniti).

*This is the torque needed for the application and must be known when selecting a drive system. It can either be provided by the user or calculated according to the application data (if provided).*

## Coppia nominale — $Mn_2$ [Nm] — *Nominal torque*

Rappresenta la coppia in uscita trasmissibile dal riduttore in base alla velocità in entrata $n_1$ e al rapporto di riduzione i.
Essa è calcolata in base ad un servizio con carico continuo uniforme corrispondente ad un fattore di servizio uguale a 1.
Questo valore non è riportato nel presente catalogo ma può essere ricavato approssimativamente con la seguente relazione fra $M_2$ (coppia trasmessa) e sf (fattore di servizio):

*This is the output torque that can be transmitted by the gearbox according to input speed $n_1$ and gear ratio i. It is calculated based on service with a continuous steady load corresponding to a service factor equal to 1. This value is not given in the catalogue but can be calculated approximately with the following formula between $M_2$ (output torque) and sf (service factor):*

$$Mn_2 = M_2 \cdot sf$$

## Coppia trasmessa — $M_2$ [Nm] — *Output torque*

È la coppia trasmessa in uscita al riduttore.
Dipende dalla potenza $P_1$ del motore installato, dal numero di giri in uscita $n_2$ e dal rendimento dinamico Rd e può essere calcolata con la relazione:

*This is the gearbox's output torque. It is strictly related to power $P_1$ of the motor installed, output rpm $n_2$ and dynamic efficiency Rd. It can be calculated with the following formula:*

$$M_2 = \frac{9550 \cdot P_1 \cdot Rd}{n_2}$$

oppure: *or:*

$$M_2 = \frac{9550 \cdot P_2}{n_2}$$

dove: *where:*

$$P_2 = P_1 \cdot Rd$$

## Rendimento del riduttore a vite senza fine — Rd; Rs — *Worm gearbox efficiency*

I calcoli delle prestazioni sono stati effettuati in base al rendimento dinamico Rd dei riduttori (valore ottimale che si raggiunge nel funzionamento a regime dopo rodaggio).

Nei riduttori combinati, il rendimento complessivo è dato dal prodotto dei rendimenti dei due riduttori, considerando però che nel secondo riduttore il rendimento dovrà essere valutato in base alla ridotta velocità in entrata ottenuta dividendo $n_1$ per il rapporto i del primo riduttore.

È opportuno considerare che nei riduttori a vite senza fine si ha anche un valore di rendimento statico Rs, presente in fase di avviamento, che declassa sensibilmente la coppia risultante per cui influenza in modo determinante la scelta di motorizzazioni destinate ad applicazioni intermittenti (es. sollevamenti).

Il valore dei rendimenti dinamico e statico dei riduttori a vite senza fine sono riportati nella tabella a pag. N4.
Nei riduttori ad ingranaggi CMG e CMB il rendimento medio è del 94%.
Nei motovariatori il rendimento assume un valore di 0.85 alla velocità massima e decresce fino a 0.7 alla velocità minima.

*Efficiency is calculated based on dynamic efficiency Rd of the gearboxes (optimal value reached when running at normal speed after the break in period).*

*In combination gearboxes, overall efficiency is obtained from the combined efficiency of the two gearboxes. However, keep in mind that efficiency of the second gearbox should be determined according to the reduced input speed obtained by dividing $n_1$ by ratio i of the first gearbox.*

*It is important to remember that wormgearboxes also have static efficiency value Rs present at start-up. This value notably reduces the resulting torque. As a result, it must be taken into consideration when selecting drive systems for intermittent operations (e.g. lifting) as it is a determinant factor.*

*Dynamic and static efficiency of wormgearboxes are given in the table on page N4 .*
*On helical gearboxes CMG and CMB the average effiency is 94%.*
*Efficiency is 0.85 at the highest speed decreasing to 0.7 at the lowest speed in motovariators.*

## Reversibilità e irreversibilità

## *Reversibility and irreversibility*

La diretta conseguenza del rendimento (statico e dinamico) è la reversibilità del riduttore a vite senza fine che consiste nella possibilità di fare ruotare l'albero entrata tramite l'applicazione di una torsione più o meno accentuata sull'albero uscita.
L'impossibilità o la difficoltà ad effettuare l'azione sopra descritta, determina il grado di reversibilità (o irreversibilità) di un riduttore.

Questa caratteristica, molto significativa nei riduttori a vite senza fine, è influenzata da molteplici fattori quali angolo d'elica (quindi rapporto di trasmissione), lubrificazione, temperatura, finitura superficiale della vite senza fine, presenza di vibrazioni, ecc.

In applicazioni dove sono presenti delle traslazioni è necessario garantire una elevata reversibilità onde evitare che le inerzie delle masse in movimento possano determinare punte di carico inammissibili sugli organi di trasmissione.

In applicazioni dove è richiesto un non ritorno del carico (es. sollevamenti o nastri trasportatori inclinati) in assenza di un freno motore è necessario scegliere un riduttore caratterizzato da un elevato grado di irreversibilità.
**Desideriamo comunque evidenziare che la garanzia assoluta di non ritorno è data esclusivamente dall'installazione di un motore autofrenante o di un altro dispositivo frenante esterno.**

La tabella sottostante riporta a titolo puramente indicativo i vari gradi di reversibilità/irreversibilità nei riduttori a vite senza fine in funzione del rendimento dinamico Rd e statico Rs.

*Reversibility of the wormgearbox is the direct consequence of efficiency (static and dynamic). This determines whether or not the input shaft can be rotated by applying a certain torque on the output shaft.*
*Whether or not this can be done and how difficult it actually is to do determine the degree of reversibility (or irreversibility) of a gearbox.*
*This feature, quite significant in wormgearboxes, is affected by numerous factors including the helix angle (therefore drive ratio), lubrication, temperature, surface finish of the worm, vibrations, etc...*

*In applications that include translations, high reversibility must be guaranteed to prevent inertia of the moving parts from creating unacceptable load peaks on the drive parts.*

*In applications that require non-return of the load (e.g. lifting or inclined conveyor belts) a gearbox with high irreversibility must be chosen when a motor-brake unit is not present.*
**However, we would like to point out that non-return can be totally assured only by installing a self-braking motor or other external braking device.**

*The table below is provided for reference purposes only. It contains the various degrees of reversibility/irreversibility of wormgearboxes in relation to dynamic Rd and static Rs efficiency.*

| Rd | Reversibilità e irreversibilità dinamica | *Dynamic reversibility and irreversibility* |
|---|---|---|
| > 0.6 | Reversibilità dinamica | Dynamic reversibility |
| 0.5 - 0.6 | Reversibilità dinamica incerta | Uncertain dynamic reversibility |
| 0.4 - 0.5 | Buona irreversibilità dinamica | Good dynamic irreversibility |
| <0.4 | Irreversibilità dinamica | Dynamic irreversibility |
| **Rs** | **Reversibilità e irreversibilità statica** | ***Static reversibility and irreversibility*** |
| > 0.55 | Reversibilità statica | Static reversibility |
| 0.5 - 0.55 | Reversibilità statica incerta | Uncertain static reversibility |
| <0.5 | Irreversibilità statica | Static irreversibility |

## Potenza in entrata

$P_1$ [kW]

## *Input power*

È la potenza motore applicata in entrata al riduttore e riferita alla velocità $n_1$.
Può essere calcolata come segue:

*This is the power applied by the motor at the gearbox input in reference to speed $n_1$.*
*It can be calculated with the following formula:*

$$P_1 = \frac{M_2 \cdot n_2}{9550 \cdot Rd}$$

## Fattore di servizio — sf — *Service factor*

È una grandezza adimensionale che indica il sovradimensionamento da applicare ad una determinata motorizzazione per garantire la resistenza agli urti e la durata richiesta.
Le tabelle di catalogo offrono una vasta scelta di motorizzazioni con fattori di servizio differenziati che possono soddisfare la maggior parte delle applicazioni più o meno gravose.
Per una corretta interpretazione dei valori del fattore di servizio sf riportati a fianco di ogni selezione proposta, riportiamo nelle tabelle seguenti i valori indicativi attribuiti alle classi di carico A, B, C e alla durata di funzionamento giornaliero h/d e al numero di avviamenti/ora.
Definendo la classe di carico a cui riferire l'applicazione, si ricercherà nella tabella il corrispondente valore di sf da utilizzare nella scelta della motorizzazione più idonea.

*This value indicates how a certain drive system is to be over-sized in order to assure the requested service and stand up to shocks. The tables given in the catalogue offer a wide range of drive systems with different service factors able to satisfy most types of applications. To correctly understand service factor values sf given for each item, approximate values for load classes A, B and C along with the number of hours of daily operation h/d and number of start-ups/hours need to be known.*
*Once the load class required for the application has been determined, locate corresponding value sf to be used when selecting the most suitable drive system.*

| | | |
|---|---|---|
| Tipo di carico | **A** - Uniforme | fa ≤ 0.3 |
| | **B** - Medio | fa ≤ 3 |
| | **C** - Forte | fa ≤ 10 |

| | | |
|---|---|---|
| *Type of load* | ***A** - Uniform* | *fa ≤ 0.3* |
| | ***B** - Moderate shocks* | *fa ≤ 3* |
| | ***C** - Heavy shocks* | *fa ≤ 10* |

$$fa = \frac{Je}{Jm}$$

- Je ($kgm^2$) momento d'inerzia esterno ridotto all'albero motore.
- Jm ($kgm^2$) momento d'inerzia motore.
  Se fa > 10 interpellare il ns. Servizio Tecnico.

$$fa = \frac{Je}{Jm}$$

- *Je ($kgm^2$) moment of reduced external inertia at the drive-shaft.*
- *Jm ($kgm^2$) moment of inertia of motor.*
  *If fa > 10 call our Technical Service.*

**A** Classe di carico / *Load class*
**Carico uniforme / *Uniform load***

| sf | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| h/d | n. avviamenti/ora / n. start-up/hour | | | | | | | | |
| | **2** | **4** | **8** | **16** | **32** | **63** | **125** | **250** | **500** |
| **4** | 0.8 | 0.8 | 0.9 | 0.9 | 1.0 | 1.1 | 1.1 | 1.2 | 1.2 |
| **8** | 1.0 | 1.0 | 1.1 | 1.1 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| **16** | 1.3 | 1.3 | 1.3 | 1.3 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| **24** | 1.5 | 1.5 | 1.5 | 1.5 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |

**B** Classe di carico / *Load class*
**Carico con urti moderati / *Moderate shock load***

| sf | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| h/d | n. avviamenti/ora / n. start-up/hour | | | | | | | | |
| | **2** | **4** | **8** | **16** | **32** | **63** | **125** | **250** | **500** |
| **4** | 1.0 | 1.0 | 1.0 | 1.0 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| **8** | 1.3 | 1.3 | 1.3 | 1.3 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| **16** | 1.5 | 1.5 | 1.5 | 1.5 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| **24** | 1.8 | 1.8 | 1.8 | 1.8 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 |

**C** Classe di carico / *Load class*
**Carico con urti forti / *Heavy shock load***

| sf | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| h/d | n. avviamenti/ora / n. start-up/hour | | | | | | | | |
| | **2** | **4** | **8** | **16** | **32** | **63** | **125** | **250** | **500** |
| **4** | 1.3 | 1.3 | 1.3 | 1.3 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| **8** | 1.5 | 1.5 | 1.5 | 1.5 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| **16** | 1.8 | 1.8 | 1.8 | 1.8 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 |
| **24** | 2.2 | 2.2 | 2.2 | 2.2 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |

Esempio applicazione:

Nastro trasportatore attribuibile alla classe di carico B **(carico con urti moderati)** e previsto per una durata di funzionamento giornaliero (h/d) di **16** ore e con **8** avviamenti/ora.
Dalla tabella rileviamo **sf = 1.5**

*Application example:*

*Conveyor belt assigned to load class B **(moderate shock load)**, to be run **16** hours a day (h/d) with **8** start-ups/hour.*
*The following value is obtained from the table*
***sf = 1.5***

## Carico radiale — R; $R_2$ [N] — *Radial load*

L'applicazione sull'albero in uscita del riduttore di pignoni, pulegge, ecc. determina delle forze radiali che debbono necessariamente essere considerate per evitare sollecitazioni eccessive con il rischio di danneggiamenti del riduttore stesso.
Il calcolo del carico radiale esterno R agente sull'albero del riduttore può essere determinato come segue:

*Pinions, pulleys, etc applied on the output shaft of the gearboxes create radial forces that must be taken into consideration to avoid excessive stress risking damage to the gearbox itself.*

*External radial load R that acts on the gearbox shaft can be calculated as follows:*

$$R = \frac{2000 \cdot M_2 \cdot kr}{d} \leq R_2$$

dove:
**d** [mm] diametro primitivo del pignone o della puleggia
**kr** coefficiente riferito al tipo di trasmissione:
**kr = 1.4** ruota per catena
**kr = 1.1** ingranaggio
**kr = 1.5 - 2.5** puleggia per cinghia a V

*where:*
***d** [mm] diameter of the pinion or pulley*
***kr** coefficient in relation to type of transmission:*
***kr = 1.4** sprocket wheel*
***kr = 1.1** gear*
***kr = 1.5 - 2.5** pulley for V belts*

È opportuno evidenziare che i valori di $R_2$ sono riferiti a carichi agenti sulla mezzeria dell'albero lento (considerando l'albero sporgente) per cui il confronto dovrà essere effettuato nelle medesime condizioni.

*Keep in mind that values $R_2$ refer to loads that act on the centerline of the output shaft (considering the shaft protrudes). As a result, the value should be compared under the same conditions.*

## Carico assiale — A; $A_2$ [N] — *Axial load*

A volte, unitamente al carico radiale, può essere presente anche una forza A che agisce assialmente sull'albero uscita; in questo caso considerare che il carico assiale ammissibile $A_2$ sull'albero è da considerare:

*At times, along with the radial load, force A may be present that acts axially on the output shaft. In this case, keep in mind allowable axial load $A_2$ that can be applied on the shaft is:*

$$A_2 = R_2 \cdot 0.2$$

Nel caso in cui il valore del carico assiale A agente sull'albero risultasse superiore ad $A_2$ contattate il ns. Servizio Tecnico.

*If axial load A that acts on the shaft is greater than $A_2$, contact the Technical Service.*

## Scelta dei motoriduttori — *Selecting the gearmotors*

Per la scelta di un motoriduttore è necessario seguire la seguente procedura.

*To select the required gearmotor perform the procedure below:*

1. Per l'applicazione desiderata ricavare il fattore di servizio sf dalle tabelle a pag. A5 in base alla classe di carico, alle ore di funzionamento giornaliere e al numero di avviamenti orari.

1. *Determine the service factor sf for the desired application by referring to the charts given on page A5. This is to be done by considering the class of load, the operational hours/day and the number of start-ups/ hour.*

2. Se si conosce la potenza motore $P_1$ [kW] richiesta, passare al punto 3); se è nota la coppia in uscita $M_2$ richiesta è necessario calcolare la potenza motore $P_1$ con la formula:

2. *If the required motor power output $P_1$ [kW] is known, go to item 3); if the required output torque $M_2$ is known, determine motor output $P_1$ by using the following formula:*

$$P_1 = \frac{M_2 \cdot n_2}{9550 \cdot Rd}$$

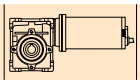
dove Rd è il rendimento dinamico e $n_2$ il numero di giri richiesti in uscita al motoriduttore.

*where Rd stands for the dynamic efficiency and $n_2$ indicates the required output rpm of the gearmotor.*

3. Nelle tabelle dei dati tecnici ricercare la motorizzazione in cui sia $P_1$ maggiore o uguale a P e con riferimento ad una velocità $n_2/n_{2max}$ prossima a quella desiderata, scegliere la motorizzazione in cui il fattore di servizio sf indicato risulti uguale o superiore a quello ricavato al punto 1).

3. Use the specification chart to search for the power unit where $P_1$ is greater than or equal to P with a speed $n_2/n_{2max}$ that approximates the desired one. Choose a power unit where the indicated service factor sf is equal to or greater than that calculated at point 1).

## ECM

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **140** | | | | | | |
| (3000 min$^{-1}$) | **600** | 2.0 | 5.0 | 5 | **ECM100/026** | 120/240/24E |
| | **400** | 2.9 | 3.8 | 7.5 | | |
| | **300** | 3.8 | 2.9 | 10 | | |
| | **200** | 5.5 | 2.0 | 15 | | |
| | **150** | 7.1 | 1.5 | 20 | | |
| | **100** | 10 | 1.2 | 30 | | |
| | **75** | 12 | 0.9 | 40 | | |
| | **60** | 14 | 0.7 | 50 | | |
| | **50** | 13 | 0.7 | 60 | | |

Esempio / *Example:*

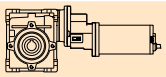
**Applicazione / *Application:***
Carrello automatico / *Automatic carriage*

**$P_1$** : 140 W
**sf** : 1.5
**$n_2$** : 150 min$^{-1}$

Motorizzazione scelta / *Power unit selected:*

**ECM100/026, i = 20, $P_1$ = 140 W, sf = 1.5**

## ECMP

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **250** | | | | | | |
| (3000 min$^{-1}$) | **50** | 35 | 2.3 | 60 | **ECMP180/063/050** | 120/240/24E |
| | **40** | 42 | 1.8 | 75 | | |
| | **33** | 48 | 2.1 | 90 | | |
| | **25** | 58 | 1.5 | 120 | | |
| | **20** | 69 | 1.2 | 150 | | |
| | **17** | 77 | 1.0 | 180 | | |
| | **13** | 90 | 0.8 | 240 | | |

Esempio / *Example:*

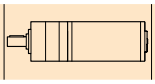
**Applicazione / *Application:***
Carrello automatico / *Automatic carriage*

**$M_2$** : 58 Nm
**sf** : 1.5
**$n_2$** : 25 min$^{-1}$

Motorizzazione scelta / *Power unit selected:*

**ECMP180/063/050, i = 120, $P_1$ = 250 W, sf = 1.5**

## ECP

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione *Version* |
|---|---|---|---|---|---|---|
| **500** | | | | | | |
| (3000 min$^{-1}$) | **218** | 16.2 | 1.5 | **13.73** | **ECP350/622** | **120/240** |
| | **189** | 18.7 | 1.3 | 15.88 | | |
| | **163** | 21.6 | 1.2 | 18.36 | | |
| | **156** | 22.6 | 1.1 | **19.20** | | |
| | **135** | 26.1 | 1.0 | 22.20 | | |
| | **120** | 29.4 | 0.8 | **25.01** | | |
| | **112** | 31.6 | 0.8 | 26.85 | | |
| | **104** | 34.1 | 0.7 | **28.93** | | |
| | **86** | 35.7 | 0.7 | **34.97** | | |
| | **66** | 35.7 | 0.7 | **45.56** | | |

Esempio / *Example:*

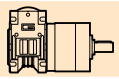
**Applicazione / *Application:***
Carrello automatico / *Automatic carriage*

**$P_1$** : 500 W
**sf** : 1.5
**$n_2$** : 218 min$^{-1}$

Motorizzazione scelta / *Power unit selected:*

**ECP350/622, i = 13.73, $P_1$ = 500 W, sf = 1.5**

## ECWMP

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **140** | | | | | | |
| (3000 min$^{-1}$) | **44.4** | 20.0 | 4.0 | 67.5 | **100/030/811** | 120/240/24E |
| | **29.6** | 29.3 | 2.7 | 101.3 | | |
| | **22.2** | 37.6 | 2.1 | 135.0 | | |
| | **14.8** | 51.5 | 1.5 | 202.5 | | |
| | **11.1** | 65.0 | 1.2 | 270.0 | | |
| | **10.4** | 80.2 | 1.5 | 289.3 | **100/030/812** | 120/240/24E |
| | **8.9** | 75.5 | 1.1 | 337.5 | **100/030/811** | 120/240/24E |
| | **7.4** | 80.0 | 1.0 | 405.0 | | |

Esempio / *Example:*

**Applicazione / *Application:***
Carrello automatico / *Automatic carriage*

**$M_2$** : 80 Nm
**sf** : 1.5
**$n_2$** : 10 min$^{-1}$

Motorizzazione scelta / *Power unit selected:*

**ECWMP100/030/812, i = 289.3, $P_1$ = 140 W, sf = 1.5**

## Installazione e verifiche

## *Installation and inspection*

In fase di installazione del motoriduttore è opportuno verificare che:

- i dati riportati in targhetta corrispondano al prodotto che è stato ordinato;
- le superfici di accoppiamento e gli alberi siano accuratamente puliti e privi di ammaccature;
- le superfici su cui verrà installato il riduttore siano perfettamente piane e sufficientemente rigide;
- l'albero macchina e quello del riduttore siano correttamente allineati;
- siano stati installati sistemi di limitazione della coppia se si prevedono urti o blocchi della macchina durante il funzionamento;
- siano state predisposte le necessarie protezioni antinfortunistiche agli organi rotanti;
- siano state create delle opportune coperture a protezione dagli agenti atmosferici se l'installazione è effettuata all'aperto ed è soggetta alle intemperie;
- l'ambiente di lavoro non sia corrosivo (a meno che tale specifica non sia stata dichiarata in fase di ordine al fine di predisporre il riduttore per questo utilizzo);
- gli eventuali pignoni o pulegge montati sull'albero uscita o entrata del riduttore, siano calettati correttamente in modo tale da non generare carichi radiali e/o assiali superiori a quelli ammissibili;
- su tutti gli accoppiamenti sia stato applicato un adeguato protettivo antiossidante per prevenire eventuali ossidazioni da contatto;
- tutte le viti di fissaggio siano state serrate correttamente.

*While installing the gearmotor always make sure that:*

- *the specifications stamped on the rating plate match those indicated for the unit actually ordered;*
- *the mating surfaces and the shafts are thoroughly clean and free of dents;*
- *the surfaces where the gearbox are to be mounted on are flat and strong enough;*
- *the machine drive shaft and the gearbox shaft are perfectly aligned;*
- *the required torque limiters have been installed if the machine is likely to produce shocks or blockages during operation;*
- *the rotary parts have been provided with the required safety guards;*
- *adequate weatherproof covering has been provided if the machine is to be installed outdoor;*
- *the working environment is not exposed to corrosive agents (unless this has been indicated while placing the order so that the gearbox assembly can be adequately set up);*
- *the pinions or pulleys on the gearbox input/output shafts are properly fitted in order not to produce radial and/or axial loads that exceed the maximum allowable limits;*
- *all the couplings have been treated with adequate rust preventative in order to avoid oxidation provoked by contact;*
- *all the mounting screws have been securely tightened.*

## Applicazioni critiche

## *Critical applications*

In tutti questi casi consultare il Servizio Tecnico

- utilizzo come argano di sollevamento;
- utilizzo in posizioni non previste a catalogo;
- utilizzo in ambiente con pressione diversa da quella atmosferica;
- utilizzo in ambiente con temperature <0°C o >+40°C

*In these cases please contact the Technical Service*

- *used as a hoist;*
- *used in mounting positions not shown in the catalogue;*
- *used in environment pressure other than atmospheric pressure;*
- *used in places with temperature <0°C or >+40°C*

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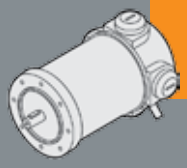
THE MODULAR GEARMOTOR

ND

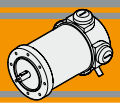
ND



# MOTORI ELETTRICI C.C. A TERRE RARE

# RARE EARTH D.C. ELECTRIC MOTORS

PRODUCTS • TRANSTECNO • GENUINE •



## Caratteristiche tecniche

I magneti in Neodimio (NdFeB) fanno parte dei magneti a terre rare e sono attualmente i magneti più potenti in produzione.
Dotati di alta forza coercitiva (resistenza alla smagnetizzazione) ed alto valore di saturazione magnetica, sono in grado di immagazzinare moltissima energia magnetica. Pertanto, i motori CC dotati di magneti in Neodimio forniscono alti valori di coppia pur in dimensioni ridotte, grazie all'alta densità di flusso del campo magnetico.

Le caratteristiche principali dei motori a terre rare della serie ND sono:

- Campo magnetico generato da magneti permanenti in Neodimio ( NdFeB )
- Costruzione tubolare senza ventilazione
- Disponibili in una grandezza diametro 65
- Alimentazione a bassa tensione 12 o 24 Vcc
- Potenza 160W e 250W S2
- Elevata coppia di spunto
- Maggiori coppie e potenze rispetto ai corrispettivi motori a magneti permanenti standard (a parità di dimensioni)
- Predisposizione encoder

## *Technical features*

*Neodymium magnet (NdFeB) is a type of rare-earth magnet and is currently the strongest type of permanent magnets.*
*Due to high coercivity resistance to being demagnetized and high saturation magnetization, they have potential for storing large amounts of magnetic energy. Therefore permanent Neodymium magnets DC motors can provide high torque in compact size due to the high density flux of magnet field.*

*The main features of ND rare earth permanent magnet motors are:*

- *Magnetic field generated by Neodymium ( NdFeB ) permanent magnets*
- *Tubular construction without fan*
- *Available in one size diameter 65*
- *Low voltage power supply 12 or 24 Vdc*
- *Power ratings available 160W and 250W S2*
- *High starting torque*
- *Higher torque and higher power than standard permanent magnet D.C. motors.*
- *Suitable for encoder assembly*

### Classe di isolamento termico

Gli avvolgimenti del rotore sono soggetti a surriscaldamento, come pure altre parti del motore. Il grado di isolamento indica la massima temperatura ammissibile oltre la quale l'isolante della matassa e l'isolante di tutte le parti soggette ad elevato riscaldamento perde le caratteristiche di buon isolante, con pericolo di danneggiamento del motore.

### *Thermal insulation class*

*The windings of the rotor can overheat just like other parts of the motor too. The degree of insulation indicates the maximum allowable temperature above which the insulation of the windings, as well as that of all the parts which heat up to a high temperature, loses its insulating properties and the motor therefore risks being damaged.*

### Servizio

Rappresenta la relazione tra il tempo di lavoro ed il tempo di riposo del motore. Servizio continuo (S1) = funzionamento continuo del motore a pieno carico.

Servizio intermittente (S2, S3, etc...) = periodi alternati di lavoro e di riposo tali da raffreddare il motore. Dato un motore, la potenza espressa per servizio continuo è inferiore a quella per servizio intermittente.

### *Duty cycle*

*This represents the relationship between the time the motor operates and the time it remains stationary. Continuous operation (S1) = the motor operates non-stop under full load.*

*Intermittent operation (S2, S3, etc.) = alternating periods of work and rest so that the motor can cool down. The output power for continuous operation is lower than that for intermittent operation.*

### Fattore di forma

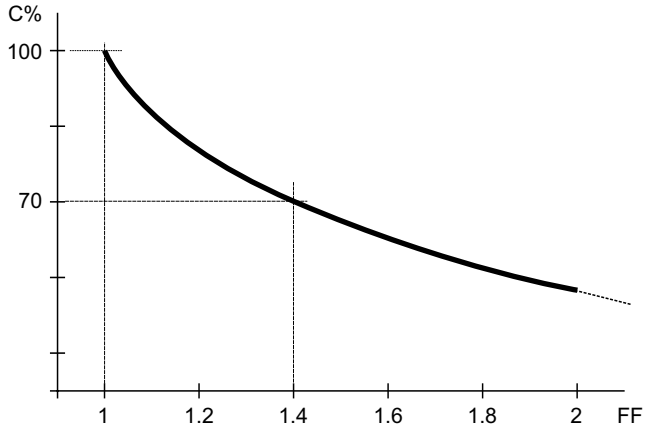
Indica quanta componente spuria alternata è presente nella alimentazione CC del motore. Più alto è il fattore ed inferiore è l'efficienza del motore. Alimentatori ad SCR = F.F 1.40. Alimentazione pura da batteria = FF 1 Alimentazione da transistori (modulazione PWM) = FF 1.05.

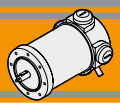
Qualitativamente l' andamento della coppia (percentuale) rispetto al fattore di forma è indicato nel grafico seguente:

### *Form factor*

*It indicates how much spurious alternating current is present in the D.C. motor power supply. The higher the factor, the lower the motor's efficiency. SCR power supplies = F.F 1.40. Battery supply = FF 1 Transistor supply (PWM modulation) = FF 1.05.*

*The graph below indicates the torque trend (percentage) in relation to the form factor:*







## Grado di protezione IP

## *IP enclosures protection indexes*

*Indica il grado di isolamento meccanico del corpo motore.*
*1ª cifra: protezione alla penetrazione di corpi solidi.*
*2ª cifra: protezione contro la penetrazione d'acqua.*

*Indicates the degree of mechanical insulation of the motor body.*
*1st figure: indicating level of protection against the penetration of solid bodies.*
*2nd figure: indicating degree to which the motor is waterproof.*

| | | | |
|---|---|---|---|
| **0** | Non protetto / *No protection* | **0** | Non protetto / *No protection* |
| **1** | Protetto da corpi solidi superiori a Ø 50 mm.<br>*Protected against solid matters (over Ø 50 mm)* | **1** | Protetto contro la caduta verticale di gocce d'acqua.<br>*Protected against drops of water falling vertically* |
| **2** | Protetto da corpi solidi superiori a Ø 12 mm.<br>*Protected against solid matters (over Ø 12 mm)* | **2** | Protetto contro la caduta verticale di gocce d'acqua con inclinazione max di 15°<br>*Protected against drops of water falling up to 15°* |
| **3** | Protetto da corpi solidi superiori a Ø 2.5 mm.<br>*Protected against solid matters (over Ø 2.5 mm)* | **3** | Protetto contro la pioggia.<br>*Rain proof fixture* |
| **4** | Protetto da corpi solidi superiori a Ø 1 mm.<br>*Protected against solid matters (over Ø 1 mm)* | **4** | Protetto contro gli spruzzi.<br>*Splash proof fixture* |
| **5** | Protetto contro la polvere<br>*Dust proof* | **5** | Protetto contro getti d'acqua<br>*Water jet proof* |
| **6** | Totalmente protetto contro la polvere<br>*Fully dust proof* | **6** | Protetto dalle ondate<br>*Wave proof* |
| **7** | N.A. | **7** | Protetto contro immersione<br>*Watertight immersion fixture.* |
| **8** | N.A. | **8** | Protetto contro immersione/sommersione prolungata<br>*Watertight immersion fixture for a long time.* |

## Classe di isolamento termico

## *Insulation class*

| **Classe / *Class*** | Δ t °C<br>Temp. ambiente: 40°C<br>*Ambient temperature: 40°C* |
|---|---|
| **A** | 65°C |
| **B** | 90°C |
| **F** | 115°C |
| **H** | 140°C |

## Tipi di servizio IEC

## *IEC duty cycle ratings*

| | | |
|---|---|---|
| **S1** | **Servizio continuo.** Funzionamento a carico costante per una durata sufficiente al raggiungimento dell'equilibrio termico. | ***Continuous duty.*** *The motor works at a constant load for enough time to reach temperature equilibrium* |
| **S2** | **Servizio di durata limitata.** Funzionamento a carico costante per una durata inferiore a quella necessaria al raggiungimento dell' equilibrio termico, seguito da un periodo di riposo tale da riportare il motore alla temperatura ambiente. | ***Short time duty****. The motor works at a constant load, but not long enough to reach temperature equilibrium, and the rest periods are long enough for the motor to reach ambient temperature.* |
| **S3** | **Servizio periodico intermittente.** Sequenze di cicli identici di marcia e di riposo a carico costante, senza raggiungimento dell'equilibrio termico. La corrente di spunto ha effetti trascurabili sul surriscaldamento del motore. | ***Intermittent periodic duty.*** *Sequential, identical run and rest cycles with constant load. Temperature equilibrium is never reached. Starting current has little effect on temperature rise.* |
| **S4** | **Servizio periodico intermittente con avviamento.** Sequenza di cicli di funzionamento identici di avviamento, marcia e riposo a carico costante, senza raggiungimento dell'equilibrio termico. La corrente di spunto ha effetti sul riscaldamento del motore. | ***Intermittent periodic duty with starting.*** *Sequential identical start, run and rest cycles with constant load. Temperature equilibrium is not reached, but starting current affects temperature rise.* |
| **S5** | **Servizio periodico intermittente con frenatura elettrica.** Sequenza di cicli di funzionamento identici di avviamento, marcia a carico costante, frenatura elettrica e riposo, senza raggiungimento dell'equilibrio termico. | ***Intermittent periodic duty with electric braking.*** *Sequential, identical cycles of starting, running at constant load, electric braking and rest. Temperature equilibrium is not reached.* |
| **S6** | **Servizio periodico ininterrotto con carico intermittente.** Sequenza di cicli di lavoro identici con carico costante e senza carico. Non ci sono periodi di riposo. | ***Continuous operation with intermittent load.*** *Sequential, identical cycles of running with constant load and running with no load. No rest periods.* |
| **S7** | **Servizio periodico ininterrotto con frenatura elettrica.** Sequenza di cicli di funzionamento identici di avviamento, marcia a carico costante e frenatura elettrica, senza periodi di riposo. | ***Continuous operation with electric braking.*** *Sequential, identical cycles of starting, running at constant load and electric braking. No rest periods.* |
| **S8** | **Servizio periodico ininterrotto con variazioni di carico e di velocità.** Sequenza di cicli identici di avviamento, marcia a carico costante e velocità definita, seguiti da marcia a carico costante differente e velocità differente dalla precedente. Non ci sono periodi di riposo. | ***Continuous operation with periodic changes in load and speed.*** *Sequential, identical, duty cycles of start, run at constant load and given speed, then run at other constant loads and speeds. No rest periods.* |

# ND120.120 - ND120.240

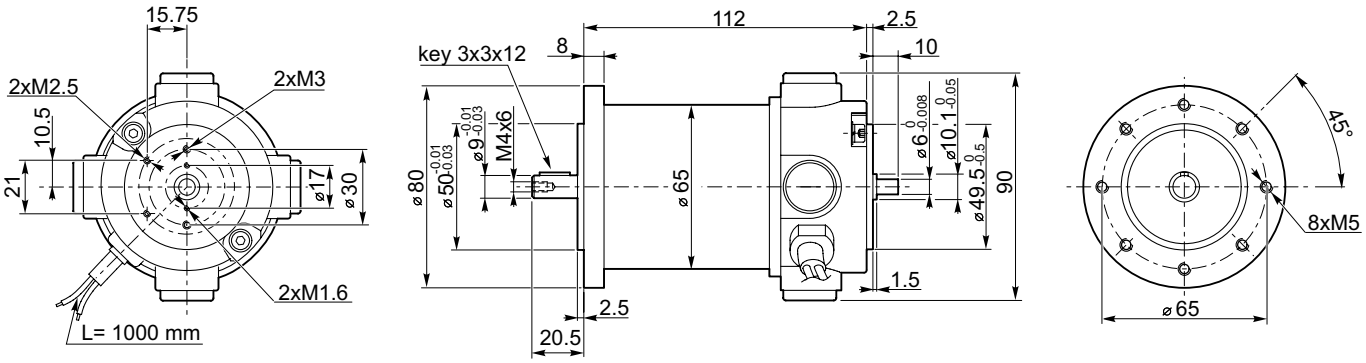
## Caratteristiche / *Features*

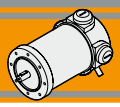
| | |
|---|---|
| Costruzione | Tubolare, senza ventilazione |
| Grandezza | Ø 65 mm |
| Potenza | 160 W S2 (120 W S1) |
| Magneti | 4 magneti in terre rare |
| Supporti | Cuscinetti a sfera |
| Fori di montaggio | 8 |
| Alimentazione | Bassa tensione, 12 o 24 Vcc |
| Spazzole | N° 4 di composto grafite-rame |
| Cavo di alimentazione | Lunghezza: 1000 mm |
| Bisporgenza | Standard |

| | |
|---|---|
| *Construction* | *Tubular, without fan* |
| *Size* | *Ø 65 mm* |
| *Power* | *160 W S2 (120 W S1)* |
| *Magnets* | *4 rare earth magnets* |
| *Bearings* | *Ball bearings* |
| *Mounting holes* | *8* |
| *Power supply* | *Low voltage, 12 or 24 Vdc* |
| *Brushes* | *4 brushes made of graphite/copper composite* |
| *Electric cable* | *Length: 1000 mm* |
| *Rear Shaft* | *Standard* |

| Tipo *Type* | S | Pn [W] | V [V] | I [A] | IC | FF | Mn [Nm] | $n_1$ [$min^{-1}$] | IP | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| **ND120.120** | **S1** | 120 | 12 | 13.9 | F | 1 | 0.38 | 3000 | 44 | 1.6 |
| | **S2 20'** | 160 | | 19 | | | 0.51 | | | |
| **ND120.240** | **S1** | 120 | 24 | 6.9 | | | 0.38 | | | |
| | **S2 20'** | 160 | | 9.0 | | | 0.51 | | | |

## Dimensioni / *Dimensions*



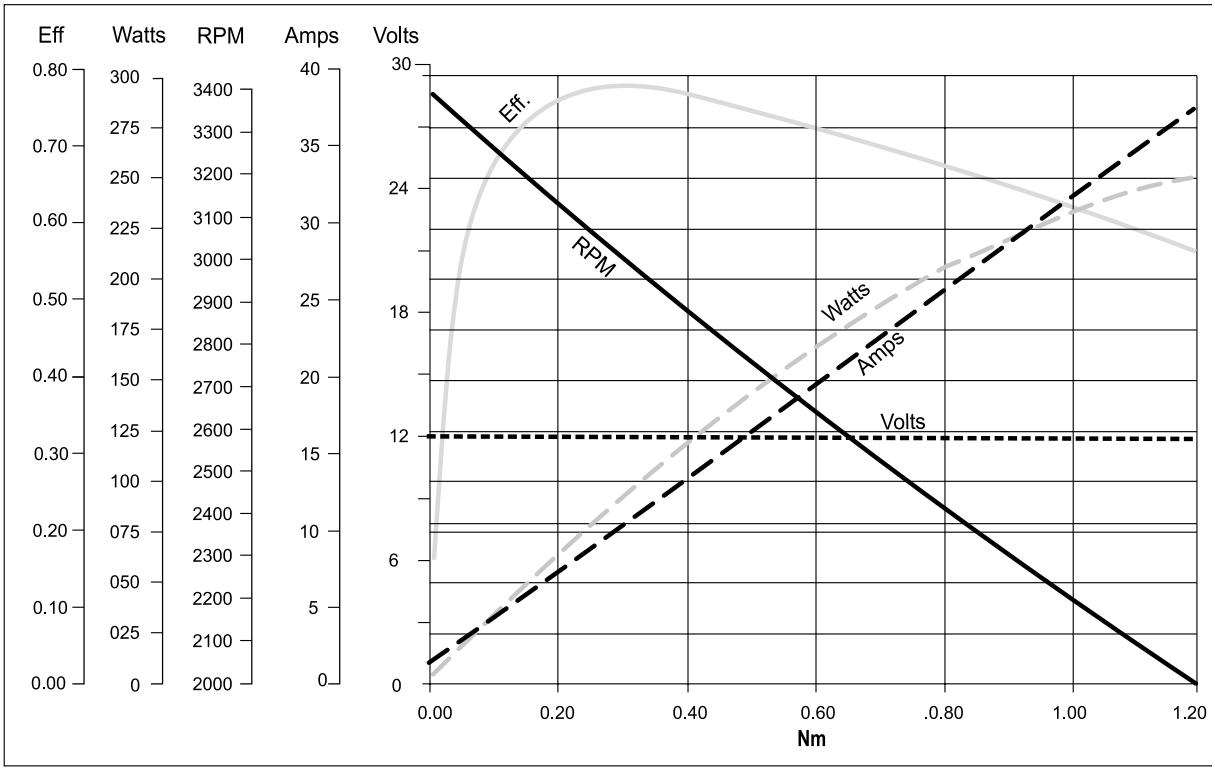




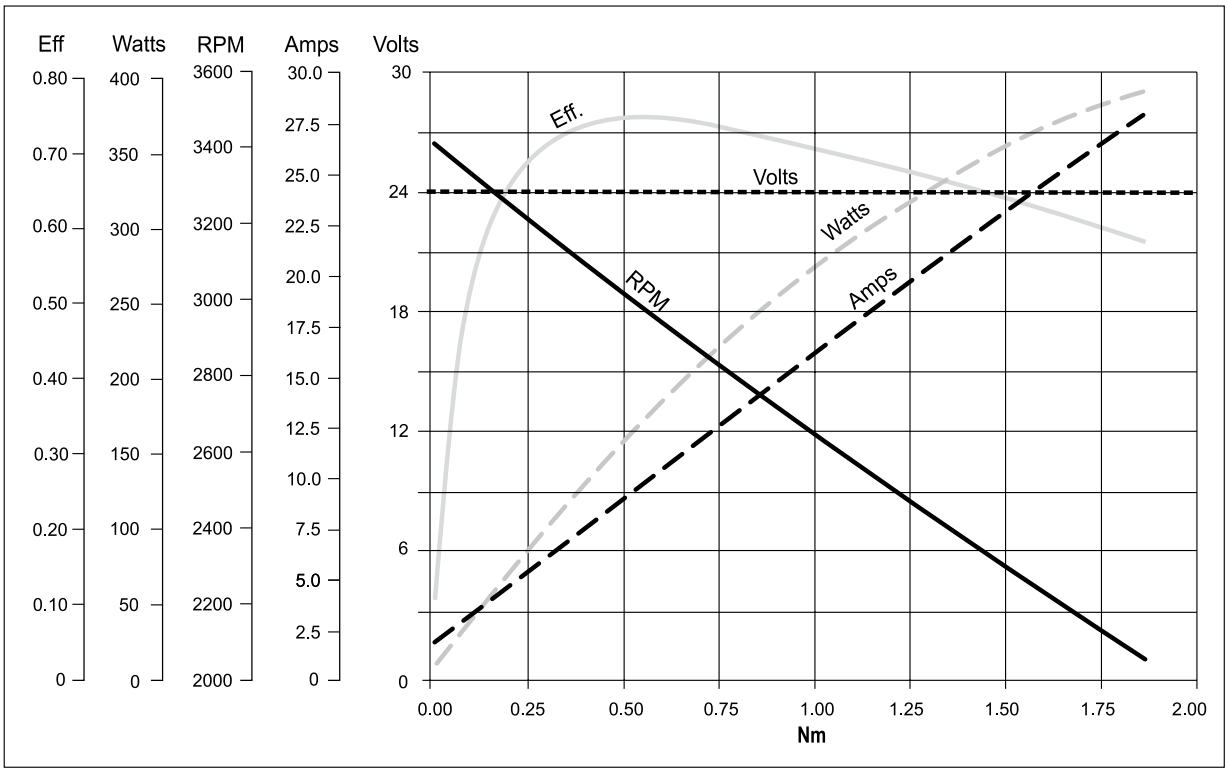
# ND120.120 - ND120.240

**Prestazioni** *Performances*

## ND120.120




## ND120.240



# ND180.120 - ND180.240

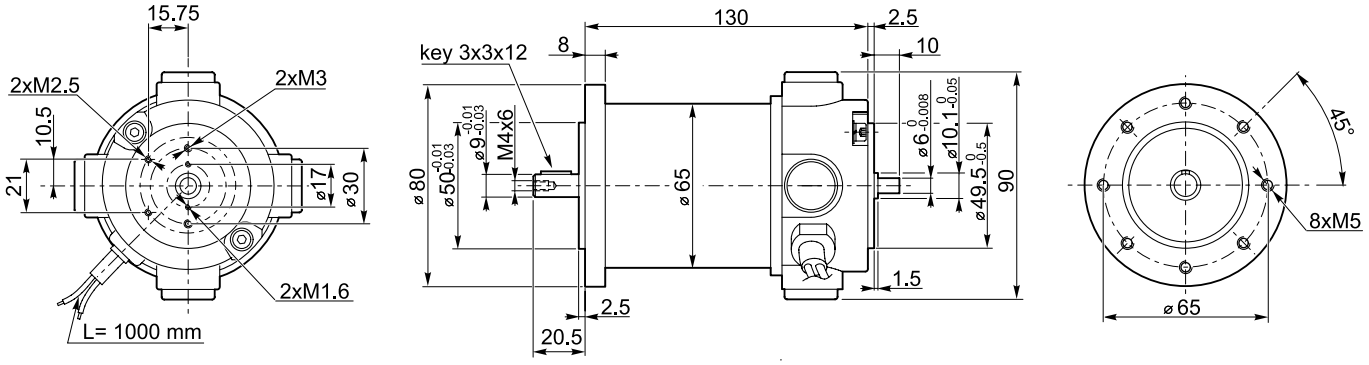
## Caratteristiche / *Features*

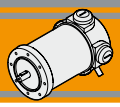
| | |
|---|---|
| Costruzione | Tubolare, senza ventilazione |
| Grandezza | Ø 65 mm |
| Potenza | 250 W S2 (180 W S1) |
| Magneti | 4 magneti in terre rare |
| Supporti | Cuscinetti a sfera |
| Fori di montaggio | 8 |
| Alimentazione | Bassa tensione, 12 o 24 Vcc |
| Spazzole | N° 4 di composto grafite-rame |
| Cavo di alimentazione | Lunghezza: 1000 mm |
| Bisporgenza | Standard |

| | |
|---|---|
| *Construction* | *Tubular, without fan* |
| *Size* | *Ø 65 mm* |
| *Power* | *250 W S2 (180 W S1)* |
| *Magnets* | *4 rare earth magnets* |
| *Bearings* | *Ball bearings* |
| *Mounting holes* | *8* |
| *Power supply* | *Low voltage, 12 or 24 Vdc* |
| *Brushes* | *4 brushes made of graphite/copper composite* |
| *Electric cable* | *Length: 1000 mm* |
| *Rear Shaft* | *Standard* |

| Tipo *Type* | S | Pn [W] | V [V] | I [A] | IC | FF | Mn [Nm] | $n_1$ [$min^{-1}$] | IP | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| **ND180.120** | **S1** | 180 | 12 | 20 | F | 1 | 0.57 | 3000 | 44 | 1.95 |
| | **S2 20'** | 250 | | 30 | | | 0.80 | | | |
| **ND180.240** | **S1** | 180 | 24 | 10 | | | 0.57 | | | |
| | **S2 20'** | 250 | | 14 | | | 0.80 | | | |

## Dimensioni / *Dimensions*



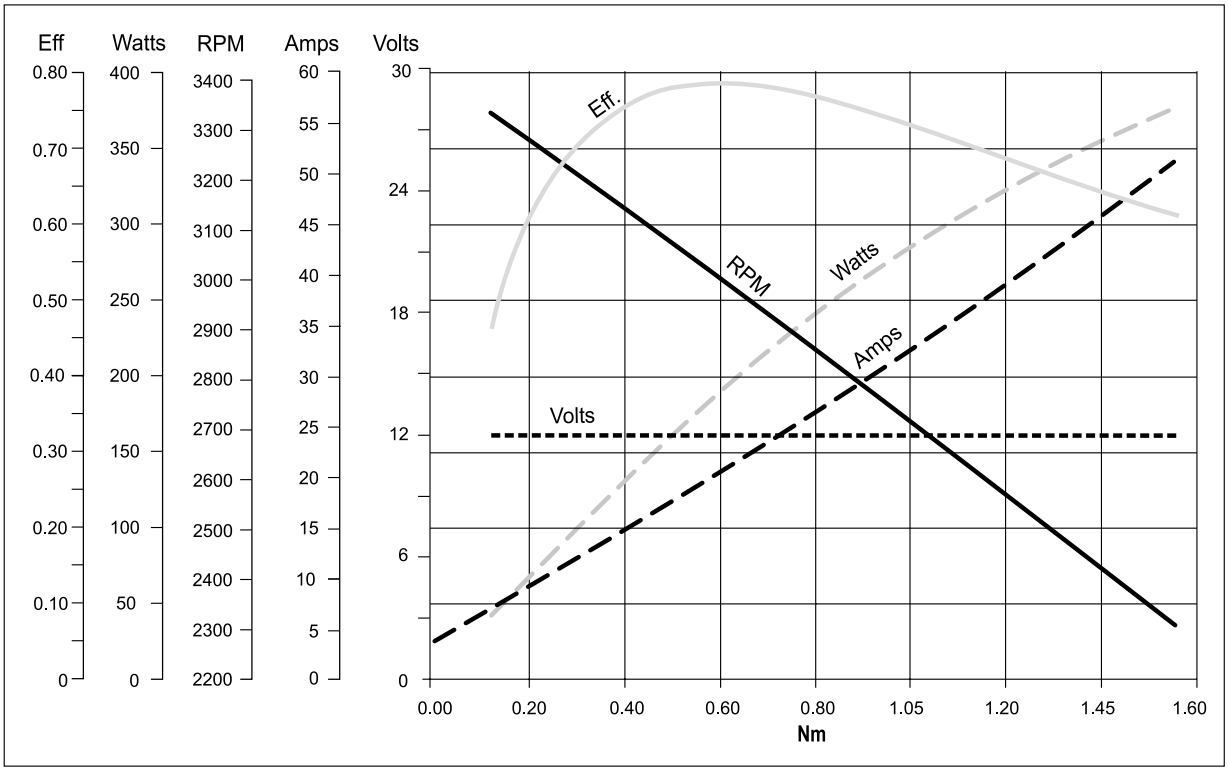




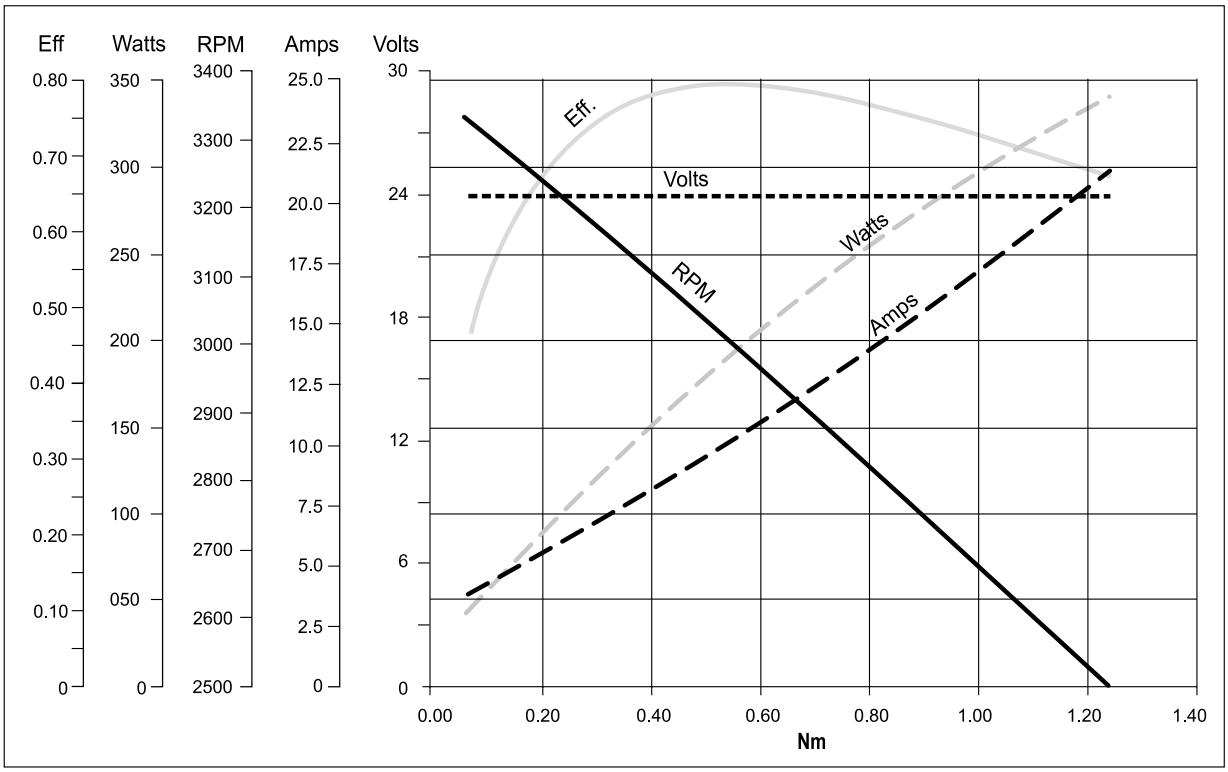
# ND180.120 - ND180.240

**Prestazioni** *Performances*

## ND180.120




## ND180.240

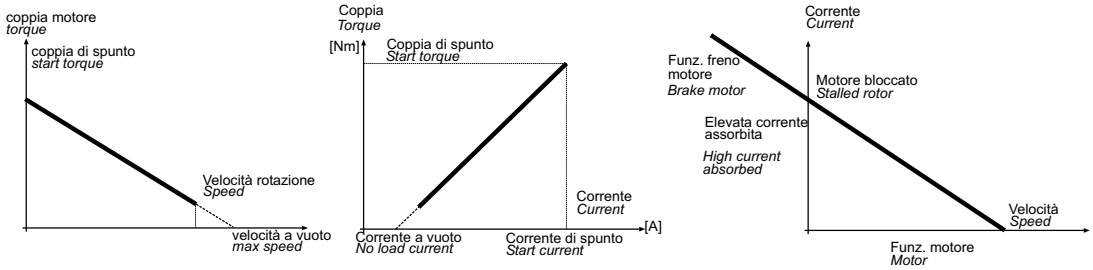


## Legenda / Glossario dei grafici

## *Key / Diagram Glossary*

Dato un motore in C.C, la velocità di rotazione è funzione lineare della coppia; così pure la corrente assorbita è una funzione lineare della coppia. Velocità e corrente variano in maniera sensibile al variare del carico.

*With a D.C. motor, the rotational speed is a linear function of the torque. In the same way, the absorbed current is also a linear function of the torque. Speed and current change a lot against applied torque.*

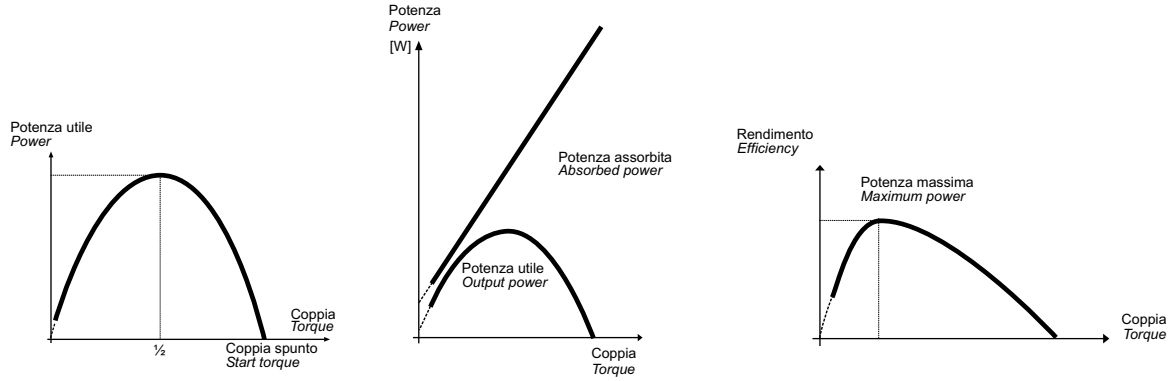



La potenza utile (potenza all'albero) si ricava dalla formula:

$$Pn\ [W] = Mn \cdot S = \frac{2\pi}{60} \cdot n_1 \cdot Mn$$

*The output power is calculated using the formula:*

$$Pn\ [W] = Mn \cdot S = \frac{2\pi}{60} \cdot n_1 \cdot Mn$$




Poiché la tensione di alimentazione è costante mentre la corrente è linearmente crescente al crescere della coppia, l'andamento della potenza assorbita è una retta crescente. Dal rapporto tra la potenza meccanica e la potenza assorbita si ottiene il grafico dell'efficienza.

*Since the supply voltage is constant, whereas the current increases in a linear manner as the torque increases, the absorbed power trend is a straight line going up. Efficiency is shown from the ratio between the output power and the absorbed power.*

## Formule utili

## *Useful formulas*

$$\eta = \frac{Pn}{Pa}$$

$$Pa = V \cdot I$$

$$Pn = V \cdot I \cdot \eta$$

$$Pn = Mn \cdot Sv$$

$$Sv = \frac{n_1}{9.55}$$

[HP] · 746 = [W].
Esempio 2 HP = circa 1500 W.

$$\eta = \frac{Pn}{Pa}$$

$$Pa = V \cdot I$$

$$Pn = V \cdot I \cdot \eta$$

$$Pn = Mn \cdot Sv$$

$$Sv = \frac{n_1}{9.55}$$

*[HP] · 746 = [W].*
*Example 2 HP = approx. 1500 W.*

| | | | |
|---|---|---|---|
| **S** | — | Servizio | *Duty* |
| **Pn** | [W] | Potenza in uscita | *Rated power* |
| **Pa** | [W] | Potenza assorbita | *Absorbed power* |
| **Mn** | [Nm] | Coppia nominale | *Rated torque* |
| **V** | [V] | Tensione | *Voltage* |
| **I** | [A] | Corrente assorbita | *Absorbed current* |
| **$n_1$** | [$min^{-1}$] | Numero giri motore | *Motor speed* |
| **Sv** | [rad/s] | Velocità angolare | *Angular speed* |
| **IC** | — | Classe d'isolamento termico | *Thermal insulation class* |
| **FF** | — | Fattore di forma | *Form factor* |
| **IP** | — | Classe di protezione | *Protection class* |
| η | — | Rendimento | *Efficiency* |
| **Kg** | — | Peso | *Weight* |

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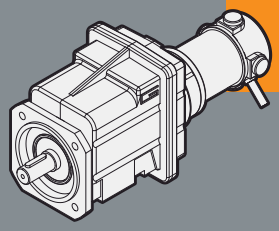
THE MODULAR GEARMOTOR

# NDCMG

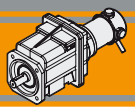
NDCMG



## MOTORIDUTTORI C.C. AD INGRANAGGI CILINDRICI

## RARE EARTH D.C. HELICAL GEARMOTORS


PRODUCTS • TRANSTECNO • GENUINE





ENERGY SAVING

## Caratteristiche tecniche

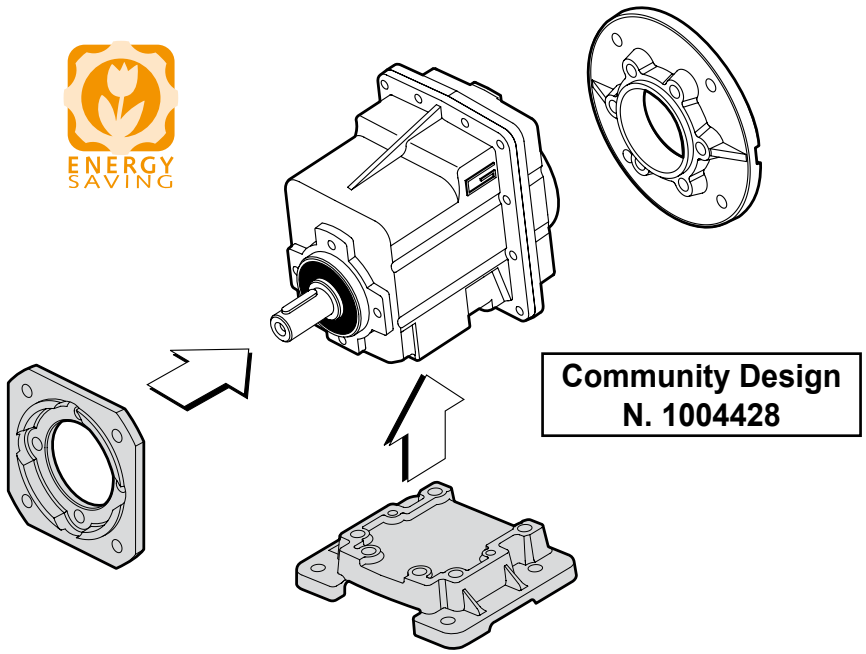
## *Technical features*

Le caratteristiche principali dei motoriduttori a corrente continua della serie NDCMG sono:

- Alimentazione in bassa tensione 12/24 Vcc
- Possibilità di montaggio encoder
- Potenze motore disponibili da 160 a 250W S2
- Magneti in terre rare
- Carcasse dei riduttori in pressofusione di alluminio
- Lubrificazione permanente con olio sintetico
- Ingranaggi sempre rettificati

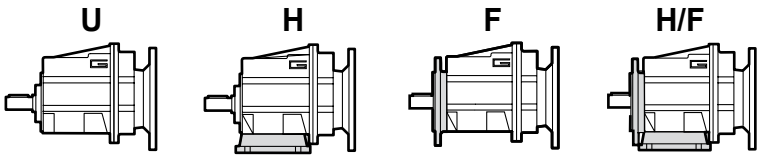
*The main features of NDCMG D.C. gearmotor range are:*

- *Low voltage power supply 12/24 Vdc*
- *Suitable for encoder assembly*
- *Motor power ratings available from 160 to 250W S2*
- *Rare earth magnets*
- *Die-cast aluminum housing*
- *Permanent synthetic oil long-life lubrication*
- *Ground helical gears*



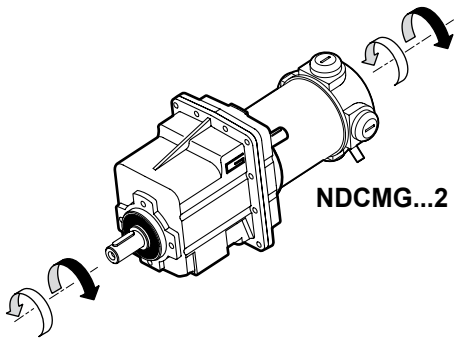

## Designazione

## *Classification*




| MOTORIDUTTORE / *GEARBOX* | | | | | | |
|---|---|---|---|---|---|---|
| **NDCMG** | **120/002** | | **U** | **8.99** | **D20** | **240** |
| Tipo<br>*Type* | Grandezza<br>*Size* | | Versione<br>*Version* | Rapporto<br>*Ratio* | Albero uscita<br>*Output shaft* | Versione motore<br>*Motor version* |
| **NDCMG** | **120/002** | **180/002** | **U...**<br>**H...**<br>**F...**<br>**H.../F...** | vedi tabelle<br>*see tables* | vedi tabelle<br>*see tables* | **120**<br>**240** |

## Sensi di rotazione — *Direction of rotation*



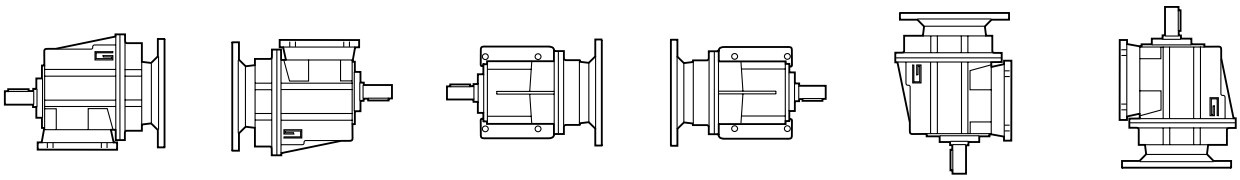

## Lubrificazione — *Lubrication*

Tutti i riduttori nelle taglie 02 sono forniti completi di lubrificante sintetico viscosità 320, pertanto possono essere installati in qualunque posizione di montaggio e non necessitano di manutenzione.

*Permanent synthetic oil long-life lubrication ( viscosity grade 320) makes it possible to use sizes 02 in all mounting positions; for this reason they can be installed in any assembly position and do not require maintenance.*

| CMG | **Quantità di olio** (litri) / ***Oil quantity*** *(litres)* | | | | | |
|---|---|---|---|---|---|---|
| | **B3** | **B8** | **B6** | **B7** | **V5** | **V6** |
| **002** | 0.18 | | | | | |
| | Lubrificati a vita / *Life lubrication* | | | | | |

Posizioni di montaggio / *Mounting positions*

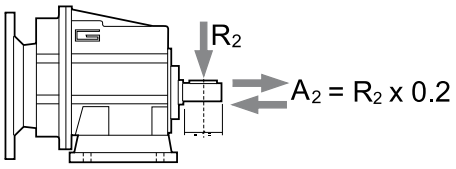


**B3** (standard) **B8** **B6** **B7** **V5** **V6**

## Simbologia — *Symbols*

| | | |
|---|---|---|
| $n_1$ | [$min^{-1}$] | Velocità in ingresso / *Input speed* |
| $n_2$ | [$min^{-1}$] | Velocità in uscita / *Output speed* |
| i | | Rapporto di riduzione / *Ratio* |
| $P_1$ | [kW] | Potenza in entrata / *Input power* |
| $M_2$ | [Nm] | Coppia nominale in uscita in funzione di $P_1$ / *Output torque referred to* $P_1$ |
| sf | | Fattore di servizio / *Service factor* |
| $R_2$ | [N] | Carico radiale ammissibile in uscita / *Permitted output radial load* |
| $A_2$ | [N] | Carico assiale ammissibile in uscita / *Permitted output axial load* |

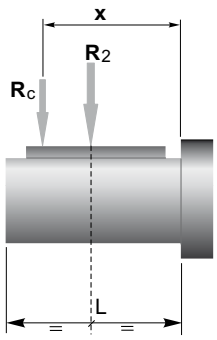
## Carichi radiali — *Radial loads*




| | CMG 002 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $n_2$ [$min^{-1}$] | 700 | 600 | 500 | 400 | 250 | 180 | 150 | 120 | 100 | 80 | 60 | 40 | 10 |
| $R_2$ [N] | 416 | 437 | 465 | 501 | 586 | 653 | 748 | 806 | 958 | 1032 | 1136 | 1300 | 1300 |

Quando il carico radiale risultante non è applicato sulla mezzeria dell'albero occorre calcolare quello effettivo con la seguente formula:

*When the resulting radial load is not applied on the centre line of the shaft it is necessary to calculate the effective load with the following formula:*

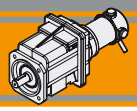



| | CMG 002 |
|---|---|
| a | 73 |
| b | 53 |
| $R_{2MAX}$ [N] | 1300 |

$$R_c = \frac{R_2 \cdot a}{(b+x)} \leq R_{2MAX}$$

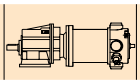
$$R \leq R_c$$

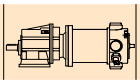
*a, b = valori riportati nella tabella*
*a, b = values given in the table*



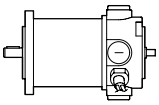


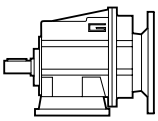
## Dati tecnici per servizio S2 — *Technical data for S2 duty*

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **160** | | | | | | |
| (3000 min$^{-1}$) | **596** | 2.5 | 12.6 | 5.03 | **120/002** | 120/240 |
| | **492** | 3.0 | 10.4 | 6.10 | | |
| | **401** | 3.7 | 8.5 | 7.49 | | |
| | **334** | 4.4 | 8.9 | 8.99 | | |
| | **295** | 5.0 | 7.9 | 10.16 | | |
| | **249** | 5.9 | 6.6 | 12.07 | | |
| | **224** | 6.6 | 8.4 | 13.40 | | |
| | **198** | 7.4 | 7.4 | 15.14 | | |
| | **165** | 8.9 | 6.2 | 18.17 | | |
| | **139** | 10.6 | 5.2 | 21.58 | | |
| | **128** | 11.5 | 4.8 | 23.51 | | |
| | **120** | 12.3 | 4.5 | 25.10 | | |
| | **111** | 13.2 | 4.2 | 27.08 | | |
| | **92** | 15.9 | 3.5 | 32.49 | | |
| | **71** | 20.6 | 2.7 | 42.04 | | |
| | **67** | 21.9 | 2.5 | 44.89 | | |
| | **61** | 23.9 | 2.3 | 48.86 | | |

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **250** | | | | | | |
| (3000 min$^{-1}$) | **596** | 3.8 | 8.1 | 5.03 | **180/002** | 120/240 |
| | **492** | 4.7 | 6.7 | 6.10 | | |
| | **401** | 5.7 | 5.4 | 7.49 | | |
| | **334** | 6.9 | 5.7 | 8.99 | | |
| | **295** | 7.8 | 5.0 | 10.16 | | |
| | **249** | 9.2 | 4.2 | 12.07 | | |
| | **224** | 10.2 | 5.4 | 13.40 | | |
| | **198** | 11.6 | 4.8 | 15.14 | | |
| | **165** | 13.9 | 4.0 | 18.17 | | |
| | **139** | 16.5 | 3.3 | 21.58 | | |
| | **128** | 18.0 | 3.1 | 23.51 | | |
| | **120** | 19.2 | 2.9 | 25.10 | | |
| | **111** | 20.7 | 2.7 | 27.08 | | |
| | **92** | 24.8 | 2.2 | 32.49 | | |
| | **71** | 32.1 | 1.7 | 42.04 | | |
| | **67** | 34.3 | 1.6 | 44.89 | | |
| | **61** | 37.3 | 1.5 | 48.86 | | |

## Motori applicabili — *IEC Motor adapters*





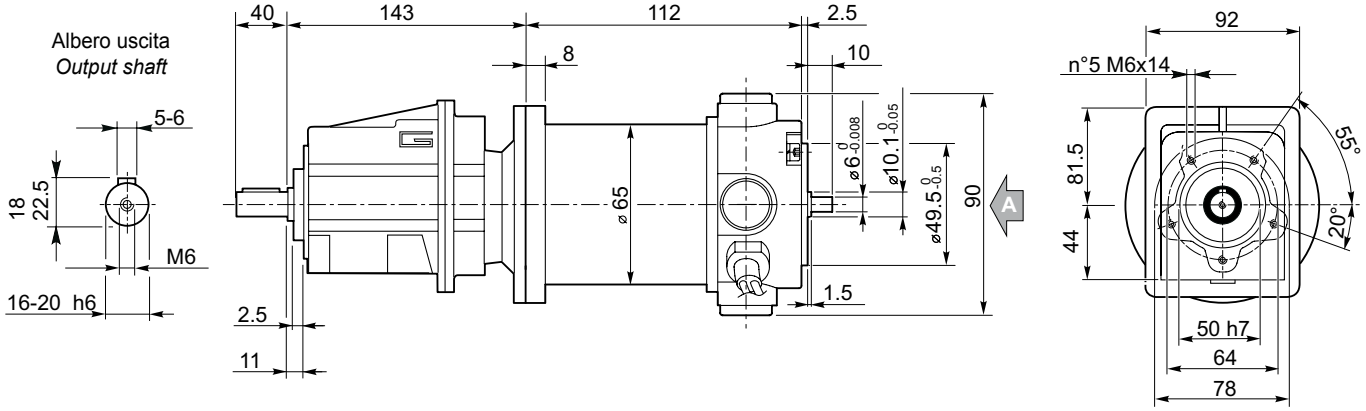
| | | ND | |
|---|---|---|---|
| | | **120.120**<br>**120.240** | **180.120**<br>**180.240** |
| **CMG** | **002** | 5.03 - 48.86 | 5.03 - 48.86 |

5.03 - 48.86 Rapporti di riduzione i
*Ratio i*

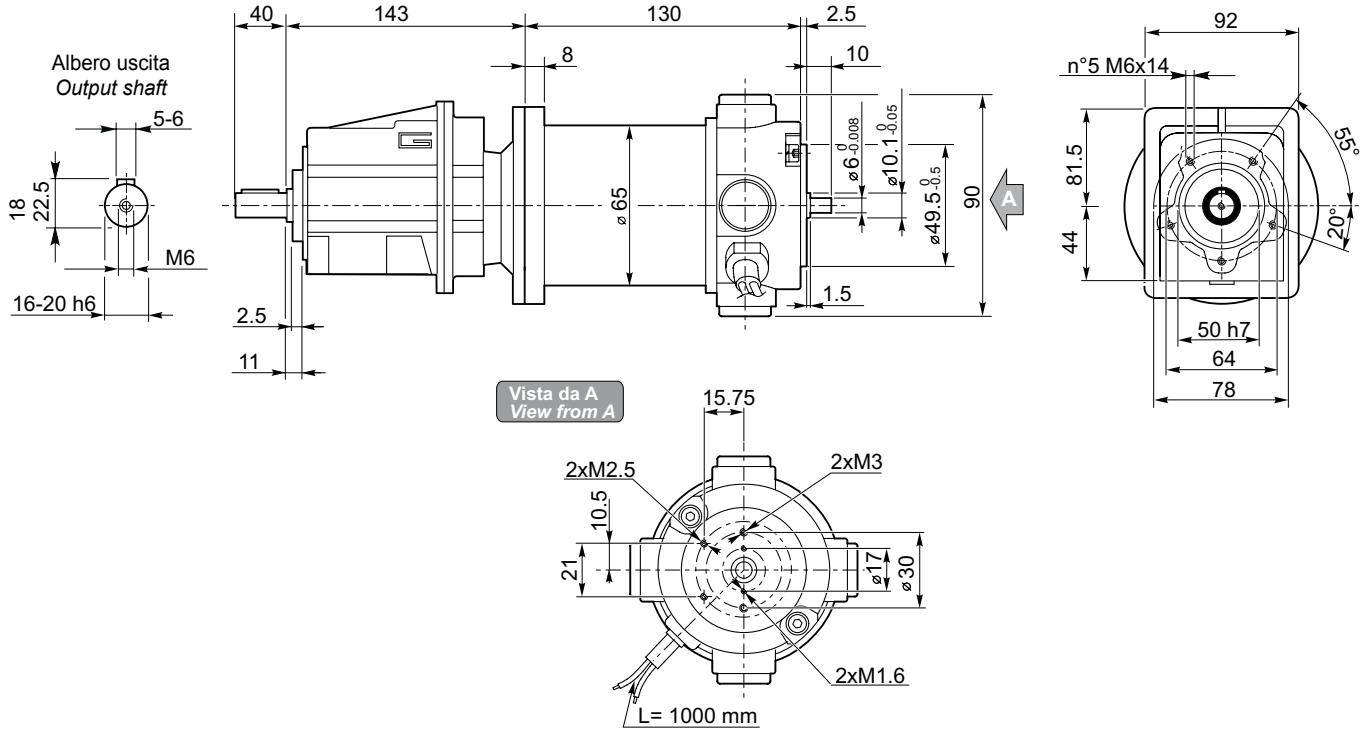
**Dimensioni** ***Dimensions***

# NDCMG..U

## NDCMG120/002 U



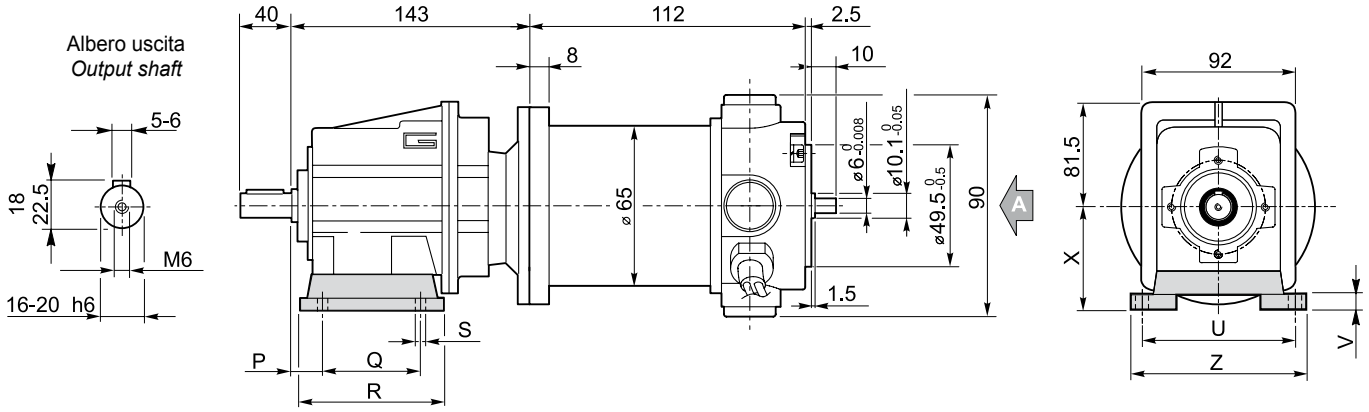

## NDCMG180/002 U



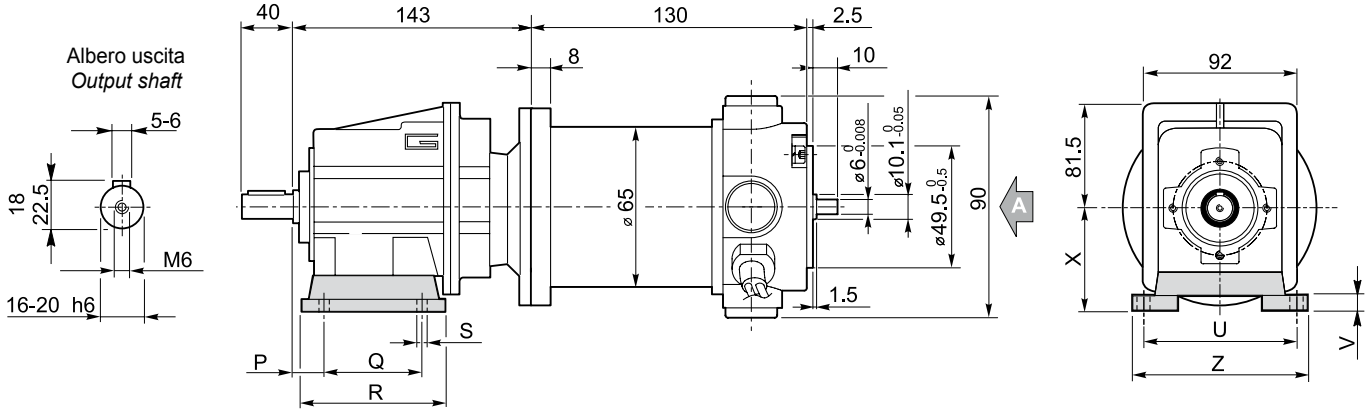
**Dimensioni** ***Dimensions***

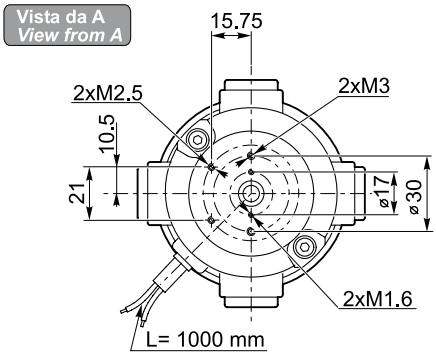
# NDCMG..H

## NDCMG120/002 H




## NDCMG180/002 H



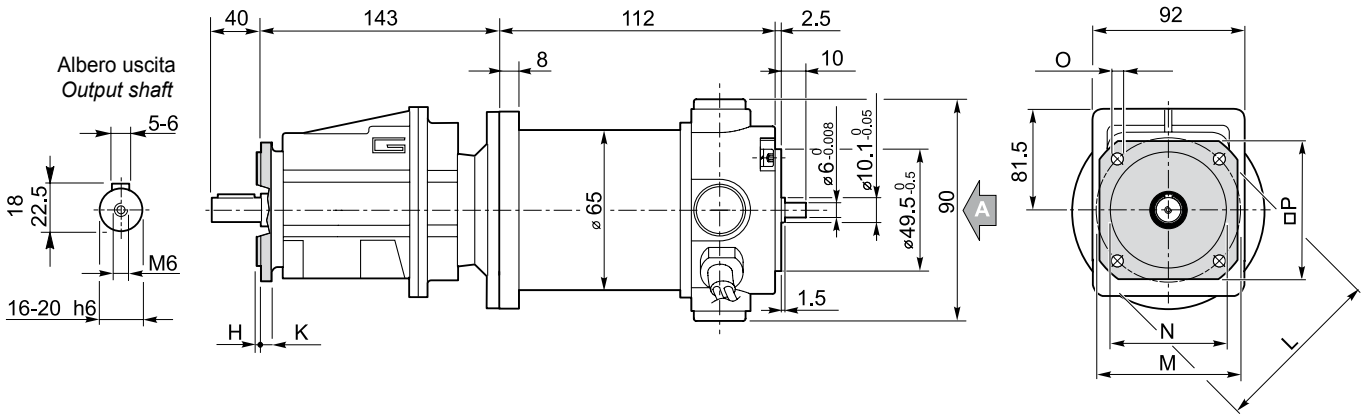

| Versione **H** / ***H** Version* | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **NDCMG** | **P** | **Q** | **R** | **S** | **U** | **V** | **X** | **Z** | **Piede / *Foot*** | |
| | | | | | | | | | Tipo / *Type* | Peso / *Weight* [kg] |
| **120/002 180/002** | **18** | **60** | **80** | **9** | **100** | **10** | **60** | **120** | **H60** | **0.2** |
| | 18 | 80 | 104 | 9 | 110 - 120 | 10 | 75 | 145 | H75 | 0.3 |
| | 18 | 50 - 87 | 110 | 9 | 110 | 10 | 85 | 135 | H85 | 0.4 |

Preferenziale / *Preferred*

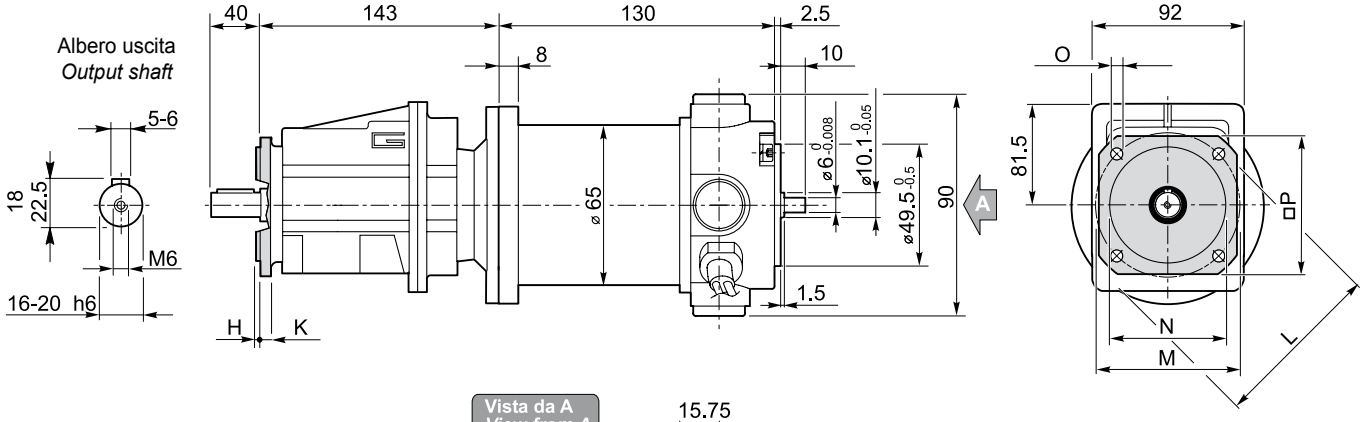
**Dimensioni** ***Dimensions***

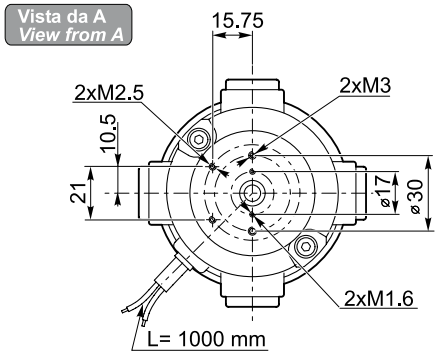
# NDCMG..F

## NDCMG120/002 F




## NDCMG180/002 F



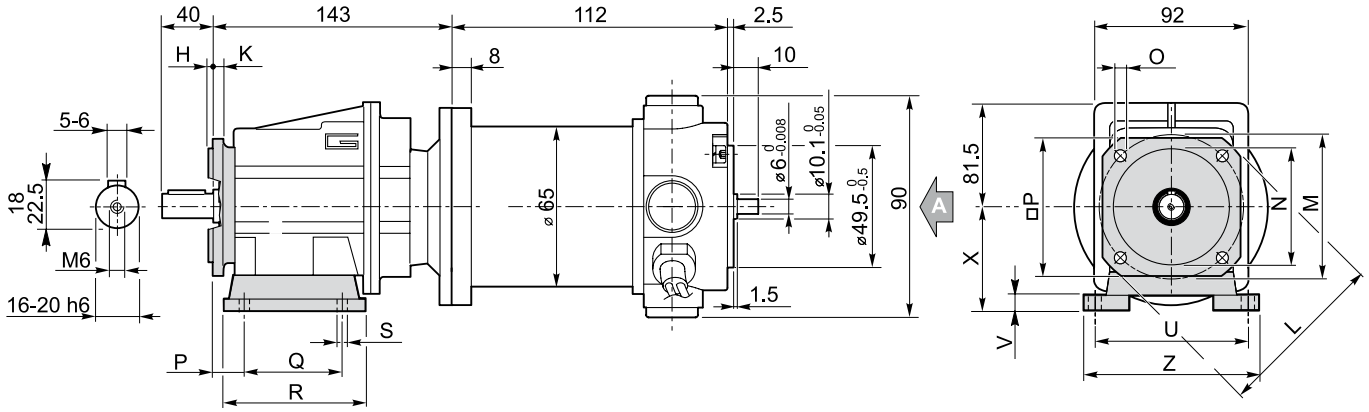




| Versione **F** / ***F** Version* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **NDCMG** | **H** | **K** | **L** | **M** | **N** f7 | **O** | **P** | **Flangia / *Flange*** | |
| | | | | | | | | Tipo / *Type* | Peso / *Weight* [kg] |
| **120/002 180/002** | 3.5 | 7 | 105 | 85 | 70 | 6.5 | 90 | **F105** | 0.1 |
| | 3.5 | 8 | 120 | 100 | 80 | 7 | 100 | **F120** | 0.2 |
| | 3.5 | 8 | 140 | 115 | 95 | 9 | 115 | **F140** | 0.2 |

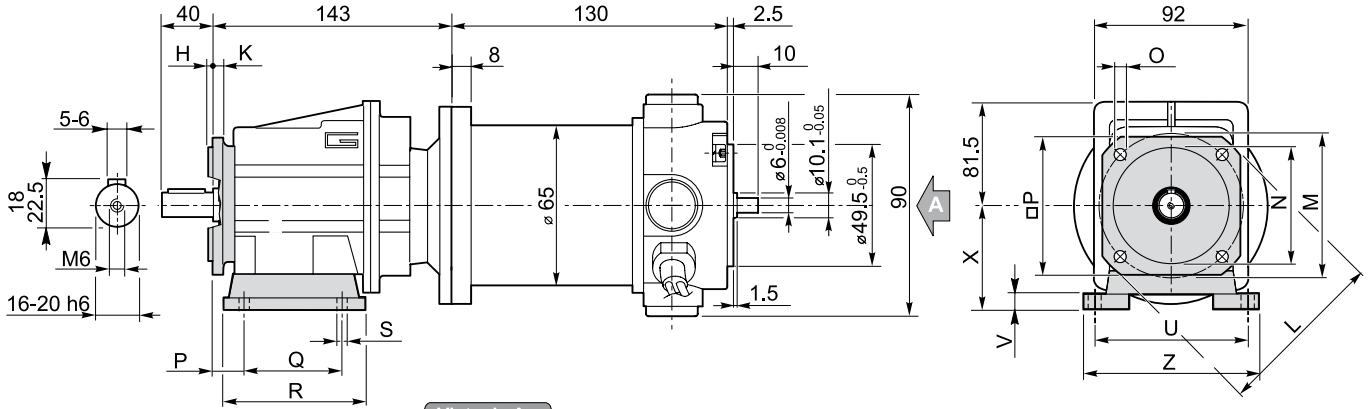
**Dimensioni** ***Dimensions***

## CMG..H../F..

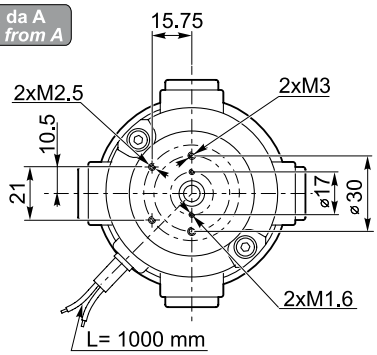
### NDCMG120/002 H../F




### NDCMG180/002 H../F




Vista da A
*View from A*




| NDCMG | Versione **H** / ***H Version*** | | | | | | | | Piede / *Foot* | | Combinazioni possibili H/F *Possible combinations H/F* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | P | Q | R | S | U | V | X | Z | Tipo *Type* | Peso / *Weight* [kg] | F105 | F120 | F140 |
| 120/002 180/002 | **18** | **60** | **80** | **9** | **100** | **10** | **60** | **120** | **H60** | **0.2** | • | • | • |
| | 18 | 80 | 104 | 9 | 110 - 120 | 10 | 75 | 145 | **H75** | 0.3 | • | • | • |
| | 18 | 50 - 87 | 110 | 9 | 110 | 10 | 85 | 135 | **H85** | 0.4 | • | • | • |

Preferenziale / *Preferred*

• Combinazioni possibili H/F / *Possible combinations H/F*

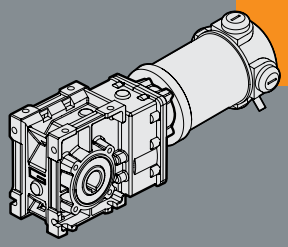
| NDCMG | Versione **F** / ***F Version*** | | | | | | | Flangia / *Flange* | |
|---|---|---|---|---|---|---|---|---|---|
| | H | K | L | M | N f7 | O | P | Tipo / *Type* | Peso / *Weight* [kg] |
| 120/002 180/002 | 3.5 | 7 | 105 | 85 | 70 | 6.5 | 90 | **F105** | 0.1 |
| | 3.5 | 8 | 120 | 100 | 80 | 7 | 100 | **F120** | 0.2 |
| | 3.5 | 8 | 140 | 115 | 95 | 9 | 115 | **F140** | 0.2 |

# Note

TRANSTECNO®
THE MODULAR GEARMOTOR

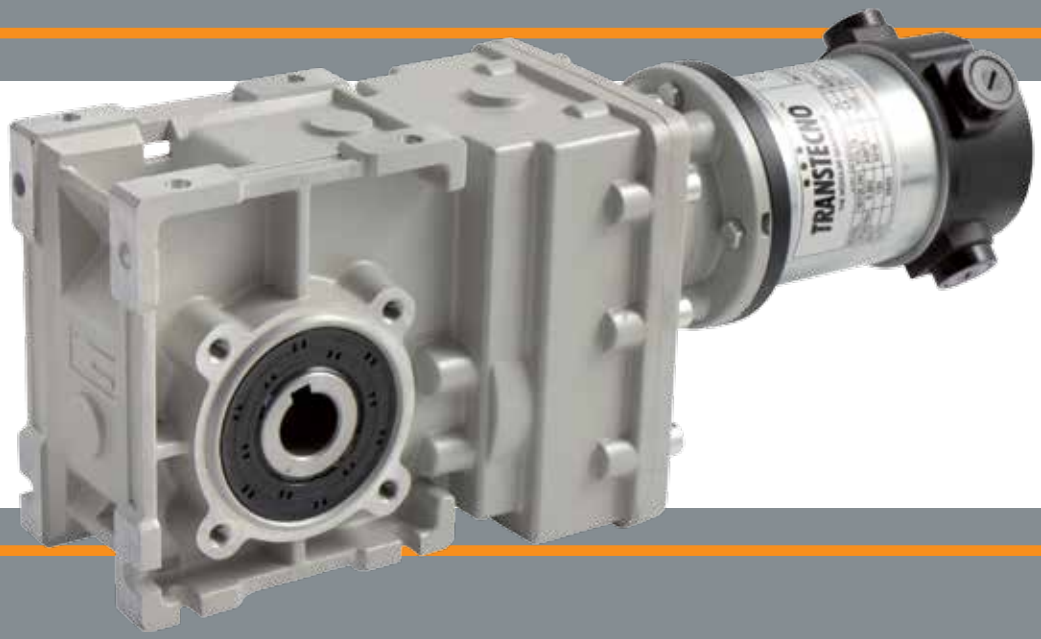
# NDCMB

NDCMB

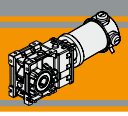


## MOTORIDUTTORI C.C. AD ASSI ORTOGONALI

## RARE EARTH D.C. BEVEL HELICAL GEARMOTORS




PRODUCTS • TRANSTECNO • GENUINE •





ENERGY SAVING

## Caratteristiche tecniche — *Technical features*

Le caratteristiche principali dei motoriduttori a corrente continua della serie NDCMB sono:

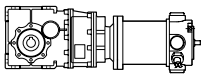
- Alimentazione in bassa tensione 12/24 Vcc
- Possibilità di montaggio encoder
- Potenze motore disponibili da 160 a 250W S2
- Magneti in terre rare
- Carcasse dei riduttori in pressofusione di alluminio
- Lubrificazione permanente con olio sintetico
- Ingranaggi sempre rettificati

*The main features of NDCMB D.C. gearmotor range are:*

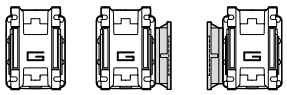
- *Low voltage power supply 12/24 Vdc*
- *Suitable for encoder assembly*
- *Motor power ratings available from 160 to 250W S2*
- *Rare earth magnets*
- *Die-cast aluminum housing*
- *Permanent synthetic oil long-life lubrication*
- *Ground helical gears*

## Designazione — *Classification*

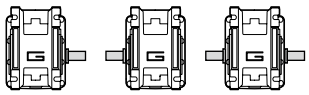
MOTORIDUTTORE / *GEARMOTOR*

| NDCMB | 120/402 | U | 9.2 | D20 | SZDX | BRSX | 90 | 240 |
|---|---|---|---|---|---|---|---|---|
| Tipo *Type* | Grandezza *Size* | Versione Riduttore *Gearbox Version* | Rapporto *Ratio* | Albero di uscita *Output shaft* | Albero di uscita *Output shaft* | Braccio di reazione *Torque arm* | Angolo *Angle* | Versione Motore *Motor Version* |
| **NDCMB**  | **120/402** **120/502** **180/402** **180/502** | **U** **FD** **FS** **FLD** **FLS** **FBD** **FBS** | Vedere tabella *See tables* | Vedere tabella *See tables* | **SZDX** **SZSX** **DZ** | **BRDX** **BRSX** | **0°** **90°** **180°** **270°** | **120** **240** |

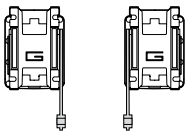
Versione Riduttore *Gearbox Version*



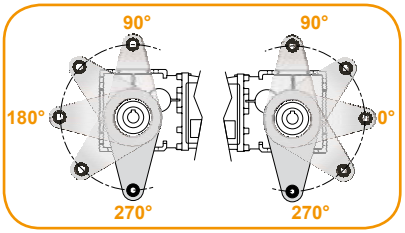

Albero di uscita *Output shaft*



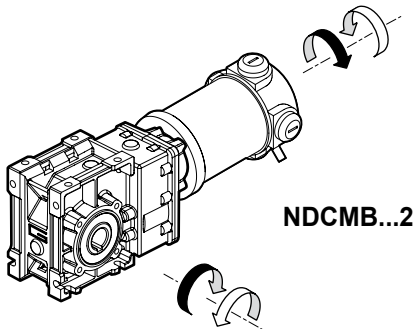

Braccio di reazione *Torque arm*




Angolo *Angle*




## Sensi di rotazione — *Direction of rotation*



**NDCMB...2**

## Simbologia — *Symbols*

| | | | | | |
|---|---|---|---|---|---|
| $n_1$ | [$min^{-1}$] | Velocità in ingresso / *Input speed* | $M_2$ | [Nm] | Coppia in uscita in funzione di $P_1$ / *Output torque referred to $P_1$* |
| $n_2$ | [$min^{-1}$] | Velocità in uscita / *Output speed* | sf | | Fattore di servizio / *Service factor* |
| i | | Rapporto di riduzione / *Ratio* | $A_2$ | N] | Carico assiale ammissibile in uscita / *Permitted output axial load* |
| $P_1$ | [kW] | Potenza in entrata / *Input power* | $R_2$ | [N] | Carico radiale ammissibile in uscita / *Permitted output radial load* |

## Lubrificazione — *Lubrication*

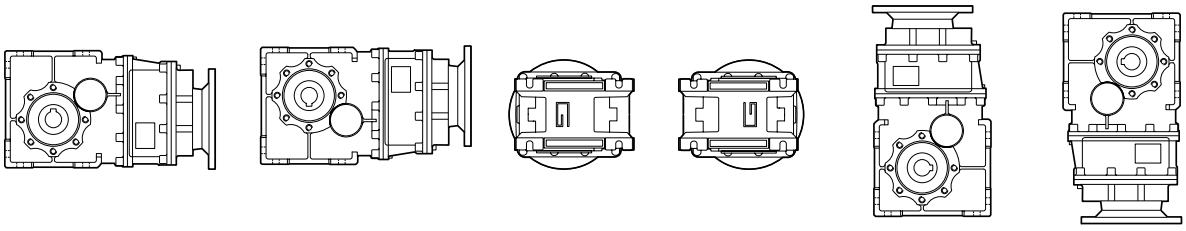
Tutti i riduttori nelle taglie 402 e 502 sono forniti completi di lubrificante sintetico viscosità 320, pertanto possono essere installati in qualunque posizione di montaggio e non necessitano di manutenzione.

*Permanent synthetic oil long-life lubrication (viscosity grade 320) makes it possible to use sizes 402 and 502 in all mounting positions; for this reason they can be installed in any assembly position and do not require maintenance.*

| CMB | **Quantità di olio** (litri) / ***Oil quantity*** *(litres)* | | | | | |
|---|---|---|---|---|---|---|
| | **B3** | **B8** | **B6** | **B7** | **V5** | **V6** |
| **402** | 0.4 | | | | | |
| **502** | 0.52 | | | | | |
| | Lubrificati a vita / *Life lubrication* | | | | | |

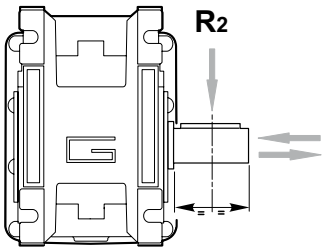
N.B.
Le quantità di lubrificante sono indipendenti dalla posizione di montaggio per le taglie 402 e 502.
*The oil quantity does not depend on mounting position for sizes 402 and 502.*

Posizioni di montaggio / *Mounting positions*



**B3** (standard) **B8** **B6** **B7** **V5** **V6**

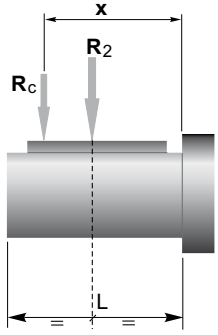
## Carichi radiali — *Radial loads*




| $n_2$ [$min^{-1}$] | $R_2$ [N] | |
|---|---|---|
| | **CMB 402** | **CMB 502** |
| 400 | 905 | 1116 |
| 300 | 996 | 1228 |
| 200 | 1141 | 1406 |
| 170 | 1204 | 1484 |
| 140 | 1414 | 1743 |
| 100 | 1582 | 1949 |
| 90 | 1638 | 2019 |
| 60 | 2047 | 2490 |
| 40 | 2524 | 3029 |
| 30 | 2778 | 3334 |
| 20 | 3180 | 3816 |
| 15 | 3500 | 4200 |
| 10 | 3500 | 4200 |

Quando il carico radiale risultante non è applicato sulla mezzeria dell'albero occorre calcolare quello effettivo con la seguente formula:

*When the resulting radial load is not applied on the centre line of the shaft it is necessary to calculate the effective load with the following formula:*




| | **CMB 402** | **CMB 502** |
|---|---|---|
| **a** | 86 | 104 |
| **b** | 66 | 79 |
| $R_{2MAX}$ | 3500 | 4200 |

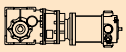
$$R_c = \frac{R_2 \cdot a}{(b+x)} \leq R_{2MAX}$$

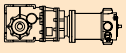
$$R \leq R_c$$

*a, b = valori riportati nella tabella*
*a, b = values given in the table*

## Dati tecnici per servizio S2

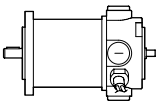
## *Technical data for S2 duty*

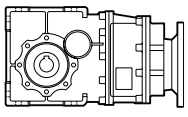
| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **160** | | | | | | |
| (3000 min$^{-1}$) | **485** | 3.0 | 10.5 | 6.18 | **120/402** | 120/240 |
| | **401** | 3.6 | 8.6 | 7.49 | | |
| | **326** | 4.4 | 7.0 | 9.20 | | |
| | **254** | 5.7 | 6.2 | 11.83 | | |
| | **240** | 6.0 | 5.9 | 12.48 | | |
| | **202** | 7.1 | 4.9 | 14.83 | | |
| | **170** | 8.4 | 4.1 | 17.63 | | |
| | **161** | 8.9 | 4.8 | 18.60 | | |
| | **134** | 10.7 | 4.0 | 22.33 | | |
| | **125** | 11.4 | 3.8 | 23.91 | | |
| | **104** | 13.8 | 3.7 | 28.89 | | |
| | **97** | 14.8 | 3.5 | 30.84 | | |
| | **89** | 16.1 | 3.2 | 33.57 | | |
| | **84** | 17.1 | 3.0 | 35.63 | | |
| | **70** | 20.5 | 2.5 | 42.75 | | |
| | **54** | 26.5 | 1.9 | 55.31 | | |
| | **51** | 28.3 | 1.8 | 59.06 | | |
| | **47** | 30.8 | 1.7 | 64.29 | | |
| | **70** | 20.5 | 4.8 | 42.75 | **120/502** | 120/240 |
| | **54** | 26.5 | 3.7 | 55.31 | | |
| | **51** | 28.3 | 3.5 | 59.06 | | |
| | **47** | 30.8 | 3.2 | 64.29 | | |

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **250** | | | | | | |
| (3000 min$^{-1}$) | **485** | 4.6 | 6.7 | 6.18 | **180/402** | 120/240 |
| | **401** | 5.6 | 5.5 | 7.49 | | |
| | **326** | 6.9 | 4.5 | 9.20 | | |
| | **254** | 8.8 | 4.0 | 11.83 | | |
| | **240** | 9.3 | 3.7 | 12.48 | | |
| | **202** | 11.1 | 3.2 | 14.83 | | |
| | **170** | 13.2 | 2.7 | 17.63 | | |
| | **161** | 13.9 | 3.1 | 18.60 | | |
| | **134** | 16.7 | 2.6 | 22.33 | | |
| | **125** | 17.9 | 2.4 | 23.91 | | |
| | **104** | 21.6 | 2.4 | 28.89 | | |
| | **97** | 23.1 | 2.2 | 30.84 | | |
| | **89** | 25.1 | 2.0 | 33.57 | | |
| | **84** | 26.7 | 1.9 | 35.63 | | |
| | **70** | 32.0 | 1.6 | 42.75 | | |
| | **54** | 41.4 | 1.2 | 55.31 | | |
| | **51** | 44.2 | 1.2 | 59.06 | | |
| | **47** | 48.1 | 1.1 | 64.29 | | |
| | **134** | 16.7 | 5.1 | 22.33 | **180/502** | 120/240 |
| | **125** | 17.9 | 4.8 | 23.91 | | |
| | **104** | 21.6 | 4.5 | 28.89 | | |
| | **97** | 23.1 | 4.2 | 30.84 | | |
| | **89** | 25.1 | 3.9 | 33.57 | | |
| | **84** | 26.7 | 3.7 | 35.63 | | |
| | **70** | 32.0 | 3.1 | 42.75 | | |
| | **54** | 41.4 | 2.4 | 55.31 | | |
| | **51** | 44.2 | 2.2 | 59.06 | | |
| | **47** | 48.1 | 2.0 | 64.29 | | |

## Motori applicabili

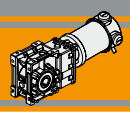
## *Motor adapters*





| | | ND | |
|---|---|---|---|
| | | **120.120<br>120.240** | **180.120<br>180.240** |
| **CMB** | **402** | 6.18 - 64.29 | 6.18 - 64.29 |
| | **502** | 6.18 - 64.29 | 6.18 - 64.29 |

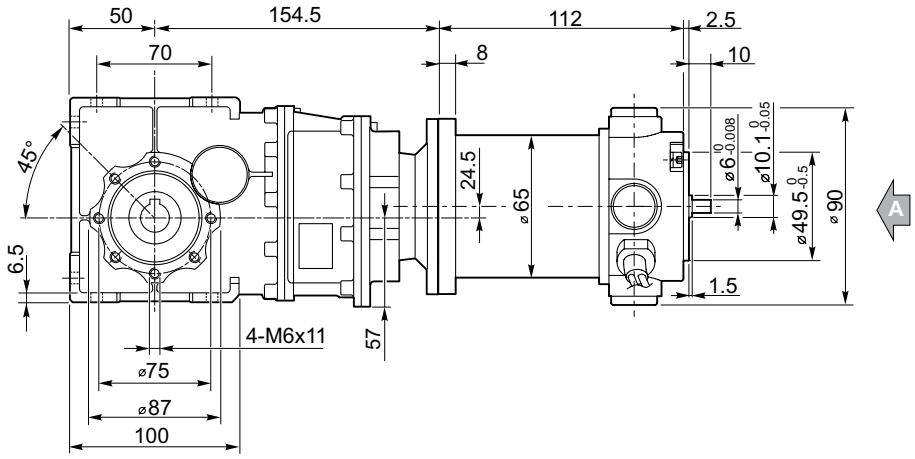
6.18 - 64.29 Rapporti di riduzione i
*Ratio i*

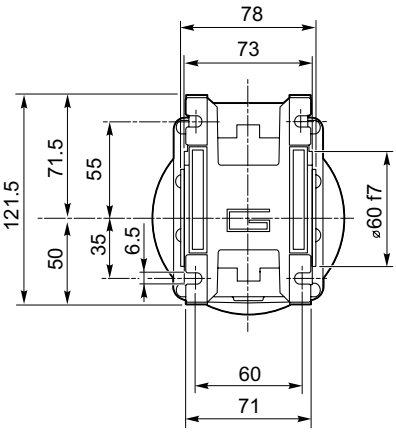


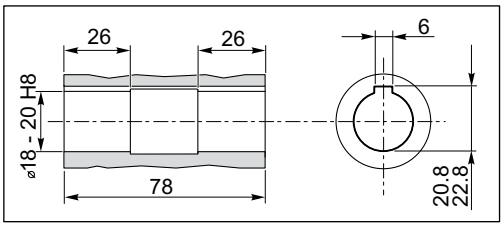


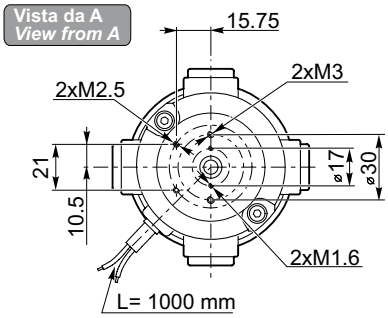
**Dimensioni** *Dimensions*

## NDCMB120/402 U

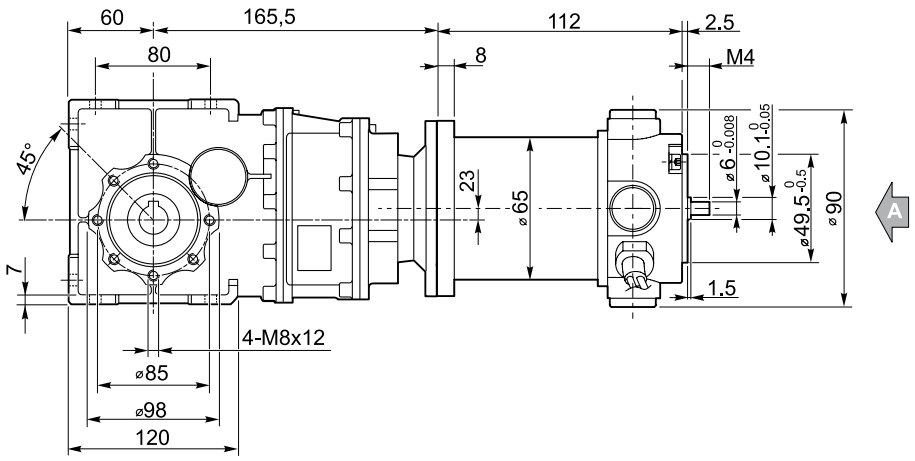


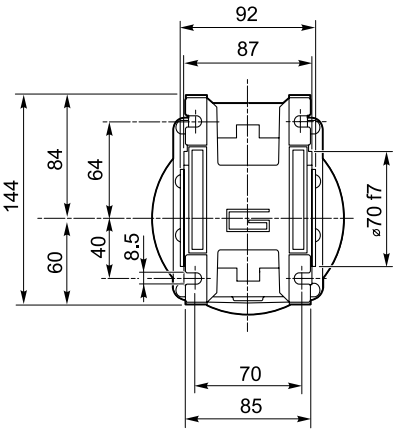



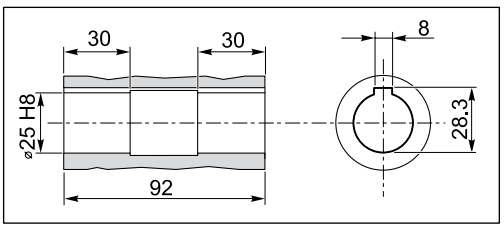



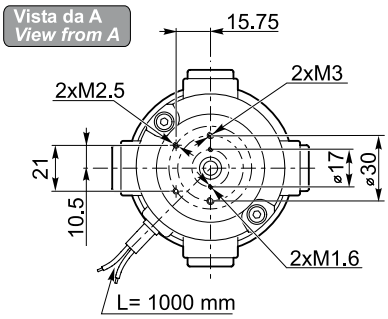




## NDCMB120/502 U



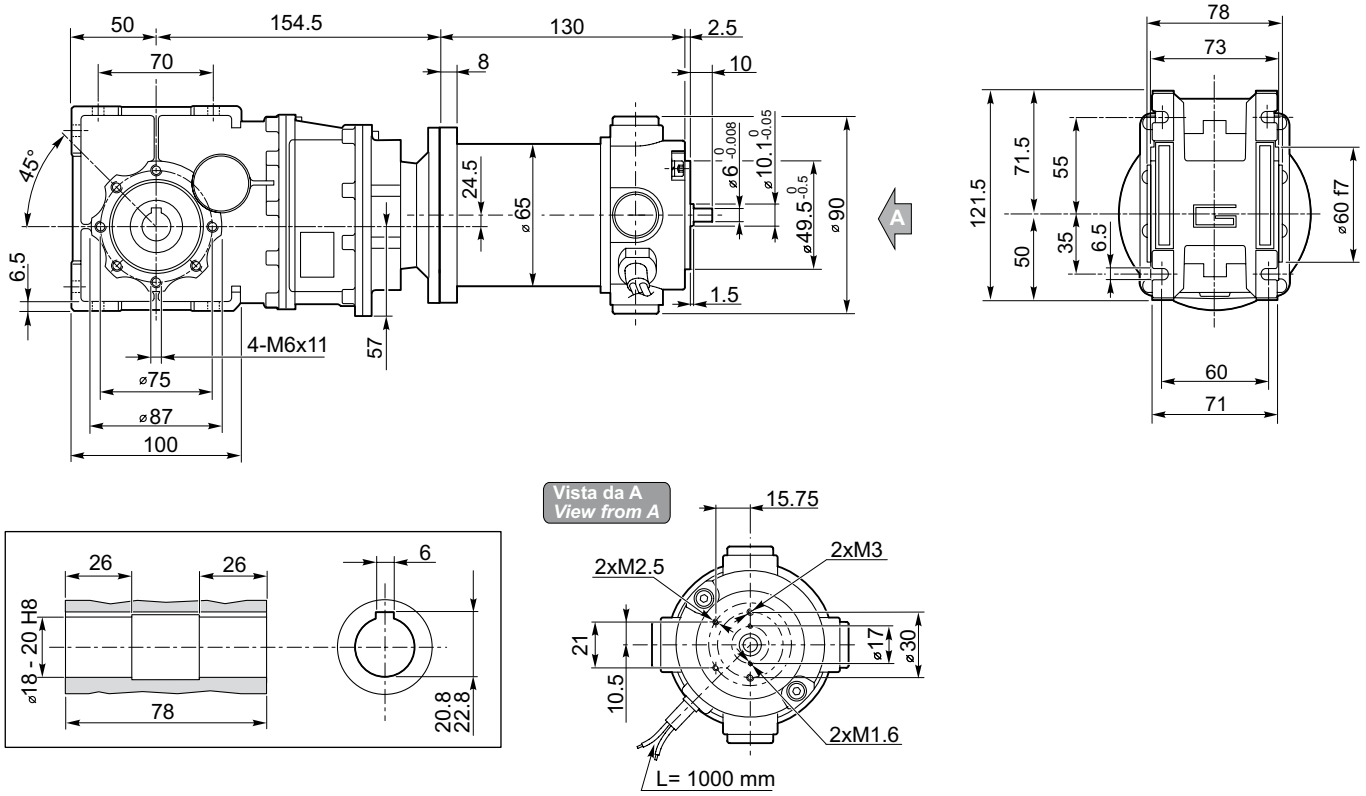



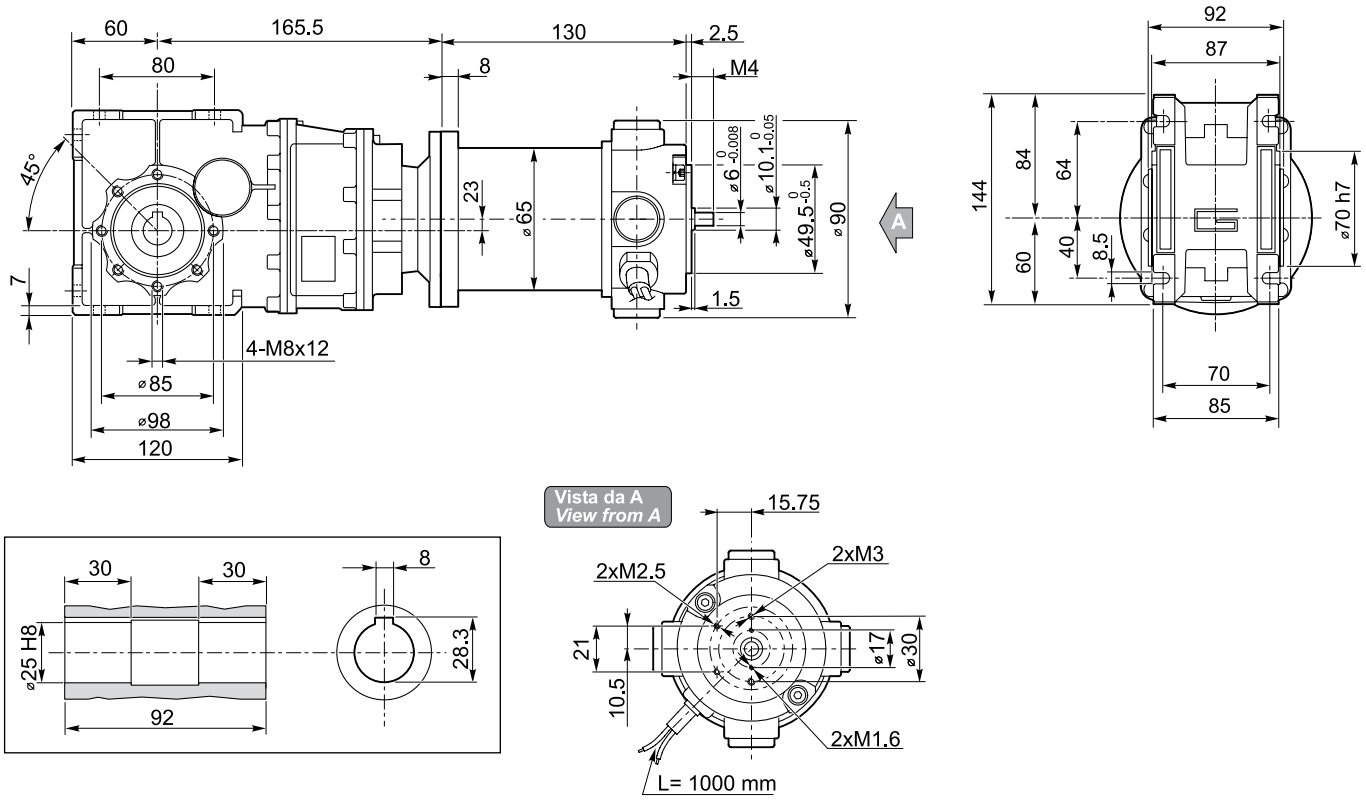



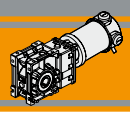
**Dimensioni** ***Dimensions***

## NDCMB180/402 U




## NDCMB180/502 U

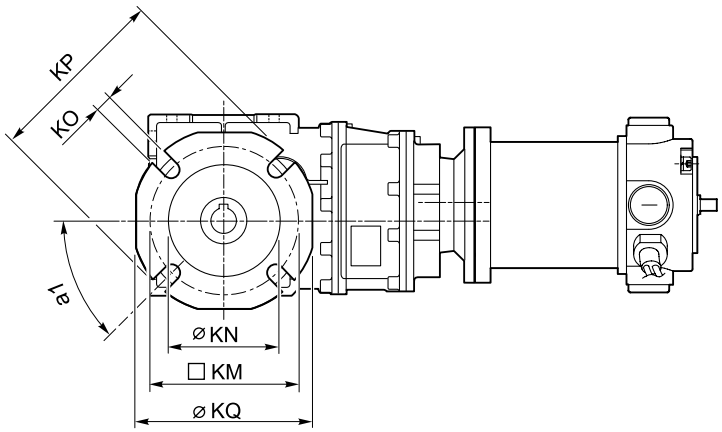


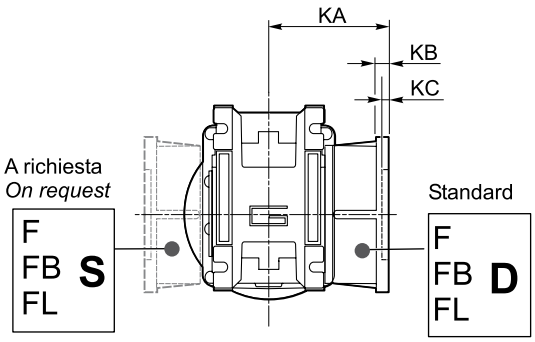




## Dimensioni — *Dimensions*

### NDCMB.../... F... Flange uscita / *Output flanges*

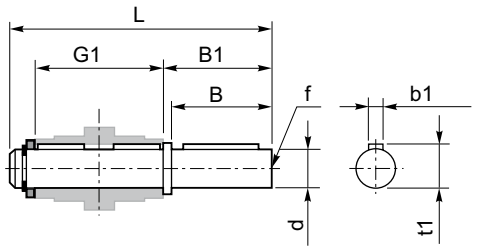


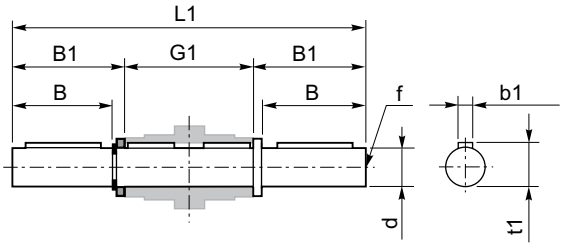

| | Flange uscita / *Output flanges* | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **F** | | | | | | | | | **FL** | | | | | | | | | **FB** | | | | | | | |
| **CMB** | **$a_1$** | **KA** | **KB** | **KC** | **KM** | **KN** H8 | **KO** | **KP** | **KQ** | **$a_1$** | **KA** | **KB** | **KC** | **KM** | **KN** H8 | **KO** | **KP** | **KQ** | **$a_1$** | **KA** | **KB** | **KC** | **KM** | **KN** H8 | **KO** | **KP** | **KQ** |
| **402** | 45° | 67 | 7.5 | 4.5 | 80-95 | 60 | 9 | 110 | 95 | 45° | 97 | 7.5 | 4.5 | 80-95 | 60 | 9 | 110 | 95 | 45° | 80 | 8.5 | 5 | 115-125 | 95 | 9.5 | 140 | 112 |
| **502** | 45° | 90 | 9 | 5 | 90-110 | 70 | 11 | 125 | 110 | 45° | 120 | 9 | 5 | 90-110 | 70 | 11 | 125 | 110 | 45° | 89 | 9 | 5 | 130-145 | 110 | 9.5 | 160 | 132 |

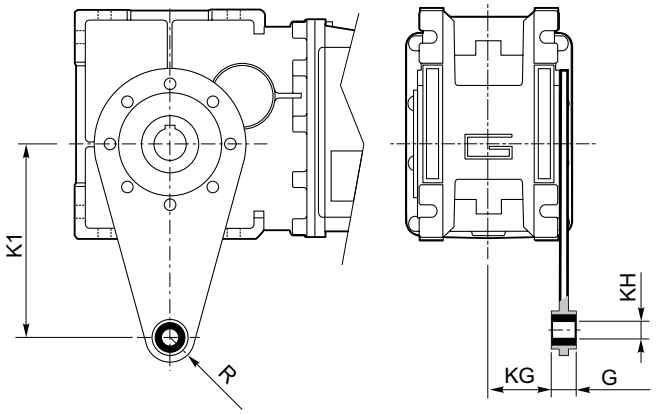
## Accessori — *Accessories*

**SZ**




**DZ**



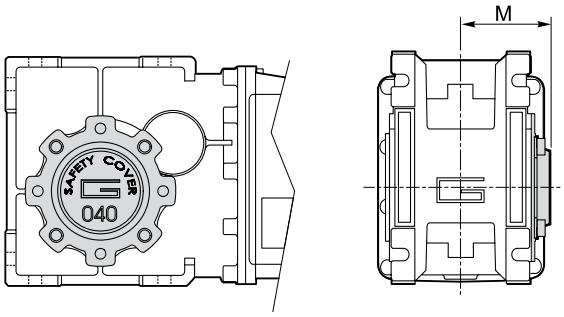

Albero lento / *Output shaft*

| CMB | d h7 | B | B1 | G1 | L | L1 | f | b1 | t1 |
|---|---|---|---|---|---|---|---|---|---|
| **402** | 18 | 40 | 43 | 78 | 128 | 164 | M6 | 6 | 20.5 |
| **502** | 25 | 50 | 53.5 | 92 | 153 | 199 | M10 | 8 | 28 |

Braccio di reazione / *Torque arm*

| CMB | K1 | G | KG | KH | R |
|---|---|---|---|---|---|
| **402** | 100 | 14 | 31 | 10 | 18 |
| **502** | 100 | 14 | 38 | 10 | 18 |

## SC - *Safety cover*



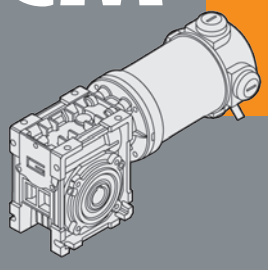

| CMB | M |
|---|---|
| **402** | 54.5 |
| **502** | 62.5 |

TRANSTECNO®

THE MODULAR GEARMOTOR

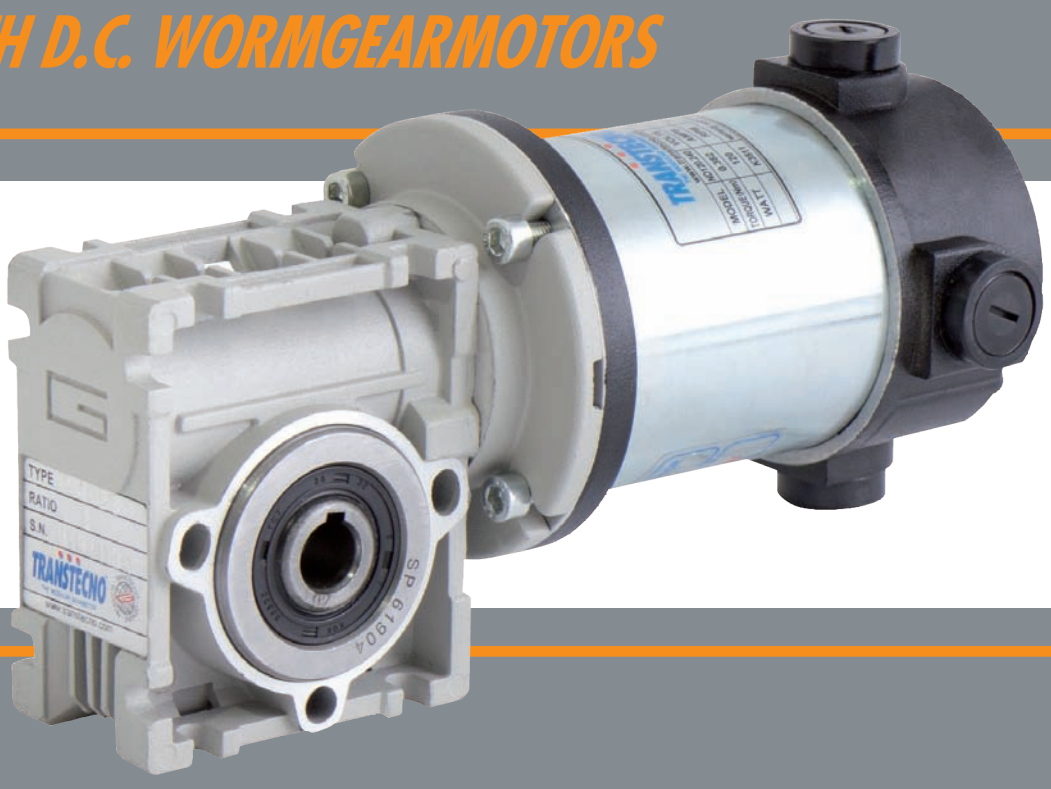
# NDCM

NDCM

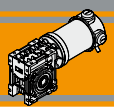


## MOTORIDUTTORI C.C. A VITE SENZA FINE

## RARE EARTH D.C. WORMGEARMOTORS




TRANSTECNO · GENUINE · PRODUCTS ·



## Caratteristiche tecniche — *Technical features*

Le caratteristiche principali dei motoriduttori a corrente continua della serie NDCM sono:

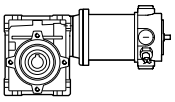
- Alimentazione in bassa tensione 12/24 Vcc
- Possibilità di montaggio encoder
- Potenze motore disponibili da 160 a 250 W S2
- Magneti in terre rare
- Carcasse dei riduttori a vite senza fine in pressofusione di alluminio
- Lubrificazione permanente con olio sintetico

*The main features of NDCM D.C. gearmotor range are:*

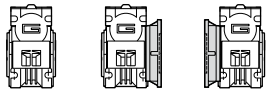
- Low voltage power supply 12/24 Vdc
- Suitable for encoder assembly
- Motor power ratings available from 160 to 250 W S2
- Rare earth magnets
- Die-cast aluminum housing on wormgearboxes
- Permanent synthetic oil long-life lubrication

## Designazione — *Classification*

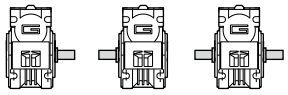
MOTORIDUTTORE / *GEARMOTOR*

| NDCM | 120/030 | U | 10 | SZDX | BRSX | 90 | 240 | VS |
|---|---|---|---|---|---|---|---|---|
| Tipo *Type* | Grandezza *Size* | Versione Riduttore *Gearbox Version* | Rapporto *Ratio* | Albero di uscita *Output shaft* | Braccio di reazione *Torque arm* | Angolo *Angle* | Versione Motore *Motor Version* | Opzioni *Options* |
| **NDCM**  | **120/026** **120/030** **120/040** **180/026** **180/030** **180/040** | **U** **FD** **FS** **FLD** **FLS** **FBD** **FBS** | Vedere tabella *See tables* | **SZDX** **SZSX** **DZ** | **BRDX** **BRSX** | **0°** **90°** **180°** **270°** | **120 — 240** | **VS** |

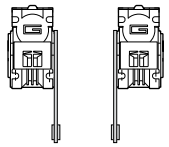
Versione Riduttore *Gearbox Version*



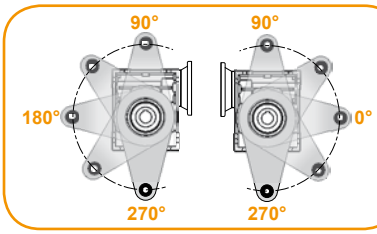

Albero di uscita *Output shaft*




Braccio di reazione *Torque arm*




Angolo *Angle*




## Simbologia — *Symbols*

| | | | | | |
|---|---|---|---|---|---|
| $n_1$ | [$min^{-1}$] | Velocità in ingresso / *Input speed* | Rd | % | Rendimento dinamico / *Dynamic efficiency* |
| $n_2$ | [$min^{-1}$] | Velocità in uscita / *Output speed* | $A_2$ | N] | Carico assiale ammissibile in uscita / *Permitted output axial load* |
| i | | Rapporto di riduzione / *Ratio* | Rs | % | Rendimento statico / *Static efficiency* |
| $P_1$ | [kW] | Potenza in entrata / *Input power* | $R_2$ | [N] | Carico radiale ammissibile in uscita / *Permitted output radial load* |
| $M_2$ | [Nm] | Coppia in uscita in funzione di $P_1$ / *Output torque referred to* $P_1$ | Z | | Numero di principi della vite / *Worm starts* |
| sf | | Fattore di servizio / *Service factor* | β | | Angolo d'elica / *Helix angle* |

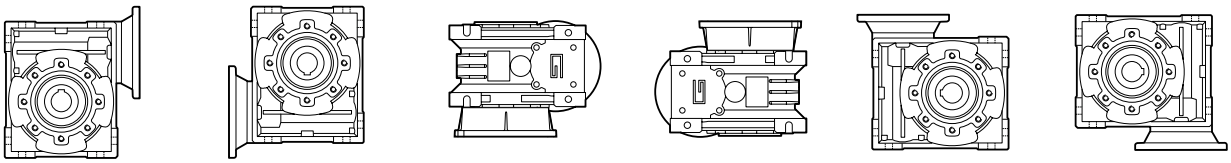
## Lubrificazione — *Lubrication*

I riduttori a vite senza fine della serie CM sono lubrificati a vite con olio sintetico di viscosità 320 e possono essere installati in qualunque posizione di montaggio.

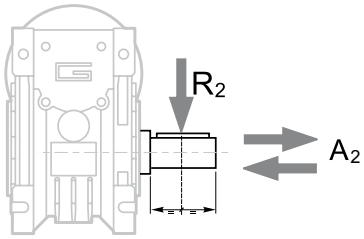
*Permanent synthetic oil long-life lubrication allow to use CM wormgearbox range in all mounting position.*

| | **Quantità di olio** (litri) / ***Oil quantity*** *(litres)* | |
|---|---|---|
| | **Per tutte le posizioni di montaggio / *For all mounting positions*** | |
| **CM026** | 0.02 | Lubrificazione a vita / *Life lubrication* |
| **CM030** | 0.03 | |
| **CM040** | 0.07 | |

Posizioni di montaggio / *Mounting positions*



## Carichi radiali — *Radial loads*

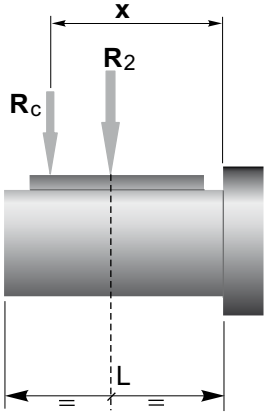



$A_2 = R_2 \times 0.2$

| $n_2$ [$min^{-1}$] | $R_2$ [N] | | |
|---|---|---|---|
| | **CM026** | **CM030** | **CM040** |
| **187** | 400 | 674 | 1264 |
| **140** | 490 | 743 | 1392 |
| **93** | 580 | 851 | 1596 |
| **70** | 610 | 936 | 1754 |
| **56** | 610 | 1008 | 1890 |
| **47** | 610 | 1069 | 2004 |
| **35** | 610 | 1179 | 2210 |
| **28** | 610 | 1270 | 2381 |
| **23** | 610 | 1356 | 2542 |
| **18** | 610 | 1471 | 2759 |
| **14** | 610 | 1600 | 3000 |

Quando il carico radiale risultante non è applicato sulla mezzeria dell'albero occorre calcolare quello effettivo con la seguente formula:

*When the resulting radial load is not applied on the centre line of the shaft it is necessary to calculate the effective load with the following formula:*




$$R_c = \frac{R_2 \cdot a}{(b+x)} \leq R_{2MAX}$$

$$R \leq R_c$$

*a, b = valori riportati nella tabella*
*a, b = values given in the table*

| | **CM** | | |
|---|---|---|---|
| | **026** | **030** | **040** |
| **a** | 56 | 65 | 84 |
| **b** | 43 | 50 | 64 |
| **$R_{2MAX}$** | 610 | 1600 | 3000 |

## Dati di dentatura — *Toothing data*

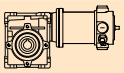
| | Dati della coppia vite-corona *Worm wheel data* | Rapporto / *Ratio* | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **5** | **7.5** | **10** | **15** | **20** | **25** | **30** | **40** | **50** | **60** | **80** | **100** |
| **CM026** | Z | 6 | 4 | 3 | 2 | 2 | | 1 | 1 | 1 | 1 | | |
| | β | 34° 35' | 24° 41' | 19° 1' | 12° 57' | 10° 30' | | 6° 33' | 5° 17' | 4° 26' | 3°49' | | |
| **CM030** | Z | 6 | 4 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| | β | 27° 4' | 24° 28' | 18° 50' | 12° 49' | 10° 23' | 8° 43' | 6° 29' | 5° 14' | 4° 23' | 3° 46' | 2° 57' | 2° 25' |
| **CM040** | Z | 6 | 4 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| | β | 34° 19' | 24° 28' | 18° 50' | 12° 49' | 10° 23' | 8° 43' | 6° 29' | 5° 14' | 4° 23' | 3°46' | 2° 57' | 2° 25' |

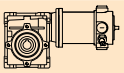
## Rendimento — *Efficiency*

| | $n_1$ [$min^{-1}$] | Rendimento *Efficiency* | Rapporto / *Ratio* | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | **5** | **7.5** | **10** | **15** | **20** | **25** | **30** | **40** | **50** | **60** | **80** | **100** |
| **CM026** | 2800 | Rd | 89 | 87 | 85 | 83 | 80 | | 73 | 68 | 64 | 60 | | |
| | 1400 | | 87 | 84 | 83 | 78 | 74 | | 66 | 61 | 57 | 53 | | |
| | 900 | | 84 | 83 | 80 | 75 | 71 | | 61 | 57 | 52 | 48 | | |
| | | Rs | 72 | 71 | 68 | 61 | 56 | | 46 | 41 | 36 | 34 | | |
| **CM030** | 2800 | Rd | 89 | 88 | 86 | 84 | 81 | 78 | 74 | 70 | 65 | 62 | 57 | 52 |
| | 1400 | | 86 | 85 | 84 | 79 | 75 | 72 | 67 | 62 | 58 | 55 | 48 | 43 |
| | 900 | | 84 | 83 | 81 | 75 | 71 | 68 | 62 | 58 | 53 | 49 | 43 | 39 |
| | | Rs | 72 | 67 | 63 | 55 | 50 | 43 | 39 | 35 | 31 | 27 | 23 | 21 |
| **CM040** | 2800 | Rd | 90 | 89 | 87 | 84 | 83 | 80 | 77 | 73 | 69 | 66 | 60 | 56 |
| | 1400 | | 88 | 86 | 84 | 81 | 78 | 74 | 70 | 65 | 60 | 58 | 52 | 46 |
| | 900 | | 86 | 84 | 82 | 77 | 74 | 70 | 66 | 60 | 57 | 53 | 46 | 41 |
| | | Rs | 74 | 71 | 67 | 60 | 55 | 51 | 45 | 40 | 36 | 32 | 28 | 24 |

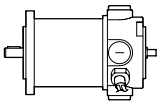
**Rendimento teorico del riduttore dopo il rodaggio**
***Theoretical efficiency of the gearbox after the first running period***

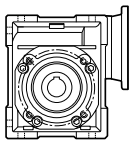
## Dati tecnici per servizio S2 — *Technical data for S2 duty*

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **160** | | | | | | |
| (3000 min$^{-1}$) | **600** | 2 | 4.4 | 5 | **120/026** | |
| | **400** | 3 | 3.3 | 7.5 | **120/026** | |
| | **300** | 4 | 2.5 | 10 | **120/026** | |
| | **200** | 6 | 1.7 | 15 | **120/026** | |
| | **150** | 8 | 1.3 | 20 | **120/026** | |
| | **100** | 11 | 1.1 | 30 | **120/026** | |
| | **75** | 14 | 0.8 | 40 | **120/026** | |
| | **60** | 14 | 0.7 | 50 | **120/026** | |
| | **50** | 13 | 0.7 | 60 | **120/026** | |
| | **600** | 2 | 5.7 | 5 | **120/030** | |
| | **400** | 3 | 4.5 | 7.5 | **120/030** | |
| | **300** | 4 | 3.7 | 10 | **120/030** | |
| | **200** | 6 | 2.5 | 15 | **120/030** | |
| | **150** | 8 | 1.7 | 20 | **120/030** | |
| | **120** | 10 | 1.5 | 25 | **120/030** | |
| | **100** | 11 | 1.6 | 30 | **120/030** | |
| | **75** | 14 | 1.1 | 40 | **120/030** | |
| | **60** | 17 | 0.9 | 50 | **120/030** | |
| | **50** | 20 | 0.7 | 60 | **120/030** | |
| | **38** | 17 | 0.7 | 80 | **120/030** | |
| | **30** | 16 | 0.7 | 100 | **120/030** | |
| | **150** | 8 | 3.7 | 20 | **120/040** | |
| | **120** | 10 | 2.7 | 25 | **120/040** | |
| | **100** | 12 | 3.2 | 30 | **120/040** | |
| | **75** | 15 | 2.3 | 40 | **120/040** | |
| | **60** | 18 | 1.8 | 50 | **120/040** | |
| | **50** | 20 | 1.4 | 60 | **120/040** | |
| | **38** | 24 | 1.1 | 80 | **120/040** | |
| | **30** | 29 | 0.8 | 100 | **120/040** | |

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **250** | | | | | | |
| (3000 min$^{-1}$) | **600** | 4 | 2.8 | 5 | **180/026** | |
| | **400** | 5 | 2.1 | 7.5 | **180/026** | |
| | **300** | 7 | 1.6 | 10 | **180/026** | |
| | **200** | 10 | 1.1 | 15 | **180/026** | |
| | **150** | 13 | 0.9 | 20 | **180/026** | |
| | **100** | 17 | 0.7 | 30 | **180/026** | |
| | **75** | 16 | 0.7 | 40 | **180/026** | |
| | **60** | 14 | 0.7 | 50 | **180/026** | |
| | **50** | 13 | 0.7 | 60 | **180/026** | |
| | **600** | 4 | 3.7 | 5 | **180/030** | |
| | **400** | 5 | 2.9 | 7.5 | **180/030** | |
| | **300** | 7 | 2.3 | 10 | **180/030** | |
| | **200** | 10 | 1.6 | 15 | **180/030** | |
| | **150** | 13 | 1.1 | 20 | **180/030** | |
| | **120** | 16 | 1.0 | 25 | **180/030** | |
| | **100** | 18 | 1.0 | 30 | **180/030** | |
| | **75** | 22 | 0.7 | 40 | **180/030** | |
| | **60** | 21 | 0.7 | 50 | **180/030** | |
| | **50** | 20 | 0.7 | 60 | **180/030** | |
| | **38** | 17 | 0.7 | 80 | **180/030** | |
| | **30** | 16 | 0.7 | 100 | **180/030** | |
| | **600** | 4 | 8.1 | 5 | **180/040** | |
| | **400** | 5 | 5.8 | 7.5 | **180/040** | |
| | **300** | 7 | 4.8 | 10 | **180/040** | |
| | **200** | 10 | 3.5 | 15 | **180/040** | |
| | **150** | 13 | 2.3 | 20 | **180/040** | |
| | **120** | 16 | 1.8 | 25 | **180/040** | |
| | **100** | 18 | 2.1 | 30 | **180/040** | |
| | **75** | 23 | 1.5 | 40 | **180/040** | |
| | **60** | 27 | 1.2 | 50 | **180/040** | |
| | **50** | 32 | 0.9 | 60 | **180/040** | |
| | **38** | 38 | 0.7 | 80 | **180/040** | |
| | **30** | 34 | 0.7 | 100 | **180/040** | |

## Motori applicabili — *IEC Motor adapters*



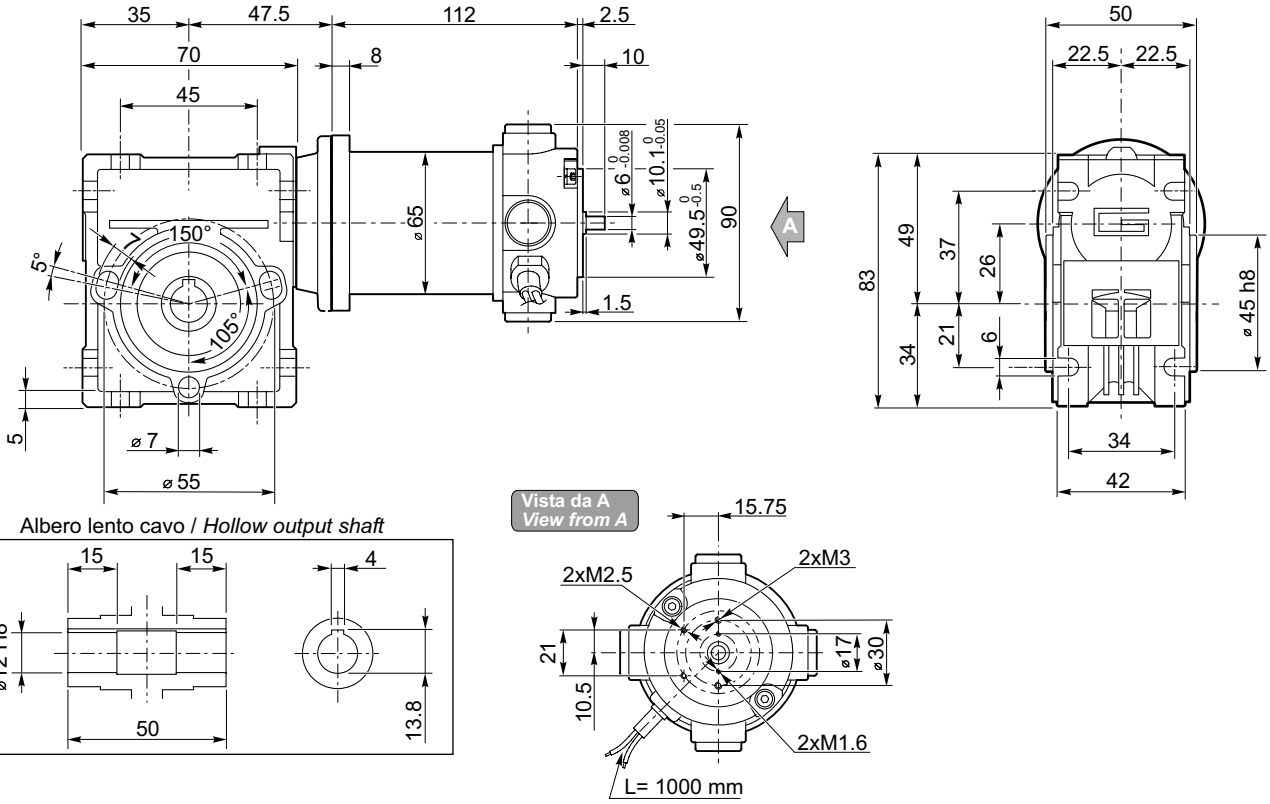


| | | ND | |
|---|---|---|---|
| | | **120.120<br>120.240** | **180.120<br>180.240** |
| **CM** | **026** | 5 - 60 | 5 - 60 |
| | **030** | 5 - 100 | 5 - 100 |
| | **040** | 5 - 100 | 5 - 100 |

5-100 — Rapporti di riduzione i
*Ratio i*

**Dimensioni** ***Dimensions***

## NDCM120/026 U



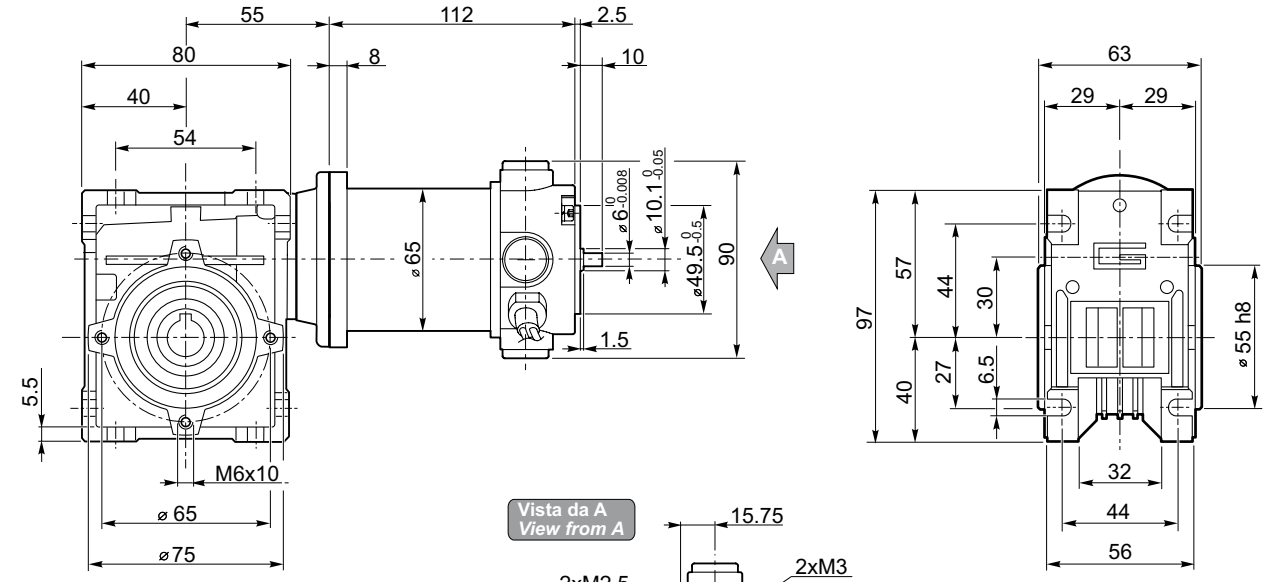

Albero lento cavo / *Hollow output shaft*



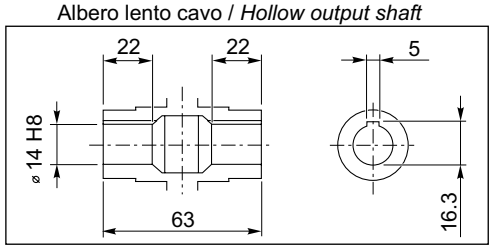


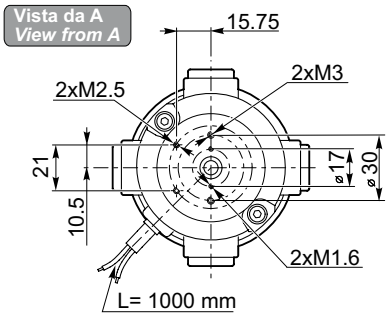


## NDCM120/030 U



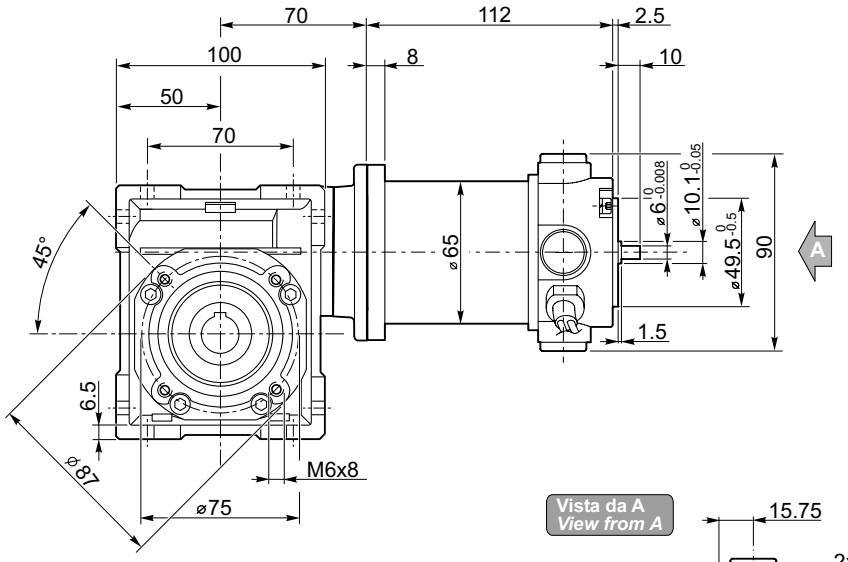

Albero lento cavo / *Hollow output shaft*

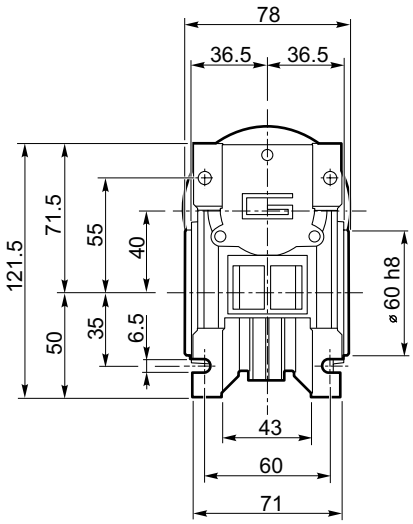


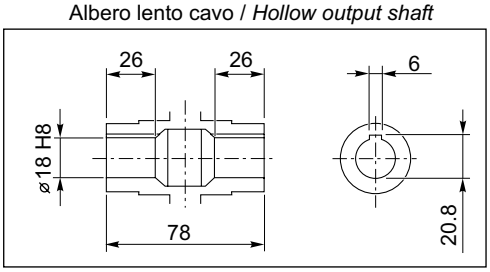


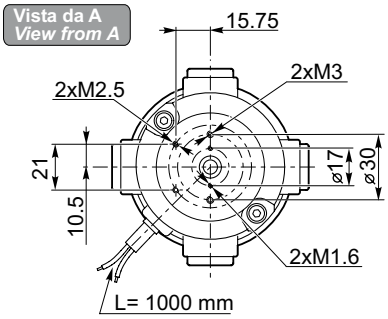
## NDCM120/040 U



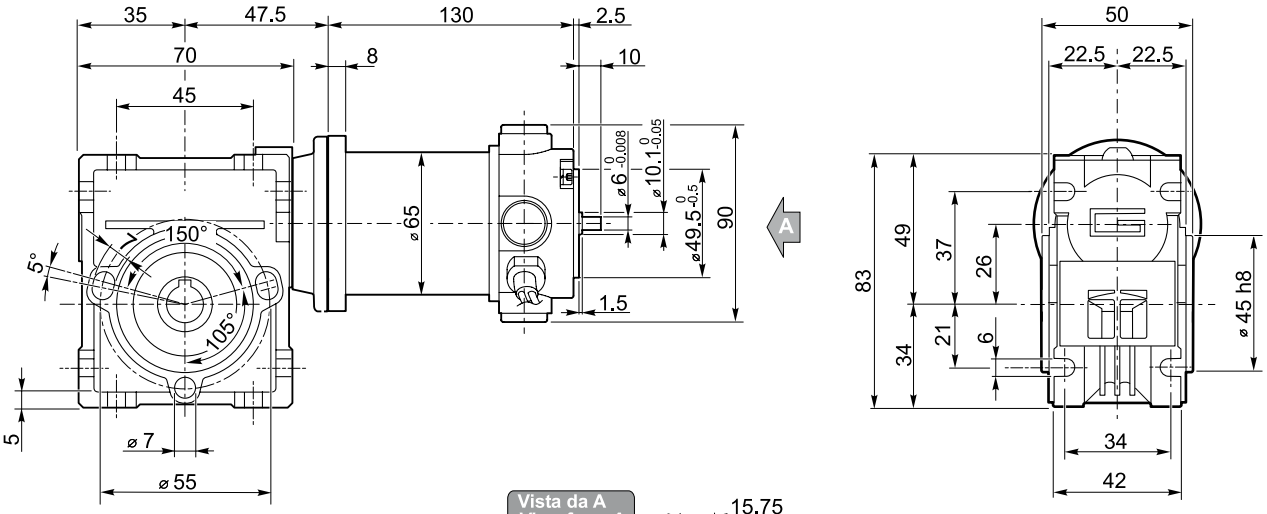




Albero lento cavo / *Hollow output shaft*

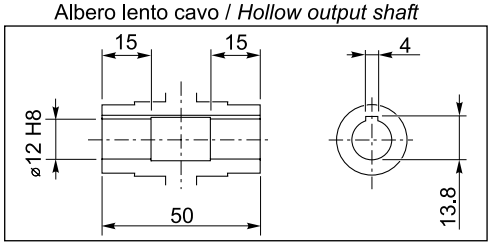


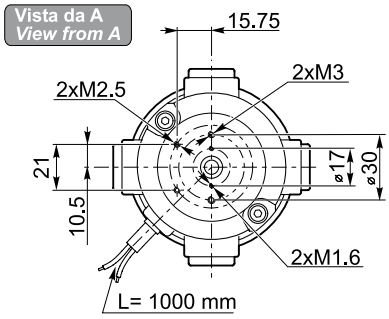



## NDCM180/026 U

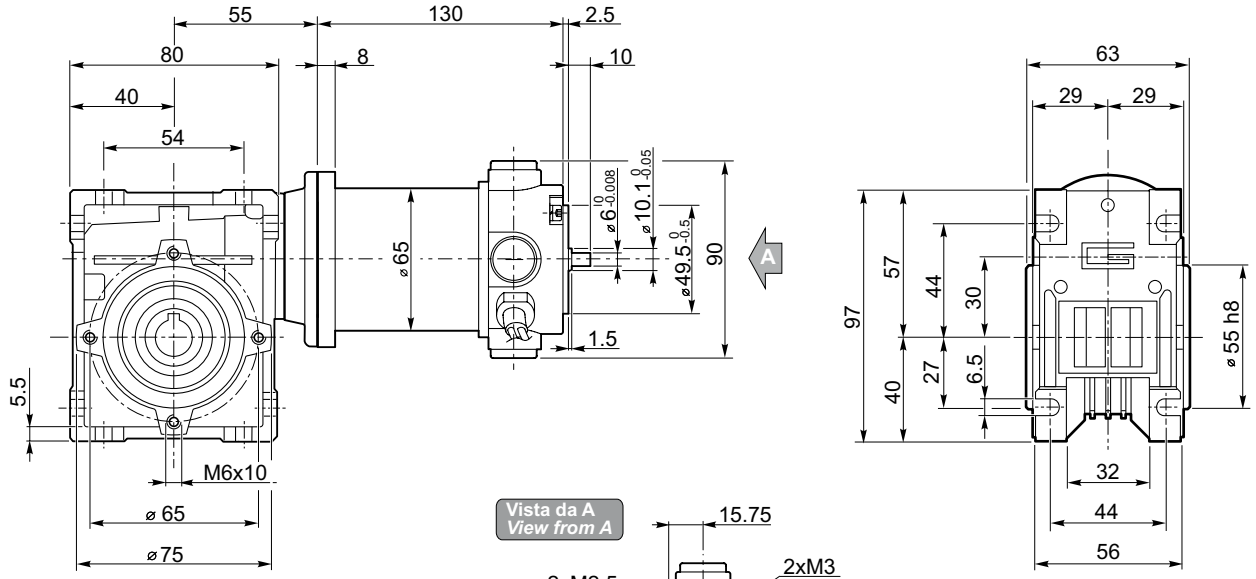



Albero lento cavo / *Hollow output shaft*

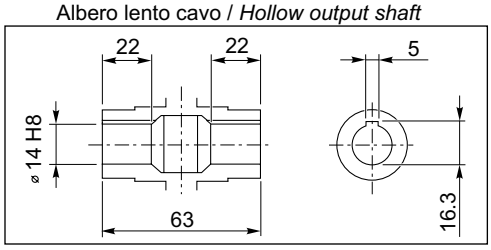


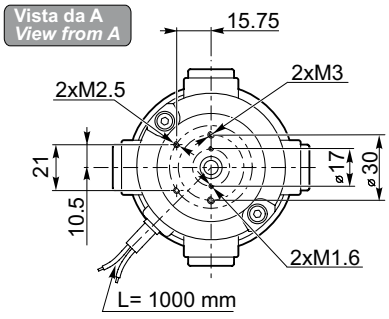




## NDCM180/030 U

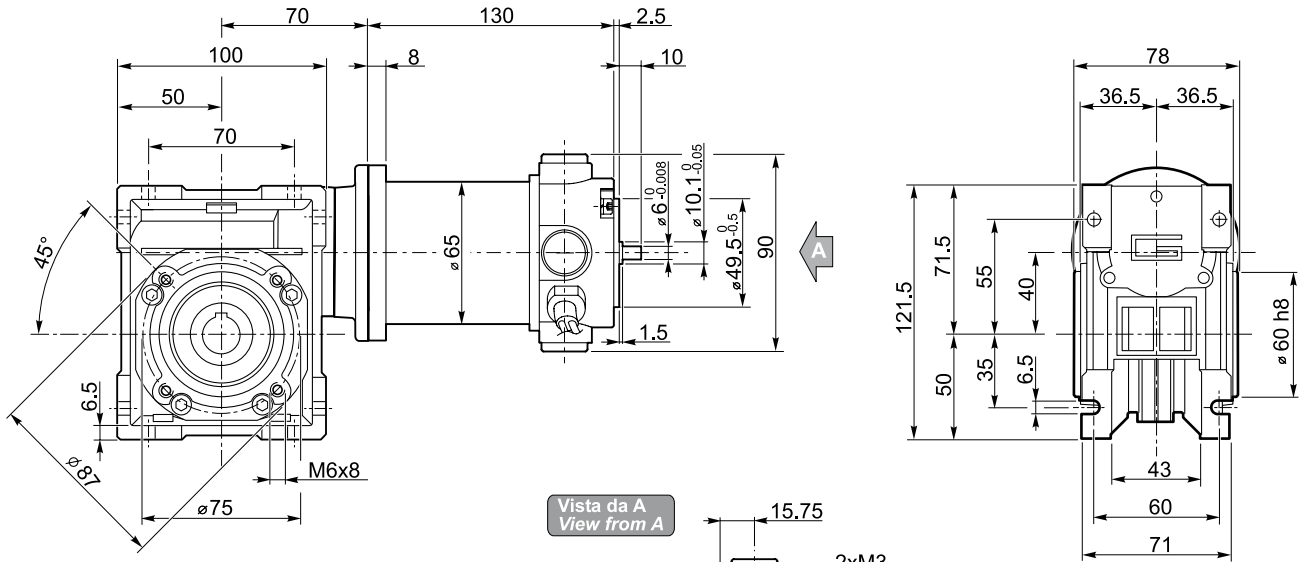



Albero lento cavo / *Hollow output shaft*

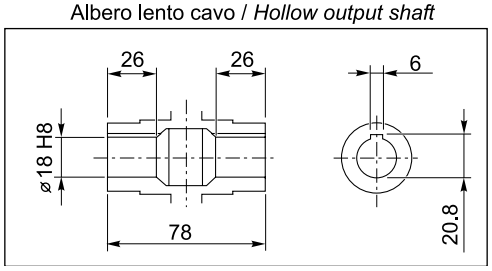


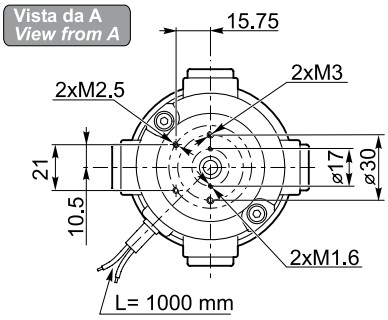



## NDCM180/040 U

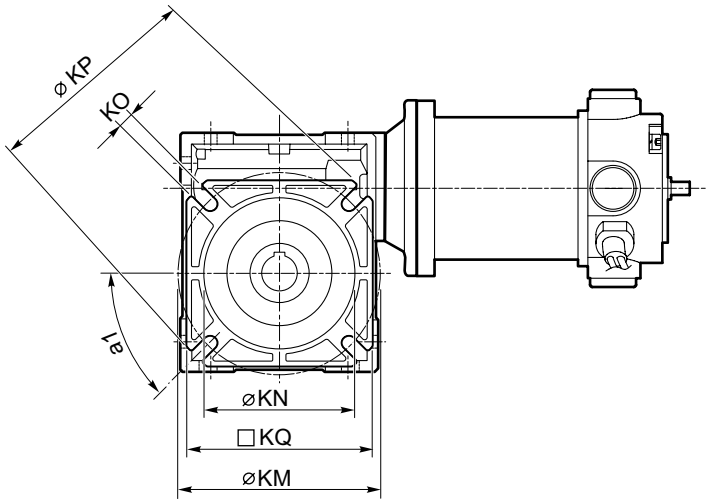


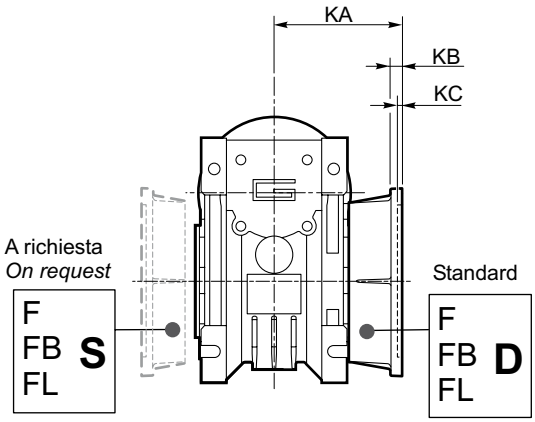

Albero lento cavo / *Hollow output shaft*




## NDCM.../... F... Flange uscita / *Output flanges*

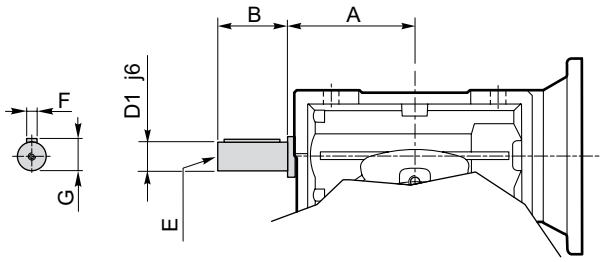



| CM | | CM..F | | | | | | | | CM..FB | | | | | | | | CM..FL | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | a1 | KA | KB | KC | KM | KN H8 | KO | KP | KQ | KA | KB | KC | KM | KN H8 | KO | KP | KQ | KA | KB | KC | KM | KN H8 | KO | KP | KQ |
| 026 | 45° | 45 | 6 | 4.5 | 55-69 | 40 | 6.5(n.4) | 75 | 70 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 030 | 45° | 54.5 | 6 | 4 | 68 | 50 | 6.5(n.4) | 80 | 70 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 040 | 45° | 67 | 7.5 | 4.5 | 80-95 | 60 | 9(n.4) | 110 | 95 | 80 | 8.5 | 5 | 115-125 | 95 | 9.5(n.4) | 140 | 112 | 97 | 7.5 | 4.5 | 80-95 | 60 | 10(n.4) | 110 | 95 |

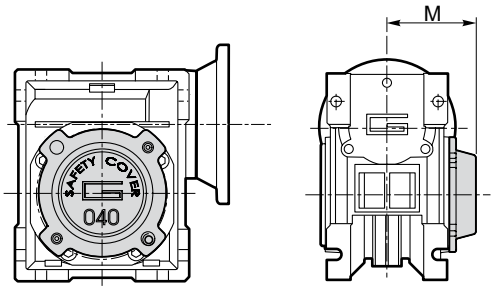
## Opzioni / *Options*

### VS - Vite sporgente / *Extended input shaft*




| | A | B | $D_1$ j6 | E | F | G |
|---|---|---|---|---|---|---|
| CM 030 | 45 | 20 | 9 | M4 | 3 | 10.2 |
| CM 040 | 53 | 23 | 11 | M5 | 4 | 12.5 |

### SC - *Safety cover*



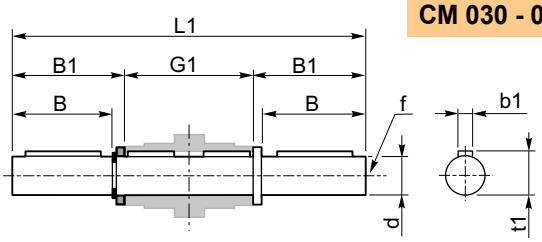

| | M |
|---|---|
| CM 030 | 47 |
| CM 040 | 54.5 |

## Accessori / *Accessories*

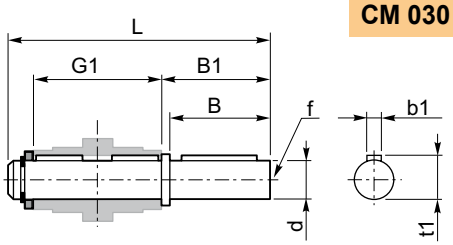
### Albero lento / *Output shaft*

**CM 030 - 040**

DZ

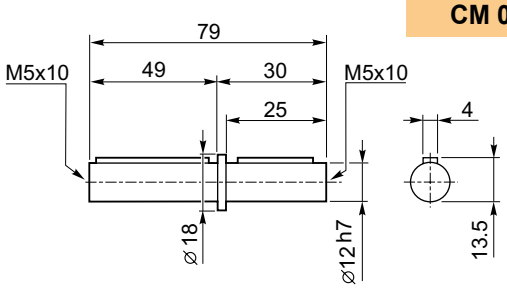



SZ



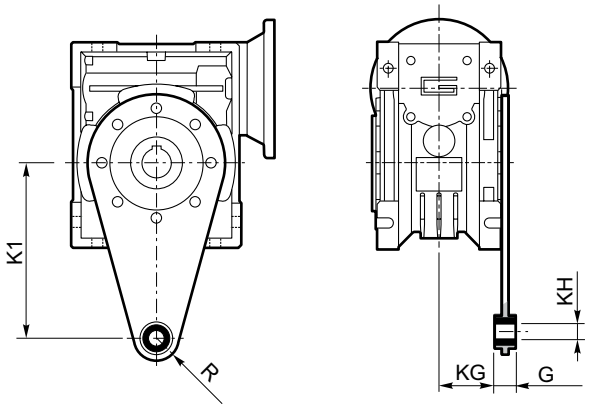

| | d h7 | B | B1 | G1 | L | L1 | f | b1 | t1 |
|---|---|---|---|---|---|---|---|---|---|
| CM 030 | 14 | 30 | 32.5 | 63 | 102 | 128 | M6 | 5 | 16 |
| CM 040 | 18 | 40 | 43 | 78 | 128 | 164 | M6 | 6 | 20.5 |

**CM 026**




### Braccio di reazione / *Torque arm*

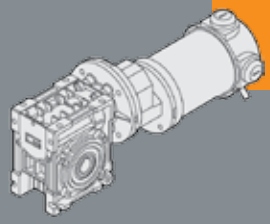
| | K1 | G | KG | KH | R |
|---|---|---|---|---|---|
| CM 030 | 85 | 14 | 23 | 8 | 15 |
| CM 040 | 100 | 14 | 31 | 10 | 18 |



TRANSTECNO®
THE MODULAR GEARMOTOR

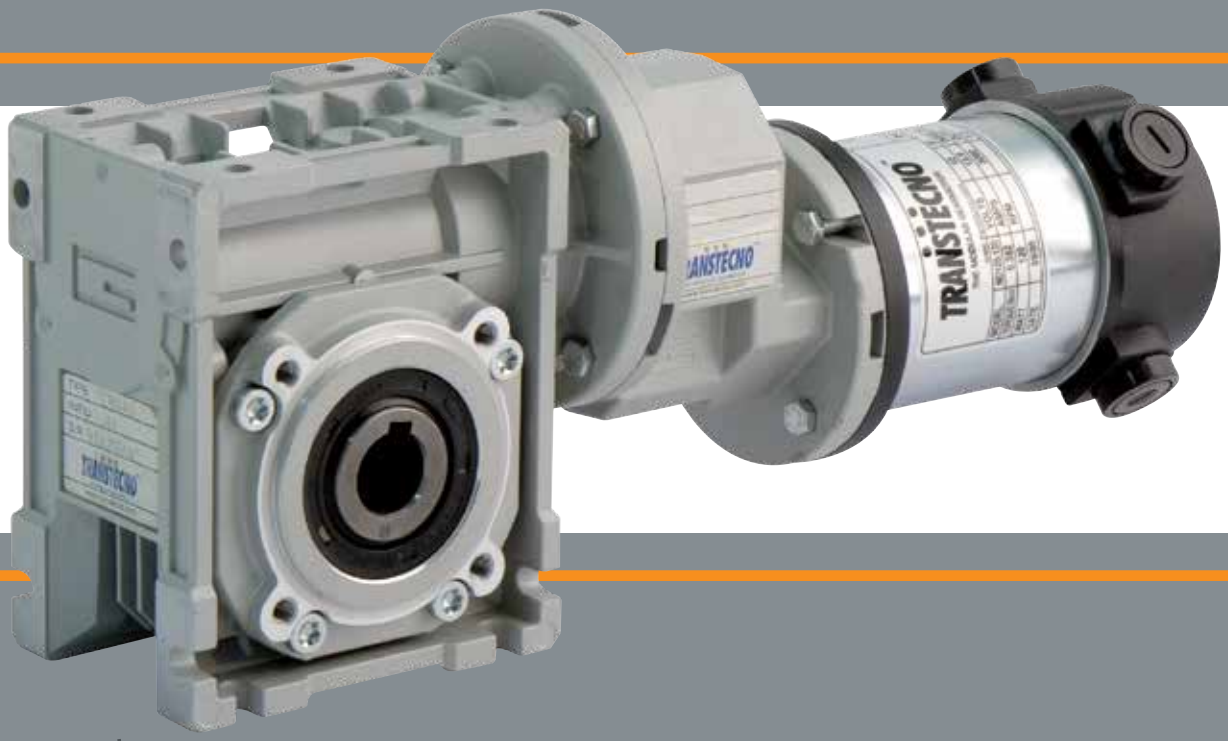
# NDCMP

NDCMP



## MOTORIDUTTORI C.C. CON PRECOPPIA

## RARE EARTH D.C. PRE-STAGE GEARMOTORS

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ENERGY SAVING





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## Caratteristiche tecniche — *Technical features*

Le caratteristiche principali dei motoriduttori a corrente continua della serie NDCMP sono:

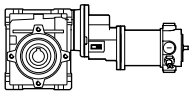
- Alimentazione in bassa tensione 12/24 Vcc
- Possibilità di montaggio encoder
- Potenze motore disponibili da 160 a 250 W S2
- Magneti in terre rare
- Sia le carcasse dei riduttori a vite senza fine che delle precoppie sono in pressofusione di alluminio
- Lubrificazione permanente con olio sintetico.

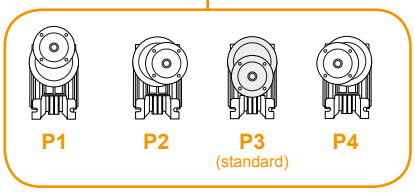
*The main features of* NDCMP D.C. *gearmotor range are:*

- *Low voltage power supply 12/24 Vdc*
- *Suitable for encoder assembly*
- *Motor power ratings available from 160 to 250 W S2*
- *Rare earth magnets*
- *Die-cast aluminum housing on pre-stage and wormgearboxes*
- *Permanent synthetic oil long-life lubrication.*

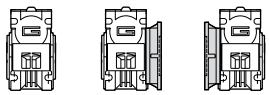
## Designazione — *Classification*

MOTORIDUTTORE / *GEARMOTOR*

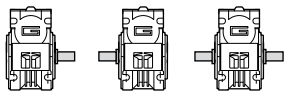
| NDCMP | 120/056/030 | U | 90 | SZDX | BRSX | 90 | P4 | B3 | 240 | VS |
|---|---|---|---|---|---|---|---|---|---|---|
| Tipo *Type* | Grandezza *Size* | Versione Riduttore *Gearbox Version* | Rapporto *Ratio* | Albero di uscita *Output shaft* | Braccio di reazione *Torque arm* | Angolo *Angle* | Pos. di montaggio precoppia *Pre stage mounting position* | Pos. di montaggio *Mounting position* | Versione Motore *Motor Version* | Opzioni *Options* |
| **NDCMP**  | **120/056/030** **180/056/030** **120/056/040** **180/056/040** | **U** **FD** **FS** **FLD** **FLS** **FBD** **FBS** | Vedere tabella *See tables* | **SZDX** **SZSX** **DZ** | **BRDX** **BRSX** | **0°** **90°** **180°** **270°** | **P1** **P2** **P3** (standard) **P4** | **B3** **B8** **B6** **B7** **V5** **V6** | **120 — 240** | **VS** |



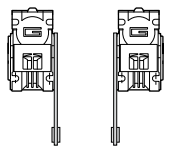

Versione Riduttore *Gearbox Version*



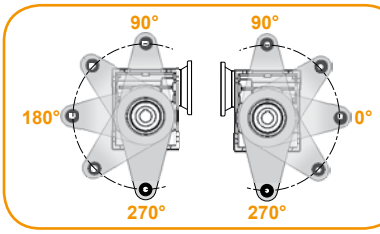

Albero di uscita *Output shaft*




Braccio di reazione *Torque arm*




Angolo *Angle*



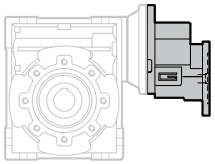
## Simbologia — *Symbols*

| | | | | | |
|---|---|---|---|---|---|
| $n_1$ | [$min^{-1}$] | Velocità in ingresso / *Input speed* | $M_2$ | [Nm] | Coppia in uscita in funzione di $P_1$ / *Output torque referred to* $P_1$ |
| $n_2$ | [$min^{-1}$] | Velocità in uscita / *Output speed* | sf | | Fattore di servizio / *Service factor* |
| i | | Rapporto di riduzione / *Ratio* | $R_2$ | [N] | Carico radiale ammissibile in uscita / *Permitted output radial load* |
| $P_1$ | [kW] | Potenza in entrata / *Input power* | $A_2$ | N] | Carico assiale ammissibile in uscita / *Permitted output axial load* |

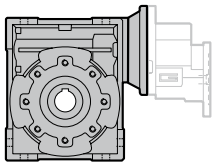
## Lubrificazione — *Lubrication*

I riduttori a vite senza fine con precoppia della serie CMP sono lubrificati a vita con olio sintetico di viscosità 320 e possono essere installati in qualunque posizione di montaggio.

*Permanent synthetic oil long-life lubrication allow to use CMP range in all mounting position.*

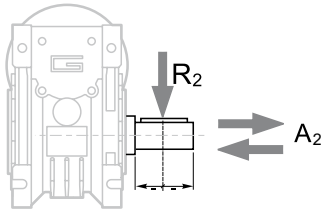


| CMP |
|---|
| **056**/030<br>**056**/040 |
| Lubrificazione a vita<br>*Life lubrication* |



| CMP | Quantità di olio (litri) / ***Oil quantity*** *(litres)*<br>**Tutte le posizioni di montaggio / *For all mounting position*** | |
|---|---|---|
| **056/030** | 0.03 | Lubrificazione a vita<br>*Life lubrication* |
| **056/040** | 0.07 | |

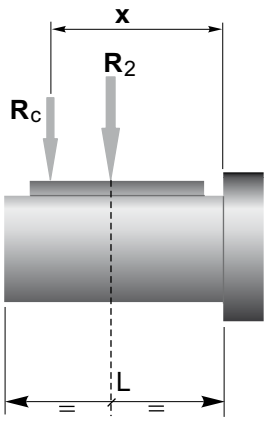
## Carichi radiali — *Radial loads*




| $n_2$ [$min^{-1}$] | $R_2$ [N] | |
|---|---|---|
| | CM030 | CM040 |
| 35 | 1179 | 2210 |
| 28 | 1270 | 2381 |
| 23 | 1356 | 2542 |
| 18 | 1471 | 2759 |
| 14 | 1600 | 3000 |

Quando il carico radiale risultante non è applicato sulla mezzeria dell'albero occorre calcolare quello effettivo con la seguente formula:

*When the resulting radial load is not applied on the centre line of the shaft it is necessary to calculate the effective load with the following formula:*



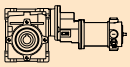

$$R_c = \frac{R_2 \cdot a}{(b+x)} \leq R_{2MAX}$$

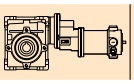
$$R \leq R_c$$

a, b = valori riportati nella tabella
*a, b = values given in the table*

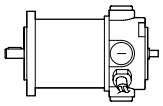
| | CMP | |
|---|---|---|
| | 030 | 040 |
| a | 65 | 84 |
| b | 50 | 64 |
| $R_{2MAX}$ | 1600 | 3000 |

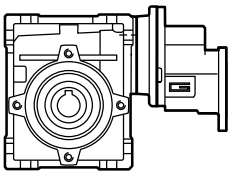
## Dati tecnici per servizio S2 — *Technical data for S2 duty*

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **160** | | | | | | |
| (3000 min$^{-1}$) | **50** | 21 | 1.0 | 60 | **120/056/030** | 120/240 |
| | **40** | 25 | 0.9 | 75 | | |
| | **33** | 28 | 1.0 | 90 | | |
| | **25** | 35 | 0.7 | 120 | | |
| | **20** | 31 | 0.7 | 150 | | |
| | **50** | 22 | 2.0 | 60 | **120/056/040** | 120/240 |
| | **40** | 26 | 1.7 | 75 | | |
| | **33** | 30 | 1.9 | 90 | | |
| | **25** | 36 | 1.3 | 120 | | |
| | **20** | 43 | 1.1 | 150 | | |
| | **17** | 48 | 0.9 | 180 | | |
| | **13** | 55 | 0.7 | 240 | | |
| | **10** | 51 | 0.7 | 300 | | |

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **250** | | | | | | |
| (3000 min$^{-1}$) | 50 | 31 | 0.7 | 60 | **180/056/030** | 180/240 |
| | 40 | 31 | 0.7 | 75 | | |
| | 33 | 39 | 0.7 | 90 | | |
| | 25 | 33 | 0.7 | 120 | | |
| | 20 | 31 | 0.7 | 150 | | |
| | 50 | 35 | 1.3 | 60 | **180/056/040** | 180/240 |
| | 40 | 41 | 1.1 | 75 | | |
| | 33 | 46 | 1.2 | 90 | | |
| | 25 | 56 | 0.9 | 120 | | |
| | 20 | 66 | 0.7 | 150 | | |
| | 17 | 61 | 0.7 | 180 | | |
| | 13 | 57 | 0.7 | 240 | | |
| | 10 | 51 | 0.7 | 300 | | |

## Motori applicabili — *IEC Motor adapters*



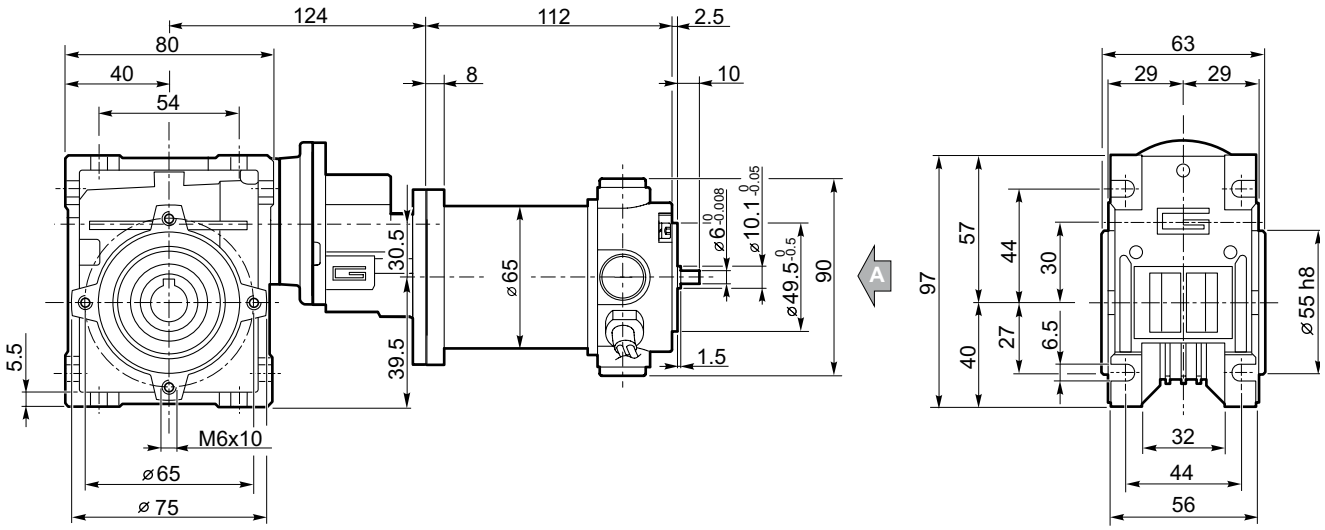


| | | ND | |
|---|---|---|---|
| | | **120.120<br>120.240** | **180.120<br>180.240** |
| **CMP** | **056/030** | 150 | 300 |
| | **056/040** | 150 | 300 |

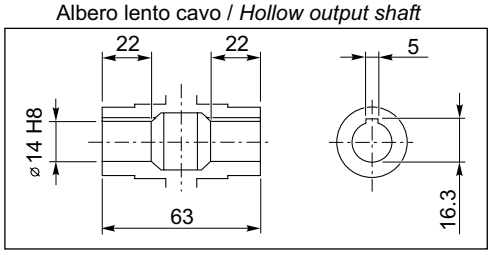
150 — Rapporto di riduzione massimo $i_{max}$
*Maximum ratio $i_{max}$*

**Dimensioni** *Dimensions*

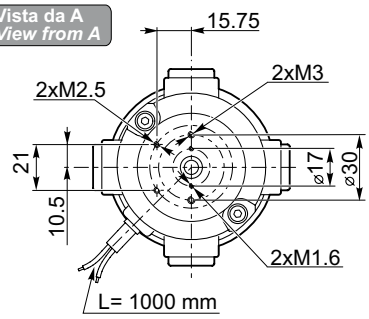
## NDCMP120/056/030 U

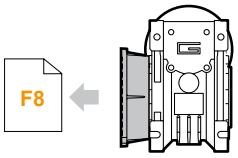



Albero lento cavo / *Hollow output shaft*



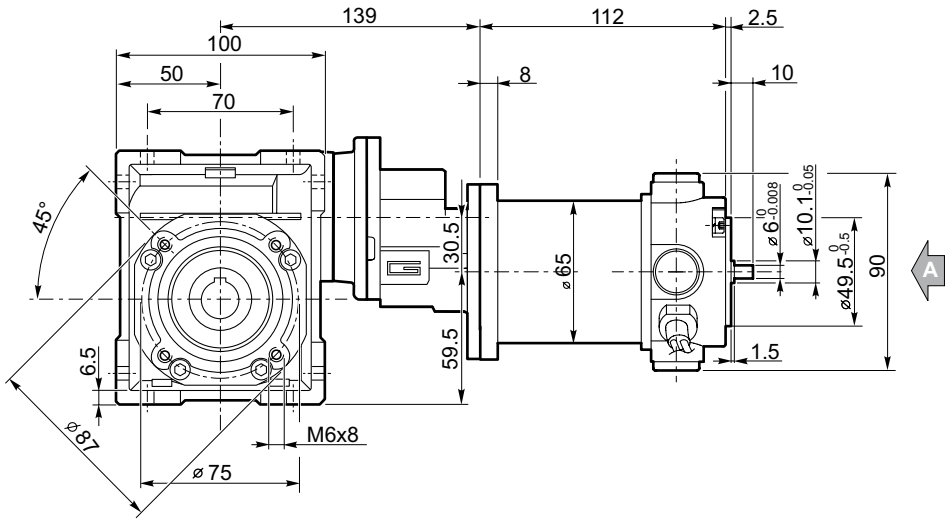

Vista da A / *View from A*



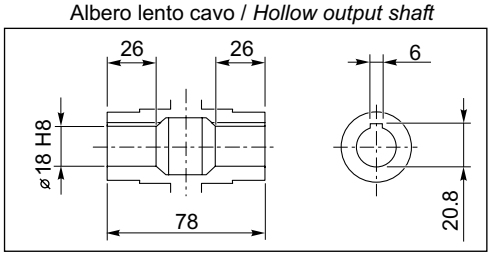




**NDCMP120/056/030 F**

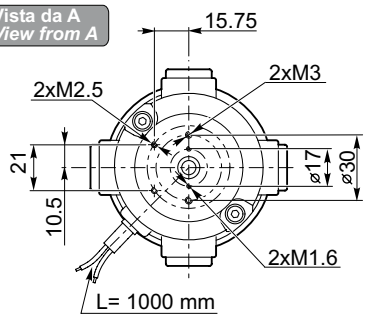
## NDCMP120/056/040 U

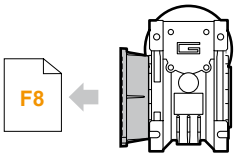



Albero lento cavo / *Hollow output shaft*




Vista da A / *View from A*

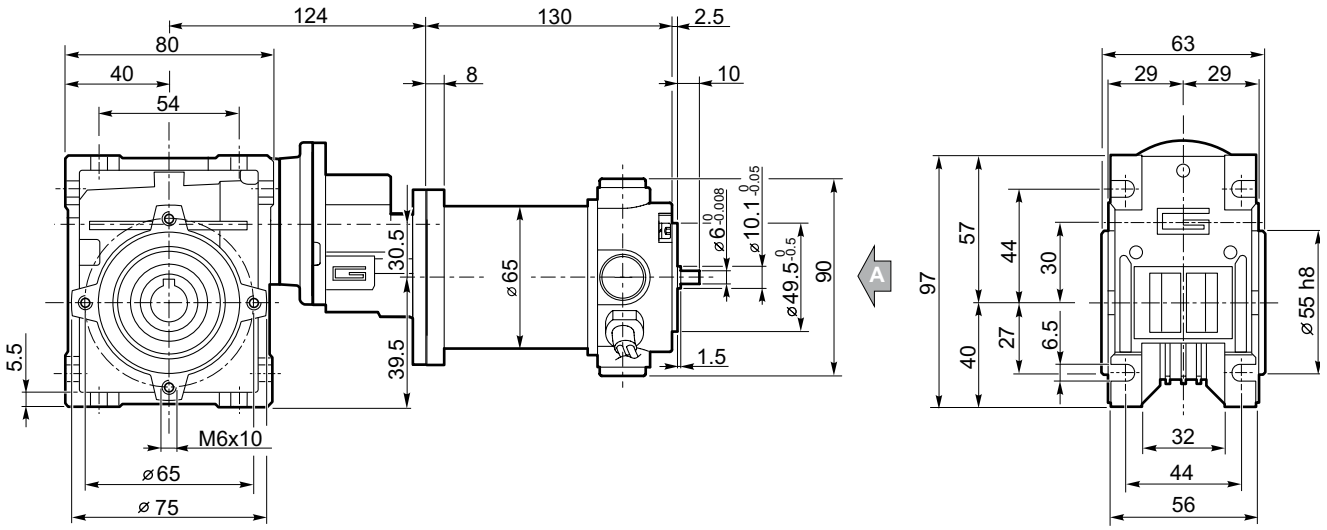


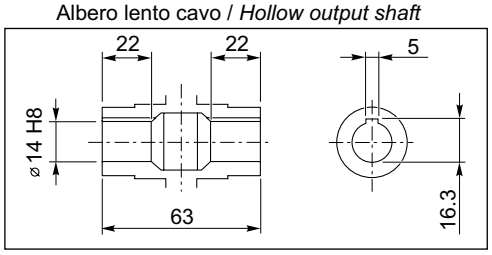

**NDCMP120/056/040 F**
**NDCMP120/056/040 FB**
**NDCMP120/056/040 FL**

**Dimensioni** *Dimensions*

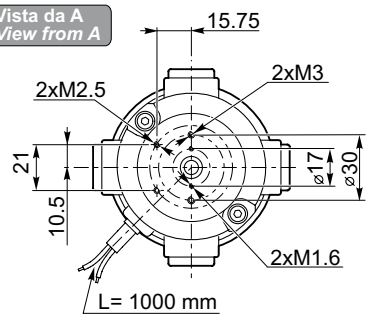
## NDCMP180/056/030 U

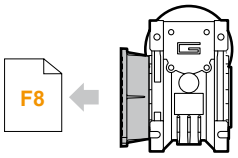



Albero lento cavo / *Hollow output shaft*



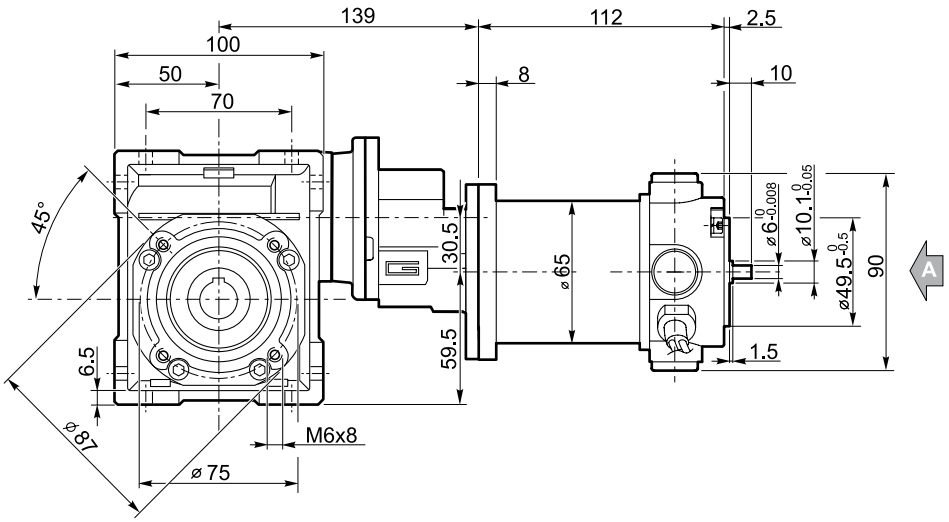

Vista da A / *View from A*



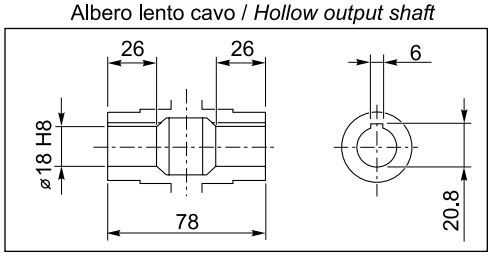




**NDCMP180/056/030 F**

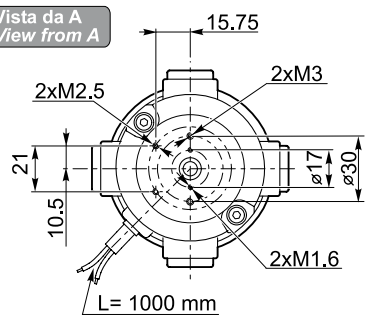
## NDCMP180/056/040 U

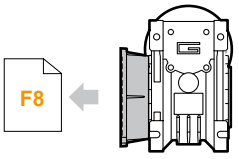



Albero lento cavo / *Hollow output shaft*



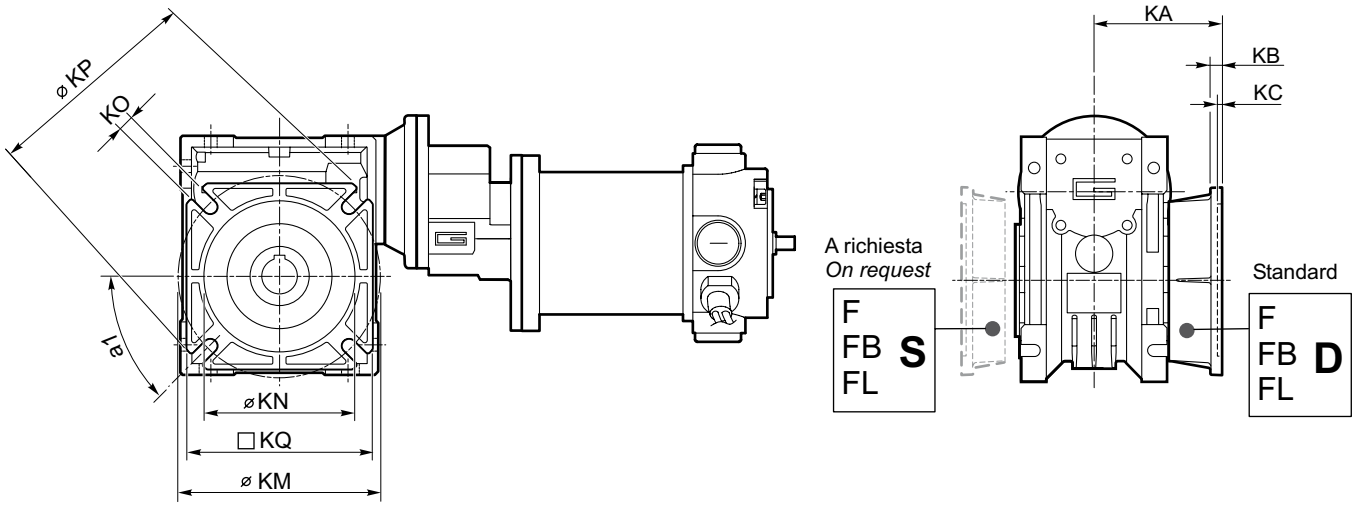

Vista da A / *View from A*




**NDCMP180/056/040 F**
**NDCMP180/056/040 FB**
**NDCMP180/056/040 FL**

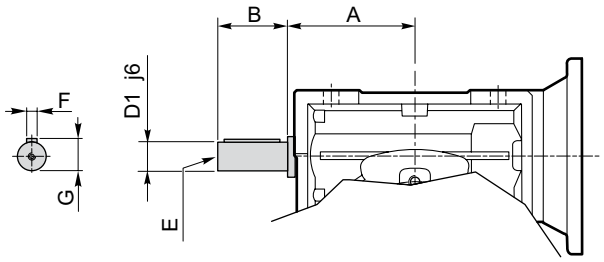
## NDCMP.../... F... Flange uscita / *Output flanges*




| CMP | | CMP..F | | | | | | | | CMP..FB | | | | | | | | CMP..FL | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | a1 | KA | KB | KC | KM | KN H8 | KO | KP | KQ | KA | KB | KC | KM | KN H8 | KO | KP | KQ | KA | KB | KC | KM | KN H8 | KO | KP | KQ |
| **056/030** | 45° | 54.5 | 6 | 4 | 68 | 50 | 6.5(n.4) | 80 | 70 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| **056/040** | 45° | 67 | 7.5 | 4.5 | 80-95 | 60 | 9(n.4) | 110 | 95 | 80 | 8.5 | 5 | 115-125 | 95 | 9.5(n.4) | 140 | 112 | 97 | 7.5 | 4.5 | 80-95 | 60 | 10(n.4) | 110 | 95 |

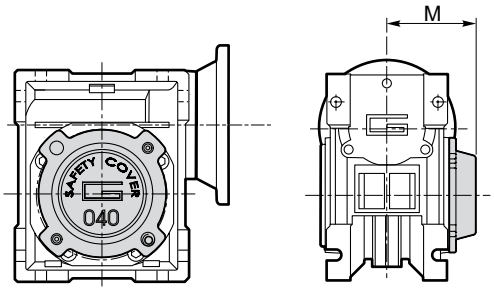
## Opzioni / *Options*

### VS - Vite sporgente / *Extended input shaft*




| CMP | A | B | $D_1$ j6 | E | F | G |
|---|---|---|---|---|---|---|
| 056/030 | 45 | 20 | 9 | M4 | 3 | 10.2 |
| 056/040 | 53 | 23 | 11 | M5 | 4 | 12.5 |

### SC - *Safety cover*

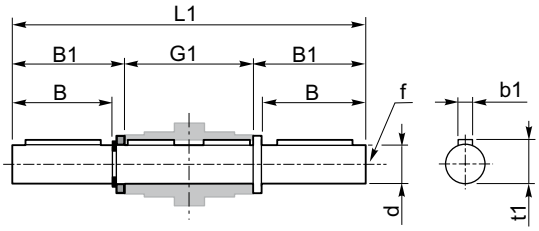



| | M |
|---|---|
| CM 030 | 47 |
| CM 040 | 54.5 |

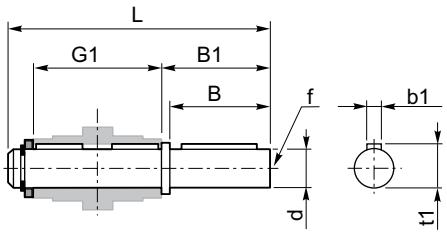
## Accessori / *Accessories*

### Albero lento semplice e doppio / *Single and double output shaft*

DZ



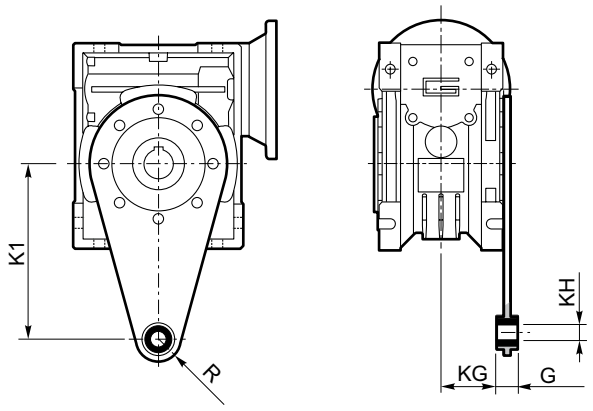

SZ




| CMP | d h6 | B | B1 | G1 | L | L1 | f | b1 | t1 |
|---|---|---|---|---|---|---|---|---|---|
| 056/030 | 14 | 30 | 32.5 | 63 | 102 | 128 | M6 | 5 | 16 |
| 056/040 | 18 | 40 | 43 | 78 | 128 | 164 | M6 | 6 | 20.5 |

### Braccio di reazione / *Torque arm*

| CMP | K1 | G | KG | KH | R |
|---|---|---|---|---|---|
| 056/030 | 85 | 14 | 23 | 8 | 15 |
| 056/040 | 100 | 14 | 31 | 10 | 18 |

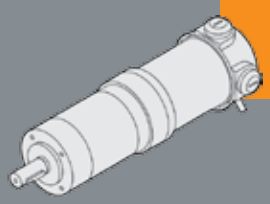


# Note

TRANSTECNO®
THE MODULAR GEARMOTOR

# NDP

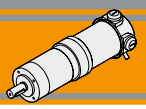
NDP



## MOTORIDUTTORI C.C. EPICICLOIDALI

## RARE EARTH D.C. PLANETARY GEARMOTORS


TRANSTECNO · GENUINE · PRODUCTS ·



ENERGY SAVING





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## Caratteristiche tecniche — *Technical features*

Le caratteristiche principali dei motoriduttori a corrente continua a terre rare della serie NDP sono:

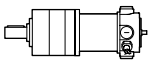
- Alimentazione in bassa tensione 12/24 Vcc
- Possibilità di montaggio encoder
- Potenze motore disponibili da 160 a 250 W S2
- Magneti in Neodimio
- Entrata ed uscita coassiali
- Design compatto
- Lubrificazione permanente a grasso
- Possono essere installati in qualunque posizione di montaggio.

*The main features of NDP rare earth D.C. gearmotor range are:*

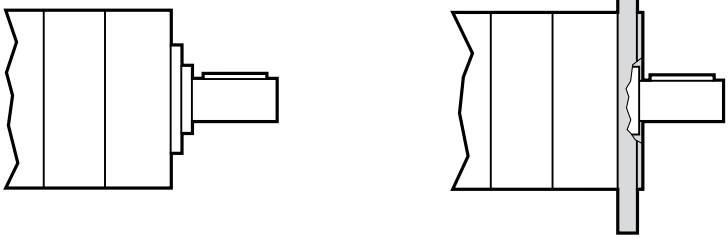
- *Low voltage power supply 12/24 Vdc*
- *Suitable for encoder assembly*
- *Motor power ratings available from 160 to 250 W S2*
- *Neodyum magnets*
- *Coaxial arrangement of the input and output*
- *Compact design*
- *Permanent grease oil long-life lubrication*
- *Can be intalled in all mounting position.*

## Designazione — *Classification*

MOTORIDUTTORE / *GEARMOTOR*

| NDP | 120/62 | 2 | C | 90 | 34.97 | 120 |
|---|---|---|---|---|---|---|
| Tipo *Type* | Grandezza *Size* | Stadi riduttore *Gearbox stages* | Versione riduttore *Gearbox Version* | Flangia uscita *Output flange* | Rapporto *Ratio* | Versione Motore *Motor Version* |
| **NDP**  | **120/52**<br>**120/62**<br>**120/72**<br>**120/81**<br>**180/52**<br>**180/62**<br>**180/72**<br>**180/81**<br>**180/105**<br>**180/120** | **1**<br>**2**<br>**3** | **U**<br>**C** | **80**<br>**90**<br>**105**<br>**120** | Vedere tabella<br>*See tables* | **120**<br>**240** |

## Versioni — *Versions*



**U** **C**

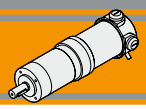
## Simbologia — *Symbols*

| | | | | | |
|---|---|---|---|---|---|
| $n_1$ | [$min^{-1}$] | Velocità in ingresso / *Input speed* | sf | | Fattore di servizio / *Service factor* |
| $n_2$ | [$min^{-1}$] | Velocità in uscita / *Output speed* | Rd | % | Rendimento dinamico / *Dynamic efficiency* |
| i | | Rapporto di riduzione / *Ratio* | $A_2$ | [N] | Carico assiale ammissibile in uscita / *Permitted output axial load* |
| $P_1$ | [kW] | Potenza in entrata / *Input power* | $R_2$ | [N] | Carico radiale ammissibile in uscita / *Permitted output radial load* |
| $M_2$ | [Nm] | Coppia in uscita in funzione di $P_1$ / *Output torque referred to $P_1$* | | | |

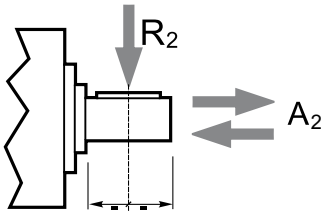
## Lubrificazione — *Lubrication*

I riduttori epicicloidali sono lubrificati in modo permanente, non richiedono quindi ulteriore manutenzione.
Questo gli consente di essere installati praticamente ovunque.
La temperatura di funzionamento consentita va da -30 °C a + 140 °C; per applicazioni particolari, possono essere adottate misure per raggiungere livelli di temperatura maggiori.

*Planetary gearboxes are life-time lubricated with grease, therefore they are maintenance free.*
*They can be installed in any location.*
*The temperature range is from* -30 °C up to + 140 °C; *for special applications, measures can be taken for higher temperature range.*



## Carichi radiali — *Radial loads*




| Numero di stadi *Stages number* | Carichi Radiali $R_2$ [N] / *Radial Load $R_2$ [N]* | | | |
|---|---|---|---|---|
| | P52 | P62 | P72 | P81 |
| 1 | 200 | 240 | 320 | 400 |
| 2 | 320 | 360 | 480 | 600 |
| 3 | 450 | 520 | 760 | 1000 |

| Numero di stadi *Stages number* | Carichi Assiali [$A_2$] [N] / *Axial Load [$A_2$] [N]* | | | |
|---|---|---|---|---|
| | P52 | P62 | P72 | P81 |
| 1 | 60 | 70 | 70 | 80 |
| 2 | 100 | 100 | 100 | 120 |
| 3 | 150 | 150 | 160 | 200 |

## Rapporti — *Ratios*

| Numero di stadi Stages number | Per tutte le grandezze di riduttori della serie P *For all gearbox sizes of P range* |
|---|---|
| | Rapporti / *Ratios* |
| 1 | **3.70** |
| | 4.28 |
| | **5.18** |
| | **6.75** |
| 2 | 13.73 |
| | 15.88 |
| | 18.36 |
| | **19.20** |
| | 22.20 |
| | **25.01** |
| | 26.85 |
| | **28.93** |
| | **34.97** |
| | **45.56** |
| 3 | **50.89** |
| | 58.85 |
| | **68.06** |
| | 71.16 |
| | 78.71 |
| | **92.70** |
| | 95.17 |
| | 99.50 |
| | 107.20 |
| | 115.07 |
| | 123.97 |
| | 129.62 |
| | 139.13 |
| | 149.90 |
| | **168.84** |
| | 181.24 |
| | 195.26 |
| | 236.09 |
| | **307.54** |

**Rapporti preferenziali**
***Preferred ratios***

Disponibile a 4 stadi con rapporti fino a 2076
*Available 4 stages with ratio up to 2076*

## Rendimento — *Efficiency*

| Rendimento *Efficiency* | Per tutte le grandezze di riduttori della serie P *For all gearbox sizes of P range* | | |
|---|---|---|---|
| | Numero di stadi / *Stages number* | | |
| | 1 | 2 | 3 |
| Rd % | 80 | 75 | 70 |

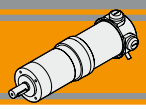
Rendimento medio per velocità nominale in ingresso 3000 rpm
*Average efficiency with input rated speed 3000 rpm*

## Dati tecnici per servizio S2

## *Technical data for S2 duty*

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i | | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **160** | | | | | | |
| (3000 min$^{-1}$) | **811** | 2 | 2.6 | **3,70** | **NDP120/521** | **120/240** |
| | **701** | 2 | 2.3 | 4,28 | | |
| | **579** | 2 | 1.9 | **5,18** | | |
| | **444** | 3 | 1.5 | **6,75** | | |
| | **218** | 5 | 2.3 | **13,73** | **NDP120/522** | **120/240** |
| | **189** | 6 | 2.0 | 15,88 | | |
| | **163** | 7 | 1.7 | 18,36 | | |
| | **156** | 7 | 1.6 | **19,20** | | |
| | **135** | 8 | 1.4 | 22,20 | | |
| | **120** | 10 | 1.3 | **25,01** | | |
| | **112** | 10 | 1.2 | 26,85 | | |
| | **104** | 11 | 1.1 | **28,93** | | |
| | **86** | 13 | 0.9 | **34,97** | | |
| | **66** | 17 | 0.7 | **45,56** | | |
| | **59** | 18 | 1.4 | **50,89** | **NDP120/523** | **120/240** |
| | **51** | 21 | 1.2 | 58,85 | | |
| | **44** | 24 | 1.0 | **68,06** | | |
| | **42** | 25 | 1.0 | 71,16 | | |
| | **38** | 28 | 0.9 | 78,71 | | |
| | **32** | 33 | 0.8 | **92,70** | | |
| | **32** | 34 | 0.7 | 95,17 | | |
| | **30** | 36 | 0.7 | 99,50 | | |
| | **28** | 36 | 0.7 | 107,20 | | |
| | **26** | 36 | 0.7 | 115,07 | | |
| | **24** | 36 | 0.7 | 123,97 | | |
| | **23** | 36 | 0.7 | 129,62 | | |
| | **22** | 36 | 0.7 | 139,13 | | |
| | **20** | 36 | 0.7 | 149,90 | | |
| | **18** | 36 | 0.7 | **168,84** | | |
| | **17** | 36 | 0.7 | 181,24 | | |
| | **15** | 36 | 0.7 | 195,26 | | |
| | **13** | 36 | 0.7 | 236,09 | | |
| | **9.8** | 36 | 0.7 | **307,54** | | |
| | **579** | 2 | 3.8 | **5,18** | **NDP120/621** | **120/240** |
| | **444** | 3 | 2.9 | **6,75** | | |
| | **218** | 5 | 4.8 | **13,73** | **NDP120/622** | **120/240** |
| | **189** | 6 | 4.1 | 15,88 | | |
| | **163** | 7 | 3.6 | 18,36 | | |
| | **156** | 7 | 3.4 | **19,20** | | |
| | **135** | 8 | 2.9 | 22,20 | | |
| | **120** | 10 | 2.6 | **25,01** | | |
| | **112** | 10 | 2.4 | 26,85 | | |
| | **104** | 11 | 2.3 | **28,93** | | |
| | **86** | 13 | 1.9 | **34,97** | | |
| | **66** | 17 | 1.4 | **45,56** | | |

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i | | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **160** | | | | | | |
| (3000 min$^{-1}$) | **59** | 18 | 2.8 | **50,89** | **NDP120/623** | **120/240** |
| | **51** | 21 | 2.4 | 58,85 | | |
| | **44** | 24 | 2.1 | **68,06** | | |
| | **42** | 25 | 2.0 | 71,16 | | |
| | **38** | 28 | 1.8 | 78,71 | | |
| | **32** | 33 | 1.5 | **92,70** | | |
| | **32** | 34 | 1.5 | 95,17 | | |
| | **30** | 36 | 1.4 | 99,50 | | |
| | **28** | 38 | 1.3 | 107,20 | | |
| | **26** | 41 | 1.2 | 115,07 | | |
| | **24** | 44 | 1.1 | 123,97 | | |
| | **23** | 46 | 1.1 | 129,62 | | |
| | **22** | 50 | 1.0 | 139,13 | | |
| | **20** | 54 | 0.9 | 149,90 | | |
| | **18** | 60 | 0.8 | **168,84** | | |
| | **17** | 65 | 0.8 | 181,24 | | |
| | **15** | 70 | 0.7 | 195,26 | | |
| | **13** | 71 | 0.7 | 236,09 | | |
| | **9.8** | 71 | 0.7 | **307,54** | | |
| | **44** | 24 | 3.5 | **68,06** | **NDP120/723** | **120/240** |
| | **42** | 25 | 3.3 | 71,16 | | |
| | **38** | 28 | 3.0 | 78,71 | | |
| | **32** | 33 | 2.5 | **92,70** | | |
| | **32** | 34 | 2.5 | 95,17 | | |
| | **30** | 36 | 2.4 | 99,50 | | |
| | **28** | 38 | 2.2 | 107,20 | | |
| | **26** | 41 | 2.0 | 115,07 | | |
| | **24** | 44 | 1.9 | 123,97 | | |
| | **23** | 46 | 1.8 | 129,62 | | |
| | **22** | 50 | 1.7 | 139,13 | | |
| | **20** | 54 | 1.6 | 149,90 | | |
| | **18** | 60 | 1.4 | **168,84** | | |
| | **17** | 65 | 1.3 | 181,24 | | |
| | **15** | 70 | 1.2 | 195,26 | | |
| | **13** | 84 | 1.0 | 236,09 | | |
| | **9.8** | 110 | 0.8 | **307,54** | | |
| | **32** | 33 | 3.6 | **92,70** | **NDP120/813** | **120/240** |
| | **32** | 34 | 3.5 | 95,17 | | |
| | **30** | 36 | 3.4 | 99,50 | | |
| | **28** | 38 | 3.1 | 107,20 | | |
| | **26** | 41 | 2.9 | 115,07 | | |
| | **24** | 44 | 2.7 | 123,97 | | |
| | **23** | 46 | 2.6 | 129,62 | | |
| | **22** | 50 | 2.4 | 139,13 | | |
| | **20** | 54 | 2.2 | 149,90 | | |
| | **18** | 60 | 2.0 | **168,84** | | |
| | **17** | 65 | 1.9 | 181,24 | | |
| | **15** | 70 | 1.7 | 195,26 | | |
| | **13** | 84 | 1.4 | 236,09 | | |
| | **9.8** | 110 | 1.1 | **307,54** | | |



## Dati tecnici per servizio S2

## *Technical data for S2 duty*

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i | | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **250** | | | | | | |
| (3000 min$^{-1}$) | **811** | 2 | 1.7 | **3,70** | **NDP180/521** | **120/240** |
| | **701** | 3 | 1.5 | **4,28** | | **120/240** |
| | **579** | 3 | 1.2 | **5,18** | | **120/240** |
| | **444** | 4 | 0.9 | **6,75** | | **120/240** |
| | | | | | | |
| | **218** | 8 | 1.5 | **13,73** | **NDP180/522** | **120/240** |
| | **189** | 10 | 1.3 | **15,88** | | **120/240** |
| | **163** | 11 | 1.1 | **18,36** | | **120/240** |
| | **156** | 12 | 1.0 | **19,20** | | **120/240** |
| | **135** | 13 | 0.9 | **22,20** | | **120/240** |
| | **120** | 15 | 0.8 | **25,01** | | **120/240** |
| | **112** | 16 | 0.7 | **26,85** | | **120/240** |
| | **104** | 17 | 0.7 | **28,93** | | **120/240** |
| | **86** | 17 | 0.7 | **34,97** | | **120/240** |
| | **66** | 17 | 0.7 | **45,56** | | **120/240** |
| | | | | | | |
| | **59** | 28 | 0.9 | **50,89** | **NDP180/523** | **120/240** |
| | **51** | 33 | 0.8 | **58,85** | | **120/240** |
| | **44** | 36 | 0.7 | **68,06** | | **120/240** |
| | **42** | 36 | 0.7 | **71,16** | | **120/240** |
| | **38** | 36 | 0.7 | **78,71** | | **120/240** |
| | **32** | 36 | 0.7 | **92,70** | | **120/240** |
| | **32** | 36 | 0.7 | **95,17** | | **120/240** |
| | **30** | 36 | 0.7 | **99,50** | | **120/240** |
| | **28** | 36 | 0.7 | **107,20** | | **120/240** |
| | **26** | 36 | 0.7 | **115,07** | | **120/240** |
| | **24** | 36 | 0.7 | **123,97** | | **120/240** |
| | **23** | 36 | 0.7 | **129,62** | | **120/240** |
| | **22** | 36 | 0.7 | **139,13** | | **120/240** |
| | **20** | 36 | 0.7 | **149,90** | | **120/240** |
| | **18** | 36 | 0.7 | **168,84** | | **120/240** |
| | **17** | 36 | 0.7 | **181,24** | | **120/240** |
| | **15** | 36 | 0.7 | **195,26** | | **120/240** |
| | **13** | 36 | 0.7 | **236,09** | | **120/240** |
| | **9.8** | 36 | 0.7 | **307,54** | | **120/240** |
| | | | | | | |
| | **811** | 2 | 3.4 | **3,70** | **NDP180/621** | **120/240** |
| | **701** | 3 | 2.9 | **4,28** | | **120/240** |
| | **579** | 3 | 2.4 | **5,18** | | **120/240** |
| | **444** | 4 | 1.9 | **6,75** | | **120/240** |
| | | | | | | |
| | **218** | 8 | 3.0 | **13,73** | **NDP180/622** | **120/240** |
| | **189** | 10 | 2.6 | **15,88** | | **120/240** |
| | **163** | 11 | 2.3 | **18,36** | | **120/240** |
| | **156** | 12 | 2.2 | **19,20** | | **120/240** |
| | **135** | 13 | 1.9 | **22,20** | | **120/240** |
| | **120** | 15 | 1.7 | **25,01** | | **120/240** |
| | **112** | 16 | 1.6 | **26,85** | | **120/240** |
| | **104** | 17 | 1.4 | **28,93** | | **120/240** |
| | **86** | 21 | 1.2 | **34,97** | | **120/240** |
| | **66** | 27 | 0.9 | **45,56** | | **120/240** |

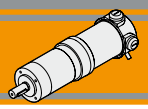
| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i | | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **250** | | | | | | |
| (3000 min$^{-1}$) | **59** | 28 | 1.8 | **50,89** | **NDP180/623** | **120/240** |
| | **51** | 33 | 1.5 | **58,85** | | **120/240** |
| | **44** | 38 | 1.3 | **68,06** | | **120/240** |
| | **42** | 40 | 1.3 | **71,16** | | **120/240** |
| | **38** | 44 | 1.1 | **78,71** | | **120/240** |
| | **32** | 52 | 1.0 | **92,70** | | **120/240** |
| | **32** | 53 | 0.9 | **95,17** | | **120/240** |
| | **30** | 56 | 0.9 | **99,50** | | **120/240** |
| | **28** | 60 | 0.8 | **107,20** | | **120/240** |
| | **26** | 64 | 0.8 | **115,07** | | **120/240** |
| | **24** | 69 | 0.7 | **123,97** | | **120/240** |
| | **23** | 71 | 0.7 | **129,62** | | **120/240** |
| | **22** | 71 | 0.7 | **139,13** | | **120/240** |
| | **20** | 71 | 0.7 | **149,90** | | **120/240** |
| | **18** | 71 | 0.7 | **168,84** | | **120/240** |
| | **17** | 71 | 0.7 | **181,24** | | **120/240** |
| | **15** | 71 | 0.7 | **195,26** | | **120/240** |
| | **13** | 71 | 0.7 | **236,09** | | **120/240** |
| | **9.8** | 71 | 0.7 | **307,54** | | **120/240** |
| | | | | | | |
| | **579** | 3 | 4.2 | **5,18** | **NDP180/721** | **120/240** |
| | **444** | 4 | 3.2 | **6,75** | | **120/240** |
| | | | | | | |
| | **156** | 12 | 3.6 | **19,20** | **NDP180/722** | **120/240** |
| | **135** | 13 | 3.2 | **22,20** | | **120/240** |
| | **120** | 15 | 2.8 | **25,01** | | **120/240** |
| | **112** | 16 | 2.6 | **26,85** | | **120/240** |
| | **104** | 17 | 2.4 | **28,93** | | **120/240** |
| | **86** | 21 | 2.0 | **34,97** | | **120/240** |
| | **66** | 27 | 1.5 | **45,56** | | **120/240** |
| | | | | | | |
| | **59** | 28 | 2.9 | **50,89** | **NDP180/723** | **120/240** |
| | **51** | 33 | 2.5 | **58,85** | | **120/240** |
| | **44** | 38 | 2.2 | **68,06** | | **120/240** |
| | **42** | 40 | 2.1 | **71,16** | | **120/240** |
| | **38** | 44 | 1.9 | **78,71** | | **120/240** |
| | **32** | 52 | 1.6 | **92,70** | | **120/240** |
| | **32** | 53 | 1.6 | **95,17** | | **120/240** |
| | **30** | 56 | 1.5 | **99,50** | | **120/240** |
| | **28** | 60 | 1.4 | **107,20** | | **120/240** |
| | **26** | 64 | 1.3 | **115,07** | | **120/240** |
| | **24** | 69 | 1.2 | **123,97** | | **120/240** |
| | **23** | 73 | 1.2 | **129,62** | | **120/240** |
| | **22** | 78 | 1.1 | **139,13** | | **120/240** |
| | **20** | 84 | 1.0 | **149,90** | | **120/240** |
| | **18** | 95 | 0.9 | **168,84** | | **120/240** |
| | **17** | 101 | 0.8 | **181,24** | | **120/240** |
| | **15** | 109 | 0.8 | **195,26** | | **120/240** |
| | **13** | 120 | 0.7 | **236,09** | | **120/240** |
| | **9.8** | 120 | 0.7 | **307,54** | | **120/240** |
| | | | | | | |
| | **86** | 21 | 2.9 | **34,97** | **NDP180/812** | **120/240** |
| | **66** | 27 | 2.2 | **45,56** | | **120/240** |

## Dati tecnici per servizio S2

## *Technical data for S2 duty*

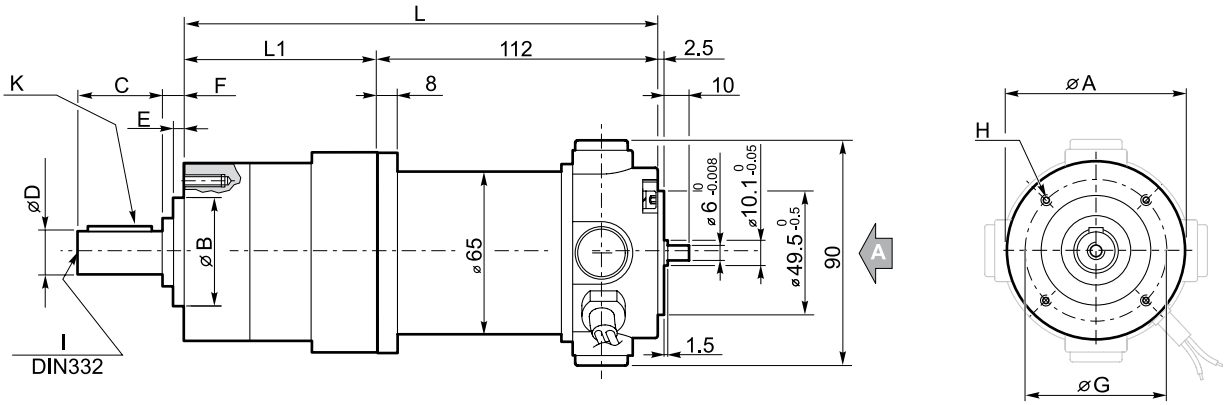
| $P_1$ [W] | $n_2$ [$min^{-1}$] | $M_2$ [Nm] | sf | i | | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **250** | | | | | | |
| (3000 $min^{-1}$) | **44** | 38 | 3.1 | **68,06** | **NDP180/813** | **120/240** |
| | **42** | 40 | 3.0 | **71,16** | | **120/240** |
| | **38** | 44 | 2.7 | **78,71** | | **120/240** |
| | **32** | 52 | 2.3 | **92,70** | | **120/240** |
| | **32** | 53 | 2.3 | **95,17** | | **120/240** |
| | **30** | 56 | 2.2 | **99,50** | | **120/240** |
| | **28** | 60 | 2.0 | **107,20** | | **120/240** |
| | **26** | 64 | 1.9 | **115,07** | | **120/240** |
| | **24** | 69 | 1.7 | **123,97** | | **120/240** |
| | **23** | 73 | 1.7 | **129,62** | | **120/240** |
| | **22** | 78 | 1.5 | **139,13** | | **120/240** |
| | **20** | 84 | 1.4 | **149,90** | | **120/240** |
| | **18** | 95 | 1.3 | **168,84** | | **120/240** |
| | **17** | 101 | 1.2 | **181,24** | | **120/240** |
| | **15** | 109 | 1.1 | **195,26** | | **120/240** |
| | **13** | 132 | 0.9 | **236,09** | | **120/240** |
| | **9.8** | 172 | 0.7 | **307,54** | | **120/240** |

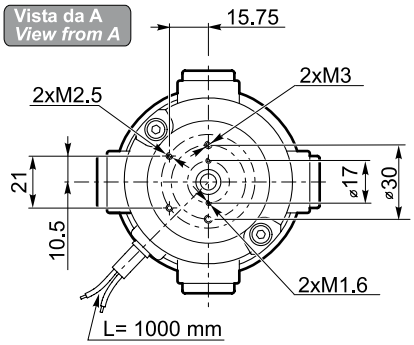
| $P_1$ [W] | $n_2$ [$min^{-1}$] | $M_2$ [Nm] | sf | i | | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **250** | | | | | | |
| (3000 $min^{-1}$) | **32** | 52 | 3.8 | **92,70** | **NDP180/1053** | **120/240** |
| | **32** | 53 | 3.7 | **95,17** | | **120/240** |
| | **30** | 56 | 3.5 | **99,50** | | **120/240** |
| | **28** | 60 | 3.2 | **107,20** | | **120/240** |
| | **26** | 64 | 3.0 | **115,07** | | **120/240** |
| | **24** | 69 | 2.8 | **123,97** | | **120/240** |
| | **23** | 73 | 2.7 | **129,62** | | **120/240** |
| | **22** | 78 | 2.5 | **139,13** | | **120/240** |
| | **20** | 84 | 2.3 | **149,90** | | **120/240** |
| | **18** | 95 | 2.1 | **168,84** | | **120/240** |
| | **17** | 101 | 1.9 | **181,24** | | **120/240** |
| | **15** | 109 | 1.8 | **195,26** | | **120/240** |
| | **13** | 132 | 1.5 | **236,09** | | **120/240** |
| | **9.8** | 172 | 1.1 | **307,54** | | **120/240** |
| | **18** | 95 | 3.2 | **168,84** | **NDP180/1203** | **120/240** |
| | **17** | 101 | 3.0 | **181,24** | | **120/240** |
| | **15** | 109 | 2.7 | **195,26** | | **120/240** |
| | **13** | 132 | 2.3 | **236,09** | | **120/240** |
| | **9.8** | 172 | 1.7 | **307,54** | | **120/240** |

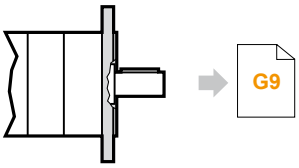




## NDP120/... U



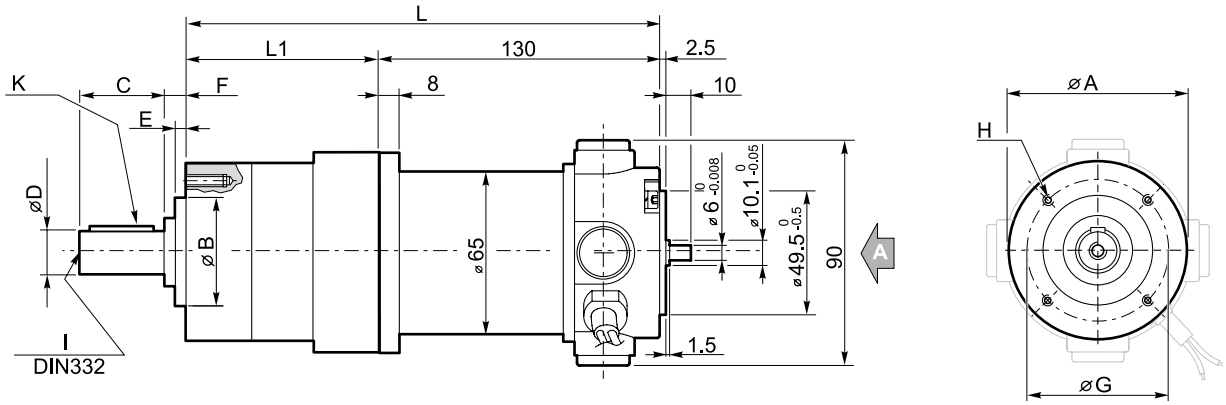



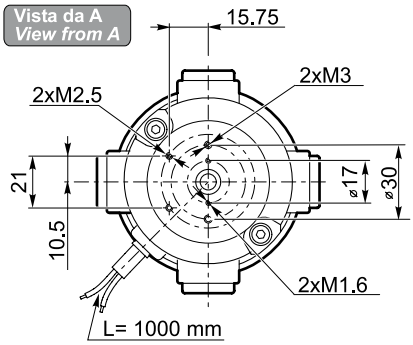

**NDP120/... C...**

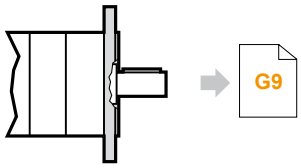
| Tipo *Type* | Numero di stadi *Stages number* | Dimensioni / *Dimensions* | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L1 | L | A | B | C | D | E | F | G | H | I | K |
| NDP120/52... | 1 | 74 | 186 | 52 | 32 h8 | 20.8 | 12 h7 | 3 | 4.2 | 40 | M5x10 | M4x10 | 4x4x16 |
| | 2 | 88 | 200 | | | | | | | | | | |
| | 3 | 102 | 214 | | | | | | | | | | |
| NDP120/62... | 1 | 74 | 186 | 62 | 40 j7 | 30 | 14 h7 | 5 | 9 | 52 | M5x10 | M5x12 | 5x5x18 |
| | 2 | 90 | 202 | | | | | | | | | | |
| | 3 | 106 | 218 | | | | | | | | | | |
| NDP120/72... | 1 | 82.4 | 194.4 | 72 | 45 j7 | 40 | 16 h7 | 5 | 9 | 60 | M5x10 | M5x12 | 5x5x30 |
| | 2 | 102 | 214 | | | | | | | | | | |
| | 3 | 121.6 | 233.6 | | | | | | | | | | |
| NDP120/81... | 1 | 91 | 203 | 81 | 50 j7 | 40 | 19 h7 | 5 | 9 | 65 | M6x12 | M6x16 | 6x6x28 |
| | 2 | 113 | 225 | | | | | | | | | | |
| | 3 | 135 | 247 | | | | | | | | | | |

**Dimensioni** ***Dimensions***

## NDP180/... U

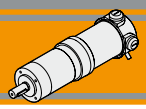


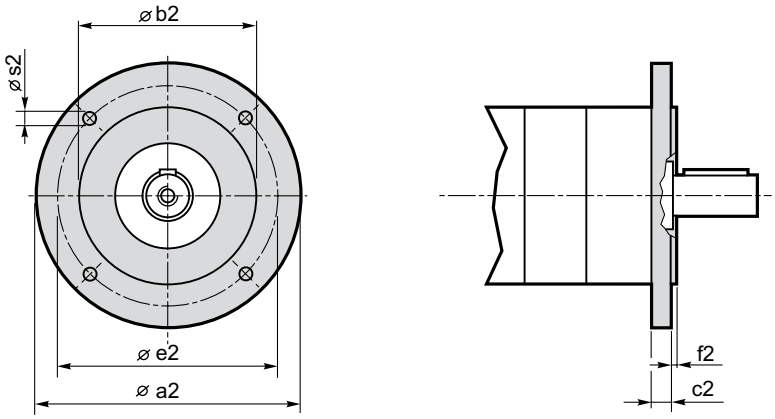

**NDP180/... C...**

| Tipo *Type* | Numero di stadi *Stages number* | Dimensioni / *Dimensions* | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L1 | L | A | B | C | D | E | F | G | H | I | K |
| **NDP180/52** | **1** | 74 | 204 | 52 | 32 h8 | 20.8 | 12 h7 | 3 | 4.2 | 40 | M5x10 | M4x10 | 4x4x16 |
| | **2** | 88 | 218 | | | | | | | | | | |
| | **3** | 102 | 232 | | | | | | | | | | |
| **NDP180/62** | **1** | 74 | 204 | 62 | 40 j7 | 30 | 14 h7 | 5 | 9 | 52 | M5x10 | M5x12 | 5x5x18 |
| | **2** | 90 | 220 | | | | | | | | | | |
| | **3** | 106 | 236 | | | | | | | | | | |
| **NDP180/72** | **1** | 82.4 | 212.4 | 72 | 45 j7 | 40 | 16 h7 | 5 | 9 | 60 | M5x10 | M5x12 | 5x5x30 |
| | **2** | 102 | 232 | | | | | | | | | | |
| | **3** | 121.6 | 251.6 | | | | | | | | | | |
| **NDP180/81** | **1** | 91 | 203 | 81 | 50 j7 | 40 | 19 h7 | 5 | 9 | 65 | M6x12 | M6x16 | 6x6x28 |
| | **2** | 113 | 225 | | | | | | | | | | |
| | **3** | 135 | 247 | | | | | | | | | | |
| **NDP180105** | **1** | 113.4 | 243.4 | 105 | 70 j7 | 50 | 25 h7 | 5 | 9 | 85 | M8x16 | M10x22 | 8x7x40 |
| | **2** | 144.5 | 274.5 | | | | | | | | | | |
| | **3** | 175.5 | 305.5 | | | | | | | | | | |
| **NDP180/120** | **1** | 131.6 | 261.6 | 120 | 80 j7 | 73 | 32 k6 | 5 | 15 | 100 | M10x22 | M12 | 10x8x50 |
| | **2** | 165.8 | 295.8 | | | | | | | | | | |
| | **3** | 200 | 330 | | | | | | | | | | |





## NDP.../... C... Flange uscita / *Output flanges*





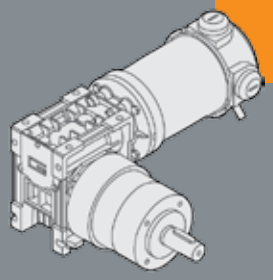

| | Dimensioni / *Dimensions* | | | | | | |
|---|---|---|---|---|---|---|---|
| **P** | **a2** | **b2** | **c2** | **e2** | **f2** | **s2** | **Flangia uscita** *Output flange* |
| **52** | 80 | 50 j7 | 9 | 65 | 2.5 | M5 | **C80** |
| | 90 | 60 j7 | 9 | 75 | 2.5 | 5.5 | **C90** |
| | 105 | 70 j7 | 9 | 85 | 2.5 | 6.5 | **C105** |
| | 120 | 80 j7 | 9 | 100 | 3.0 | 6.5 | **C120** |
| **62** | 80 | 50 j7 | 9 | 65 | 2.5 | M5 | **C80** |
| | 90 | 60 j7 | 9 | 75 | 2.5 | 5.5 | **C90** |
| | 105 | 70 j7 | 9 | 85 | 2.5 | 6.5 | **C105** |
| | 120 | 80 j7 | 9 | 100 | 3.0 | 6.5 | **C120** |
| **72** | 80 | 50 j7 | 9 | 65 | 2.5 | M5 | **C80** |
| | 90 | 60 j7 | 9 | 75 | 2.5 | M5 | **C90** |
| | 105 | 70 j7 | 9 | 85 | 2.5 | 6.5 | **C105** |
| | 120 | 80 j7 | 9 | 100 | 3.0 | 6.5 | **C120** |
| **81** | 90 | 60 j7 | 9 | 75 | 2.5 | M5 | **C90** |
| | 105 | 70 j7 | 9 | 85 | 2.5 | M6 | **C105** |
| | 120 | 80 j7 | 9 | 100 | 3.0 | 6.5 | **C120** |
| **P105** | 120 | 80 j7 | 12 | 100 | 3 | M6 | **C120** |
| | 140 | 95 j7 | 12 | 115 | 3.5 | M8 | **C140** |
| | 160 | 110 j7 | 12 | 130 | 3.5 | M8 | **C160** |
| **P120** | 140 | 95 j7 | 15 | 115 | 3 | M8 | **C140** |
| | 160 | 110 j7 | 15 | 130 | 3.5 | M8 | **C160** |

# Note

TRANSTECNO®
THE MODULAR GEARMOTOR

# NDWMP

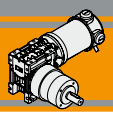
NDWMP



## MOTORIDUTTORI C.C. COMBINATI

## RARE EARTH D.C. COMBINATION GEARMOTORS


TRANSTECNO · GENUINE · PRODUCTS ·



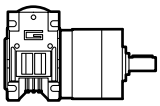
## Caratteristiche tecniche — *Technical features*

L'accoppiamento di un riduttore a vite senza fine con un riduttore epicicloidale consente di ottenere elevati rapporti di riduzione ($i_{max}$ = 1/18452) e di disporre di un gruppo autolubrificato compatto, silenzioso e con un'elevata affidabilità.

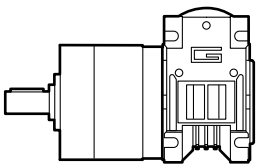
*The coupling of a wormgearbox to a planetary gearbox allows to obtain high reduction ratios ($i_{max}$ = 1/18452) and to get a compact, silent, self lubricated with high reliability group.*

## Designazione — *Classification*

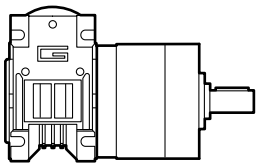
MOTORIDUTTORE / *GEARMOTOR*

| NDWMP | 120/026/52 | 2 | CD | 90 | 405 | 240 | VS |
|---|---|---|---|---|---|---|---|
| Tipo *Type* | Grandezza *Size* | Numero stadi epicicloidale *Planetary stages number* | Versione Riduttore *Gearbox Version* | Flangia Uscita *Output flange* | Rapporto *Ratio* | Versione Motore *Motor Version* | Opzioni *Options* |
| **NDWMP** | **120/026/52** | **1** | **US** | **80** | Vedere tabella *See tables* | **120** | **VS** |
| | **120/026/62** | **2** | **UD** | **90** | | **240** | |
|  | **120/030/81** | **3** | **CS** | **105** | | | |
| | | | **CD** | **120** | | | |
| | **180/026/62** | | | | | | |
| | **180/030/81** | | | | | | |

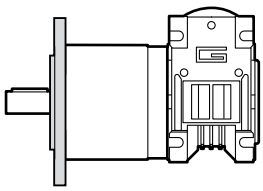
## Versioni — *Versions*



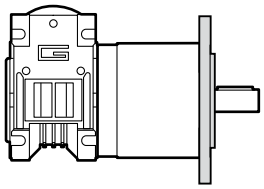
**US**



**UD**



**CS**



**CD**

## Simbologia — *Symbols*

| | | |
|---|---|---|
| $n_1$ | [$min^{-1}$] | Velocità in ingresso / *Input speed* |
| $n_2$ | [$min^{-1}$] | Velocità in uscita / *Output speed* |
| i | | Rapporto di riduzione / *Ratio* |
| $P_1$ | [kW] | Potenza in entrata / *Input power* |
| $M_n$ | [Nm] | Coppia nominale in uscita del riduttore / *Maximum output torque of the gearbox* |
| $M_2$ | [Nm] | Coppia in uscita in funzione di $P_1$ / *Output torque referred to $P_1$* |
| sf | | Fattore di servizio / *Service factor* |
| Rd | % | Rendimento dinamico / *Dynamic efficiency* |
| $A_2$ | N] | Carico assiale ammissibile in uscita / *Permitted output axial load* |
| $R_2$ | [N] | Carico radiale ammissibile in uscita / *Permitted output radial load* |

## Lubrificazione

## *Lubrication*

I riduttori a vite senza fine della serie CM sono lubrificati a vita con olio sintetico di viscosità 320 e possono essere installati in qualunque posizione di montaggio.

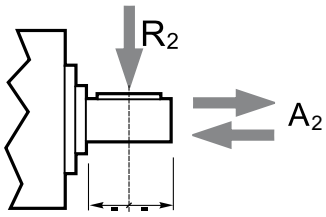
*Permanent synthetic oil long-life lubrication allow to use CM wormgearbox range in all mounting position.*

I riduttori epicicloidali sono lubrificati in modo permanente, non richiedono quindi ulteriore manutenzione.
Questo gli consente di essere installati praticamente ovunque.
La temperatura di funzionamento consentita va da -30°C a + 140°C; per applicazioni particolari possone essere adottate misure per raggiungere livelli di temperatura maggiori.

*Planetary gearboxes are life-time lubricated with grease, therefore they are maintenance free.*
*They can be installed in any location.*
*The temperature range is from -30°C up to + 140°C; for special applications, measures can be taken for higher temperature range.*

## Carichi radiali

## *Radial loads*




| Numero di stadi *Stages number* | Carichi Radiali $R_2$ [N] *Radial Load $R_2$ [N]* | | |
|---|---|---|---|
| | P52 | P62 | P81 |
| 1 | 200 | 240 | 400 |
| 2 | 320 | 360 | 600 |
| 3 | 450 | 520 | 1000 |

| Numero di stadi *Stages number* | Carichi Assiali $A_2$ [N] *Axial Load $A_2$ [N]* | | |
|---|---|---|---|
| | P52 | P62 | P81 |
| 1 | 60 | 70 | 80 |
| 2 | 100 | 100 | 120 |
| 3 | 150 | 150 | 200 |

## Rapporti — *Ratios*

| Motoriduttore *Gearmotor* | Numero stadi epicicloidale *Planetary stages number* | Rapporto epicicloidale *Planetary ratio* | Rapporto vite senza fine *Wormgearbox ratio* | Rapporto finale *Total ratio* |
|---|---|---|---|---|
| .../026/52<br>.../026/62<br>.../030/81 | 1 | 6.75 | 10 | **67.5** |
| | | | 15 | **101.3** |
| | | | 20 | **135** |
| | | | 30 | **202.5** |
| | | | 40 | **270** |
| | | | 50 | **337.5** |
| | | | 60 | **405** |
| | 2 | 28.93 | 10 | **289.3** |
| | | | 15 | **434.0** |
| | | | 20 | **578.6** |
| | | | 30 | **867.9** |
| | | | 40 | **1157** |
| | | | 50 | **1447** |
| | | | 60 | **1736** |
| | | 34.97 | 60 | **2098** |
| | | 45.56 | 60 | **2734** |

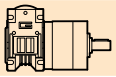
## Rendimento — *Efficiency*

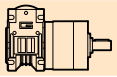
| Motoriduttore *Gearmotor* | $n_1$ [$min^{-1}$] | Rendimento *Efficiency* | Rapporto / *Ratio* | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | **67.5** | **101.3** | **135** | **202.5** | **270** | **337.5** | **405** | **289.3** | **434.0** | **578.6** | **867.9** | **1157** | **1447** | **1736** | **2098** | **2734** |
| **.../026/52** | 2800 | Rd % | 68 | 66 | 64 | 58 | 54 | 51 | 48 | 64 | 62 | 60 | 54 | 51 | 48 | 45 | 45 | 45 |
| **.../026/62** | | | 68 | 66 | 64 | 58 | 54 | 51 | 48 | 64 | 62 | 60 | 54 | 51 | 48 | 45 | 45 | 45 |
| **.../030/81** | | | 68 | 67 | 64 | 59 | 56 | 52 | 49 | 64 | 63 | 60 | 55 | 52 | 48 | 46 | 46 | 46 |

**Rendimento teorico del riduttore dopo il rodaggio**
***Theoretical efficiency of the gearbox after the first running period***

## Dati tecnici per servizio S2

## *Technical data for S2 duty*

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **160** | | | | | | |
| (3000 min$^{-1}$) | **44.4** | 23 | 1.1 | 67.5 | **120/026/521** | 120/240 |
| | **29.6** | 25 | 1.0 | 101.3 | | |
| | **22.2** | 25 | 1.0 | 135.0 | | |
| | **14.8** | 25 | 1.0 | 202.5 | | |
| | **11.1** | 25 | 1.0 | 270.0 | | |
| | **10.4** | 25 | 1.0 | 289.3 | **120/026/522** | 120/240 |
| | **8.9** | 25 | 1.0 | 337.5 | **120/026/521** | 120/240 |
| | **7.4** | 25 | 1.0 | 405.0 | | |
| | **6.9** | 25 | 1.0 | 434.0 | **120/026/522** | 120/240 |
| | **5.2** | 25 | 1.0 | 578.6 | | |
| | **3.5** | 25 | 1.0 | 867.9 | | |
| | **2.6** | 25 | 1.0 | 1157.0 | | |
| | **2.1** | 25 | 1.0 | 1447.0 | | |
| | **1.7** | 25 | 1.0 | 1736.0 | | |
| | **1.4** | 25 | 1.0 | 2098.0 | | |
| | **1.1** | 25 | 1.0 | 2734.0 | | |
| | **44.4** | 23 | 1.7 | 67.5 | **120/026/621** | 120/240 |
| | **29.6** | 34 | 1.2 | 101.3 | | |
| | **22.2** | 40 | 1.0 | 135.0 | | |
| | **14.8** | 40 | 1.0 | 202.5 | | |
| | **11.1** | 40 | 1.0 | 270.0 | | |
| | **10.4** | 50 | 1.0 | 289.3 | **120/026/622** | 120/240 |
| | **8.9** | 40 | 1.0 | 337.5 | **120/026/621** | 120/240 |
| | **7.4** | 40 | 1.0 | 405.0 | | |
| | **6.9** | 50 | 1.0 | 434.0 | **120/026/622** | 120/240 |
| | **5.2** | 50 | 1.0 | 578.6 | | |
| | **3.5** | 50 | 1.0 | 867.9 | | |
| | **2.6** | 50 | 1.0 | 1157.0 | | |
| | **2.1** | 50 | 1.0 | 1447.0 | | |
| | **1.7** | 50 | 1.0 | 1736.0 | | |
| | **1.4** | 50 | 1.0 | 2098.0 | | |
| | **1.1** | 50 | 1.0 | 2734.0 | | |

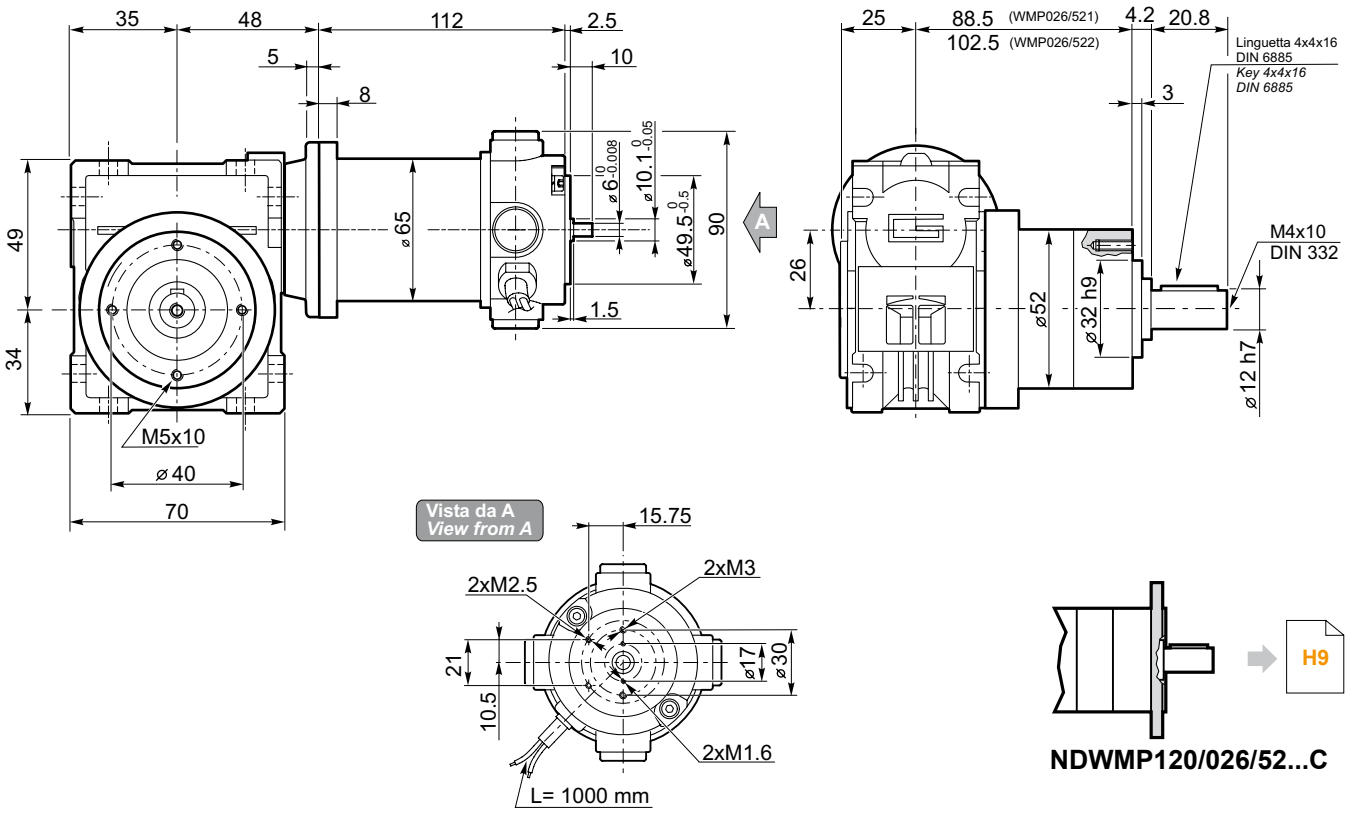
| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **160** | | | | | | |
| (3000 min$^{-1}$) | **44.4** | 24 | 3.4 | 67.5 | **120/030/811** | 120/240 |
| | **29.6** | 35 | 2.3 | 101.3 | | |
| | **22.2** | 45 | 1.8 | 135.0 | | |
| | **14.8** | 61 | 1.3 | 202.5 | | |
| | **11.1** | 77 | 1.0 | 270.0 | | |
| | **10.4** | 95 | 1.3 | 289.3 | **120/030/812** | 120/240 |
| | **8.9** | 80 | 1.0 | 337.5 | **120/030/811** | 120/240 |
| | **7.4** | 80 | 1.0 | 405.0 | | |
| | **6.9** | 120 | 1.0 | 434.0 | **120/030/812** | 120/240 |
| | **5.2** | 120 | 1.0 | 578.6 | | |
| | **3.5** | 120 | 1.0 | 867.9 | | |
| | **2.6** | 120 | 1.0 | 1157.0 | | |
| | **2.1** | 120 | 1.0 | 1447.0 | | |
| | **1.7** | 120 | 1.0 | 1736.0 | | |
| | **1.4** | 120 | 1.0 | 2098.0 | | |
| | **1.1** | 120 | 1.0 | 2734.0 | | |
| **250** | | | | | | |
| (3000 min$^{-1}$) | **44.4** | 37 | 1.1 | 67.5 | **180/026/621** | 120/240 |
| | **44.4** | 40 | 2.0 | 67.5 | **180/030/811** | 120/240 |
| | **29.6** | 54 | 1.5 | 101.3 | | 120/240 |
| | **22.2** | 70 | 1.1 | 135.0 | | 120/240 |
| | **14.8** | 80 | 1.0 | 202.5 | | 120/240 |
| | **10.4** | 120 | 1.0 | 289.3 | **180/030/812** | 120/240 |

**Nota:** Verificare sempre che la coppia $M_2$ utilizzata non ecceda il valore indicato nelle caselle in grigio

***Note:*** *Please check that the output torque $M_2$ does not exceed the value into the grey areas*

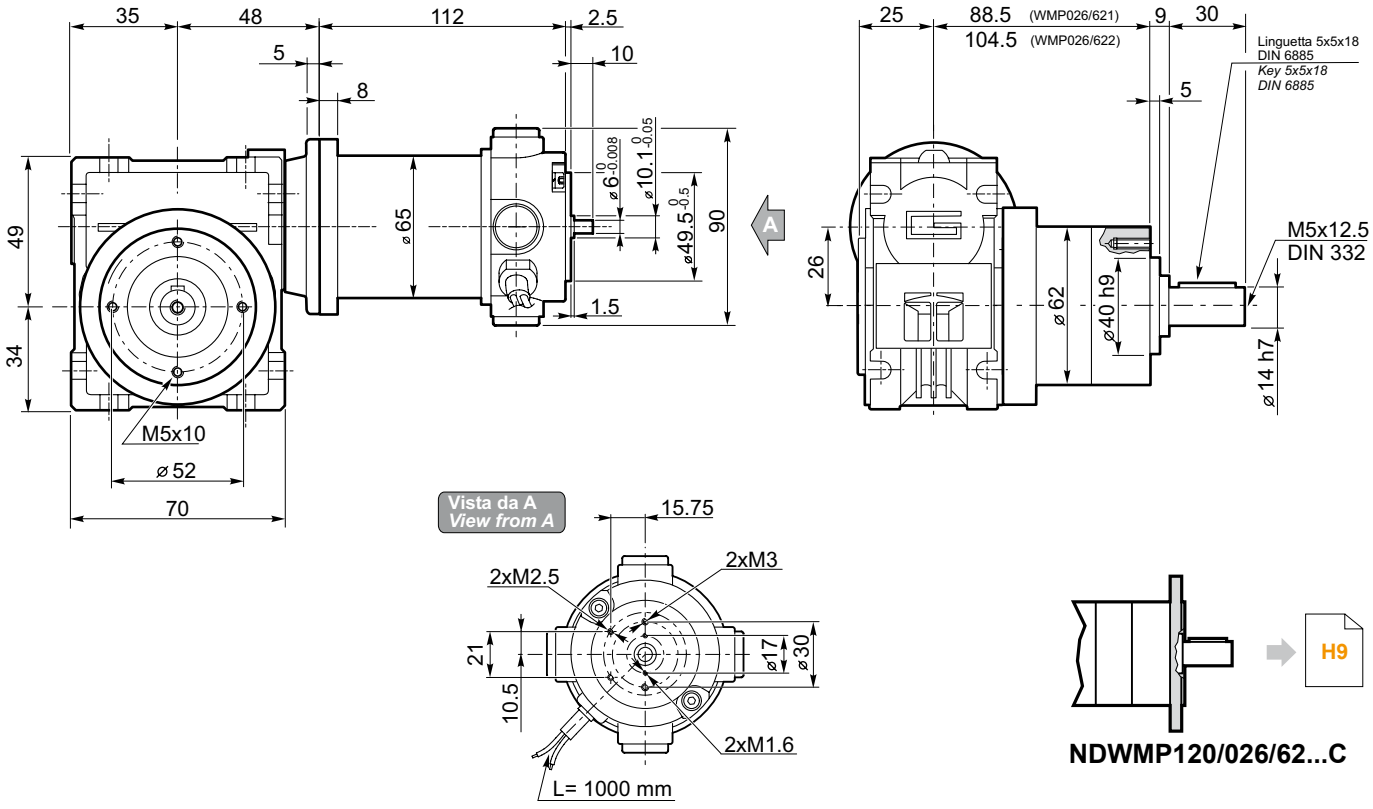
**Dimensioni** ***Dimensions***

## NDWMP120/026/52...U




**NDWMP120/026/52...C**

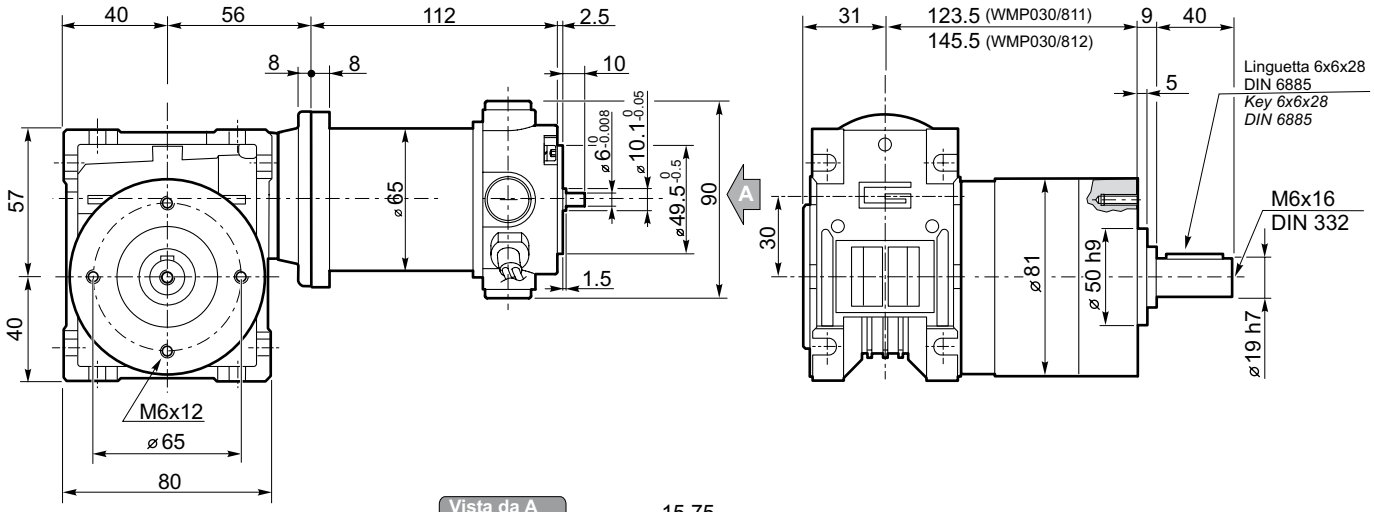
## NDWMP120/026/62...U

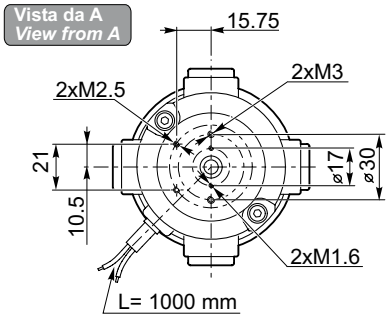


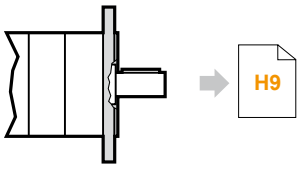

**NDWMP120/026/62...C**

## Dimensioni — *Dimensions*

### NDWMP120/030/81...U



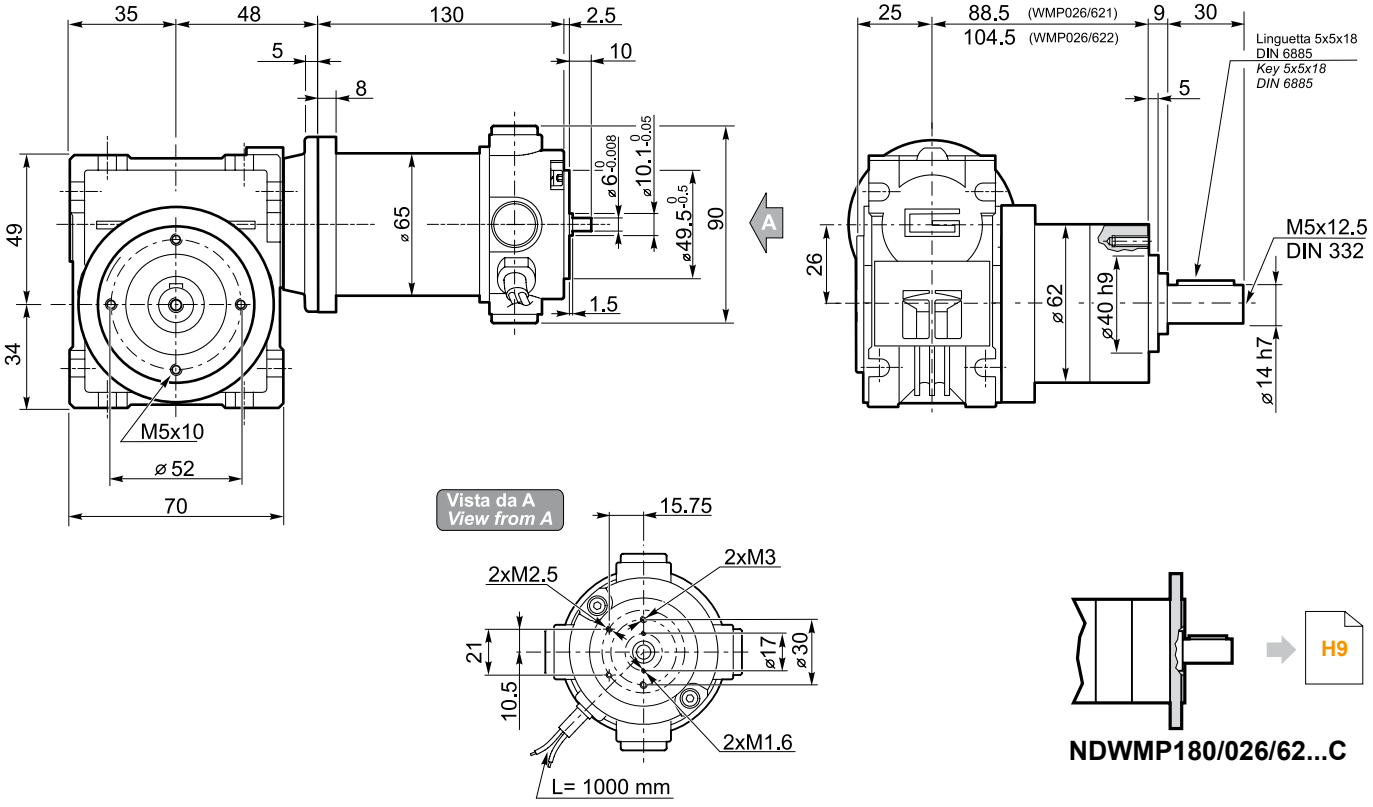




**NDWMP120/030/81...C**

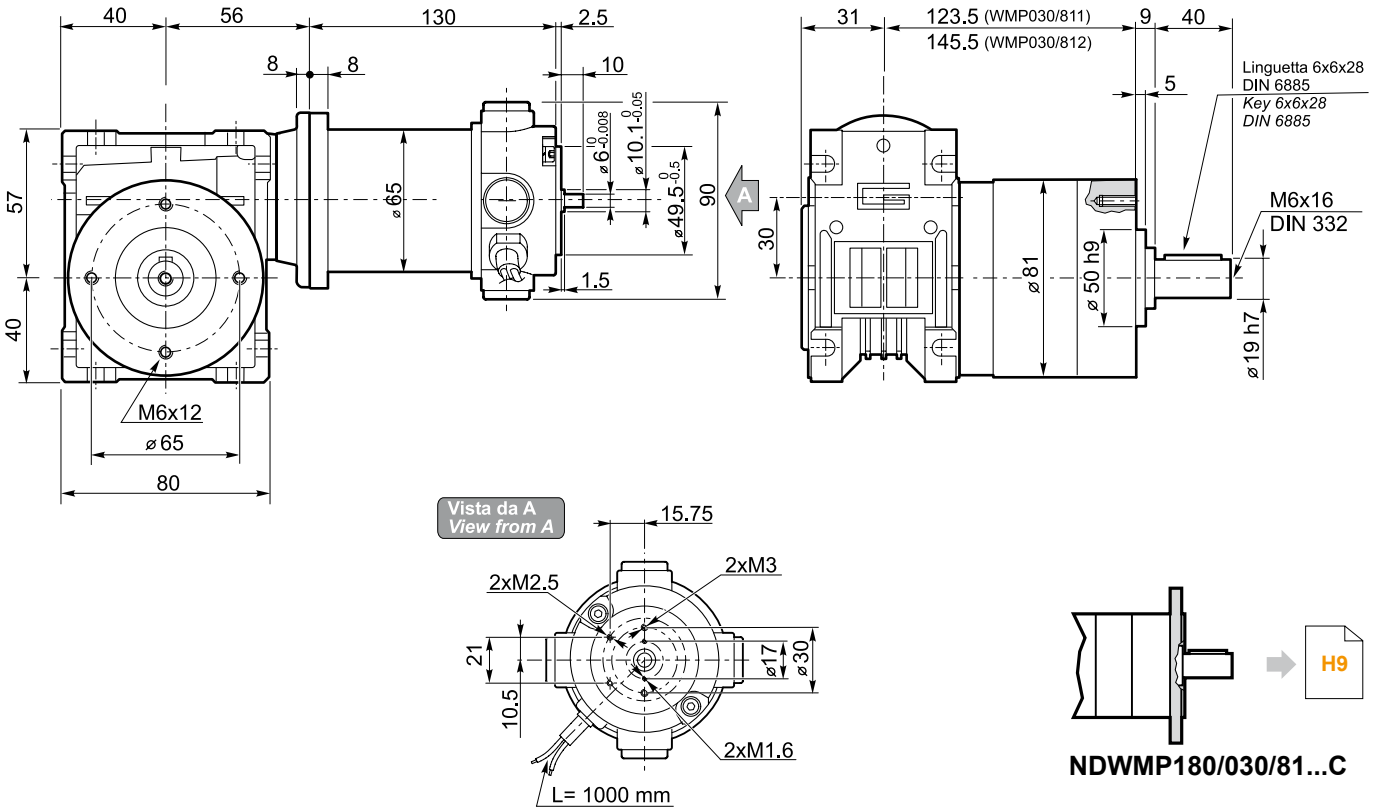
**Dimensioni** ***Dimensions***

## NDWMP180/026/62...U




**NDWMP180/026/62...C**

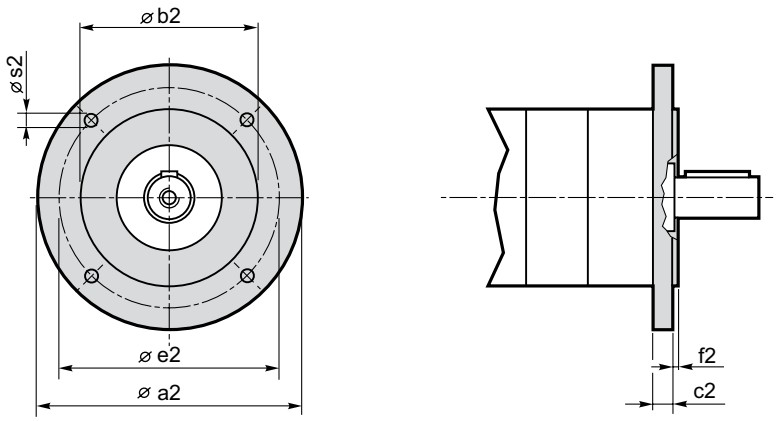
## NDWMP180/030/81...U




**NDWMP180/030/81...C**

## Dimensioni — *Dimensions*

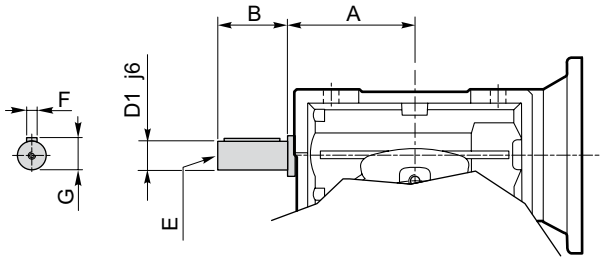
### NDWMP.../.../... C... Flange uscita / *Output flanges*




| P | Dimensioni / *Dimensions* | | | | | | |
|---|---|---|---|---|---|---|---|
| | a2 | b2 | c2 | e2 | f2 | s2 | Flangia uscita *Output flange* |
| 52 | 80 | 50 j7 | 9 | 65 | 2.5 | M5 | C80 |
| | 90 | 60 j7 | 9 | 75 | 2.5 | 5.5 | C90 |
| | 105 | 70 j7 | 9 | 85 | 2.5 | 6.5 | C105 |
| | 120 | 80 j7 | 9 | 100 | 3.0 | 6.5 | C120 |
| 62 | 80 | 50 j7 | 9 | 65 | 2.5 | M5 | C80 |
| | 90 | 60 j7 | 9 | 75 | 2.5 | 5.5 | C90 |
| | 105 | 70 j7 | 9 | 85 | 2.5 | 6.5 | C105 |
| | 120 | 80 j7 | 9 | 100 | 3.0 | 6.5 | C120 |
| 81 | 90 | 60 j7 | 9 | 75 | 2.5 | M5 | C90 |
| | 105 | 70 j7 | 9 | 85 | 2.5 | M6 | C105 |
| | 120 | 80 j7 | 9 | 100 | 3.0 | 6.5 | C120 |

## Opzioni — *Options*

### VS - Vite sporgente / *Extended input shaft*




| | A | B | $D_1$ j6 | E | F | G |
|---|---|---|---|---|---|---|
| CM 030 | 45 | 20 | 9 | M4 | 3 | 10.2 |

# Note

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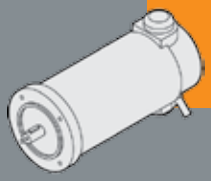
THE MODULAR GEARMOTOR

EC



# MOTORI ELETTRICI C.C. A MAGNETI PERMANENTI

# PERMANENT MAGNETS D.C. ELECTRIC MOTORS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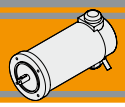





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## Caratteristiche tecniche

**Le caratteristiche principali dei motori della serie EC sono:**

- Campo magnetico generato da magneti permanenti
- Costruzione tubolare, senza ventilazione
- Disponibili in 5 grandezze: diametro 42, 52, 65, 81, 110 mm
- Alimentazione a bassa tensione, 12 o 24 Vcc
- Potenze disponibili da 30 a 800 W S2
- Elevate coppie di spunto
- Elevate coppie e potenze in dimensioni compatte

### Classe di isolamento termico

Gli avvolgimenti del rotore sono soggetti a surriscaldamento, come pure altre parti del motore. Il grado di isolamento indica la massima temperatura ammissibile oltre la quale l'isolante della matassa e l'isolante di tutte le parti soggette ad elevato riscaldamento perde le caratteristiche di buon isolante, con pericolo di danneggiamento del motore.

### Servizio

Rappresenta la relazione tra il tempo di lavoro ed il tempo di riposo del motore. Servizio continuo (S1) = funzionamento continuo del motore a pieno carico.

Servizio intermittente (S2, S3, etc...) = periodi alternati di lavoro e di riposo tali da raffreddare il motore. Dato un motore, la potenza espressa per servizio continuo è inferiore a quella per servizio intermittente.

### Fattore di forma

Indica quanta componente spuria alternata è presente nella alimentazione CC del motore. Più alto è il fattore ed inferiore è l'efficienza del motore. Alimentatori ad SCR = F.F 1.40. Alimentazione pura da batteria = FF 1. Alimentazione da transistori (modulazione PWM) = FF 1.05.

Qualitativamente l' andamento della coppia (percentuale) rispetto al fattore di forma è indicato nel grafico seguente:

## *Technical features*

***The main features of EC motor range are:***

- *Magnetic field generated by permanent magnets*
- *Tubular construction, without fan*
- *Available in 5 sizes: diameter 42, 52, 65, 81, 110 mm*
- *Low voltage power supply, 12 or 24 Vdc*
- *Power ratings available from 30 to 800 W S2*
- *High starting torque*
- *High torque and output power with compact package*

### *Thermal insulation class*

*The windings of the rotor can overheat just like other parts of the motor too. The degree of insulation indicates the maximum allowable temperature above which the insulation of the windings, as well as that of all the parts which heat up to a high temperature, loses its insulating properties and the motor therefore risks being damaged.*

### *Duty cycle*

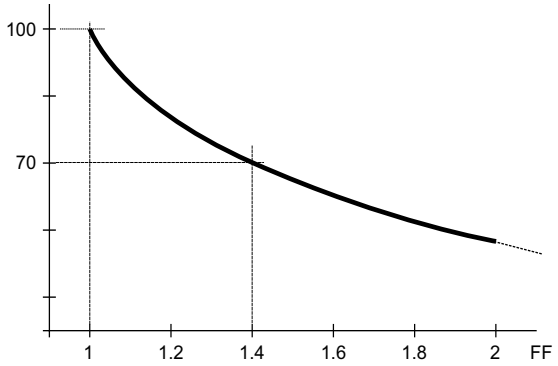
*This represents the relationship between the time the motor operates and the time it remains stationary. Continuous operation (S1) = the motor operates non-stop under full load.*

*Intermittent operation (S2, S3, etc.) = alternating periods of work and rest so that the motor can cool down. The output power for continuous operation is lower than that for intermittent operation.*

### *Form factor*

*It indicates how much spurious alternating current is present in the D.C. motor power supply. The higher the factor, the lower the motor's efficiency. SCR power supplies = F.F 1.40. Battery supply = FF 1 Transistor supply (PWM modulation) = FF 1.05.*

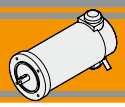
*The graph below indicates the torque trend (percentage) in relation to the form factor.*




## Simbologia

## *Symbols*

| | | | | | |
|---|---|---|---|---|---|
| **S** | — | Servizio / *Duty* | **$M_{Br}$** | [Nm] | Coppia nominale del freno / *Brake motor torque* |
| **Pn** | [W] | Potenza in uscita / *Rated power* | **$n_1$ max** | [$min^{-1}$] | Velocità massima / *Max speed* |
| **Pa** | [W] | Potenza assorbita / *Absorbed power* | **$T_r$** | [ms] | Tempo di inserzione / *Engaging time* |
| **Mn** | [Nm] | Coppia nominale / *Rated torque* | **$T_f$** | [ms] | Tempo di disimpegno / *Disengaging time* |
| **V** | [V] | Tensione / *Voltage* | **IC** | — | Classe d'isolamento termico / *Thermal insulation class* |
| **I** | [A] | Corrente assorbita / *Absorbed current* | **FF** | — | Fattore di forma / *Form factor* |
| **n1** | [min-1] | Numero giri motore / *Motor speed* | **IP** | — | Classe di protezione / *Protection class* |
| **Sv** | [rad/s] | Velocità angolare / *Angular speed* | **η** | — | Rendimento / *Efficiency* |
| **Pe** | [W] | Potenza elettrica del freno / *Brake electric power* | **Kg** | — | Peso / *Weight* |



## Grado di protezione IP

## *IP enclosures protection indexes*

*Indica il grado di isolamento meccanico del corpo motore.*
*1ª cifra protezione alla penetrazione di corpi solidi.*
*2ª cifra protezione contro la penetrazione d'acqua.*

*Indicates the degree of mechanical insulation of the motor body.*
*1st figure indicating level of protection against the penetration of solid bodies.*
*2nd figure: indicating degree to which the motor is waterproof.*

| | | | |
|---|---|---|---|
| **0** | Non protetto / *No protection* | **0** | Non protetto / *No protection* |
| **1** | Protetto da corpi solidi superiori a Ø 50 mm.<br>*Protected against solid matters (over Ø 50 mm)* | **1** | Protetto contro la caduta verticale di gocce d'acqua.<br>*Protected against drops of water falling vertically* |
| **2** | Protetto da corpi solidi superiori a Ø 12 mm.<br>*Protected against solid matters (over Ø 12 mm)* | **2** | Protetto contro la caduta verticale di gocce d'acqua con inclinazione max di 15°<br>*Protected against drops of water falling up to 15°* |
| **3** | Protetto da corpi solidi superiori a Ø 2,5 mm.<br>*Protected against solid matters (over Ø 2,5 mm)* | **3** | Protetto contro la pioggia.<br>*Rain proof fixture* |
| **4** | Protetto da corpi solidi superiori a Ø1 mm.<br>*Protected against solid matters (over Ø1 mm)* | **4** | Protetto contro gli spruzzi.<br>*Splash proof fixture* |
| **5** | Protetto contro la polvere<br>*Dust proof* | **5** | Protetto contro getti d'acqua<br>*Water jet proof* |
| **6** | Totalmente protetto contro la polvere<br>*Fully dust proof* | **6** | Protetto dalle ondate<br>*Wave proof* |
| **7** | N.A. | **7** | Protetto contro immersione<br>*Watertight immersion fixture.* |
| **8** | N.A. | **8** | Protetto contro immersione/sommersione prolungata<br>*Watertight immersion fixture for a long time.* |

## Classe di isolamento termico

## *Insulation class*

| **Classe / *Class*** | Δ t °C<br>Temp. ambiente: 40°C<br>*Ambient temperature: 40°C* |
|---|---|
| **A** | 65°C |
| **B** | 90°C |
| **F** | 115°C |
| **H** | 140°C |

## Tipi di servizio IEC

## *IEC duty cycle ratings*

| | | |
|---|---|---|
| **S1** | **Servizio continuo.** Funzionamento a carico costante per una durata sufficiente al raggiungimento dell' equilibrio termico. | ***Continuous duty.*** *The motor works at a constant load for enough time to reach temperature equilibrium* |
| **S2** | **Servizio di durata limitata.** Funzionamento a carico costante per una durata inferiore a quella necessaria al raggiungimento dell' equilibrio termico, seguito da un periodo di riposo tale da riportare il motore alla temperatura ambiente. | ***Short time duty****. The motor works at a constant load, but not long enough to reach temperature equilibrium, and the rest periods are long enough for the motor to reach ambient temperature.* |
| **S3** | **Servizio periodico intermittente.** Sequenze di cicli identici di marcia e di riposo a carico costante, senza raggiungimento dell' equilibrio termico. La corrente di spunto ha effetti trascurabili sul surriscaldamento del motore. | ***Intermittent periodic duty.*** *Sequential, identical run and rest cycles with constant load. Temperature equilibrium is never reached. Starting current has little effect on temperature rise.* |
| **S4** | **Servizio periodico intermittente con avviamento.** Sequenza di cicli di funzionamento identici di avviamento, marcia e riposo a carico costante, senza raggiungimento dell'equilibrio termico. La corrente di spunto ha effetti sul riscaldamento del motore. | ***Intermittent periodic duty with starting.*** *Sequential identical start, run and rest cycles with constant load. Temperature equilibrium is not reached, but starting current affects temperature rise.* |
| **S5** | **Servizio periodico intermittente con frenatura elettrica.** Sequenza di cicli di funzionamento identici di avviamento, marcia a carico costante, frenatura elettrica e riposo, senza raggiungimento dell'equilibrio termico. | ***Intermittent periodic duty with electric braking.*** *Sequential, identical cycles of starting, running at constant load, electric braking and rest. Temperature equilibrium is not reached.* |
| **S6** | **Servizio periodico ininterrotto con carico intermittente.** Sequenza di cicli di lavoro identici con carico costante e senza carico. Non ci sono periodi di riposo. | ***Continuous operation with intermittent load.*** *Sequential, identical cycles of running with constant load and running with no load. No rest periods.* |
| **S7** | **Servizio periodico ininterrotto con frenatura elettrica.** Sequenza di cicli di funzionamento identici di avviamento, marcia a carico costante e frenatura elettrica, senza periodi di riposo. | ***Continuous operation with electric braking.*** *Sequential, identical cycles of starting, running at constant load and electric braking. No rest periods.* |
| **S8** | **Servizio periodico ininterrotto con variazioni di carico e di velocità.** Sequenza di cicli identici di avviamento, marcia a carico costante e velocità definita, seguiti da marcia a carico costante differente e velocità differente dalla precedente. Non ci sono periodi di riposo. | ***Continuous operation with periodic changes in load and speed.*** *Sequential, identical, duty cycles of start, run at constant load and given speed, then run at other constant loads and speeds. No rest periods.* |

# EC020.120 - EC020.24E

## Caratteristiche / *Features*

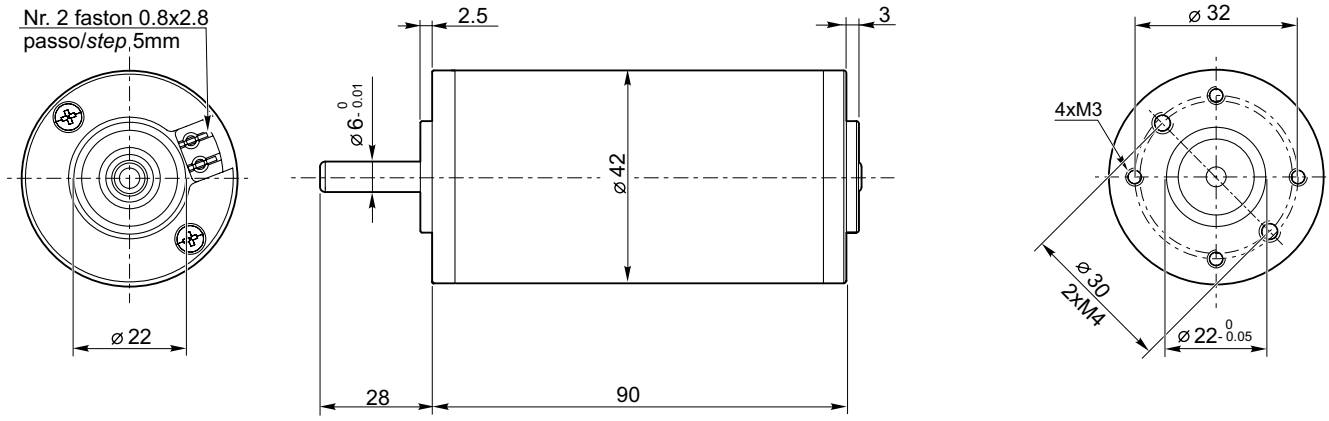
| | |
|---|---|
| Costruzione | Tubolare, senza ventilazione |
| Grandezza | Ø 42 mm |
| Potenza | 30 W S2 (20 W S1) |
| Magneti | 2 |
| Supporti | Cuscinetti a sfera |
| Fori di montaggio | 4 |
| Alimentazione | Bassa tensione, 12 o 24 Vcc |
| Spazzole | N° 2 di composto grafite-rame |
| Cavo di alimentazione | Connettori faston (0.8 x 2.8 mm) |
| Opzioni | Filtro EMC |
| | Encoder magnetico max. 2 imp/giro, 2 canali Max. |

| | |
|---|---|
| *Construction* | *Tubular, without fan* |
| *Size* | *Ø 42 mm* |
| *Power* | *30 W S2 (20 W S1)* |
| *Magnets* | *2* |
| *Bearings* | *Ball bearing* |
| *Mounting holes* | *4* |
| *Power supply* | *Low voltage, 12 or 24 Vdc* |
| *Brushes* | *2 brushes made of graphite/copper composite* |
| *Electric cable* | *Faston terminals (0.8 x 2.8 mm)* |
| *Options* | *EMC filter* |
| | *Magnetic encoder max 2 ppr, Max. 2 channels* |

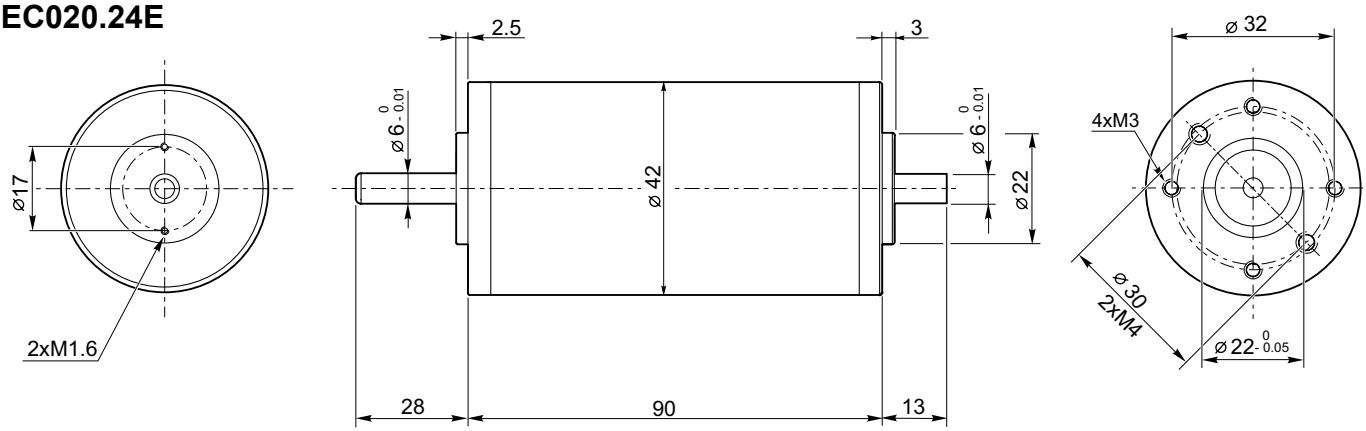
| Tipo *Type* | S | Pn [W] | V [V] | I [A] | IC | FF | Mn [Nm] | $n_1$ [$min^{-1}$] | IP | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| **EC020.120** | **S1** | 20 | 12 | 2.6 | B | 1 | 0.06 | 2850 | 20 | 0.4 |
| | **S2 6'** | 30 | | 3.5 | | | 0.08 | | | |
| **EC020.24E** | **S1** | 20 | 24 | 1.4 | | | 0.06 | | | |
| | **S2 6'** | 30 | | 1.9 | | | 0.08 | | | |

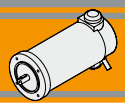
## Dimensioni / *Dimensions*

### EC020.120




### EC020.24E

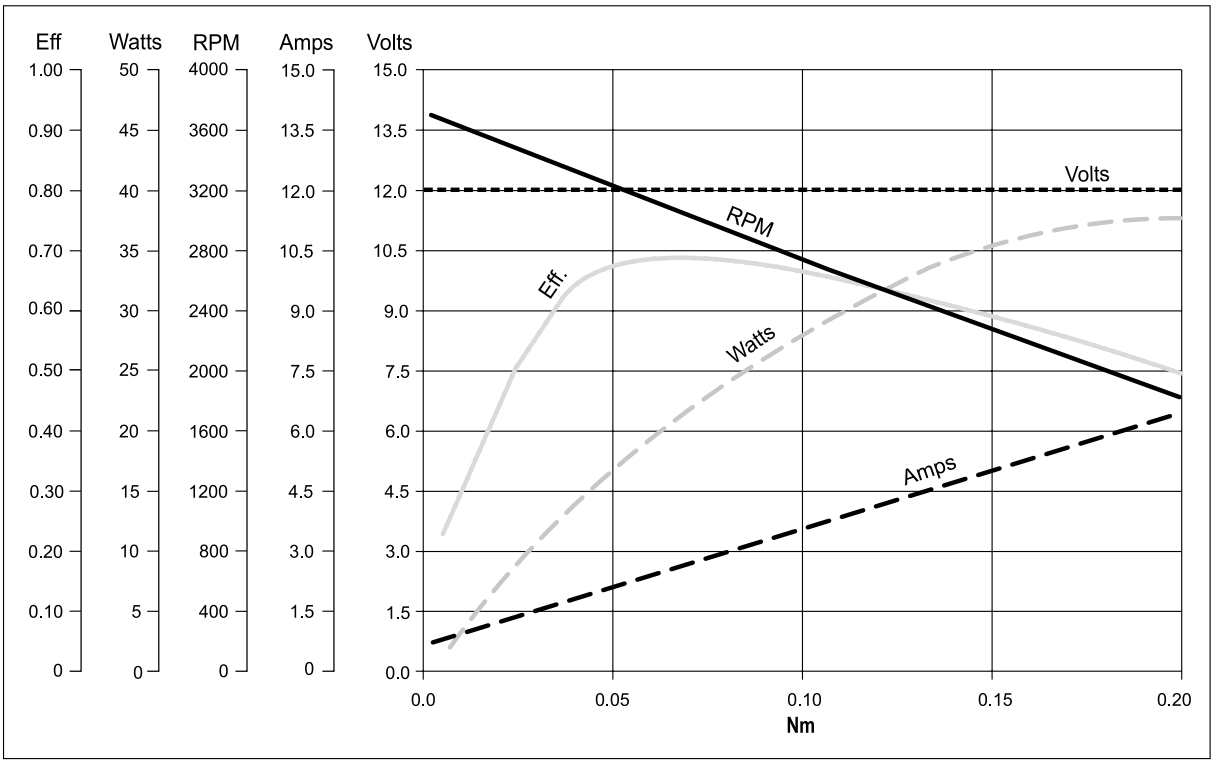




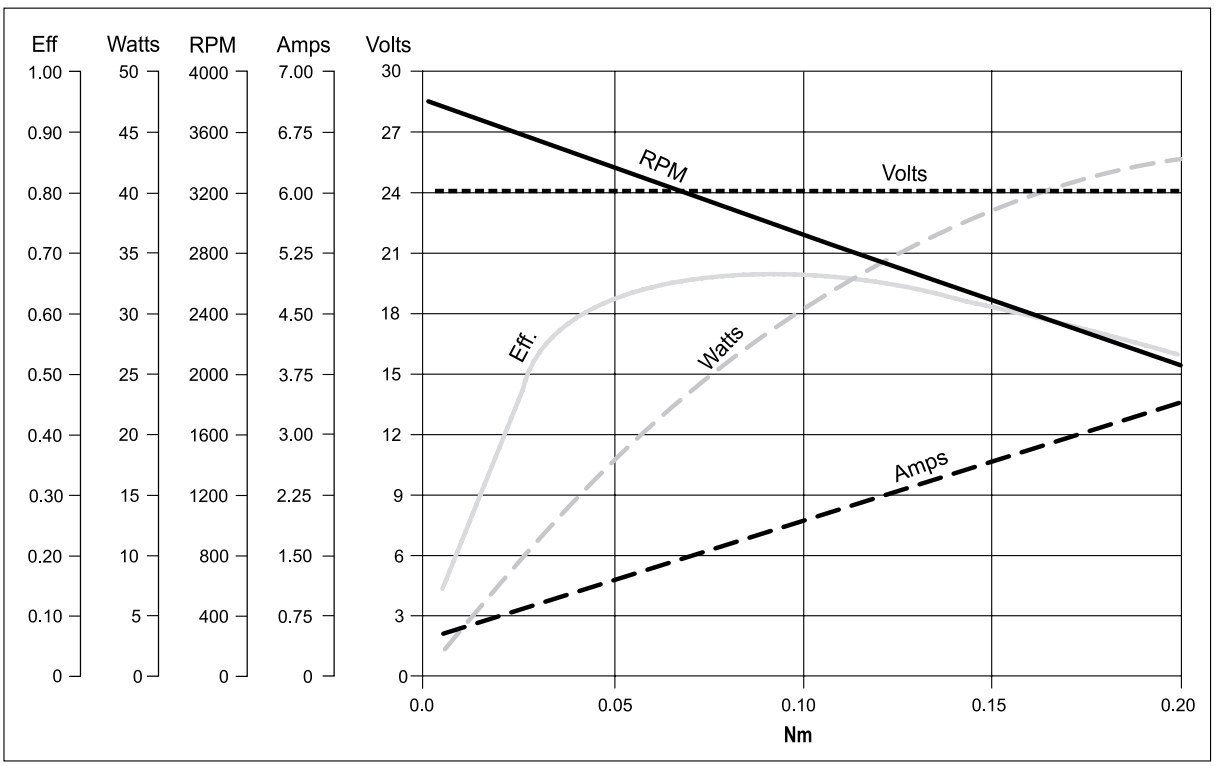
# EC020.120 - EC020.24E

**Prestazioni** ***Performances***

## EC020.120




## EC020.24E



# EC035.120 - EC035.240

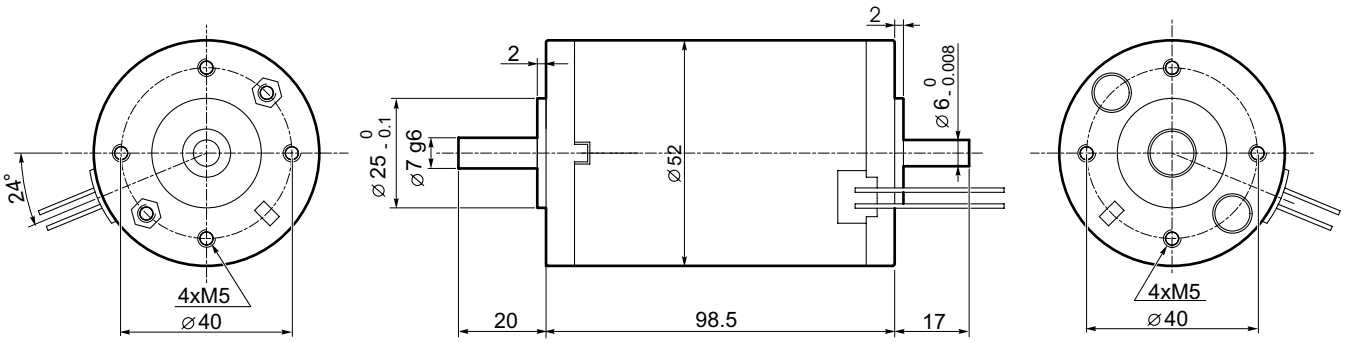
## Caratteristiche / *Features*

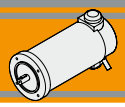
| | |
|---|---|
| Costruzione | Tubolare, senza ventilazione |
| Grandezza | Ø 52 mm |
| Potenza | 55 W S2 (35 W S1) |
| Magneti | 2 |
| Supporti | Cuscinetti a sfera |
| Fori di montaggio | 4 |
| Alimentazione | Bassa tensione, 12 o 24 Vcc |
| Spazzole | N° 2 interne di composto grafite-rame |
| Cavo di alimentazione | Lunghezza: 200 mm |
| Opzioni | Encoder magnetico max. 1 imp/giro, max.2 canali |

| | |
|---|---|
| *Construction* | *Tubular, without fan* |
| *Size* | *Ø 52 mm* |
| *Power* | *55 W S2 (35 W S1)* |
| *Magnets* | *2* |
| *Bearings* | *Ball bearings* |
| *Mounting holes* | *4* |
| *Power supply* | *Low voltage, 12 or 24 Vdc* |
| *Brushes* | *2 inside brushes made of graphite/copper composite* |
| *Electric cable* | *Length: 200 mm* |
| *Options* | *Magnetic encoder max 1 ppr, Max. 2 channels* |

| Tipo *Type* | S | Pn [W] | V [V] | I [A] | IC | FF | Mn [Nm] | $n_1$ [$min^{-1}$] | IP | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| **EC035.120** | **S1** | 35 | 12 | 5.2 | F | 1 | 0.11 | 3000 | 44 | 0.8 |
| | **S2 9'** | 55 | | 8.0 | | | 0.18 | | | |
| **EC035.240** | **S1** | 35 | 24 | 2.6 | F | 1 | 0.11 | | 44 | 0.8 |
| | **S2 9'** | 55 | | 4.0 | | | 0.18 | | | |

## Dimensioni / *Dimensions*

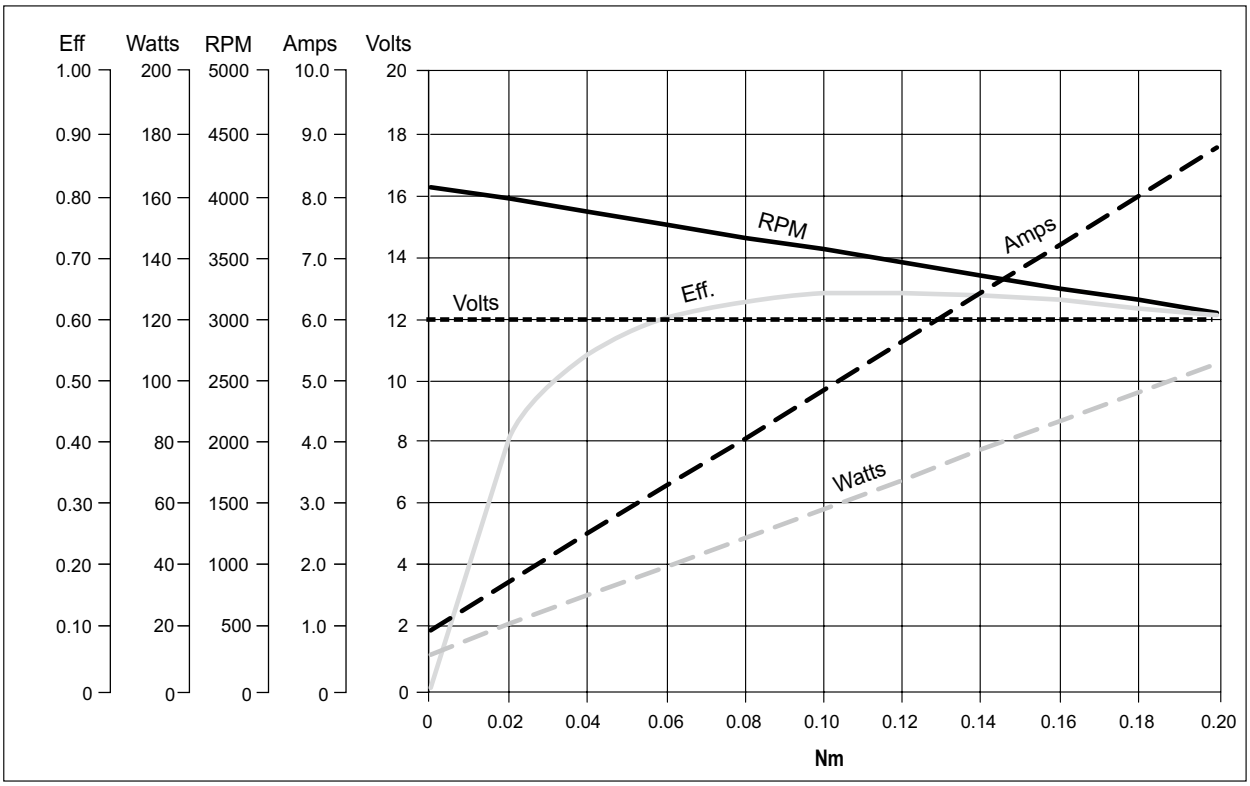




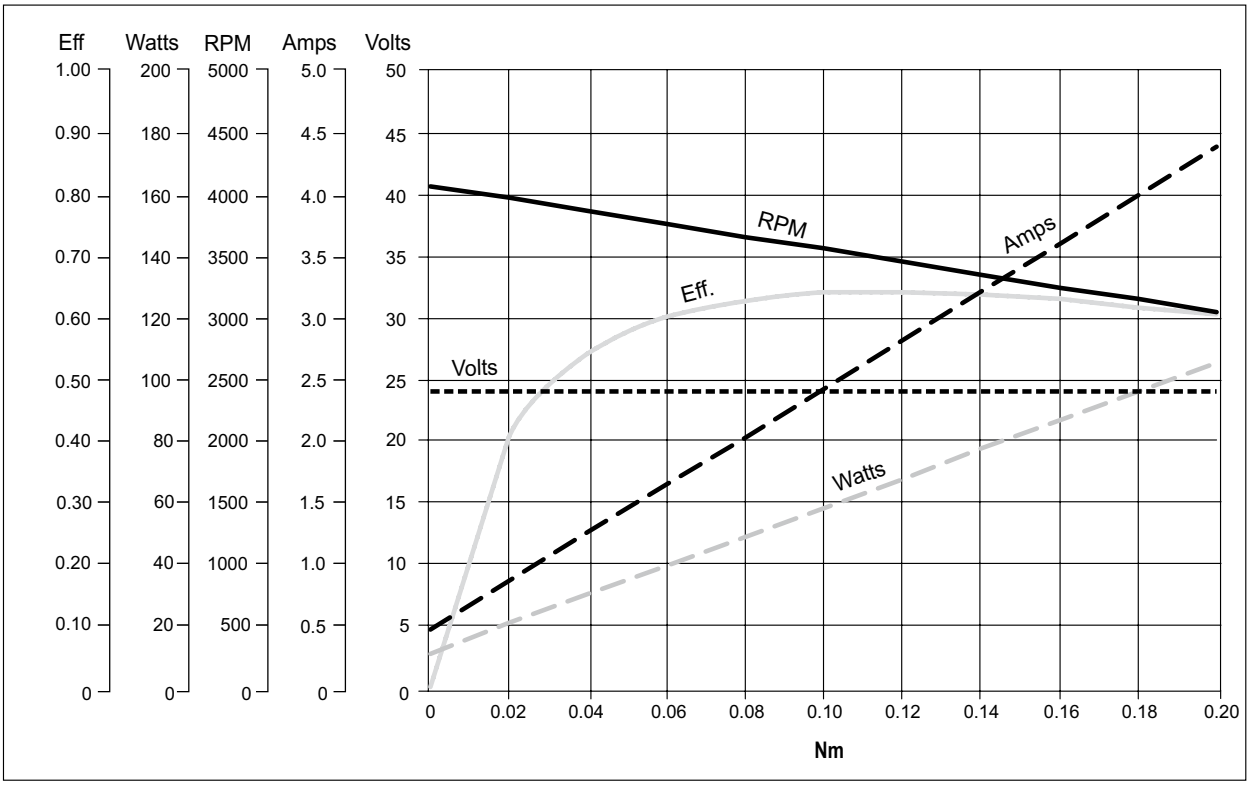
# EC035.120 - EC035.240

**Prestazioni** ***Performances***

## EC035.120




## EC035.240



# EC050.12E - EC050.24E

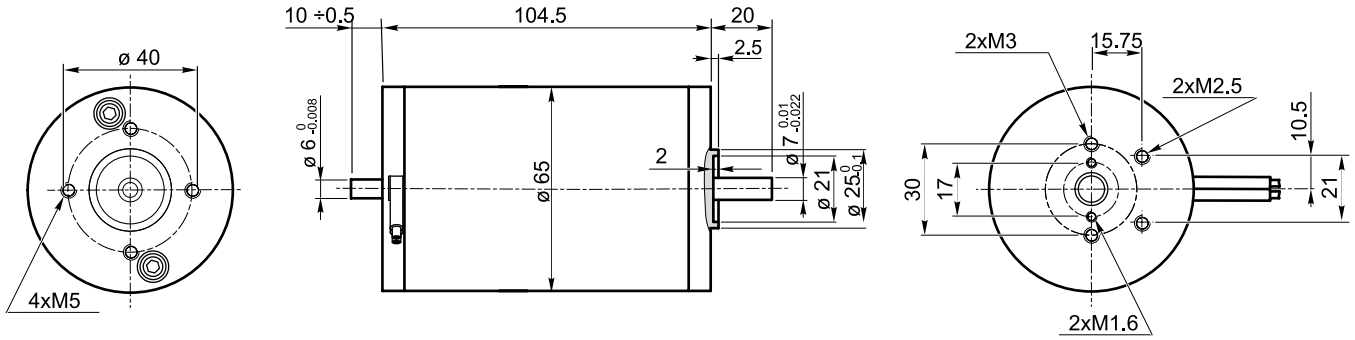
## Caratteristiche / *Features*

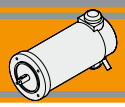
| | |
|---|---|
| Costruzione | Tubolare, senza ventilazione |
| Grandezza | Ø 65 mm |
| Potenza | 70 W S2 (50 W S1) |
| Magneti | 2 |
| Supporti | Cuscinetti a sfera |
| Fori di montaggio | 4 |
| Alimentazione | Bassa tensione, 12 o 24 Vcc |
| Spazzole | N° 2 interne di composto grafite-rame |
| Cavo di alimentazione | Lunghezza: 200 mm |
| Bisporgenza | Standard |

| | |
|---|---|
| *Construction* | *Tubular, without fan* |
| *Size* | *Ø 65 mm* |
| *Power* | *70 W S2 (50 W S1)* |
| *Magnets* | *2* |
| *Bearings* | *Ball bearings* |
| *Mounting holes* | *4* |
| *Power supply* | *Low voltage, 12 or 24 Vdc* |
| *Brushes* | *2 inside brushes made of graphite/copper composite* |
| *Electric cable* | *Length: 200 mm* |
| *Rear Shaft* | *Standard* |

| Tipo *Type* | S | Pn [W] | V [V] | I [A] | IC | FF | Mn [Nm] | $n_1$ [$min^{-1}$] | IP | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| **EC050.12E** | **S1** | 50 | 12 | 6.5 | F | 1 | 0.16 | 3000 | 44 | 1.2 |
| | **S2 15'** | 70 | | 9.0 | | | 0.22 | | | |
| **EC050.24E** | **S1** | 50 | 24 | 3.2 | | | 0.16 | | | |
| | **S2 15'** | 70 | | 4.5 | | | 0.22 | | | |

## Dimensioni / *Dimensions*

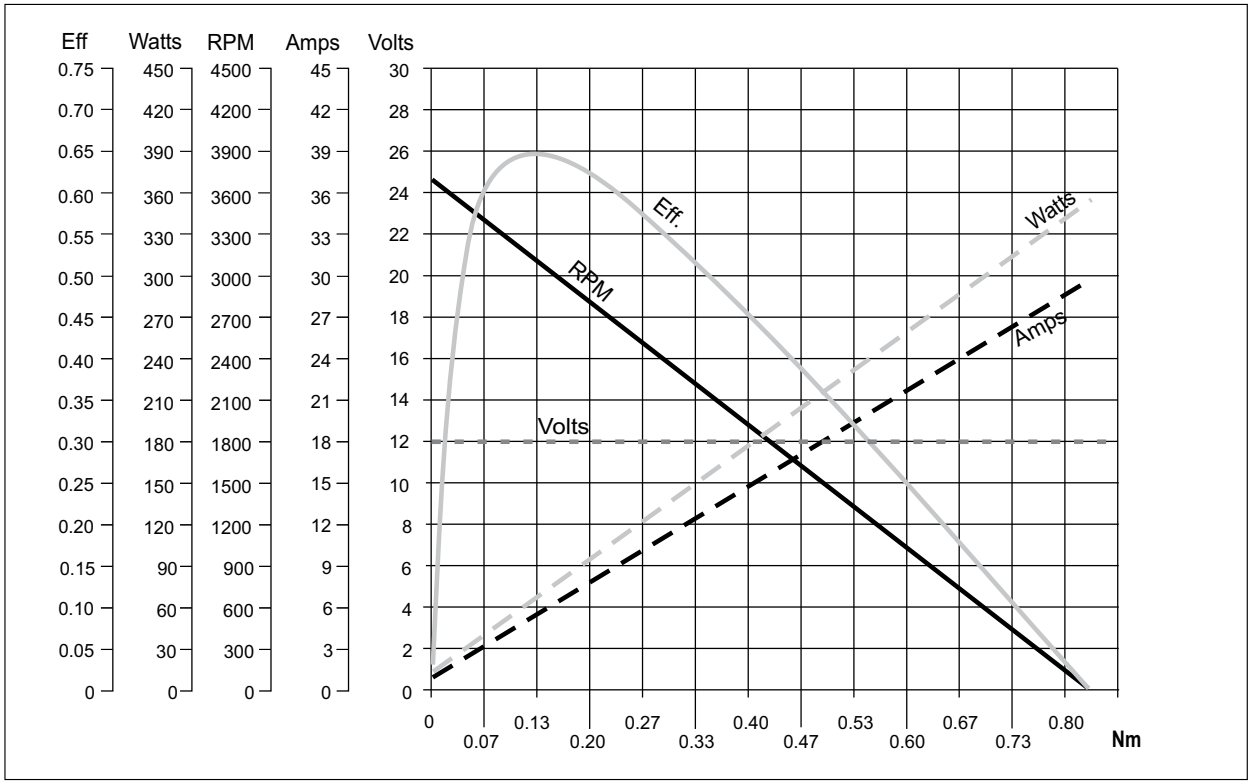




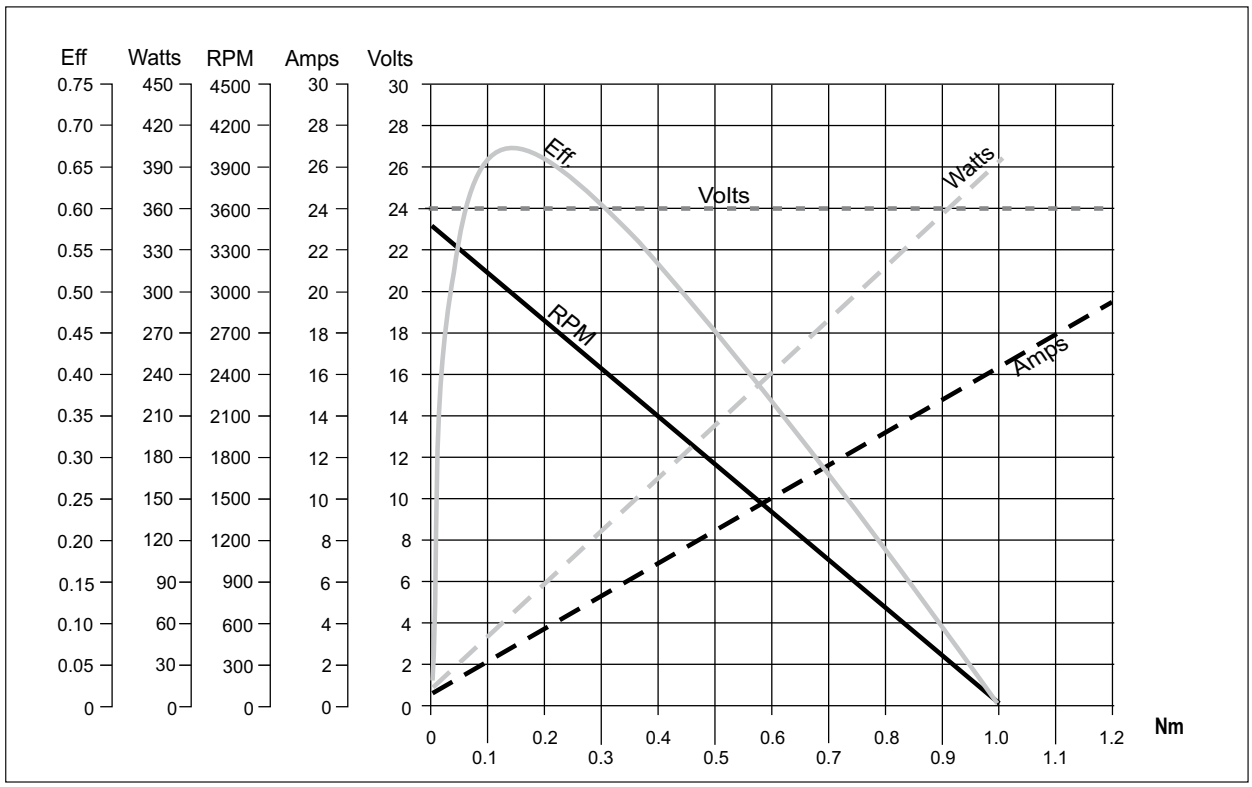
# EC050.12E - EC050.24E

**Prestazioni** ***Performances***

## EC050.12E




## EC050.24E



# EC070.120 - EC070.240

## Caratteristiche / *Features*

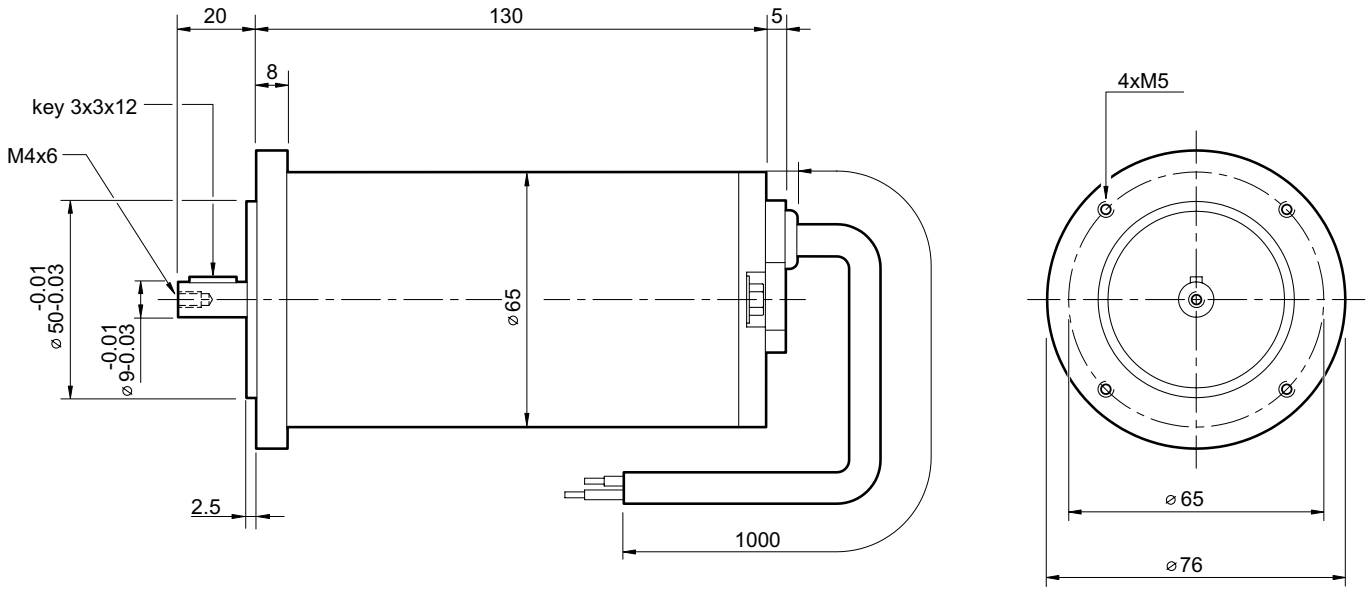
| | |
|---|---|
| Costruzione | Tubolare, senza ventilazione |
| Grandezza | Ø 65 mm |
| Potenza | 100 W S2 |
| Magneti | 2 |
| Supporti | Cuscinetti a sfera |
| Fori di montaggio | 4 |
| Alimentazione | Bassa tensione, 12 o 24 Vcc |
| Spazzole | N° 2 interne di composto grafite-rame |
| Cavo di alimentazione | Lunghezza: 1000 mm |

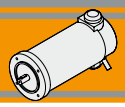
| | |
|---|---|
| *Construction* | *Tubular, without fan* |
| *Size* | *Ø 65 mm* |
| *Power* | *100 W S2* |
| *Magnets* | *2* |
| *Bearings* | *Ball bearings* |
| *Mounting holes* | *4* |
| *Power supply* | *Low voltage, 12 or 24 Vdc* |
| *Brushes* | *2 inside brushes made of graphite/copper composite* |
| *Electric cable* | *Length: 1000 mm* |

| Tipo *Type* | S | Pn [W] | V [V] | I [A] | IC | FF | Mn [Nm] | $n_1$ [$min^{-1}$] | IP | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| **EC070.120** | **S2 20'** | 100 | 12 | 11.8 | F | 1 | 0.31 | 3000 | 44 | 1.7 |
| **EC070.240** | **S2 20'** | 100 | 24 | 5.9 | | | 0.31 | | | |

Nota: Per servizio continuativo contattare il Servizio Tecnico.
*Note: For continous duty please contact our Technical Service.*

## Dimensioni / *Dimensions*

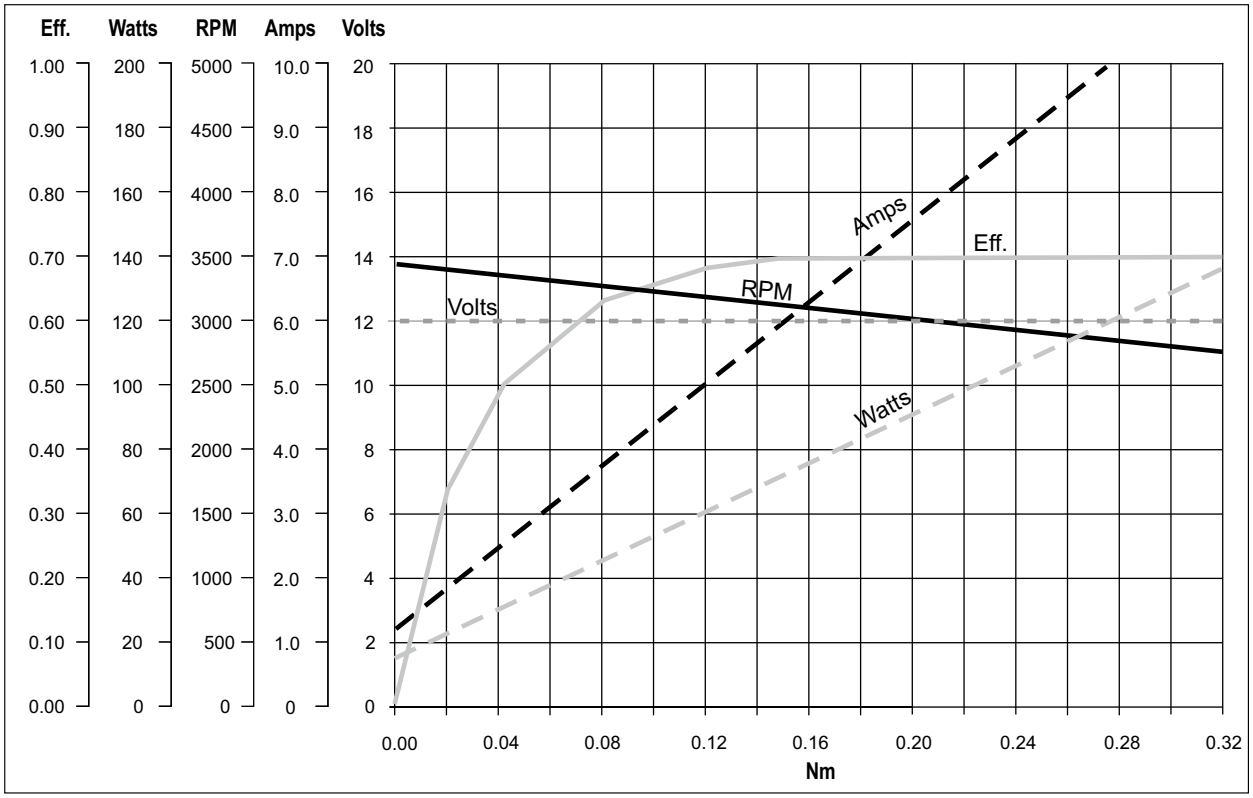




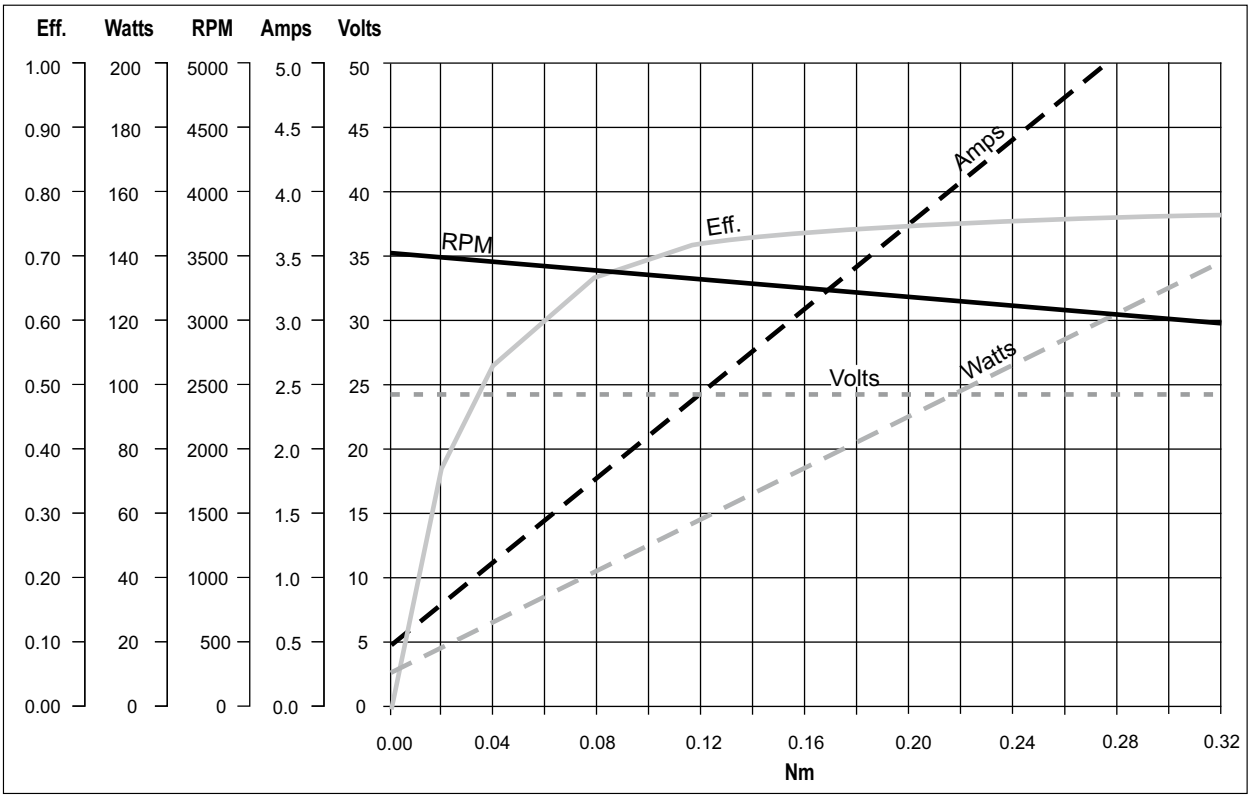
# EC070.120 - EC070.240

**Prestazioni** ***Performances***

## EC070.120




## EC070.240



# EC100.120 - EC100.240 - EC100.24E

## Caratteristiche / *Features*

| | |
|---|---|
| Costruzione | Tubolare, senza ventilazione |
| Grandezza | Ø 80 mm |
| Potenza | 140 W S2 (100 W S1) |
| Magneti | 2 |
| Supporti | Cuscinetti a sfera |
| Fori di montaggio | 4 |
| Alimentazione | Bassa tensione, 12 o 24 Vcc |
| Spazzole | N° 2 di composto grafite-rame |
| Dimensione spazzole | LxPxH = 17.1 x 6.5 x 16.7 mm |
| Cavo di alimentazione | Lunghezza: 1000 mm |
| Bisporgenza | Standard solo EC100.24E |

| | |
|---|---|
| *Construction* | *Tubular, without fan* |
| *Size* | *Ø 80 mm* |
| *Power* | *140 W S2 (100 W S1)* |
| *Magnets* | *2* |
| *Bearings* | *Ball bearings* |
| *Mounting holes* | *4* |
| *Power supply* | *Low voltage, 12 or 24 Vdc* |
| *Brushes* | *2 inside brushes made of graphite/copper composite* |
| *Brushes size* | *LxWxH = 17.1 x 6.5 x 16.7 mm* |
| *Electric cable* | *Length: 1000 mm* |
| *Rear shaft* | *Standard only EC100.24E* |

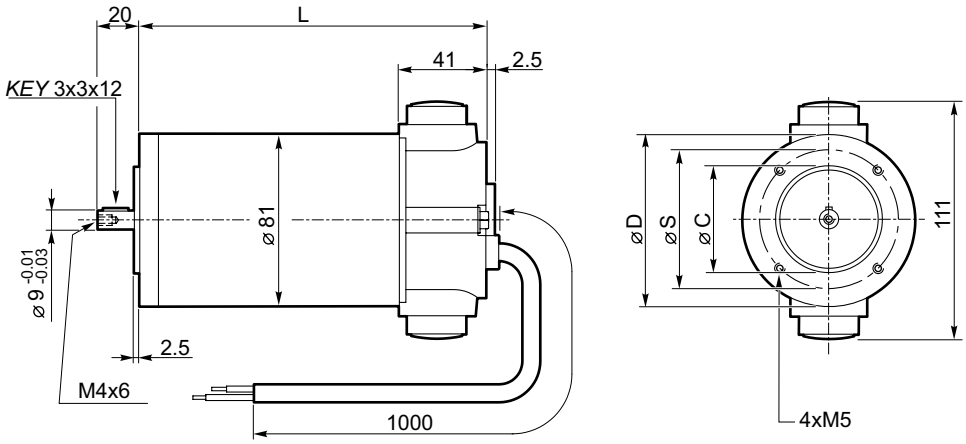
| Tipo *Type* | S | Pn [W] | V [V] | I [A] | IC | FF | Mn [Nm] | $n_1$ [$min^{-1}$] | IP | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| **EC100.120** | **S1** | 100 | 12 | 12 | F | 1 | 0.31 | 3000 | 44 | 2.7 |
| | **S2 25'** | 140 | | 16.8 | | | 0.43 | | | |
| **EC100.240** | **S1** | 100 | 24 | 6 | | | 0.31 | | | |
| | **S2 25'** | 140 | | 8.4 | | | 0.43 | | | |
| **EC100.24E** | **S1** | 100 | | 6 | | | 0.31 | | | |
| | **S2 25'** | 140 | | 8.4 | | | 0.43 | | | |

## Dimensioni / *Dimensions*

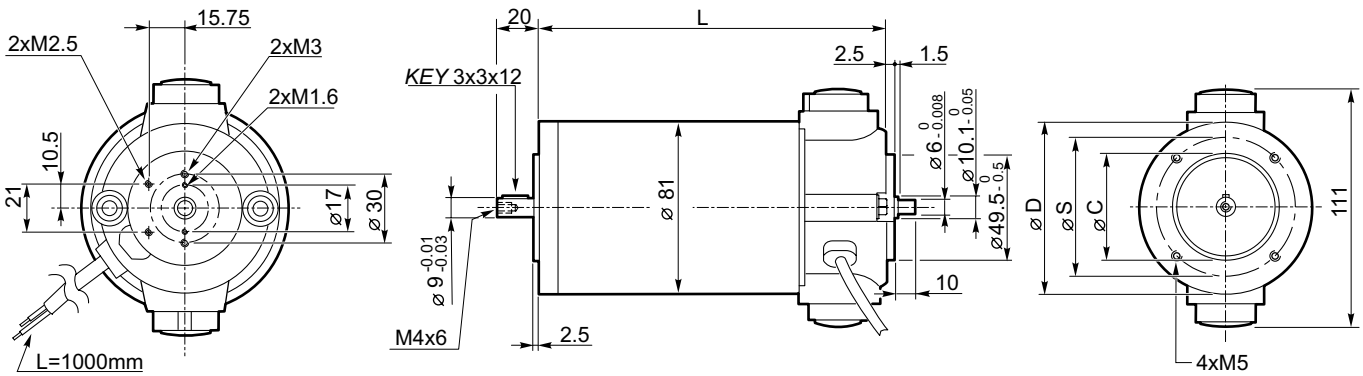
### EC100.120
### EC100.240

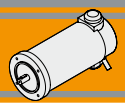
| 56 B14 | |
|---|---|
| **L** | 153 |
| **D** | 80 |
| **S** | 65 |
| **C** ( -0.03 / -0.01) | 50 |
| **63B14*** | |
| **L** | 155 |
| **D** | 90 |
| **S** | 75 |
| **C** ( -0.03 / -0.01) | 60 |

* Usare boccola 9/11
** Use sleeve 9/11*




### EC100.24E

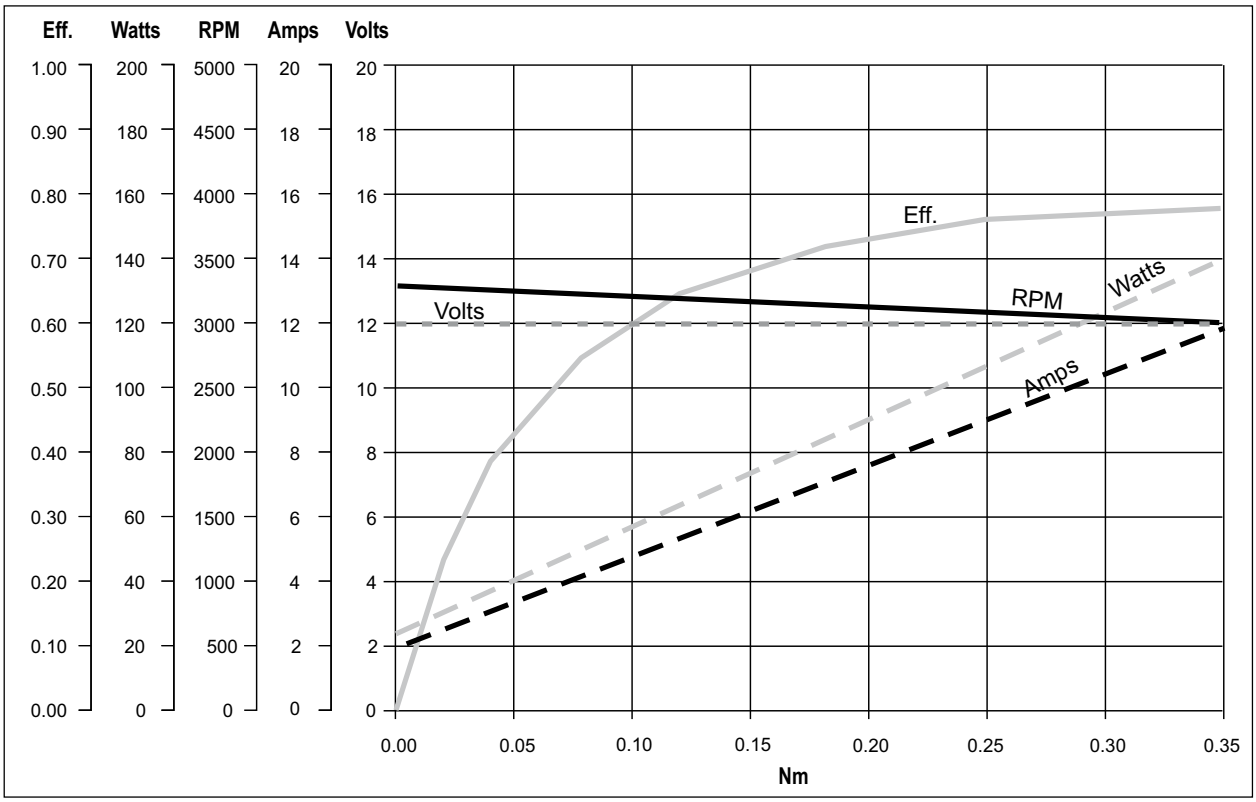




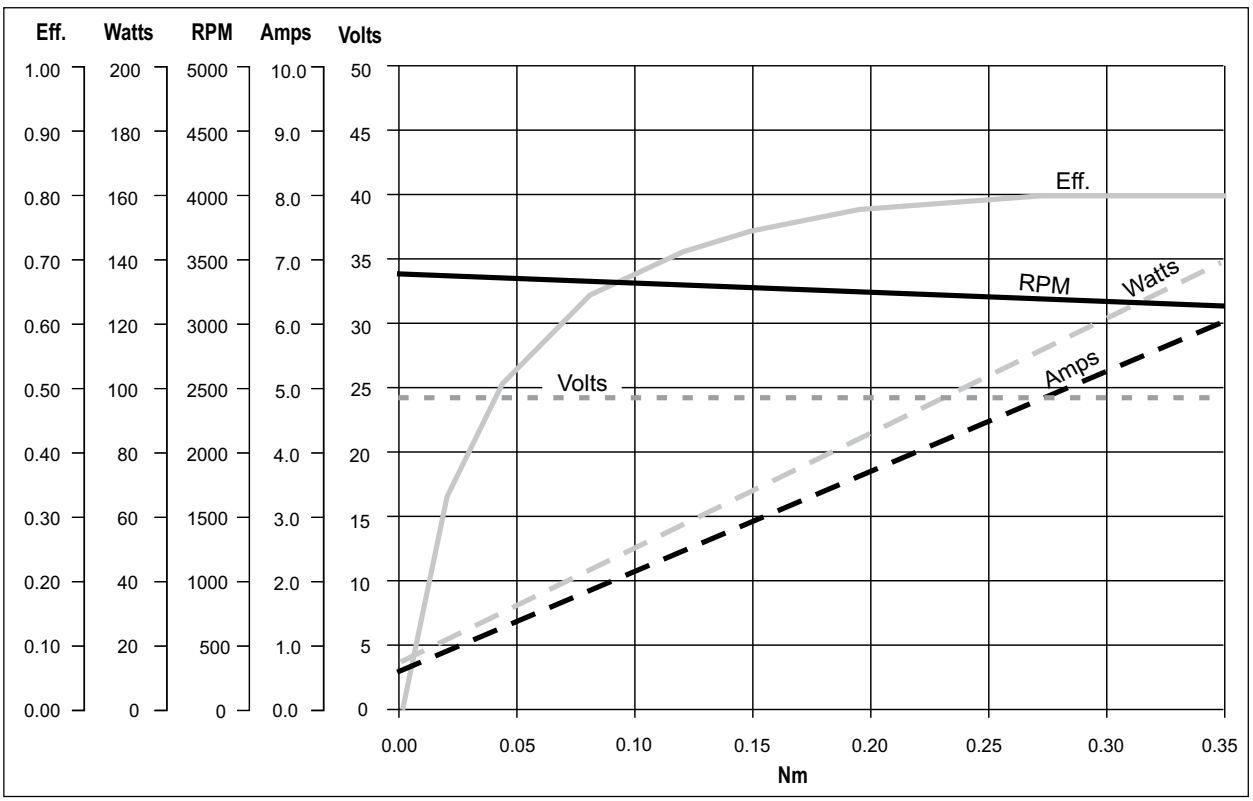
# EC100.120 - EC100.240 - EC100.24E

**Prestazioni** ***Performances***

## EC100.120




## EC100.240 - EC100.24E



# EC180.120 - EC180.240 - EC180.24E

## Caratteristiche / *Features*

| | |
|---|---|
| Costruzione | Tubolare, senza ventilazione |
| Grandezza | Ø 80 mm |
| Potenza | 250 W S2 (180 W S1) |
| Magneti | 2 |
| Supporti | Cuscinetti a sfera |
| Fori di montaggio | 4 |
| Alimentazione | Bassa tensione, 12 o 24 Vcc |
| Spazzole | N° 2 di composto grafite-rame |
| Dimensione spazzole | LxPxH = 17.1 x 6.5 x 16.7 mm |
| Cavo di alimentazione | Lunghezza:1000 mm |
| Bisporgenza | Standard solo EC180.24E |

| | |
|---|---|
| *Construction* | *Tubular, without fan* |
| *Size* | *Ø 80 mm* |
| *Power* | *250 W S2 (180 W S1)* |
| *Magnets* | *2* |
| *Bearings* | *Ball bearings* |
| *Mounting holes* | *4* |
| *Power supply* | *Low voltage, 12 or 24 Vdc* |
| *Brushes* | *2 inside brushes made of graphite/copper composite* |
| *Brushes size* | *LxPxH = 17.1 x 6.5 x 16.7 mm* |
| *Electric cable* | *Length: 1000 mm* |
| *Rear shaft* | *Standard only EC180.24E* |

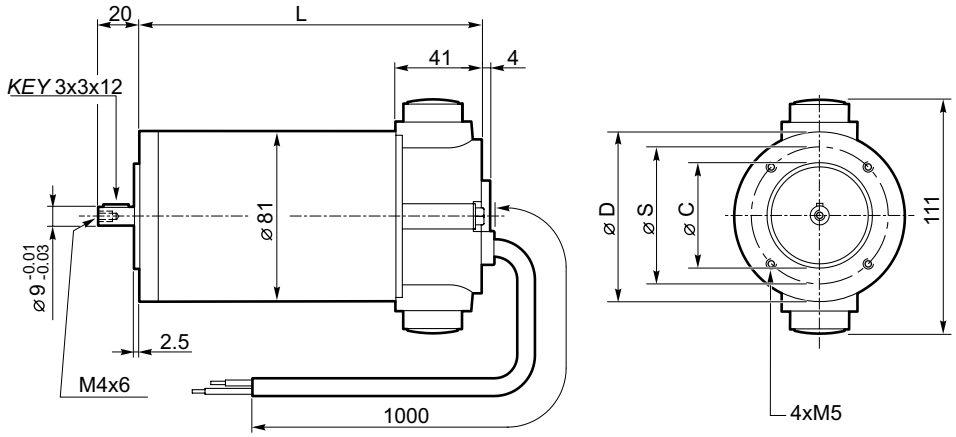
| Tipo *Type* | S | Pn [W] | V [V] | I [A] | IC | FF | Mn [Nm] | $n_1$ [$min^{-1}$] | IP | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| **EC180.120** | **S1** | 180 | 12 | 21.5 | F | 1 | 0.57 | 3000 | IP44 | 3.4 |
| | **S2 25'** | 250 | | 30 | | | 0.8 | | | |
| **EC180.240** | **S1** | 180 | 24 | 10.8 | | | 0.57 | | | |
| | **S2 25'** | 250 | | 15 | | | 0.8 | | | |
| **EC180.24E** | **S1** | 180 | | 10.8 | | | 0.57 | | | |
| | **S2 25'** | 250 | | 15 | | | 0.8 | | | |

## Dimensioni / *Dimensions*

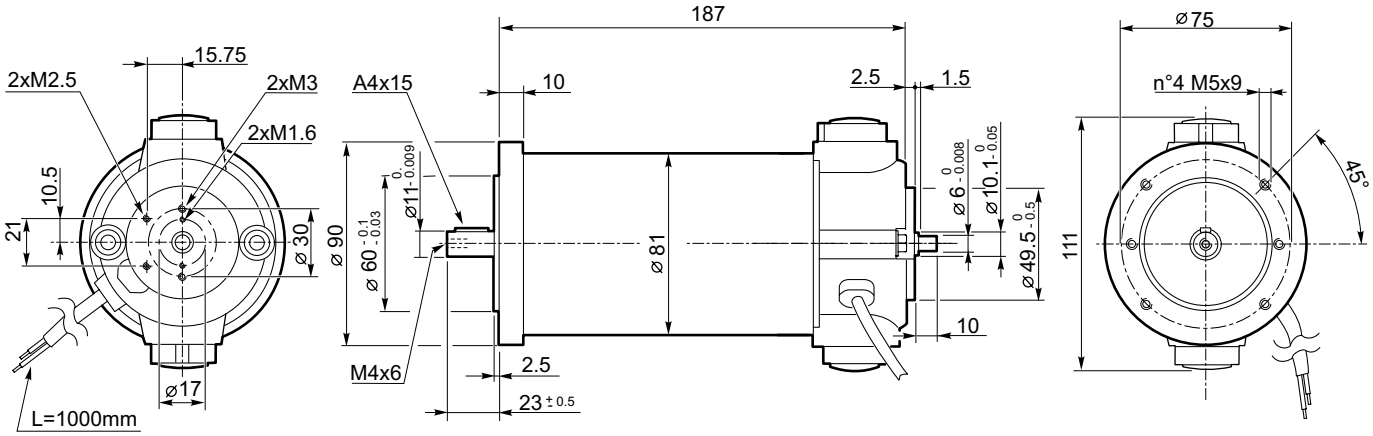
### EC180.120
### EC180.240

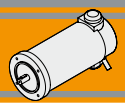
| 56 B14 | |
|---|---|
| **L** | 185 |
| **D** | 80 |
| **S** | 65 |
| **C** ( -0.03 / -0.01) | 50 |
| **63B14*** | |
| **L** | 187 |
| **D** | 90 |
| **S** | 75 |
| **C** ( -0.03 / -0.01) | 60 |

* Usare boccola 9/11
** Use sleeve 9/11*




### EC180.24E

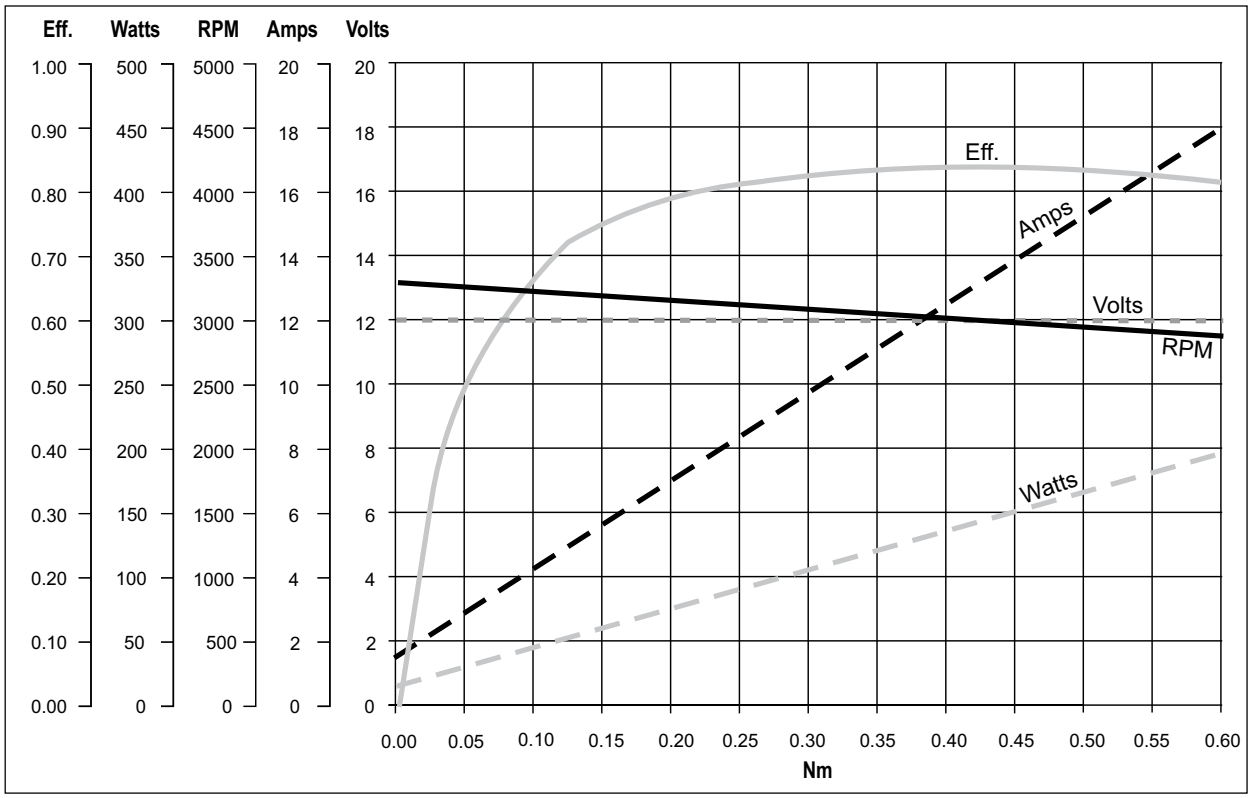




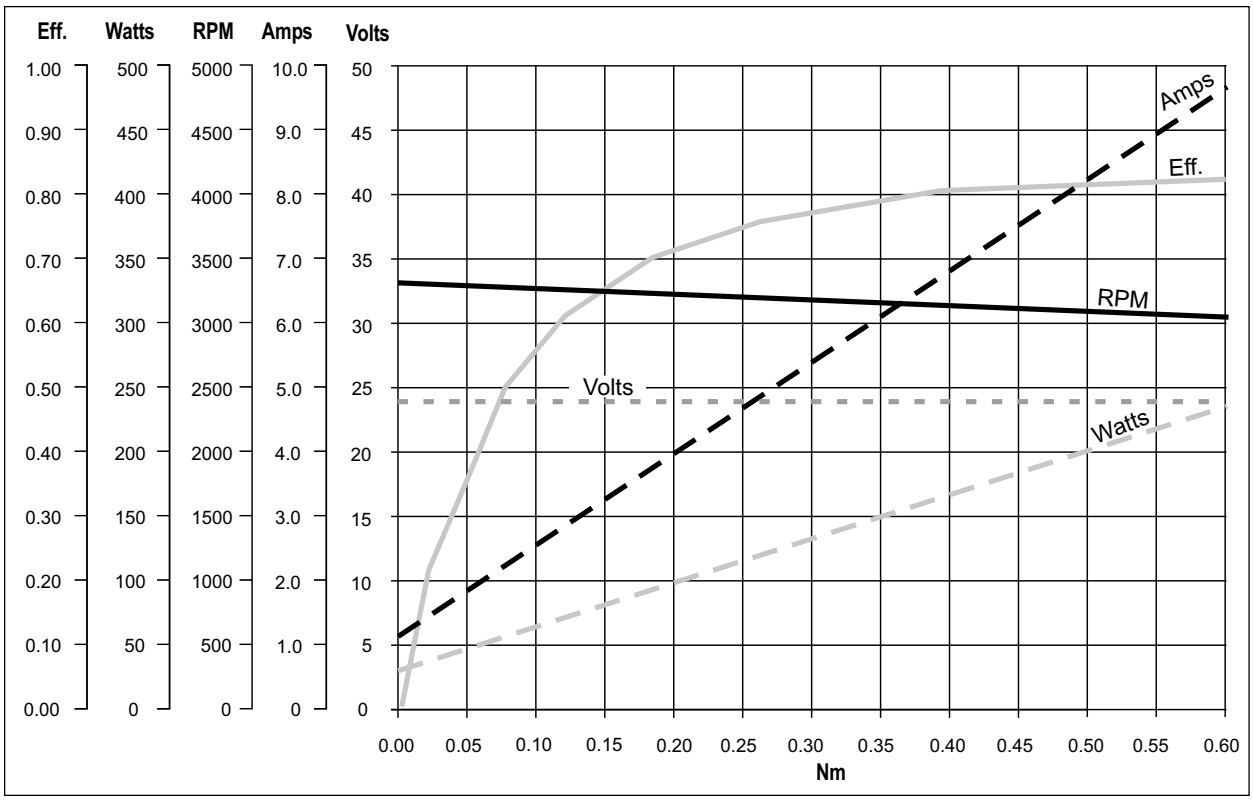
# EC180.120 - EC180.240 - EC180.24E

**Prestazioni** ***Performances***

## EC180.120




## EC180.240 - EC180.24E



# EC250.120 - EC250.240

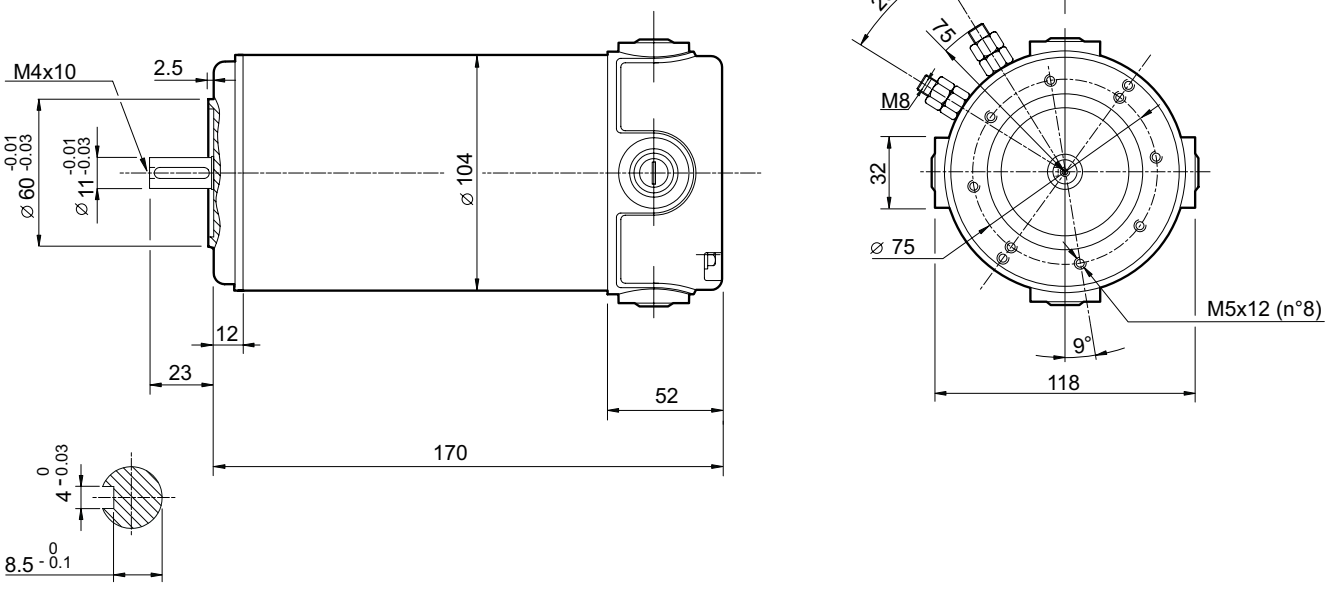
## Caratteristiche / *Features*

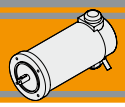
| | |
|---|---|
| Costruzione | Tubolare, senza ventilazione |
| Grandezza | Ø 104 mm |
| Potenza | 350 W S2 (250 W S1) |
| Magneti | 4 |
| Supporti | Cuscinetti a sfera |
| Fori di montaggio | 8 |
| Alimentazione | Bassa tensione, 12 o 24 Vcc |
| Spazzole | N° 4 di composto grafite-rame |
| Dimensione spazzole | LxPxH = 18.9 x 9.5 x 16.7 mm |
| Terminali | 2 con doppio dado di fissaggio |

| | |
|---|---|
| *Construction* | *Tubular, without fan* |
| *Size* | *Ø 104 mm* |
| *Power* | *350 W S2 (250 W S1)* |
| *Magnets* | *4* |
| *Bearings* | *Ball bearings* |
| *Mounting holes* | *8* |
| *Power supply* | *Low voltage, 12 or 24 Vdc* |
| *Brushes* | *4 inside brushes made of graphite/copper composite* |
| *Brushes size* | *LxPxH = 18.9 x 9.5 x 16.7 mm* |
| *Leads terminals* | *2, with double nut* |

| Tipo *Type* | S | Pn [W] | V [V] | I [A] | IC | FF | Mn [Nm] | $n_1$ [$min^{-1}$] | IP | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| **EC250.120** | **S1** | 250 | 12 | 30 | F | 1 | 0.8 | 3000 | IP44 | 4.15 |
| | **S2 25'** | 350 | | 38.5 | | | 1.12 | | | |
| **EC250.240** | **S1** | 250 | 24 | 15 | | | 0.8 | | | |
| | **S2 25'** | 350 | | 20.5 | | | 1.12 | | | |

## Dimensioni / *Dimensions*

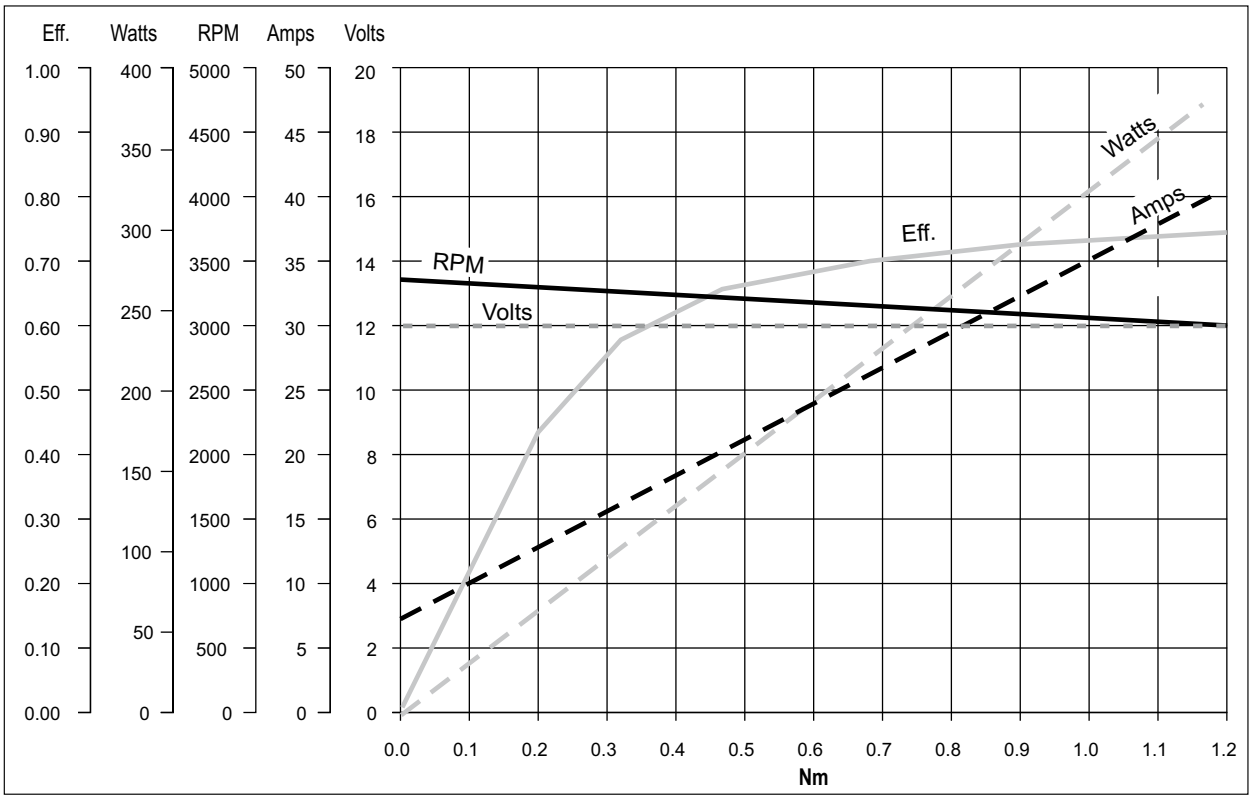




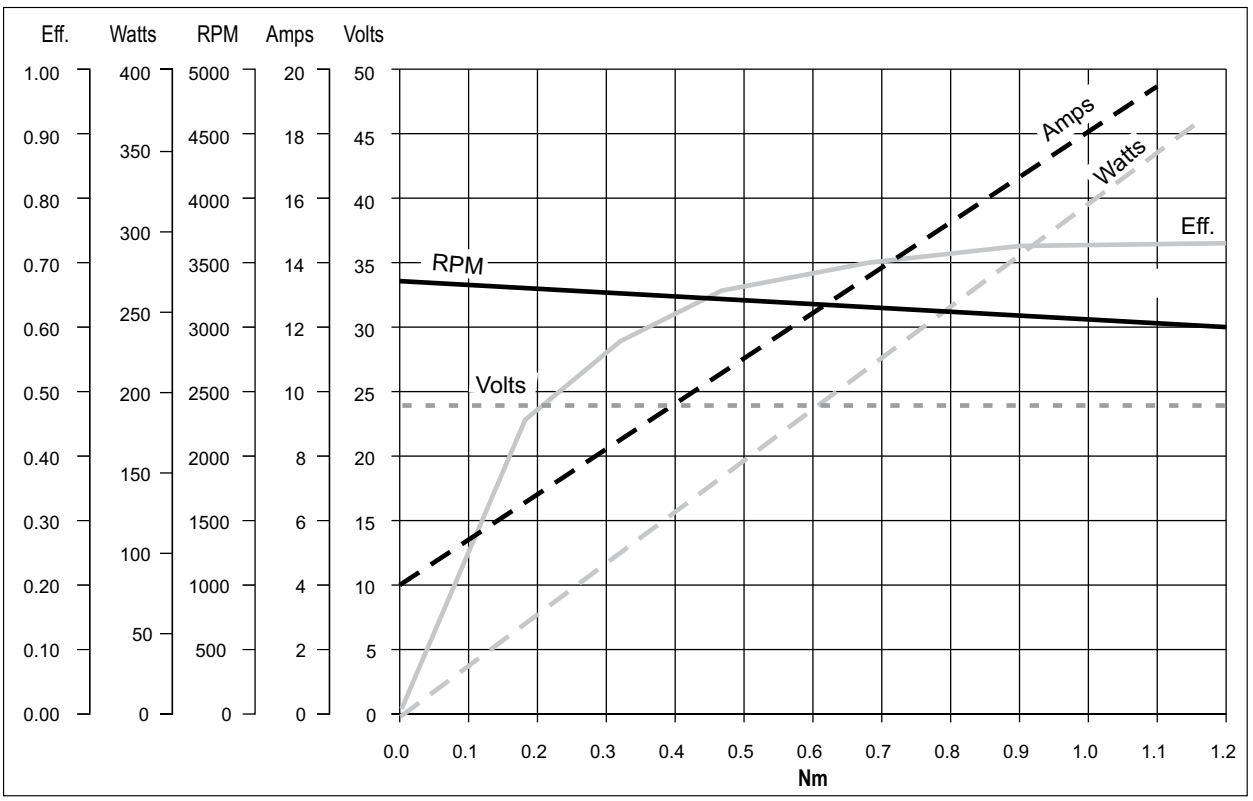
# EC250.120 - EC250.240

**Prestazioni** ***Performances***

## EC250.120




## EC250.240



# EC350.120 - EC350.120BR - EC350.240 - EC350.240BR

## Caratteristiche / *Features*

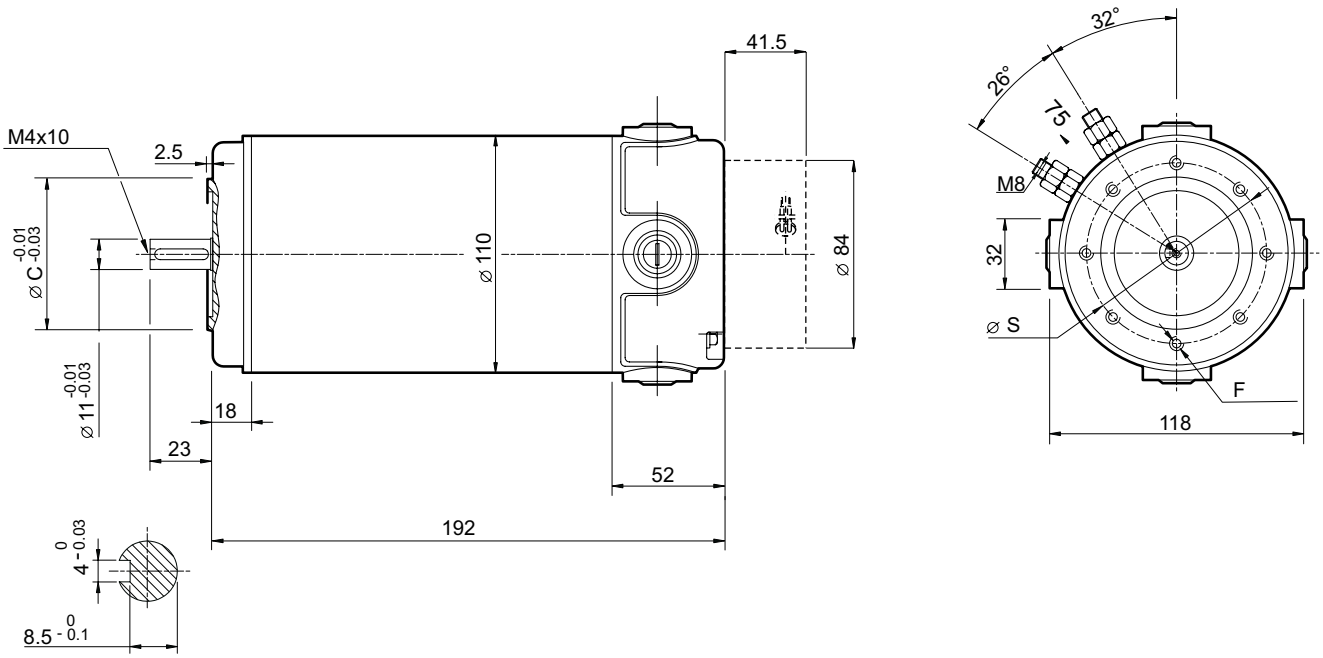
| | |
|---|---|
| Costruzione | Tubolare, senza ventilazione |
| Grandezza | Ø 110 mm |
| Potenza | 500 W S2 (350 W S1) |
| Magneti | 4 |
| Supporti | Cuscinetti a sfera |
| Fori di montaggio | 8 |
| Alimentazione | Bassa tensione, 12 o 24 Vcc |
| Spazzole | N° 4 di composto grafite-rame |
| Dimensione spazzole | LxPxH = 18.9 x 9.5 x 16.7 mm |
| Terminali | 2 con dadi di fissaggio |
| Freno | Elettromagnetico |

| | |
|---|---|
| *Construction* | *Tubular, without fan* |
| *Size* | *Ø 110 mm* |
| *Power* | *500 W S2 (350 W S1)* |
| *Magnets* | *4* |
| *Bearings* | *Ball bearings* |
| *Mounting holes* | *8* |
| *Power supply* | *Low voltage, 12 or 24 Vdc* |
| *Brushes* | *4 brushes made of graphite/copper composite* |
| *Brushes size* | *LxPxH = 18.9 x 9.5 x 16.7 mm* |
| *Leads terminals* | *2, with double nut* |
| *Brake* | *Electromagnetic* |

| Tipo *Type* | S | Pn [W] | V [V] | I [A] | IC | FF | Mn [Nm] | $n_1$ [$min^{-1}$] | IP | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| **EC350.120** | **S1** | 350 | 12 | 42 | F | 1 | 1.12 | 3000 | 44 | 5.1 |
| **EC350.120BR** | **S2 30'** | 500 | | 58.8 | | | 1.57 | | | 5.9 |
| **EC350.240** | **S1** | 350 | 24 | 21 | | | 1.12 | | | 5.3 |
| **EC350.240BR** | **S2 30'** | 500 | | 29.4 | | | 1.57 | | | 6.1 |

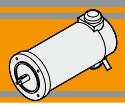
| Freno *Brake* | $M_{Br}$ [Nm] | Pe [W] | V [V] | $T_r$ [≤ ms] | $T_f$ [≤ ms] | $n_1$ max [$min^{-1}$] |
|---|---|---|---|---|---|---|
| **EC350.120BR** | **5** | 25 | 12 | 75 | 65 | 3000 |
| **EC350.240BR** | | | 24 | | | |

## Dimensioni / *Dimensions*




| 63 B14 | | 71 B14* | |
|---|---|---|---|
| **S** | 75 | **S** | 85 |
| **C** ( -0.03 / -0.01) | 60 | **C** ( -0.03 / -0.01) | 70 |
| **F** | 8 - M5 | **F** | 8 - M6 |

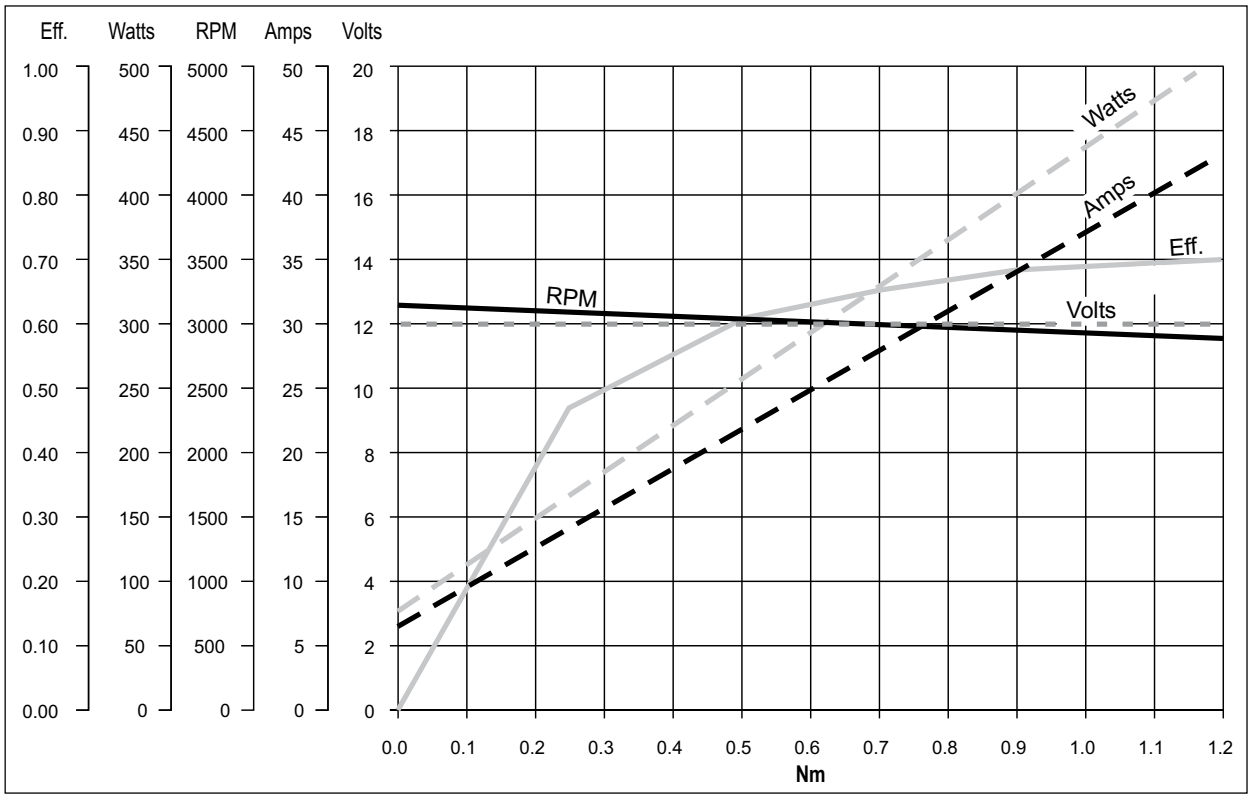
* Usare boccola 11/14
** Use sleeve 11/14*



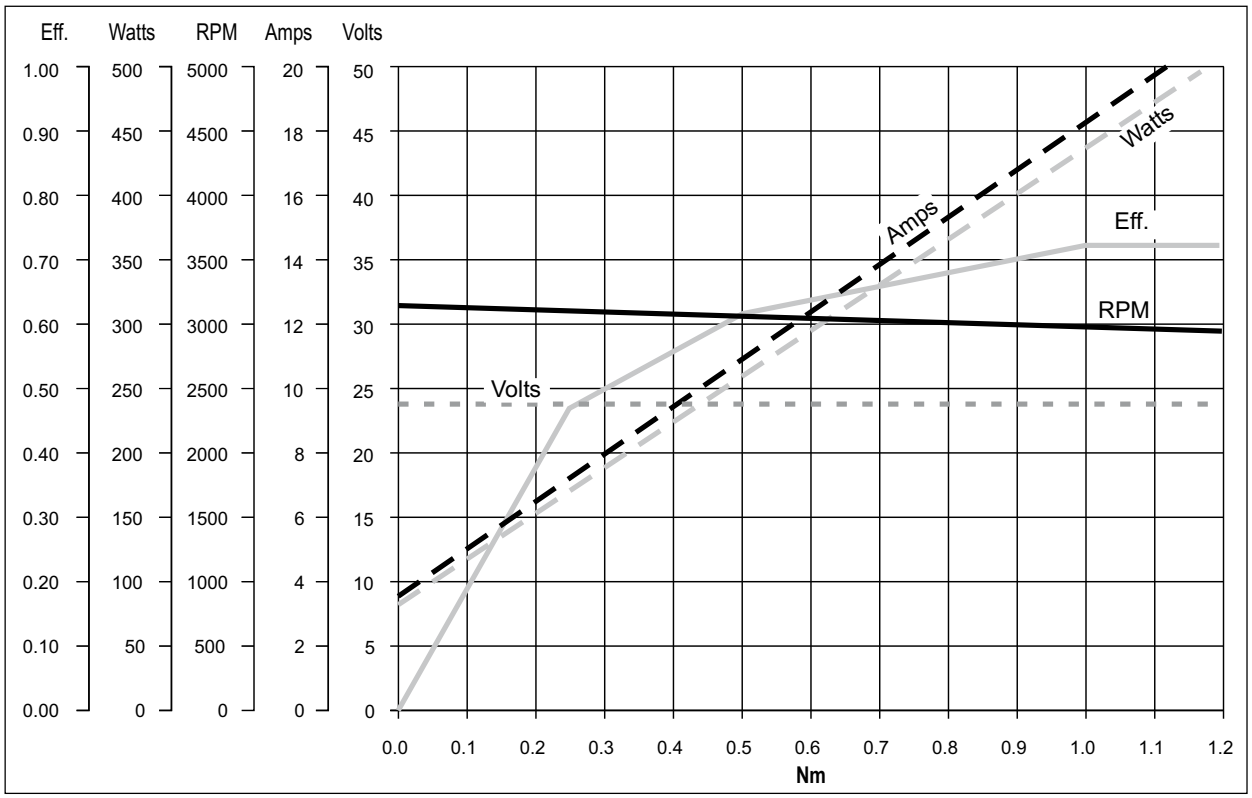
# EC350.120 - EC350.120BR - EC350.240 - EC350.240BR

**Prestazioni** ***Performances***

## EC350.120 - EC350.120BR




## EC350.240 - EC350.240BR



# EC600.120 - EC600.120BR - EC600.240 - EC600.240BR

## Caratteristiche / *Features*

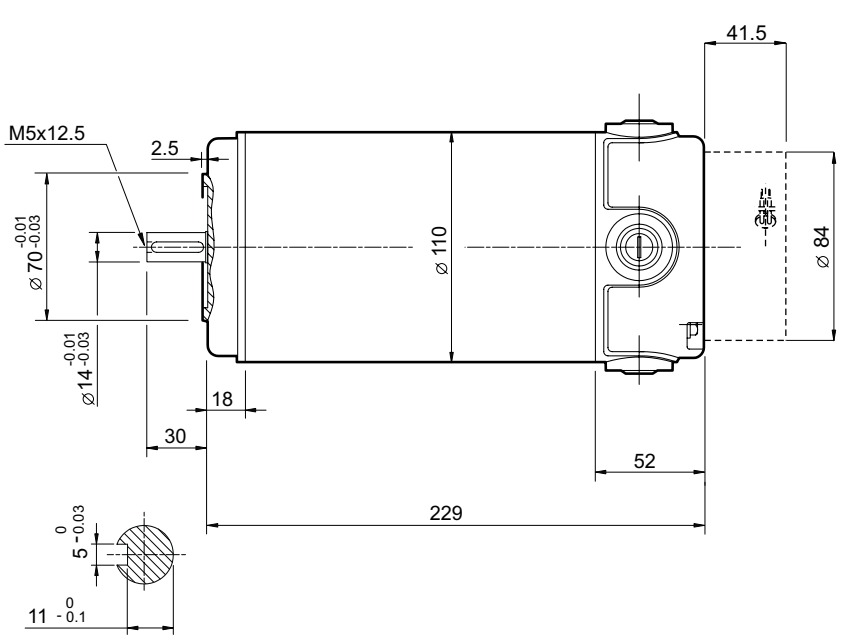
| | |
|---|---|
| Costruzione | Tubolare, senza ventilazione |
| Grandezza | Ø 110 mm |
| Potenza | 800 W S2 (600 W S1) |
| Magneti | 4 |
| Supporti | Cuscinetti a sfera |
| Fori di montaggio | 8 |
| Alimentazione | Bassa tensione, 12 o 24 Vcc |
| Spazzole | N° 4 di composto grafite-rame |
| Dimensione spazzole | LxPxH = 18.9 x 9.5 x 16.7 mm |
| Terminali | 2 con doppio dado di fissaggio |
| Freno | Elettromagnetico |

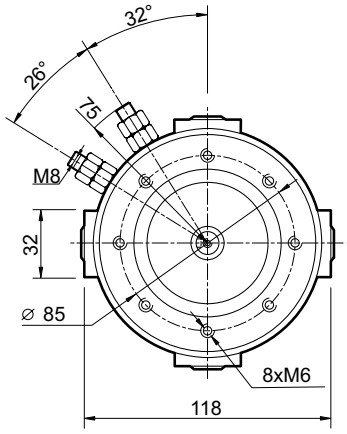
| | |
|---|---|
| *Construction* | *Tubular, without fan* |
| *Size* | *Ø 110 mm* |
| *Power* | *800 W S2 (600 W S1)* |
| *Magnets* | *4* |
| *Bearings* | *Ball bearings* |
| *Mounting holes* | *8* |
| *Power supply* | *Low voltage, 12 or 24 Vdc* |
| *Brushes* | *4 brushes made of graphite/copper composite* |
| *Brushes size* | *LxPxH = 18.9 x 9.5 x 16.7 mm* |
| *Leads terminals* | *2, with double nut* |
| *Brake* | *Electromagnetic* |

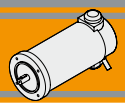
| Tipo *Type* | S | Pn [W] | V [V] | I [A] | IC | FF | Mn [Nm] | $n_1$ [$min^{-1}$] | IP | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| **EC600.120** | **S1** | 600 | 12 | 71 | F | 1 | 1.91 | 3000 | 44 | 6.6 |
| **EC600.120BR** | **S2 30'** | 800 | | 94.4 | | | 2.54 | | | 7.4 |
| **EC600.240** | **S1** | 600 | 24 | 35.5 | | | 1.91 | | | 7.1 |
| **EC600.240BR** | **S2 30'** | 800 | | 47.2 | | | 2.54 | | | 7.9 |

| Freno *Brake* | $M_{Br}$ [Nm] | Pe [W] | V [V] | $T_r$ [≤ ms] | $T_f$ [≤ ms] | $n_1$ max [$min^{-1}$] |
|---|---|---|---|---|---|---|
| **EC600.120BR** | **5** | 25 | 12 | 75 | 65 | 3000 |
| **EC600.240BR** | | | 24 | | | |

## Dimensioni / *Dimensions*



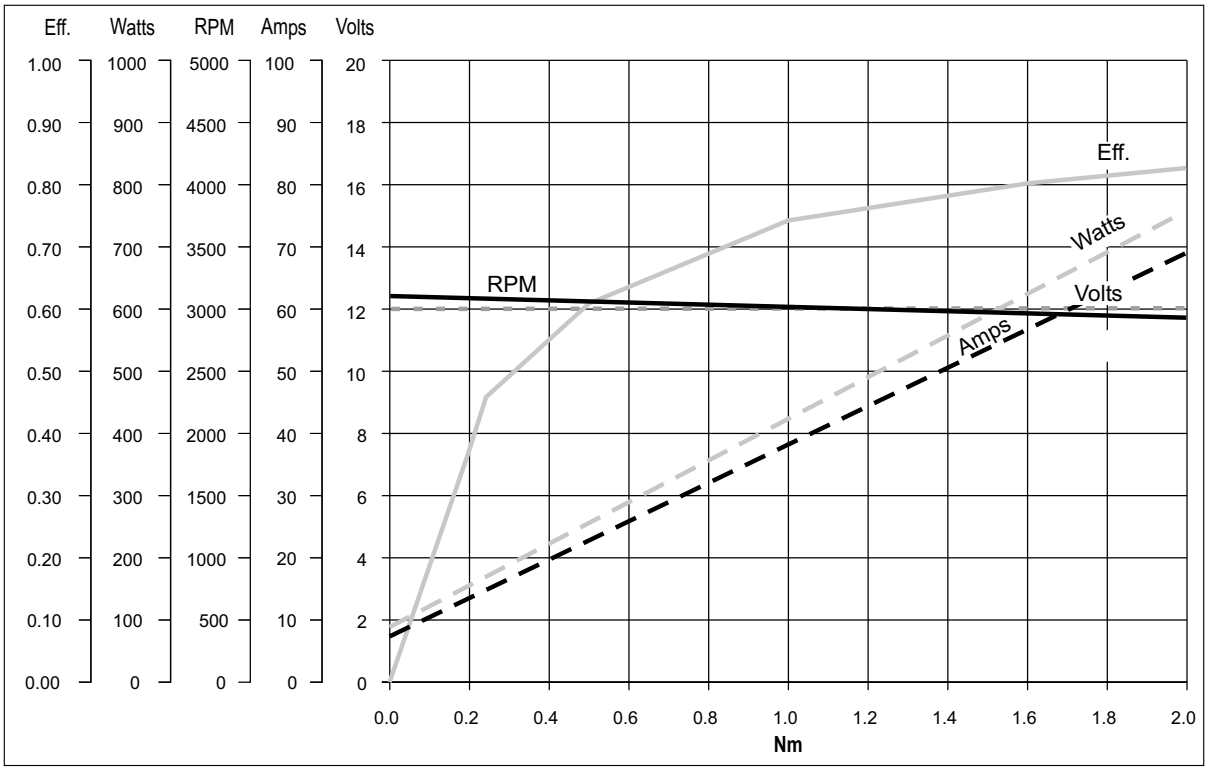





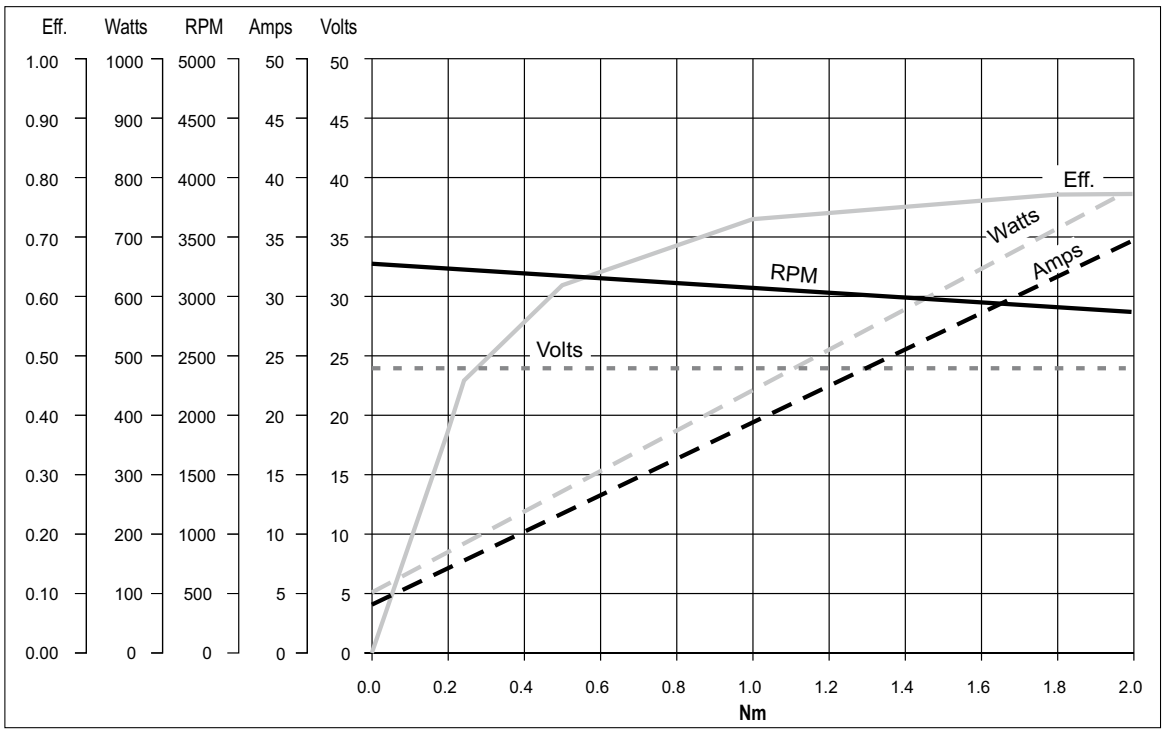
# EC600.120 - EC600.120BR - EC600.240 - EC600.240BR

**Prestazioni** ***Performances***

## EC600.120 - EC600.120BR




## EC600.240 - EC600.240BR

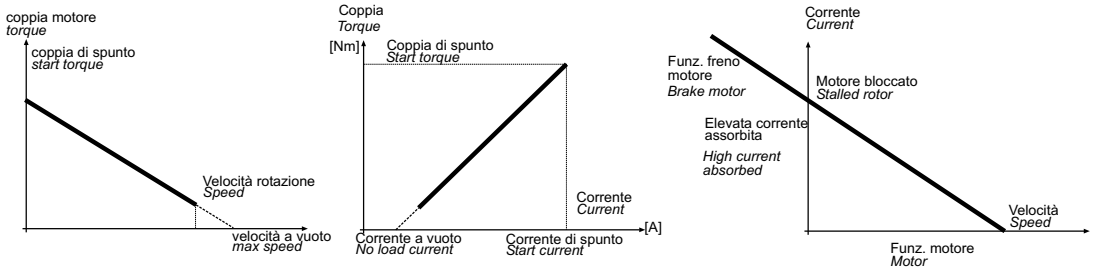


## Legenda / Glossario dei grafici

## *Key / Diagram Glossary*

Dato un motore in C.C, la velocità di rotazione è funzione lineare della coppia; così pure la corrente assorbita è una funzione lineare della coppia. Velocità e corrente variano in maniera sensibile al variare del carico.

*With a D.C. motor, the rotational speed is a linear function of the torque. In the same way, the absorbed current is also a linear function of the torque. Speed and current change a lot against applied torque.*

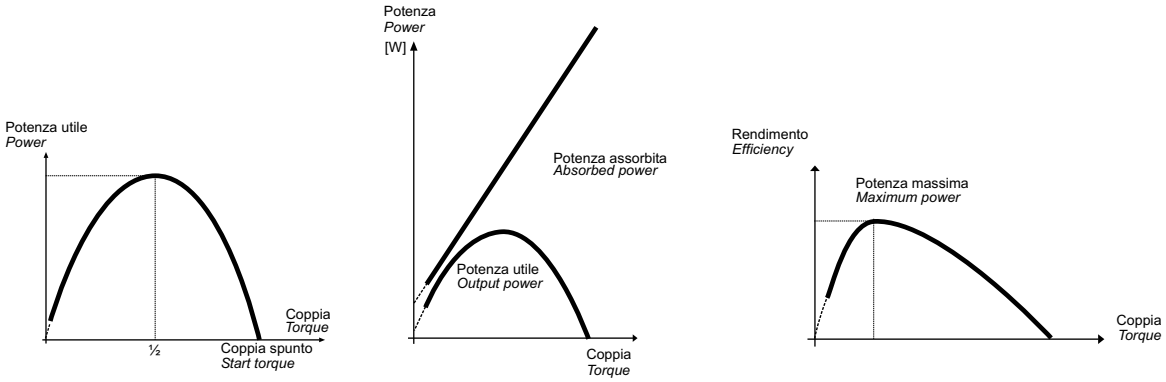



La potenza utile (potenza all' albero) si ricava dalla formula:

$$Pn\ [W] = Mn \cdot S = \frac{2\pi}{60} \cdot n_1 \cdot Mn$$

*The output power is calculated using the formula:*

$$Pn\ [W] = Mn \cdot S = \frac{2\pi}{60} \cdot n_1 \cdot Mn$$




Poiché la tensione di alimentazione è costante mentre la corrente è linearmente crescente al crescere della coppia, l'andamento della potenza assorbita è un retta crescente. Dal rapporto tra la potenza meccanica e la potenza assorbita si ottiene il grafico dell'efficienza.

*Since the supply voltage is constant, whereas the current increases in a linear manner as the torque increases, the absorbed power trend is a straight line going up. Efficiency is shown from the ratio between the output power and the absorbed power.*

## Formule utili

## *Useful formulas*

$$\eta = \frac{Pn}{Pa}$$

$$Pa = V \cdot I$$

$$Pn = V \cdot I \cdot \eta$$

$$Pn = Mn \cdot Sv$$

$$Sv = \frac{n_1}{9.55}$$

[HP] · 746 = [W].
Esempio 2 HP = circa 1500 W.

$$\eta = \frac{Pn}{Pa}$$

$$Pa = V \cdot I$$

$$Pn = V \cdot I \cdot \eta$$

$$Pn = Mn \cdot Sv$$

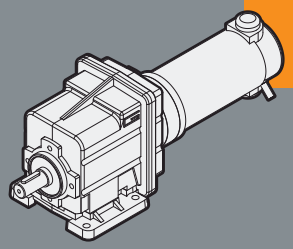
$$Sv = \frac{n_1}{9.55}$$

*[HP] · 746 = [W].*
*Example 2 HP = approx. 1500 W.*

TRANSTECNO®
THE MODULAR GEARMOTOR

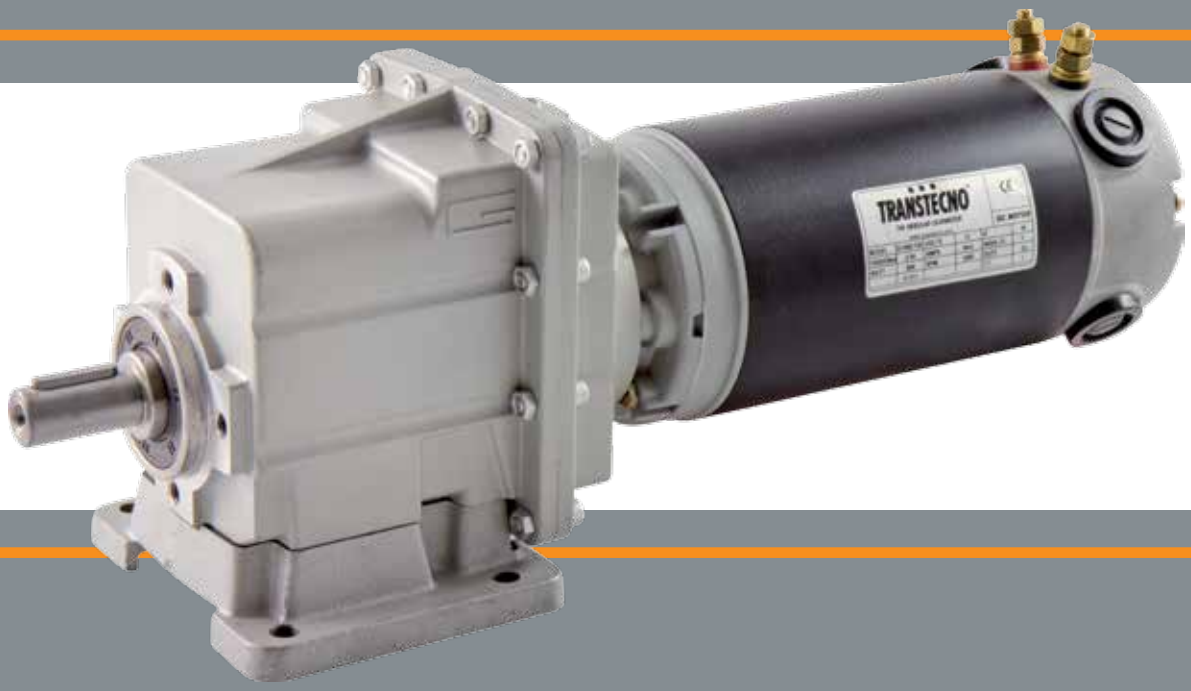
# ECMG





## MOTORIDUTTORI C.C. AD INGRANAGGI CILINDRICI

## PERMANENT MAGNETS D.C. HELICAL GEARMOTORS

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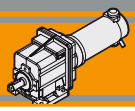

ENERGY SAVING





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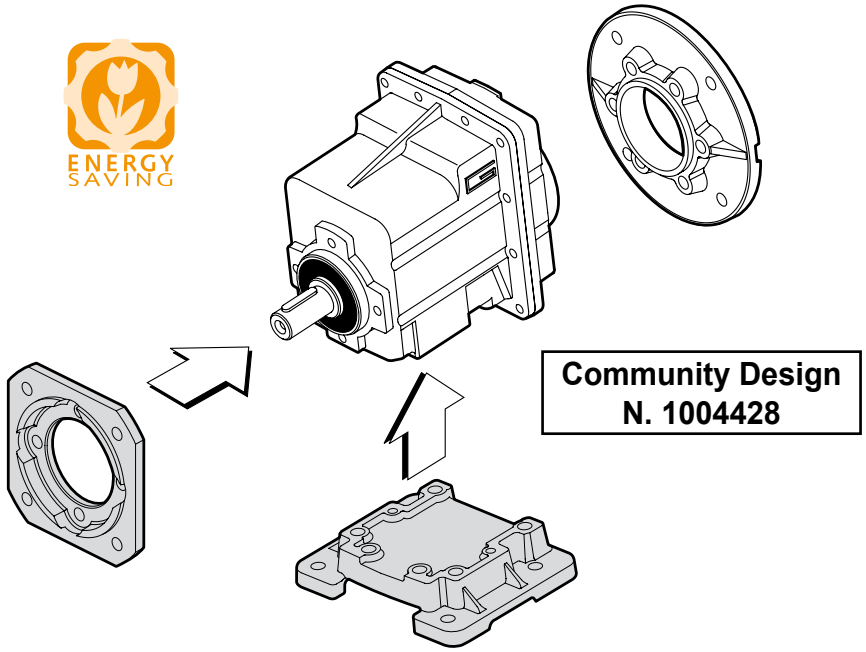
## Caratteristiche tecniche — *Technical features*

Le caratteristiche principali dei motoriduttori a corrente continua della serie ECMG sono:

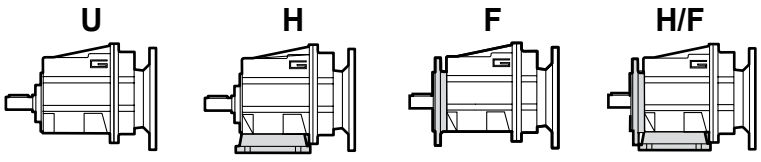
- Alimentazione in bassa tensione 12/24 Vcc
- Possibilità di montaggio encoder
- Potenze motore disponibili da 100 a 800W S2
- Magneti in ferrite
- Carcasse dei riduttori in pressofusione di alluminio
- Lubrificazione permanente con olio sintetico
- Ingranaggi sempre rettificati

*The main features of ECMG D.C. gearmotor range are:*

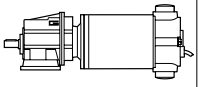
- *Low voltage power supply 12/24 Vdc*
- *Suitable for encoder assembly*
- *Motor power ratings available from 100 to 800W S2*
- *Ferrite magnets*
- *Die-cast aluminum housing*
- *Permanent synthetic oil long-life lubrication*
- *Ground helical gears*



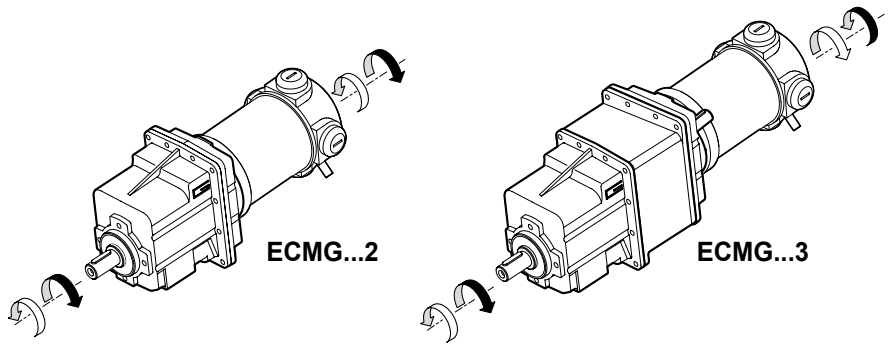

## Designazione — *Classification*




MOTORIDUTTORE / *GEARBOX*

| ECMG | 100/002 | U | 8.99 | D20 | 240 |
|---|---|---|---|---|---|
| Tipo *Type* | Grandezza *Size* | Versione *Version* | Rapporto *Ratio* | Albero uscita *Output shaft* | Versione motore *Motor version* |
| **ECMG**  | **070/002** \| **100/002** \| **180/002** \| **250/002** **250/012** **250/013** **250/022** **250/023** **250/033** **250/043** \| **350/002** **350/012** **350/013** **350/022** **350/023** **350/033** **350/043** \| **600/002** **600/012** **600/013** **600/022** **600/023** **600/033** **600/043** | **U...** **H...** **F...** **H.../F...** | vedi tabelle *see tables* | vedi tabelle *see tables* | **120** **240** **24E** |

## Sensi di rotazione — *Direction of rotation*



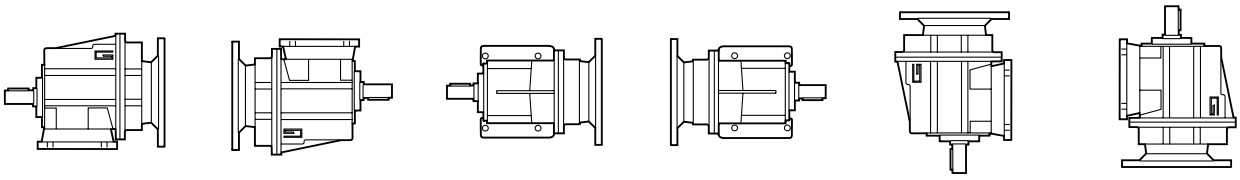

## Lubrificazione — *Lubrication*

Tutti i riduttori nelle taglie 02 sono forniti completi di lubrificante sintetico viscosità 320, pertanto possono essere installati in qualunque posizione di montaggio e non necessitano di manutenzione.

*Permanent synthetic oil long-life lubrication ( viscosity grade 320) makes it possible to use sizes 02 in all mounting positions; for this reason they can be installed in any assembly position and do not require maintenance.*

| CMG | **Quantità di olio** (litri) / ***Oil quantity*** *(litres)* | | | | | | |
|---|---|---|---|---|---|---|---|
| | **B3** | **B8** | **B6** | **B7** | **V5** | **V6** | |
| **002** | 0.18 | | | | | | Lubrificati a vita *Life lubrication* |
| **012** | 0.32 | | | | | | |
| **013** | 0.94 | | | | | | |
| **022** | 0.32 | | | | | | |
| **023** | 0.94 | | | | | | |
| **033** | 1.8 | | | | | | |
| **043** | 1.8 | | | | | | |

Posizioni di montaggio / *Mounting positions*

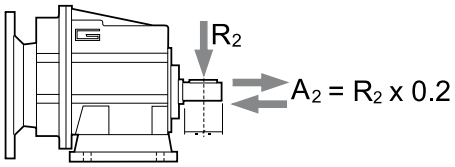


**B3** (standard) **B8** **B6** **B7** **V5** **V6**

## Simbologia — *Symbols*

| | | |
|---|---|---|
| $n_1$ | [$min^{-1}$] | Velocità in ingresso / *Input speed* |
| $n_2$ | [$min^{-1}$] | Velocità in uscita / *Output speed* |
| i | | Rapporto di riduzione / *Ratio* |
| $P_1$ | [kW] | Potenza in entrata / *Input power* |
| $M_2$ | [Nm] | Coppia nominale in uscita in funzione di $P_1$ / *Output torque referred to* $P_1$ |
| sf | | Fattore di servizio / *Service factor* |
| $R_2$ | [N] | Carico radiale ammissibile in uscita / *Permitted output radial load* |
| $A_2$ | [N] | Carico assiale ammissibile in uscita / *Permitted output axial load* |

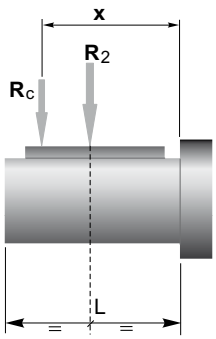
## Carichi radiali — *Radial loads*




| $n_2$ [$min^{-1}$] | $R_2$ [N] | | | | |
|---|---|---|---|---|---|
| | CMG 00 | CMG 01 | CMG 02 | CMG 03 | CMG 04 |
| 700 | 416 | 764 | 1529 | 1987 | 2379 |
| 600 | 437 | 805 | 1609 | 2092 | 2504 |
| 500 | 465 | 855 | 1710 | 2223 | 2661 |
| 400 | 501 | 921 | 1842 | 2395 | 2866 |
| 250 | 586 | 1077 | 2154 | 2801 | 3353 |
| 180 | 653 | 1323 | 2554 | 3321 | 3897 |
| 150 | 748 | 1406 | 2714 | 3529 | 4244 |
| 120 | 806 | 1631 | 3467 | 3801 | 4572 |
| 100 | 958 | 1842 | 3684 | 4507 | 5234 |
| 80 | 1032 | 1984 | 3969 | 5042 | 5991 |
| 60 | 1136 | 2184 | 4368 | 5549 | 6594 |
| 40 | 1300 | 2500 | 5000 | 6500 | 8000 |
| 10 | 1300 | 2500 | 5000 | 6500 | 8000 |

Quando il carico radiale risultante non è applicato sulla mezzeria dell'albero occorre calcolare quello effettivo con la seguente formula:

*When the resulting radial load is not applied on the centre line of the shaft it is necessary to calculate the effective load with the following formula:*



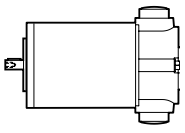

| | CMG 00 | CMG 01 | CMG 02 | CMG 03 | CMG 04 |
|---|---|---|---|---|---|
| a | 73 | 104 | 117 | 132 | 150 |
| b | 53 | 84 | 92 | 102 | 115 |
| $R_{2MAX}$ | 1300 | 2500 | 5000 | 6500 | 8000 |

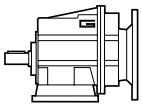
$$R_c = \frac{R_2 \cdot a}{(b+x)} \leq R_{2MAX}$$

$$R \leq R_c$$

*a, b = valori riportati nella tabella*
*a, b = values given in the table*

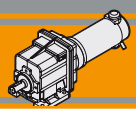
## Motori applicabili — *IEC Motor adapters*





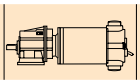
| | | EC | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 070.120 070.240 | 100.120 100.240 100.24E | 180.120 180.240 | 180.24E | 250.120 250.240 | 350.120 350.240 | 600.120 600.240 |
| CMG | 002 | 5.03 - 48.86 | 5.03 - 48.86 | 5.03 - 48.86 | 5.03 - 48.86 | 5.03 - 48.86 | 5.03 - 48.86 | 5.03 - 48.86 |
| | 012 | | | | | 3.82 - 53.33 | 3.82 - 53.33 | 3.82 - 53.33 |
| | 013 | | | | | 63.22 - 393.33 | 63.22 - 393.33 | 63.22 - 393.33 |
| | 022 | | | | | 3.66 - 54 | 3.66 - 54 | 3.66 - 54 |
| | 023 | | | | | 64.01 - 398.25 | 64.01 - 398.25 | 64.01 - 398.25 |
| | 033 | | | | | 72.83 - 378.64 | 72.83 - 378.64 | 72.83 - 378.64 |
| | 043 | | | | | 72.83 - 378.64 | 72.83 - 378.64 | 72.83 - 378.64 |

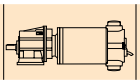
5.03 - 48.86 — Rapporti di riduzione i / *Ratio i*



## Dati tecnici per servizio S2

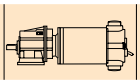
## *Technical data for S2 duty*

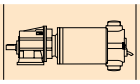
| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **100** | | | | | | |
| (3000 min$^{-1}$) | **596** | 1.5 | 20.2 | 5.03 | **070/002** | 120/240 |
| | **492** | 1.9 | 16.6 | 6.10 | | |
| | **401** | 2.3 | 13.5 | 7.49 | | |
| | **334** | 2.7 | 14.2 | 8.99 | | |
| | **295** | 3.1 | 12.6 | 10.16 | | |
| | **249** | 3.7 | 10.6 | 12.07 | | |
| | **224** | 4.1 | 13.4 | 13.40 | | |
| | **198** | 5 | 11.9 | 15.14 | | |
| | **165** | 6 | 9.9 | 18.17 | | |
| | **139** | 6.6 | 8.3 | 21.58 | | |
| | **128** | 7.2 | 7.7 | 23.51 | | |
| | **120** | 7.7 | 7.2 | 25.10 | | |
| | **111** | 8.3 | 6.6 | 27.08 | | |
| | **92** | 9.9 | 5.5 | 32.49 | | |
| | **71** | 12.8 | 4.3 | 42.04 | | |
| | **67** | 13.7 | 4.0 | 44.89 | | |
| | **61** | 14.9 | 3.7 | 48.86 | | |
| **140** | | | | | | |
| (3000 min$^{-1}$) | **596** | 2 | 14.4 | 5.03 | **100/002** | 120/240/24E |
| | **492** | 3 | 11.9 | 6.10 | | |
| | **401** | 3 | 9.7 | 7.49 | | |
| | **334** | 4 | 10.1 | 8.99 | | |
| | **295** | 4.3 | 9.0 | 10.16 | | |
| | **249** | 5.2 | 7.6 | 12.07 | | |
| | **224** | 5.7 | 9.6 | 13.40 | | |
| | **198** | 6.5 | 8.5 | 15.14 | | |
| | **165** | 7.8 | 7.1 | 18.17 | | |
| | **139** | 9 | 6.0 | 21.58 | | |
| | **128** | 10 | 5.5 | 23.51 | | |
| | **120** | 11 | 5.1 | 25.10 | | |
| | **111** | 12 | 4.7 | 27.08 | | |
| | **92** | 13.9 | 4.0 | 32.49 | | |
| | **71** | 18.0 | 3.1 | 42.04 | | |
| | **67** | 19.2 | 2.9 | 44.89 | | |
| | **61** | 21 | 2.6 | 48.86 | | |
| **250** | | | | | | |
| (3000 min$^{-1}$) | **596** | 4 | 8.1 | 5.03 | **180/002** | 120/240/24E |
| | **492** | 5 | 6.7 | 6.10 | | |
| | **401** | 6 | 5.4 | 7.49 | | |
| | **334** | 7 | 5.7 | 8.99 | | |
| | **295** | 8 | 5.0 | 10.16 | | |
| | **249** | 9 | 4.2 | 12.07 | | |
| | **224** | 10 | 5.4 | 13.40 | | |
| | **198** | 12 | 4.8 | 15.14 | | |
| | **165** | 13.9 | 4.0 | 18.17 | | |
| | **139** | 16.5 | 3.3 | 21.58 | | |
| | **128** | 18.0 | 3.1 | 23.51 | | |
| | **120** | 19 | 2.9 | 25.10 | | |
| | **111** | 21 | 2.7 | 27.08 | | |
| | **92** | 25 | 2.2 | 32.49 | | |
| | **71** | 32 | 1.7 | 42.04 | | |
| | **67** | 34 | 1.6 | 44.89 | | |
| | **61** | 37 | 1.5 | 48.86 | | |

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **350** | | | | | | |
| (3000 min$^{-1}$) | **596** | 5 | 5.8 | 5.03 | **250/002** | 120/240 |
| | **492** | 7 | 4.8 | 6.10 | | |
| | **401** | 8 | 3.9 | 7.49 | | |
| | **334** | 10 | 4.1 | 8.99 | | |
| | **295** | 11 | 3.6 | 10.16 | | |
| | **249** | 13 | 3.0 | 12.07 | | |
| | **224** | 14 | 3.8 | 13.40 | | |
| | **198** | 16 | 3.4 | 15.14 | | |
| | **165** | 19 | 2.8 | 18.17 | | |
| | **139** | 23 | 2.4 | 21.58 | | |
| | **128** | 25 | 2.2 | 23.51 | | |
| | **120** | 27 | 2.0 | 25.10 | | |
| | **111** | 29 | 1.9 | 27.08 | | |
| | **92** | 35 | 1.6 | 32.49 | | |
| | **71** | 45 | 1.2 | 42.04 | | |
| | **67** | 48 | 1.1 | 44.89 | | |
| | **61** | 52 | 1.1 | 48.86 | | |
| | **327** | 10 | 6.3 | 9.17 | **250/012** | 120/240 |
| | **306** | 10 | 5.9 | 9.81 | | |
| | **261** | 12 | 6.3 | 11.50 | | |
| | **252** | 13 | 6.1 | 11.90 | | |
| | **217** | 15 | 6.4 | 13.80 | | |
| | **205** | 16 | 6.0 | 14.62 | | |
| | **168** | 19 | 4.9 | 17.86 | | |
| | **157** | 20 | 4.6 | 19.07 | | |
| | **151** | 21 | 4.4 | 19.83 | | |
| | **127** | 25 | 3.7 | 23.56 | | |
| | **101** | 32 | 3.0 | 29.56 | | |
| | **85** | 38 | 2.5 | 35.47 | | |
| | **65** | 49 | 1.9 | 45.89 | | |
| | **61** | 52 | 1.8 | 49.00 | | |
| | **56** | 57 | 1.6 | 53.33 | | |
| | **47** | 66 | 1.4 | 63.22 | **250/013** | 120/240 |
| | **40** | 79 | 1.2 | 75.08 | | |
| | **34** | 93 | 1.0 | 89.17 | | |
| | **27** | 118 | 0.8 | 113.05 | | |
| | **22** | 141 | 0.7 | 134.27 | | |
| | **17** | 134 | 0.7 | 173.72 | | |
| | **15** | 134 | 0.7 | 202.16 | | |
| | **11** | 134 | 0.7 | 261.57 | | |
| | **10** | 134 | 0.7 | 304.00 | | |
| | **8** | 134 | 0.7 | 393.33 | | |
| | **126** | 26 | 6.1 | 23.85 | **250/022** | 120/240 |
| | **100** | 32 | 4.9 | 29.93 | | |
| | **84** | 38 | 4.1 | 35.91 | | |
| | **65** | 50 | 3.1 | 46.46 | | |
| | **60** | 53 | 2.9 | 49.61 | | |
| | **56** | 58 | 2.7 | 54.00 | | |

## Dati tecnici per servizio S2

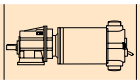
## *Technical data for S2 duty*

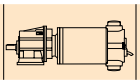
| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **350** | | | | | | |
| (3000 min$^{-1}$) | **47** | 67 | 2.3 | 64.01 | **250/023** | 120/240 |
| | **39** | 80 | 2.0 | 76.02 | | |
| | **33** | 95 | 1.6 | 90.29 | | |
| | **26** | 120 | 1.3 | 114.46 | | |
| | **22** | 142 | 1.1 | 135.95 | | |
| | **17** | 184 | 0.8 | 175.89 | | |
| | **15** | 214 | 0.7 | 204.69 | | |
| | **11** | 223 | 0.7 | 264.84 | | |
| | **10** | 223 | 0.7 | 307.80 | | |
| | **8** | 223 | 0.7 | 398.25 | | |
| | **41** | 76 | 3.1 | 72.83 | **250/033** | 120/240 |
| | **31** | 102 | 2.3 | 97.45 | | |
| | **26** | 121 | 1.9 | 115.74 | | |
| | **21** | 147 | 1.6 | 140.81 | | |
| | **17** | 183 | 1.3 | 174.26 | | |
| | **13** | 236 | 1.0 | 225.47 | | |
| | **11** | 274 | 0.9 | 262.05 | | |
| | **9** | 341 | 0.7 | 325.79 | | |
| | **8** | 334 | 0.7 | 378.64 | | |
| | **41** | 76 | 5.1 | 72.83 | **250/043** | 120/240 |
| | **31** | 102 | 3.8 | 97.45 | | |
| | **26** | 121 | 3.2 | 115.74 | | |
| | **21** | 147 | 2.6 | 140.81 | | |
| | **17** | 183 | 2.1 | 174.26 | | |
| | **13** | 236 | 1.7 | 225.47 | | |
| | **11** | 274 | 1.4 | 262.05 | | |
| | **9** | 341 | 1.1 | 325.79 | | |
| | **8** | 397 | 1.0 | 378.64 | | |
| **500** | | | | | | |
| (3000 min$^{-1}$) | **596** | 7.7 | 4.0 | 5.03 | **350/002** | 120/240 |
| | **492** | 9.3 | 3.3 | 6.10 | | |
| | **401** | 11 | 2.7 | 7.49 | | |
| | **334** | 14 | 2.8 | 8.99 | | |
| | **295** | 16 | 2.5 | 10.16 | | |
| | **249** | 18 | 2.1 | 12.07 | | |
| | **224** | 20 | 2.7 | 13.40 | | |
| | **198** | 23 | 2.4 | 15.14 | | |
| | **165** | 28 | 2.0 | 18.17 | | |
| | **139** | 33 | 1.7 | 21.58 | | |
| | **128** | 36 | 1.5 | 23.51 | | |
| | **120** | 38 | 1.4 | 25.1 | | |
| | **111** | 41 | 1.3 | 27.08 | | |
| | **92** | 50 | 1.1 | 32.49 | | |
| | **71** | 64 | 0.9 | 42.04 | | |
| | **67** | 69 | 0.8 | 44.89 | | |
| | **61** | 75 | 0.7 | 48.86 | | |
| | **785** | 6 | 8.1 | 3.82 | **350/012** | 120/240 |
| | **648** | 7 | 6.6 | 4.63 | | |
| | **527** | 9 | 5.4 | 5.69 | | |
| | **389** | 12 | 5.3 | 7.72 | | |
| | **327** | 14 | 4.4 | 9.17 | | |
| | **306** | 15 | 4.1 | 9.81 | | |
| | **261** | 18 | 4.4 | 11.5 | | |
| | **252** | 18 | 4.3 | 11.9 | | |
| | **217** | 21 | 4.5 | 13.80 | | |
| | **205** | 22 | 4.2 | 14.62 | | |

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **500** | | | | | | |
| (3000 min$^{-1}$) | **168** | 27 | 3.4 | 17.86 | **350/012** | 120/240 |
| | **157** | 29 | 3.2 | 19.07 | | |
| | **151** | 30 | 3.1 | 19.83 | | |
| | **127** | 36 | 2.6 | 23.56 | | |
| | **101** | 45 | 2.1 | 29.56 | | |
| | **85** | 54 | 1.7 | 35.47 | | |
| | **65** | 70 | 1.3 | 45.89 | | |
| | **61** | 75 | 1.3 | 49.00 | | |
| | **56** | 81.5 | 1.2 | 53.33 | | |
| | **47** | 95 | 1.0 | 63.22 | **350/013** | 120/240 |
| | **40** | 112 | 0.8 | 75.08 | | |
| | **34** | 133 | 0.7 | 89.17 | | |
| | **27** | 134 | 0.7 | 113.05 | | |
| | **22** | 134 | 0.7 | 134.27 | | |
| | **17** | 134 | 0.7 | 173.72 | | |
| | **15** | 134 | 0.7 | 202.16 | | |
| | **11** | 134 | 0.7 | 261.57 | | |
| | **10** | 134 | 0.7 | 304 | | |
| | **8** | 134 | 0.7 | 393.33 | | |
| | **126** | 36 | 4.3 | 23.85 | **350/022** | 120/240 |
| | **100** | 46 | 3.4 | 29.93 | | |
| | **84** | 55 | 2.8 | 35.91 | | |
| | **65** | 71 | 2.2 | 46.46 | | |
| | **60** | 76 | 2.1 | 49.61 | | |
| | **56** | 83 | 1.9 | 54 | | |
| | **47** | 96 | 1.6 | 64.01 | **350/023** | 120/240 |
| | **39** | 114 | 1.4 | 76.02 | | |
| | **33** | 135 | 1.2 | 90.29 | | |
| | **26** | 171 | 0.9 | 114.46 | | |
| | **22** | 203 | 0.8 | 135.95 | | |
| | **17** | 223 | 0.7 | 175.89 | | |
| | **15** | 223 | 0.7 | 204.69 | | |
| | **11** | 223 | 0.7 | 264.84 | | |
| | **10** | 223 | 0.7 | 307.80 | | |
| | **8** | 223 | 0.7 | 398.25 | | |
| | **41** | 109 | 2.1 | 72.83 | **350/033** | 120/240 |
| | **31** | 146 | 1.6 | 97.45 | | |
| | **26** | 173 | 1.4 | 115.74 | | |
| | **21** | 211 | 1.1 | 140.81 | | |
| | **17** | 261 | 0.9 | 174.26 | | |
| | **13** | 334 | 0.7 | 225.47 | | |
| | **11** | 334 | 0.7 | 262.05 | | |
| | **9** | 334 | 0.7 | 325.79 | | |
| | **8** | 334 | 0.7 | 378.64 | | |
| | **41** | 109 | 3.6 | 72.83 | **350/043** | 120/240 |
| | **31** | 146 | 2.7 | 97.45 | | |
| | **26** | 173 | 2.3 | 115.74 | | |
| | **21** | 211 | 1.9 | 140.81 | | |
| | **17** | 261 | 1.5 | 174.26 | | |
| | **13** | 337 | 1.2 | 225.47 | | |
| | **11** | 392 | 1.0 | 262.05 | | |
| | **9** | 487 | 0.8 | 325.79 | | |
| | **8** | 557 | 0.7 | 378.64 | | |

## Dati tecnici per servizio S2

## *Technical data for S2 duty*

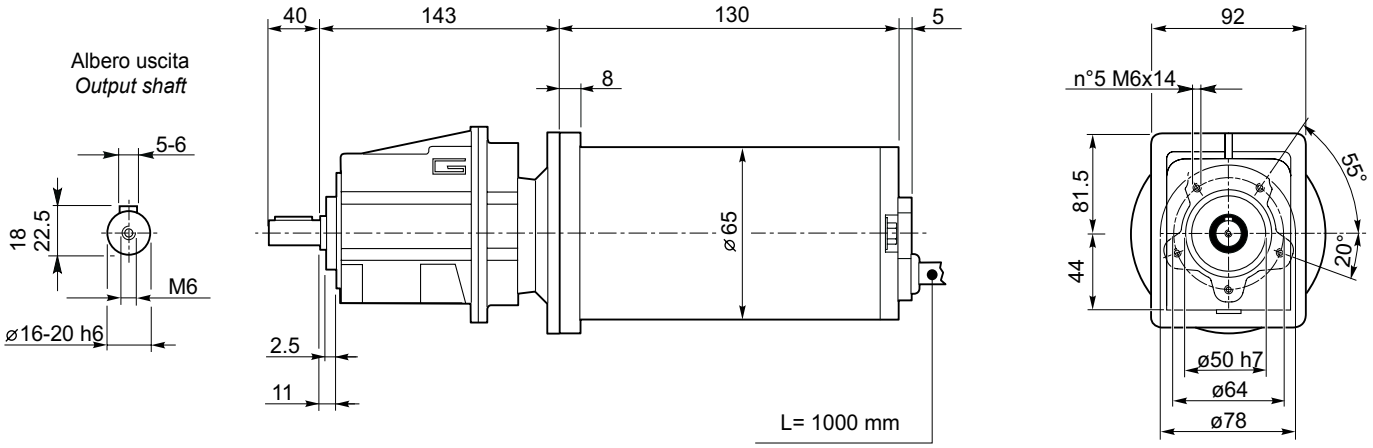
| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **800** | | | | | | |
| (3000 min$^{-1}$) | **596** | 12 | 2.5 | 5.03 | **600/002** | 120/240 |
| | **492** | 15 | 2.1 | 6.10 | | |
| | **401** | 18 | 1.7 | 7.49 | | |
| | **334** | 22 | 1.8 | 8.99 | | |
| | **295** | 25 | 1.6 | 10.16 | | |
| | **249** | 30 | 1.3 | 12.07 | | |
| | **224** | 33 | 1.7 | 13.40 | | |
| | **198** | 37 | 1.5 | 15.14 | | |
| | **165** | 44 | 1.2 | 18.17 | | |
| | **139** | 53 | 1.0 | 21.58 | | |
| | **128** | 57 | 1.0 | 23.51 | | |
| | **120** | 61 | 0.9 | 25.10 | | |
| | **111** | 66 | 0.8 | 27.08 | | |
| | **92** | 79 | 0.7 | 32.49 | | |
| | **71** | 79 | 0.7 | 42.04 | | |
| | **67** | 79 | 0.7 | 44.89 | | |
| | **61** | 79 | 0.7 | 48.86 | | |
| | **785** | 9 | 5.0 | 3.82 | **600/012** | 120/240 |
| | **648** | 11 | 4.2 | 4.63 | | |
| | **527** | 14 | 3.4 | 5.69 | | |
| | **389** | 19 | 3.3 | 7.72 | | |
| | **327** | 22 | 2.8 | 9.17 | | |
| | **306** | 24 | 2.6 | 9.81 | | |
| | **261** | 28 | 2.8 | 11.5 | | |
| | **252** | 29 | 2.7 | 11.9 | | |
| | **217** | 34 | 2.8 | 13.8 | | |
| | **205** | 36 | 2.6 | 14.62 | | |
| | **168** | 44 | 2.2 | 17.86 | | |
| | **157** | 47 | 2.0 | 19.07 | | |
| | **151** | 48 | 1.9 | 19.83 | | |
| | **127** | 58 | 1.6 | 23.56 | | |
| | **101** | 72 | 1.3 | 29.56 | | |
| | **85** | 87 | 1.1 | 35.47 | | |
| | **65** | 112 | 0.8 | 45.89 | | |
| | **61** | 120 | 0.8 | 49 | | |
| | **56** | 130 | 0.7 | 53.33 | | |
| | **47** | 134 | 0.7 | 63.22 | **600/013** | 120/240 |
| | **40** | 134 | 0.7 | 75.08 | | |
| | **34** | 134 | 0.7 | 89.17 | | |
| | **27** | 134 | 0.7 | 113.05 | | |
| | **22** | 134 | 0.7 | 134.27 | | |
| | **17** | 134 | 0.7 | 173.72 | | |
| | **15** | 134 | 0.7 | 202.16 | | |
| | **11** | 134 | 0.7 | 261.57 | | |
| | **10** | 134 | 0.7 | 304.00 | | |
| | **8** | 134 | 0.7 | 393.33 | | |

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **800** | | | | | | |
| (3000 min$^{-1}$) | **302** | 24 | 3.9 | 9.93 | **600/022** | 120/240 |
| | **272** | 27 | 5.8 | 11.01 | | |
| | **249** | 29 | 5.3 | 12.05 | | |
| | **227** | 32 | 4.8 | 13.21 | | |
| | **203** | 36 | 4.3 | 14.81 | | |
| | **175** | 42 | 3.0 | 17.1 | | |
| | **164** | 45 | 2.8 | 18.26 | | |
| | **149** | 49 | 3.2 | 20.08 | | |
| | **126** | 58 | 2.7 | 23.85 | | |
| | **100** | 73 | 2.1 | 29.93 | | |
| | **84** | 88 | 1.8 | 35.91 | | |
| | **65** | 114 | 1.4 | 46.46 | | |
| | **60** | 121 | 1.3 | 49.61 | | |
| | **56** | 132 | 1.2 | 54 | | |
| | **47** | 153 | 1.0 | 64.01 | **600/023** | 120/240 |
| | **39** | 182 | 0.9 | 76.02 | | |
| | **33** | 216 | 0.7 | 90.29 | | |
| | **26** | 223 | 0.7 | 114.46 | | |
| | **22** | 223 | 0.7 | 135.95 | | |
| | **17** | 223 | 0.7 | 175.89 | | |
| | **15** | 223 | 0.7 | 204.69 | | |
| | **11** | 223 | 0.7 | 264.84 | | |
| | **10** | 223 | 0.7 | 307.80 | | |
| | **8** | 223 | 0.7 | 398.25 | | |
| | **41** | 174 | 1.3 | 72.83 | **600/033** | 120/240 |
| | **31** | 233 | 1.0 | 97.45 | | |
| | **26** | 277 | 0.8 | 115.74 | | |
| | **21** | 334 | 0.7 | 140.81 | | |
| | **17** | 334 | 0.7 | 174.26 | | |
| | **13** | 334 | 0.7 | 225.47 | | |
| | **11** | 334 | 0.7 | 262.05 | | |
| | **9** | 334 | 0.7 | 325.79 | | |
| | **8** | 334 | 0.7 | 378.64 | | |
| | **41** | 174 | 2.2 | 72.83 | **600/043** | 120/240 |
| | **31** | 233 | 1.7 | 97.45 | | |
| | **26** | 277 | 1.4 | 115.74 | | |
| | **21** | 337 | 1.2 | 140.81 | | |
| | **17** | 417 | 0.9 | 174.26 | | |
| | **13** | 540 | 0.7 | 225.47 | | |
| | **11** | 557 | 0.7 | 262.05 | | |
| | **9** | 557 | 0.7 | 325.79 | | |
| | **8** | 557 | 0.7 | 378.64 | | |

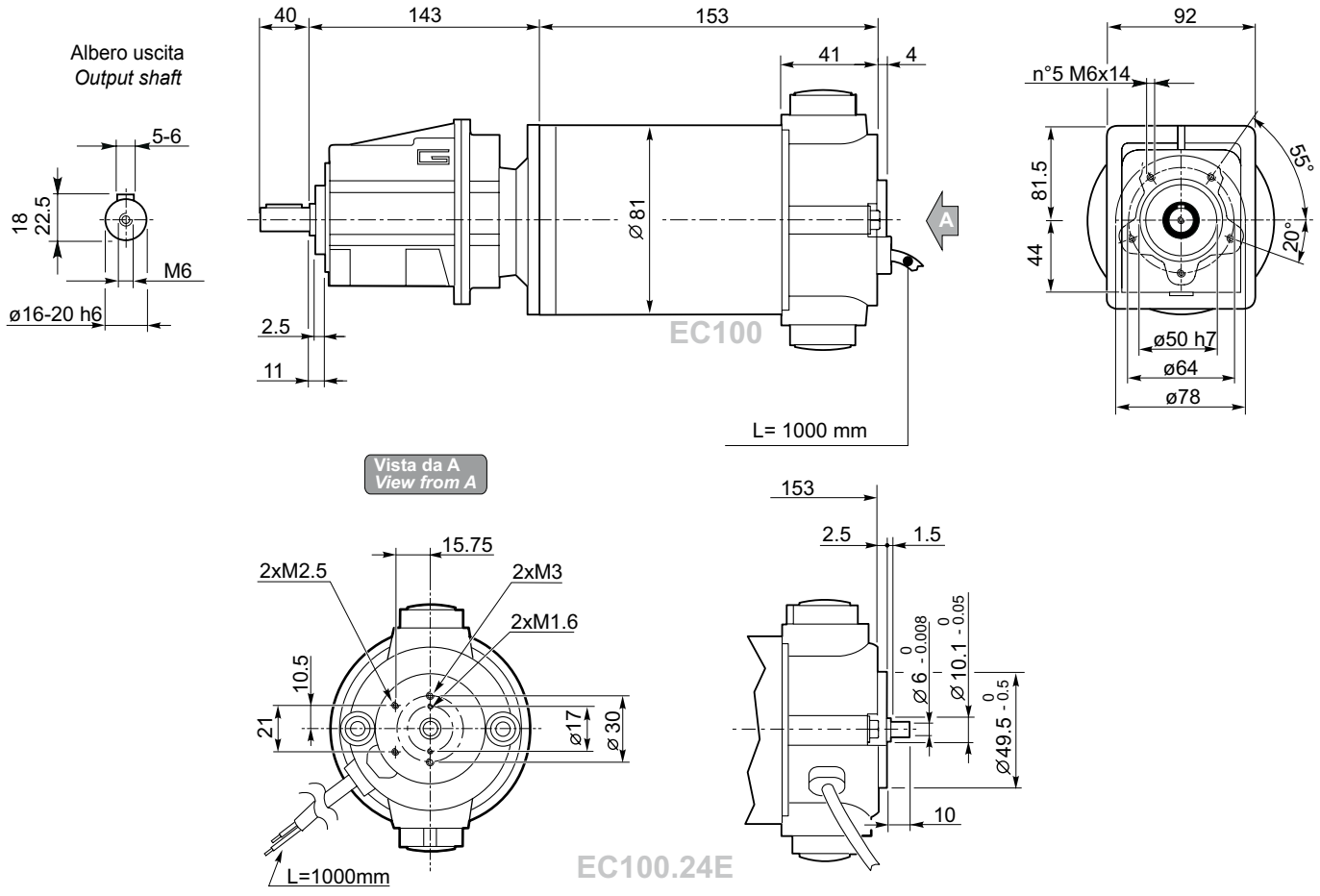
**Dimensioni** ***Dimensions***

# ECMG..U

## ECMG070/002 U



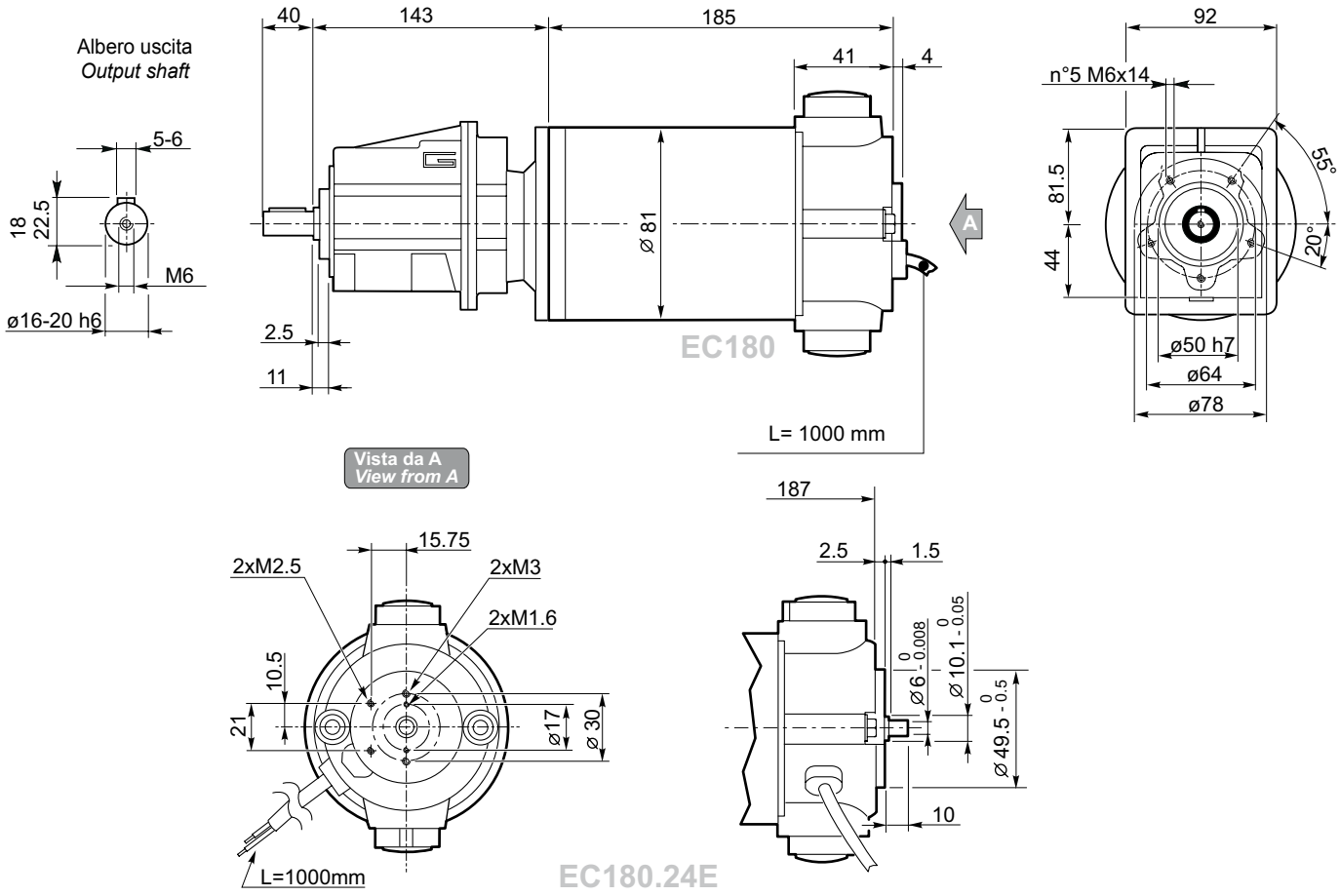

## ECMG100/002 U



**Dimensioni** *Dimensions*

# ECMG..U

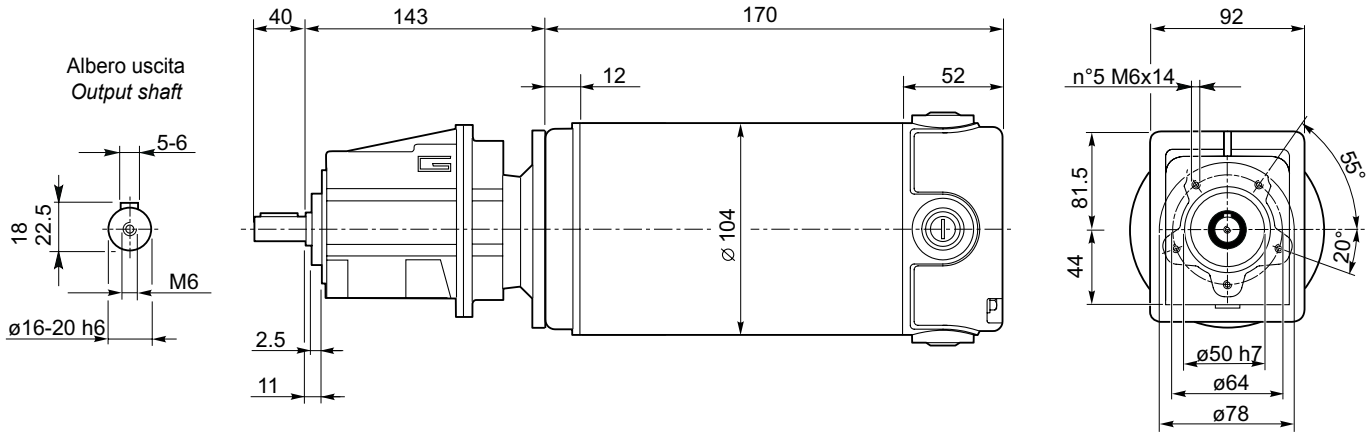
## ECMG180/002 U



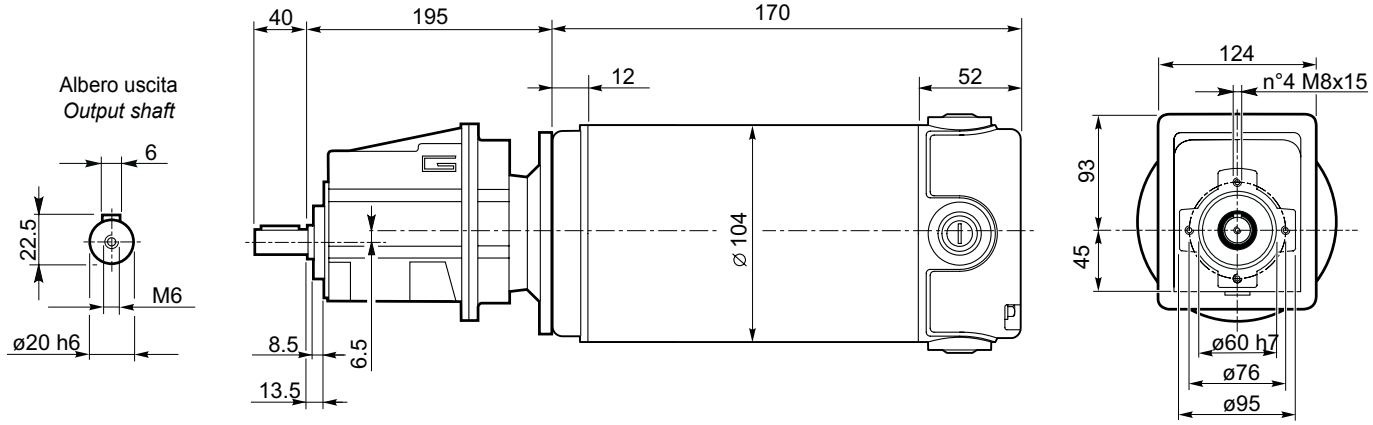
**Dimensioni** ***Dimensions***

# ECMG..U

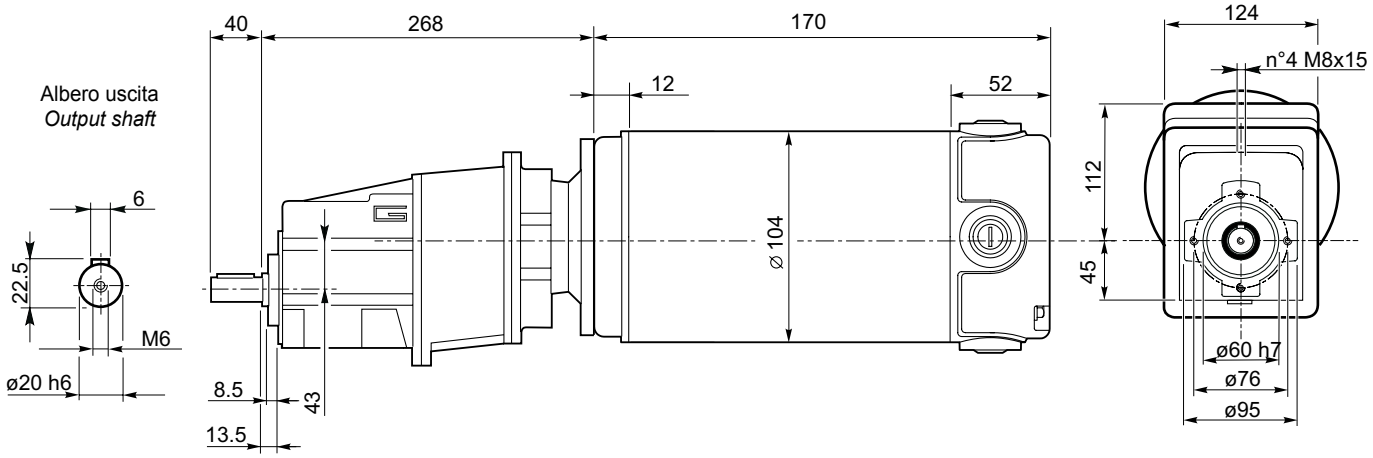
## ECMG250/002 U




## ECMG250/012 U



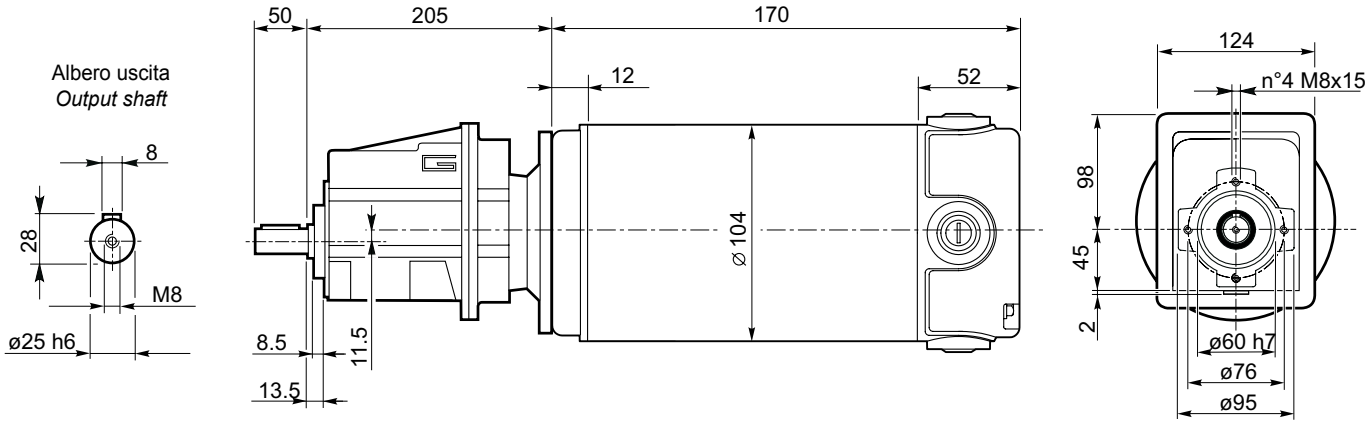

## ECMG250/013 U



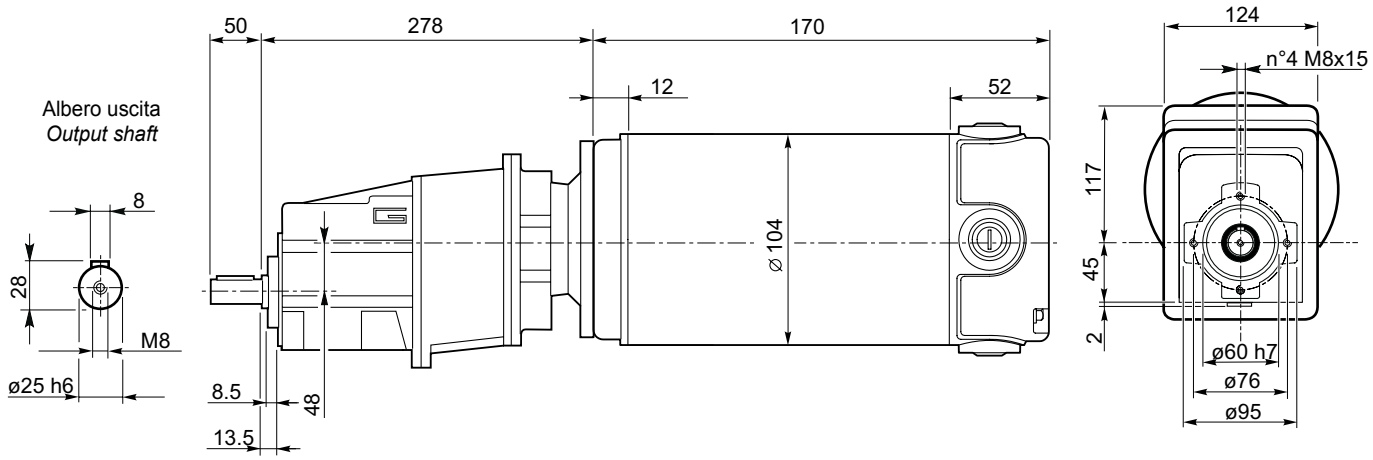
**Dimensioni** *Dimensions*

## ECMG..U

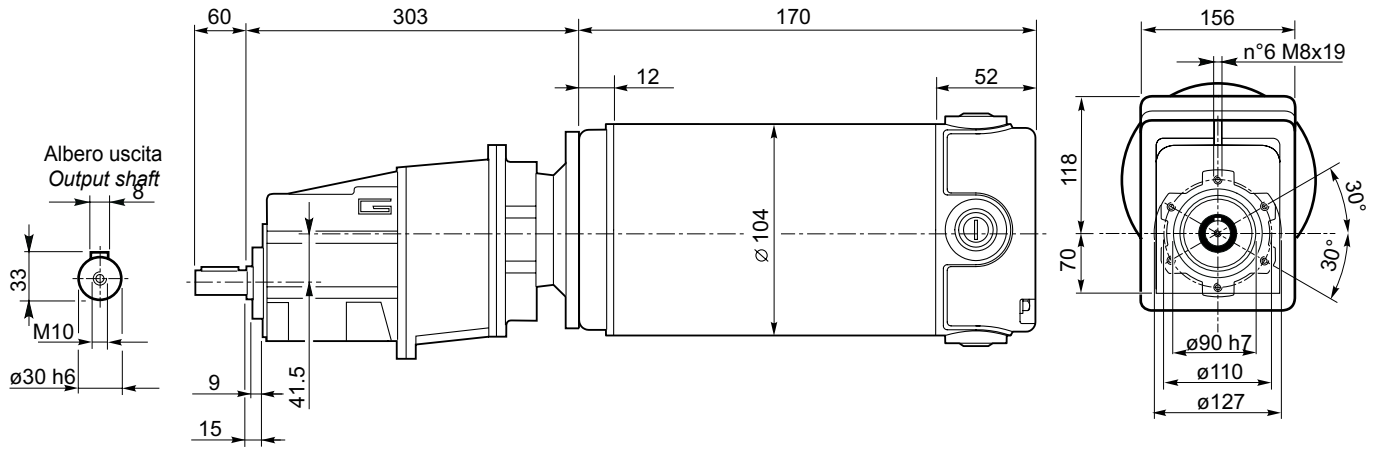
### ECMG250/022 U




### ECMG250/023 U



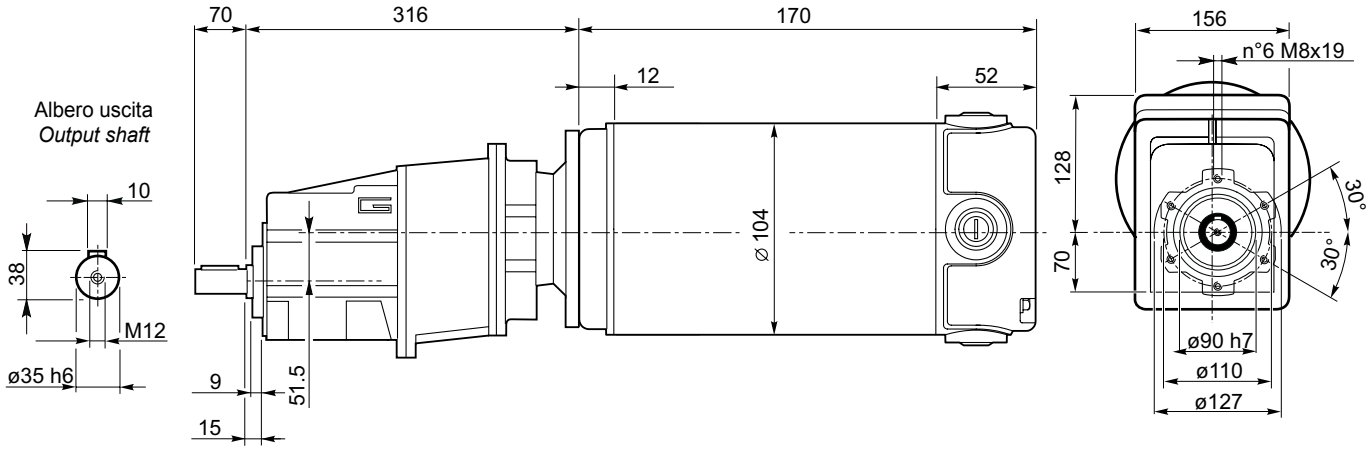

### ECMG250/033 U



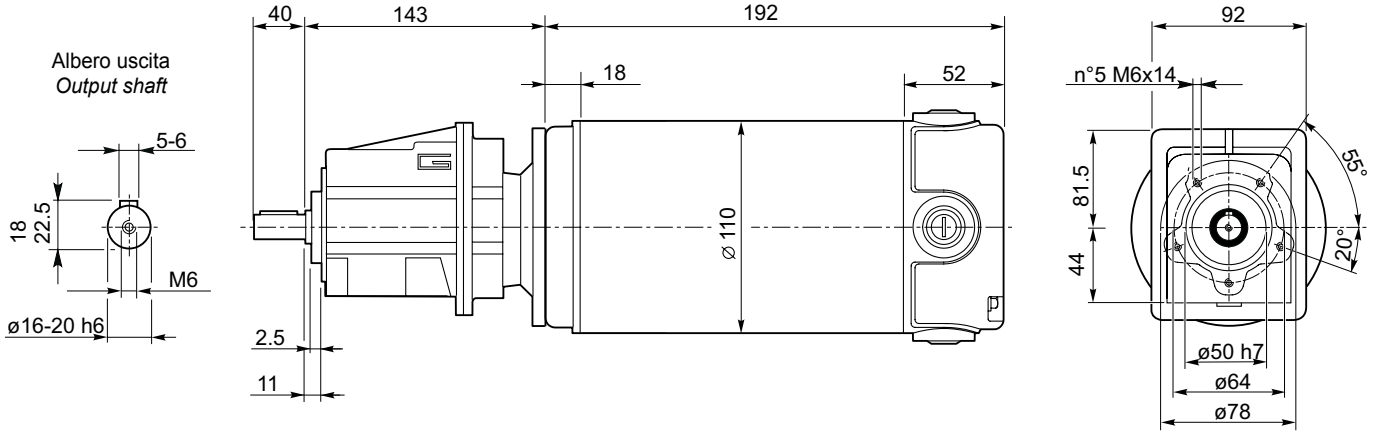
**Dimensioni** ***Dimensions***

# ECMG..U

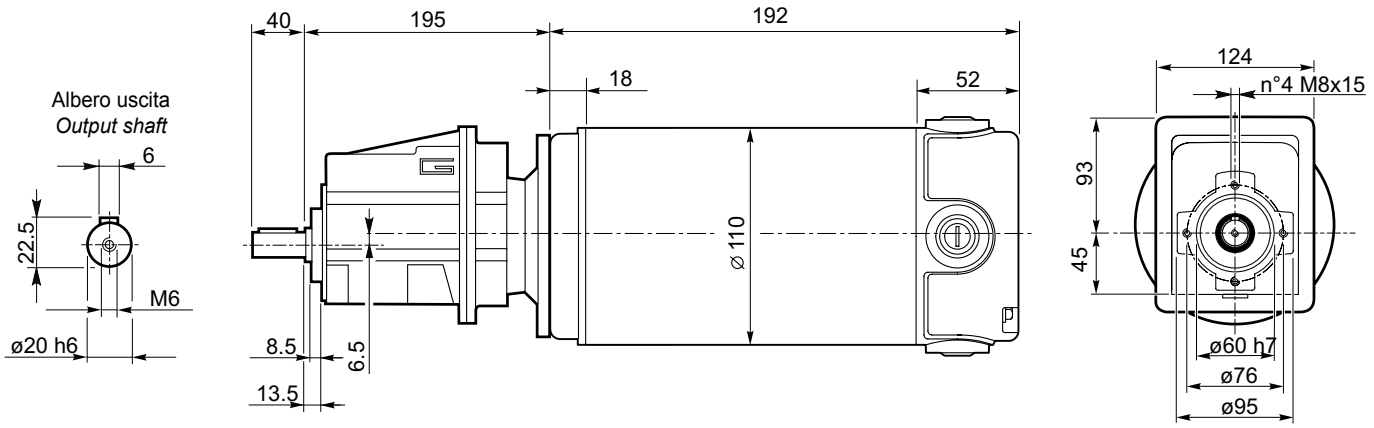
## ECMG250/043 U




## ECMG350/002 U



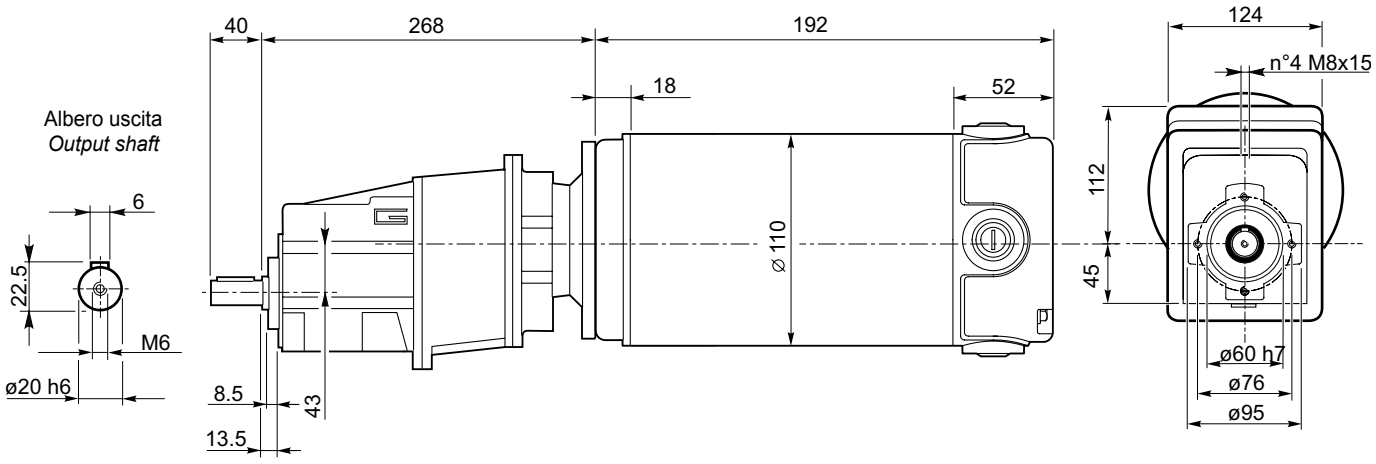

## ECMG350/012 U



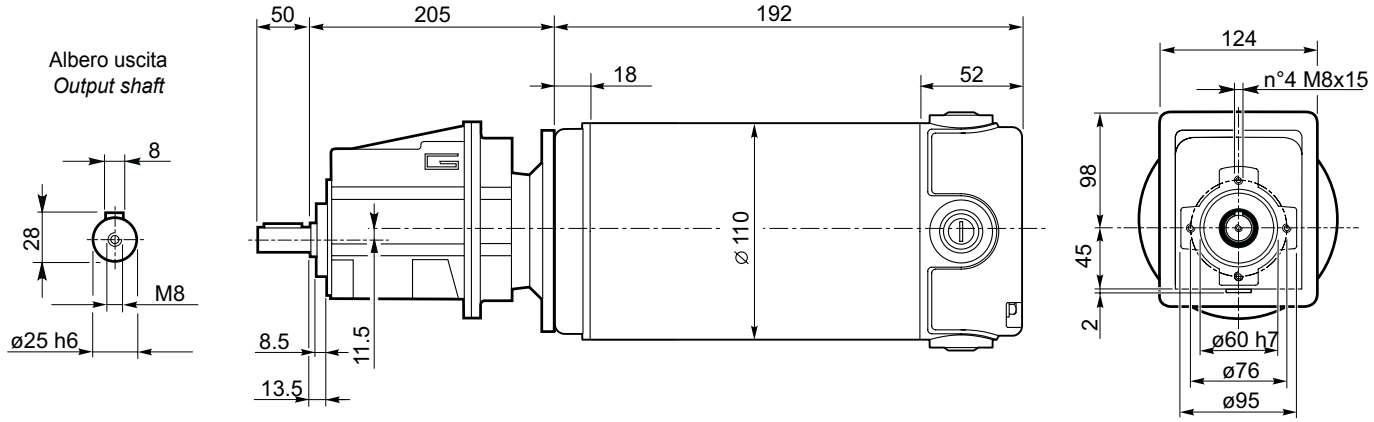
**Dimensioni** ***Dimensions***

# ECMG..U

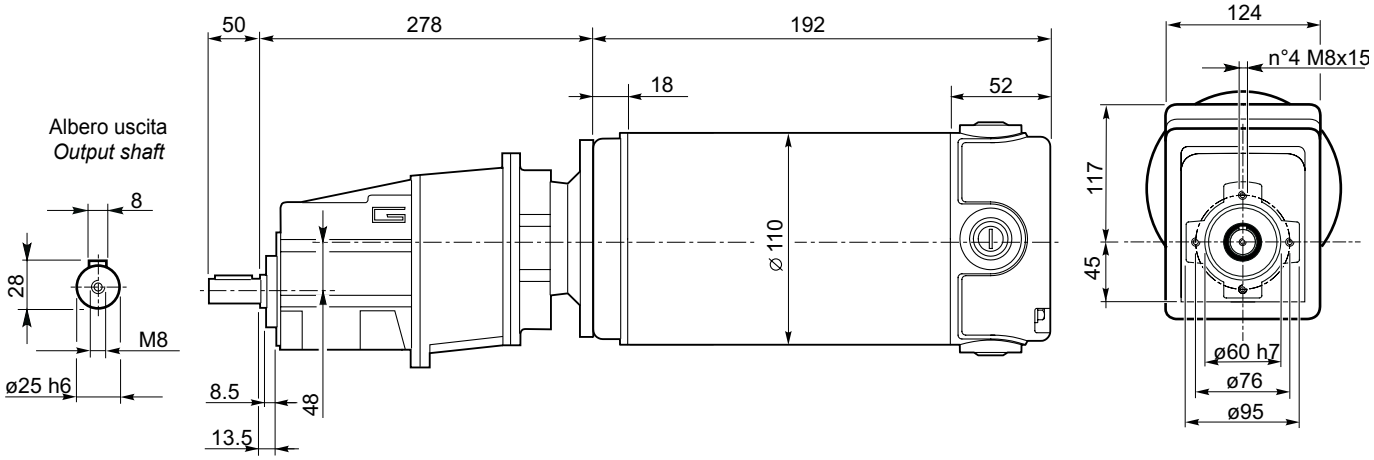
## ECMG350/013 U




## ECMG350/022 U



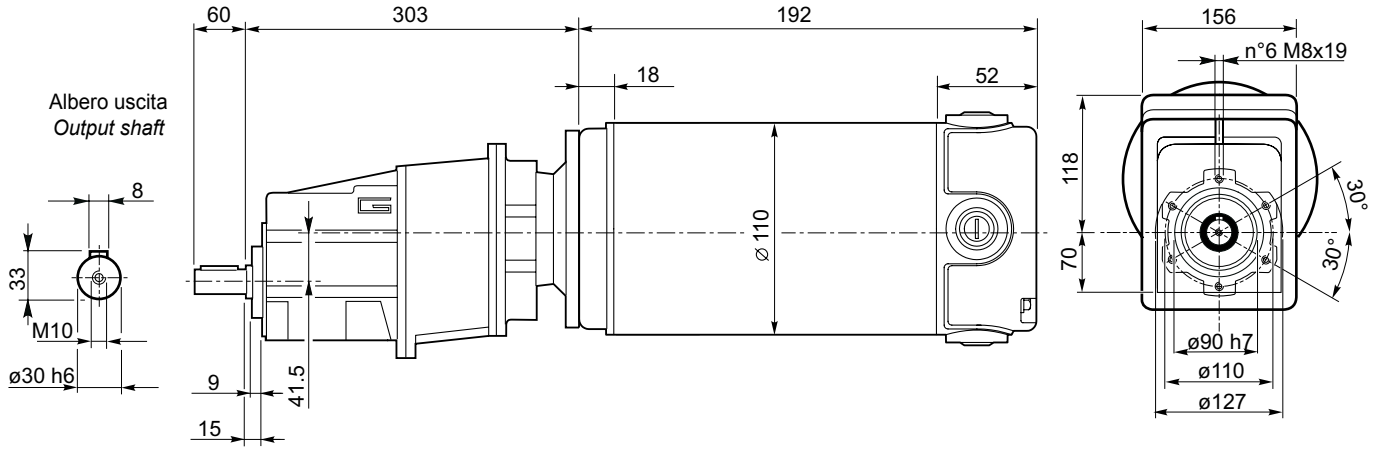

## ECMG350/023 U



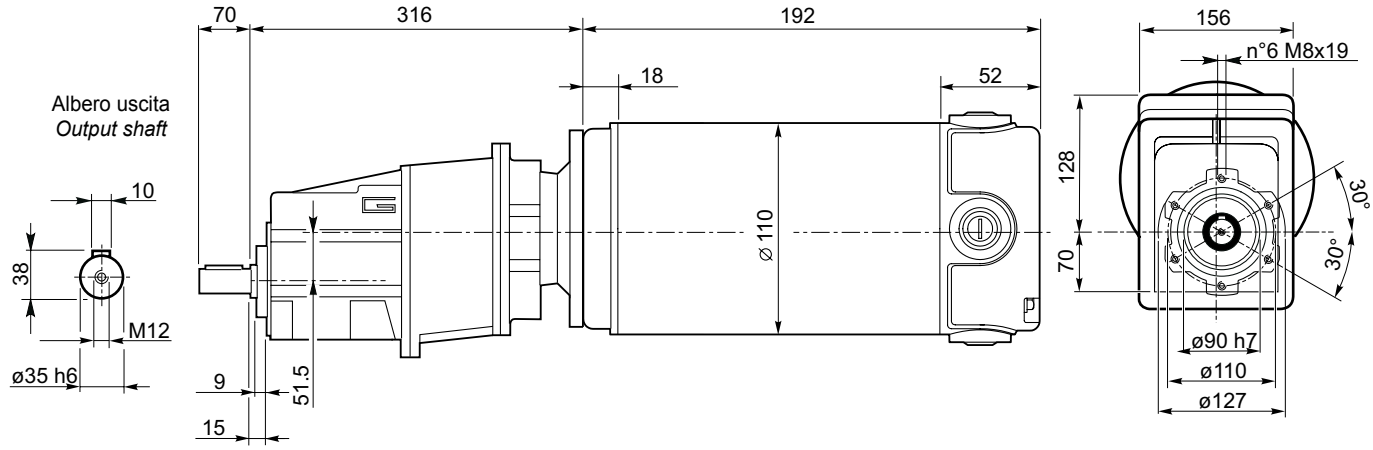
**Dimensioni** ***Dimensions***

# ECMG..U

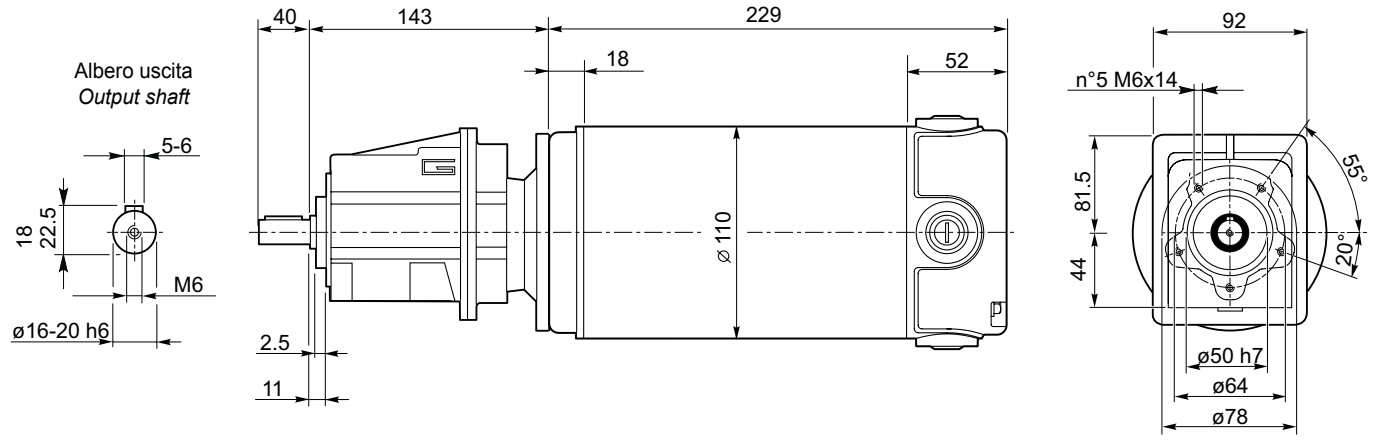
## ECMG350/033 U




## ECMG350/043 U



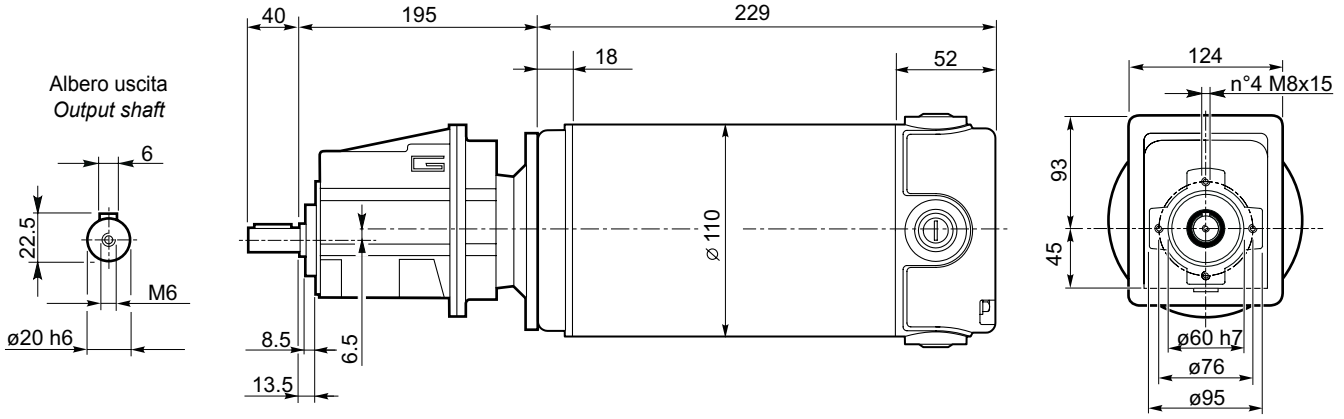

## ECMG600/002 U



**Dimensioni** ***Dimensions***

## ECMG..U

### ECMG600/012 U

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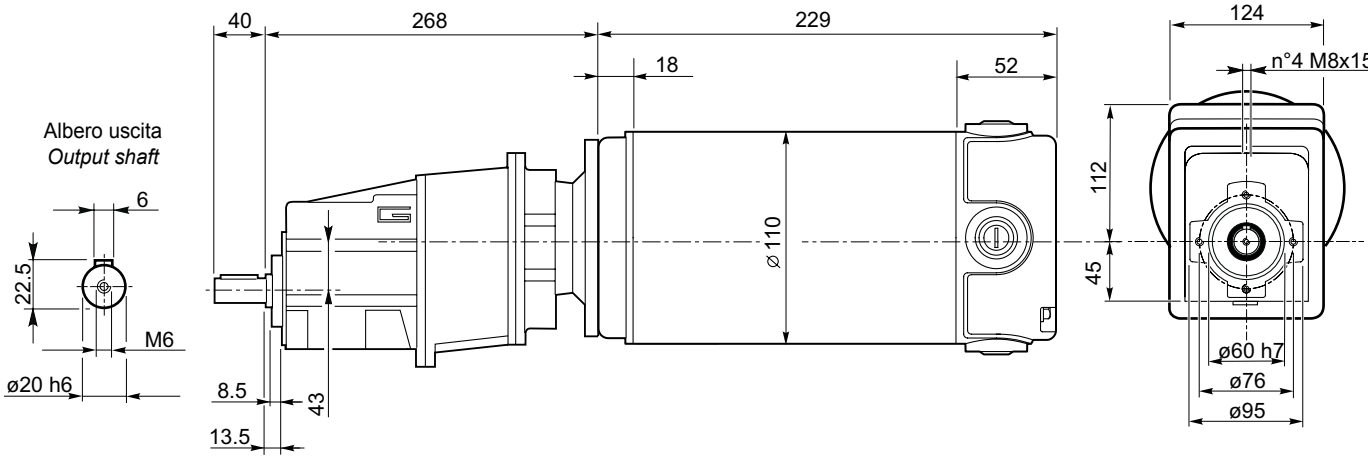
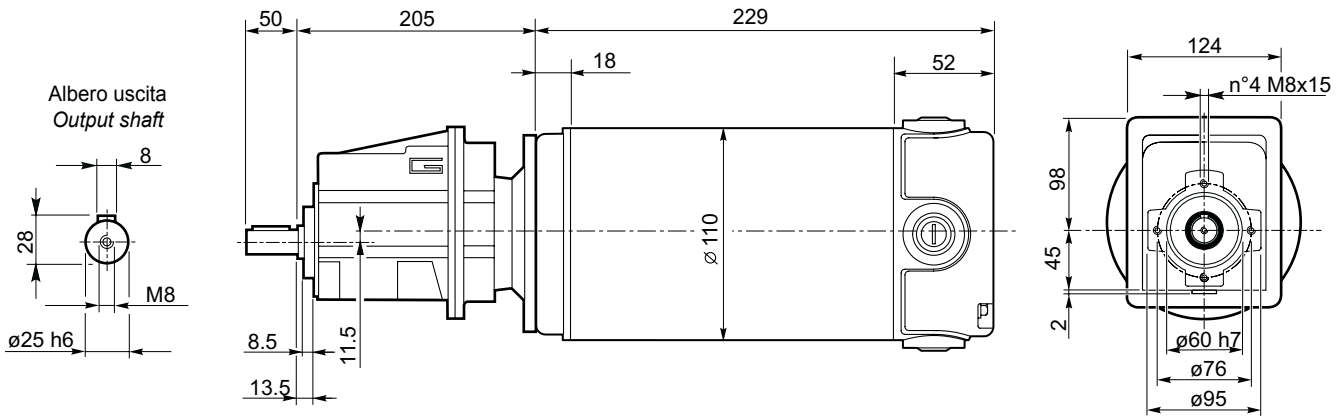


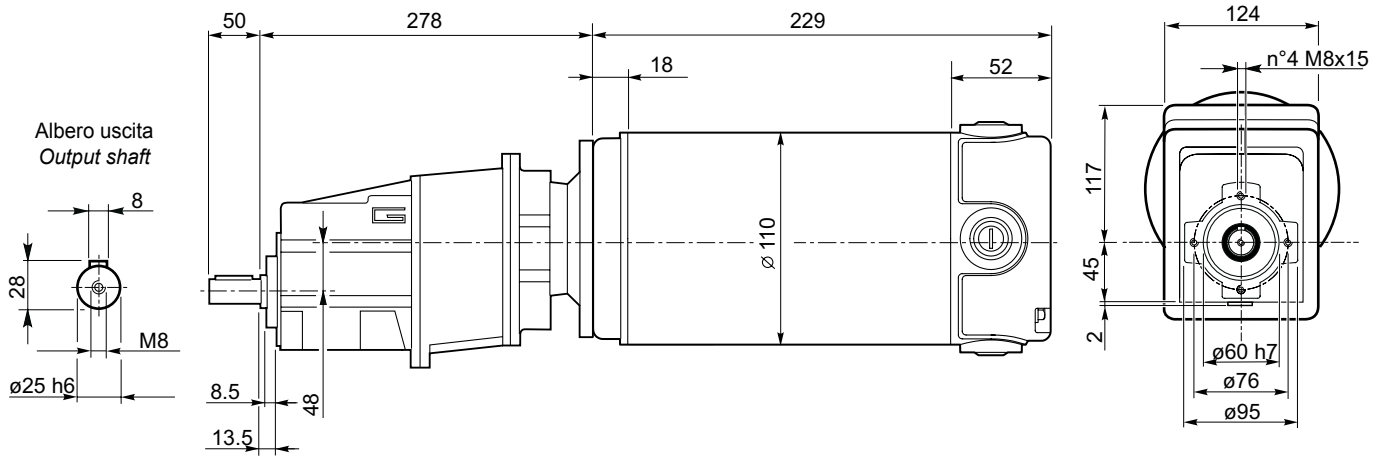

### ECMG600/022 U



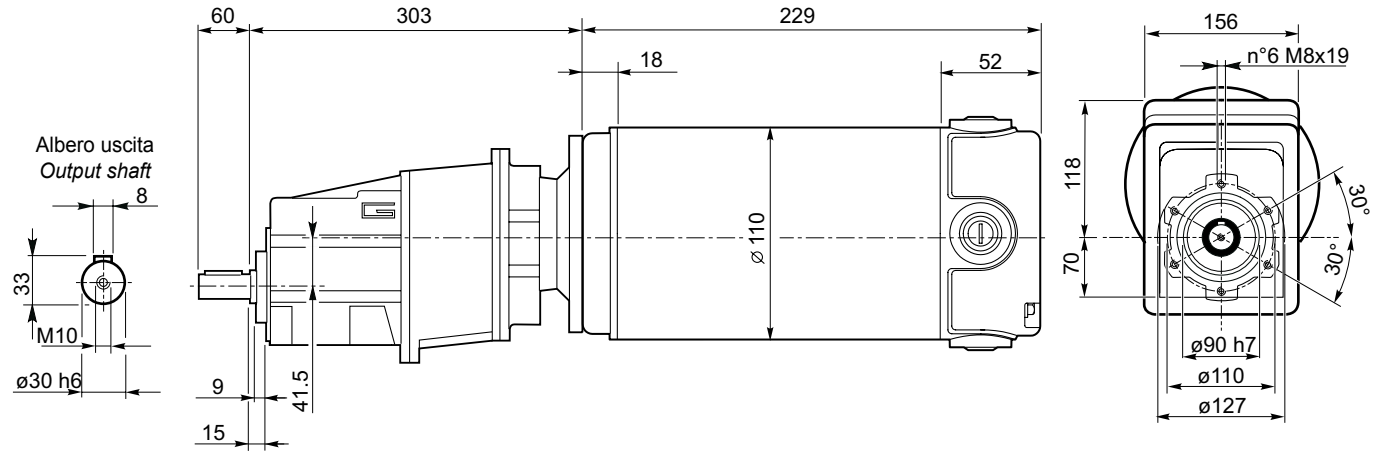
**Dimensioni** ***Dimensions***

# ECMG..U

## ECMG600/023 U




## ECMG600/033 U

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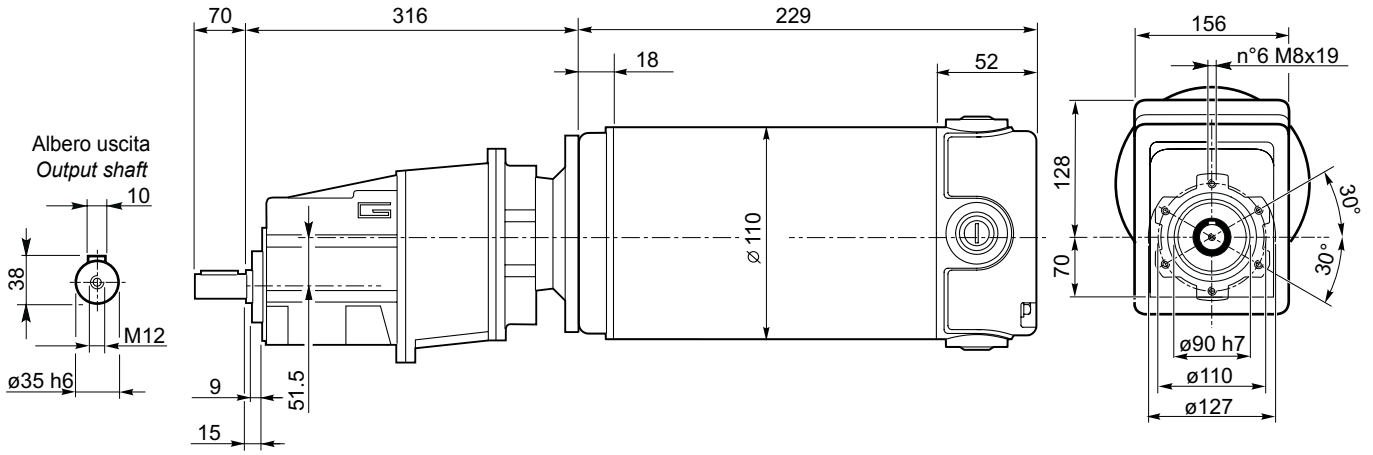
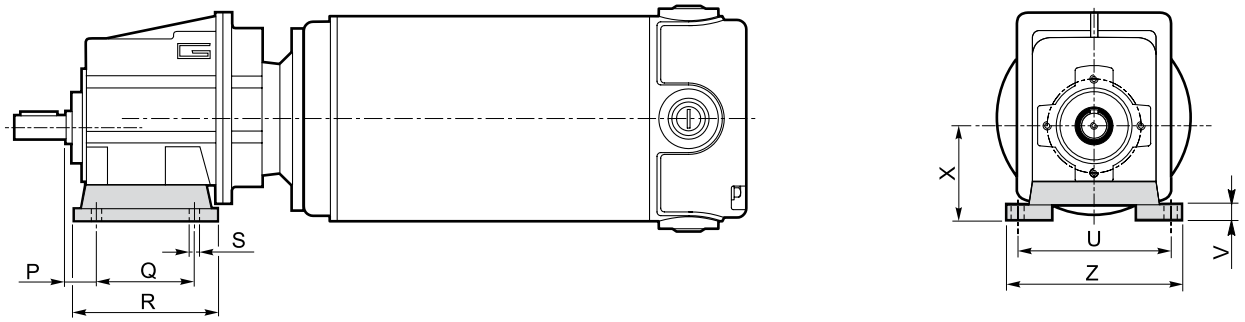


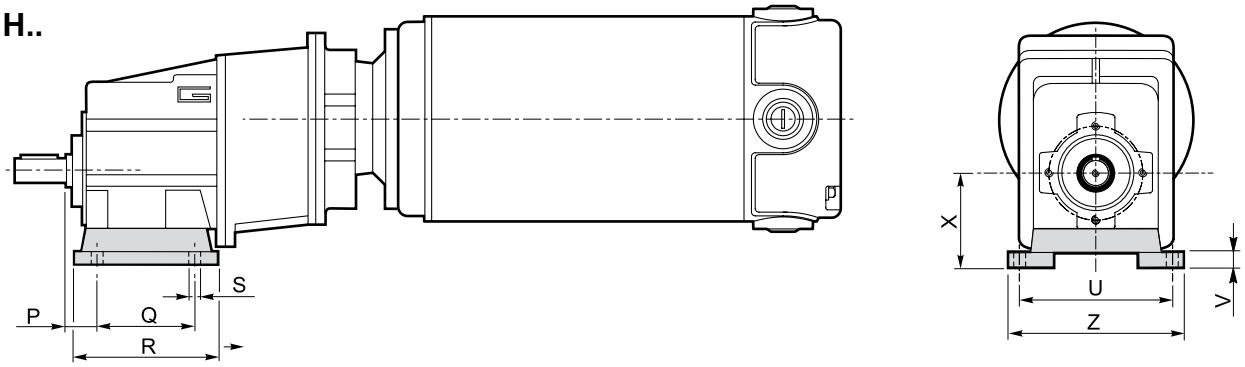
**Dimensioni** *Dimensions*

# CMG..H

## CMG..2 H..




## CMG..3 H..



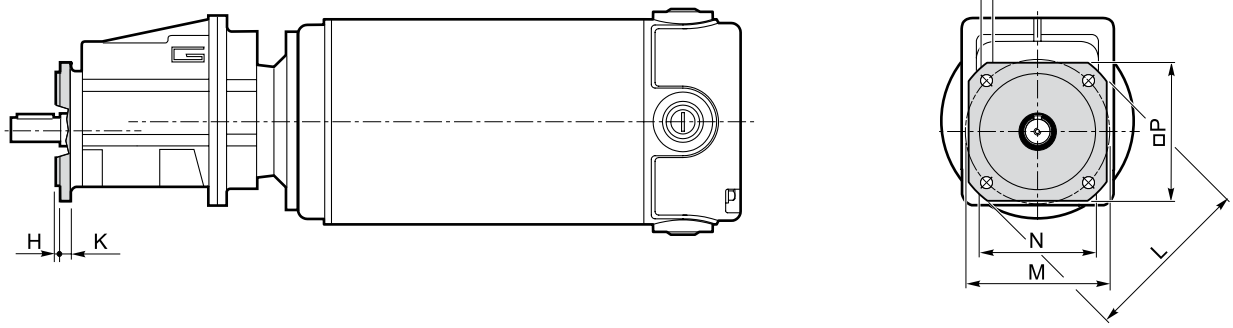

| Versione **H** / ***H** Version* | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **CMG** | **P** | **Q** | **R** | **S** | **U** | **V** | **X** | **Z** | **Piede / *Foot*** | |
| | | | | | | | | | Tipo / *Type* | Peso / *Weight* [kg] |
| **002** | **18** | **60** | **80** | **9** | **100** | **10** | **60** | **120** | **H60** | **0.2** |
| | 18 | 80 | 104 | 9 | 110 - 120 | 10 | 75 | 145 | H75 | 0.3 |
| | 18 | 50 - 87 | 110 | 9 | 110 | 10 | 85 | 135 | H85 | 0.4 |
| **012 013** | **20** | **85** | **108** | **9** | **115** | **12** | **65** | **139** | **H65** | **0.7** |
| | 18 | 80 | 118 | 9 | 110 | 12 | 75 | 140 | **H75** | 1.0 |
| | 25 | 85 | 120 | 9 | 120 | 12 | 80 | 140 | **H80** | 1.1 |
| | 18 | 50 - 87 | 118 | 9 | 110 | 12 | 85 | 130 | **H85** | 1.2 |
| | 25 | 130 | 154 | 9 | 110 | 12 | 90 | 135 | **H90** | 1.5 |
| | 18 | 60 - 107.5 | 135 | 11 | 130 | 12 | 100 | 155 | **H100** | 1.7 |
| **022 023** | **20** | **85** | **108** | **9** | **115** | **12** | **65** | **139** | **H65** | **0.7** |
| | 18 | 80 | 118 | 9 | 110 | 12 | 75 | 140 | **H75** | 1.0 |
| | 25 | 85 | 120 | 9 | 120 | 12 | 80 | 140 | **H80** | 1.1 |
| | 18 | 50 - 87 | 118 | 9 | 110 | 12 | 85 | 130 | **H85** | 1.2 |
| | 25 | 130 | 154 | 9 | 110 | 12 | 90 | 135 | **H90** | 1.5 |
| | 18 | 60 - 107.5 | 135 | 11 | 130 | 12 | 100 | 155 | **H100** | 1.7 |
| **033** | **30** | **105** | **136** | **14** | **160** | **14** | **95** | **194** | **H95** | **1.5** |
| | 30 | 100 | 150 | 11 | 150 | 14 | 110 | 185 | **H110** | 1.9 |
| | 18 | 70 | | | 160 | | | | | |
| | 30 | 165 | 195 | 14 | 135 | 14 | 115 | 170 | **H115** | 2.2 |
| | 35 | 110 | 160 | 14 | 170 | 14 | 120 | 210 | **H120** | 2.6 |
| **043** | **30** | **105** | **136** | **14** | **160** | **14** | **95** | **194** | **H95** | **1.5** |
| | 30 | 100 | 150 | 11 | 150 | 14 | 110 | 185 | **H110** | 1.9 |
| | 18 | 70 | | | 160 | | | | | |
| | 30 | 165 | 195 | 14 | 135 | 14 | 115 | 170 | **H115** | 2.2 |
| | 35 | 110 | 160 | 14 | 170 | 14 | 120 | 210 | **H120** | 2.6 |

Preferenziale / *Preferred*

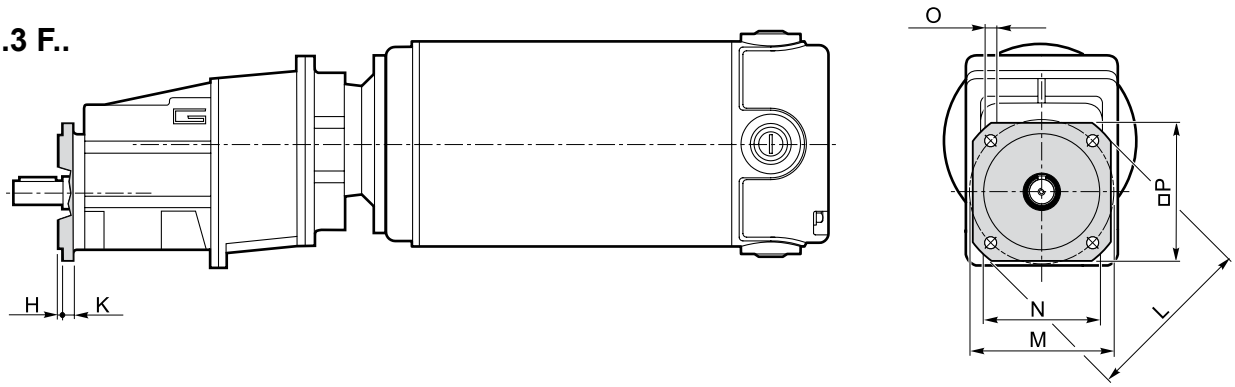
**Dimensioni** ***Dimensions***

# CMG..F

## CMG..2 F..




## CMG..3 F..




| Versione **F** / ***F** Version* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **CMG** | **H** | **K** | **L** | **M** | **N** f7 | **O** | **P** | **Flangia / *Flange*** | |
| | | | | | | | | Tipo / *Type* | Peso / *Weight* [kg] |
| **002** | 3.5 | 7 | 105 | 85 | 70 | 6.5 | 90 | **F105** | 0.1 |
| | 3.5 | 8 | 120 | 100 | 80 | 7 | 100 | **F120** | 0.2 |
| | 3.5 | 8 | 140 | 115 | 95 | 9 | 115 | **F140** | 0.2 |
| **012 013** | 3 | 9 | 120 | 100 | 80 | 9 | 106 | **F120** | 0.5 |
| | 3.5 | 9 | 140 | 115 | 95 | 9 | 115 | **F140** | 0.8 |
| | 3.5 | 9 | 160 | 130 | 110 | 9 | 126 | **F160** | 1.1 |
| | 3.5 | 11 | 200 | 165 | 130 | 11 | 165 | **F200** | 1.8 |
| **022 023** | 3 | 9 | 120 | 100 | 80 | 9 | 106 | **F120** | 0.5 |
| | 3.5 | 9 | 140 | 115 | 95 | 9 | 115 | **F140** | 0.8 |
| | 3.5 | 9 | 160 | 130 | 110 | 9 | 126 | **F160** | 1.1 |
| | 3.5 | 11 | 200 | 165 | 130 | 11 | 165 | **F200** | 1.8 |
| **033** | 3.5 | 11 | 160 | 130 | 110 | 9 | 140 | **F160** | 1.0 |
| | 3.5 | 11 | 200 | 165 | 130 | 11 | 165 | **F200** | 1.8 |
| | 4 | 13 | 250 | 215 | 180 | 14 | 215 | **F250** | 2.9 |
| **043** | 3.5 | 11 | 160 | 130 | 110 | 9 | 140 | **F160** | 1.0 |
| | 3.5 | 11 | 200 | 165 | 130 | 11 | 165 | **F200** | 1.8 |
| | 4 | 13 | 250 | 215 | 180 | 14 | 215 | **F250** | 2.9 |

## Dimensioni — *Dimensions*

| Versione **H** / ***H*** Version | | | | | | | | | | | Combinazioni possibili H/F *Possible combinations H/F* | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CMG** | **P** | **Q** | **R** | **S** | **U** | **V** | **X** | **Z** | **Piede / *Foot*** Tipo *Type* | Peso / *Weight* [kg] | **F105** | **F120** | **F140** | **F160** | **F200** | **F250** | **F300** |
| **002** | **18** | **60** | **80** | **9** | **100** | **10** | **60** | **120** | **H60** | **0.2** | • | • | • | | | | |
| | 18 | 80 | 104 | 9 | 110 - 120 | 10 | 75 | 145 | **H75** | 0.3 | • | • | • | | | | |
| | 18 | 50 - 87 | 110 | 9 | 110 | 10 | 85 | 135 | **H85** | 0.4 | • | • | • | | | | |
| **012 013** | **20** | **85** | **108** | **9** | **115** | **12** | **65** | **139** | **H65** | **0.7** | | • | • | | | | |
| | 18 | 80 | 118 | 9 | 110 | 12 | 75 | 140 | **H75** | 1.0 | | • | • | • | | | |
| | 25 | 85 | 120 | 9 | 120 | 12 | 80 | 140 | **H80** | 1.1 | | • | • | • | | | |
| | 18 | 50 - 87 | 118 | 9 | 110 | 12 | 85 | 130 | **H85** | 1.2 | | • | • | • | | | |
| | 25 | 130 | 154 | 9 | 110 | 12 | 90 | 135 | **H90** | 1.5 | | • | • | • | • | | |
| | 18 | 60 - 107.5 | 135 | 11 | 130 | 12 | 100 | 155 | **H100** | 1.7 | | • | • | • | • | | |
| **022 023** | **20** | **85** | **108** | **9** | **115** | **12** | **65** | **139** | **H65** | **0.7** | | • | • | | | | |
| | 18 | 80 | 118 | 9 | 110 | 12 | 75 | 140 | **H75** | 1.0 | | • | • | • | | | |
| | 25 | 85 | 120 | 9 | 120 | 12 | 80 | 140 | **H80** | 1.1 | | • | • | • | | | |
| | 18 | 50 - 87 | 118 | 9 | 110 | 12 | 85 | 130 | **H85** | 1.2 | | • | • | • | | | |
| | 25 | 130 | 154 | 9 | 110 | 12 | 90 | 135 | **H90** | 1.5 | | • | • | • | • | | |
| | 18 | 60 - 107.5 | 135 | 11 | 130 | 12 | 100 | 155 | **H100** | 1.7 | | • | • | • | • | | |
| **033** | **30** | **105** | **136** | **14** | **160** | **14** | **95** | **194** | **H95** | **1.5** | | | | • | • | | |
| | 30 | 100 | 150 | 11 | 150 | 14 | 110 | 185 | **H110** | 1.9 | | | | • | • | | |
| | 18 | 70 | | | 160 | | | | | | | | | | | | |
| | 30 | 165 | 195 | 14 | 135 | 14 | 115 | 170 | **H115** | 2.2 | | | | • | • | • | |
| | 35 | 110 | 160 | 14 | 170 | 14 | 120 | 210 | **H120** | 2.6 | | | | • | • | • | |
| **043** | **30** | **105** | **136** | **14** | **160** | **14** | **95** | **194** | **H95** | **1.5** | | | | • | • | | |
| | 30 | 100 | 150 | 11 | 150 | 14 | 110 | 185 | **H110** | 1.9 | | | | • | • | | |
| | 18 | 70 | | | 160 | | | | | | | | | | | | |
| | 30 | 165 | 195 | 14 | 135 | 14 | 115 | 170 | **H115** | 2.2 | | | | • | • | • | |
| | 35 | 110 | 160 | 14 | 170 | 14 | 120 | 210 | **H120** | 2.6 | | | | • | • | • | |

Preferenziale / *Preferred*

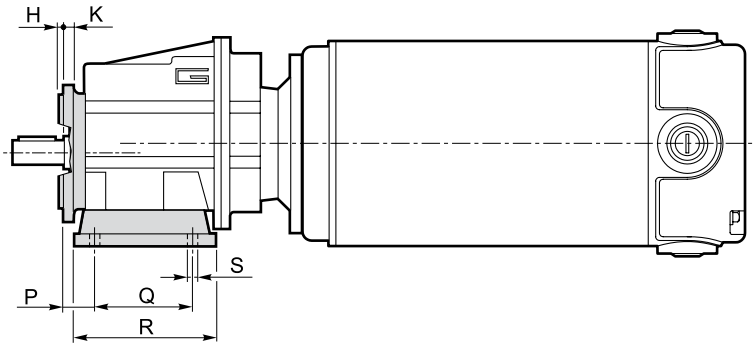
• Combinazioni possibili H/F / *Possible combinations H/F*

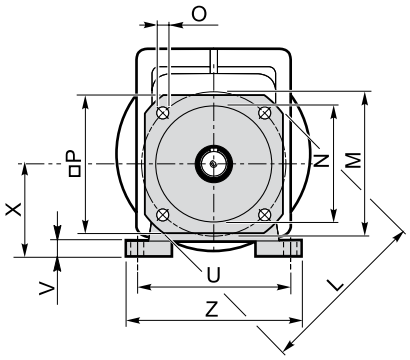
| Versione **F** / ***F*** *Version* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **CMG** | **H** | **K** | **L** | **M** | **N** f7 | **O** | **P** | **Flangia / *Flange*** Tipo / *Type* | Peso / *Weight* [kg] |
| **002** | 3.5 | 7 | 105 | 85 | 70 | 6.5 | 90 | **F105** | 0.1 |
| | 3.5 | 8 | 120 | 100 | 80 | 7 | 100 | **F120** | 0.2 |
| | 3.5 | 8 | 140 | 115 | 95 | 9 | 115 | **F140** | 0.2 |
| **012 013** | 3 | 9 | 120 | 100 | 80 | 9 | 106 | **F120** | 0.5 |
| | 3.5 | 9 | 140 | 115 | 95 | 9 | 115 | **F140** | 0.8 |
| | 3.5 | 9 | 160 | 130 | 110 | 9 | 126 | **F160** | 1.1 |
| | 3.5 | 11 | 200 | 165 | 130 | 11 | 165 | **F200** | 1.8 |
| **022 023** | 3 | 9 | 120 | 100 | 80 | 9 | 106 | **F120** | 0.5 |
| | 3.5 | 9 | 140 | 115 | 95 | 9 | 115 | **F140** | 0.8 |
| | 3.5 | 9 | 160 | 130 | 110 | 9 | 126 | **F160** | 1.1 |
| | 3.5 | 11 | 200 | 165 | 130 | 11 | 165 | **F200** | 1.8 |
| **033** | 3.5 | 11 | 160 | 130 | 110 | 9 | 140 | **F160** | 1.0 |
| | 3.5 | 11 | 200 | 165 | 130 | 11 | 165 | **F200** | 1.8 |
| | 4 | 13 | 250 | 215 | 150 | 14 | 215 | **F250** | 2.9 |
| **043** | 3.5 | 11 | 160 | 130 | 110 | 9 | 140 | **F160** | 1.0 |
| | 3.5 | 11 | 200 | 165 | 130 | 11 | 165 | **F200** | 1.8 |
| | 4 | 13 | 250 | 215 | 150 | 14 | 215 | **F250** | 2.9 |

Dimensioni *Dimensions*

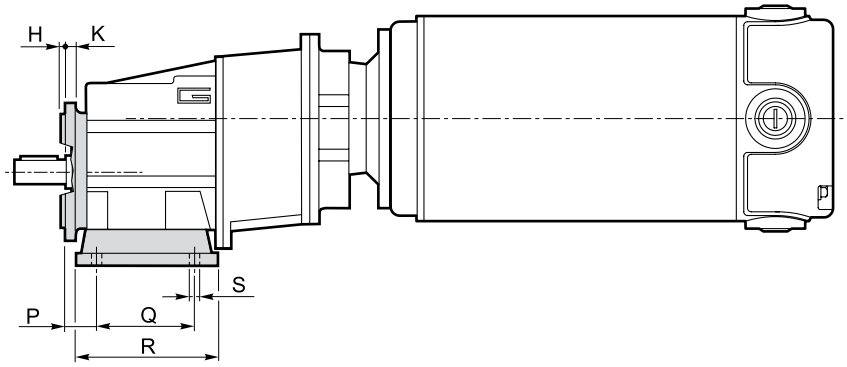
## CMG..H../F..

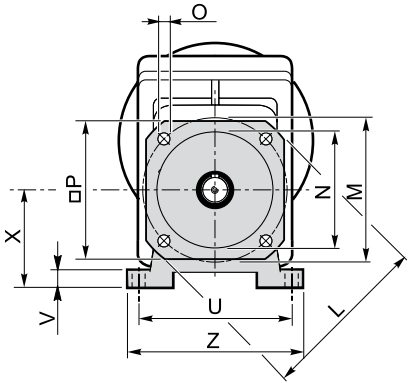
### CMG..2 H../F..




### CMG..3 H../F..

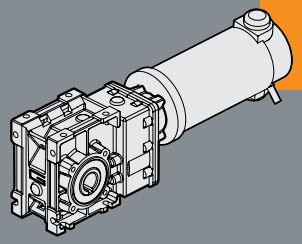


TRANSTECNO®
THE MODULAR GEARMOTOR

# ECMB

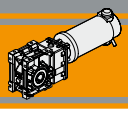
ECMB



## MOTORIDUTTORI C.C. AD ASSI ORTOGONALI

## PERMANENT MAGNETS D.C. BEVEL HELICAL GEARMOTORS


TRANSTECNO · GENUINE · PRODUCTS ·



ENERGY SAVING

## Caratteristiche tecniche — *Technical features*

Le caratteristiche principali dei motoriduttori a corrente continua della serie ECMB sono:

- Alimentazione in bassa tensione 12/24 Vcc
- Possibilità di montaggio encoder
- Potenze motore disponibili da 100 a 800W S2
- Magneti in ferrite
- Carcasse dei riduttori in pressofusione di alluminio
- Lubrificazione permanente con olio sintetico
- Ingranaggi sempre rettificati

*The main features of ECMB D.C. gearmotor range are:*

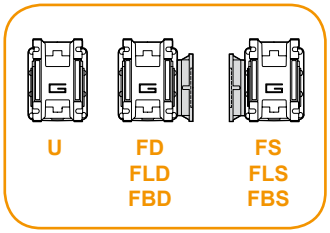
- *Low voltage power supply 12/24 Vdc*
- *Suitable for encoder assembly*
- *Motor power ratings available from 100 to 800W S2*
- *Ferrite magnets*
- *Die-cast aluminum housing*
- *Permanent synthetic oil long-life lubrication*
- *Ground helical gears*

## Designazione — *Classification*

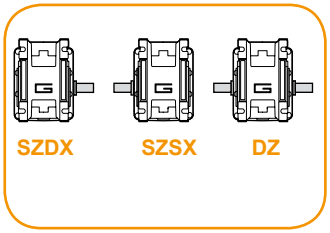
MOTORIDUTTORE / *GEARMOTOR*

| ECMB | 100/402 | U | 9.2 | D20 | SZDX | BRSX | 90 | 240 |
|---|---|---|---|---|---|---|---|---|
| Tipo *Type* | Grandezza *Size* | Versione Riduttore *Gearbox Version* | Rapporto *Ratio* | Albero di uscita *Output shaft* | Albero di uscita *Output shaft* | Braccio di reazione *Torque arm* | Angolo *Angle* | Versione Motore *Motor Version* |
| ECMB | 070/402<br>100/402<br>100/502<br>180/402<br>180/502<br>250/402<br>250/502<br>250/633<br>350/402<br>350/502<br>350/633<br>600/402<br>600/502<br>600/633 | U<br>FD<br>FS<br>FLD<br>FLS<br>FBD<br>FBS | Vedere tabella<br>*See tables* | Vedere tabella<br>*See tables* | SZDX<br>SZSX<br>DZ | BRDX<br>BRSX | 0°<br>90°<br>180°<br>270° | 120<br>240<br>24E |

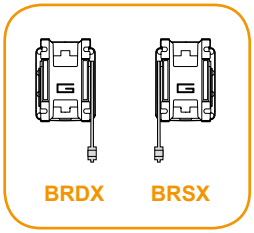
Versione Riduttore *Gearbox Version*



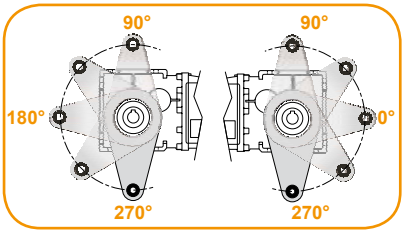

Albero di uscita *Output shaft*



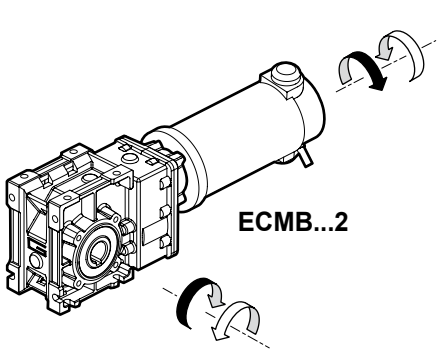

Braccio di reazione *Torque arm*

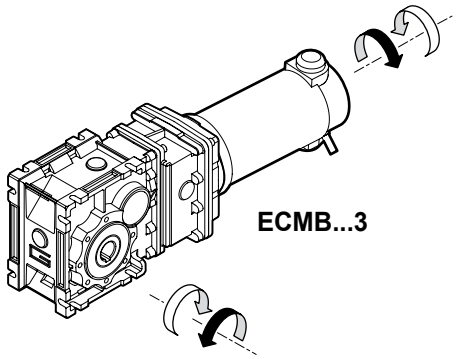



Angolo *Angle*




## Sensi di rotazione — *Direction of rotation*




## Simbologia — *Symbols*

| | | | | | |
|---|---|---|---|---|---|
| $n_1$ | [$min^{-1}$] | Velocità in ingresso / *Input speed* | $M_2$ | [Nm] | Coppia in uscita in funzione di $P_1$ / *Output torque referred to* $P_1$ |
| $n_2$ | [$min^{-1}$] | Velocità in uscita / *Output speed* | sf | | Fattore di servizio / *Service factor* |
| i | | Rapporto di riduzione / *Ratio* | $A_2$ | N] | Carico assiale ammissibile in uscita / *Permitted output axial load* |
| $P_1$ | [kW] | Potenza in entrata / *Input power* | $R_2$ | [N] | Carico radiale ammissibile in uscita / *Permitted output radial load* |

## Lubrificazione — *Lubrication*

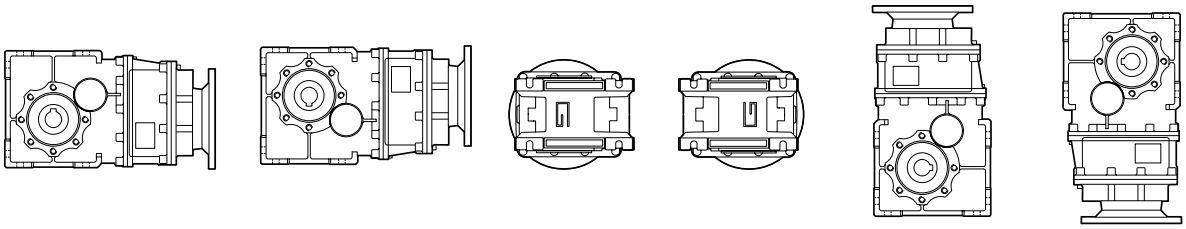
Tutti i riduttori nelle taglie 402, 502 e 633 sono forniti completi di lubrificante sintetico viscosità 320, pertanto possono essere installati in qualunque posizione di montaggio e non necessitano di manutenzione.

*Permanent synthetic oil long-life lubrication (viscosity grade 320) makes it possible to use sizes 402, 502 and 603 in all mounting positions; for this reason they can be installed in any assembly position and do not require maintenance.*

| CMB | **Quantità di olio** (litri) / ***Oil quantity*** *(litres)* | | | | | |
|---|---|---|---|---|---|---|
| | **B3** | **B8** | **B6** | **B7** | **V5** | **V6** |
| **402** | 0.4 | | | | | |
| **502** | 0.52 | | | | | |
| **633** | 1.3 | | | | | |
| | Lubrificati a vita / *Life lubrication* | | | | | |

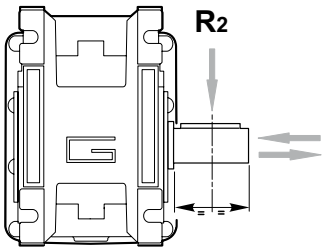
N.B.
Le quantità di lubrificante sono indipendenti dalla posizione di montaggio per le taglie 402, 502 e 603.
*The oil quantity does not depend on mounting position for sizes 402, 502 and 603.*

Posizioni di montaggio / *Mounting positions*



**B3** (standard) **B8** **B6** **B7** **V5** **V6**

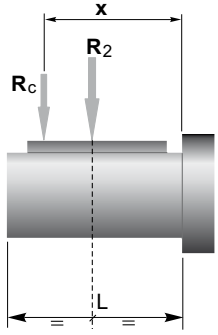
## Carichi radiali — *Radial loads*




| $n_2$ [$min^{-1}$] | $R_2$ [N] | | |
|---|---|---|---|
| | **CMB 402** | **CMB 502** | **CMB 633** |
| 400 | 905 | 1116 | 1835 |
| 300 | 996 | 1228 | 2020 |
| 200 | 1141 | 1406 | 2312 |
| 170 | 1204 | 1484 | 2441 |
| 140 | 1414 | 1743 | 2604 |
| 100 | 1582 | 1949 | 2913 |
| 90 | 1638 | 2019 | 3321 |
| 60 | 2047 | 2490 | 3801 |
| 40 | 2524 | 3029 | 4492 |
| 30 | 2778 | 3334 | 5159 |
| 20 | 3180 | 3816 | 5906 |
| 15 | 3500 | 4200 | 6500 |
| 10 | 3500 | 4200 | 6500 |

Quando il carico radiale risultante non è applicato sulla mezzeria dell'albero occorre calcolare quello effettivo con la seguente formula:

*When the resulting radial load is not applied on the centre line of the shaft it is necessary to calculate the effective load with the following formula:*




| | **CMB 402** | **CMB 502** | **CMB 633** |
|---|---|---|---|
| **a** | 86 | 104 | 118 |
| **b** | 66 | 79 | 93 |
| **$R_{2MAX}$** | 3500 | 4200 | 6500 |

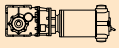
$$R_c = \frac{R_2 \cdot a}{(b+x)} \leq R_{2MAX}$$

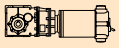
$$R \leq R_c$$

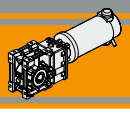
*a, b = valori riportati nella tabella*
*a, b = values given in the table*

## Dati tecnici per servizio S2

## *Technical data for S2 duty*

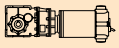
| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **100** | | | | | | |
| (3000 min$^{-1}$) | **485** | 1.8 | 16.8 | 6.18 | **070/402** | 120/240 |
| | **401** | 2.2 | 13.8 | 7.49 | | |
| | **326** | 2.8 | 11.3 | 9.20 | | |
| | **254** | 3.5 | 9.9 | 11.83 | | |
| | **240** | 3.7 | 9.4 | 12.48 | | |
| | **202** | 4.4 | 7.9 | 14.83 | | |
| | **170** | 5.3 | 6.6 | 17.63 | | |
| | **161** | 5.6 | 7.7 | 18.60 | | |
| | **134** | 6.7 | 6.4 | 22.33 | | |
| | **125** | 7.2 | 6.0 | 23.91 | | |
| | **104** | 8.6 | 5.9 | 28.89 | | |
| | **97** | 9.2 | 5.5 | 30.84 | | |
| | **89** | 10.0 | 5.1 | 33.57 | | |
| | **84** | 10.7 | 4.8 | 35.63 | | |
| | **70** | 12.8 | 4.0 | 42.75 | | |
| | **54** | 16.6 | 3.1 | 55.31 | | |
| | **51** | 17.7 | 2.9 | 59.06 | | |
| | **47** | 19.2 | 2.7 | 64.29 | | |
| **140** | | | | | | |
| (3000 min$^{-1}$) | **485** | 2.6 | 12.0 | 6.18 | **100/402** | 120/240/24E |
| | **401** | 3.1 | 9.9 | 7.49 | | |
| | **326** | 3.9 | 8.0 | 9.20 | | |
| | **254** | 5.0 | 7.1 | 11.83 | | |
| | **240** | 5.2 | 6.7 | 12.48 | | |
| | **202** | 6.2 | 5.6 | 14.83 | | |
| | **170** | 7.4 | 4.7 | 17.63 | | |
| | **161** | 7.8 | 5.5 | 18.60 | | |
| | **134** | 9.4 | 4.6 | 22.33 | | |
| | **125** | 10.0 | 4.3 | 23.91 | | |
| | **104** | 12.1 | 4.2 | 28.89 | | |
| | **97** | 12.9 | 3.9 | 30.84 | | |
| | **89** | 14.1 | 3.6 | 33.57 | | |
| | **84** | 14.9 | 3.4 | 35.63 | | |
| | **70** | 17.9 | 2.8 | 42.75 | | |
| | **54** | 23.2 | 2.2 | 55.31 | | |
| | **51** | 24.7 | 2.1 | 59.06 | | |
| | **47** | 26.9 | 1.9 | 64.29 | | |
| | **54** | 23.2 | 4.23 | 55.31 | **100/502** | 120/240/24E |
| | **51** | 24.7 | 3.96 | 59.06 | | |
| | **47** | 26.9 | 3.64 | 64.29 | | |
| **250** | | | | | | |
| (3000 min$^{-1}$) | **485** | 4.6 | 6.7 | 6.18 | **180/402** | 120/240/24E |
| | **401** | 5.6 | 5.5 | 7.49 | | |
| | **326** | 6.9 | 4.5 | 9.20 | | |
| | **254** | 8.8 | 4.0 | 11.83 | | |
| | **240** | 9.3 | 3.7 | 12.48 | | |
| | **202** | 11.1 | 3.2 | 14.83 | | |
| | **170** | 13.2 | 2.7 | 17.63 | | |
| | **161** | 13.9 | 3.1 | 18.60 | | |
| | **134** | 16.7 | 2.6 | 22.33 | | |
| | **125** | 17.9 | 2.4 | 23.91 | | |

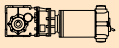
| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **250** | | | | | | |
| (3000 min$^{-1}$) | **104** | 21.6 | 2.4 | 28.89 | **180/402** | 120/240/24E |
| | **97** | 23.1 | 2.2 | 30.84 | | |
| | **89** | 25.1 | 2.0 | 33.57 | | |
| | **84** | 26.7 | 1.9 | 35.63 | | |
| | **70** | 32.0 | 1.6 | 42.75 | | |
| | **54** | 41.4 | 1.2 | 55.31 | | |
| | **51** | 44.2 | 1.2 | 59.06 | | |
| | **47** | 48.1 | 1.1 | 64.29 | | |
| | **134** | 16.7 | 5.1 | 22.33 | **180/502** | 120/240/24E |
| | **125** | 17.9 | 4.8 | 23.91 | | |
| | **104** | 21.6 | 4.5 | 28.89 | | |
| | **97** | 23.1 | 4.2 | 30.84 | | |
| | **89** | 25.1 | 3.9 | 33.57 | | |
| | **84** | 26.7 | 3.7 | 35.63 | | |
| | **70** | 32.0 | 3.1 | 42.75 | | |
| | **54** | 41.4 | 2.4 | 55.31 | | |
| | **51** | 44.2 | 2.2 | 59.06 | | |
| | **47** | 48.1 | 2.0 | 64.29 | | |
| **350** | | | | | | |
| (3000 min$^{-1}$) | **485** | 6.5 | 4.79 | 6.18 | **250/402** | 120/240 |
| | **401** | 7.8 | 3.95 | 7.49 | | |
| | **326** | 9.6 | 3.22 | 9.20 | | |
| | **254** | 12.4 | 2.82 | 11.83 | | |
| | **240** | 13.1 | 2.68 | 12.48 | | |
| | **202** | 15.5 | 2.25 | 14.83 | | |
| | **170** | 18.5 | 1.90 | 17.63 | | |
| | **161** | 19.5 | 2.21 | 18.60 | | |
| | **134** | 23.4 | 1.84 | 22.33 | | |
| | **125** | 25.0 | 1.72 | 23.91 | | |
| | **104** | 30.3 | 1.69 | 28.89 | | |
| | **97** | 32.3 | 1.58 | 30.84 | | |
| | **89** | 35.2 | 1.45 | 33.57 | | |
| | **84** | 37.3 | 1.37 | 35.63 | | |
| | **70** | 44.8 | 1.14 | 42.75 | | |
| | **54** | 57.9 | 0.88 | 55.31 | | |
| | **51** | 61.9 | 0.82 | 59.06 | | |
| | **47** | 67.3 | 0.76 | 64.29 | | |
| | **485** | 6.5 | 8.50 | 6.18 | **250/502** | 120/240 |
| | **401** | 7.8 | 7.01 | 7.49 | | |
| | **326** | 9.6 | 5.71 | 9.2 | | |
| | **254** | 12.4 | 5.65 | 11.83 | | |
| | **240** | 13.1 | 5.36 | 12.48 | | |
| | **202** | 15.5 | 4.51 | 14.83 | | |
| | **170** | 18.5 | 3.79 | 17.63 | | |
| | **161** | 19.5 | 4.41 | 18.6 | | |
| | **134** | 23.4 | 3.68 | 22.33 | | |
| | **125** | 25.0 | 3.43 | 23.91 | | |
| | **104** | 30.3 | 3.24 | 28.89 | | |
| | **97** | 32.3 | 3.03 | 30.84 | | |
| | **89** | 35.2 | 2.79 | 33.57 | | |
| | **84** | 37.3 | 2.63 | 35.63 | | |
| | **70** | 44.8 | 2.19 | 42.75 | | |
| | **54** | 57.9 | 1.69 | 55.31 | | |
| | **51** | 61.9 | 1.58 | 59.06 | | |
| | **47** | 67.3 | 1.46 | 64.29 | | |



## Dati tecnici per servizio S2

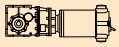
## *Technical data for S2 duty*

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **350** | | | | | | |
| (3000 min$^{-1}$) | **106** | 29.5 | 5.83 | 28.17 | **250/633** | 120/240 |
| | **89** | 35.4 | 4.86 | 33.81 | | |
| | **84** | 37.6 | 4.57 | 35.92 | | |
| | **77** | 40.7 | 4.79 | 38.88 | | |
| | **64** | 49.4 | 3.95 | 47.16 | | |
| | **52** | 60.7 | 3.21 | 57.93 | | |
| | **49** | 64.5 | 3.02 | 61.63 | | |
| | **41** | 77.5 | 2.52 | 73.96 | | |
| | **38** | 82.3 | 2.37 | 78.58 | | |
| | **32** | 97.7 | 1.99 | 93.33 | | |
| | **21** | 147.2 | 1.33 | 140.52 | | |
| | **17** | 190.4 | 1.02 | 181.81 | | |
| | **14** | 221.3 | 0.88 | 211.31 | | |
| **500** | | | | | | |
| (3000 min$^{-1}$) | **485** | 9 | 3.4 | 6.18 | **350/402** | 120/240 |
| | **401** | 11 | 2.8 | 7.49 | | |
| | **326** | 14 | 2.3 | 9.2 | | |
| | **254** | 18 | 2.0 | 11.83 | | |
| | **240** | 19 | 1.9 | 12.48 | | |
| | **202** | 22 | 1.6 | 14.83 | | |
| | **170** | 26 | 1.3 | 17.63 | | |
| | **161** | 28 | 1.5 | 18.6 | | |
| | **134** | 33 | 1.3 | 22.33 | | |
| | **125** | 36 | 1.2 | 23.91 | | |
| | **104** | 43 | 1.2 | 28.89 | | |
| | **97** | 46 | 1.1 | 30.84 | | |
| | **89** | 50 | 1.0 | 33.57 | | |
| | **84** | 53 | 1.0 | 35.63 | | |
| | **70** | 64 | 0.8 | 42.75 | | |
| | **54** | 73 | 0.7 | 55.31 | | |
| | **51** | 73 | 0.7 | 59.06 | | |
| | **47** | 73 | 0.7 | 64.29 | | |
| | **326** | 14 | 4.0 | 9.20 | **350/502** | 120/240 |
| | **254** | 18 | 4.0 | 11.83 | | |
| | **240** | 19 | 3.7 | 12.48 | | |
| | **202** | 22 | 3.2 | 14.83 | | |
| | **170** | 26 | 2.7 | 17.63 | | |
| | **161** | 28 | 3.1 | 18.60 | | |
| | **134** | 33 | 2.6 | 22.33 | | |
| | **125** | 35.8 | 2.4 | 23.91 | | |
| | **104** | 43 | 2.3 | 28.89 | | |
| | **97** | 46 | 2.1 | 30.84 | | |
| | **89** | 50 | 2.0 | 33.57 | | |
| | **84** | 53 | 1.8 | 35.63 | | |
| | **70** | 64 | 1.5 | 42.75 | | |
| | **54** | 83 | 1.2 | 55.31 | | |
| | **51** | 88 | 1.1 | 59.06 | | |
| | **47** | 96 | 1.0 | 64.29 | | |

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **500** | | | | | | |
| (3000 min$^{-1}$) | **139** | 32 | 5.3 | 21.56 | **350/633** | 120/240 |
| | **113** | 40 | 4.3 | 26.48 | | |
| | **106** | 42 | 4.1 | 28.17 | | |
| | **89** | 51 | 3.4 | 33.81 | | |
| | **84** | 54 | 3.2 | 35.92 | | |
| | **77** | 58 | 3.4 | 38.88 | | |
| | **64** | 71 | 2.8 | 47.16 | | |
| | **52** | 87 | 2.2 | 57.93 | | |
| | **49** | 92 | 2.1 | 61.63 | | |
| | **41** | 111 | 1.8 | 73.96 | | |
| | **38** | 118 | 1.7 | 78.58 | | |
| | **32** | 140 | 1.4 | 93.33 | | |
| | **21** | 210 | 0.9 | 140.52 | | |
| | **17** | 272 | 0.7 | 181.81 | | |
| | **14** | 279 | 0.7 | 211.31 | | |
| **800** | | | | | | |
| (3000 min$^{-1}$) | **485** | 15 | 2.1 | 6.18 | **600/402** | 120/240 |
| | **401** | 18 | 1.7 | 7.49 | | |
| | **326** | 22 | 1.4 | 9.20 | | |
| | **254** | 28 | 1.2 | 11.83 | | |
| | **240** | 30 | 1.2 | 12.48 | | |
| | **202** | 36 | 1.0 | 14.83 | | |
| | **170** | 42 | 0.8 | 17.63 | | |
| | **161** | 45 | 1.0 | 18.60 | | |
| | **134** | 53 | 0.8 | 22.33 | | |
| | **125** | 57 | 0.8 | 23.91 | | |
| | **104** | 69 | 0.7 | 28.89 | | |
| | **97** | 73 | 0.7 | 30.84 | | |
| | **89** | 73 | 0.7 | 33.57 | | |
| | **84** | 73 | 0.7 | 35.63 | | |
| | **70** | 73 | 0.7 | 42.75 | | |
| | **54** | 73 | 0.7 | 55.31 | | |
| | **51** | 73 | 0.7 | 59.06 | | |
| | **47** | 73 | 0.7 | 64.29 | | |
| | **485** | 15 | 3.7 | 6.18 | **600/502** | 120/240 |
| | **401** | 18 | 3.1 | 7.49 | | |
| | **326** | 22 | 2.5 | 9.20 | | |
| | **254** | 28 | 2.5 | 11.83 | | |
| | **240** | 30 | 2.3 | 12.48 | | |
| | **202** | 36 | 2.0 | 14.83 | | |
| | **170** | 42 | 1.7 | 17.63 | | |
| | **161** | 45 | 1.9 | 18.60 | | |
| | **134** | 53 | 1.6 | 22.33 | | |
| | **125** | 57 | 1.5 | 23.91 | | |
| | **104** | 69 | 1.4 | 28.89 | | |
| | **97** | 74 | 1.3 | 30.84 | | |
| | **89** | 80 | 1.2 | 33.57 | | |
| | **84** | 85 | 1.1 | 35.63 | | |
| | **70** | 102 | 1.0 | 42.75 | | |
| | **54** | 132 | 0.7 | 55.31 | | |
| | **51** | 140 | 0.7 | 59.06 | | |
| | **47** | 140 | 0.7 | 64.29 | | |

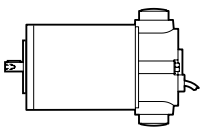
## Dati tecnici per servizio S2

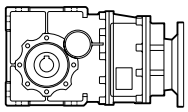
## *Technical data for S2 duty*

| $P_1$ [W] | $n_2$ [$min^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **500** | | | | | | |
| (3000 $min^{-1}$) | **306** | 23 | 5.0 | 9.81 | **600/633** | 120/240 |
| | **287** | 25 | 4.7 | 10.44 | | |
| | **239** | 30 | 3.9 | 12.53 | | |
| | **225** | 32 | 3.7 | 13.31 | | |
| | **190** | 38 | 3.5 | 15.81 | | |
| | **169** | 43 | 4.0 | 17.77 | | |
| | **139** | 52 | 3.3 | 21.56 | | |
| | **113** | 63 | 2.7 | 26.48 | | |
| | **106** | 67 | 2.6 | 28.17 | | |
| | **89** | 81 | 2.1 | 33.81 | | |
| | **84** | 86 | 2.0 | 35.92 | | |
| | **77** | 93 | 2.1 | 38.88 | | |
| | **64** | 113 | 1.7 | 47.16 | | |
| | **52** | 139 | 1.4 | 57.93 | | |
| | **49** | 148 | 1.3 | 61.63 | | |
| | **41** | 177 | 1.1 | 73.96 | | |
| | **38** | 188 | 1.0 | 78.58 | | |
| | **32** | 223 | 0.9 | 93.33 | | |
| | **21** | 279 | 0.7 | 140.52 | | |
| | **17** | 279 | 0.7 | 181.81 | | |
| | **14** | 279 | 0.7 | 211.31 | | |

## Motori applicabili

## *Motor adapters*



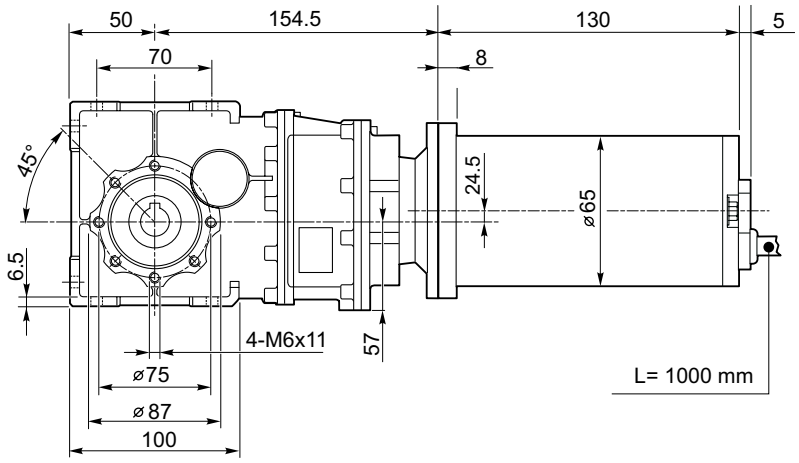


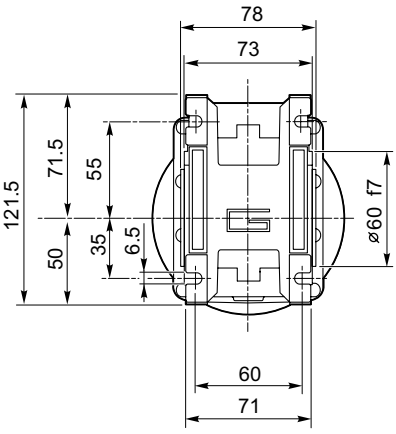
| | | EC | | | | | |
|---|---|---|---|---|---|---|---|
| | | **070.120 070.240** | **100.120 100.240 100.24E** | **180.120 180.240 180.24E** | **250.120 250.240** | **350.120 350.240** | **600.120 600.240** |
| **CMB** | **402** | 6.18 - 64.29 | 6.18 - 64.29 | 6.18 - 64.29 | 6.18 - 64.29 | 6.18 - 64.29 | 6.18 - 64.29 |
| | **502** | | 6.18 - 64.29 | 6.18 - 64.29 | 6.18 - 64.29 | 6.18 - 64.29 | 6.18 - 64.29 |
| | **633** | | | | 6.58 - 211.31 | 6.58 - 211.31 | 6.58 - 211.31 |

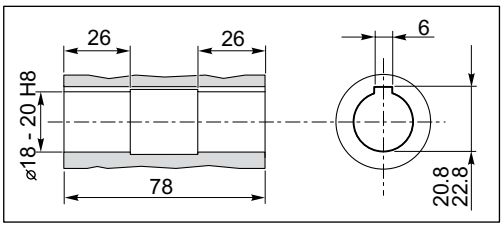
6.18 - 64.29 Rapporti di riduzione i *Ratio i*

**Dimensioni** | ***Dimensions***

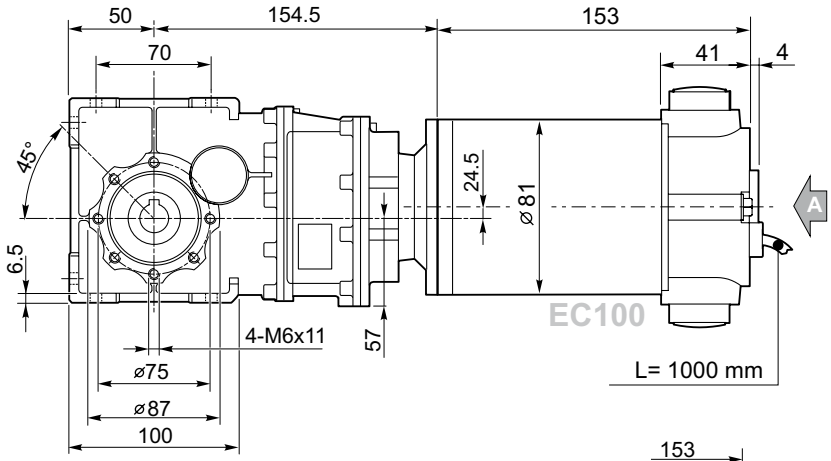
## ECMB70/402 U

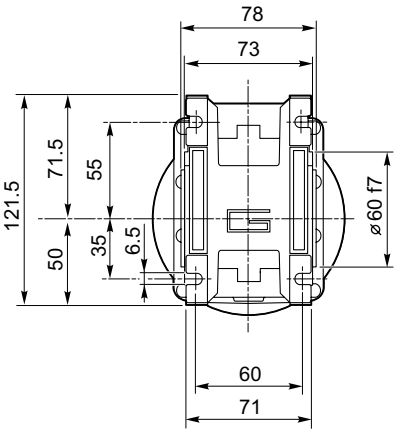


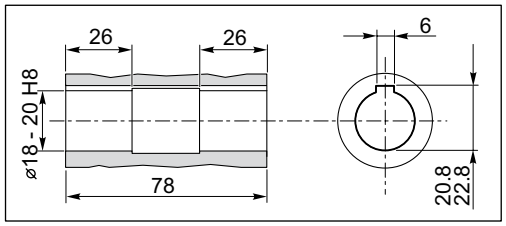



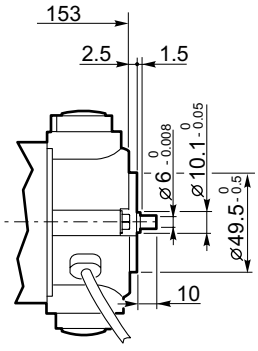



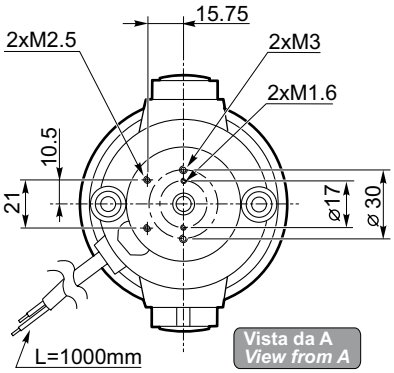

## ECMB100/402 U



**Dimensioni** *Dimensions*

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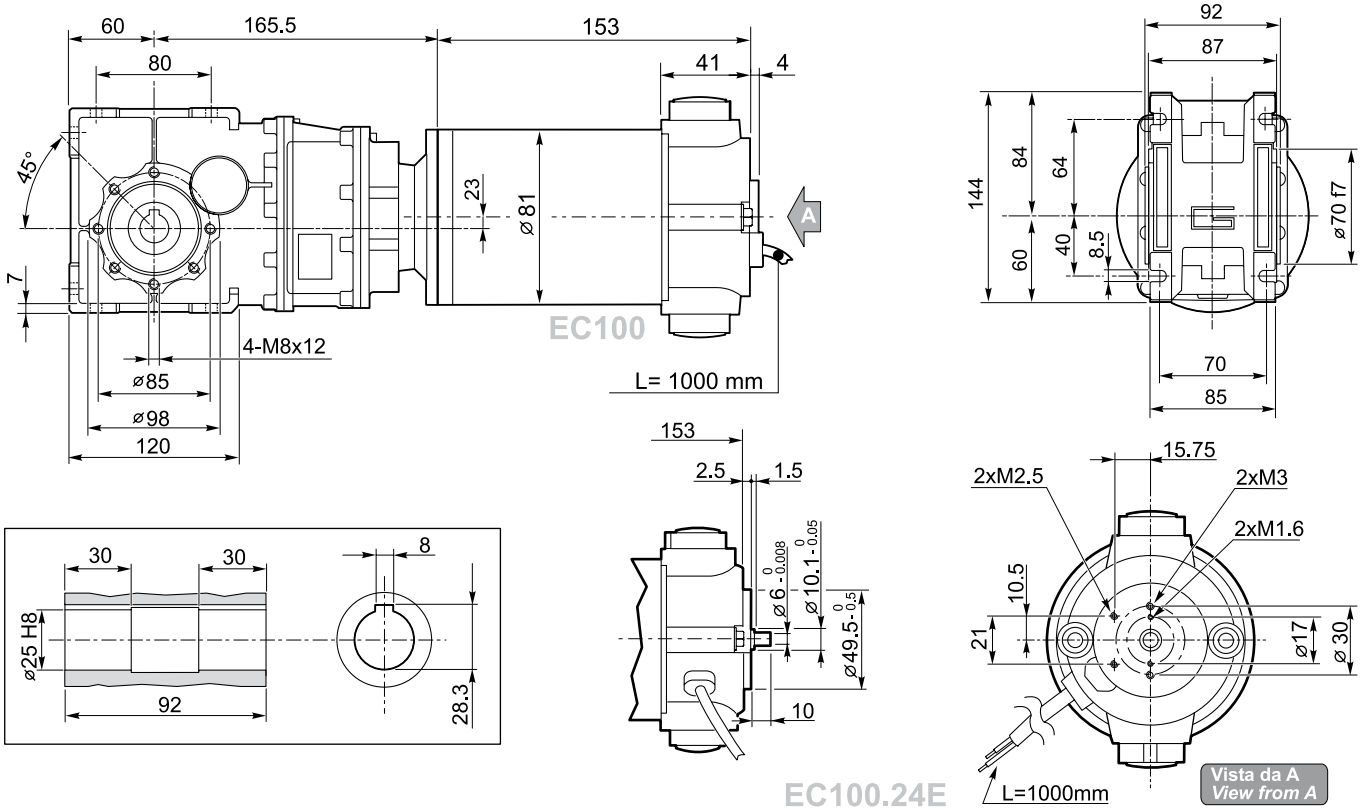


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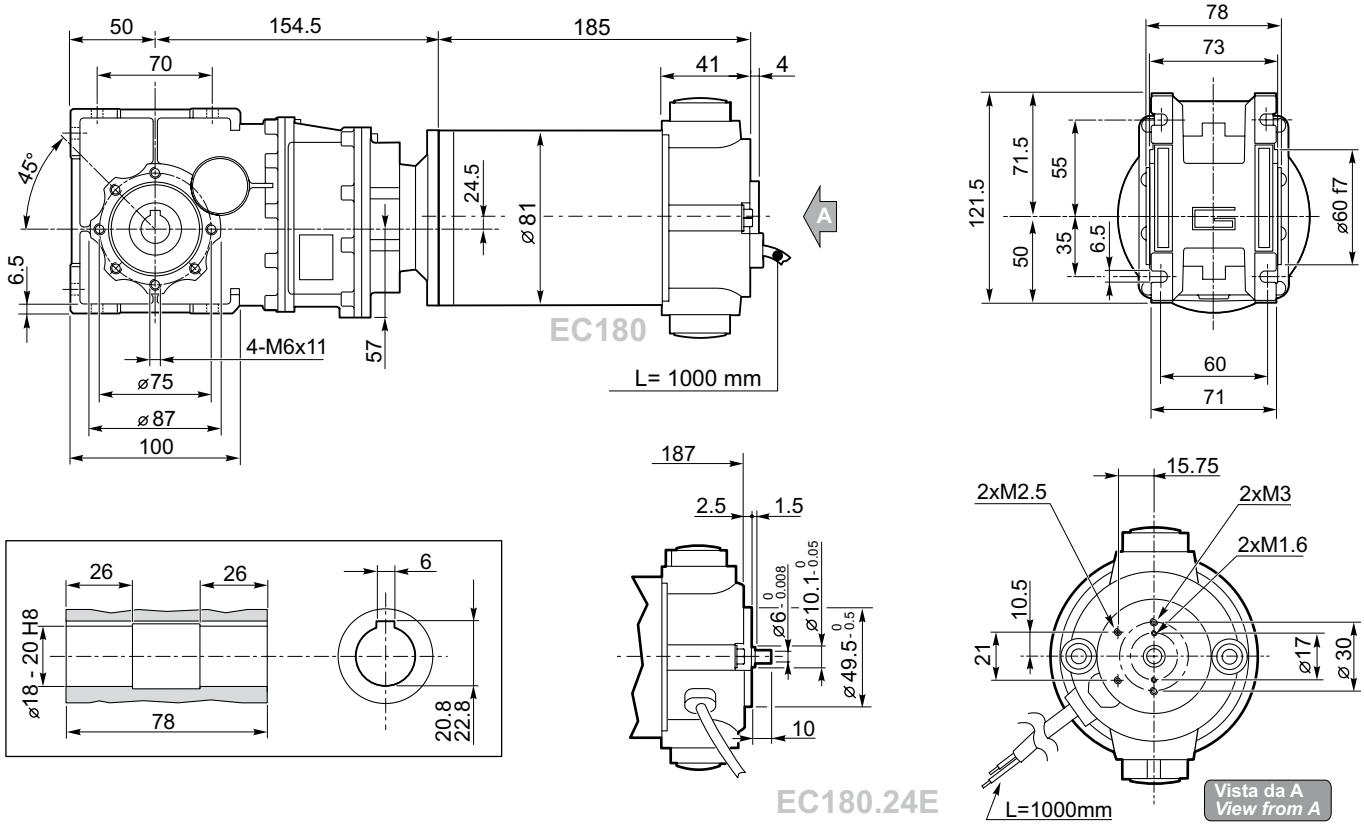

**Dimensioni** *Dimensions*

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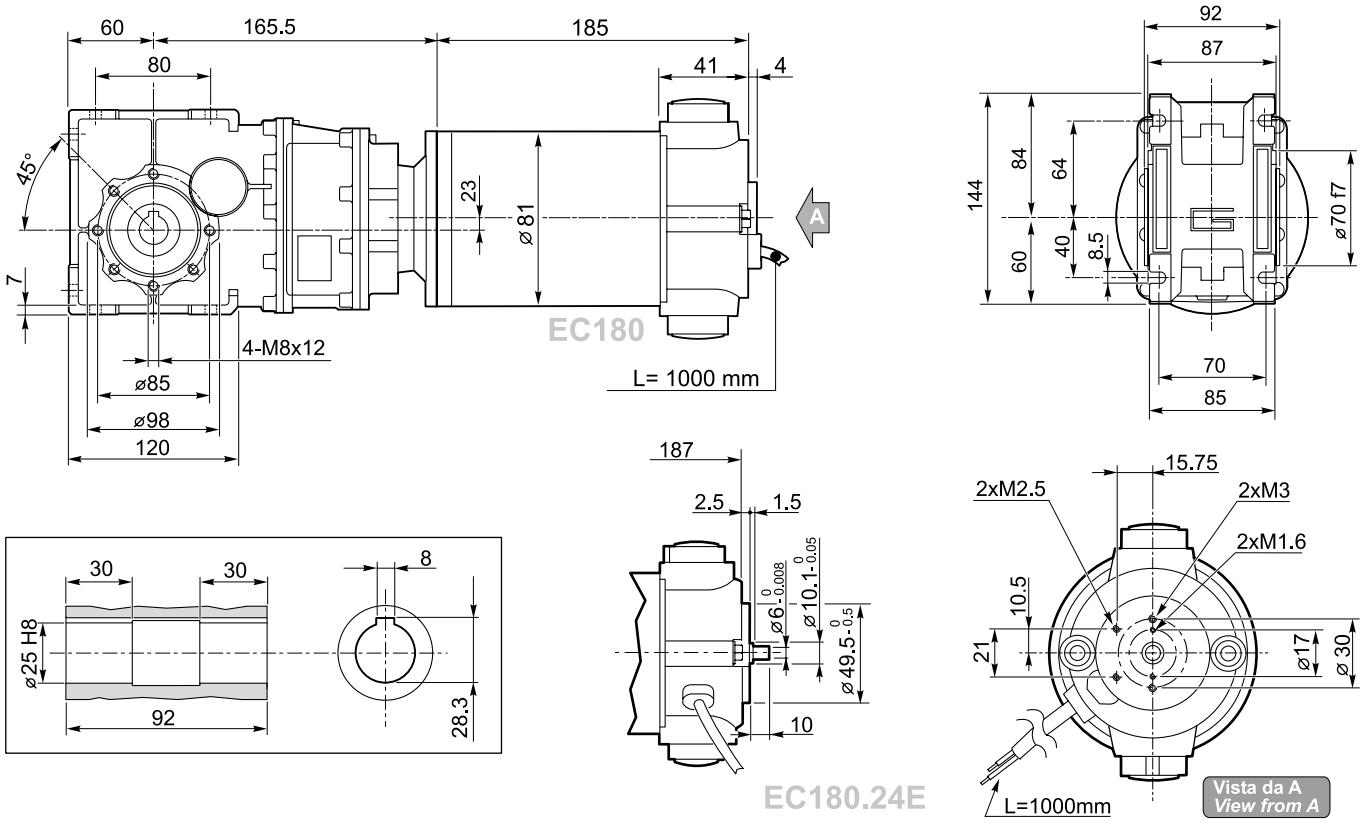

**Dimensioni** ***Dimensions***

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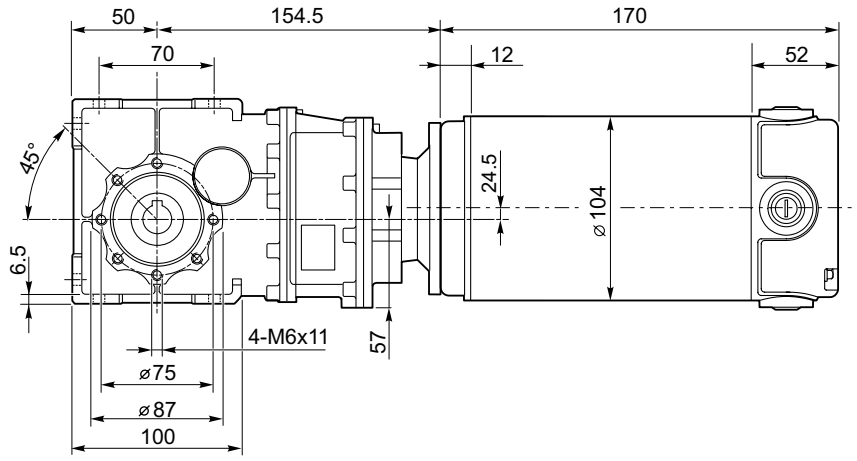


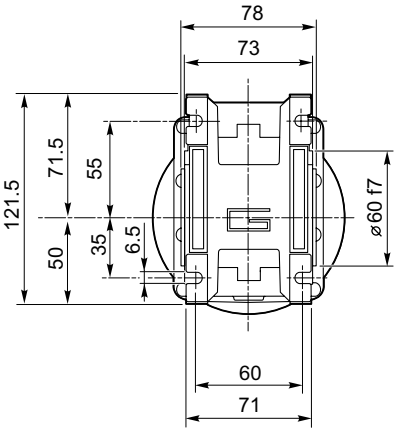


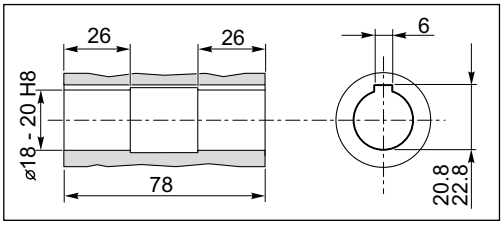


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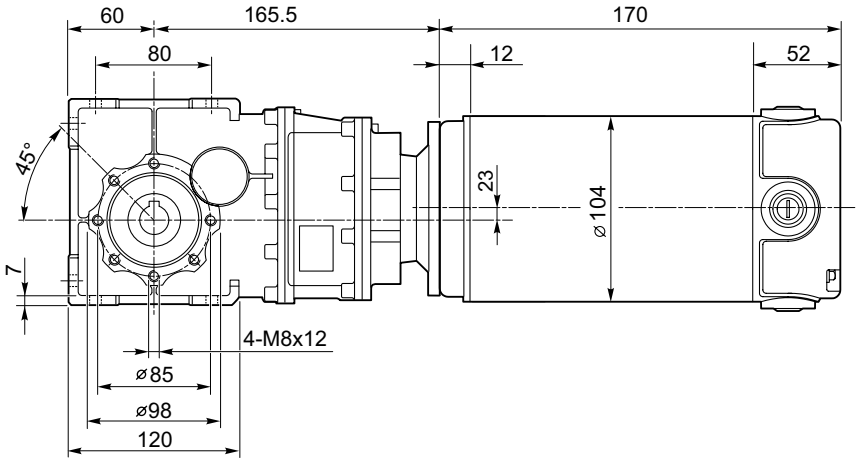
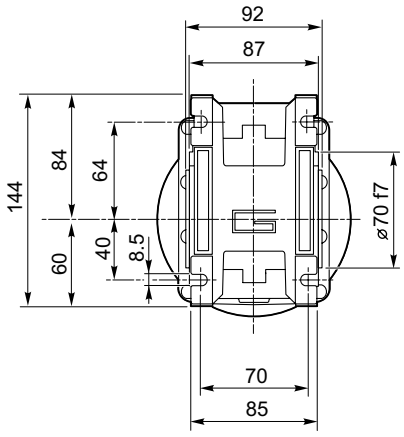
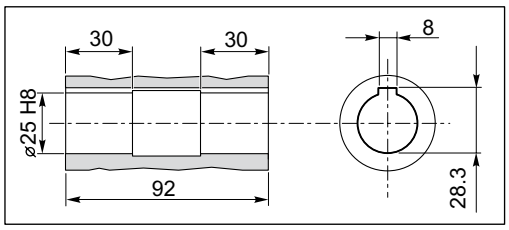
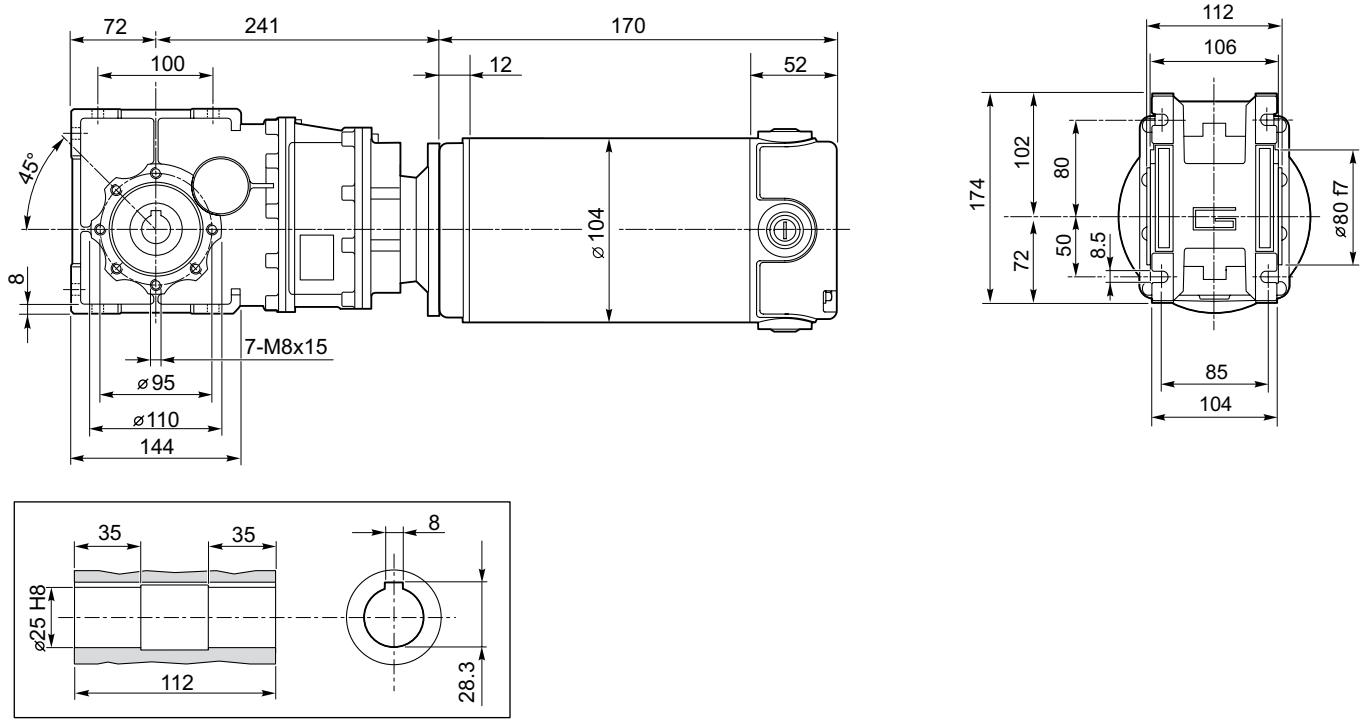


**Dimensioni** ***Dimensions***

## ECMB250/633 U

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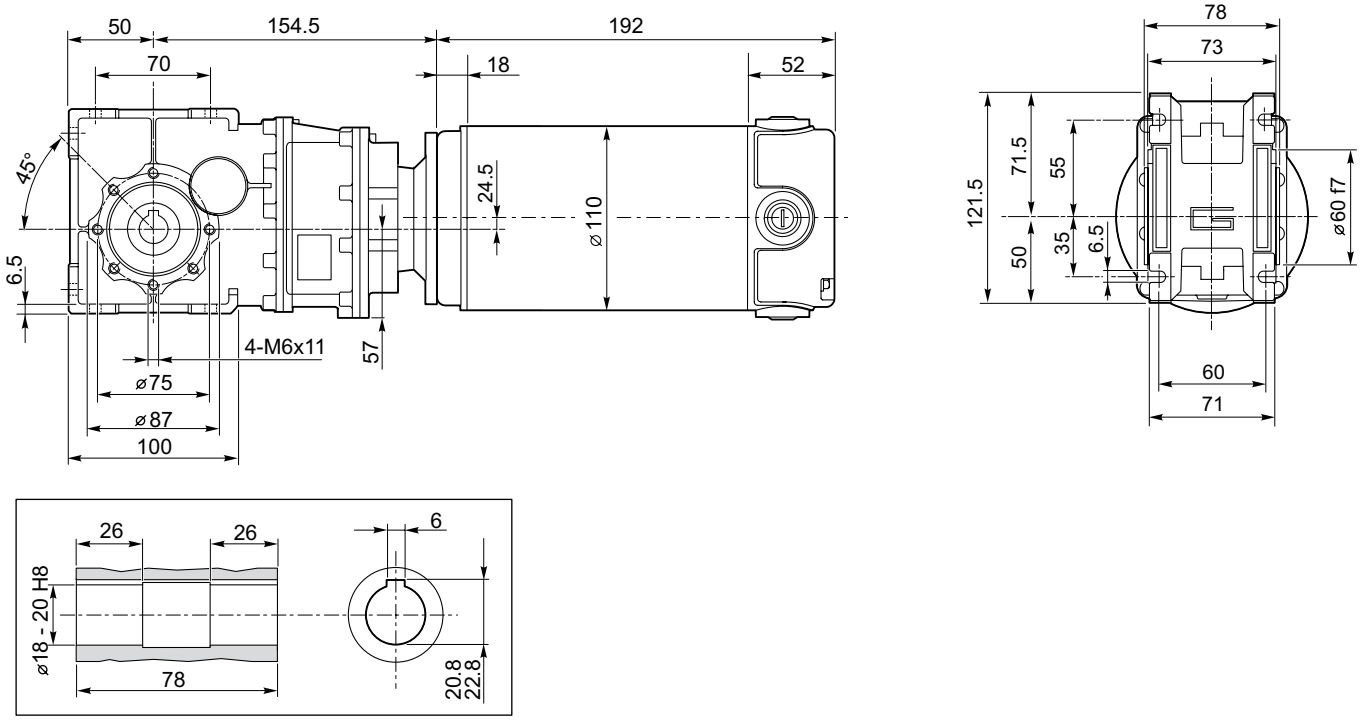
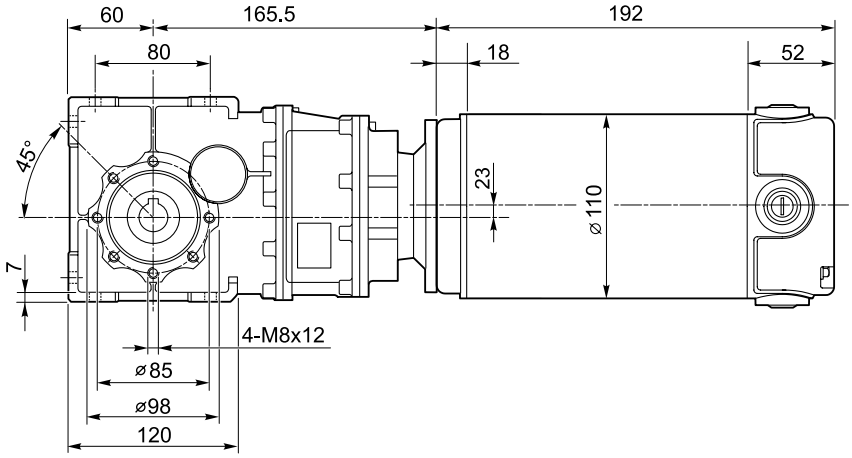
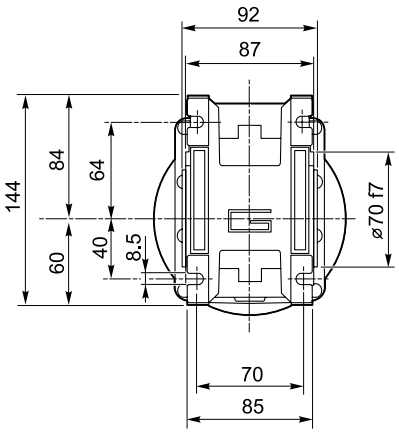
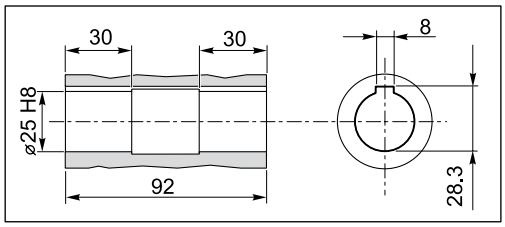


**Dimensioni** ***Dimensions***

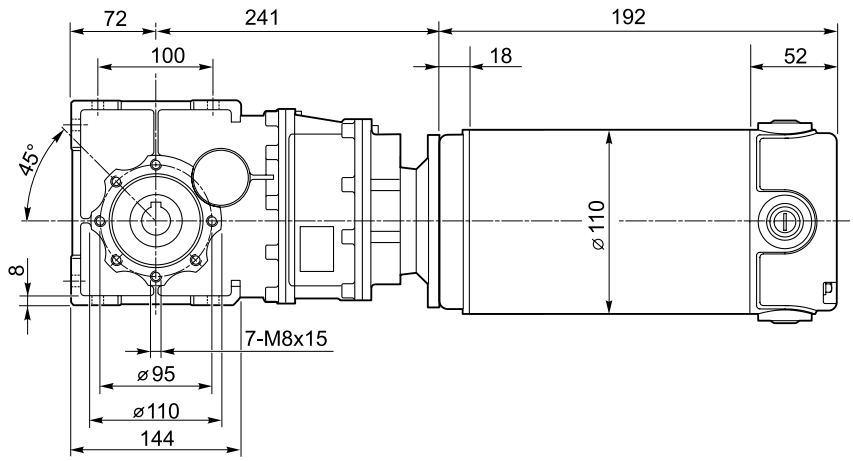
## ECMB350/502 U

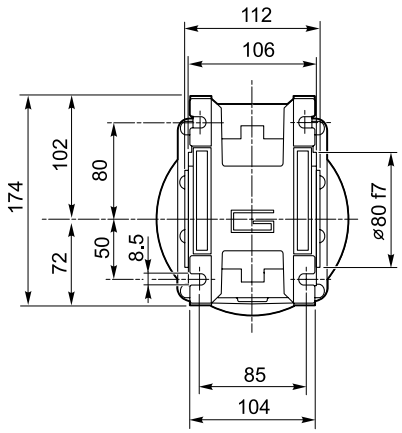


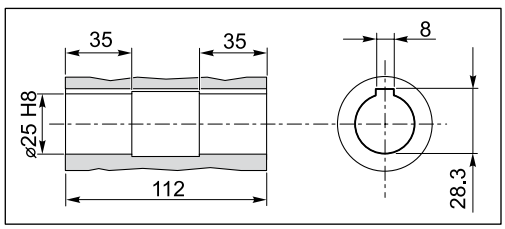




## ECMB350/633 U

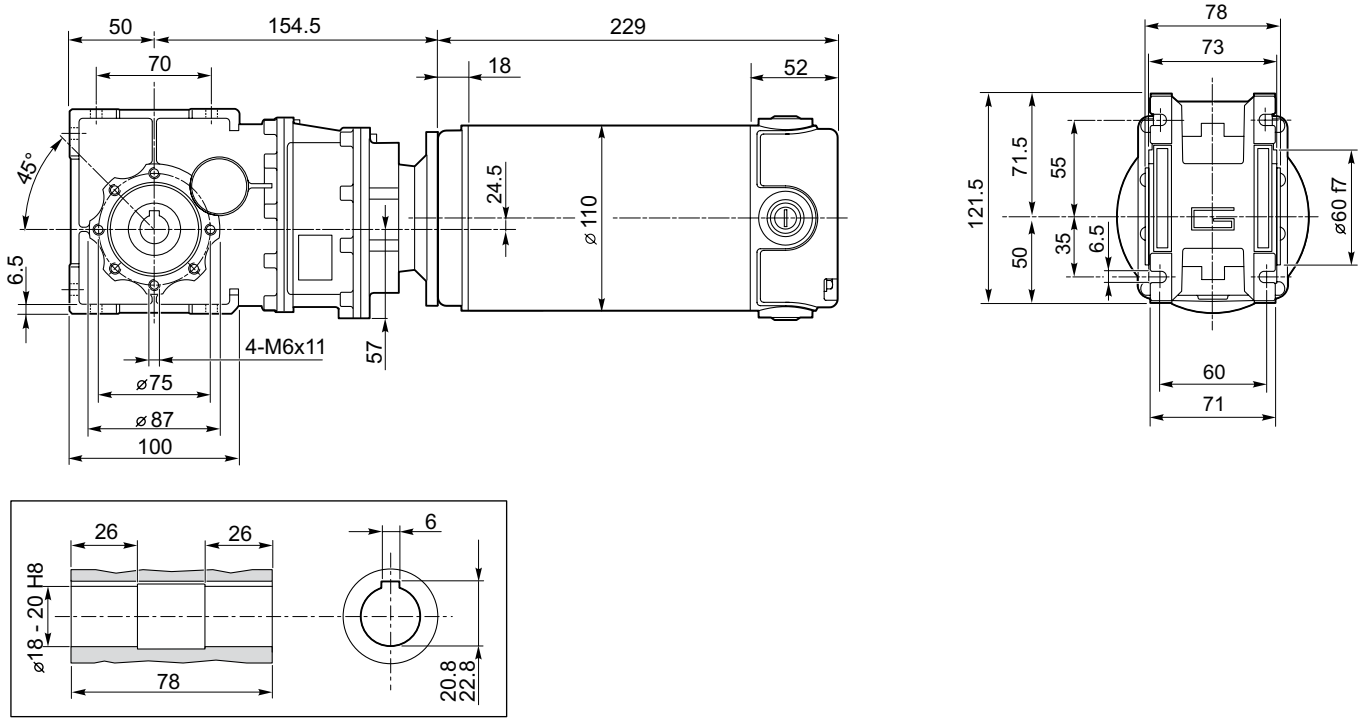


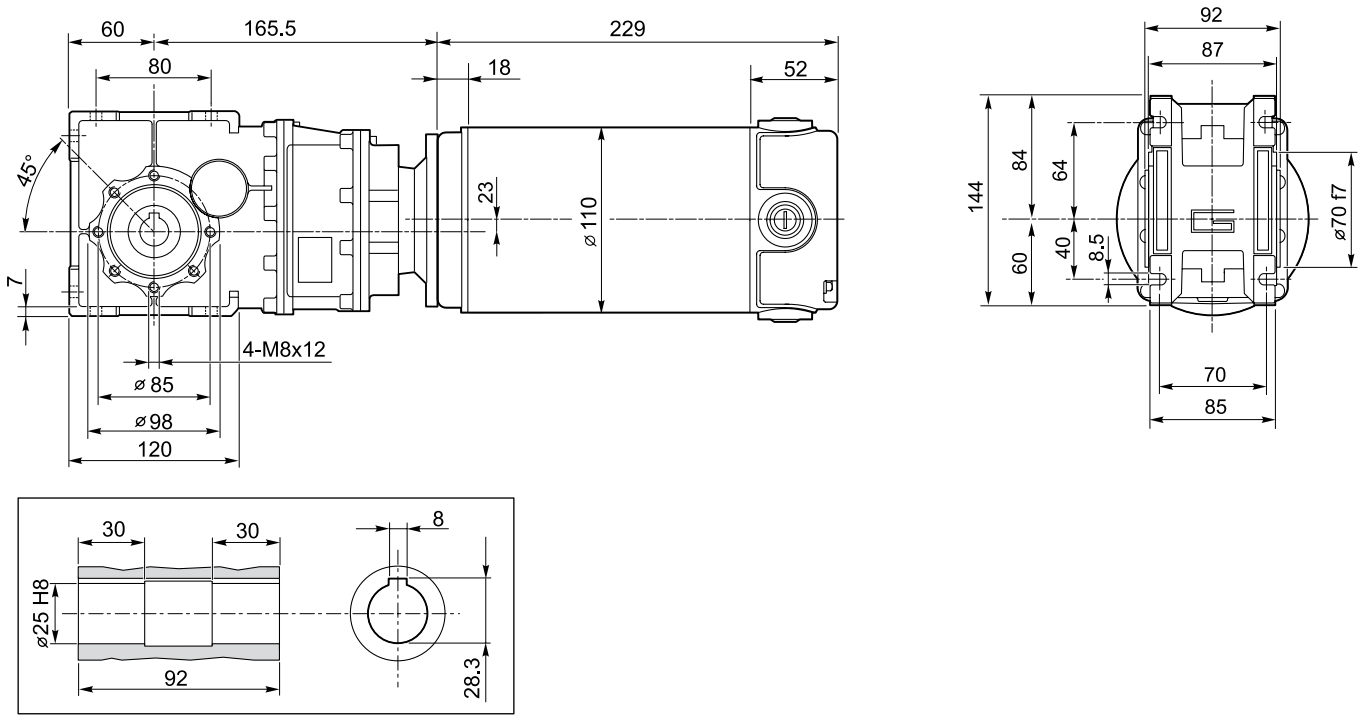



**Dimensioni** *Dimensions*

## ECMB600/402 U

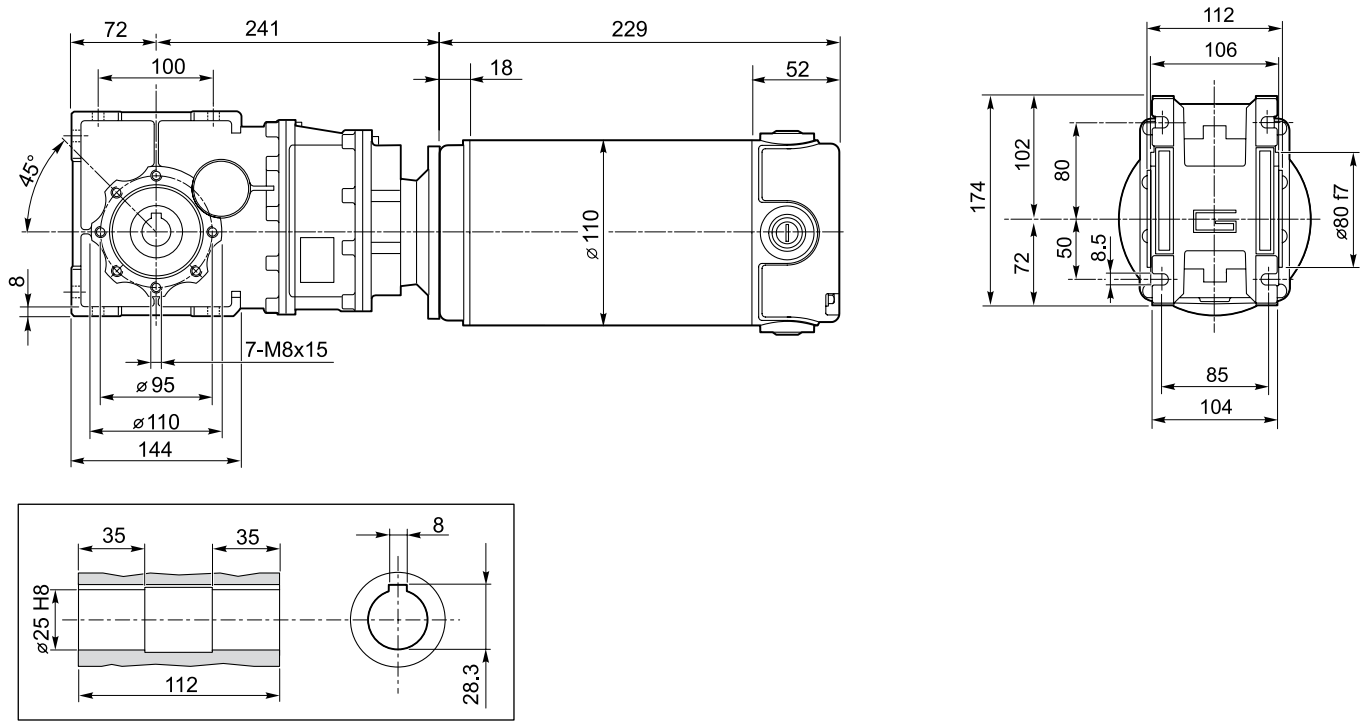



## ECMB600/502 U

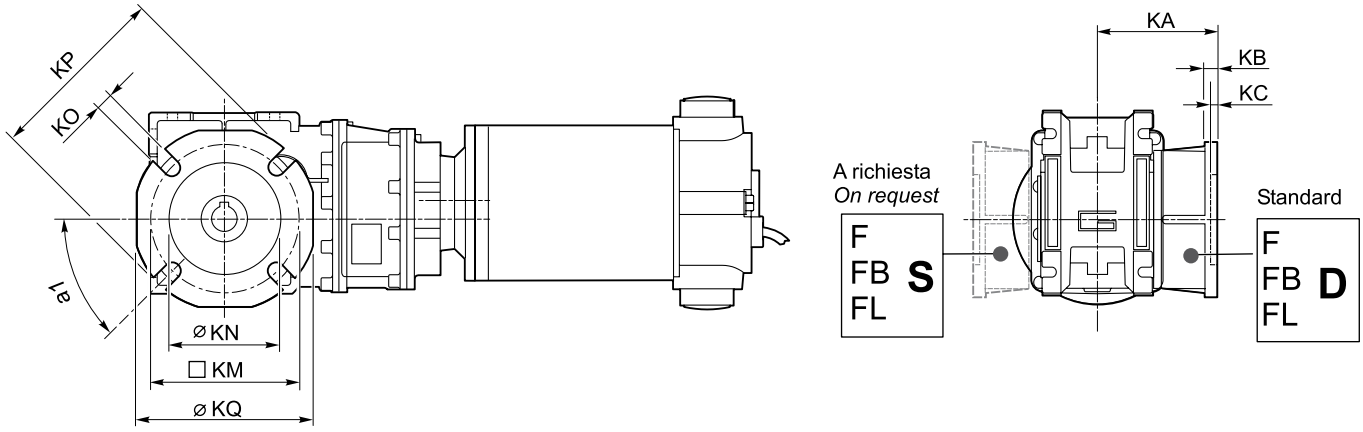


**Dimensioni** ***Dimensions***

## ECMB600/633 U



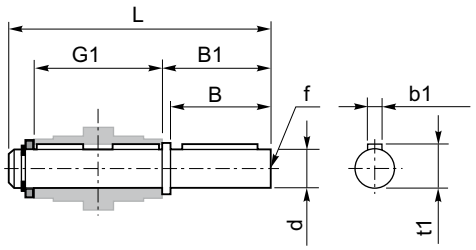

## ECMB.../... F... **Flange uscita /** ***Output flanges***



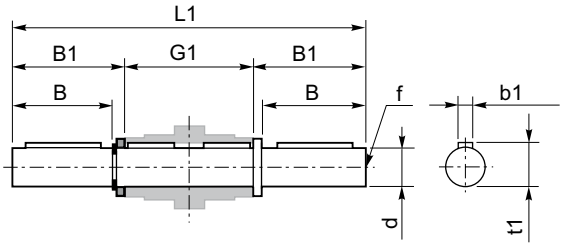

| | Flange uscita / *Output flanges* | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **F** | | | | | | | | | **FL** | | | | | | | | | **FB** | | | | | | | |
| **CMB** | **$a_1$** | **KA** | **KB** | **KC** | **KM** | **KN** H8 | **KO** | **KP** | **KQ** | **$a_1$** | **KA** | **KB** | **KC** | **KM** | **KN** H8 | **KO** | **KP** | **KQ** | **$a_1$** | **KA** | **KB** | **KC** | **KM** | **KN** H8 | **KO** | **KP** | **KQ** |
| **402** | 45° | 67 | 7.5 | 4.5 | 80-95 | 60 | 9 | 110 | 95 | 45° | 97 | 7.5 | 4.5 | 80-95 | 60 | 9 | 110 | 95 | 45° | 80 | 8.5 | 5 | 115-125 | 95 | 9.5 | 140 | 112 |
| **502** | 45° | 90 | 9 | 5 | 90-110 | 70 | 11 | 125 | 110 | 45° | 120 | 9 | 5 | 90-110 | 70 | 11 | 125 | 110 | 45° | 89 | 9 | 5 | 130-145 | 110 | 9.5 | 160 | 132 |
| **633** | 45° | 82 | 10 | 6 | 150 - 160 | 115 | 11 | 180 | 142 | 45° | 112 | 10 | 8 | 150 - 160 | 115 | 11 | 180 | 142 | 45° | 98 | 11 | 5 | 165 | 130 | 11 | 200 | 160 |

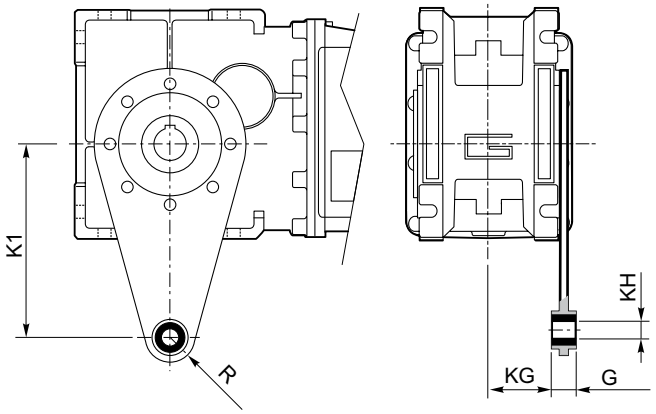
## Accessori / *Accessories*

**SZ**




**DZ**



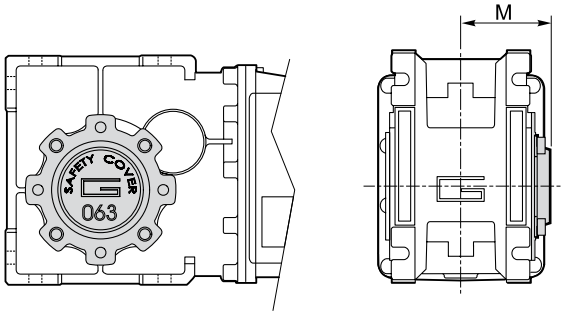

Albero lento / *Output shaft*

| CMB | d h7 | B | B1 | G1 | L | L1 | f | b1 | t1 |
|---|---|---|---|---|---|---|---|---|---|
| **402** | 18 | 40 | 43 | 78 | 128 | 164 | M6 | 6 | 20.5 |
| **502** | 25 | 50 | 53.5 | 92 | 153 | 199 | M10 | 8 | 28 |
| **633** | 25 | 50 | 53.5 | 112 | 173 | 219 | M10 | 8 | 28 |

Braccio di reazione / *Torque arm*

| CMB | K1 | G | KG | KH | R |
|---|---|---|---|---|---|
| **402** | 100 | 14 | 31 | 10 | 18 |
| **502** | 100 | 14 | 38 | 10 | 18 |
| **633** | 150 | 14 | 47.5 | 10 | 18 |

## SC - *Safety cover*



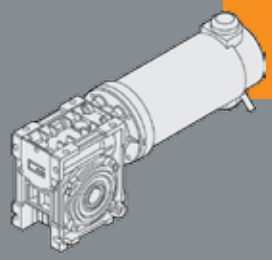

| CMB | M |
|---|---|
| **402** | 54.5 |
| **502** | 62.5 |
| **633** | 73 |

# Note

TRANSTECNO®
THE MODULAR GEARMOTOR

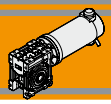
# ECM





## MOTORIDUTTORI C.C. A VITE SENZA FINE
## PERMANENT MAGNETS D.C. WORMGEARMOTORS


TRANSTECNO · GENUINE · PRODUCTS ·







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## Caratteristiche tecniche — *Technical features*

Le caratteristiche principali dei motoriduttori a corrente continua della serie ECM sono:

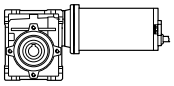
- Alimentazione in bassa tensione 12/24 Vcc
- Possibilità di montaggio encoder
- Potenze motore disponibili da 100 a 800W S2
- Magneti in ferrite
- Carcasse dei riduttori in pressofusione di alluminio
- Lubrificazione permanente con olio sintetico.

*The main features of ECM D.C. gearmotor range are:*

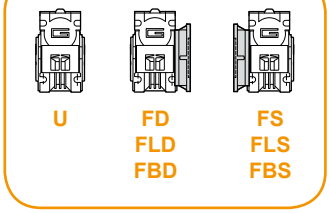
- *Low voltage power supply 12/24 Vdc*
- *Suitable for encoder assembly*
- *Motor power ratings available from 100 to 800W S2*
- *Ferrite magnets*
- *Die-cast aluminum housing*
- *Permanent synthetic oil long-life lubrication.*

## Designazione — *Classification*

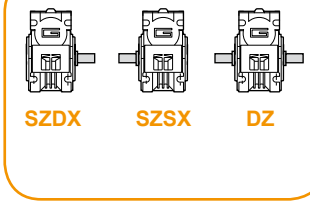
MOTORIDUTTORE / *GEARMOTOR*

| ECM | 070/026 | U | 10 | SZDX | BRSX | 90 | 240 | VS |
|---|---|---|---|---|---|---|---|---|
| Tipo *Type* | Grandezza *Size* | Versione Riduttore *Gearbox Version* | Rapporto *Ratio* | Albero di uscita *Output shaft* | Braccio di reazione *Torque arm* | Angolo *Angle* | Versione Motore *Motor Version* | Opzioni *Options* |
| **ECM**  | **070/026** **070/030** **100/026** **100/030** **100/040** **180/026** **180/030** **180/040** **180/050** **250/030** **250/040** **250/050** **350/030** **350/040** **350/050** **600/040** **600/050** **600/063** | **U** **FD** **FS** **FLD** **FLS** **FBD** **FBS** | Vedere tabella *See tables* | **SZDX** **SZSX** **DZ** | **BRDX** **BRSX** | **0°** **90°** **180°** **270°** | **120** **240** **24E** | **VS** |

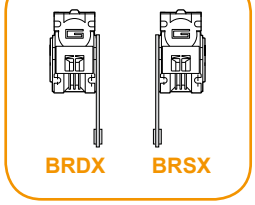
Versione Riduttore *Gearbox Version*



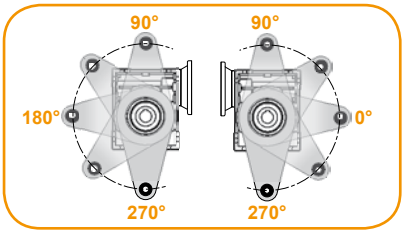

Albero di uscita *Output shaft*




Braccio di reazione *Torque arm*




Angolo *Angle*




## Simbologia — *Symbols*

| | | | | | |
|---|---|---|---|---|---|
| $n_1$ | [$min^{-1}$] | Velocità in ingresso / *Input speed* | Rd | % | Rendimento dinamico / *Dynamic efficiency* |
| $n_2$ | [$min^{-1}$] | Velocità in uscita / *Output speed* | $A_2$ | N] | Carico assiale ammissibile in uscita / *Permitted output axial load* |
| i | | Rapporto di riduzione / *Ratio* | Rs | % | Rendimento statico / *Static efficiency* |
| $P_1$ | [kW] | Potenza in entrata / *Input power* | $R_2$ | [N] | Carico radiale ammissibile in uscita / *Permitted output radial load* |
| $M_2$ | [Nm] | Coppia in uscita in funzione di $P_1$ / *Output torque referred to* $P_1$ | Z | | Numero di principi della vite / *Worm starts* |
| sf | | Fattore di servizio / *Service factor* | β | | Angolo d'elica / *Helix angle* |

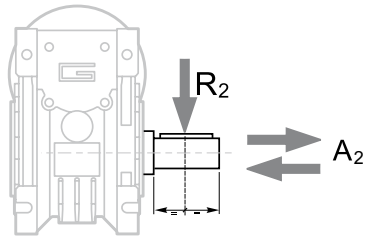
## Lubrificazione — *Lubrication*

I riduttori a vite senza fine della serie CM sono lubrificati a vita con olio sintetico di viscosità 320 e possono essere installati in qualunque posizione di montaggio.

*Permanent synthetic oil long-life lubrication allow to use CM wormgearbox range in all mounting position.*

| | **Quantità di olio** (litri) / ***Oil quantity*** *(litres)* | | | | | | |
|---|---|---|---|---|---|---|---|
| | **B3** | **B8** | **B6** | **B7** | **V5** | **V6** | |
| **CM026** | 0.02 | | | | | | Lubrificazione a vita *Life lubrication* |
| **CM030** | 0.03 | | | | | | |
| **CM040** | 0.07 | | | | | | |
| **CM050** | 0.10 | | | | | | |
| **CM063** | 0.25 | | | | | | |

## Carichi radiali — *Radial loads*

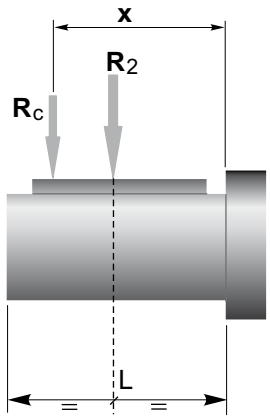



$A_2 = R_2 \times 0.2$

| $n_2$ [$min^{-1}$] | $R_2$ [N] | | | | |
|---|---|---|---|---|---|
| | **CM026** | **CM030** | **CM040** | **CM050** | **CM063** |
| **187** | 400 | 674 | 1264 | 1770 | 2445 |
| **140** | 490 | 743 | 1392 | 1949 | 2692 |
| **93** | 580 | 851 | 1596 | 2234 | 3085 |
| **70** | 610 | 936 | 1754 | 2456 | 3392 |
| **56** | 610 | 1008 | 1890 | 2646 | 3654 |
| **47** | 610 | 1069 | 2004 | 2805 | 3874 |
| **35** | 610 | 1179 | 2210 | 3095 | 4273 |
| **28** | 610 | 1270 | 2381 | 3334 | 4603 |
| **23** | 610 | 1356 | 2542 | 3559 | 4915 |
| **18** | 610 | 1471 | 2759 | 3862 | 5334 |
| **14** | 610 | 1600 | 3000 | 4200 | 5800 |

Quando il carico radiale risultante non è applicato sulla mezzeria dell'albero occorre calcolare quello effettivo con la seguente formula:

*When the resulting radial load is not applied on the centre line of the shaft it is necessary to calculate the effective load with the following formula:*




$$R_c = \frac{R_2 \cdot a}{(b+x)} \leq R_{2MAX}$$

$$R \leq R_c$$

*a, b = valori riportati nella tabella*
*a, b = values given in the table*

| | **CM** | | | | |
|---|---|---|---|---|---|
| | **026** | **030** | **040** | **050** | **063** |
| **a** | 56 | 65 | 84 | 101 | 120 |
| **b** | 43 | 50 | 64 | 76 | 95 |
| **$R_{2MAX}$** | 610 | 1600 | 3000 | 4200 | 5800 |

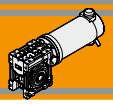
## Dati di dentatura — *Toothing data*

| | Dati della coppia vite-corona<br>Worm wheel data | Rapporto / *Ratio* | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 5 | 7.5 | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 80 | 100 |
| CM026 | Z | 6 | 4 | 3 | 2 | 2 | | 1 | 1 | 1 | 1 | | |
| | β | 34° 35' | 24° 41' | 19° 1' | 12° 57 ' | 10° 30' | | 6° 33' | 5° 17' | 4° 26' | 3°49' | | |
| CM030 | Z | 6 | 4 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| | β | 27° 4' | 24° 28' | 18° 50' | 12° 49' | 10° 23' | 8° 43' | 6° 29' | 5° 14' | 4° 23' | 3° 46' | 2° 57' | 2° 25' |
| CM040 | Z | 6 | 4 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| | β | 34° 19' | 24° 28' | 18° 50' | 12° 49' | 10° 23' | 8° 43' | 6° 29' | 5° 14' | 4° 23' | 3°46' | 2° 57' | 2° 25' |
| CM050 | Z | 6 | 4 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| | β | 33° 37' | 23° 54' | 18° 23' | 12° 29' | 10° 6' | 8° 28' | 6° 19' | 5° 5' | 4° 15' | 3° 39' | 2°51' | 2° 20' |
| CM063 | Z | 6 | 4 | 3 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| | β | 34° 23' | 24° 31' | 18° 53' | 12° 50' | 10° 24' | 8° 44' | 6° 30' | 5° 14' | 4° 23' | 3° 47' | 2° 57' | 2° 25' |

## Rendimento — *Efficiency*

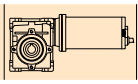
| | $n_1$ [$min^{-1}$] | Rendimento<br>Efficiency | Rapporto / *Ratio* | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 5 | 7.5 | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 80 | 100 |
| CM026 | 2800 | Rd | 89 | 87 | 85 | 83 | 80 | | 73 | 68 | 64 | 60 | | |
| | 1400 | | 87 | 84 | 83 | 78 | 74 | | 66 | 61 | 57 | 53 | | |
| | 900 | | 84 | 83 | 80 | 75 | 71 | | 61 | 57 | 52 | 48 | | |
| | | Rs | 72 | 71 | 68 | 61 | 56 | | 46 | 41 | 36 | 34 | | |
| CM030 | 2800 | Rd | 89 | 88 | 86 | 84 | 81 | 78 | 74 | 70 | 65 | 62 | 57 | 52 |
| | 1400 | | 86 | 85 | 84 | 79 | 75 | 72 | 67 | 62 | 58 | 55 | 48 | 43 |
| | 900 | | 84 | 83 | 81 | 75 | 71 | 68 | 62 | 58 | 53 | 49 | 43 | 39 |
| | | Rs | 72 | 67 | 63 | 55 | 50 | 43 | 39 | 35 | 31 | 27 | 23 | 21 |
| CM040 | 2800 | Rd | 90 | 89 | 87 | 84 | 83 | 80 | 77 | 73 | 69 | 66 | 60 | 56 |
| | 1400 | | 88 | 86 | 84 | 81 | 78 | 74 | 70 | 65 | 60 | 58 | 52 | 46 |
| | 900 | | 86 | 84 | 82 | 77 | 74 | 70 | 66 | 60 | 57 | 53 | 46 | 41 |
| | | Rs | 74 | 71 | 67 | 60 | 55 | 51 | 45 | 40 | 36 | 32 | 28 | 24 |
| CM050 | 2800 | Rd | 91 | 90 | 88 | 86 | 84 | 82 | 78 | 74 | 71 | 68 | 62 | 58 |
| | 1400 | | 89 | 87 | 85 | 82 | 79 | 76 | 72 | 67 | 63 | 60 | 54 | 49 |
| | 900 | | 87 | 85 | 84 | 79 | 75 | 72 | 68 | 62 | 59 | 55 | 48 | 43 |
| | | Rs | 73 | 70 | 66 | 59 | 55 | 51 | 44 | 39 | 35 | 32 | 27 | 23 |
| CM063 | 2800 | Rd | 91 | 90 | 88 | 86 | 84 | 83 | 79 | 76 | 73 | 70 | 65 | 60 |
| | 1400 | | 90 | 88 | 86 | 84 | 81 | 78 | 75 | 70 | 66 | 63 | 57 | 52 |
| | 900 | | 89 | 86 | 84 | 81 | 78 | 75 | 70 | 65 | 61 | 58 | 52 | 47 |
| | | Rs | 73 | 71 | 67 | 60 | 55 | 51 | 45 | 40 | 36 | 33 | 28 | 24 |

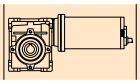
**Rendimento teorico del riduttore dopo il rodaggio**
***Theoretical efficiency of the gearbox after the first running period***



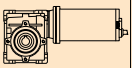
## Dati tecnici per servizio S2

## *Technical data for S2 duty*

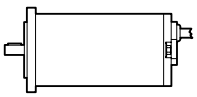
| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **100** | | | | | | |
| (3000 min$^{-1}$) | **600** | 1.4 | 7.1 | 5.00 | **ECM070/026** | 120/240 |
| | **400** | 2.1 | 5.3 | 7.50 | | |
| | **300** | 2.7 | 4.1 | 10.00 | | |
| | **200** | 4.0 | 2.8 | 15.00 | | |
| | **150** | 5.1 | 2.2 | 20.00 | | |
| | **100** | 7.0 | 1.7 | 30.00 | | |
| | **75** | 8.7 | 1.3 | 40.00 | | |
| | **60** | 10 | 1.0 | 50.00 | | |
| | **50** | 11 | 0.8 | 60.00 | | |
| | **600** | 1.4 | 9.2 | 5.00 | **ECM070/030** | |
| | **400** | 2.1 | 7.1 | 7.50 | | |
| | **300** | 2.7 | 5.8 | 10.00 | | |
| | **200** | 4.0 | 4.0 | 15.00 | | |
| | **150** | 5.2 | 2.7 | 20.00 | | |
| | **120** | 6.2 | 2.4 | 25.00 | | |
| | **100** | 7.1 | 2.5 | 30.00 | | |
| | **75** | 8.9 | 1.8 | 40.00 | | |
| | **60** | 10 | 1.4 | 50.00 | | |
| | **50** | 12 | 1.2 | 60.00 | | |
| | **38** | 15 | 0.8 | 80.00 | | |
| | **30** | 17 | 0.7 | 100.00 | | |
| **140** | | | | | | |
| (3000 min$^{-1}$) | **600** | 2.0 | 5.0 | 5.00 | **ECM100/026** | 120/240/24E |
| | **400** | 2.9 | 3.8 | 7.50 | | |
| | **300** | 3.8 | 2.9 | 10.00 | | |
| | **200** | 5.5 | 2.0 | 15.00 | | |
| | **150** | 7.1 | 1.5 | 20.00 | | |
| | **100** | 10 | 1.2 | 30.00 | | |
| | **75** | 12 | 0.9 | 40.00 | | |
| | **60** | 14 | 0.7 | 50.00 | | |
| | **50** | 13 | 0.7 | 60.00 | | |
| | **200** | 5.6 | 2.8 | 15.00 | **ECM100/030** | |
| | **150** | 7.2 | 1.9 | 20.00 | | |
| | **120** | 8.7 | 1.7 | 25.00 | | |
| | **100** | 10 | 1.8 | 30.00 | | |
| | **75** | 12 | 1.3 | 40.00 | | |
| | **60** | 14 | 1.0 | 50.00 | | |
| | **50** | 17 | 0.8 | 60.00 | | |
| | **38** | 20 | 0.6 | 80.00 | | |
| | **30** | 16 | 0.7 | 100.00 | | |
| | **100** | 10 | 3.7 | 30.00 | **ECM100/040** | |
| | **75** | 13 | 2.6 | 40.00 | | |
| | **60** | 15 | 2.1 | 50.00 | | |
| | **50** | 18 | 1.6 | 60.00 | | |
| | **38** | 21 | 1.3 | 80.00 | | |
| | **30** | 25 | 1.0 | 100.00 | | |
| **250** | | | | | | |
| (3000 min$^{-1}$) | **600** | 3.5 | 2.8 | 5.00 | **ECM180/026** | 120/240 |
| | **400** | 5.2 | 2.1 | 7.50 | | |
| | **300** | 6.8 | 1.6 | 10.00 | | |
| | **200** | 10 | 1.1 | 15.00 | | |
| | **150** | 13 | 0.9 | 20.00 | | |
| | **100** | 17 | 0.7 | 30.00 | | |
| | **75** | 16 | 0.7 | 40.00 | | |
| | **60** | 14 | 0.7 | 50.00 | | |
| | **50** | 13 | 0.7 | 60.00 | | |
| | **600** | 3.5 | 3.7 | 5.00 | **ECM180/030** | 120/240/24E |
| | **400** | 5.3 | 2.9 | 7.50 | | |
| | **300** | 6.8 | 2.3 | 10.00 | | |
| | **200** | 10 | 1.6 | 15.00 | | |
| | **150** | 13 | 1.1 | 20.00 | | |
| | **120** | 16 | 1.0 | 25.00 | | |
| | **100** | 18 | 1.0 | 30.00 | | |
| | **75** | 22 | 0.7 | 40.00 | | |
| | **60** | 21 | 0.7 | 50.00 | | |
| | **50** | 20 | 0.7 | 60.00 | | |
| | **38** | 17 | 0.7 | 80.00 | | |
| | **30** | 16 | 0.7 | 100.00 | | |

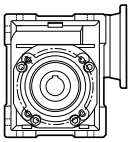
| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **250** | | | | | | |
| (3000 min$^{-1}$) | **200** | 10 | 3.5 | 15.00 | **ECM180/040** | 120/240/24E |
| | **150** | 13 | 2.3 | 20.00 | | |
| | **120** | 16 | 1.8 | 25.00 | | |
| | **100** | 18 | 2.1 | 30.00 | | |
| | **75** | 23 | 1.5 | 40.00 | | |
| | **60** | 27 | 1.2 | 50.00 | | |
| | **50** | 32 | 0.9 | 60.00 | | |
| | **38** | 38 | 0.7 | 80.00 | | |
| | **30** | 34 | 0.7 | 100.00 | | |
| | **75** | 24 | 2.5 | 40.00 | **ECM180/050** | 120/240/24E |
| | **60** | 28 | 2.0 | 50.00 | | |
| | **50** | 32 | 1.6 | 60.00 | | |
| | **38** | 39 | 1.2 | 80.00 | | |
| | **30** | 46 | 0.9 | 100.00 | | |
| **350** | | | | | | |
| (3000 min$^{-1}$) | **600** | 5.0 | 2.6 | 5 | **ECM250/030** | 120/240 |
| | **400** | 7.4 | 2.0 | 7.5 | | |
| | **300** | 10 | 1.7 | 10 | | |
| | **200** | 14 | 1.1 | 15 | | |
| | **150** | 18 | 0.8 | 20 | | |
| | **120** | 22 | 0.7 | 25 | | |
| | **100** | 25 | 0.7 | 30 | | |
| | **75** | 22 | 0.7 | 40 | | |
| | **60** | 21 | 0.7 | 50 | | |
| | **200** | 14 | 2.5 | 15 | **ECM250/040** | 120/240 |
| | **150** | 18 | 1.7 | 20 | | |
| | **120** | 22 | 1.3 | 25 | | |
| | **100** | 26 | 1.5 | 30 | | |
| | **75** | 33 | 1.0 | 40 | | |
| | **60** | 38 | 0.8 | 50 | | |
| | **50** | 44 | 0.7 | 60 | | |
| | **37.5** | 38 | 0.7 | 80 | | |
| | **30** | 35 | 0.7 | 100 | | |
| | **150** | 19 | 2.9 | 20 | **ECM250/050** | 120/240 |
| | **120** | 23 | 2.2 | 25 | | |
| | **100** | 26 | 2.6 | 30 | | |
| | **75** | 33 | 1.8 | 40 | | |
| | **60** | 40 | 1.4 | 50 | | |
| | **50** | 45 | 1.1 | 60 | | |
| | **37.5** | 55 | 0.8 | 80 | | |
| | **30** | 65 | 0.7 | 100 | | |
| **500** | | | | | | |
| (3000 min$^{-1}$) | **600** | 7.1 | 1.8 | 5.00 | **ECM350/030** | 120/240 |
| | **400** | 11 | 1.4 | 7.50 | | |
| | **300** | 14 | 1.2 | 10.00 | | |
| | **200** | 20 | 0.8 | 15.00 | | |
| | **150** | 20 | 0.7 | 20.00 | | |
| | **120** | 21 | 0.7 | 25.00 | | |
| | **100** | 26 | 0.7 | 30.00 | | |
| | **75** | 23 | 0.7 | 40.00 | | |
| | **60** | 21 | 0.7 | 50.00 | | |
| | **600** | 7.2 | 4.0 | 5.00 | **ECM350/040** | 120/240 |
| | **400** | 11 | 2.9 | 7.50 | | |
| | **300** | 14 | 2.4 | 10.00 | | |
| | **200** | 20 | 1.7 | 15.00 | | |
| | **150** | 26 | 1.2 | 20.00 | | |
| | **120** | 32 | 0.9 | 25.00 | | |
| | **100** | 37 | 1.0 | 30.00 | | |
| | **75** | 46 | 0.7 | 40.00 | | |
| | **60** | 46 | 0.7 | 50.00 | | |
| | **50** | 41 | 0.7 | 60.00 | | |
| | **38** | 39 | 0.7 | 80.00 | | |
| | **30** | 34 | 0.7 | 100.00 | | |
| | **200** | 21 | 3.0 | 15.00 | **ECM350/050** | 120/240 |
| | **150** | 27 | 2.1 | 20.00 | | |
| | **120** | 33 | 1.6 | 25.00 | | |
| | **100** | 37 | 1.8 | 30.00 | | |
| | **75** | 47 | 1.3 | 40.00 | | |
| | **60** | 57 | 1.0 | 50.00 | | |
| | **50** | 65 | 0.8 | 60.00 | | |
| | **38** | 66 | 0.7 | 80.00 | | |
| | **30** | 61 | 0.7 | 100.00 | | |

## Dati tecnici per servizio S2 — *Technical data for S2 duty*

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **800** | | | | | | |
| (3000 min$^{-1}$) | **600** | 11 | 2.5 | 5.00 | **ECM600/040** | 120/240 |
| | **400** | 17 | 1.8 | 7.50 | | |
| | **300** | 22 | 1.5 | 10.00 | | |
| | **200** | 32 | 1.1 | 15.00 | | |
| | **150** | 42 | 0.7 | 20.00 | | |
| | **120** | 40 | 0.7 | 25.00 | | |
| | **100** | 54 | 0.7 | 30.00 | | |
| | **75** | 49 | 0.7 | 40.00 | | |
| | **600** | 11 | 4.9 | 5.00 | **ECM600/050** | 120/240 |
| | **400** | 17 | 3.3 | 7.50 | | |
| | **300** | 22 | 2.7 | 10.00 | | |
| | **200** | 33 | 1.9 | 15.00 | | |
| | **150** | 43 | 1.3 | 20.00 | | |
| | **120** | 52 | 1.0 | 25.00 | | |
| | **100** | 60 | 1.1 | 30.00 | | |
| | **75** | 75 | 0.8 | 40.00 | | |
| | **60** | 81 | 0.7 | 50.00 | | |
| | **50** | 74 | 0.7 | 60.00 | | |
| | **38** | 66 | 0.7 | 80.00 | | |
| | **200** | 33 | 3.5 | 15.00 | **ECM600/063** | 120/240 |
| | **150** | 43 | 2.4 | 20.00 | | |
| | **120** | 53 | 1.8 | 25.00 | | |
| | **100** | 60 | 2.1 | 30.00 | | |
| | **75** | 77 | 1.4 | 40.00 | | |
| | **60** | 93 | 1.1 | 50.00 | | |
| | **50** | 107 | 0.9 | 60.00 | | |
| | **38** | 132 | 0.7 | 80.00 | | |
| | **30** | 114 | 0.7 | 100.00 | | |

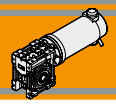
## Motori applicabili — *IEC Motor adapters*





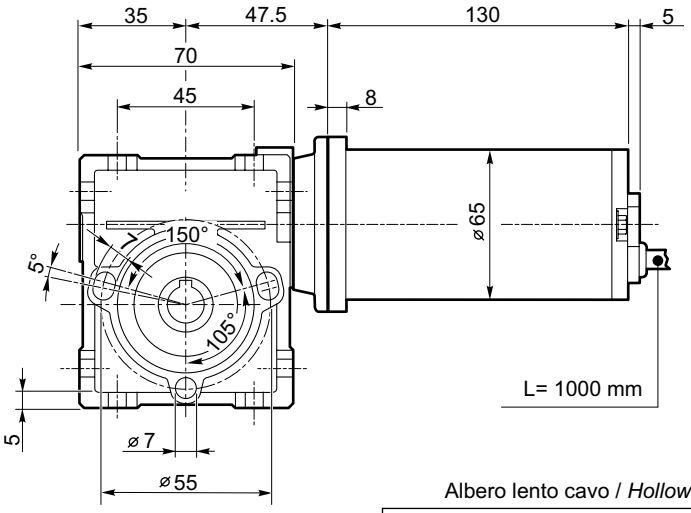
| | | EC | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **070.120 070.240** | **100.120 100.240 100.24E** | **180.120 180.240** | **180.24E** | **250.120 250.240** | **350.120 350.240** | **600.120 600.240** |
| **CM** | **026** | 5-60 | 5-60 | 5-60 | | | | |
| | **030** | 5-100 | 5-100 | 5-100 | 5-50 | 5-50 | 5-50 | |
| | **040** | | 5-100 | 5-100 | 5-100 | 5-100 | 5-100 | 5-40 |
| | **050** | | | 40-100 | 5-100 | 5-100 | 15-100 | 5-80 |
| | **063** | | | | | | | 5-100 |

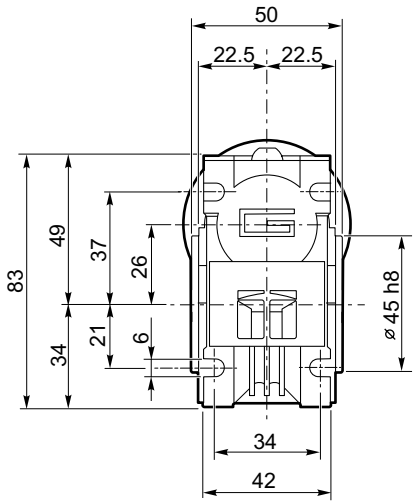
5-100 — Rapporti di riduzione i *Ratio i*



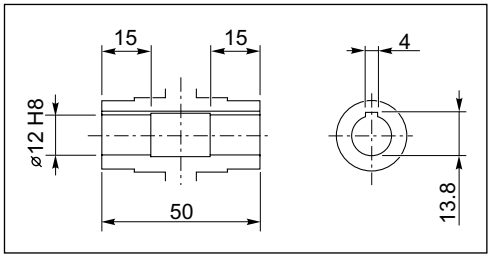
**Dimensioni** ***Dimensions***

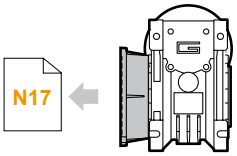
## ECM070/026 U



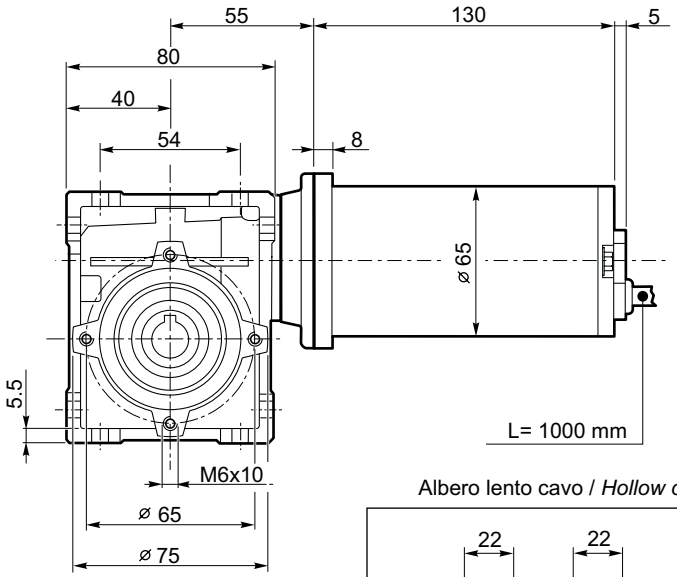

Albero lento cavo / *Hollow output shaft*

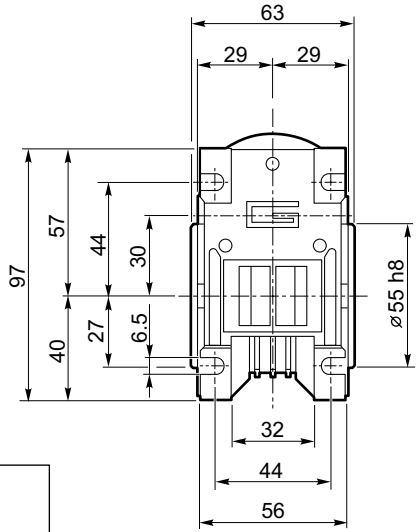


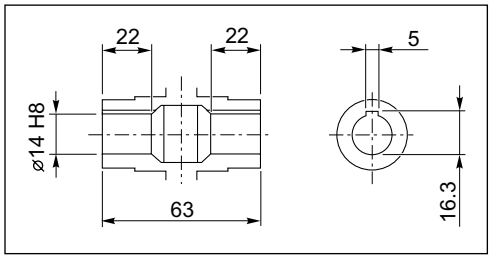

**ECM070/026 F**

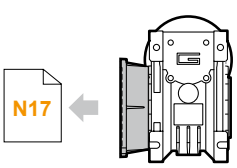
## ECM070/030 U




Albero lento cavo / *Hollow output shaft*

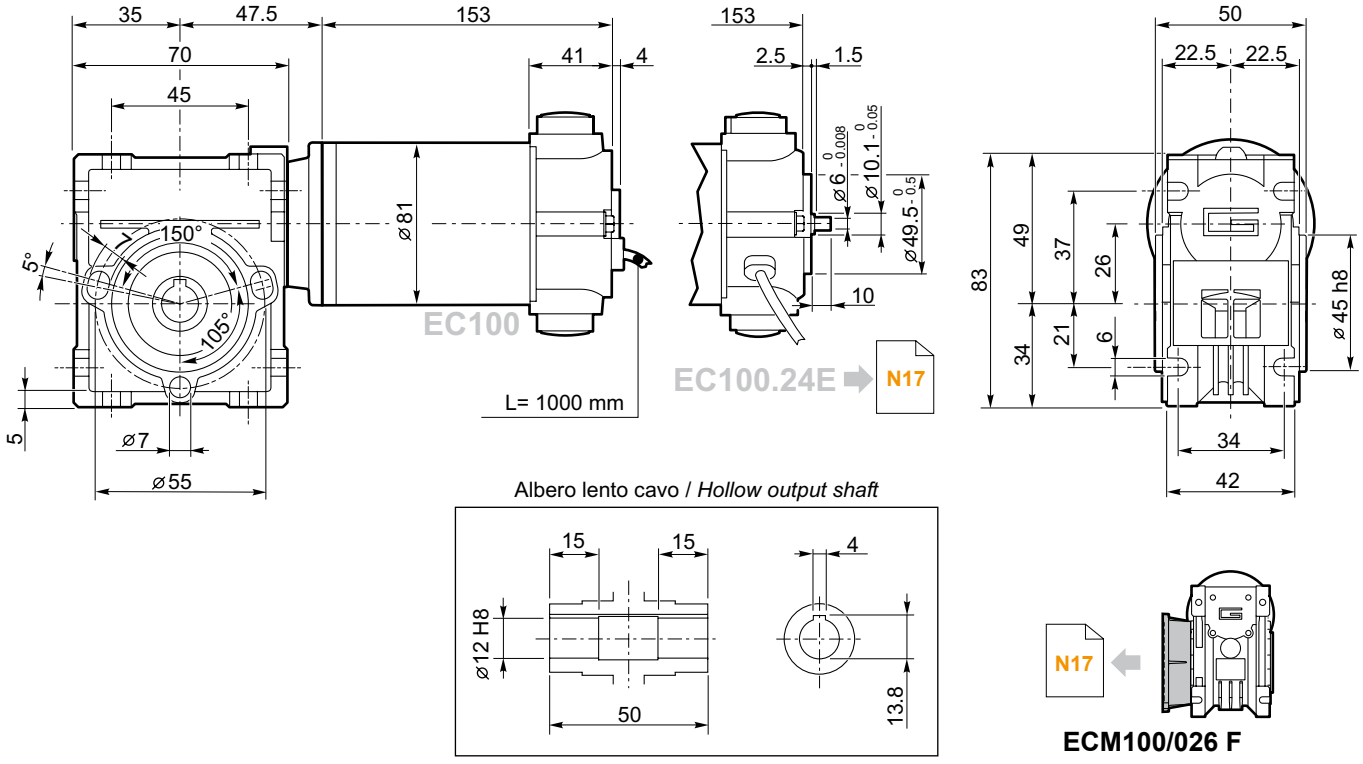


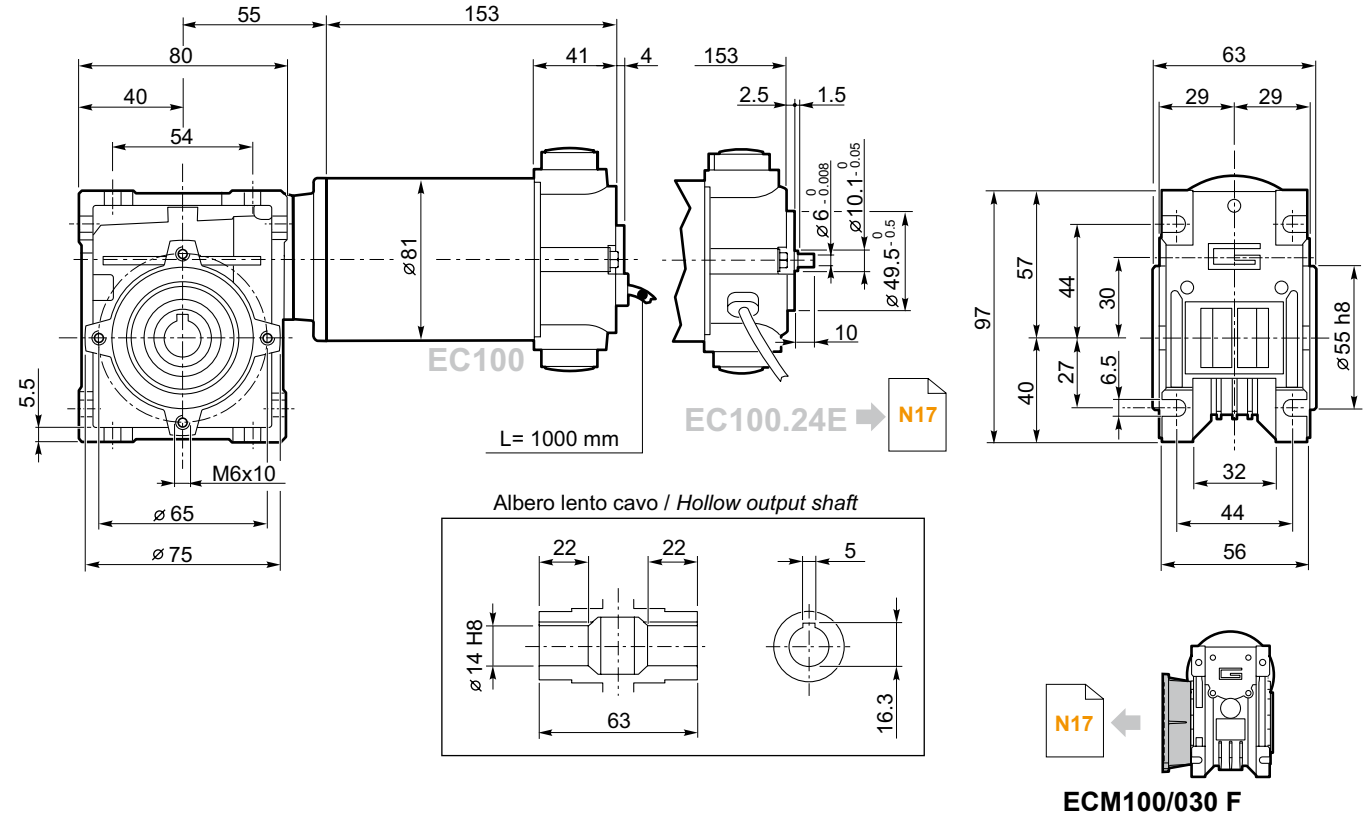

**ECM070/030 F**

**Dimensioni** | ***Dimensions***

## ECM100/026 U

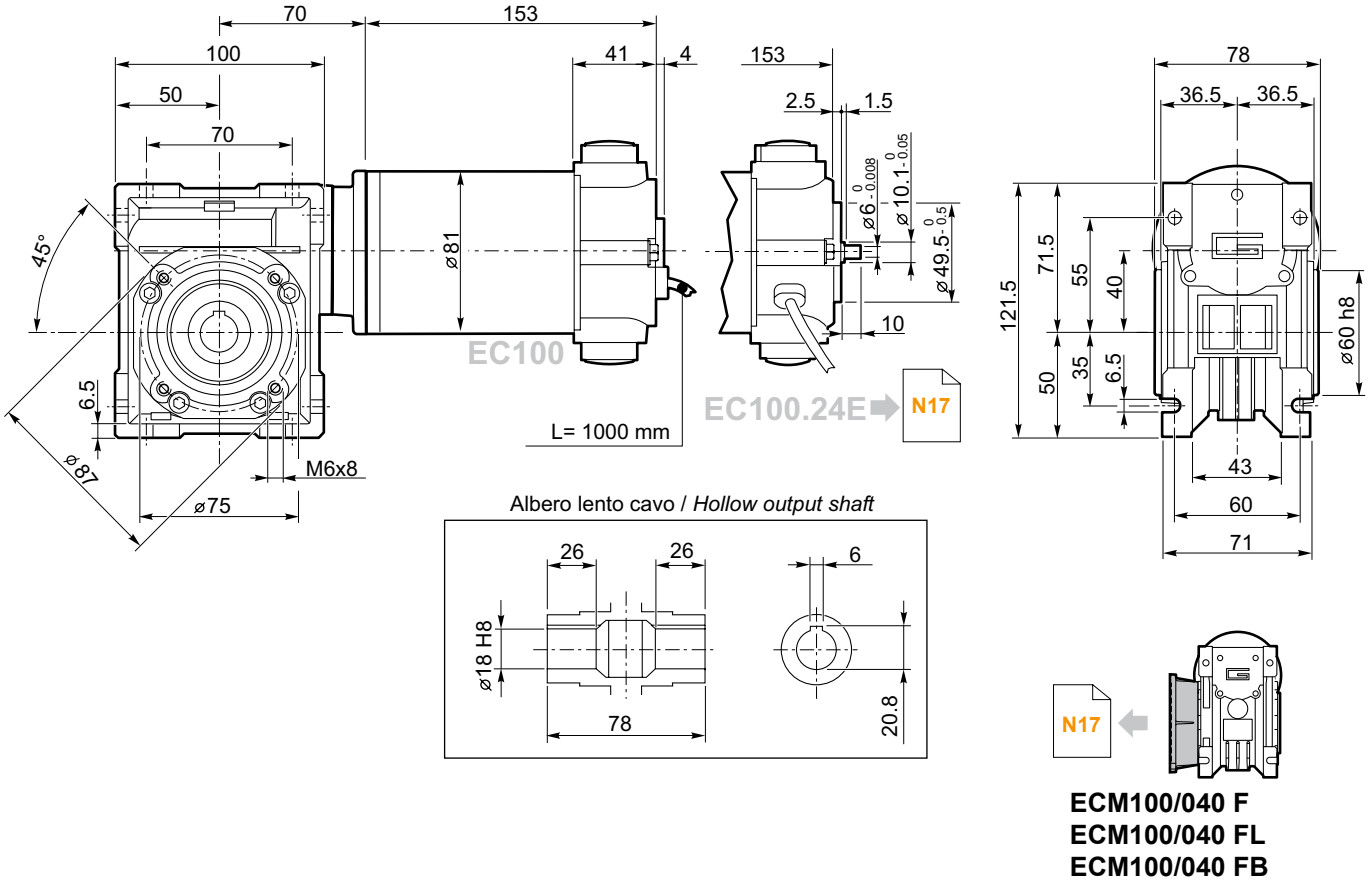



## ECM100/030 U



**Dimensioni** *Dimensions*

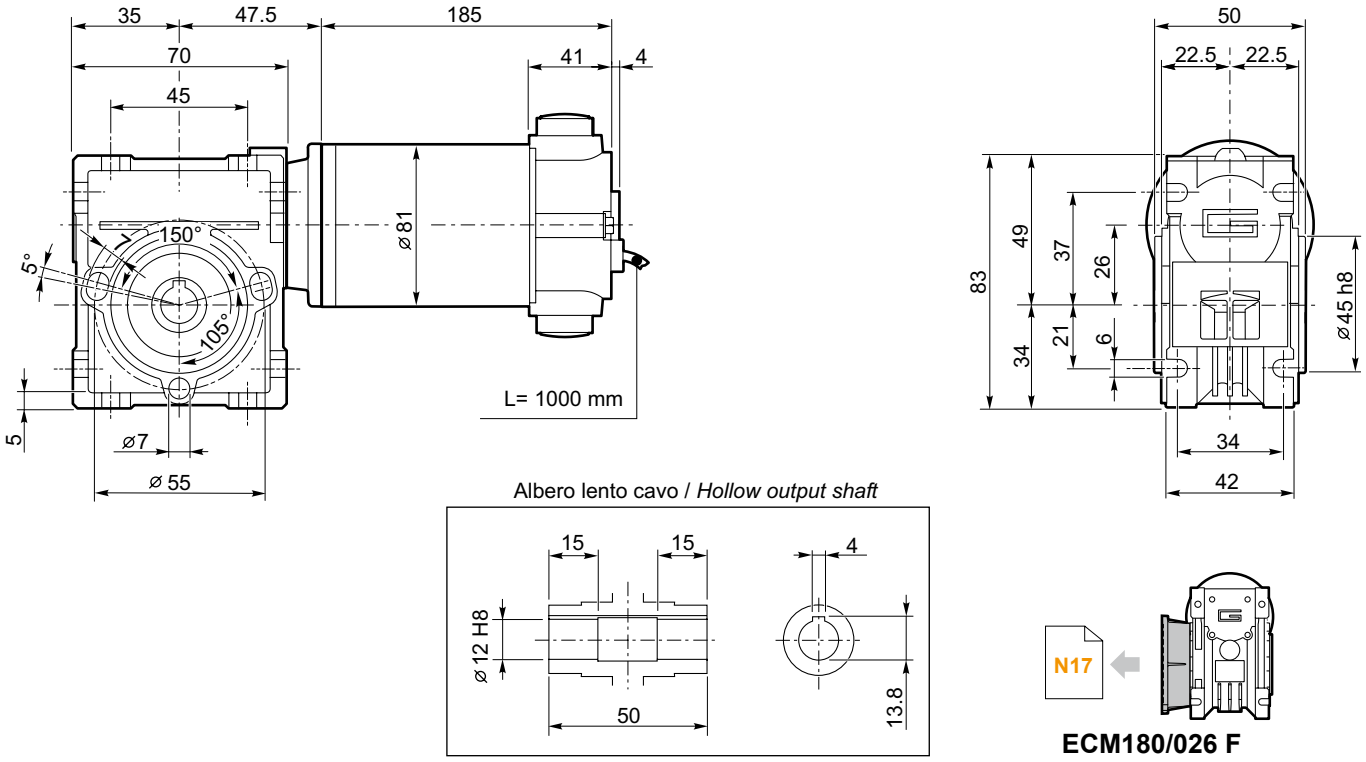
## ECM100/040 U



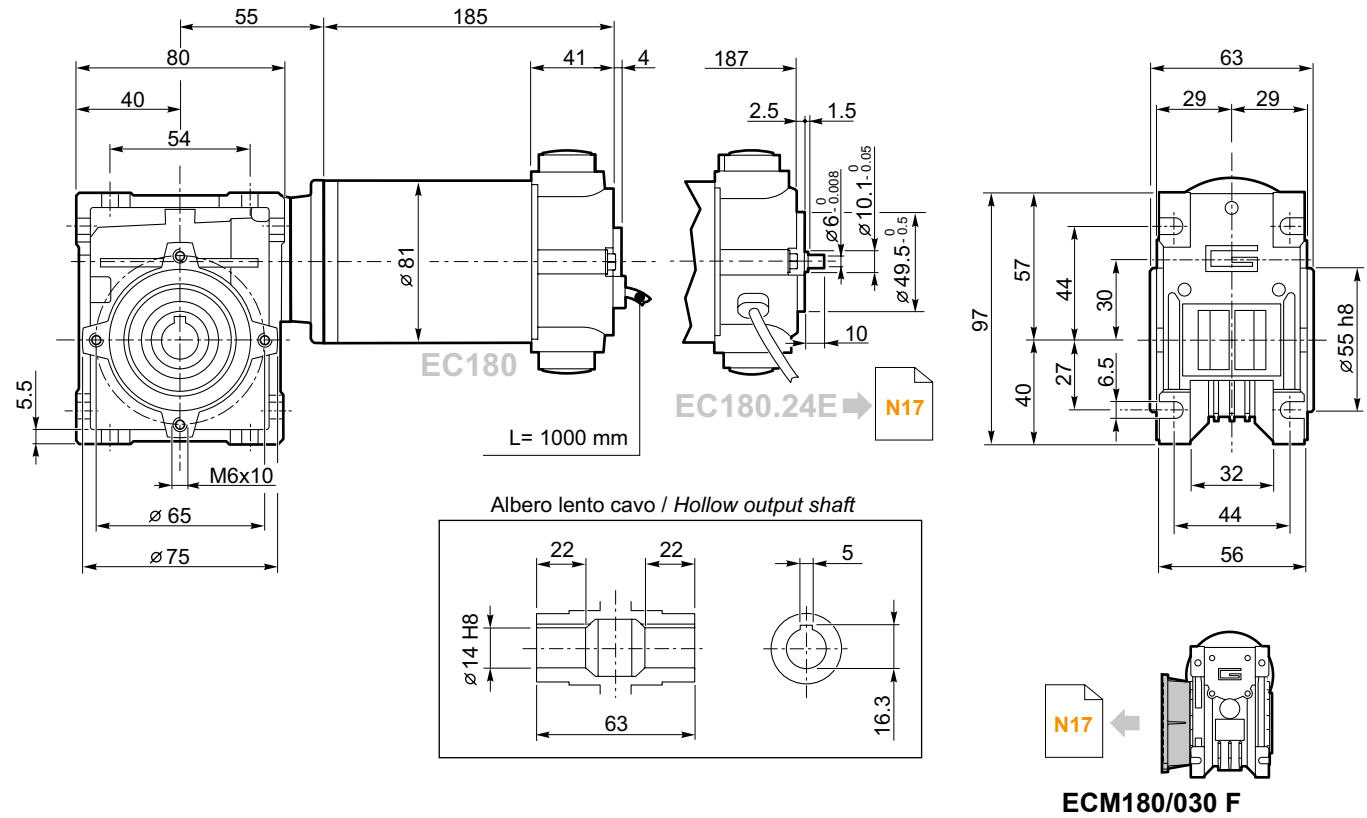

**ECM100/040 F**
**ECM100/040 FL**
**ECM100/040 FB**

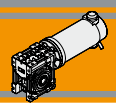
**Dimensioni** ***Dimensions***

## ECM180/026 U



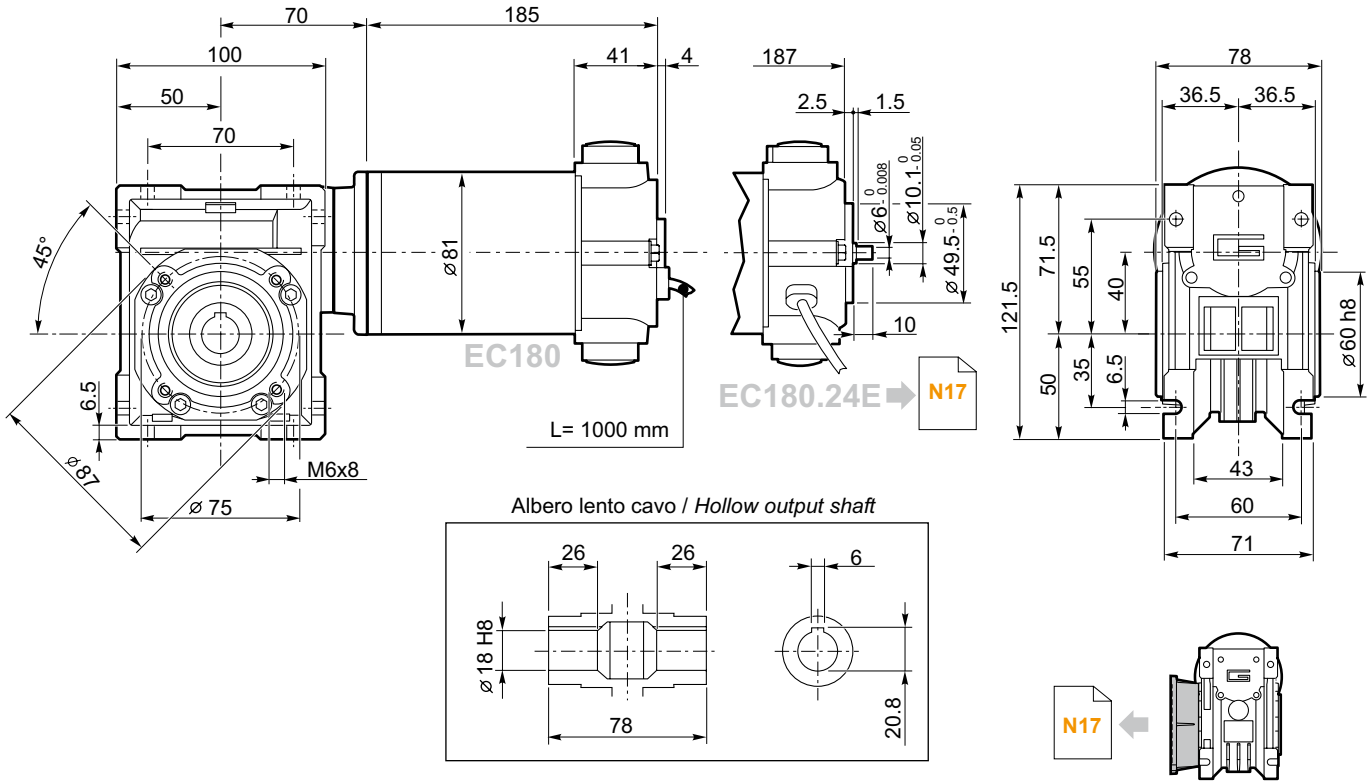

## ECM180/030 U





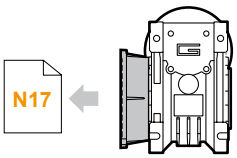
**Dimensioni** *Dimensions*

## ECM180/040 U



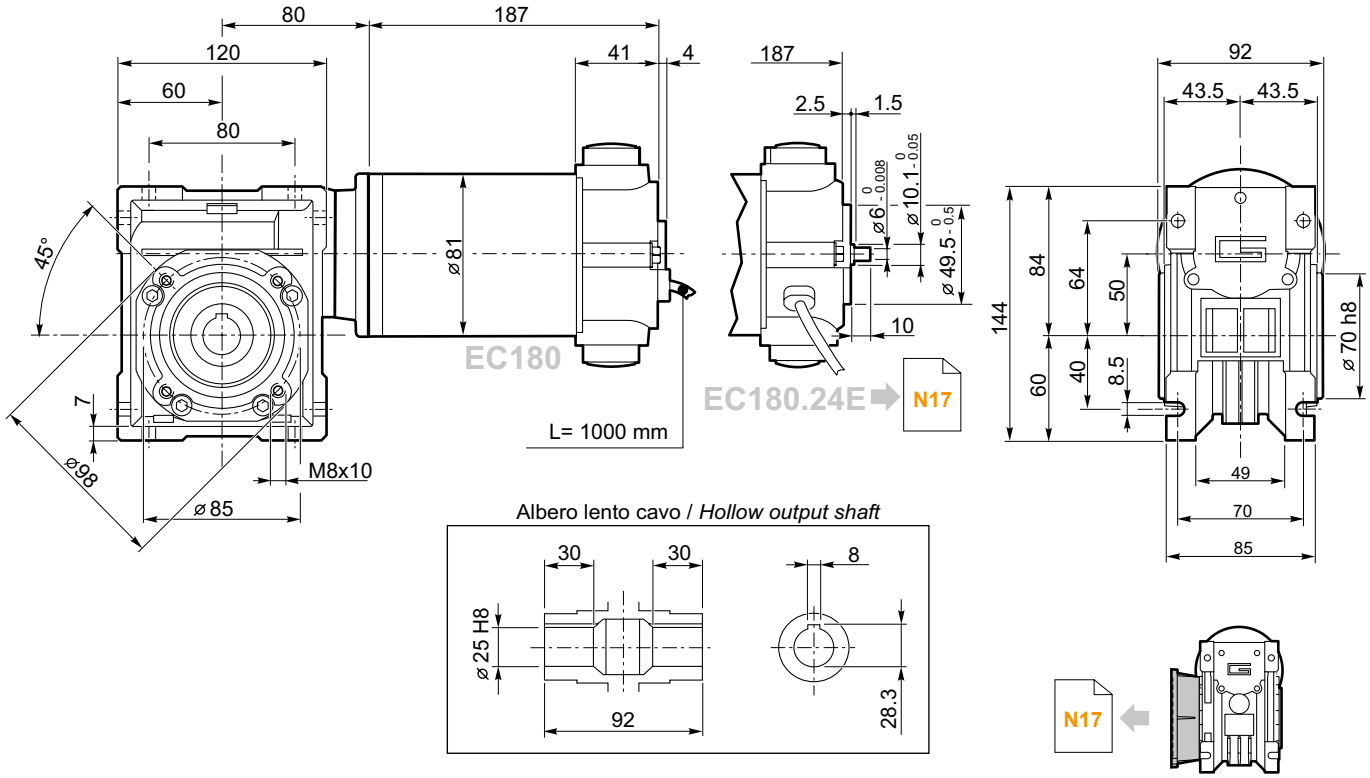

Albero lento cavo / *Hollow output shaft*




**ECM180/040 F**
**ECM180/040 FL**
**ECM180/040 FB**

## ECM180/050 U




Albero lento cavo / *Hollow output shaft*



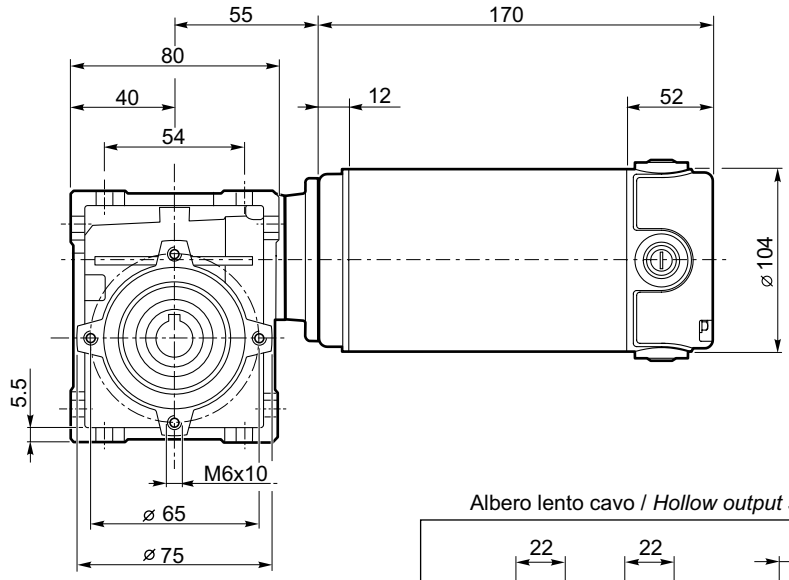


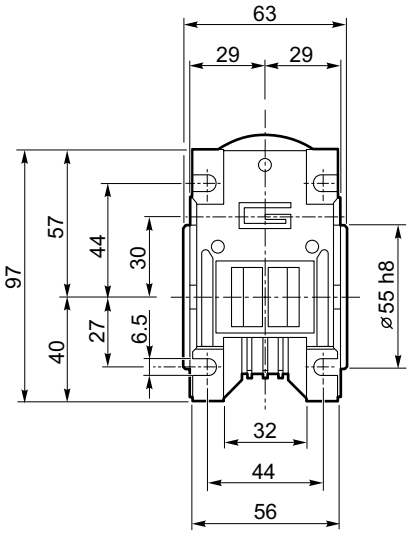


**ECM180/050 F**
**ECM180/050 FL**
**ECM180/050 FB**

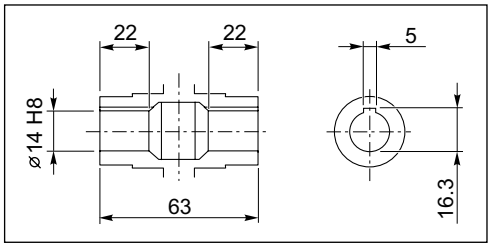
**Dimensioni** *Dimensions*

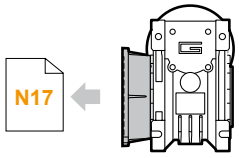
## ECM250/030 U



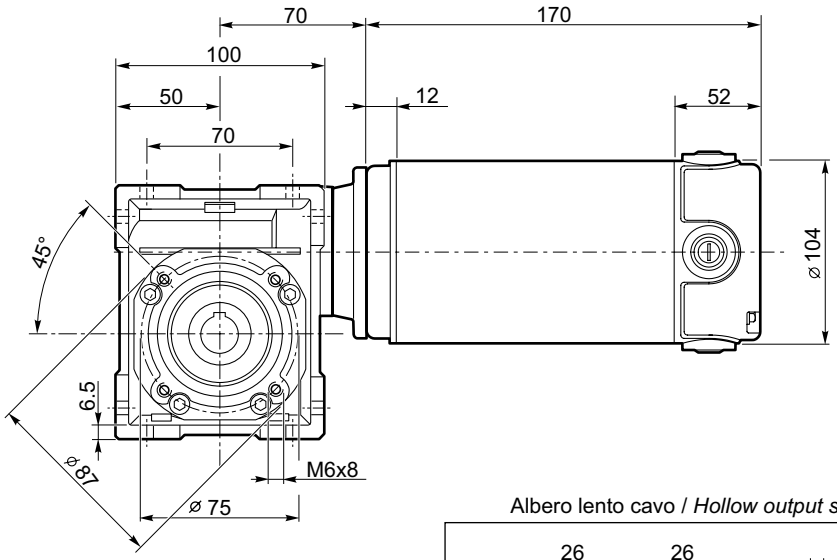

Albero lento cavo / *Hollow output shaft*

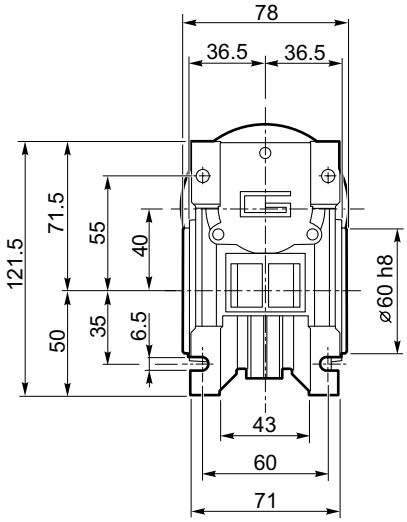


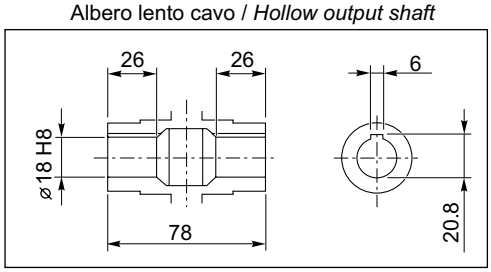

**ECM250/030 F**

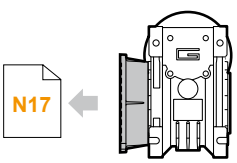
## ECM250/040 U



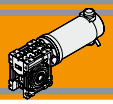




Albero lento cavo / *Hollow output shaft*



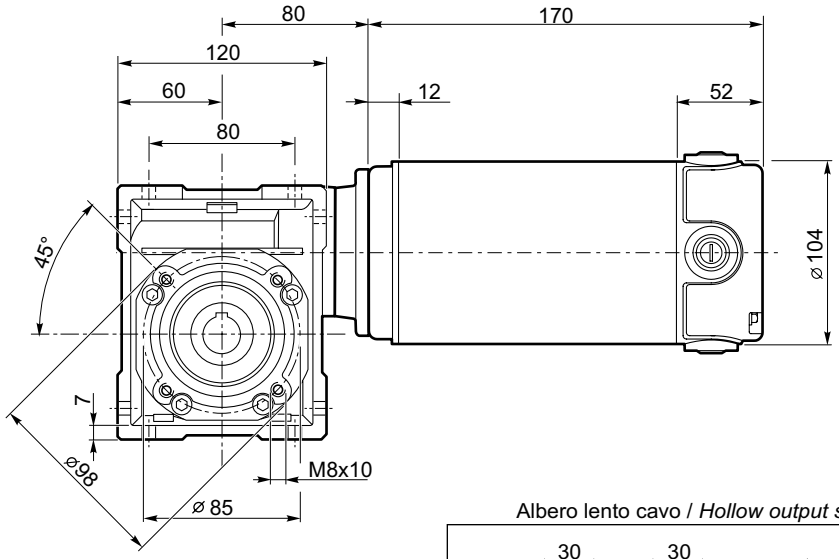



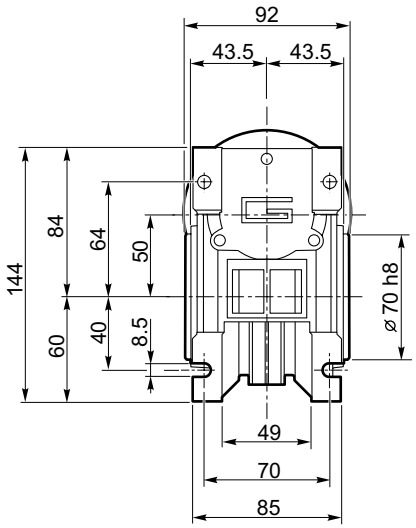

**ECM250/040 F**
**ECM250/040 FL**
**ECM250/040 FB**



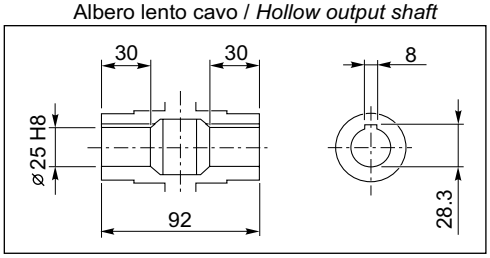
**Dimensioni** ***Dimensions***

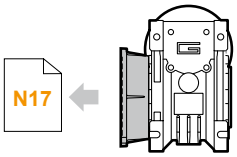
## ECM250/050 U




Albero lento cavo / *Hollow output shaft*

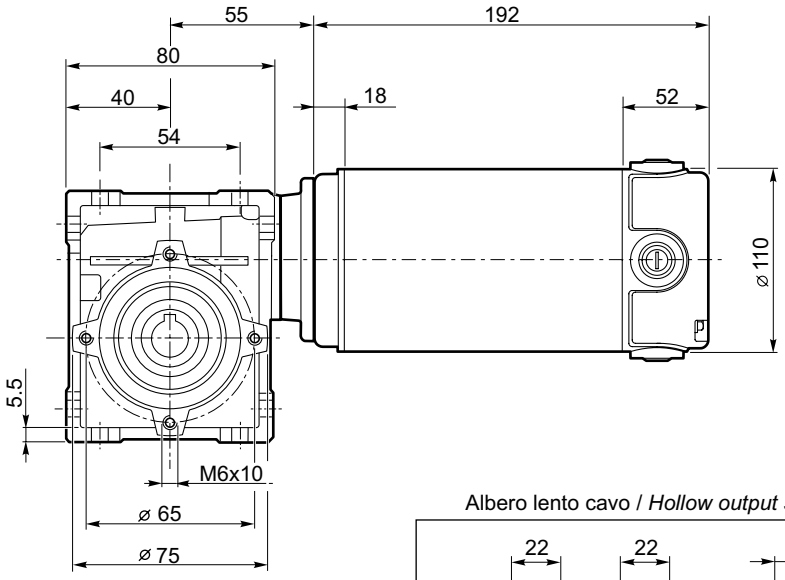


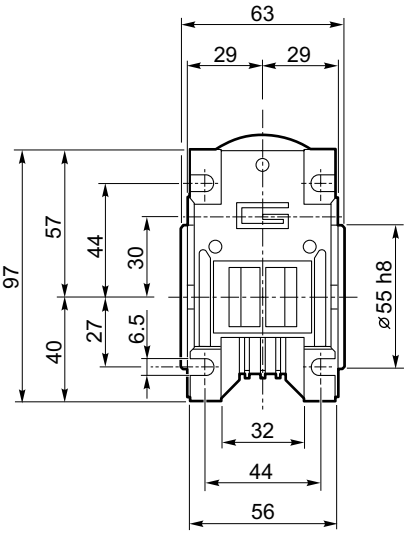




**ECM250/050 F**
**ECM250/050 FL**
**ECM250/050 FB**

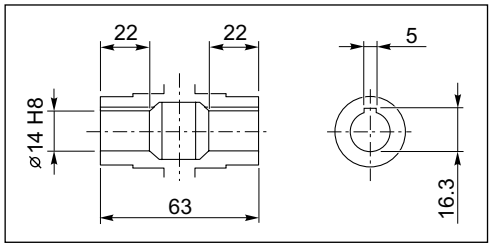
**Dimensioni** *Dimensions*

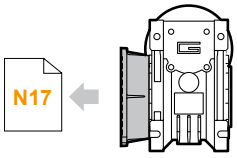
## ECM350/030 U



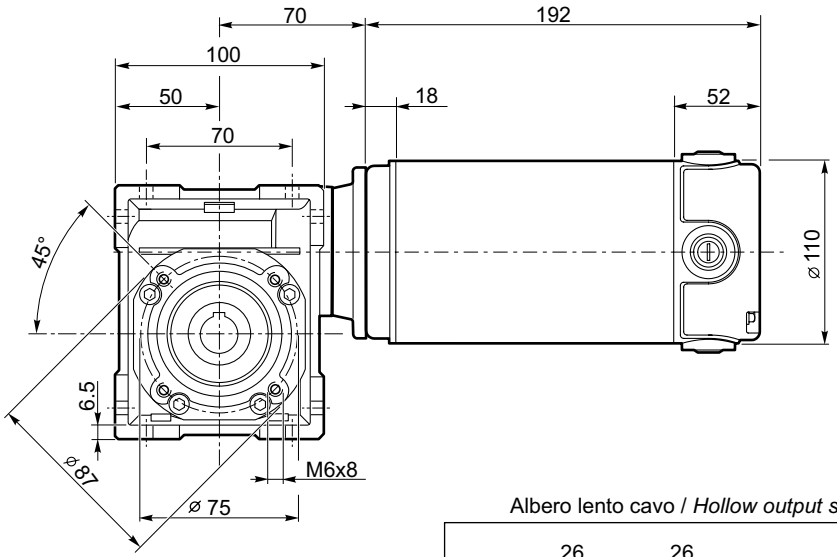

Albero lento cavo / *Hollow output shaft*

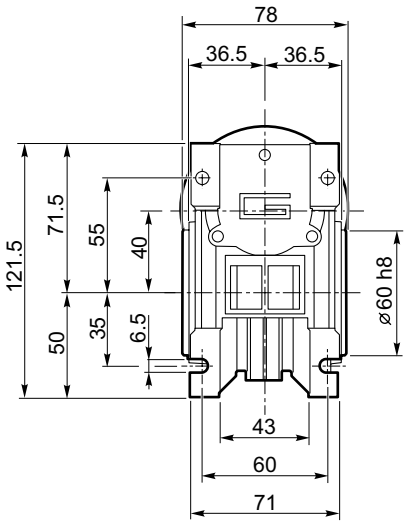


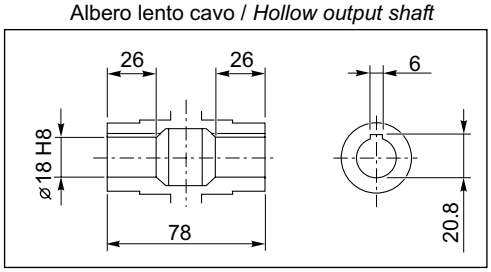

**ECM350/030 F**

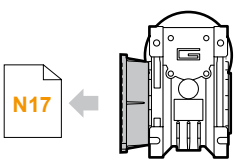
## ECM350/040 U



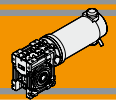




Albero lento cavo / *Hollow output shaft*



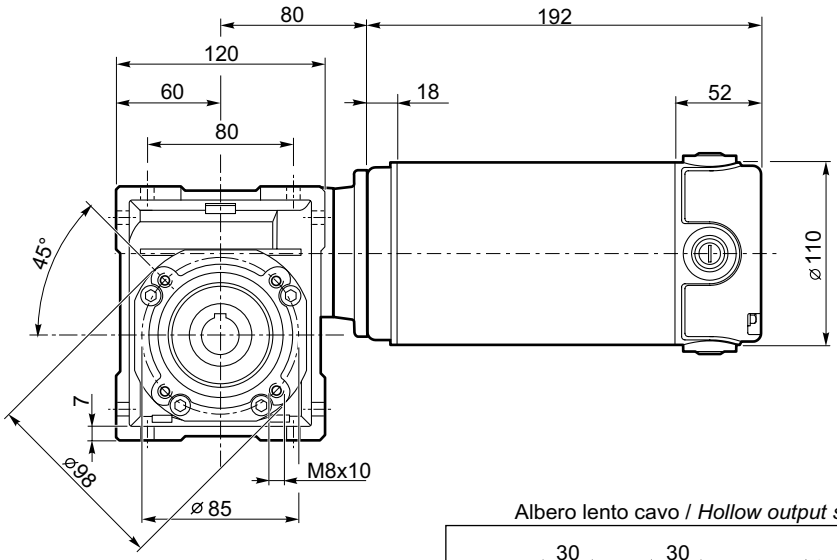



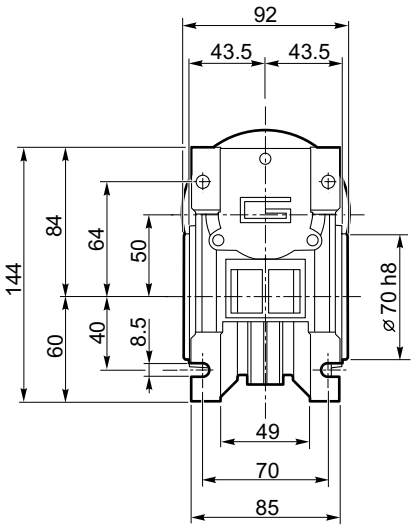

**ECM350/040 F**
**ECM350/040 FL**
**ECM350/040 FB**



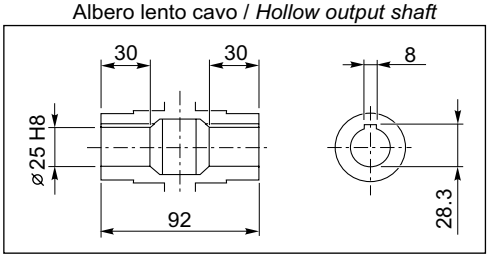
**Dimensioni** ***Dimensions***

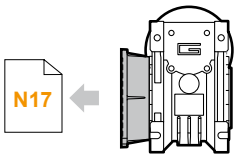
## ECM350/050 U



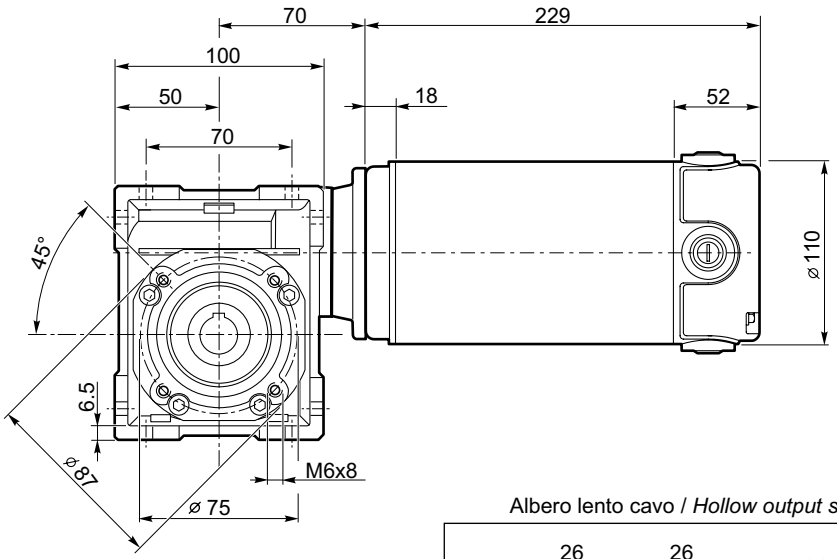

Albero lento cavo / *Hollow output shaft*

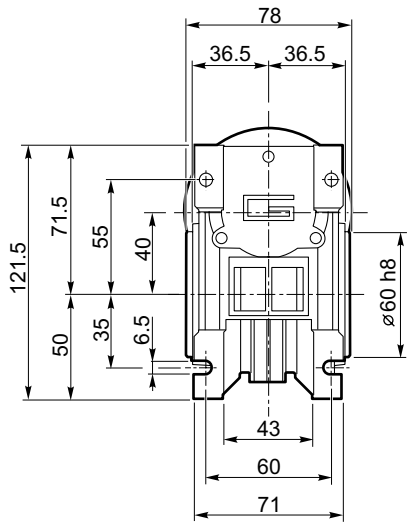


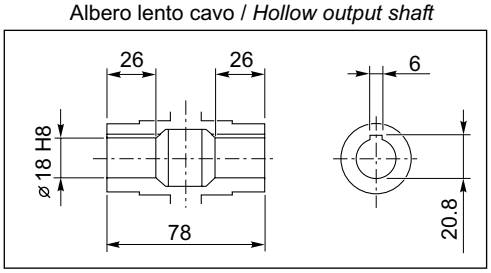

**ECM350/050 F**
**ECM350/050 FL**
**ECM350/050 FB**

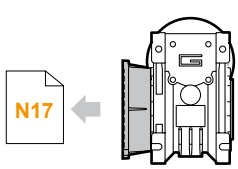
## ECM600/040 U




Albero lento cavo / *Hollow output shaft*

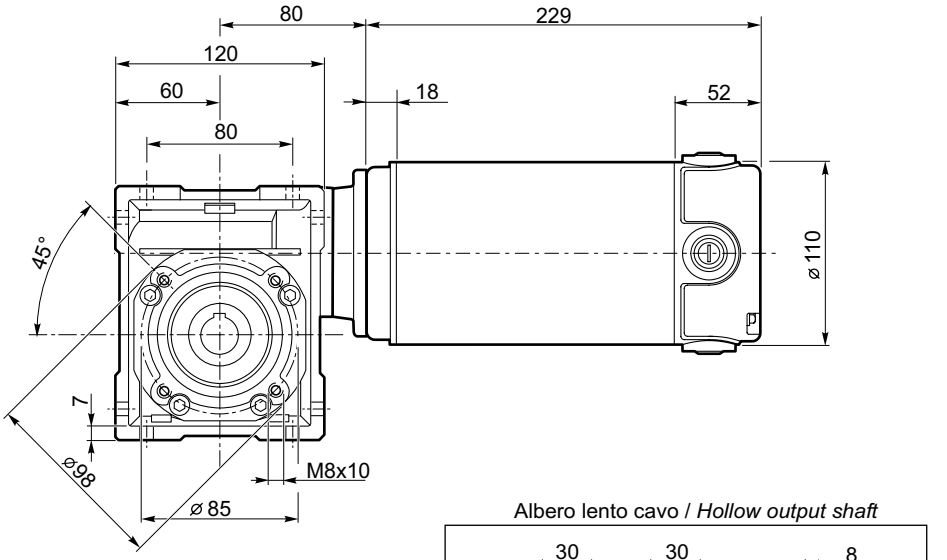


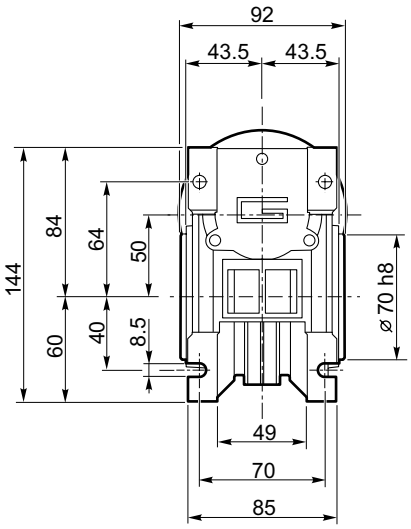




**ECM600/040 F**
**ECM600/040 FL**
**ECM600/040 FB**

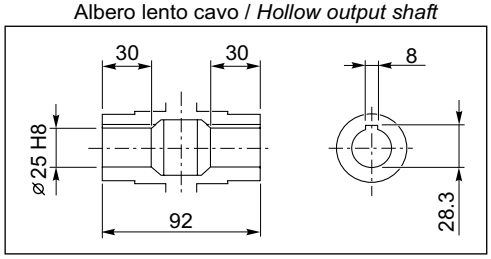
**Dimensioni** | ***Dimensions***

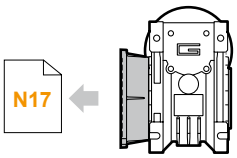
## ECM600/050 U



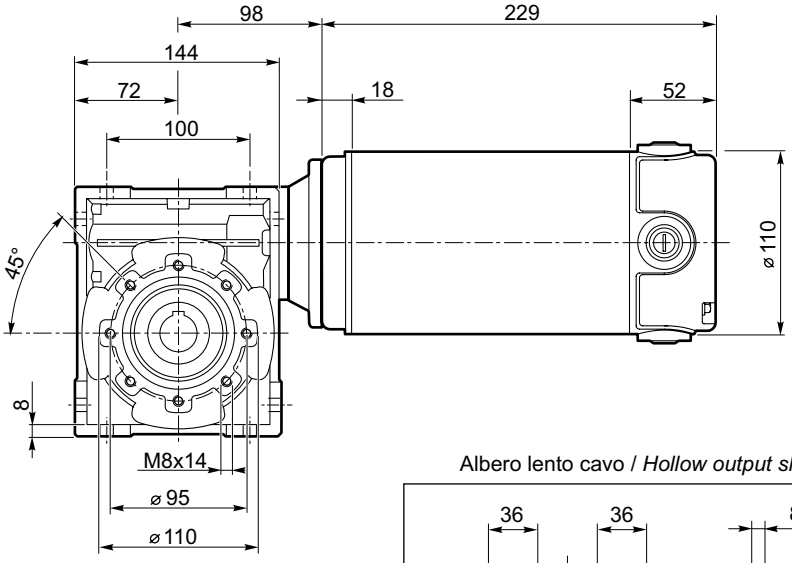

Albero lento cavo / *Hollow output shaft*

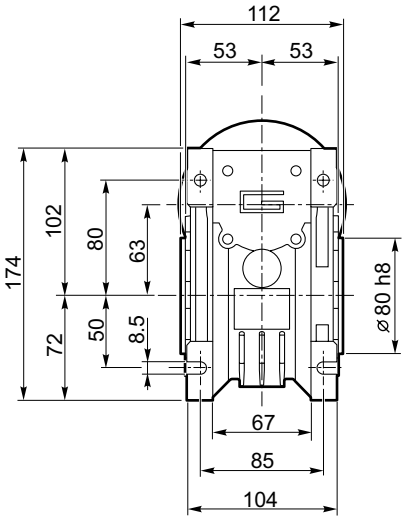


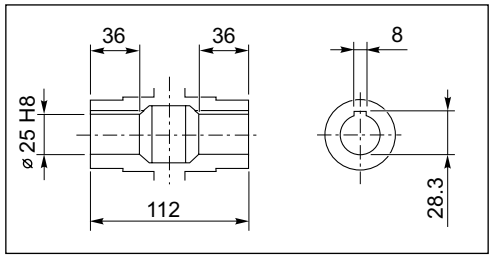

**ECM600/050 F**
**ECM600/050 FL**
**ECM600/050 FB**

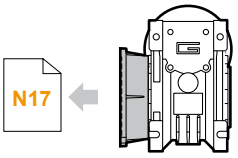
## ECM600/063 U



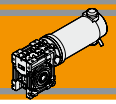




Albero lento cavo / *Hollow output shaft*



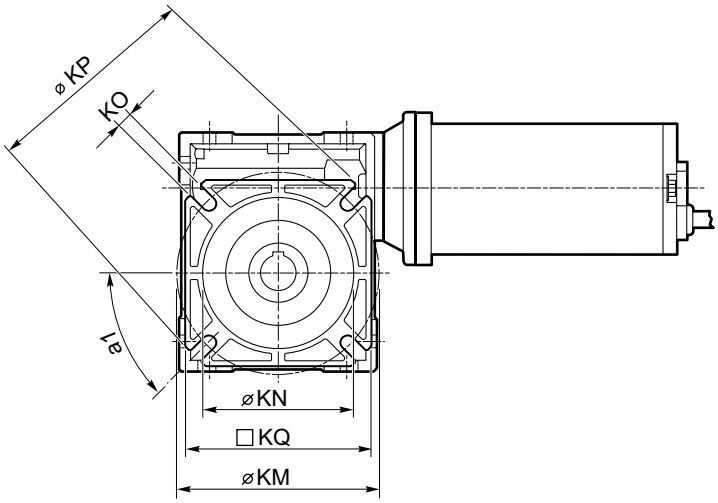



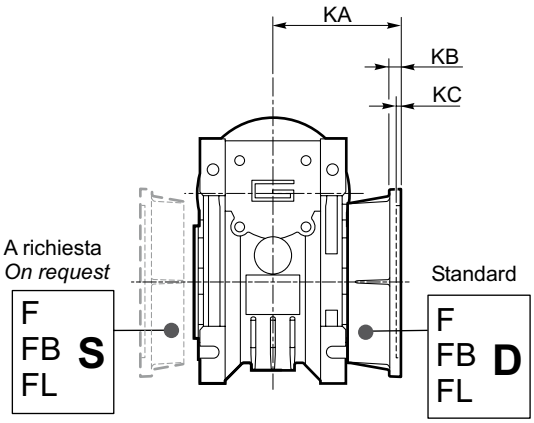

**ECM600/063 F**
**ECM600/063 FL**
**ECM600/063 FB**



## Dimensioni — *Dimensions*

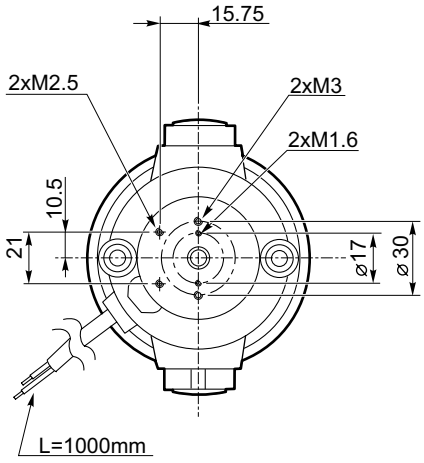
### ECM.../... F... Flange uscita / *Output flanges*

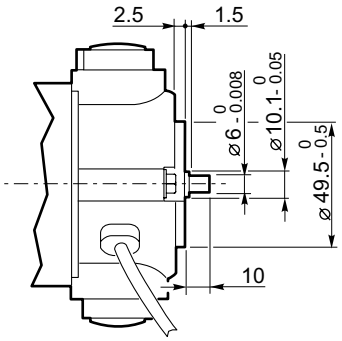



| CM | | CM..F | | | | | | | | CM..FB | | | | | | | | CM..FL | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | a1 | KA | KB | KC | KM | KN H8 | KO | KP | KQ | KA | KB | KC | KM | KN H8 | KO | KP | KQ | KA | KB | KC | KM | KN H8 | KO | KP | KQ |
| 026 | 45° | 45 | 6 | 4.5 | 55-69 | 40 | 6.5(n.4) | 75 | 70 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 030 | 45° | 54.5 | 6 | 4 | 68 | 50 | 6.5(n.4) | 80 | 70 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 040 | 45° | 67 | 7.5 | 4 | 80-95 | 60 | 9(n.4) | 110 | 95 | 80 | 8.5 | 5 | 115-125 | 95 | 9.5(n.4) | 140 | 112 | 97 | 7.5 | 4.5 | 80-95 | 60 | 9(n.4) | 110 | 95 |
| 050 | 45° | 90 | 9 | 5 | 90-110 | 70 | 11(n.4) | 125 | 110 | 89 | 9 | 5 | 130-145 | 110 | 9.5(n.4) | 160 | 132 | 120 | 9 | 5 | 90-110 | 70 | 11(n.4) | 125 | 110 |
| 063 | 45° | 82 | 10 | 6 | 150-160 | 115 | 11(n.4) | 180 | 142 | 98 | 10 | 5 | 165-180 | 130 | 11(n.4) | 200 | 160 | 112 | 10 | 6 | 150-160 | 115 | 11(n.4) | 180 | 142 |

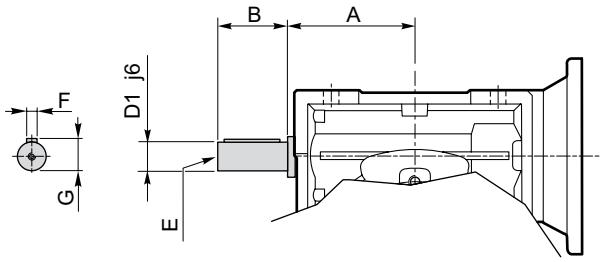
## EC100.24E
## EC180.24E



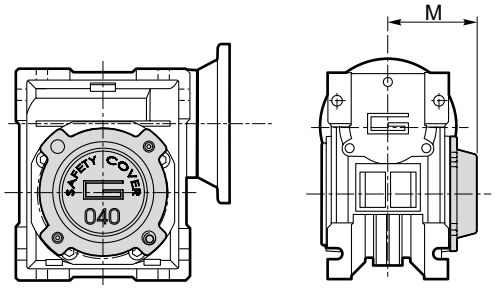
## Opzioni / *Options*

### VS - Vite sporgente / *Extended input shaft*




| | A | B | $D_1$ j6 | E | F | G |
|---|---|---|---|---|---|---|
| **CM 030** | 45 | 20 | 9 | M4 | 3 | 10.2 |
| **CM 040** | 53 | 23 | 11 | M5 | 4 | 12.5 |
| **CM 050** | 64 | 30 | 14 | M6 | 5 | 16 |
| **CM 063** | 75 | 40 | 19 | M6 | 6 | 21.5 |

### SC - *Safety cover*

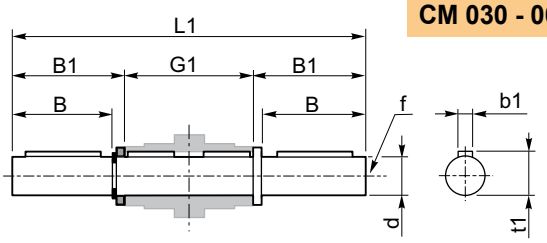



| | M |
|---|---|
| **CM 030** | 47 |
| **CM 040** | 54.5 |
| **CM 050** | 62.5 |
| **CM 063** | 73 |

## Accessori / *Accessories*

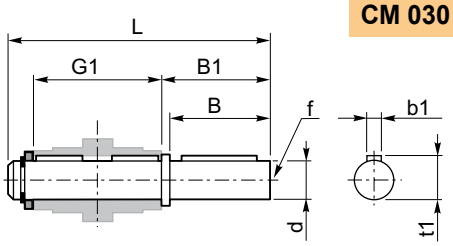
### Albero lento / *Output shaft*

DZ




**CM 030 - 063**

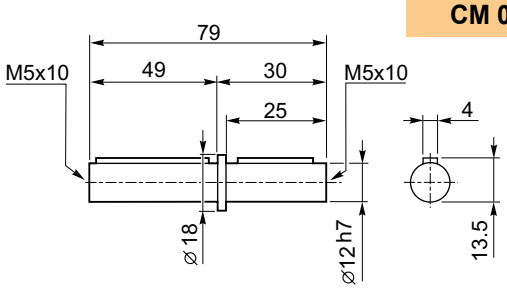
SZ




**CM 030 - 063**

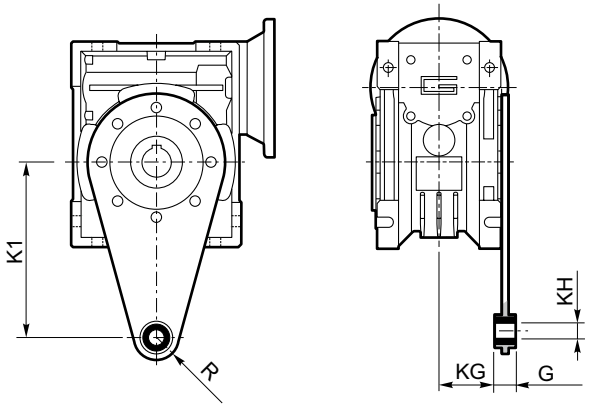
| | d h7 | B | B1 | G1 | L | L1 | f | b1 | t1 |
|---|---|---|---|---|---|---|---|---|---|
| **CM 030** | 14 | 30 | 32.5 | 63 | 102 | 128 | M6 | 5 | 16 |
| **CM 040** | 18 | 40 | 43 | 78 | 128 | 164 | M6 | 6 | 20.5 |
| **CM 050** | 25 | 50 | 53.5 | 92 | 153 | 199 | M10 | 8 | 28 |
| **CM 063** | 25 | 50 | 53.5 | 112 | 173 | 219 | M10 | 8 | 28 |

**CM 026**




### Braccio di reazione / *Torque arm*

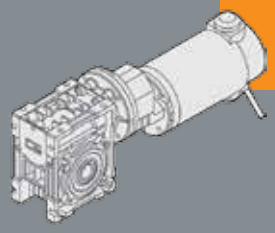
| | K1 | G | KG | KH | R |
|---|---|---|---|---|---|
| **CM 030** | 85 | 14 | 23 | 8 | 15 |
| **CM 040** | 100 | 14 | 31 | 10 | 18 |
| **CM 050** | 100 | 14 | 38 | 10 | 18 |
| **CM 063** | 150 | 14 | 47.5 | 10 | 18 |



TRANSTECNO®
THE MODULAR GEARMOTOR

# ECMP

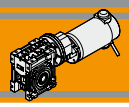
ECMP



## MOTORIDUTTORI C.C. CON PRECOPPIA

## PERMANENT MAGNETS D.C. PRE-STAGE GEARMOTORS


PRODUCTS • TRANSTECNO • GENUINE •



ENERGY SAVING





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## Caratteristiche tecniche — *Technical features*

Le caratteristiche principali dei motoriduttori a corrente continua della serie ECMP sono:

- Alimentazione in bassa tensione 12/24 Vcc
- Possibilità di montaggio encoder
- Potenze motore disponibili da 100 a 800W S2
- Magneti in ferrite
- Sia le carcasse dei riduttori a vite senza fine che delle precoppie sono in pressofusione di alluminio
- Lubrificazione permanente con olio sintetico

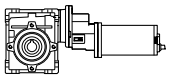
*The main features of ECMP D.C. gearmotor range are:*

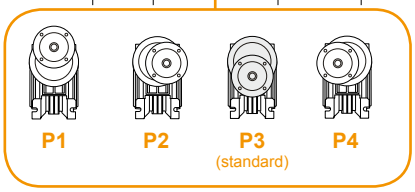
- *Low voltage power supply 12/24 Vdc*
- *Suitable for encoder assembly*
- *Motor power ratings available from 100 up to 800W S2*
- *Ferrite magnets*
- *Die-cast aluminum housing on pre-stage and wormgearboxes*
- *Permanent synthetic oil long-life lubrication.*

## Designazione — *Classification*

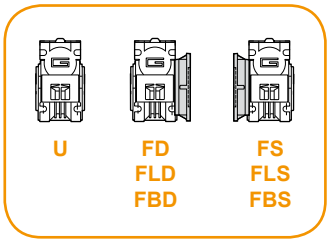
MOTORIDUTTORE / *GEARMOTOR*

| ECMP | 070/056/030 | U | 90 | SZDX | BRSX | 90 | P4 | B3 | 240 | VS |
|---|---|---|---|---|---|---|---|---|---|---|
| Tipo *Type* | Grandezza *Size* | Versione Riduttore *Gearbox Version* | Rapporto *Ratio* | Albero di uscita *Output shaft* | Braccio di reazione *Torque arm* | Angolo *Angle* | Pos. di montaggio precoppia *Pre stage mounting position* | Pos. di montaggio *Mounting position* | Versione Motore *Motor Version* | Opzioni *Options* |
| ECMP | 070/056/030<br>070/056/040<br>100/056/030<br>100/056/040<br>100/063/050<br>180/056/030<br>180/056/040<br>180/063/050<br>180/063/063<br>250/063/040<br>250/063/050<br>250/063/063<br>350/063/050<br>350/063/063<br>350/071/063<br>350/071/075<br>600/071/050<br>600/071/063<br>600/071/075 | U<br>FD<br>FS<br>FLD<br>FLS<br>FBD<br>FBS | Vedere tabella<br>*See tables* | SZDX<br>SZSX<br>DZ | BRDX<br>BRSX | 0°<br>90°<br>180°<br>270° | P1<br>P2<br>P3 (standard)<br>P4 | B3<br>B8<br>B6<br>B7<br>V5<br>V6 | 120<br>240<br>24E | VS |

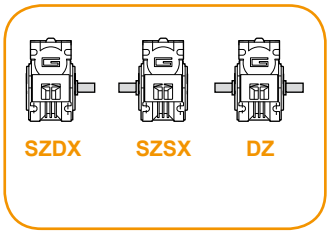




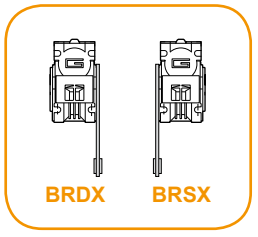

Versione Riduttore *Gearbox Version*



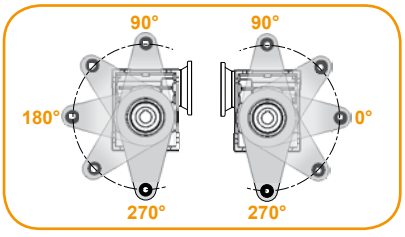

Albero di uscita *Output shaft*




Braccio di reazione *Torque arm*




Angolo *Angle*



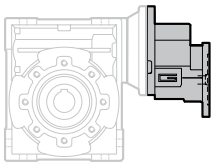
## Simbologia — *Symbols*

| | | | | | |
|---|---|---|---|---|---|
| $n_1$ | [$min^{-1}$] | Velocità in ingresso / *Input speed* | $M_2$ | [Nm] | Coppia in uscita in funzione di $P_1$ / *Output torque referred to $P_1$* |
| $n_2$ | [$min^{-1}$] | Velocità in uscita / *Output speed* | sf | | Fattore di servizio / *Service factor* |
| i | | Rapporto di riduzione / *Ratio* | $R_2$ | [N] | Carico radiale ammissibile in uscita / *Permitted output radial load* |
| $P_1$ | [kW] | Potenza in entrata / *Input power* | $A_2$ | N] | Carico assiale ammissibile in uscita / *Permitted output axial load* |

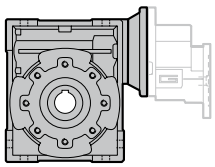
## Lubrificazione — *Lubrication*

I riduttori a vite senza fine con precoppia della serie CMP sono lubrificati a vita con olio sintetico di viscosità 320 e possono essere installati in qualunque posizione di montaggio.

*Permanent synthetic oil long - life lubrication allow to use CMP range in all mounting positions.*

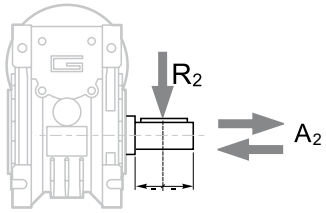


| CMP | | |
|---|---|---|
| **056**/030<br>**056**/040 | **063**/040<br>**063**/050<br>**063**/063 | **071**/050<br>**071**/063<br>**071**/075 |
| Lubrificazione a vita - *Life lubrication* | | |



| CMP | **Quantità di olio** (litri) / ***Oil quantity*** *(litres)* Per tutte le posizioni di montaggio / *For all mounting positions* | |
|---|---|---|
| 056/**030** | 0.03 | Lubrificazione a vita *Life lubrication* |
| 056/**040** - 063/**040** | 0.07 | |
| 063/**050** - 071/**050** | 0.1 | |
| 063/**063** - 071/**063** | 0.25 | |
| 071/**075** | 0.4 | |

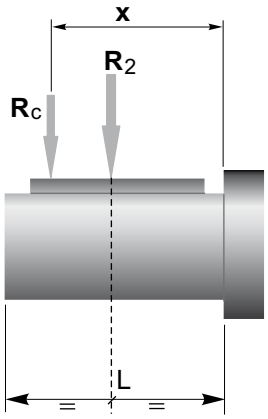
## Carichi radiali — *Radial loads*




| $n_2$ [$min^{-1}$] | $R_2$ [N] | | | | |
|---|---|---|---|---|---|
| | CM030 | CM040 | CM050 | CM063 | CM075 |
| 35 | 1179 | 2210 | 3095 | 4273 | 4937 |
| 28 | 1270 | 2381 | 3334 | 4603 | 5318 |
| 23 | 1356 | 2542 | 3559 | 4915 | 5678 |
| 18 | 1471 | 2759 | 3862 | 5334 | 6162 |
| 14 | 1600 | 3000 | 4200 | 5800 | 6700 |

Quando il carico radiale risultante non è applicato sulla mezzeria dell'albero occorre calcolare quello effettivo con la seguente formula:

*When the resulting radial load is not applied on the centre line of the shaft it is necessary to calculate the effective load with the following formula:*

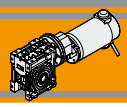



$$R_c = \frac{R_2 \cdot a}{(b+x)} \leq R_{2MAX}$$

$$R \leq R_c$$

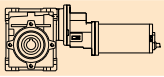
*a, b = valori riportati nella tabella*
*a, b = values given in the table*

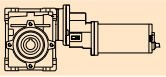
| | CM | | | | |
|---|---|---|---|---|---|
| | 030 | 040 | 050 | 063 | 075 |
| a | 65 | 84 | 101 | 120 | 131 |
| b | 50 | 64 | 76 | 95 | 101 |
| $R_{2MAX}$ | 1600 | 3000 | 4200 | 5800 | 6700 |



## Dati tecnici per servizio S2

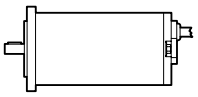
## *Technical data for S2 duty*

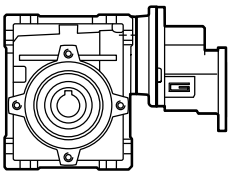
| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **100** | | | | | | |
| (3000 min$^{-1}$) | **50** | 13 | 1.7 | 60 | **ECMP070/056/030** | 120/240 |
| | **40** | 16 | 1.4 | 75 | | |
| | **33** | 17 | 1.6 | 90 | | |
| | **25** | 22 | 1.1 | 120 | | |
| | **20** | 25 | 0.9 | 150 | | |
| | **50** | 14 | 3.2 | 60 | **ECMP070/056/040** | 120/240 |
| | **40** | 16 | 2.7 | 75 | | |
| | **33** | 19 | 3.0 | 90 | | |
| | **25** | 22 | 2.1 | 120 | | |
| | **20** | 27 | 1.7 | 150 | | |
| | **17** | 30 | 1.4 | 180 | | |
| | **13** | 34 | 1.2 | 240 | | |
| | **10** | 38 | 0.9 | 300 | | |
| **140** | | | | | | |
| (3000 min$^{-1}$) | **50** | 19 | 1.2 | 60 | **ECMP100/056/030** | 120/240/24E |
| | **40** | 22 | 1.0 | 75 | | |
| | **33** | 24 | 1.1 | 90 | | |
| | **25** | 30 | 0.8 | 120 | | |
| | **20** | 31 | 0.7 | 150 | | |
| | **50** | 19 | 2.3 | 60 | **ECMP100/056/040** | 120/240/24E |
| | **40** | 23 | 1.9 | 75 | | |
| | **33** | 26 | 2.2 | 90 | | |
| | **25** | 31 | 1.5 | 120 | | |
| | **20** | 37 | 1.2 | 150 | | |
| | **17** | 42 | 1.0 | 180 | | |
| | **13** | 48 | 0.8 | 240 | | |
| | **10** | 54 | 0.7 | 300 | | |
| | **50** | 20 | 4.1 | 60 | **ECMP100/063/050** | 120/240/24E |
| | **40** | 24 | 3.2 | 75 | | |
| | **33** | 27 | 3.7 | 90 | | |
| | **25** | 32 | 2.6 | 120 | | |
| | **20** | 39 | 2.1 | 150 | | |
| | **17** | 43 | 1.8 | 180 | | |
| | **13** | 50 | 1.4 | 240 | | |
| **250** | | | | | | |
| (3000 min$^{-1}$) | **50** | 33 | 0.7 | 60 | **ECMP180/056/030** | 120/240 |
| | **40** | 31 | 0.7 | 75 | | |
| | **33** | 39 | 0.7 | 90 | | |
| | **25** | 33 | 0.7 | 120 | | |
| | **20** | 31 | 0.7 | 150 | | |
| | **50** | 35 | 1.3 | 60 | **ECMP180/056/040** | 120/240 |
| | **40** | 41 | 1.1 | 75 | | |
| | **33** | 46 | 1.2 | 90 | | |
| | **25** | 56 | 0.9 | 120 | | |
| | **20** | 67 | 0.7 | 150 | | |
| | **17** | 61 | 0.7 | 180 | | |
| | **13** | 57 | 0.7 | 240 | | |
| | **10** | 51 | 0.7 | 300 | | |
| | **50** | 35 | 2.3 | 60 | **ECMP180/063/050** | 120/240/24E |
| | **40** | 42 | 1.8 | 75 | | |
| | **33** | 48 | 2.1 | 90 | | |
| | **25** | 58 | 1.5 | 120 | | |
| | **20** | 69 | 1.2 | 150 | | |
| | **17** | 77 | 1.0 | 180 | | |
| | **13** | 90 | 0.8 | 240 | | |
| | **50** | 37 | 4.2 | 60 | **ECMP180/063/063** | 120/240/24E |
| | **40** | 44 | 3.1 | 75 | | |
| | **33** | 49 | 3.8 | 90 | | |
| | **25** | 61 | 2.6 | 120 | | |
| | **20** | 71 | 2.1 | 150 | | |
| | **17** | 81 | 1.7 | 180 | | |
| | **13** | 97 | 1.3 | 240 | | |
| | **10** | 110 | 1.1 | 300 | | |

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **350** | | | | | | |
| (3000 min$^{-1}$) | **50** | 48 | 0.9 | 60 | **ECMP250/063/040** | 120/240 |
| | **40** | 57 | 0.8 | 75 | | |
| | **33** | 65 | 0.9 | 90 | | |
| | **25** | 69 | 0.7 | 120 | | |
| | **50** | 49 | 1.6 | 60 | **ECMP250/063/050** | 120/240 |
| | **40** | 59 | 1.3 | 75 | | |
| | **33** | 67 | 1.5 | 90 | | |
| | **25** | 81 | 1.0 | 120 | | |
| | **20** | 97 | 0.8 | 150 | | |
| | **17** | 108 | 0.7 | 180 | | |
| | **13** | 99 | 0.7 | 240 | | |
| | **50** | 51 | 3.0 | 60 | **ECMP250/063/063** | 120/240 |
| | **40** | 61 | 2.2 | 75 | | |
| | **33** | 69 | 2.7 | 90 | | |
| | **25** | 85 | 1.9 | 120 | | |
| | **20** | 100 | 1.5 | 150 | | |
| | **17** | 114 | 1.2 | 180 | | |
| | **13** | 136 | 0.9 | 240 | | |
| | **10** | 154 | 0.8 | 300 | | |
| **500** | | | | | | |
| (3000 min$^{-1}$) | **50** | 70 | 1.1 | 60 | **ECMP350/063/050** | 120/240 |
| | **40** | 84 | 0.9 | 75 | | |
| | **33** | 95 | 1.0 | 90 | | |
| | **25** | 116 | 0.7 | 120 | | |
| | **20** | 116 | 0.7 | 150 | | |
| | **17** | 109 | 0.7 | 180 | | |
| | **13** | 99 | 0.7 | 240 | | |
| | **50** | 73 | 2.1 | 60 | **ECMP350/063/063** | 120/240 |
| | **40** | 88 | 1.6 | 75 | | |
| | **33** | 98 | 1.9 | 90 | | |
| | **25** | 122 | 1.3 | 120 | | |
| | **20** | 143 | 1.1 | 150 | | |
| | **17** | 163 | 0.9 | 180 | | |
| | **13** | 195 | 0.7 | 240 | | |
| | **10** | 174 | 0.7 | 300 | | |
| | **50** | 73 | 2.1 | 60 | **ECMP350/071/063** | 120/240 |
| | **40** | 88 | 1.6 | 75 | | |
| | **33** | 98 | 1.9 | 90 | | |
| | **25** | 122 | 1.3 | 120 | | |
| | **20** | 143 | 1.1 | 150 | | |
| | **17** | 163 | 0.9 | 180 | | |
| | **50** | 75 | 3.4 | 60 | **ECMP350/071/075** | 120/240 |
| | **40** | 90 | 2.6 | 75 | | |
| | **33** | 102 | 3.0 | 90 | | |
| | **25** | 127 | 2.1 | 120 | | |
| | **20** | 150 | 1.6 | 150 | | |
| | **17** | 171 | 1.4 | 180 | | |
| | **13** | 206 | 1.0 | 240 | | |
| | **10** | 234 | 0.8 | 300 | | |
| **800** | | | | | | |
| (3000 min$^{-1}$) | **50** | 112 | 0.7 | 60 | **ECMP600/071/050** | 120/240 |
| | **40** | 107 | 0.7 | 75 | | |
| | **33** | 141 | 0.7 | 90 | | |
| | **50** | 117 | 1.3 | 60 | **ECMP600/071/063** | 120/240 |
| | **40** | 140 | 1.0 | 75 | | |
| | **33** | 157 | 1.2 | 90 | | |
| | **25** | 195 | 0.8 | 120 | | |
| | **20** | 228 | 0.7 | 150 | | |
| | **17** | 203 | 0.7 | 180 | | |
| | **50** | 120 | 2.1 | 60 | **ECMP600/071/075** | 120/240 |
| | **40** | 144 | 1.6 | 75 | | |
| | **33** | 164 | 1.9 | 90 | | |
| | **25** | 204 | 1.3 | 120 | | |
| | **20** | 240 | 1.0 | 150 | | |
| | **17** | 274 | 0.9 | 180 | | |
| | **13** | 299 | 0.7 | 240 | | |
| | **10** | 277 | 0.7 | 300 | | |

## Motori applicabili

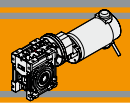
## *IEC Motor adapters*





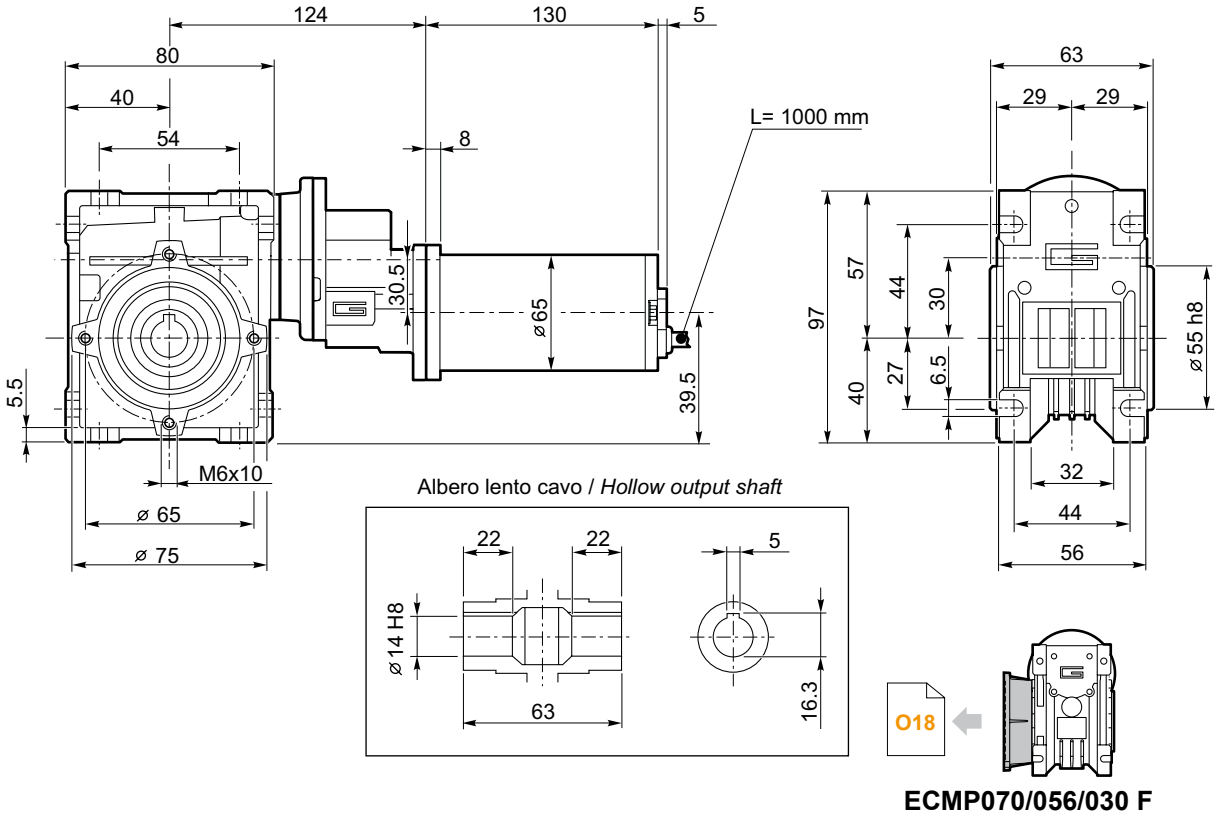
| | | EC | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 070.120<br>070.240 | 100.120<br>100.240<br>100.24E | 180.120<br>180.240 | 180.24E | 250.120<br>250.240 | 350.120<br>350.240 | 600.120<br>600.240 |
| CMP | 056/030 | 150 | 150 | 150 | | | | |
| | 056/040 | 300 | 300 | 300 | | | | |
| | 063/040 | | | | | 120 | | |
| | 063/050 | | 240 | 240 | 240 | 240 | 240 | |
| | 063/063 | | | 300 | 300 | 300 | 300 | |
| | 071/050 | | | | | | | 90 |
| | 071/063 | | | | | | 180 | 180 |
| | 071/075 | | | | | | 300 | 300 |

150 Rapporto di riduzione massimo $i_{max}$
*Maximum ratio $i_{max}$*



**Dimensioni** *Dimensions*

## ECMP070/056/030 U

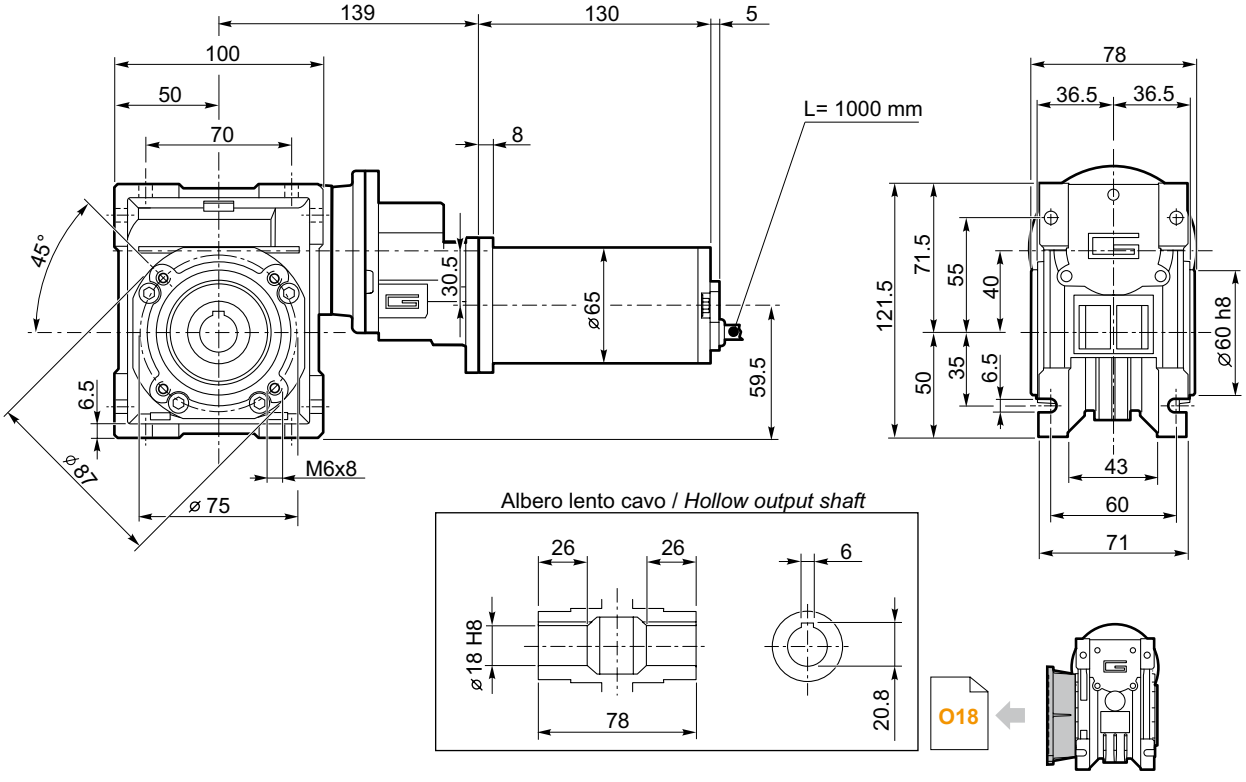






**ECMP070/056/030 F**

## ECMP070/056/040 U



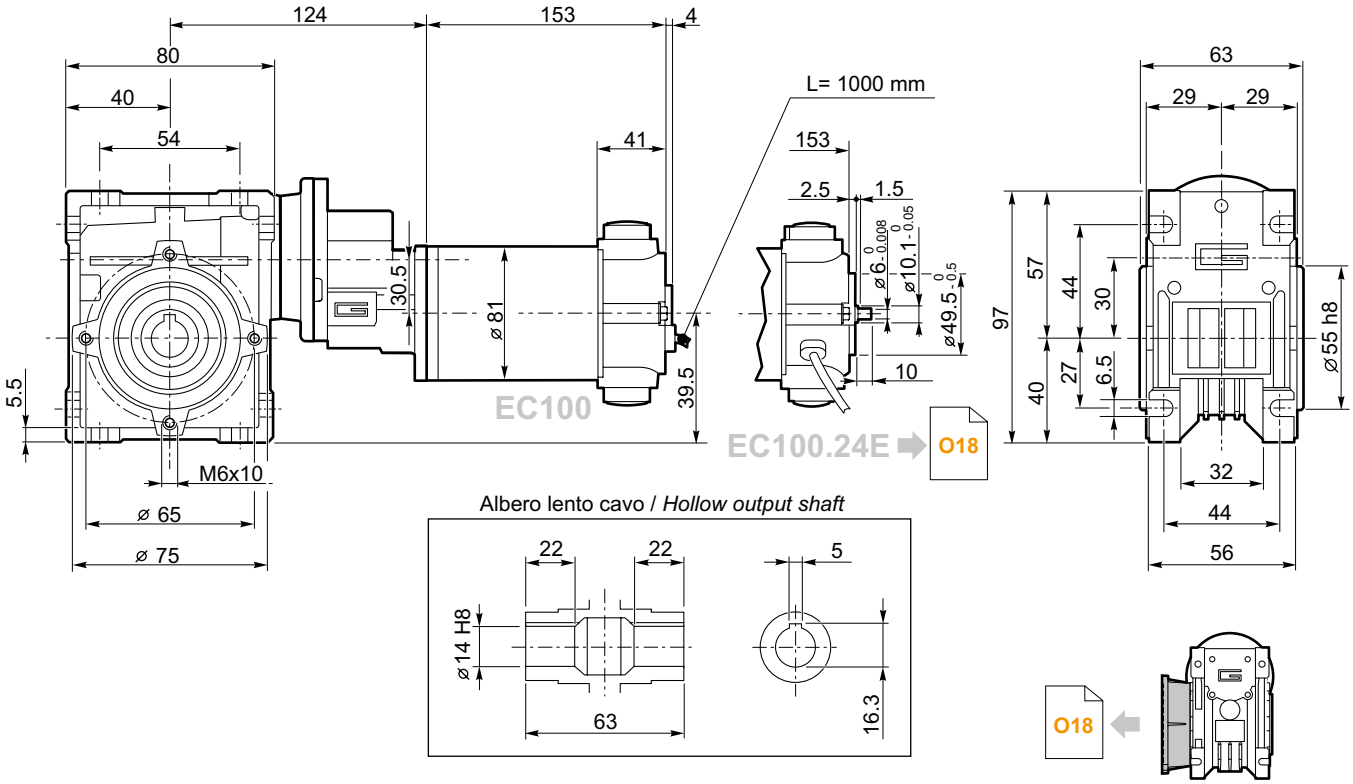




**ECMP070/056/040 F**
**ECMP070/056/040 FL**
**ECMP070/056/040 FB**

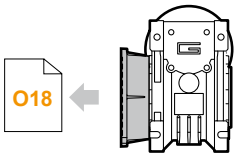
**Dimensioni** *Dimensions*

## ECMP100/056/030 U



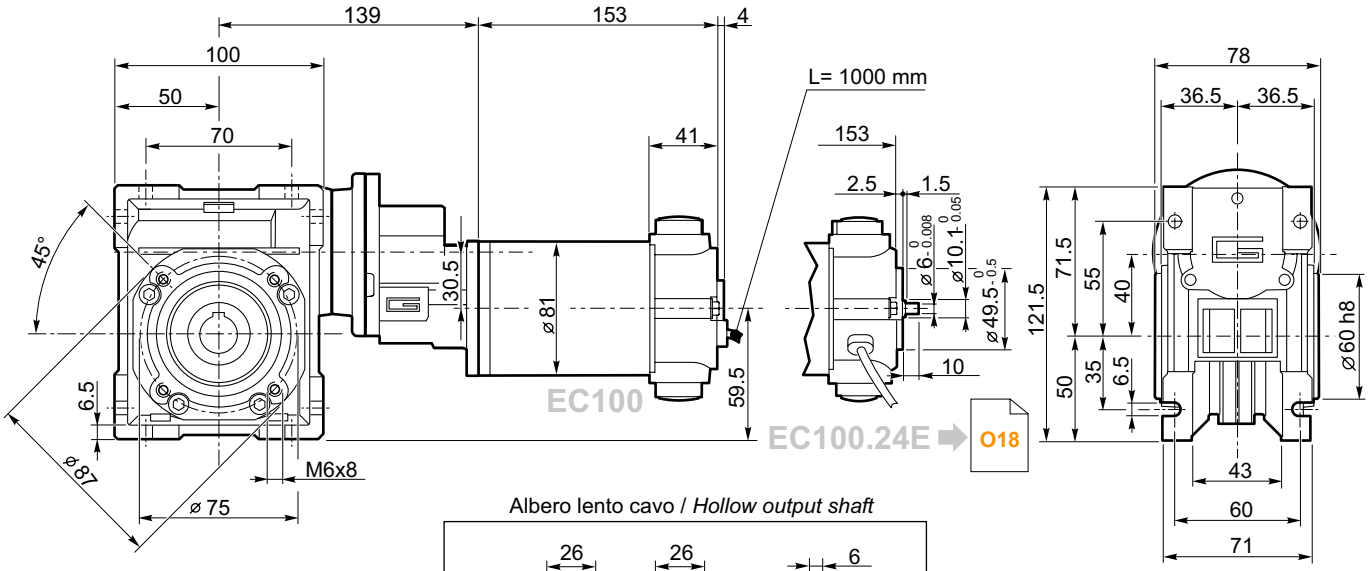

Albero lento cavo / *Hollow output shaft*



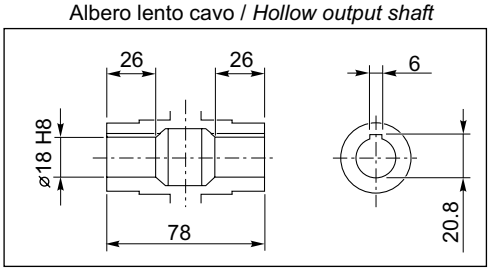



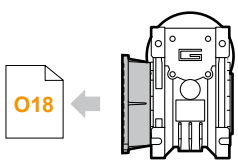

**ECMP100/056/030 F**

## ECMP100/056/040 U




Albero lento cavo / *Hollow output shaft*

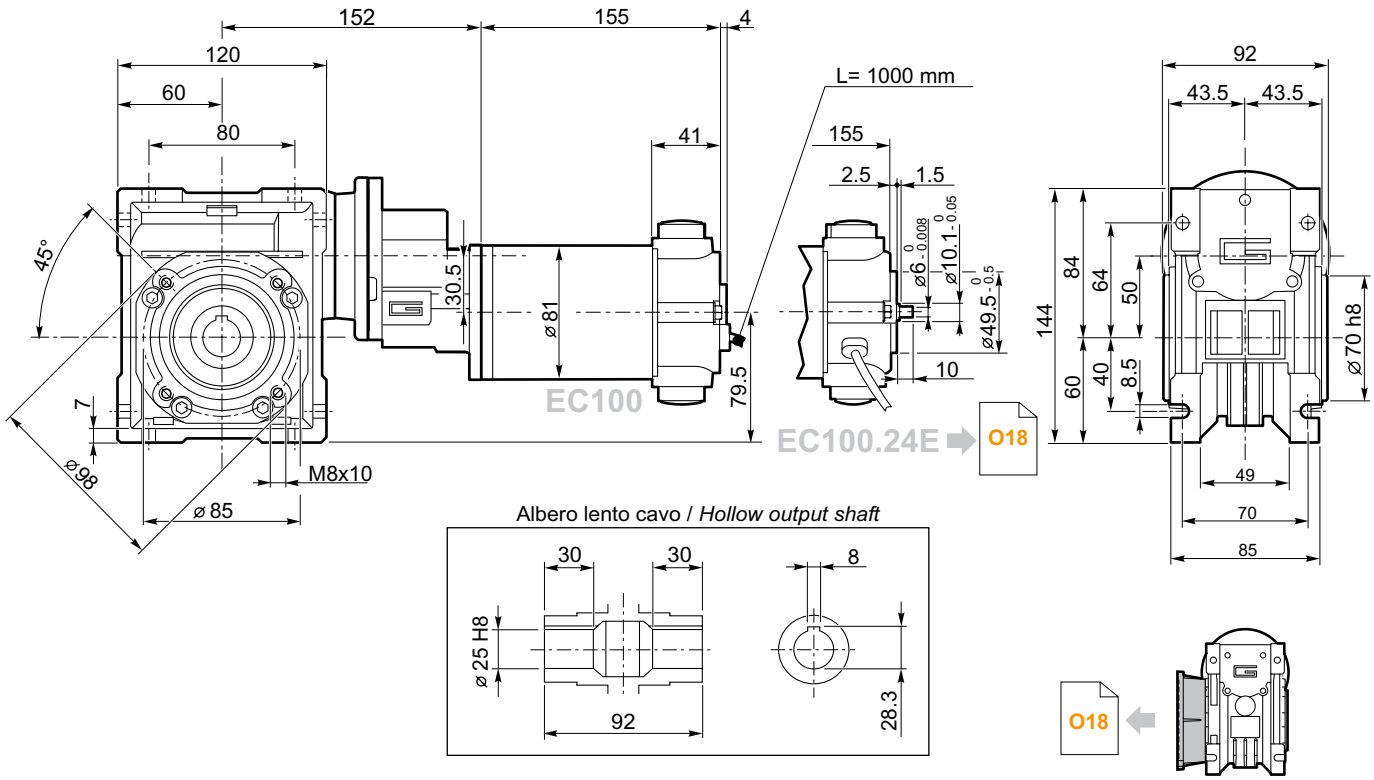



**ECMP100/056/040 F**
**ECMP100/05/040 FL**
**ECMP100/05/040 FB**

**Dimensioni** *Dimensions*

## ECMP100/063/050 U




Albero lento cavo / *Hollow output shaft*



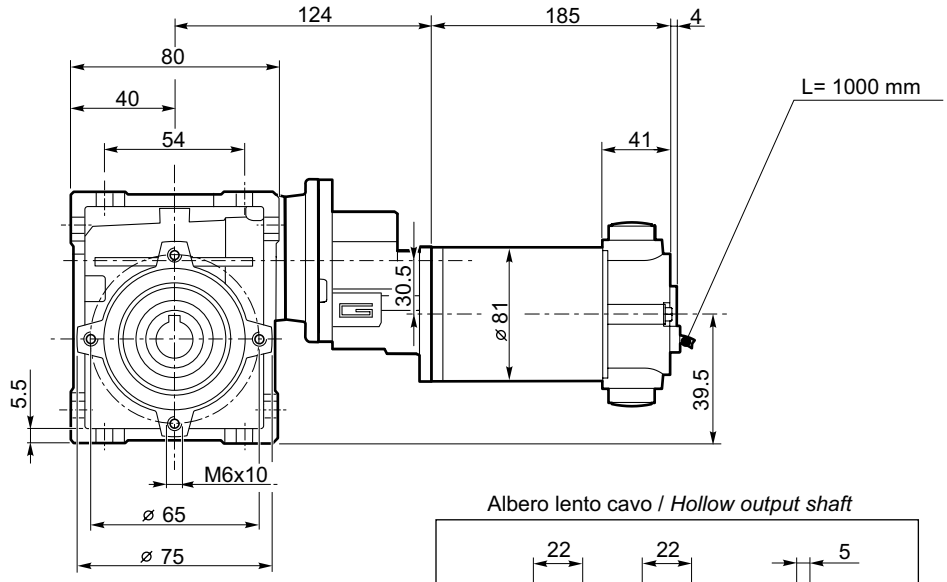


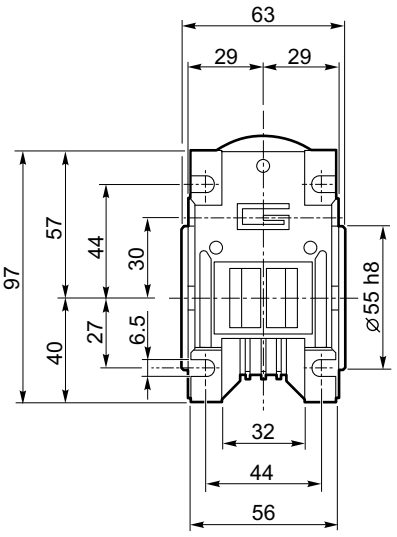


**ECMP100/063/050 F**
**ECMP100/063/050 FL**
**ECMP100/063/050 FB**

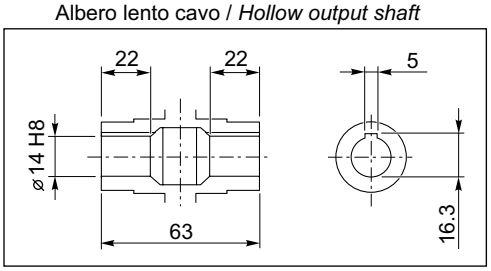
**Dimensioni** *Dimensions*

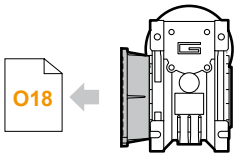
## ECMP180/056/030 U



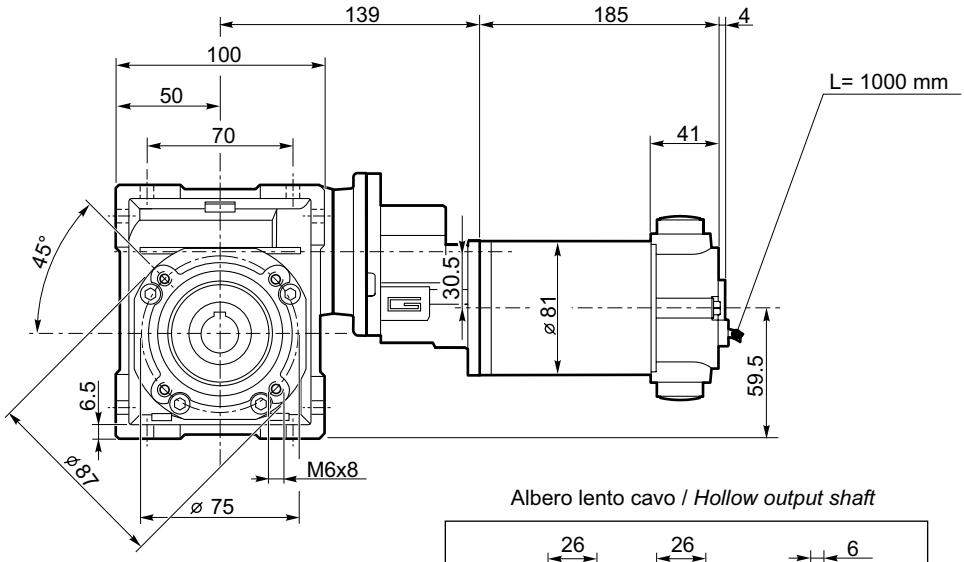

Albero lento cavo / *Hollow output shaft*

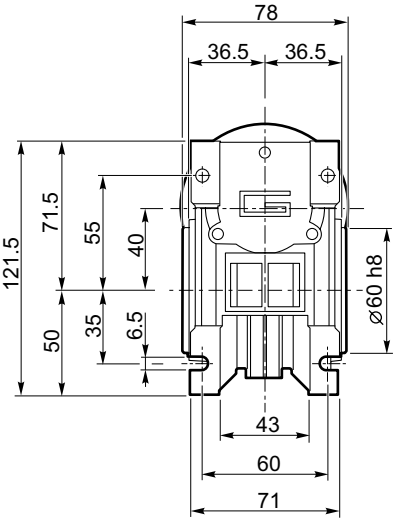


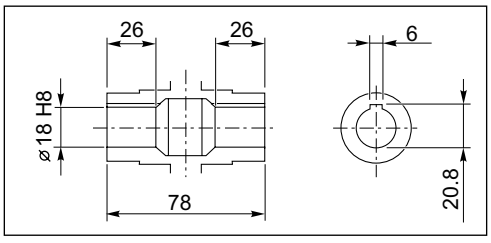

**ECMP180/056/030 F**

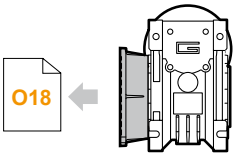
## ECMP180/056/040 U



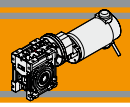




Albero lento cavo / *Hollow output shaft*



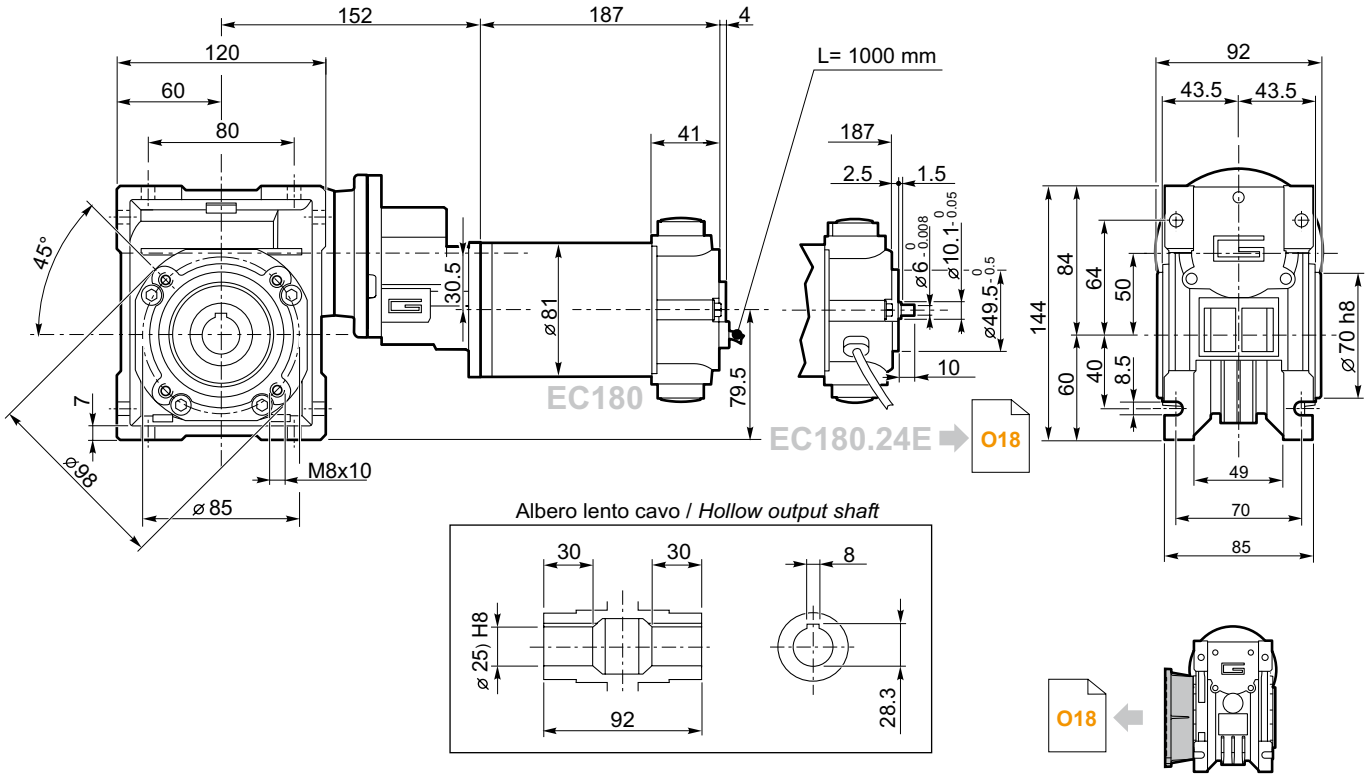




**ECMP180/056/040 F**
**ECMP180/056/040 FL**
**ECMP180/056/040 FB**



**Dimensioni** ***Dimensions***

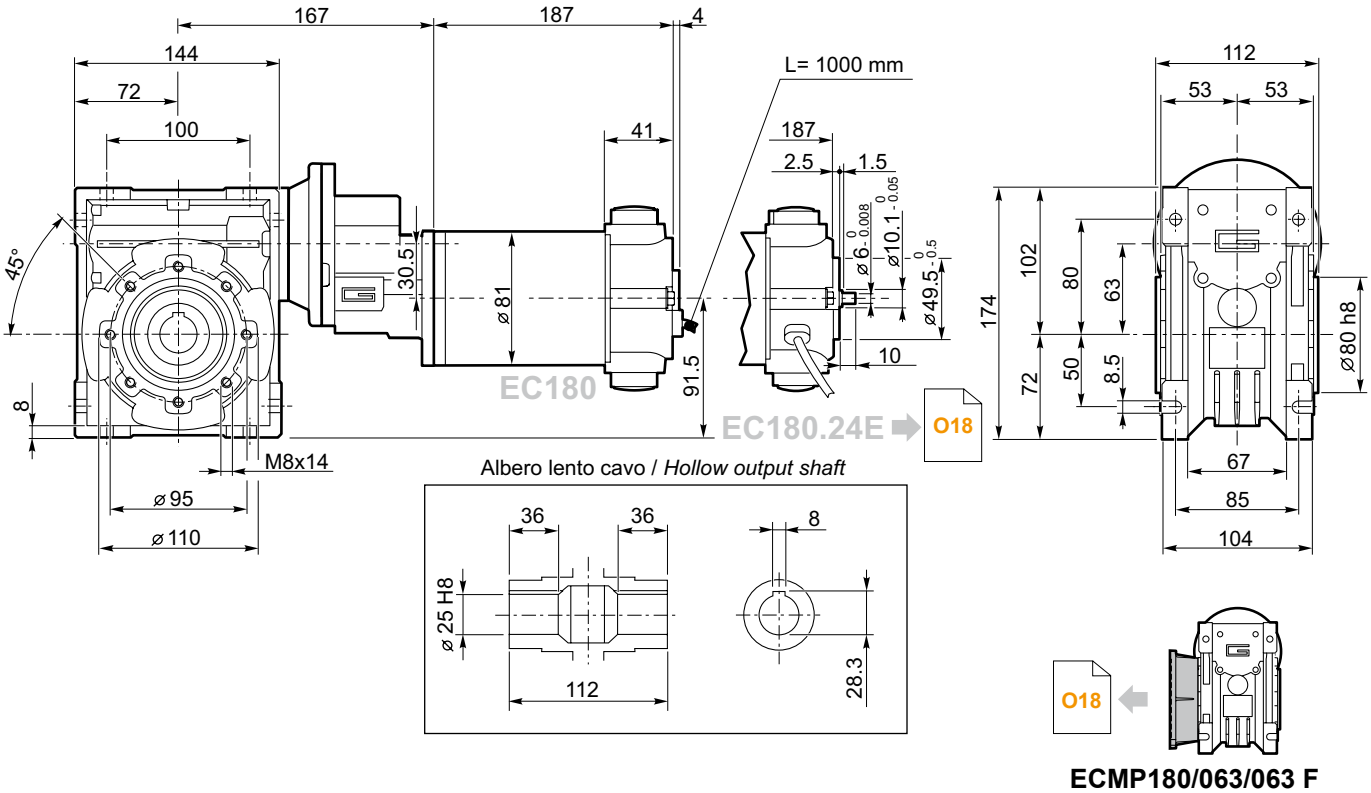
## ECMP180/063/050 U






**ECMP180/063/050 F**
**ECMP180/063/050 FL**
**ECMP180/063/050 FB**

## ECMP180/063/063 U

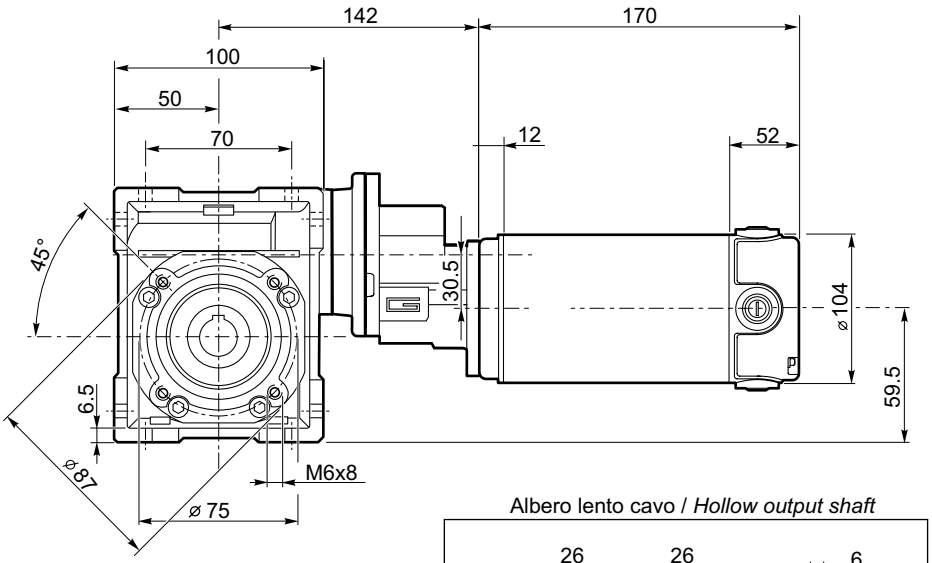




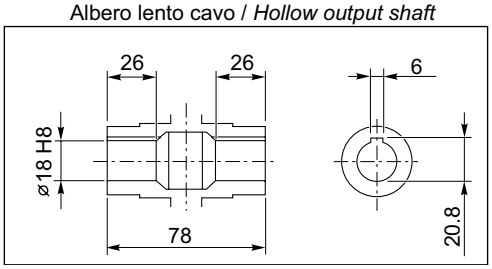

**ECMP180/063/063 F**
**ECMP180/063/063 FL**
**ECMP180/063/063 FB**

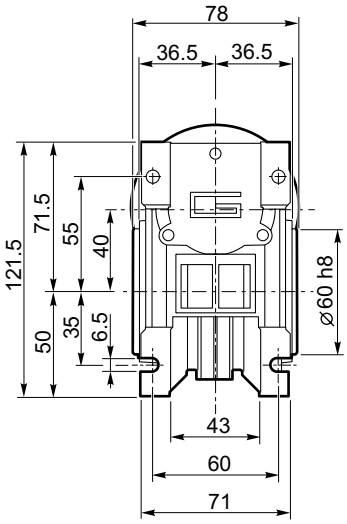
**Dimensioni** *Dimensions*

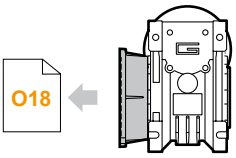
## ECMP250/063/040 U




Albero lento cavo / *Hollow output shaft*

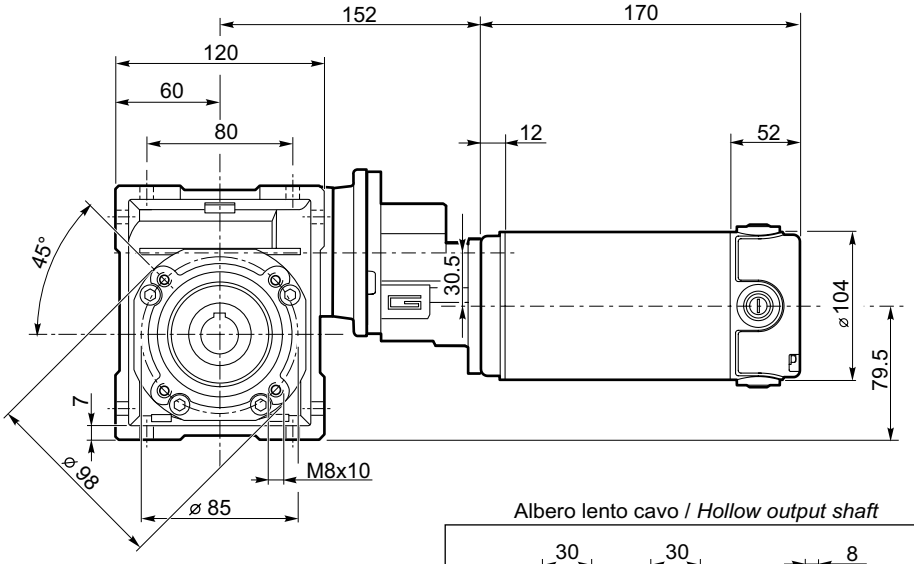


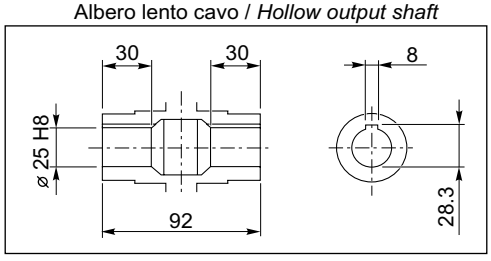



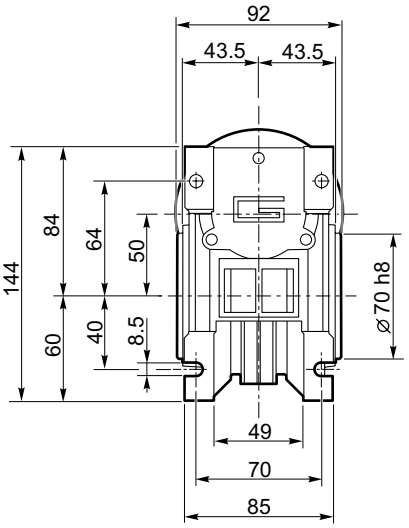

**ECMP250/063/040 F**
**ECMP250/063/040 FL**
**ECMP250/063/040 FB**

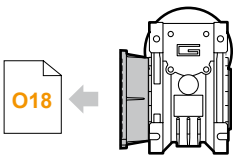
## ECMP250/063/050 U



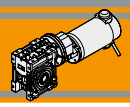

Albero lento cavo / *Hollow output shaft*



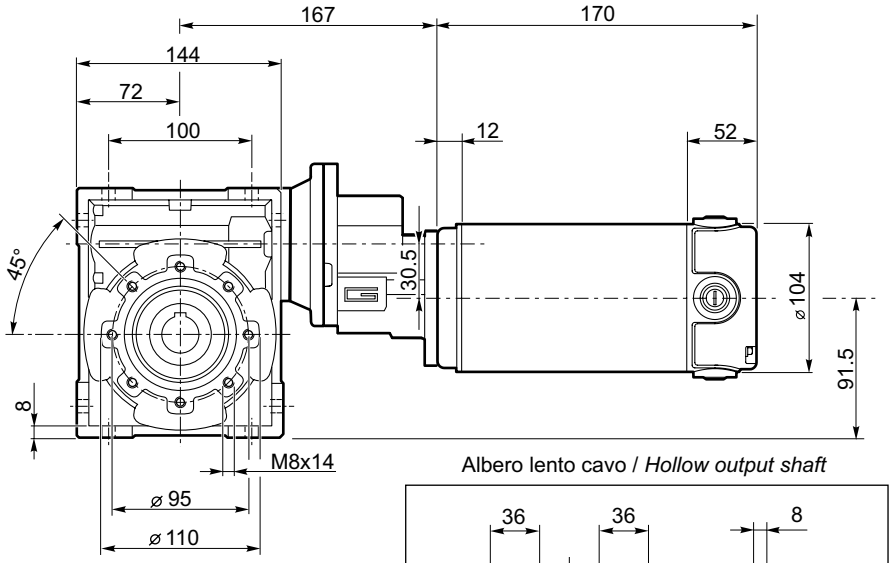




**ECMP250/063/050 F**
**ECMP250/063/050 FL**
**ECMP250/063/050 FB**

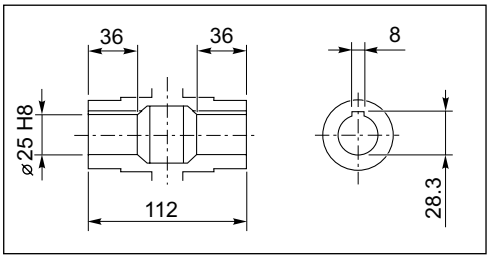


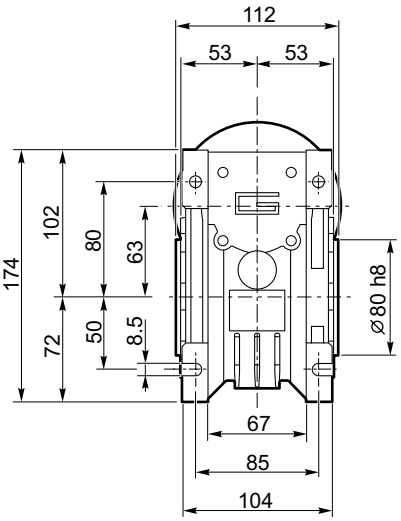
**Dimensioni** ***Dimensions***

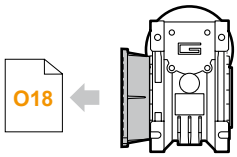
## ECMP250/063/063 U




Albero lento cavo / *Hollow output shaft*



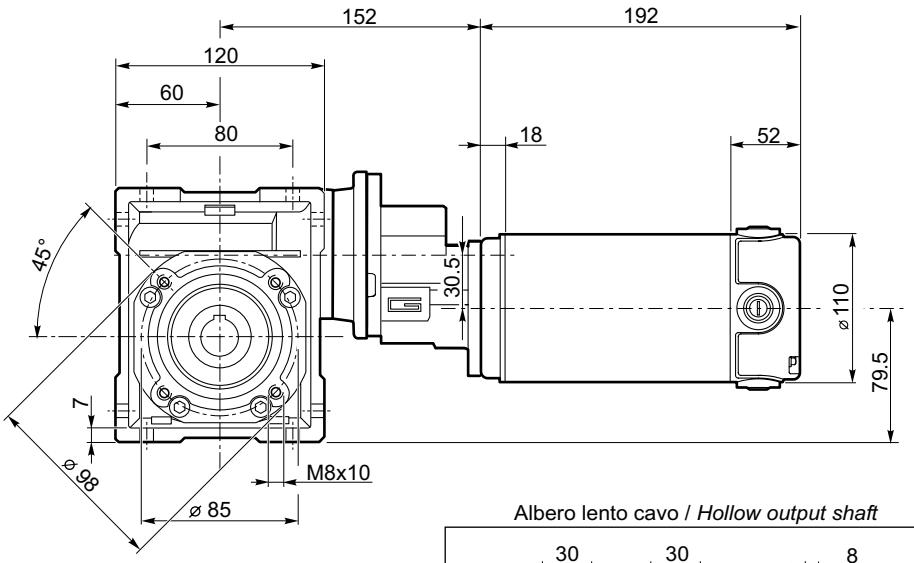



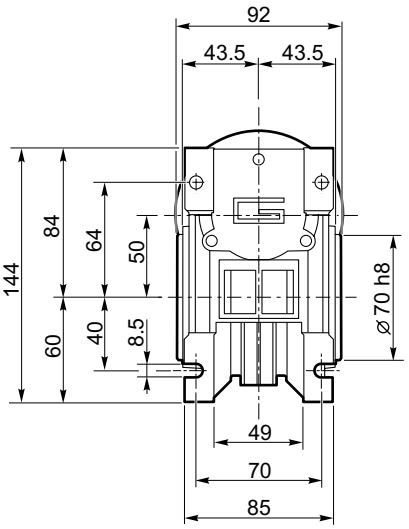




**ECMP250/063/063 F**
**ECMP250/063/063 FL**
**ECMP250/063/063 FB**

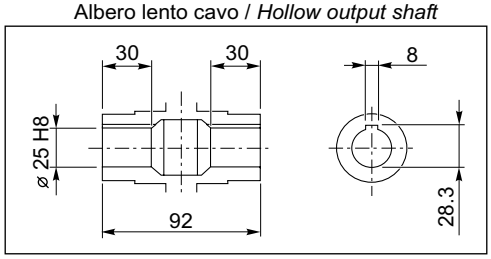
**Dimensioni** *Dimensions*

## ECMP350/063/050 U

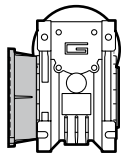



Albero lento cavo / *Hollow output shaft*

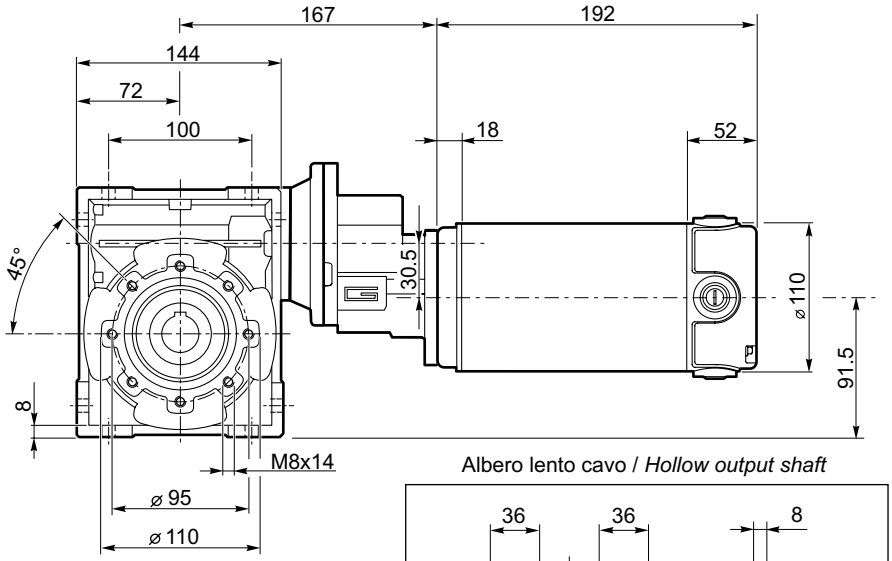


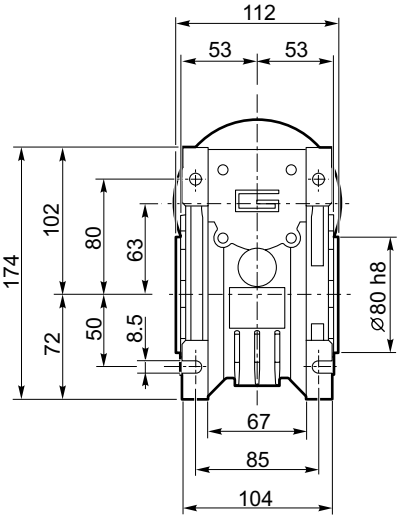

O18



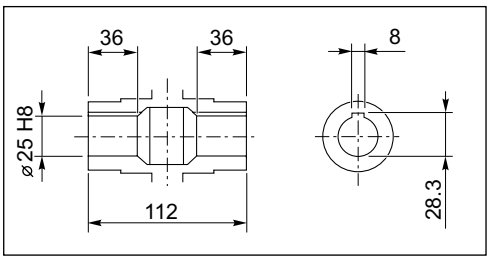
**ECMP350/063/050 F**
**ECMP350/063/050 FL**
**ECMP350/063/050 FB**

## ECMP350/063/063 U

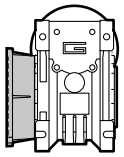


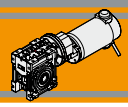

Albero lento cavo / *Hollow output shaft*




O18

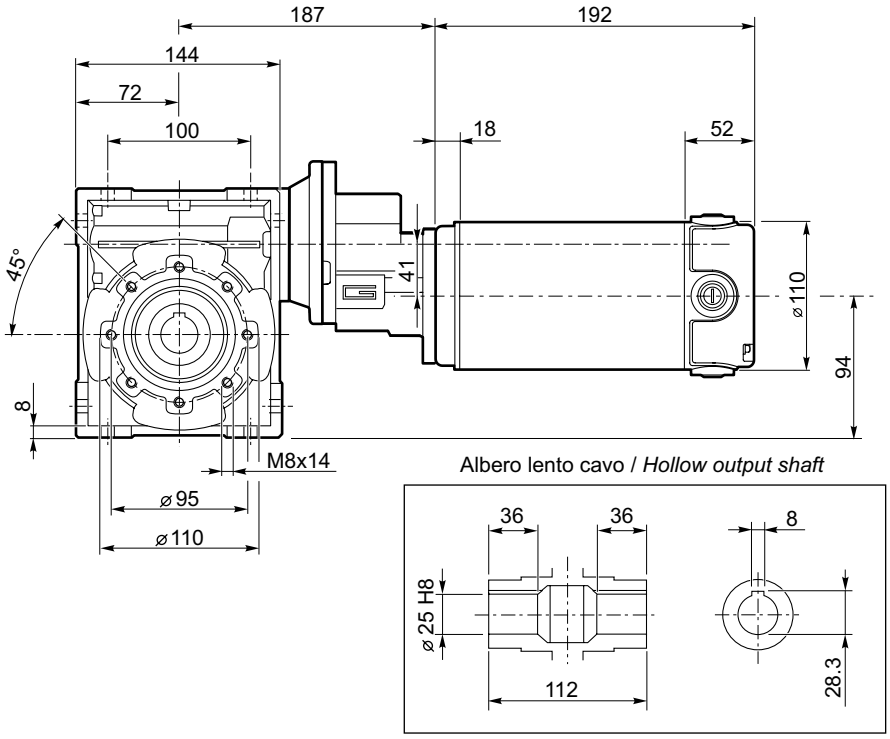


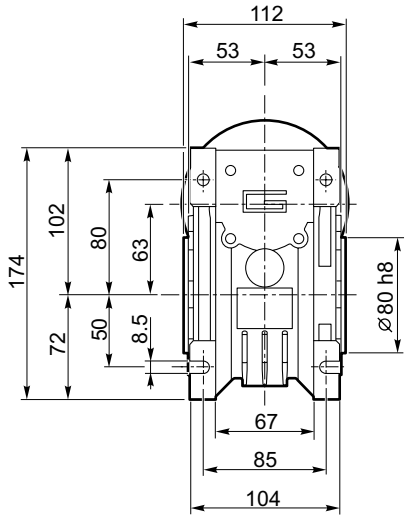
**ECMP350/063/063 F**
**ECMP350/063/063 FL**
**ECMP350/063/063 FB**

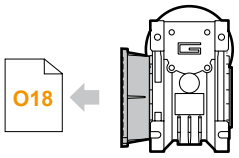


**Dimensioni** *Dimensions*

## ECMP350/071/063 U

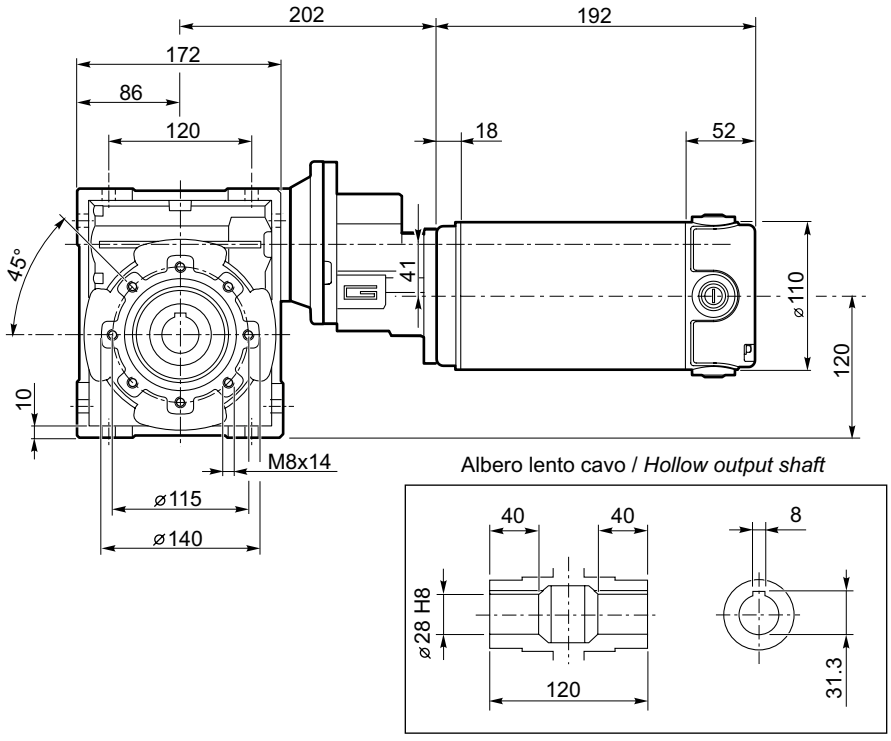


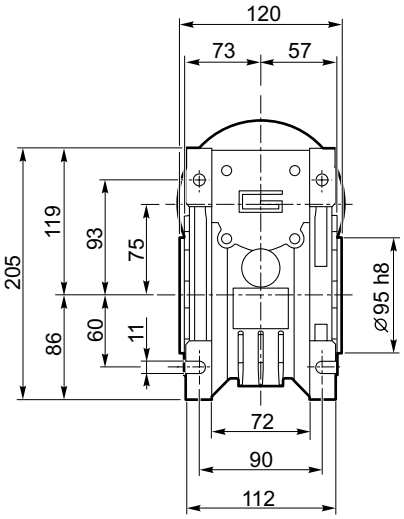



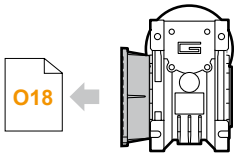




**ECMP350/071/063 F**
**ECMP350/071/063 FL**
**ECMP350/071/063 FB**

## ECMP350/071/075 U



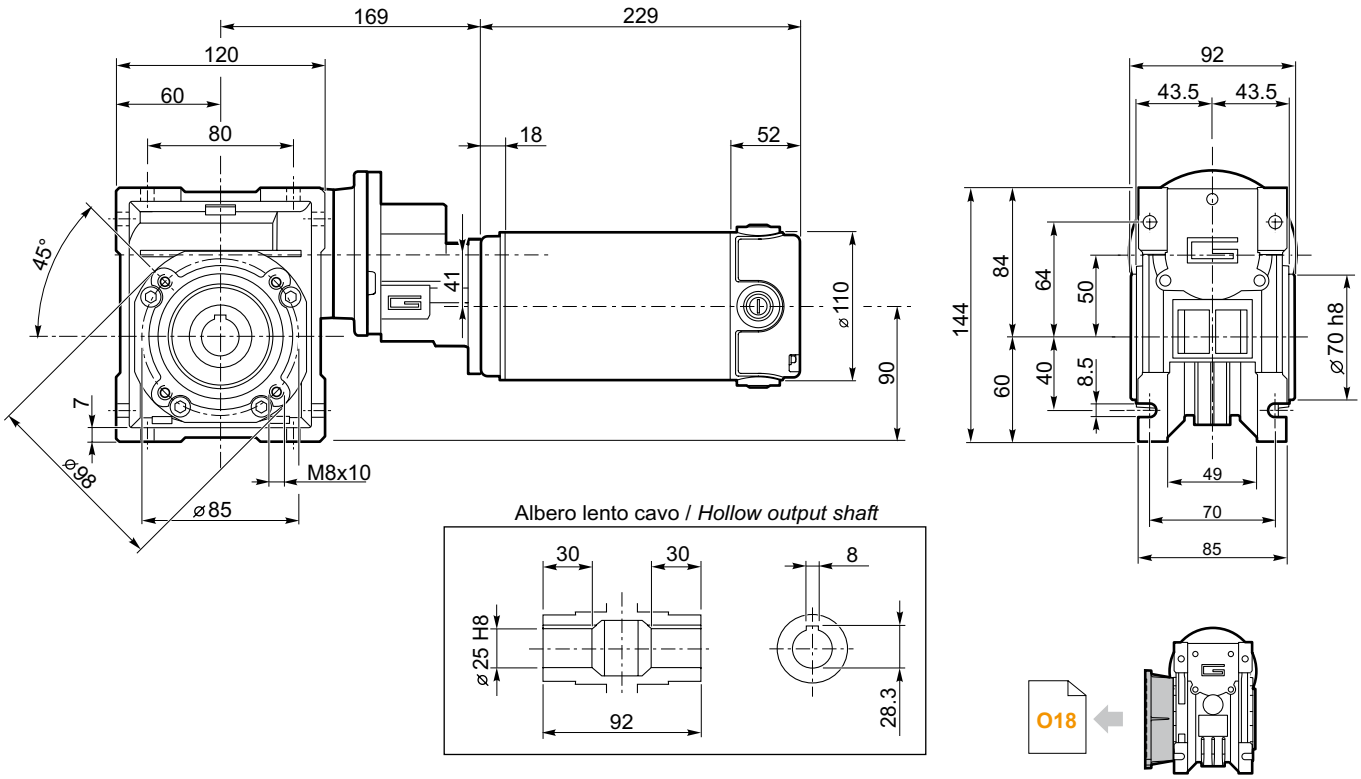




**ECMP350/071/075 F**

ECMP

**Dimensioni** ***Dimensions***

## ECMP600/071/050 U




Albero lento cavo / *Hollow output shaft*

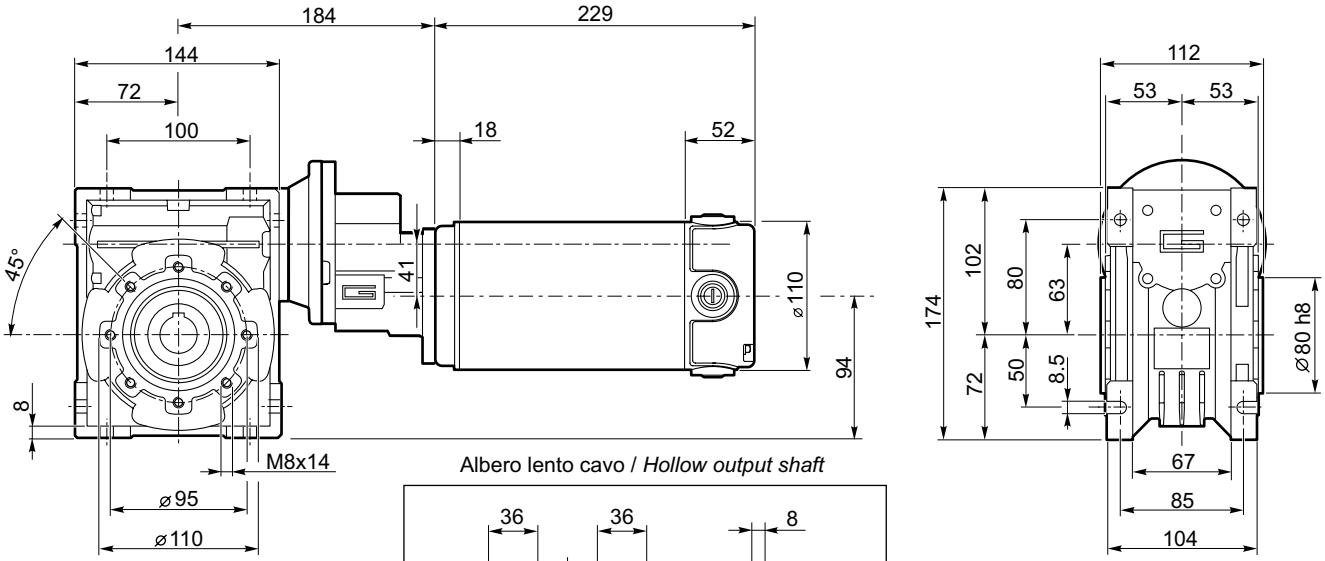



O18

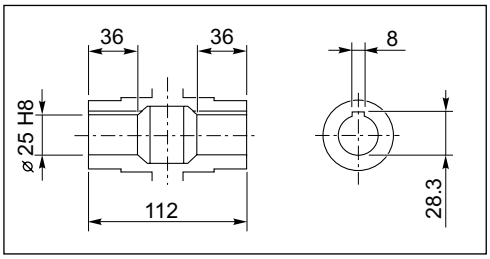


**ECMP600/071/050 F**
**ECMP600/071/050 FL**
**ECMP600/071/050 FB**

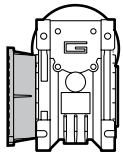
## ECMP600/071/063 U



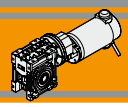

Albero lento cavo / *Hollow output shaft*




O18

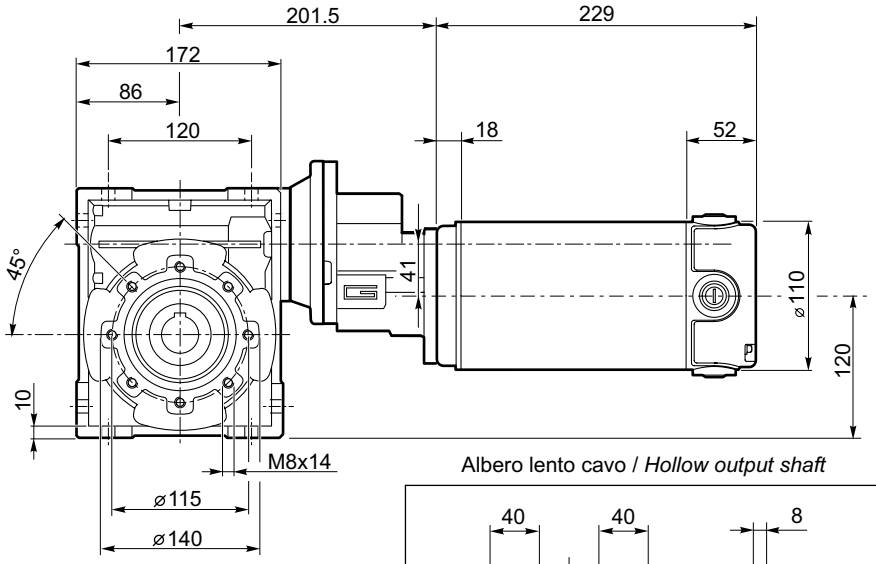


**ECMP600/071/063 F**
**ECMP600/071/063 FL**
**ECMP600/071/063 FB**

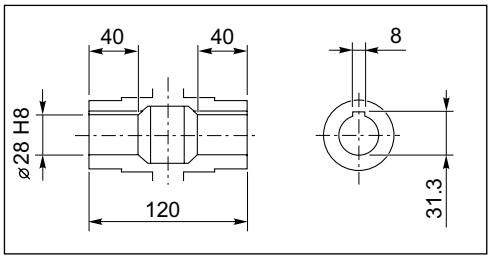


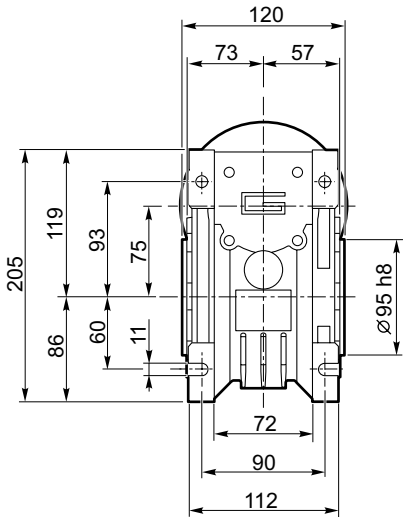
**Dimensioni** ***Dimensions***

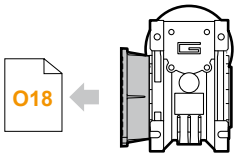
## ECMP600/071/075 U




Albero lento cavo / *Hollow output shaft*



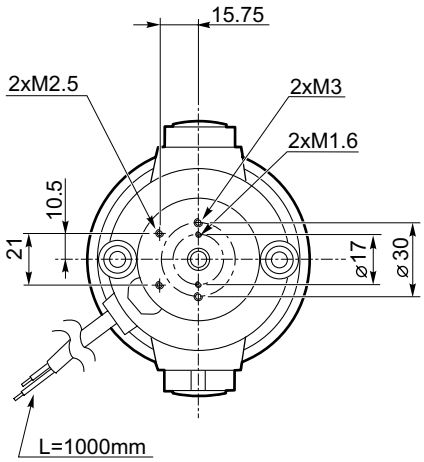



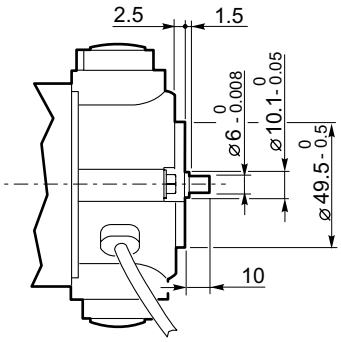




**ECMP600/071/075 F**

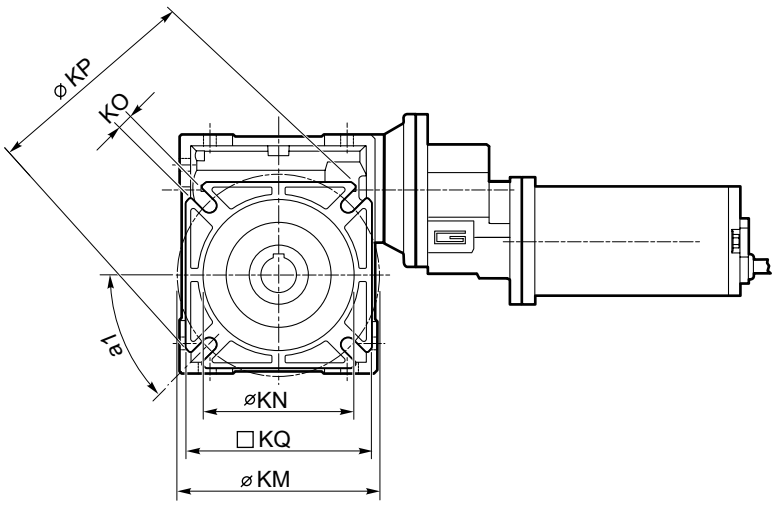
## Dimensioni — *Dimensions*

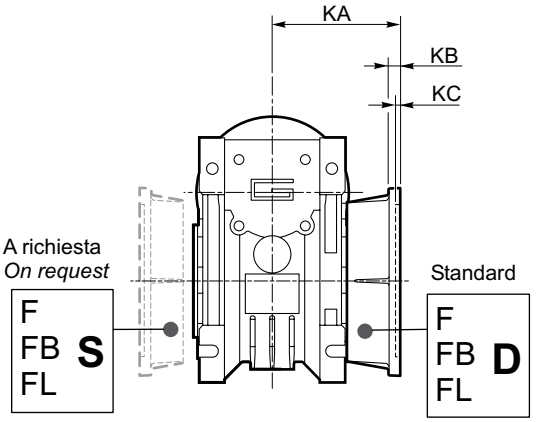
### EC100.24E
### EC180.24E




### ECMP.../... F... Flange uscita / *Output flanges*

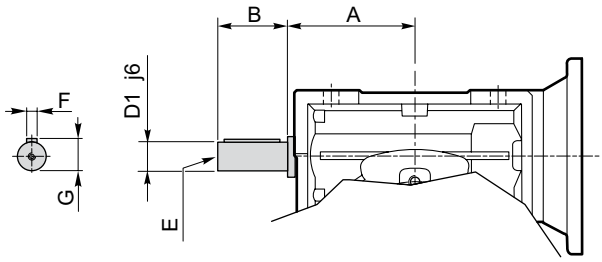



| CMP | | CMP..F | | | | | | | | CMP..FB | | | | | | | | CMP..FL | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | a1 | KA | KB | KC | KM | KN H8 | KO | KP | KQ | KA | KB | KC | KM | KN H8 | KO | KP | KQ | KA | KB | KC | KM | KN H8 | KO | KP | KQ |
| 056/030 | 45° | 54.5 | 6 | 4 | 68 | 50 | 6.5(n.4) | 80 | 70 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 056/040 063/040 | 45° | 67 | 7.5 | 4 | 80-95 | 60 | 9(n.4) | 110 | 95 | 80 | 8.5 | 5 | 115-125 | 95 | 9.5(n.4) | 140 | 112 | 97 | 7.5 | 4.5 | 80-95 | 60 | 9(n.4) | 110 | 95 |
| 063/050 071/050 | 45° | 90 | 9 | 5 | 90-110 | 70 | 11(n.4) | 125 | 110 | 89 | 9 | 5 | 130-145 | 110 | 9.5(n.4) | 160 | 132 | 120 | 9 | 5 | 90-110 | 70 | 11(n.4) | 125 | 110 |
| 063/063 071/063 | 45° | 82 | 10 | 6 | 150-160 | 115 | 11(n.4) | 180 | 142 | 98 | 10 | 5 | 165-180 | 130 | 11(n.4) | 200 | 160 | 112 | 10 | 6 | 150-160 | 115 | 11(n.4) | 180 | 142 |
| 071/075 | 45° | 111 | 13 | 6 | 165-180 | 130 | 14(n.4) | 200 | 170 | — | — | — | — | — | — | — | | — | — | — | — | — | — | — | — |

## Opzioni / *Options*

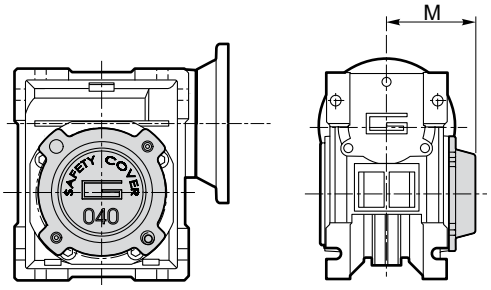
### VS - Vite sporgente / *Extended input shaft*




| CMP | A | B | $D_1$ j6 | E | F | G |
|---|---|---|---|---|---|---|
| 056/030 | 45 | 20 | 9 | M4 | 3 | 10.2 |
| 056/040<br>063/040 | 53 | 23 | 11 | M5 | 4 | 12.5 |
| 063/050 | 64 | 30 | 14 | M6 | 5 | 16 |
| 063/063<br>071/063<br>080/063 | 75 | 40 | 19 | M6 | 6 | 21.5 |
| 071/075 | 90 | 50 | 24 | M8 | 8 | 27 |

Costruito su richiesta
*Built on request*

### SC - *Safety cover*




| | M |
|---|---|
| CM 030 | 47 |
| CM 040 | 54.5 |
| CM 050 | 62.5 |
| CM 063 | 73 |
| CM 075 | 79 |

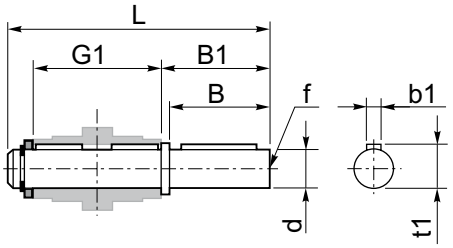
## Accessori / *Accessories*

### Albero lento semplice e doppio

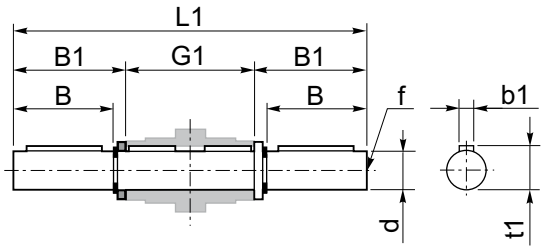
| CMP | d h7 | B | B1 | G1 | L | L1 | f | b1 | t1 |
|---|---|---|---|---|---|---|---|---|---|
| 056/030 | 14 | 30 | 32.5 | 63 | 102 | 128 | M6 | 5 | 16 |
| 056/040<br>063/040 | 18 | 40 | 43 | 78 | 128 | 164 | M6 | 6 | 20.5 |
| 063/050 | 25 | 50 | 53.5 | 92 | 153 | 199 | M10 | 8 | 28 |
| 063/063<br>071/063<br>080/063 | 25 | 50 | 53.5 | 112 | 173 | 219 | M10 | 8 | 28 |
| 071/075 | 28 | 60 | 63.5 | 120 | 192 | 247 | M10 | 8 | 31 |

### *Single and double output shaft*

SZ



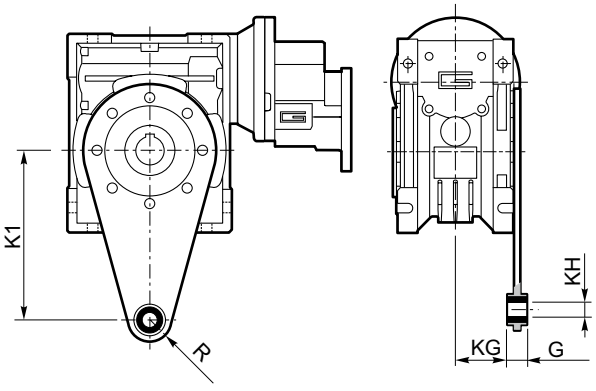

DZ




### Braccio di reazione

| CMP | K1 | G | KG | KH | R |
|---|---|---|---|---|---|
| 056/030 | 85 | 14 | 23 | 8 | 15 |
| 056/040<br>063/040 | 100 | 14 | 31 | 10 | 18 |
| 063/050 | 100 | 14 | 38 | 10 | 18 |
| 063/063<br>071/063<br>080/063 | 150 | 14 | 47.5 | 10 | 18 |
| 071/075 | 200 | 25 | 46.5 | 20 | 30 |

### *Torque arm*

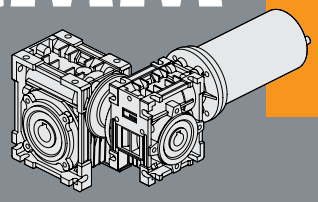


# Note

TRANSTECNO®
THE MODULAR GEARMOTOR

# ECMM

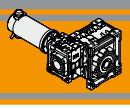
ECMM



## MOTORIDUTTORI C.C. COMBINATI

## PERMANENT MAGNETS D.C. COMBINATION GEARMOTORS


TRANSTECNO • GENUINE • PRODUCTS •



## Caratteristiche tecniche — *Technical features*

Le caratteristiche principali dei motoriduttori a corrente continua della serie ECMM sono:

- Alimentazione in bassa tensione 12/24Vcc
- Possibilità di montaggio encoder
- Potenze motore disponibili da 100 a 800W S2
- Magneti in ferrite
- Carcassa in pressofusione di alluminio nelle grandezze 026, 030, 040, 050, 063, 075, 090 e 110. La grandezza 130 è costruita con carcassa in ghisa
- Lubrificazione permanente con olio sintetico

*The main features of ECMM DC gearmotor range are:*

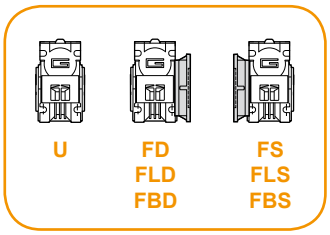
- Low voltage power supply 12/24Vdc
- Suitable for encoder assembly
- Motor power ratings available from 100 up to 800W S2
- Ferrite magnets
- Die cast aluminium housing on sizes 026, 030, 040, 050, 063, 075, 090 and 110. Cast iron housing on size 130
- Permanent synthetic oil long life lubrication

## Designazione — *Classification*

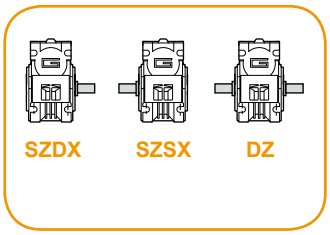
MOTORIDUTTORE / *GEARMOTOR*

| ECMM | 100/026/026 | U | 150 | SZDX | BRSX | 90 | B3 | UB1 | 120 | VS1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Tipo *Type* | Grandezza *Size* | Versione *Version* | Rapporto *Ratio* | Albero di uscita *Output shaft* | Braccio di reazione *Torque arm* | Angolo *Angle* | Pos. di montaggio Mounting position | *Esecuzione di montaggio Mounting execution* | Versione motore *Motor version* | Opzioni *Options* |
| ECMM | 070/026/026<br>070/026/030<br>070/026/040<br>070/026/050<br>070/030/040<br>070/030/050<br>070/030/063<br>070/040/075<br>070/040/090 | U<br>FD<br>FS<br>FLD<br>FLS<br>FBD<br>FBS | vedi tabelle<br>*see tables* | SZDX<br>SZSX<br>DZ | BRDX<br>BRSX | 0°<br>90°<br>180°<br>270° | B3<br>B8<br>B6<br>B7<br>V5<br>V6 | UB1<br>UB2<br>US1<br>US2<br>UV1<br>UV2<br>UC1<br>UC2 | 120<br>240<br>24E | VS1<br>VS2 |
| | 100/026/026<br>100/026/030<br>100/026/040<br>100/026/050<br>100/030/040<br>100/030/050<br>100/030/063<br>100/040/075<br>100/040/090 | | | | | | | | | |
| | 180/026/040<br>180/026/050<br>180/030/040<br>180/030/050<br>180/030/063<br>180/040/075<br>180/040/090<br>180/050/110 | | | | | | | | | |
| | 250/030/040<br>250/030/050<br>250/030/063<br>250/040/075<br>250/040/090<br>250/050/110 | | | | | | | | | |
| | 350/030/040<br>350/030/050<br>350/030/063<br>350/040/075<br>350/040/090<br>350/050/110<br>350/063/130<br><br>600/040/075<br>600/040/090<br>600/050/110<br>600/063/130 | | | | | | | | | |

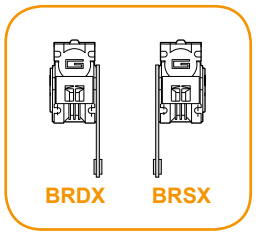
Versione Riduttore *Gearbox Version*



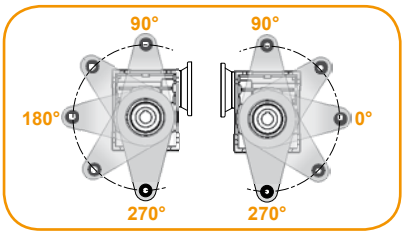

Albero di uscita *Output shaft*




Braccio di reazione *Torque arm*



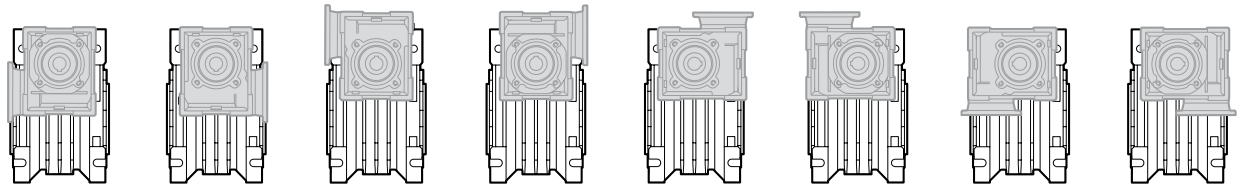

Angolo *Angle*




## Simbologia — *Symbols*

| | | | | | |
|---|---|---|---|---|---|
| $n_1$ | [$min^{-1}$] | Velocità in ingresso / *Input speed* | $M_2$ | [Nm] | Coppia in uscita in funzione di $P_1$ / *Output torque referred to $P_1$* |
| $n_2$ | [$min^{-1}$] | Velocità in uscita / *Output speed* | sf | | Fattore di servizio / *Service factor* |
| i | | Rapporto di riduzione / *Ratio* | $R_2$ | [N] | Carico radiale ammissibile in uscita / *Permitted output radial load* |
| $P_1$ | [kW] | Potenza in entrata / *Input power* | $A_2$ | N] | Carico assiale ammissibile in uscita / *Permitted output axial load* |

## Esecuzioni di montaggio — *Mounting executions*



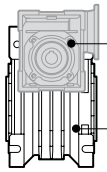
UB1 UB2 US1 US2 UV1 UV2 UC1 UC2

## Combinazioni rapporti — *Combination ratio*

| CMM 026/026 - CMM 026/030 - CMM 026/040 - CMM 026/050 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **i** ($i_1$ x $i_2$) | | | | | | | | | | | |
| | **150** | **225** | **300** | **450** | **600** | **900** | **1200** | **1500** | **1800** | **2400** | **3000** | **3600** |
| $i_1$ | 10 | 15 | 10 | 15 | 20 | 30 | 40 | 50 | 60 | 60 | 60 | 60 |
| $i_2$ | 15 | 15 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 40 | 50 | 60 |

| CMM 030/040 - CMM 030/050 - CMM 030/063 - CMM 040/075 - CMM 040/090 - CMM 050/110 - CMM 063/130 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **i** ($i_1$ x $i_2$) | | | | | | | | | | | | | | |
| | **75** | **100** | **150** | **200** | **250** | **300** | **400** | **500** | **600** | **750** | **900** | **1200** | **1500** | **1800** | **2400** | **3000** |
| $i_1$ | 7.5 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 20 | 25 | 30 | 40 | 50 | 60 | 60 | 60 |
| $i_2$ | 10 | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 30 | 30 | 30 | 30 | 30 | 30 | 40 | 50 |

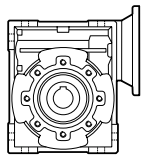
## Lubrificazione — *Lubrication*

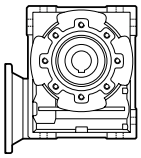


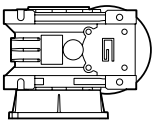
| | **CMM** | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **026/026** | **026/030** | **026/040** | **026/050** | **030/040** | **030/050** | **030/063** | **040/075** | **040/090** | **050/110** | **063/130** |
| 1 | 026 | | | | 030 | | | 040 | | 050 | 063 |
| | Lubrificazione a vita / *Life lubricated* | | | | | | | | | | |
| 2 | 026 | 030 | 040 | 050 | 040 | 050 | 063 | 075 | 090 | 110 | 130 |
| | Lubrificazione a vita / *Life lubricated* | | | | | | | | | | |

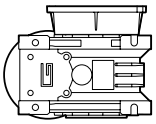
Posizioni di montaggio / *Mounting positions*

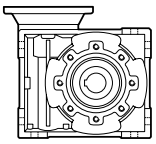
### CM 026-030-040-050-063-075-090-110

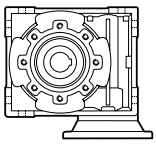

**B3** (standard)


**B8**

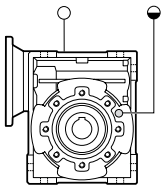

**B6**

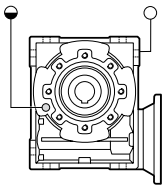

**B7**

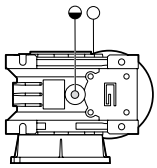

**V5**

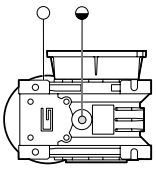

**V6**

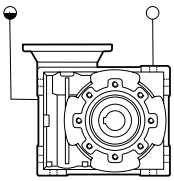
### CM 130

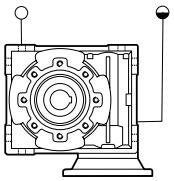

**B3** (standard)


**B8**


**B6**


**B7**


**V5**


**V6**

○ Sfiato e tappo di riempimento / *Breather and filling plug*
◒ Livello olio / *Oil level plug*

| | **Quantità di olio** (litri) / ***Oil quantity*** *(litres)* | | | | | | |
|---|---|---|---|---|---|---|---|
| | **B3** | **B8** | **B6** | **B7** | **V5** | **V6** | |
| **CM026** | 0.02 | | | | | | Lubrificati a vita *Life lubrication* |
| **CM030** | 0.03 | | | | | | |
| **CM040** | 0.07 | | | | | | |
| **CM050** | 0.1 | | | | | | |
| **CM063** | 0.25 | | | | | | |
| **CM075** | 0.4 | | | | | | |
| **CM090** | 0.7 | | | | | | |
| **CM110** | 1.1 | | | | | | |
| **CM130** | 4.5 | 3.3 | 3.5 | 3.5 | 4.5 | 3.3 | |

## Dati tecnici per servizio S2

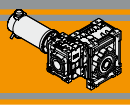
## *Technical data for S2 duty*

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i | | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **100** | | | | | | |
| (3000 min$^{-1}$) | **20.0** | 26 | 1.0 | 150 | **ECMM 070/026/026** | **120/240** |
| | **13.3** | 26 | 1.0 | 225 | | |
| | **10.0** | 27 | 1.0 | 300 | | |
| | **6.7** | 27 | 1.0 | 450 | | |
| | **5.0** | 27 | 1.0 | 600 | | |
| | **3.3** | 27 | 1.0 | 900 | | |
| | **2.5** | 27 | 1.0 | 1200 | | |
| | **2.0** | 27 | 1.0 | 1500 | | |
| | **1.7** | 27 | 1.0 | 1800 | | |
| | **1.3** | 22 | 1.0 | 2400 | | |
| | **1.0** | 20 | 1.0 | 3000 | | |
| | **0.8** | 18 | 1.0 | 3600 | | |
| | **20.0** | 26 | 1.5 | 150 | **ECMM 070/026/030** | **120/240** |
| | **13.3** | 39 | 1.0 | 225 | | |
| | **10.0** | 40 | 1.0 | 300 | | |
| | **6.7** | 40 | 1.0 | 450 | | |
| | **5.0** | 40 | 1.0 | 600 | | |
| | **3.3** | 40 | 1.0 | 900 | | |
| | **2.5** | 40 | 1.0 | 1200 | | |
| | **2.0** | 40 | 1.0 | 1500 | | |
| | **1.7** | 40 | 1.0 | 1800 | | |
| | **1.3** | 34 | 1.0 | 2400 | | |
| | **1.0** | 30 | 1.0 | 3000 | | |
| | **0.8** | 27 | 1.0 | 3600 | | |
| | **20.0** | 27 | 3.2 | 150 | **ECMM 070/026/040** | **120/240** |
| | **13.3** | 40 | 2.2 | 225 | | |
| | **10.0** | 45 | 2.0 | 300 | | |
| | **6.7** | 66 | 1.4 | 450 | | |
| | **5.0** | 85 | 1.1 | 600 | | |
| | **3.3** | 90 | 1.0 | 900 | | |
| | **2.5** | 90 | 1.0 | 1200 | | |
| | **2.0** | 90 | 1.0 | 1500 | | |
| | **1.7** | 90 | 1.0 | 1800 | | |
| | **1.3** | 74 | 1.0 | 2400 | | |
| | **1.0** | 68 | 1.0 | 3000 | | |
| | **0.8** | 62 | 1.0 | 3600 | | |
| | **20.0** | 28 | 5.7 | 150 | **ECMM 070/026/050** | **120/240** |
| | **13.3** | 42 | 3.9 | 225 | | |
| | **10.0** | 46 | 3.5 | 300 | | |
| | **6.7** | 67 | 2.4 | 450 | | |
| | **5.0** | 86 | 1.9 | 600 | | |
| | **3.3** | 118 | 1.4 | 900 | | |
| | **2.5** | 147 | 1.1 | 1200 | | |
| | **2.0** | 162 | 1.0 | 1500 | | |
| | **1.7** | 162 | 1.0 | 1800 | | |
| | **1.3** | 135 | 1.0 | 2400 | | |
| | **1.0** | 125 | 1.0 | 3000 | | |
| | **0.8** | 113 | 1.0 | 3600 | | |

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i | | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **100** | | | | | | |
| (3000 min$^{-1}$) | **40.0** | 15 | 5.5 | 75 | **ECMM 070/030/040** | **120/240** |
| | **30.0** | 20 | 4.2 | 100 | | |
| | **20.0** | 28 | 3.2 | 150 | | |
| | **15.0** | 36 | 2.1 | 200 | | |
| | **12.0** | 43 | 1.6 | 250 | | |
| | **10.0** | 46 | 2.0 | 300 | | |
| | **7.5** | 55 | 1.3 | 400 | | |
| | **6.0** | 63 | 1.1 | 500 | | |
| | **5.0** | 86 | 1.0 | 600 | | |
| | **4.0** | 103 | 0.9 | 750 | | |
| | **3.3** | 118 | 0.8 | 900 | | |
| | **2.5** | 74 | 1.0 | 1200 | | |
| | **2.0** | 90 | 1.0 | 1500 | | |
| | **1.7** | 90 | 1.0 | 1800 | | |
| | **1.3** | 74 | 1.0 | 2400 | | |
| | **1.0** | 68 | 1.0 | 3000 | | |
| | **15.0** | 36 | 3.8 | 200 | **ECMM 070/030/050** | **120/240** |
| | **12.0** | 43 | 2.9 | 250 | | |
| | **10.0** | 46 | 3.5 | 300 | | |
| | **7.5** | 57 | 2.4 | 400 | | |
| | **6.0** | 64 | 2.0 | 500 | | |
| | **5.0** | 87 | 1.9 | 600 | | |
| | **4.0** | 105 | 1.5 | 750 | | |
| | **3.3** | 120 | 1.4 | 900 | | |
| | **2.5** | 146 | 0.9 | 1200 | | |
| | **2.0** | 175 | 0.9 | 1500 | | |
| | **1.7** | 201 | 0.8 | 1800 | | |
| | **1.3** | 135 | 1.0 | 2400 | | |
| | **1.0** | 125 | 1.0 | 3000 | | |
| | **4.0** | 109 | 2.8 | 750 | **ECMM 070/030/063** | **120/240** |
| | **3.3** | 124 | 2.5 | 900 | | |
| | **2.5** | 149 | 1.7 | 1200 | | |
| | **2.0** | 181 | 1.7 | 1500 | | |
| | **1.7** | 208 | 1.5 | 1800 | | |
| | **1.3** | 249 | 1.0 | 2400 | | |
| | **1.0** | 288 | 0.8 | 3000 | | |
| | **2.5** | 163 | 2.6 | 1200 | **ECMM 070/040/075** | **120/240** |
| | **2.0** | 202 | 2.5 | 1500 | | |
| | **1.7** | 232 | 2.2 | 1800 | | |
| | **1.3** | 280 | 1.5 | 2400 | | |
| | **1.0** | 325 | 1.2 | 3000 | | |
| | **1.3** | 300 | 2.5 | 2400 | **ECMM 070/040/090** | **120/240** |
| | **1.0** | 350 | 1.8 | 3000 | | |

**Nota:** Verificare sempre che la coppia M2 utilizzata non ecceda il valore indicato nelle caselle in grigio

***Note:*** *Please check that the output torque M2 does not exceed the value into the grey areas*



## Dati tecnici per servizio S2

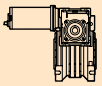
## *Technical data for S2 duty*

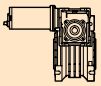
| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i | | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **140** | | | | | | |
| (3000 min$^{-1}$) | **20.0** | 26 | 1.0 | 150 | **ECMM 100/026/026** | **120/240** |
| | **13.3** | 26 | 1.0 | 225 | | |
| | **10.0** | 27 | 1.0 | 300 | | |
| | **6.7** | 27 | 1.0 | 450 | | |
| | **5.0** | 27 | 1.0 | 600 | | |
| | **3.3** | 27 | 1.0 | 900 | | |
| | **2.5** | 27 | 1.0 | 1200 | | |
| | **2.0** | 27 | 1.0 | 1500 | | |
| | **1.7** | 27 | 1.0 | 1800 | | |
| | **1.3** | 22 | 1.0 | 2400 | | |
| | **1.0** | 20 | 1.0 | 3000 | | |
| | **0.8** | 18 | 1.0 | 3600 | | |
| | **20.0** | 37 | 1.1 | 150 | **ECMM 100/026/030** | **120/240** |
| | **13.3** | 39 | 1.0 | 225 | | |
| | **10.0** | 40 | 1.0 | 300 | | |
| | **6.7** | 40 | 1.0 | 450 | | |
| | **5.0** | 40 | 1.0 | 600 | | |
| | **3.3** | 40 | 1.0 | 900 | | |
| | **2.5** | 40 | 1.0 | 1200 | | |
| | **2.0** | 40 | 1.0 | 1500 | | |
| | **1.7** | 40 | 1.0 | 1800 | | |
| | **1.3** | 34 | 1.0 | 2400 | | |
| | **1.0** | 30 | 1.0 | 3000 | | |
| | **0.8** | 27 | 1.0 | 3600 | | |
| | **20.0** | 38 | 2.3 | 150 | **ECMM 100/026/040** | **120/240** |
| | **13.3** | 55 | 1.6 | 225 | | |
| | **10.0** | 63 | 1.4 | 300 | | |
| | **6.7** | 92 | 1.0 | 450 | | |
| | **5.0** | 90 | 1.0 | 600 | | |
| | **3.3** | 90 | 1.0 | 900 | | |
| | **2.5** | 90 | 1.0 | 1200 | | |
| | **2.0** | 90 | 1.0 | 1500 | | |
| | **1.7** | 90 | 1.0 | 1800 | | |
| | **1.3** | 74 | 1.0 | 2400 | | |
| | **1.0** | 68 | 1.0 | 3000 | | |
| | **0.8** | 62 | 1.0 | 3600 | | |
| | **20.0** | 39 | 4.1 | 150 | **ECMM 100/026/050** | **120/240** |
| | **13.3** | 58 | 2.8 | 225 | | |
| | **10.0** | 64 | 2.5 | 300 | | |
| | **6.7** | 93 | 1.7 | 450 | | |
| | **5.0** | 120 | 1.4 | 600 | | |
| | **3.3** | 164 | 1.0 | 900 | | |
| | **2.5** | 162 | 1.0 | 1200 | | |
| | **2.0** | 162 | 1.0 | 1500 | | |
| | **1.7** | 162 | 1.0 | 1800 | | |
| | **1.3** | 135 | 1.0 | 2400 | | |
| | **1.0** | 125 | 1.0 | 3000 | | |
| | **0.8** | 113 | 1.0 | 3600 | | |

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i | | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **140** | | | | | | |
| (3000 min$^{-1}$) | **40.0** | 21 | 3.9 | 75 | **ECMM 100/030/040** | **120/240** |
| | **30.0** | 28 | 3.0 | 100 | | |
| | **20.0** | 38 | 2.3 | 150 | | |
| | **15.0** | 50 | 1.5 | 200 | | |
| | **12.0** | 59 | 1.1 | 250 | | |
| | **10.0** | 63 | 1.4 | 300 | | |
| | **7.5** | 77 | 1.0 | 400 | | |
| | **6.0** | 87 | 0.8 | 500 | | |
| | **5.0** | 119 | 0.8 | 600 | | |
| | **4.0** | 90 | 1.0 | 750 | | |
| | **3.3** | 90 | 1.0 | 900 | | |
| | **2.5** | 74 | 1.0 | 1200 | | |
| | **2.0** | 90 | 1.0 | 1500 | | |
| | **1.7** | 90 | 1.0 | 1800 | | |
| | **1.3** | 74 | 1.0 | 2400 | | |
| | **1.0** | 68 | 1.0 | 3000 | | |
| | **15.0** | 50 | 2.7 | 200 | **ECMM 100/030/050** | **120/240** |
| | **12.0** | 59 | 2.1 | 250 | | |
| | **10.0** | 64 | 2.5 | 300 | | |
| | **7.5** | 78 | 1.7 | 400 | | |
| | **6.0** | 89 | 1.4 | 500 | | |
| | **5.0** | 121 | 1.3 | 600 | | |
| | **4.0** | 146 | 1.1 | 750 | | |
| | **3.3** | 166 | 1.0 | 900 | | |
| | **2.5** | 202 | 0.7 | 1200 | | |
| | **2.0** | 243 | 0.7 | 1500 | | |
| | **1.7** | 162 | 1.0 | 1800 | | |
| | **1.3** | 135 | 1.0 | 2400 | | |
| | **1.0** | 125 | 1.0 | 3000 | | |
| | **6.0** | 92 | 2.5 | 500 | **ECMM 100/030/063** | **120/240** |
| | **5.0** | 125 | 2.5 | 600 | | |
| | **4.0** | 151 | 2.1 | 750 | | |
| | **3.3** | 172 | 1.8 | 900 | | |
| | **2.5** | 206 | 1.3 | 1200 | | |
| | **2.0** | 252 | 1.2 | 1500 | | |
| | **1.7** | 288 | 1.1 | 1800 | | |
| | **1.3** | 346 | 0.8 | 2400 | | |
| | **1.0** | 232 | 1.0 | 3000 | | |
| | **3.3** | 188 | 2.7 | 900 | **ECMM 100/040/075** | **120/240** |
| | **2.5** | 226 | 1.9 | 1200 | | |
| | **2.0** | 280 | 1.8 | 1500 | | |
| | **1.7** | 322 | 1.6 | 1800 | | |
| | **1.3** | 388 | 1.1 | 2400 | | |
| | **1.0** | 451 | 0.8 | 3000 | | |
| | **1.7** | 337 | 2.6 | 1800 | **ECMM 100/040/090** | **120/240** |
| | **1.3** | 415 | 1.8 | 2400 | | |
| | **1.0** | 485 | 1.3 | 3000 | | |

## Dati tecnici per servizio S2

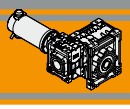
## *Technical data for S2 duty*

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **250** | | | | | | |
| (3000 min$^{-1}$) | **20.0** | 70 | 1.2 | 150 | **ECMM 180/026/040** | **120/240** |
| | **13.3** | 103 | 0.8 | 225 | | |
| | **10.0** | 116 | 0.8 | 300 | | |
| | **20.0** | 73 | 2.2 | 150 | **ECMM 180/026/050** | **120/240** |
| | **13.3** | 108 | 1.5 | 225 | | |
| | **10.0** | 118 | 1.4 | 300 | | |
| | **6.7** | 173 | 0.9 | 450 | | |
| | **5.0** | 223 | 0.7 | 600 | | |
| | **40.0** | 40 | 2.1 | 75 | **ECMM 180/030/040** | **120/240/24E** |
| | **30.0** | 52 | 1.6 | 100 | | |
| | **20.0** | 71 | 1.2 | 150 | | |
| | **15.0** | 92 | 0.8 | 200 | | |
| | **12.0** | 67 | 1.0 | 250 | | |
| | **10.0** | 90 | 1.0 | 300 | | |
| | **7.5** | 74 | 1.0 | 400 | | |
| | **6.0** | 68 | 1.0 | 500 | | |
| | **5.0** | 90 | 1.0 | 600 | | |
| | **4.0** | 90 | 1.0 | 750 | | |
| | **3.3** | 90 | 1.0 | 900 | | |
| | **40.0** | 40 | 3.9 | 75 | **ECMM 180/030/050** | **120/240/24E** |
| | **30.0** | 52 | 3.0 | 100 | | **120/240/24E** |
| | **20.0** | 74 | 2.2 | 150 | | **120/240/24E** |
| | **15.0** | 94 | 1.5 | 200 | | **120/240/24E** |
| | **12.0** | 110 | 1.1 | 250 | | **120/240/24E** |
| | **10.0** | 120 | 1.4 | 300 | | **120/240/24E** |
| | **7.5** | 146 | 0.9 | 400 | | **120/240/24E** |
| | **6.0** | 165 | 0.8 | 500 | | **120/240/24E** |
| | **5.0** | 226 | 0.7 | 600 | | **120/240/24E** |
| | **4.0** | 162 | 1.0 | 750 | | **120/240/24E** |
| | **3.3** | 162 | 1.0 | 900 | | **120/240/24E** |
| | **2.5** | 135 | 1.0 | 1200 | | **120/240/24E** |
| | **2.0** | 162 | 1.0 | 1500 | | **120/240/24E** |
| | **1.7** | 162 | 1.0 | 1800 | | **120/240** |
| | **15.0** | 92 | 2.8 | 200 | **ECMM 180/030/063** | **120/240/24E** |
| | **12.0** | 108 | 2.1 | 250 | | **120/240/24E** |
| | **10.0** | 124 | 2.5 | 300 | | **120/240/24E** |
| | **7.5** | 149 | 1.7 | 400 | | **120/240/24E** |
| | **6.0** | 172 | 1.3 | 500 | | **120/240/24E** |
| | **5.0** | 233 | 1.3 | 600 | | **120/240/24E** |
| | **4.0** | 281 | 1.1 | 750 | | **120/240/24E** |
| | **3.3** | 320 | 1.0 | 900 | | **120/240/24E** |
| | **2.5** | 384 | 0.7 | 1200 | | **120/240/24E** |
| | **2.0** | 468 | 0.7 | 1500 | | **120/240/24E** |
| | **1.7** | 310 | 1.0 | 1800 | | **120/240** |
| | **1.3** | 260 | 1.0 | 2400 | | **120/240** |
| | **1.0** | 232 | 1.0 | 3000 | | **120/240** |

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **250** | | | | | | |
| (3000 min$^{-1}$) | **12.0** | 115 | 3.3 | 250 | **ECMM 180/040/075** | **120/240/24E** |
| | **10.0** | 132 | 3.9 | 300 | | |
| | **7.5** | 159 | 2.7 | 400 | | |
| | **6.0** | 184 | 2.0 | 500 | | |
| | **5.0** | 251 | 2.0 | 600 | | |
| | **4.0** | 302 | 1.7 | 750 | | |
| | **3.3** | 349 | 1.5 | 900 | | |
| | **2.5** | 421 | 1.0 | 1200 | | |
| | **2.0** | 522 | 1.0 | 1500 | | |
| | **1.7** | 599 | 0.9 | 1800 | | |
| | **1.3** | 432 | 1.0 | 2400 | | |
| | **1.0** | 378 | 1.0 | 3000 | | |
| | **5.0** | 263 | 3.3 | 600 | **ECMM 180/040/090** | **120/240/24E** |
| | **4.0** | 317 | 2.8 | 750 | | |
| | **3.3** | 366 | 2.4 | 900 | | |
| | **2.5** | 451 | 1.7 | 1200 | | |
| | **2.0** | 546 | 1.6 | 1500 | | |
| | **1.7** | 627 | 1.4 | 1800 | | |
| | **1.3** | 773 | 1.0 | 2400 | | |
| | **1.0** | 903 | 0.7 | 3000 | | |
| | **3.3** | 376 | 3.9 | 900 | **ECMM 180/050/110** | **24E** |
| | **2.5** | 487 | 2.7 | 1200 | | **120/240/24E** |
| | **2.0** | 571 | 2.6 | 1500 | | **120/240/24E** |
| | **1.7** | 656 | 2.3 | 1800 | | **120/240/24E** |
| | **1.3** | 849 | 1.6 | 2400 | | **120/240/24E** |
| | **1.0** | 996 | 1.2 | 3000 | | **120/240/24E** |
| **350** | | | | | | |
| (3000 min$^{-1}$) | 40.0 | 55 | 1.5 | 75 | **ECMM 250/030/040** | **120/240** |
| | 30.0 | 72 | 1.2 | 100 | | |
| | 20.0 | 100 | 0.9 | 150 | | |
| | 15.0 | 74 | 1.0 | 200 | | |
| | 12.0 | 67 | 1.0 | 250 | | |
| | 10.0 | 90 | 1.0 | 300 | | |
| | 7.5 | 74 | 1.0 | 400 | | |
| | 6.0 | 68 | 1.0 | 500 | | |
| | 5.0 | 90 | 1.0 | 600 | | |
| | 4.0 | 90 | 1.0 | 750 | | |
| | 3.3 | 90 | 1.0 | 900 | | |
| | 2.5 | 74 | 1.0 | 1200 | | |
| | 2.0 | 90 | 1.0 | 1500 | | |
| | 40.0 | 56 | 2.8 | 75 | **ECMM 250/030/050** | **120/240** |
| | 30.0 | 73 | 2.1 | 100 | | |
| | 20.0 | 104 | 1.5 | 150 | | |
| | 15.0 | 131 | 1.0 | 200 | | |
| | 12.0 | 154 | 0.8 | 250 | | |
| | 10.0 | 168 | 1.0 | 300 | | |

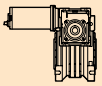
**Nota:** Verificare sempre che la coppia M2 utilizzata non ecceda il valore indicato nelle caselle in grigio

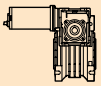
***Note:*** *Please check that the output torque M2 does not exceed the value into the grey areas*



## Dati tecnici per servizio S2

## *Technical data for S2 duty*

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **350** | | | | | | |
| (3000 min$^{-1}$) | 7.5 | 204 | *0.7* | 400 | **ECMM 250/030/050** | **120/240** |
| | 6.0 | 125 | *1.0* | 500 | | |
| | 5.0 | 162 | *1.0* | 600 | | |
| | 4.0 | 162 | *1.0* | 750 | | |
| | 3.3 | 162 | *1.0* | 900 | | |
| | 2.5 | 135 | *1.0* | 1200 | | |
| | 2.00 | 162 | *1.0* | 1500 | | |
| | 30.0 | 74 | *3.9* | 100 | **ECMM 250/030/063** | **120/240** |
| | 20.0 | 103 | *3.0* | 150 | | |
| | 15.0 | 129 | *2.0* | 200 | | |
| | 12.0 | 152 | *1.5* | 250 | | |
| | 10.0 | 173 | *1.8* | 300 | | |
| | 7.5 | 208 | *1.2* | 400 | | |
| | 6.0 | 241 | *1.0* | 500 | | |
| | 5.0 | 327 | *0.9* | 600 | | |
| | 4.0 | 393 | *0.8* | 750 | | |
| | 3.3 | 448 | *0.7* | 900 | | |
| | 2.5 | 260 | *1.0* | 1200 | | |
| | 2.00 | 310 | *1.0* | 1500 | | |
| | 15.0 | 134 | *3.2* | 200 | **ECMM 250/040/075** | **120/240** |
| | 12.0 | 161 | *2.4* | 250 | | |
| | 10.0 | 184 | *2.8* | 300 | | |
| | 7.5 | 222 | *1.9* | 400 | | |
| | 6.0 | 258 | *1.5* | 500 | | |
| | 5.0 | 351 | *1.5* | 600 | | |
| | 4.0 | 423 | *1.2* | 750 | | |
| | 3.3 | 489 | *1.0* | 900 | | |
| | 2.5 | 590 | *0.7* | 1200 | | |
| | 2.0 | 730 | *0.7* | 1500 | | |
| | 1.7 | 511 | *1.0* | 1800 | | |
| | 1.3 | 432 | *1.0* | 2400 | | |
| | 1.0 | 378 | *1.0* | 3000 | | |
| | 12.0 | 168 | *3.9* | 250 | **ECMM 250/040/090** | **120/240** |
| | 10.0 | 193 | *4.6* | 300 | | |
| | 7.5 | 238 | *3.2* | 400 | | |
| | 6.0 | 278 | *2.3* | 500 | | |
| | 5.0 | 368 | *2.4* | 600 | | |
| | 4.0 | 444 | *2.0* | 750 | | |
| | 3.3 | 512 | *1.7* | 900 | | |
| | 2.5 | 631 | *1.2* | 1200 | | |
| | 2.00 | 765 | *1.1* | 1500 | | |
| | 1.67 | 878 | *1.0* | 1800 | | |
| | 1.25 | 1082 | *0.7* | 2400 | | |
| | 1.00 | 635 | *1.0* | 3000 | | |

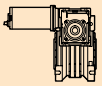
| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **350** | | | | | | |
| (3000 min$^{-1}$) | 6.0 | 301 | *3.8* | 500 | **ECMM 250/050/110** | **120/240** |
| | 5.0 | 378 | *3.9* | 600 | | |
| | 4.0 | 461 | 3.2 | 750 | | |
| | 3.3 | 527 | 2.8 | 900 | | |
| | 2.5 | 681 | 1.9 | 1200 | | |
| | 2.00 | 799 | 1.9 | 1500 | | |
| | 1.67 | 918 | 1.6 | 1800 | | |
| | 1.25 | 1188 | 1.1 | 2400 | | |
| | 1.00 | 1394 | 0.8 | 3000 | | |
| **500** | | | | | | |
| (3000 min$^{-1}$) | **40.0** | 78 | 1.1 | 75 | **ECMM 350/030/040** | **120/240** |
| | **30.0** | 101 | 0.8 | 100 | | |
| | **20.0** | 87 | 1.0 | 150 | | |
| | **15.0** | 74 | 1.0 | 200 | | |
| | **12.0** | 67 | 1.0 | 250 | | |
| | **10.0** | 90 | 1.0 | 300 | | |
| | **7.5** | 74 | 1.0 | 400 | | |
| | **40.0** | 79 | 2.0 | 75 | **ECMM 350/030/050** | **120/240** |
| | **30.0** | 103 | 1.5 | 100 | | |
| | **20.0** | 146 | 1.1 | 150 | | |
| | **15.0** | 184 | 0.7 | 200 | | |
| | **12.0** | 216 | 0.6 | 250 | | |
| | **10.0** | 235 | 0.7 | 300 | | |
| | **7.5** | 135 | 1.0 | 400 | | |
| | **6.0** | 125 | 1.0 | 500 | | |
| | **5.0** | 162 | 1.0 | 600 | | |
| | **4.0** | 162 | 1.0 | 750 | | |
| | **3.3** | 162 | 1.0 | 900 | | |
| | **40.0** | 80 | 3.6 | 75 | **ECMM 350/030/063** | **120/240** |
| | **30.0** | 104 | 2.8 | 100 | | |
| | **20.0** | 144 | 2.1 | 150 | | |
| | **15.0** | 181 | 1.4 | 200 | | |
| | **12.0** | 213 | 1.1 | 250 | | |
| | **10.0** | 243 | 1.3 | 300 | | |
| | **7.5** | 292 | 0.9 | 400 | | |
| | **6.0** | 338 | 0.7 | 500 | | |
| | **5.0** | 458 | 0.7 | 600 | | |
| | **4.0** | 310 | 1.0 | 750 | | |
| | **3.3** | 310 | 1.0 | 900 | | |
| | **2.5** | 260 | 1.0 | 1200 | | |
| | **2.0** | 310 | 1.0 | 1500 | | |

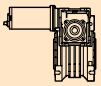
**Nota:** Verificare sempre che la coppia M2 utilizzata non ecceda il valore indicato nelle caselle in grigio

***Note:*** *Please check that the output torque M2 does not exceed the value into the grey areas*

## Dati tecnici per servizio S2

## *Technical data for S2 duty*

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **500** | | | | | | |
| (3000 min$^{-1}$) | **20.0** | 150 | 3.3 | 150 | **ECMM 350/040/075** | **120/240** |
| | **15.0** | 188 | 2.3 | 200 | | |
| | **12.0** | 225 | 1.7 | 250 | | |
| | **10.0** | 258 | 2.0 | 300 | | |
| | **7.5** | 311 | 1.4 | 400 | | |
| | **6.0** | 362 | 1.0 | 500 | | |
| | **5.0** | 493 | 1.0 | 600 | | |
| | **4.0** | 593 | 0.9 | 750 | | |
| | **3.3** | 685 | 0.7 | 900 | | |
| | **2.5** | 432 | 1.0 | 1200 | | |
| | **2.0** | 511 | 1.0 | 1500 | | |
| | **1.7** | 511 | 1.0 | 1800 | | |
| | **1.3** | 432 | 1.0 | 2400 | | |
| | **12.0** | 236 | 2.8 | 250 | **ECMM 350/040/090** | **120/240** |
| | **10.0** | 270 | 3.2 | 300 | | |
| | **7.5** | 333 | 2.3 | 400 | | |
| | **6.0** | 389 | 1.6 | 500 | | |
| | **5.0** | 516 | 1.7 | 600 | | |
| | **4.0** | 622 | 1.4 | 750 | | |
| | **3.3** | 718 | 1.2 | 900 | | |
| | **2.5** | 885 | 0.9 | 1200 | | |
| | **2.0** | 1072 | 0.8 | 1500 | | |
| | **1.7** | 1231 | 0.7 | 1800 | | |
| | **1.3** | 755 | 1.0 | 2400 | | |
| | **1.0** | 635 | 1.0 | 3000 | | |
| | **6.0** | 421 | 2.7 | 500 | **ECMM 350/050/110** | **120/240** |
| | **5.0** | 530 | 2.8 | 600 | | |
| | **4.0** | 647 | 2.3 | 750 | | |
| | **3.3** | 738 | 2.0 | 900 | | |
| | **2.5** | 955 | 1.4 | 1200 | | |
| | **2.0** | 1120 | 1.3 | 1500 | | |
| | **1.7** | 1288 | 1.1 | 1800 | | |
| | **1.3** | 1665 | 0.8 | 2400 | | |
| | **1.0** | 1157 | 1.0 | 3000 | | |
| | **4.0** | 645 | 2.6 | 750 | **ECMM 350/063/130** | **120/240** |
| | **3.3** | 737 | 2.3 | 900 | | |
| | **2.5** | 938 | 1.7 | 1200 | | |
| | **2.0** | 1135 | 1.5 | 1500 | | |
| | **1.7** | 1306 | 1.3 | 1800 | | |
| | **1.3** | 1662 | 1.0 | 2400 | | |
| | **1.0** | 2011 | 0.7 | 3000 | | |

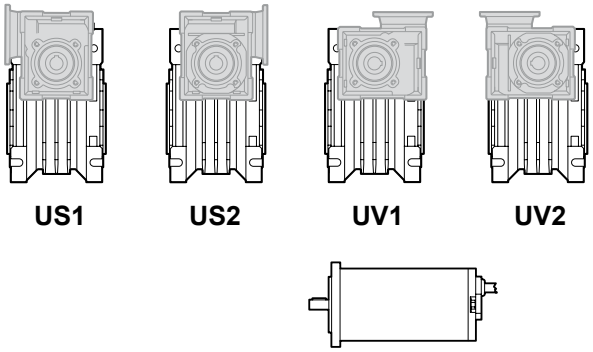
| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **800** | | | | | | |
| (3000 min$^{-1}$) | **40.0** | 132 | 3.5 | 75 | **ECMM 600/040/075** | **120/240** |
| | **30.0** | 172 | 2.7 | 100 | | |
| | **20.0** | 242 | 2.0 | 150 | | |
| | **15.0** | 305 | 1.4 | 200 | | |
| | **12.0** | 365 | 1.1 | 250 | | |
| | **10.0** | 418 | 1.2 | 300 | | |
| | **7.5** | 504 | 0.9 | 400 | | |
| | **6.0** | 378 | 1.0 | 500 | | |
| | **5.0** | 511 | 1.0 | 600 | | |
| | **4.0** | 511 | 1.0 | 750 | | |
| | **3.3** | 511 | 1.0 | 900 | | |
| | **2.5** | 432 | 1.0 | 1200 | | |
| | **20.0** | 249 | 3.3 | 150 | **ECMM 600/040/090** | **120/240** |
| | **15.0** | 318 | 2.4 | 200 | | |
| | **12.0** | 381 | 1.7 | 250 | | |
| | **10.0** | 438 | 2.0 | 300 | | |
| | **7.5** | 539 | 1.4 | 400 | | |
| | **6.0** | 630 | 1.0 | 500 | | |
| | **5.0** | 835 | 1.1 | 600 | | |
| | **4.0** | 1006 | 0.9 | 750 | | |
| | **3.3** | 1162 | 0.8 | 900 | | |
| | **2.5** | 755 | 1.0 | 1200 | | |
| | **12.0** | 402 | 3.0 | 250 | **ECMM 600/050/110** | **120/240** |
| | **10.0** | 449 | 3.3 | 300 | | |
| | **7.5** | 581 | 2.3 | 400 | | |
| | **6.0** | 682 | 1.7 | 500 | | |
| | **5.0** | 858 | 1.7 | 600 | | |
| | **4.0** | 1047 | 1.4 | 750 | | |
| | **3.3** | 1195 | 1.2 | 900 | | |
| | **2.5** | 1545 | 0.9 | 1200 | | |
| | **2.0** | 1812 | 0.8 | 1500 | | |
| | **1.7** | 2083 | 0.7 | 1800 | | |
| | **1.3** | 1320 | 1.0 | 2400 | | |
| | **1.0** | 1157 | 1.0 | 3000 | | |
| | **7.5** | 563 | 2.8 | 400 | **ECMM 600/063/130** | **120/240** |
| | **6.0** | 682 | 2.2 | 500 | | |
| | **5.0** | 845 | 2.0 | 600 | | |
| | **4.0** | 1044 | 1.6 | 750 | | |
| | **3.3** | 1192 | 1.4 | 900 | | |
| | **2.5** | 1517 | 1.1 | 1200 | | |
| | **2.0** | 1836 | 0.9 | 1500 | | |
| | **1.7** | 2112 | 0.8 | 1800 | | |
| | **1.3** | 1600 | 1.0 | 2400 | | |
| | **1.0** | 1500 | 1.0 | 3000 | | |

**Nota:** Verificare sempre che la coppia M2 utilizzata non ecceda il valore indicato nelle caselle in grigio

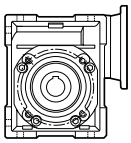
***Note:*** *Please check that the output torque M2 does not exceed the value into the grey areas*

## Motori applicabili

*IEC Motor adapters*

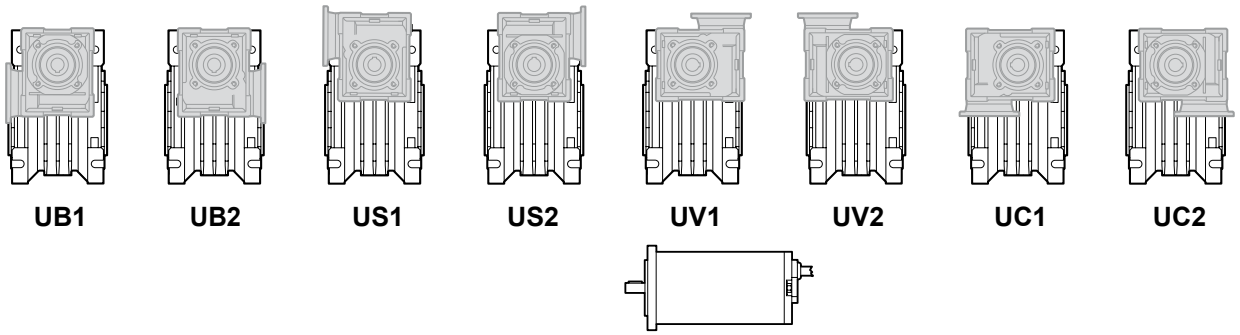


US1 US2 UV1 UV2

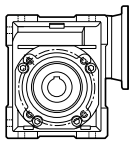


| | | EC | | | |
|---|---|---|---|---|---|
| | | **070.120<br>070.240** | **100.120<br>100.240** | **100.24E** | **180.120<br>180.240** |
| **CMM** | **026/026** | 150 - 3600 | 150 - 3600 | 150 - 3600 | 150 - 3600 |

150 - 3600 Rapporti di riduzione i
*Ratio i*



UB1 UB2 US1 US2 UV1 UV2 UC1 UC2



| | | EC | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | **070.120<br>070.240** | **100.120<br>100.240** | **100.24E** | **180.120<br>180.240** | **180.24E** | **250.120<br>250.240** | **350.120<br>350.240** | **600.120<br>600.240** |
| **CMM** | **026/030** | 150 - 3600 | 150 - 3600 | 150 - 3600 | 150 - 3600 | | | | |
| | **026/040** | 150 - 3600 | 150 - 3600 | 150 - 3600 | 150 - 3600 | | | | |
| | **026/050** | 150 - 3600 | 150 - 3600 | 150 - 3600 | 150 - 3600 | | | | |
| | **030/040** | 75 - 3000 | 75 - 3000 | 75 - 3000 | 75 - 3000 | 75 - 1500 | 75 - 1500 | 75 - 1500 | |
| | **030/050** | 75 - 3000 | 75 - 3000 | 75 - 3000 | 75 - 3000 | 75 - 1500 | 75 - 1500 | 75 - 1500 | |
| | **030/063** | 75 - 3000 | 75 - 3000 | 75 - 3000 | 75 - 3000 | 75 - 1500 | 100 - 1500 | 75 - 1500 | |
| | **040/075** | 75 - 3000 | 75 - 3000 | 75 - 3000 | 75 - 3000 | 75 - 3000 | 200 - 3000 | 75 - 3000 | 75 - 1200 |
| | **040/090** | 75 - 3000 | 75 - 3000 | 75 - 3000 | 75 - 3000 | 75 - 3000 | 250 - 3000 | 75 - 3000 | 75 - 1200 |
| | **050/110** | | | | 1200 - 3000 | 75 - 3000 | 500 - 3000 | 75 - 3000 | 75 - 3000 |
| | **063/130** | | | | | | | 75 - 3000 | 75 - 3000 |

150 - 3600 Rapporti di riduzione i
*Ratio i*

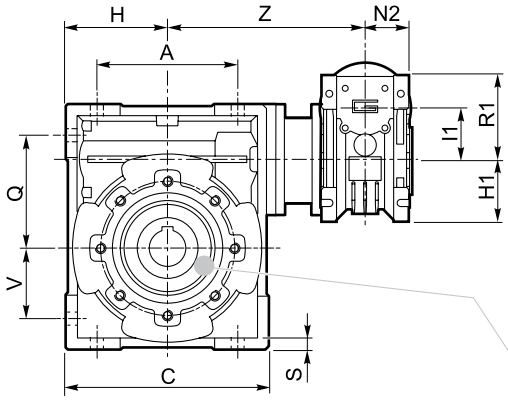
## Dimensioni — *Dimensions*

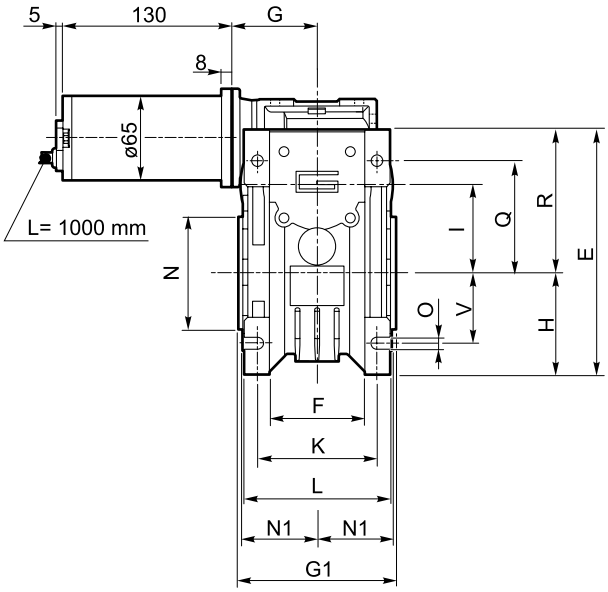
| | CMM..U - CMM..F - CMM..FB - CMM..FL | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | C | D H8 | E | F | G | G1 | H | H1 | I | I1 | K | L | M | N h8 | N1 | N2 |
| **026/026** | 45 | 70 | 12 | 83 | 22 | 47.5 | 50 | 35 | 34 | 26 | 26 | 34 | 42 | 55 | 45 | 22.5 | 21 |
| **026/030** | 54 | 80 | 14 | 97 | 32 | 47.5 | 63 | 40 | 34 | 30 | 26 | 44 | 56 | 65 | 55 | 29 | 21 |
| **026/040** | 70 | 100 | 18 | 121.5 | 43 | 47.5 | 78 | 50 | 34 | 40 | 26 | 60 | 71 | 75 | 60 | 36.5 | 21 |
| **026/050** | 80 | 120 | 25 | 144 | 49 | 47.5 | 92 | 60 | 34 | 50 | 26 | 70 | 85 | 85 | 70 | 43.5 | 21 |
| **030/040** | 70 | 100 | 18 | 121.5 | 43 | 55 | 78 | 50 | 40 | 40 | 30 | 60 | 71 | 75 | 60 | 36.5 | 29 |
| **030/050** | 80 | 120 | 25 | 144 | 49 | 55 | 92 | 60 | 40 | 50 | 30 | 70 | 85 | 85 | 70 | 43.5 | 29 |
| **030/063** | 100 | 144 | 25 | 174 | 67 | 55 | 112 | 72 | 40 | 63 | 30 | 85 | 104 | 95 | 80 | 53 | 29 |
| **040/075** | 120 | 172 | 28 | 205 | 72 | 70 | 120 | 86 | 50 | 75 | 40 | 90 | 112 | 115 | 95 | 57 | 36.5 |
| **040/090** | 140 | 208 | 35 | 238 | 74 | 70 | 140 | 103 | 50 | 90 | 40 | 100 | 130 | 130 | 110 | 67 | 36.5 |

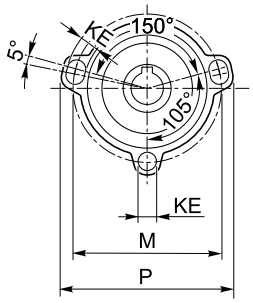
| | CMM..U - CMM..F - CMM..FB - CMM..FL | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | O | P | Q | R | R1 | S | T | V | Z | KE | a | b | t | Kg |
| **026/026** | 6 | — | 37 | 49 | 49 | 5 | 15 | 21 | 76 | 7 | — | 4 | 13.8 | 3.3 |
| **026/030** | 6.5 | 75 | 44 | 57 | 49 | 5.5 | 22 | 27 | 81 | M6x10(n.4) | 90° | 5 | 16.3 | 4.1 |
| **026/040** | 6.5 | 87 | 55 | 71.5 | 49 | 6.5 | 26 | 35 | 91.5 | M6x8(n.4) | 45° | 6 | 20.8 | 5.2 |
| **026/050** | 8.5 | 98 | 64 | 84 | 49 | 7 | 30 | 40 | 100.5 | M8x10(n.4) | 45° | 8 | 28.3 | 6.7 |
| **030/040** | 6.5 | 87 | 55 | 71.5 | 57 | 6.5 | 26 | 35 | 122 | M6x8(n.4) | 45° | 6 | 20.8 | 5.6 |
| **030/050** | 8.5 | 98 | 64 | 84 | 57 | 7 | 30 | 40 | 132 | M8x10(n.4) | 45° | 8 | 28.3 | 6.7 |
| **030/063** | 8.5 | 110 | 80 | 102 | 57 | 8 | 36 | 50 | 145 | M8x14(n.8) | 45° | 8 | 28.3 | 8.7 |
| **040/075** | 11 | 140 | 93 | 119 | 71.5 | 10 | 40 | 60 | 165 | M8x14(n.8) | 45° | 8 | 31.3 | 13.7 |
| **040/090** | 13 | 160 | 102 | 135 | 71.5 | 11 | 45 | 70 | 182 | M10x18(n.8) | 45° | 10 | 38.3 | 17.3 |

## Dimensioni — *Dimensions*

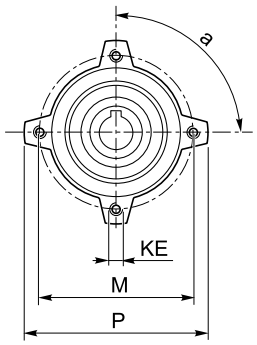
### ECMM070/../..U



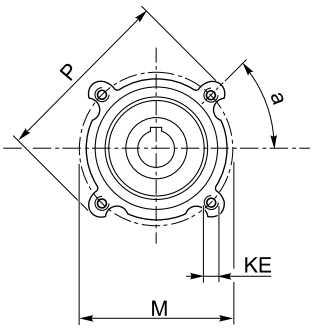



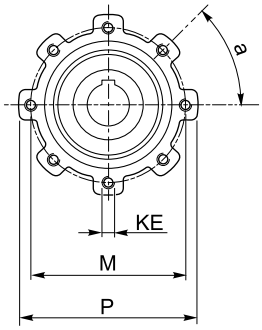

**..026/026**



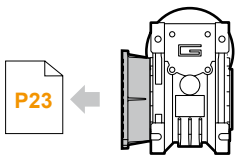

**..026/030**



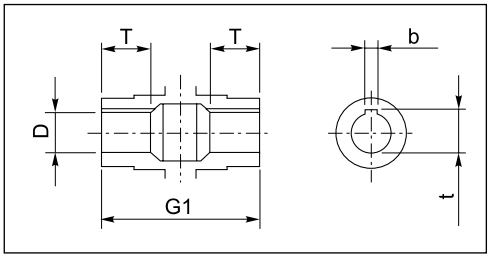

**..026/040 ..026/050**
**..030/040 ..030/050**




**..030/063 ..040/075**
**..040/090**




**ECMM070/../.. F**
**ECMM070/../.. FL**
**ECMM070/../.. FB**




Albero lento cavo / *Hollow output shaft*

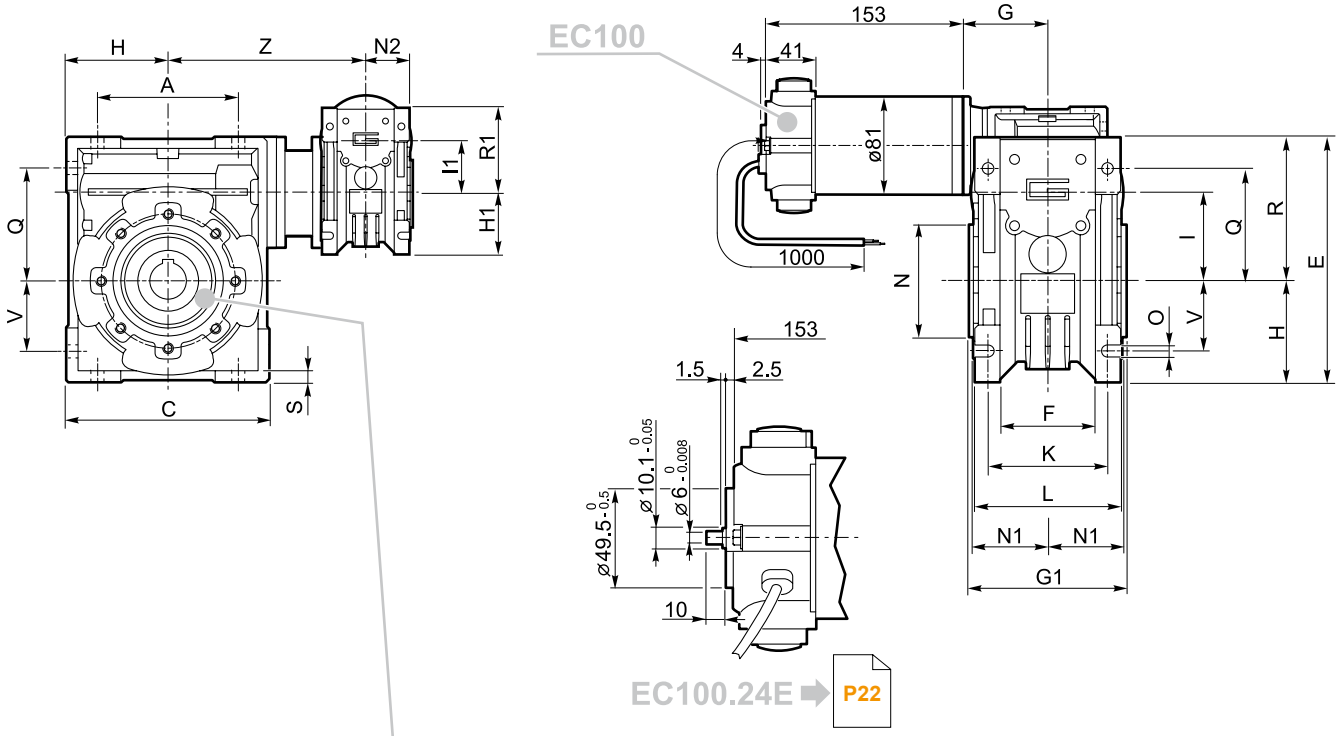
## Dimensioni — *Dimensions*

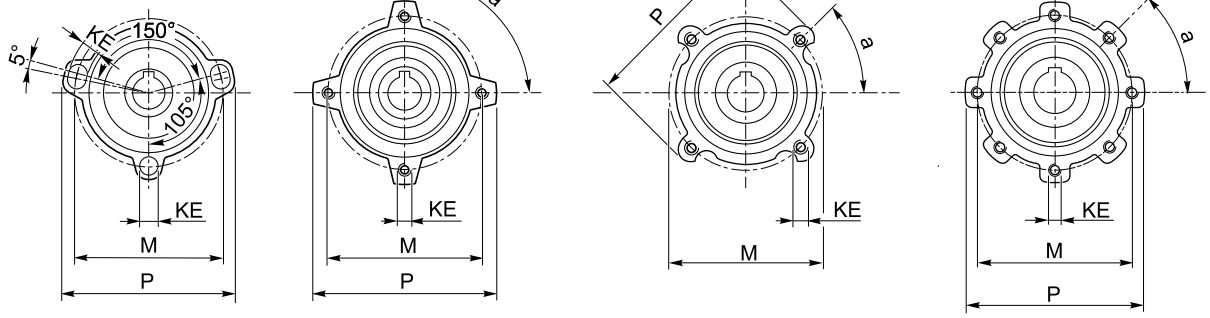
| | CMM..U - CMM..F - CMM..FB - CMM..FL | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | C | D H8 | E | F | G | G1 | H | H1 | I | I1 | K | L | M | N h8 | N1 | N2 |
| **026/026** | 45 | 70 | 12 | 83 | 22 | 47.5 | 50 | 35 | 34 | 26 | 26 | 34 | 42 | 55 | 45 | 22.5 | 21 |
| **026/030** | 54 | 80 | 14 | 97 | 32 | 47.5 | 63 | 40 | 34 | 30 | 26 | 44 | 56 | 65 | 55 | 29 | 21 |
| **026/040** | 70 | 100 | 18 | 121.5 | 43 | 47.5 | 78 | 50 | 34 | 40 | 26 | 60 | 71 | 75 | 60 | 36.5 | 21 |
| **026/050** | 80 | 120 | 25 | 144 | 49 | 47.5 | 92 | 60 | 34 | 50 | 26 | 70 | 85 | 85 | 70 | 43.5 | 21 |
| **030/040** | 70 | 100 | 18 | 121.5 | 43 | 55 | 78 | 50 | 40 | 40 | 30 | 60 | 71 | 75 | 60 | 36.5 | 29 |
| **030/050** | 80 | 120 | 25 | 144 | 49 | 55 | 92 | 60 | 40 | 50 | 30 | 70 | 85 | 85 | 70 | 43.5 | 29 |
| **030/063** | 100 | 144 | 25 | 174 | 67 | 55 | 112 | 72 | 40 | 63 | 30 | 85 | 104 | 95 | 80 | 53 | 29 |
| **040/075** | 120 | 172 | 28 | 205 | 72 | 70 | 120 | 86 | 50 | 75 | 40 | 90 | 112 | 115 | 95 | 57 | 36.5 |
| **040/090** | 140 | 208 | 35 | 238 | 74 | 70 | 140 | 103 | 50 | 90 | 40 | 100 | 130 | 130 | 110 | 67 | 36.5 |

| | CMM..U - CMM..F - CMM..FB - CMM..FL | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | O | P | Q | R | R1 | S | T | V | Z | KE | a | b | t | Kg |
| **026/026** | 6 | — | 37 | 49 | 49 | 5 | 15 | 21 | 76 | 7 | — | 4 | 13.8 | 4.3 |
| **026/030** | 6.5 | 75 | 44 | 57 | 49 | 5.5 | 22 | 27 | 81 | M6x10(n.4) | 90° | 5 | 16.3 | 5.1 |
| **026/040** | 6.5 | 87 | 55 | 71.5 | 49 | 6.5 | 26 | 35 | 91.5 | M6x8(n.4) | 45° | 6 | 20.8 | 6.2 |
| **026/050** | 8.5 | 98 | 64 | 84 | 49 | 7 | 30 | 40 | 100.5 | M8x10(n.4) | 45° | 8 | 28.3 | 7.7 |
| **030/040** | 6.5 | 87 | 55 | 71.5 | 57 | 6.5 | 26 | 35 | 122 | M6x8(n.4) | 45° | 6 | 20.8 | 6.6 |
| **030/050** | 8.5 | 98 | 64 | 84 | 57 | 7 | 30 | 40 | 132 | M8x10(n.4) | 45° | 8 | 28.3 | 7.7 |
| **030/063** | 8.5 | 110 | 80 | 102 | 57 | 8 | 36 | 50 | 145 | M8x14(n.8) | 45° | 8 | 28.3 | 9.7 |
| **040/075** | 11 | 140 | 93 | 119 | 71.5 | 10 | 40 | 60 | 165 | M8x14(n.8) | 45° | 8 | 31.3 | 14.7 |
| **040/090** | 13 | 160 | 102 | 135 | 71.5 | 11 | 45 | 70 | 182 | M10x18(n.8) | 45° | 10 | 38.3 | 18.3 |

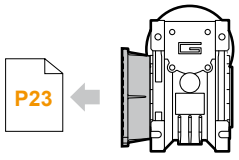
## Dimensioni — *Dimensions*

### ECMM100/../..U

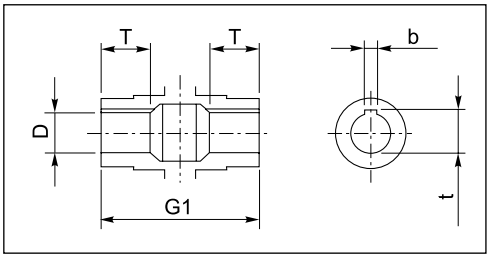



**..026/026** **..026/030** **..026/040 ..026/050 ..030/040 ..030/050** **..030/063 ..040/075 ..040/090**




**ECMM100/../.. F**
**ECMM100/../.. FL**
**ECMM100/../.. FB**




Albero lento cavo / *Hollow output shaft*

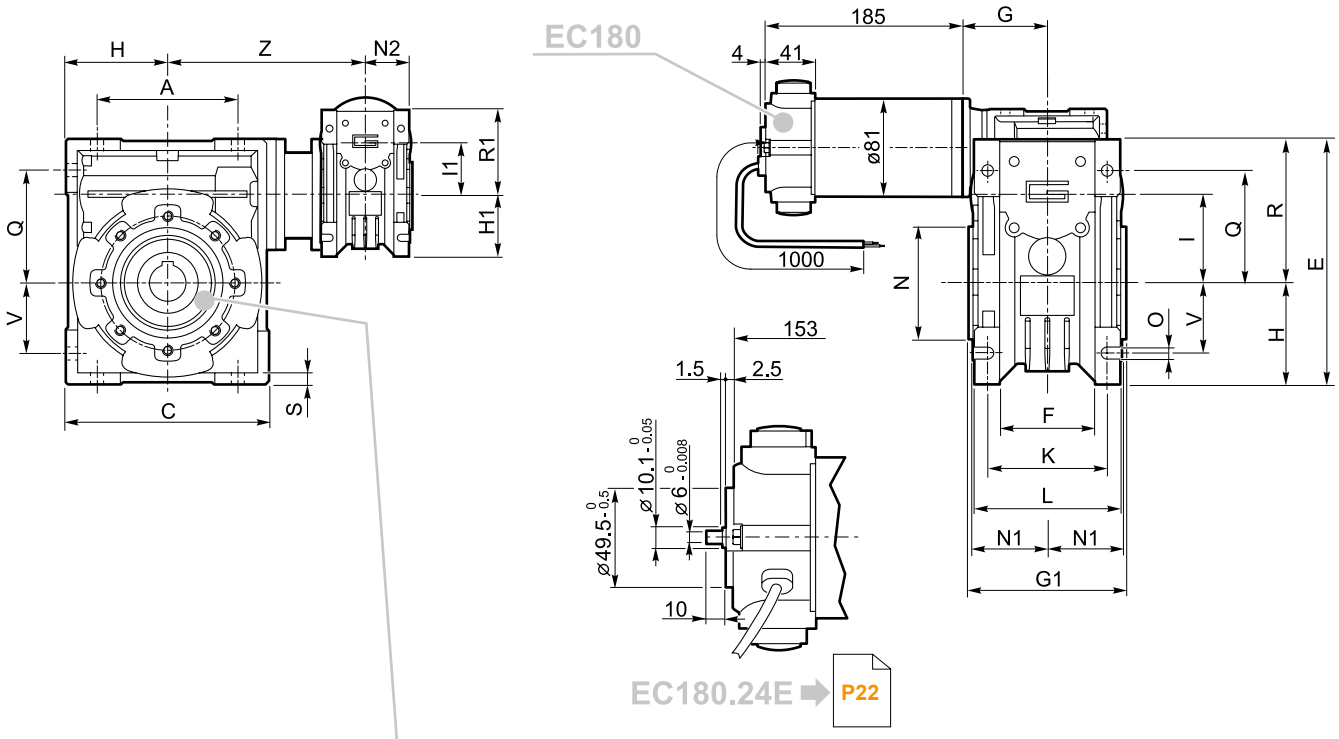
## Dimensioni — *Dimensions*

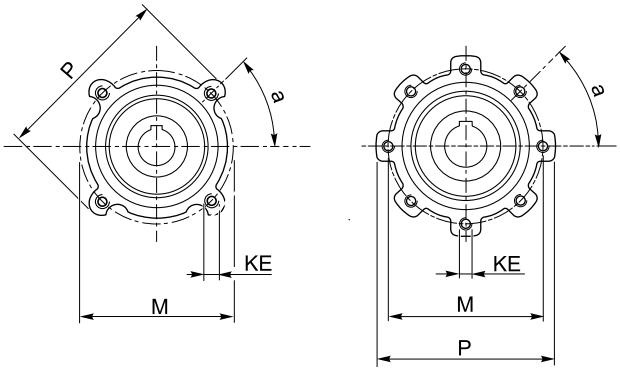
| | CMM..U - CMM..F - CMM..FB - CMM..FL | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | C | D H8 | E | F | G | G1 | H | H1 | I | I1 | K | L | M | N h8 | N1 | N2 |
| **026/040** | 70 | 100 | 18 | 121.5 | 43 | 47.5 | 78 | 50 | 34 | 40 | 26 | 60 | 71 | 75 | 60 | 36.5 | 21 |
| **026/050** | 80 | 120 | 25 | 144 | 49 | 47.5 | 92 | 60 | 34 | 50 | 26 | 70 | 85 | 85 | 70 | 43.5 | 21 |
| **030/040** | 70 | 100 | 18 | 121.5 | 43 | 55 | 78 | 50 | 40 | 40 | 30 | 60 | 71 | 75 | 60 | 36.5 | 29 |
| **030/050** | 80 | 120 | 25 | 144 | 49 | 55 | 92 | 60 | 40 | 50 | 30 | 70 | 85 | 85 | 70 | 43.5 | 29 |
| **030/063** | 100 | 144 | 25 | 174 | 67 | 55 | 112 | 72 | 40 | 63 | 30 | 85 | 104 | 95 | 80 | 53 | 29 |
| **040/075** | 120 | 172 | 28 | 205 | 72 | 70 | 120 | 86 | 50 | 75 | 40 | 90 | 112 | 115 | 95 | 57 | 36.5 |
| **040/090** | 140 | 208 | 35 | 238 | 74 | 70 | 140 | 103 | 50 | 90 | 40 | 100 | 130 | 130 | 110 | 67 | 36.5 |
| **050/110** | 170 | 252.5 | 42 | 295 | — | 80 | 155 | 127.5 | 60 | 110 | 50 | 115 | 144 | 165 | 130 | 74 | 43.5 |

| | CMM..U - CMM..F - CMM..FB - CMM..FL | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | O | P | Q | R | R1 | S | T | V | Z | KE | a | b | t | Kg |
| **026/040** | 6.5 | 87 | 55 | 71.5 | 49 | 6.5 | 26 | 35 | 91.5 | M6x8(n.4) | 45° | 6 | 20.8 | 6.9 |
| **026/050** | 8.5 | 98 | 64 | 84 | 49 | 7 | 30 | 40 | 100.5 | M8x10(n.4) | 45° | 8 | 28.3 | 8.4 |
| **030/040** | 6.5 | 87 | 55 | 71.5 | 57 | 6.5 | 26 | 35 | 122 | M6x8(n.4) | 45° | 6 | 20.8 | 7.3 |
| **030/050** | 8.5 | 98 | 64 | 84 | 57 | 7 | 30 | 40 | 132 | M8x10(n.4) | 45° | 8 | 28.3 | 8.4 |
| **030/063** | 8.5 | 110 | 80 | 102 | 57 | 8 | 36 | 50 | 145 | M8x14(n.8) | 45° | 8 | 28.3 | 10.4 |
| **040/075** | 11 | 140 | 93 | 119 | 71.5 | 10 | 40 | 60 | 165 | M8x14(n.8) | 45° | 8 | 31.3 | 15.4 |
| **040/090** | 13 | 160 | 102 | 135 | 71.5 | 11 | 45 | 70 | 182 | M10x18(n.8) | 45° | 10 | 38.3 | 19 |
| **050/110** | 14 | 200 | 125 | 167.5 | 84 | 14 | 50 | 85 | 225 | M10x18(n.8) | 45° | 12 | 45.3 | 33.6 |

## Dimensioni — *Dimensions*

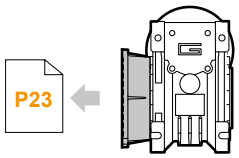
### ECMM180/../..U



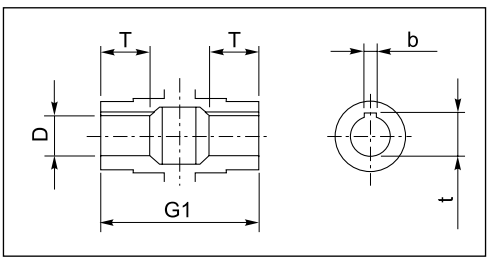




**..026/040 ..026/050**
**..030/040 ..030/050**

**..030/063 ..040/075**
**..040/090 ..050/110**




**ECMM180/../.. F**
**ECMM180/../.. FL**
**ECMM180/../.. FB**




Albero lento cavo / *Hollow output shaft*

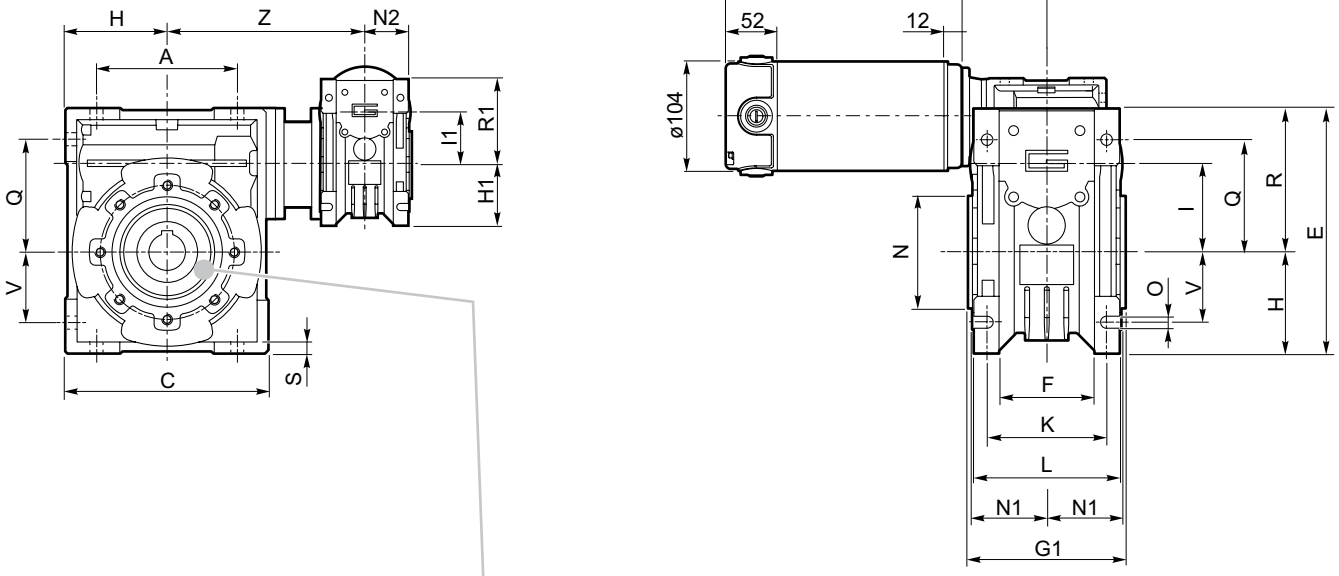
## Dimensioni — *Dimensions*

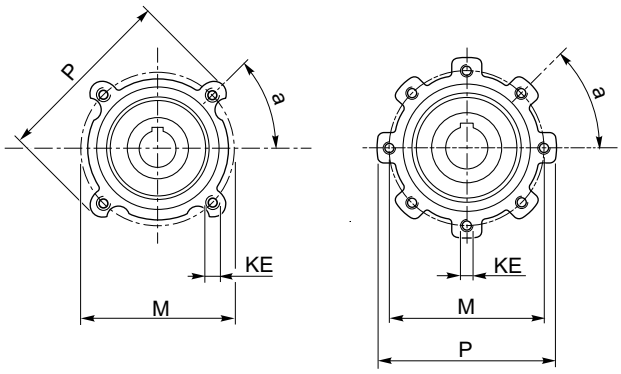
| | CMM..U - CMM..F - CMM..FB - CMM..FL | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | C | D H8 | E | F | G | G1 | H | H1 | I | I1 | K | L | M | N h8 | N1 | N2 |
| **030/040** | 70 | 100 | 18 | 121.5 | 43 | 55 | 78 | 50 | 40 | 40 | 30 | 60 | 71 | 75 | 60 | 36.5 | 29 |
| **030/050** | 80 | 120 | 25 | 144 | 49 | 55 | 92 | 60 | 40 | 50 | 30 | 70 | 85 | 85 | 70 | 43.5 | 29 |
| **030/063** | 100 | 144 | 25 | 174 | 67 | 55 | 112 | 72 | 40 | 63 | 30 | 85 | 104 | 95 | 80 | 53 | 29 |
| **040/075** | 120 | 172 | 28 | 205 | 72 | 70 | 120 | 86 | 50 | 75 | 40 | 90 | 112 | 115 | 95 | 57 | 36.5 |
| **040/090** | 140 | 208 | 35 | 238 | 74 | 70 | 140 | 103 | 50 | 90 | 40 | 100 | 130 | 130 | 110 | 67 | 36.5 |
| **050/110** | 170 | 252.5 | 42 | 295 | — | 80 | 155 | 127.5 | 60 | 110 | 50 | 115 | 144 | 165 | 130 | 74 | 43.5 |

| | CMM..U - CMM..F - CMM..FB - CMM..FL | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | O | P | Q | R | R1 | S | T | V | Z | KE | a | b | t | Kg |
| **030/040** | 6.5 | 87 | 55 | 71.5 | 57 | 6.5 | 26 | 35 | 122 | M6x8(n.4) | 45° | 6 | 20.8 | 9.2 |
| **030/050** | 8.5 | 98 | 64 | 84 | 57 | 7 | 30 | 40 | 132 | M8x10(n.4) | 45° | 8 | 28.3 | 10.3 |
| **030/063** | 8.5 | 110 | 80 | 102 | 57 | 8 | 36 | 50 | 145 | M8x14(n.8) | 45° | 8 | 28.3 | 12.3 |
| **040/075** | 11 | 140 | 93 | 119 | 71.5 | 10 | 40 | 60 | 165 | M8x14(n.8) | 45° | 8 | 31.3 | 17.3 |
| **040/090** | 13 | 160 | 102 | 135 | 71.5 | 11 | 45 | 70 | 182 | M10x18(n.8) | 45° | 10 | 38.3 | 20.9 |
| **050/110** | 14 | 200 | 125 | 167.5 | 84 | 14 | 50 | 85 | 225 | M10x18(n.8) | 45° | 12 | 45.3 | 35.5 |

## Dimensioni — *Dimensions*

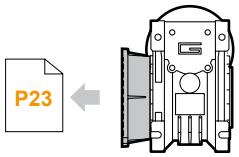
### ECMM250/../..U



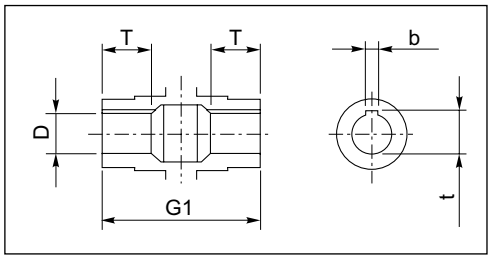




**..030/040 ..030/050**

**..030/063 ..040/075**
**..040/090 ..050/110**




**ECMM250/../.. F**
**ECMM250/../.. FL**
**ECMM250/../.. FB**




Albero lento cavo / *Hollow output shaft*

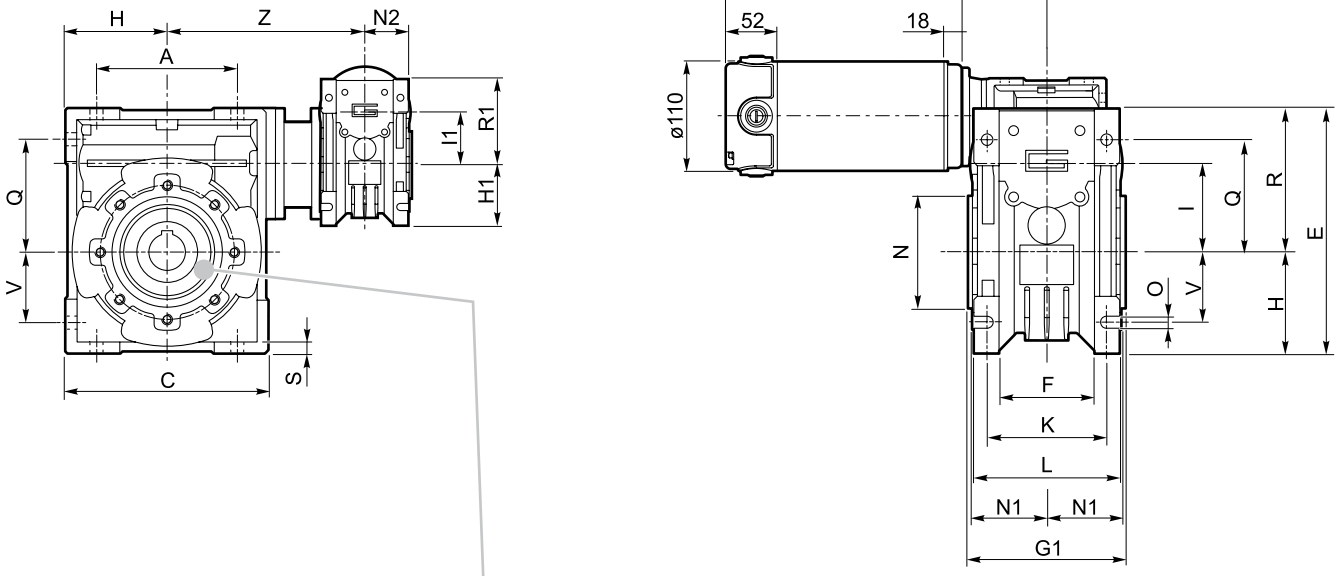
## Dimensioni — *Dimensions*

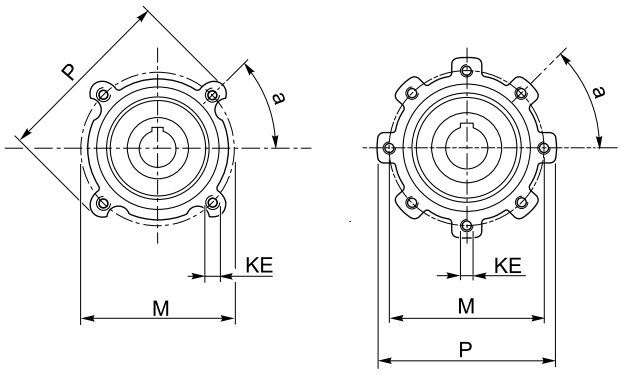
| | CMM..U - CMM..F - CMM..FB - CMM..FL | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | C | D H8 | E | F | G | G1 | H | H1 | I | I1 | K | L | M | N h8 | N1 | N2 |
| **030/040** | 70 | 100 | 18 | 121.5 | 43 | 55 | 78 | 50 | 40 | 40 | 30 | 60 | 71 | 75 | 60 | 36.5 | 29 |
| **030/050** | 80 | 120 | 25 | 144 | 49 | 55 | 92 | 60 | 40 | 50 | 30 | 70 | 85 | 85 | 70 | 43.5 | 29 |
| **030/063** | 100 | 144 | 25 | 174 | 67 | 55 | 112 | 72 | 40 | 63 | 30 | 85 | 104 | 95 | 80 | 53 | 29 |
| **040/075** | 120 | 172 | 28 | 205 | 72 | 70 | 120 | 86 | 50 | 75 | 40 | 90 | 112 | 115 | 95 | 57 | 36.5 |
| **040/090** | 140 | 208 | 35 | 238 | 74 | 70 | 140 | 103 | 50 | 90 | 40 | 100 | 130 | 130 | 110 | 67 | 36.5 |
| **050/110** | 170 | 252.5 | 42 | 295 | — | 80 | 155 | 127.5 | 60 | 110 | 50 | 115 | 144 | 165 | 130 | 74 | 43.5 |
| **063/130** | 200 | 292.5 | 45 | 335 | — | 95 | 170 | 147.5 | 72 | 130 | 63 | 120 | 155 | 215 | 180 | 81 | 53 |

| | CMM..U - CMM..F - CMM..FB - CMM..FL | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | O | P | Q | R | R1 | S | T | V | Z | KE | a | b | t | Kg |
| **030/040** | 6.5 | 87 | 55 | 71.5 | 57 | 6.5 | 26 | 35 | 122 | M6x8(n.4) | 45° | 6 | 20.8 | 9.2 |
| **030/050** | 8.5 | 98 | 64 | 84 | 57 | 7 | 30 | 40 | 132 | M8x10(n.4) | 45° | 8 | 28.3 | 10.3 |
| **030/063** | 8.5 | 110 | 80 | 102 | 57 | 8 | 36 | 50 | 145 | M8x10(n.8) | 45° | 8 | 28.3 | 12.3 |
| **040/075** | 11 | 140 | 93 | 119 | 71.5 | 10 | 40 | 60 | 165 | M8x14(n.8) | 45° | 8 | 31.3 | 17.3 |
| **040/090** | 13 | 160 | 102 | 135 | 71.5 | 11 | 45 | 70 | 182 | M10x18(n.8) | 45° | 10 | 38.3 | 20.9 |
| **050/110** | 14 | 200 | 125 | 167.5 | 84 | 14 | 50 | 85 | 225 | M10x18(n.8) | 45° | 12 | 45.3 | 35.5 |
| **063/130** | 16 | 250 | 140 | 187.5 | 102 | 15 | 60 | 100 | 245 | M12x21(n.8) | 45° | 14 | 48.8 | 60.3 |

## Dimensioni — *Dimensions*

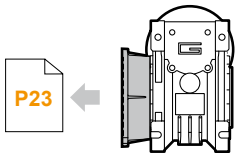
### ECMM350/../..U



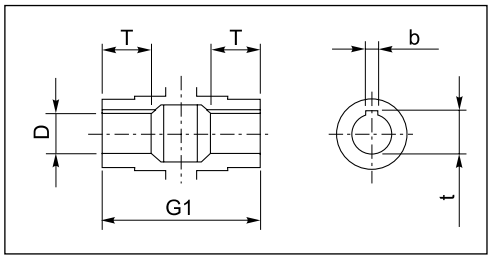




**..030/040 ..030/050**

**..030/063 ..040/075**
**..040/090 ..050/110**
**..063/130**




**ECMM350/../.. F**
**ECMM350/../.. FL**
**ECMM350/../.. FB**




Albero lento cavo / *Hollow output shaft*

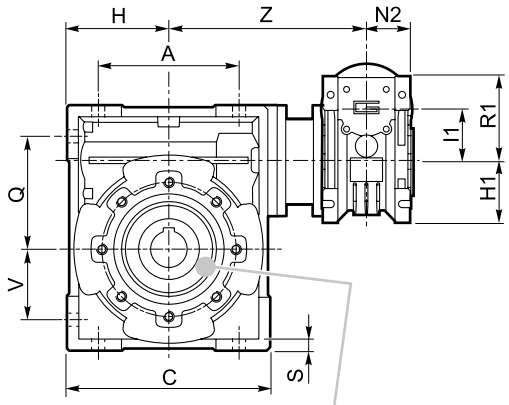
## Dimensioni — *Dimensions*

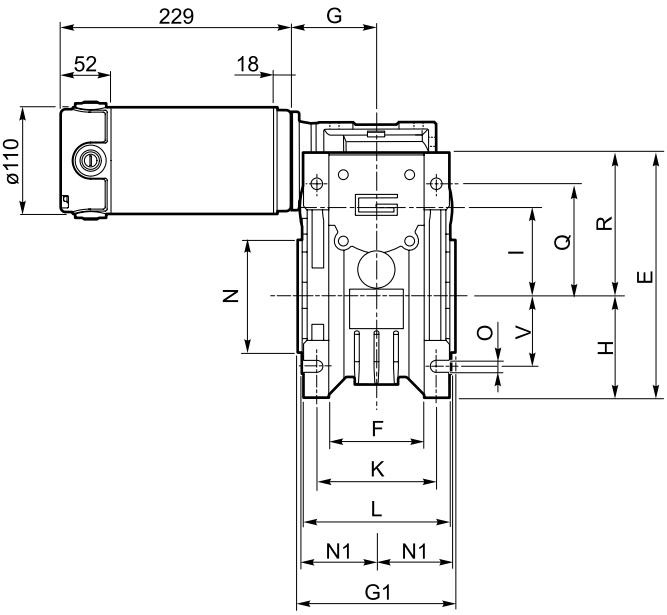
| | CMM..U - CMM..F - CMM..FB - CMM..FL | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | C | D H8 | E | F | G | G1 | H | H1 | I | I1 | K | L | M | N h8 | N1 | N2 |
| **040/075** | 120 | 172 | 28 | 205 | 72 | 70 | 120 | 86 | 50 | 75 | 40 | 90 | 112 | 115 | 95 | 57 | 36.5 |
| **040/090** | 140 | 208 | 35 | 238 | 74 | 70 | 140 | 103 | 50 | 90 | 40 | 100 | 130 | 130 | 110 | 67 | 36.5 |
| **050/110** | 170 | 252.5 | 42 | 295 | — | 80 | 155 | 127.5 | 60 | 110 | 50 | 115 | 144 | 165 | 130 | 74 | 43.5 |
| **063/130** | 200 | 292.5 | 45 | 335 | — | 95 | 170 | 147.5 | 72 | 130 | 63 | 120 | 155 | 215 | 180 | 81 | 53 |

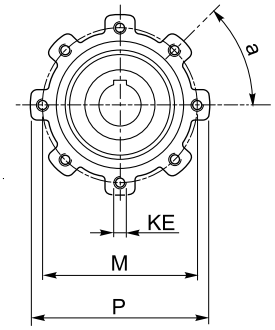
| | CMM..U - CMM..F - CMM..FB - CMM..FL | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | O | P | Q | R | R1 | S | T | V | Z | KE | a | b | t | Kg |
| **040/075** | 11 | 140 | 93 | 119 | 71.5 | 10 | 40 | 60 | 165 | M8x14(n.8) | 45° | 8 | 31.3 | 19.1 |
| **040/090** | 13 | 160 | 102 | 135 | 71.5 | 11 | 45 | 70 | 182 | M10x18(n.8) | 45° | 10 | 38.3 | 22.7 |
| **050/110** | 14 | 200 | 125 | 167.5 | 84 | 14 | 50 | 85 | 225 | M10x18(n.8) | 45° | 12 | 45.3 | 37.3 |
| **063/130** | 16 | 250 | 140 | 187.5 | 102 | 15 | 60 | 100 | 245 | M12x21(n.8) | 45° | 14 | 48.8 | 62.1 |

## Dimensioni — *Dimensions*

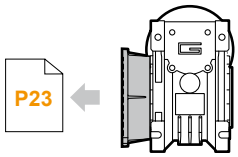
### ECMM600/../..U



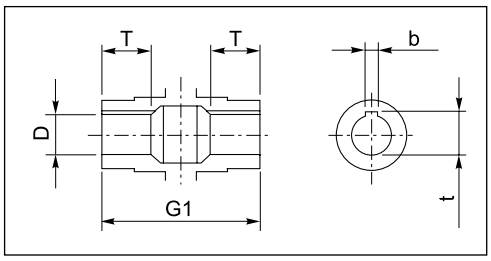




**..040/075 ..040/090**
**..050/110 ..063/130**



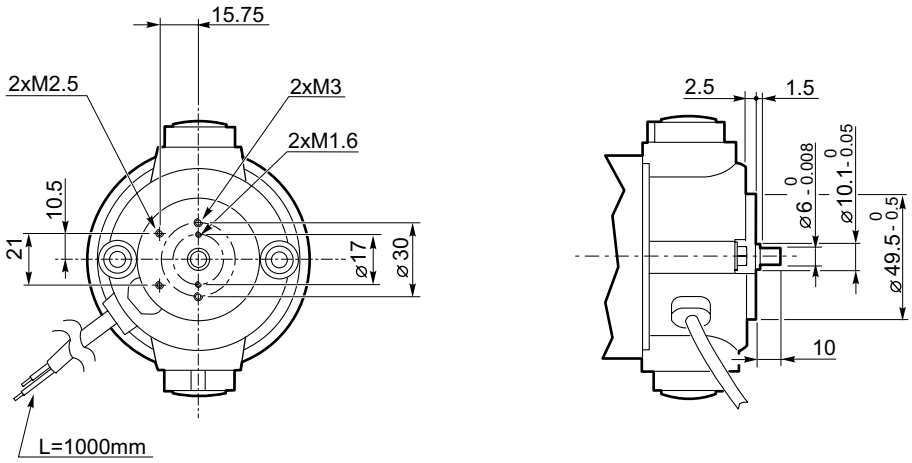

**ECMM600/../.. F**
**ECMM600/../.. FL**
**ECMM600/../.. FB**




Albero lento cavo / *Hollow output shaft*

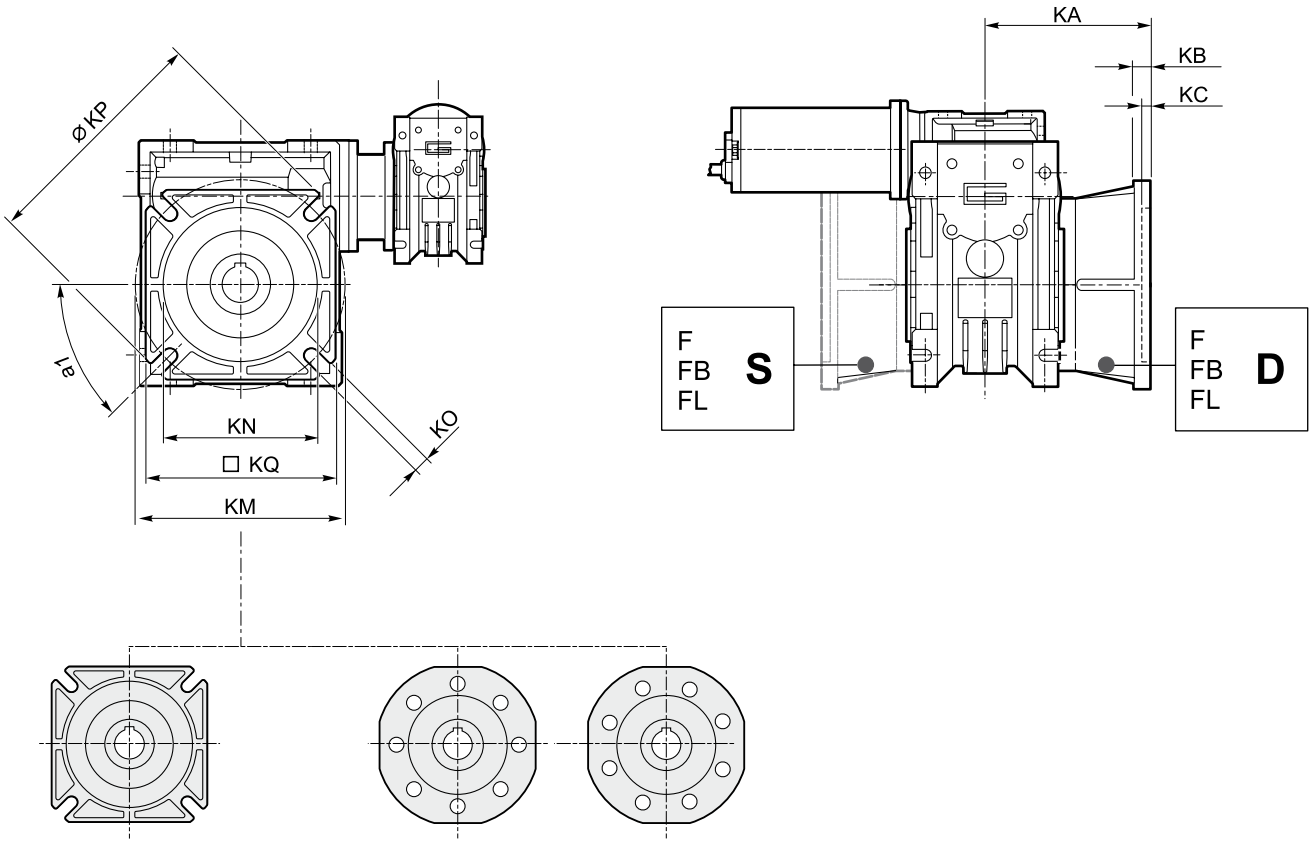
**Dimensioni** ***Dimensions***

## EC100.24E
## EC180.24E



## Dimensioni — *Dimensions*

### ECMM.../... F... Flange uscita / *Output flanges*




**CMM..F**
**(../26 - ../030 - ../075 - ../090)**
**CMM..FB**
**(../040 - ../063)**
**CMM..FL**
**(../040 - ../063)**

**CMM..F**
**(../110)**

**CMM..F**
**(../130)**

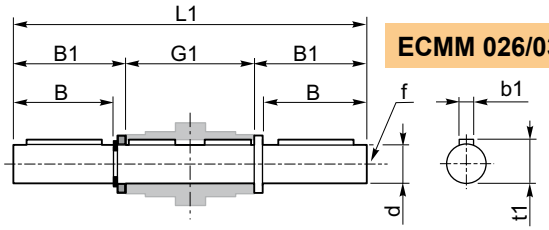
| | | CMM..F | | | | | | | | CMM..FB | | | | | | | | CMM..FL | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | a1 | KA | KB | KC | KM | KN H8 | KO | KP | KQ | KA | KB | KC | KM | KN H8 | KO | KP | KQ | KA | KB | KC | KM | KN H8 | KO | KP | KQ |
| **026/026** | 45° | 45 | 6 | 4.5 | 55-69 | 40 | 6.5(n.4) | 75 | 70 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| **026/030** | 45° | 54.5 | 6 | 4 | 68 | 50 | 6.5(n.4) | 80 | 70 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| **026/040 030/040** | 45° | 67 | 7.5 | 4.5 | 80-95 | 60 | 9(n.4) | 110 | 95 | 80 | 8.5 | 5 | 115-125 | 95 | 9.5(n.4) | 140 | 112 | 97 | 7.5 | 4.5 | 80-95 | 60 | 9(n.4) | 110 | 95 |
| **026/050 030/050** | 45° | 90 | 9 | 5 | 90-110 | 70 | 11(n.4) | 125 | 110 | 89 | 9 | 5 | 130-145 | 110 | 9.5(n.4) | 160 | 132 | 120 | 9 | 5 | 90-110 | 70 | 11(n.4) | 125 | 110 |
| **030/063** | 45° | 82 | 10 | 6 | 150-160 | 115 | 11(n.4) | 180 | 142 | 98 | 10 | 5 | 165-180 | 130 | 11(n.4) | 200 | 112 | 112 | 10 | 6 | 150-160 | 115 | 11(n.4) | 180 | 142 |
| **040/075** | 45° | 111 | 13 | 6 | 165-180 | 130 | 14(n.4) | 200 | 170 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| **040/090** | 45° | 111 | 13 | 6 | 175-190 | 152 | 14(n.4) | 210 | 200 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| **050/110** | 45° | 131 | 15 | 6 | 230 | 170 | 14(n.8) | 280 | 260 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| **063/130** | 22.5° | 140 | 15 | 6 | 255 | 180 | 16(n.8) | 320 | 290 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## Accessori — *Accessories*

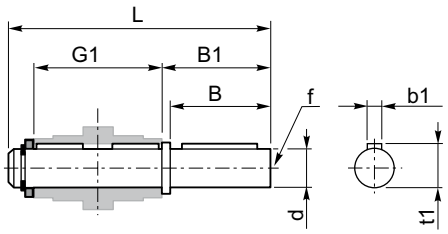
### Albero lento semplice e doppio — *Single and double output shaft*

**ECMM 026/030 - ECMM 063/130**

DZ

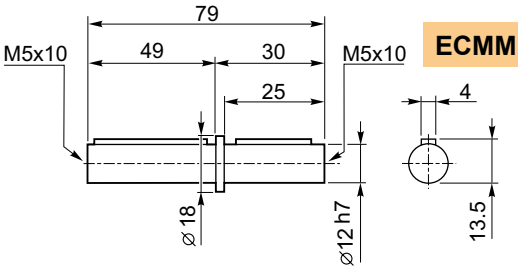



SZ



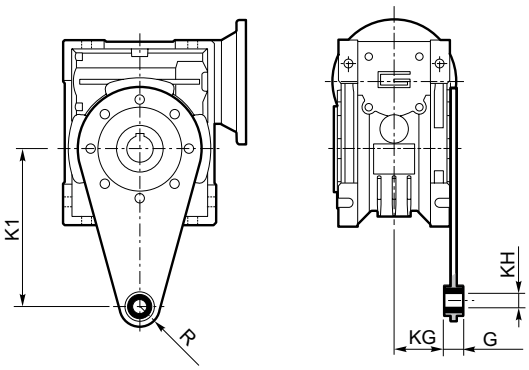

| ECMM | d h7 | B | B1 | G1 | L | L1 | f | b1 | t1 |
|---|---|---|---|---|---|---|---|---|---|
| 026/030 | 14 | 30 | 32.5 | 63 | 102 | 128 | M6 | 5 | 16 |
| 026/040 030/040 | 18 | 40 | 43 | 78 | 128 | 164 | M6 | 6 | 20.5 |
| 026/050 030/050 | 25 | 50 | 53.5 | 92 | 153 | 199 | M10 | 8 | 28 |
| 030/063 | 25 | 50 | 53.5 | 112 | 173 | 219 | M10 | 8 | 28 |
| 040/075 | 28 | 60 | 63.5 | 120 | 192 | 247 | M10 | 8 | 31 |
| 040/090 | 35 | 80 | 84.5 | 140 | 234 | 309 | M12 | 10 | 38 |
| 050/110 | 42 | 80 | 84.5 | 155 | 249 | 324 | M16 | 12 | 45 |
| 063/130 | 45 | 80 | 85 | 170 | 265 | 340 | M16 | 14 | 48.5 |

**ECMM 026/026**



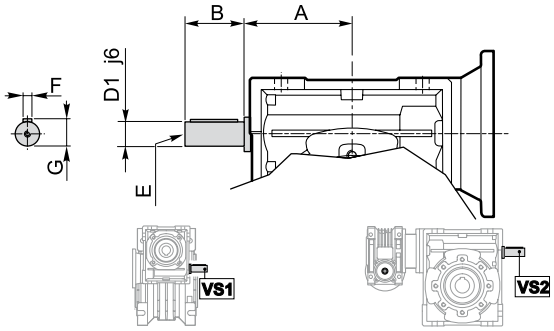

### Braccio di reazione — *Torque arm*

| ECMM | K1 | G | KG | KH | R |
|---|---|---|---|---|---|
| 026/030 | 85 | 14 | 23 | 8 | 15 |
| 026/040 030/040 | 100 | 14 | 31 | 10 | 18 |
| 026/050 030/050 | 100 | 14 | 38 | 10 | 18 |
| 030/063 | 150 | 14 | 47.5 | 10 | 18 |
| 040/075 | 200 | 25 | 46.5 | 20 | 30 |
| 040/090 | 200 | 25 | 56.5 | 20 | 30 |
| 050/110 | 250 | 30 | 62 | 25 | 35 |
| 063/130 | 250 | 30 | 69 | 25 | 35 |



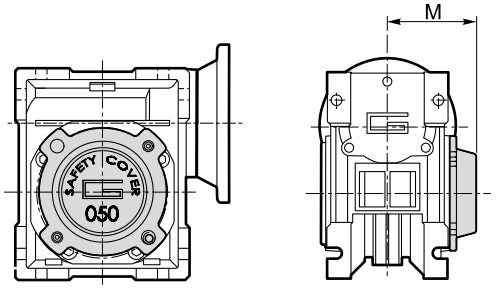

## Opzioni — *Options*

### VS1 - VS2 - Vite sporgente / *Extended input shaft*




| CMM | VS1 | | | | | | VS2 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | B | $D_1$ j6 | E | F | G | A | B | $D_1$ j6 | E | F | G |
| 026/030 | — | — | — | — | — | — | 45 | 20 | 9 | M4 | 3 | 10.2 |
| 026/040 | — | — | — | — | — | — | 53 | 23 | 11 | M5 | 4 | 12.5 |
| 026/050 | — | — | — | — | — | — | 64 | 30 | 14 | M6 | 5 | 16 |
| 030/040 | 45 | 20 | 9 | M4 | 3 | 10.2 | 53 | 23 | 11 | M5 | 4 | 12.5 |
| 030/050 | 45 | 20 | 9 | M4 | 3 | 10.2 | 64 | 30 | 14 | M6 | 5 | 16 |
| 030/063 | 45 | 20 | 9 | M4 | 3 | 10.2 | 75 | 40 | 19 | M6 | 6 | 21.5 |
| 040/075 | 53 | 23 | 11 | M5 | 4 | 12.5 | 90 | 50 | 24 | M8 | 8 | 27 |
| 040/090 | 53 | 23 | 11 | M5 | 4 | 12.5 | 108 | 50 | 24 | M8 | 8 | 27 |
| 050/110 | 64 | 30 | 14 | M6 | 5 | 16 | 135 | 60 | 28 | M10 | 8 | 31 |
| 063/130 | 75 | 40 | 19 | M6 | 6 | 21.5 | — | — | — | — | — | — |

### SC - *Safety cover*

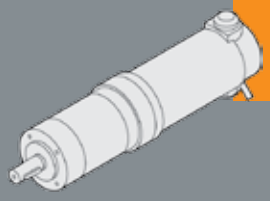



| | CM | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 30 | 40 | 50 | 63 | 75 | 90 | 110 | 130 |
| M | 47 | 54.5 | 62.5 | 73 | 79 | 94 | 102 | 117 |

TRANSTECNO®
THE MODULAR GEARMOTOR

# ECP

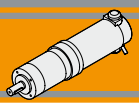
ECP



## MOTORIDUTTORI C.C. EPICICLOIDALI

## PERMANENT MAGNETS D.C. PLANETARY GEARMOTORS

PRODUCTS • TRANSTECNO • GENUINE •



ENERGY SAVING





Questa sezione annulla e sostituisce ogni precedente edizione o revisione. Qualora questa sezione non Vi sia giunta in distribuzione controllata, l'aggiornamento dei dati ivi contenuto non è assicurato. **In tal caso la versione più aggiornata è disponibile sul nostro sito internet www.transtecno.com**

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## Caratteristiche tecniche / *Technical features*

Le caratteristiche principali dei motoriduttori a corrente continua della serie ECP sono:

- Alimentazione in bassa tensione 12/24 Vcc
- Possibilità di montaggio encoder
- Potenze motore disponibili da 30 a 800W S2
- Magneti in ferrite
- Entrata ed uscita coassiali
- Design compatto
- Lubrificazione permanente a grasso
- Possono essere installati in qualunque posizione di montaggio.

*The main features of ECP D.C. gearmotor range are:*

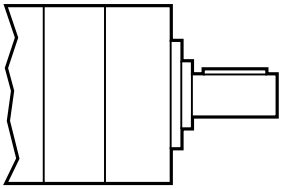
- *Low voltage power supply 12/24 Vdc*
- *Suitable for encoder assembly*
- *Motor power ratings available from 30 up to 800W S2*
- *Ferrite magnets*
- *Coaxial arrangement of the input and output*
- *Compact design*
- *Permanent grease oil long-life lubrication*
- *Can be intalled in all mounting position.*

## Designazione / *Classification*

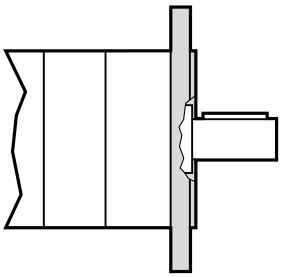
MOTORIDUTTORE / *GEARMOTOR*

| ECP | 070/62 | 2 | C | 90 | 34.97 | 120 |
|---|---|---|---|---|---|---|
| Tipo *Type* | Grandezza *Size* | Stadi riduttore *Gearbox stages* | Versione riduttore *Gearbox Version* | Flangia Uscita *Output flange* | Rapporto *Ratio* | Versione Motore *Motor Version* |
| **ECP** | **020/42** **035/42** **035/52** **050/42** **050/52** **070/52** **070/62** **070/72** **070/81** **100/52** **100/62** **100/72** **100/81** **180/52** **180/62** **180/72** **180/81** **180/105** **180/120** **250/62** **250/72** **250/81** **250/105** **250/120** **350/62** **350/72** **350/81** **350/105** **350/120** **600/72** **600/81** **600/105** **600/120** | **1** **2** **3** | **U** **C** | **80** **90** **105** **120** | Vedere tabella *See tables* | **120** **240** **24E** |

## Versioni / *Versions*



**U**



**C**

## Simbologia / *Symbols*

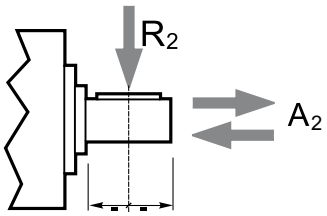
| | | |
|---|---|---|
| $n_1$ | [$min^{-1}$] | Velocità in ingresso / *Input speed* |
| $n_2$ | [$min^{-1}$] | Velocità in uscita / *Output speed* |
| i | | Rapporto di riduzione / *Ratio* |
| $P_1$ | [kW] | Potenza in entrata / *Input power* |
| $M_2$ | [Nm] | Coppia in uscita in funzione di $P_1$ / *Output torque referred to $P_1$* |
| sf | | Fattore di servizio / *Service factor* |
| Rd | % | Rendimento dinamico / *Dynamic efficiency* |
| $A_2$ | [N] | Carico assiale ammissibile in uscita / *Permitted output axial load* |
| $R_2$ | [N] | Carico radiale ammissibile in uscita / *Permitted output radial load* |

## Lubrificazione / *Lubrication*

I riduttori epicicloidali sono lubrificati in modo permanente, non richiedono quindi ulteriore manutenzione.
Questo gli consente di essere installati praticamente ovunque.
La temperatura di funzionamento consentita va da -30 °C a + 140 °C; per applicazioni particolari, possono essere adottate misure per raggiungere livelli di temperatura maggiori.

*Planetary gearboxes are life-time lubricated with grease, therefore they are maintenance free.*
*They can be installed in any location.*
*The temperature range is from* -30 °C up to + 140 °C; *for special applications, measures can be taken for higher temperature range.*

## Carichi radiali — *Radial loads*




| Numero di stadi *Stages number* | Carichi Radiali $R_2$ [N] / *Radial Load $R_2$ [N]* | | | | | | |
|---|---|---|---|---|---|---|---|
| | P42 | P52 | P62 | P72 | P81 | P105 | P120 |
| 1 | 160 | 200 | 240 | 320 | 400 | 600 | 600 |
| 2 | 230 | 320 | 360 | 480 | 600 | 900 | 900 |
| 3 | 300 | 450 | 520 | 760 | 1000 | 1500 | 1500 |

| Numero di stadi *Stages number* | Carichi Assiali $A_2$ [N] / *Axial Load $A_2$ [N]* | | | | | | |
|---|---|---|---|---|---|---|---|
| | P42 | P52 | P62 | P72 | P81 | P105 | P120 |
| 1 | 50 | 60 | 70 | 70 | 80 | 120 | 120 |
| 2 | 80 | 100 | 100 | 100 | 120 | 180 | 180 |
| 3 | 110 | 150 | 150 | 160 | 200 | 300 | 300 |

## Rapporti — *Ratios*

| Numero di stadi *Stages number* | Per tutte le grandezze di riduttori della serie P *For all gearbox sizes of P range* |
|---|---|
| | Rapporti / *Ratios* |
| 1 | **3.70** |
| | 4.28* |
| | **5.18*** |
| | **6.75** |
| 2 | **13.73** |
| | 15.88* |
| | 18.36* |
| | **19.20*** |
| | 22.20* |
| | **25.01** |
| | 26.85* |
| | **28.93*** |
| | **34.97*** |
| | **45.56** |
| 3 | **50.89** |
| | 58.85* |
| | **68.06*** |
| | 71.16* |
| | 78.71* |
| | **92.70** |
| | 95.17* |
| | 99.50* |
| | 107.20* |
| | 115.07* |
| | 123.97* |
| | 129.62* |
| | 139.13* |
| | 149.90* |
| | **168.84** |
| | 181.24* |
| | 195.26* |
| | 236.09* |
| | **307.54** |

**Rapporti preferenziali**
***Preferred ratios***

* ***Rapporto non disponibile su grandezza P120***
***Ratio not available on size P120***

Disponibile a 4 stadi con rapporti fino a 2076
*Available 4 stages with ratio up to 2076*

## Rendimento — *Efficiency*

| Rendimento *Efficiency* | Per tutte le grandezze di riduttori della serie P *For all gearbox sizes of P range* | | |
|---|---|---|---|
| | Numero di stadi / *Stages number* | | |
| | 1 | 2 | 3 |
| Rd % | 80 | 75 | 70 |

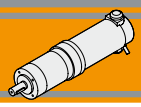
Rendimento medio per velocità nominale in ingresso 3000 rpm
*Average efficiency with input rated speed 3000 rpm*

## Dati tecnici per servizio S2

## *Technical data for S2 duty*

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i | | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **30** | | | | | | |
| (2850 min$^{-1}$) | **770** | 0.24 | 12.7 | **3.70** | **ECP020/421** | **120/24E** |
| | **666** | 0.27 | 11.0 | 4.28 | | |
| | **550** | 0.33 | 9.0 | **5.18** | | |
| | **422** | 0.43 | 6.9 | **6.75** | | |
| | **208** | 0.82 | 9.1 | **13.73** | **ECP020/422** | **120/24E** |
| | **179** | 0.95 | 7.9 | 15.88 | | |
| | **155** | 1.1 | 6.8 | 18.36 | | |
| | **148** | 1.2 | 6.5 | **19.20** | | |
| | **128** | 1.3 | 5.6 | 22.20 | | |
| | **114** | 1.5 | 5.0 | **25.01** | | |
| | **106** | 1.6 | 4.7 | 26.85 | | |
| | **99** | 1.7 | 4.3 | **28.93** | | |
| | **81** | 2.1 | 3.6 | **34.97** | | |
| | **63** | 2.7 | 2.7 | **45.56** | | |
| | **56** | 2.8 | 5.3 | **50.89** | **ECP020/423** | **120/24E** |
| | **48** | 3.3 | 4.6 | 58.85 | | |
| | **42** | 3.8 | 3.9 | **68.06** | | |
| | **40** | 4.0 | 3.8 | 71.16 | | |
| | **36** | 4.4 | 3.4 | 78.71 | | |
| | **31** | 5.2 | 2.9 | **92.70** | | |
| | **30** | 5.3 | 2.8 | 95.17 | | |
| | **29** | 5.6 | 2.7 | 99.50 | | |
| | **27** | 6.0 | 2.5 | 107.20 | | |
| | **25** | 6.4 | 2.3 | 115.07 | | |
| | **23** | 6.9 | 2.2 | 123.97 | | |
| | **22** | 7.3 | 2.1 | 129.62 | | |
| | **20** | 7.8 | 1.9 | 139.13 | | |
| | **19** | 8.4 | 1.8 | 149.90 | | |
| | **17** | 9.5 | 1.6 | **168.84** | | |
| | **16** | 10 | 1.5 | 181.24 | | |
| | **15** | 11 | 1.4 | 195.26 | | |
| | **12** | 13 | 1.1 | 236.09 | | |
| | **9.3** | 17 | 0.9 | **307.54** | | |
| **55** | | | | | | |
| (3000 min$^{-1}$) | **811** | 0.53 | 5.6 | **3.70** | **ECP035/421** | **120/240** |
| | **701** | 0.62 | 4.9 | 4.28 | | |
| | **579** | 0.75 | 4.0 | **5.18** | | |
| | **444** | 0.97 | 3.1 | **6.75** | | |
| | **218** | 1.9 | 4.0 | **13.73** | **ECP035/422** | **120/240** |
| | **189** | 2.1 | 3.5 | 15.88 | | |
| | **163** | 2.5 | 3.0 | 18.36 | | |
| | **156** | 2.6 | 2.9 | **19.20** | | |
| | **135** | 3.0 | 2.5 | 22.20 | | |
| | **120** | 3.4 | 2.2 | **25.01** | | |
| | **112** | 3.6 | 2.1 | 26.85 | | |
| | **104** | 3.9 | 1.9 | **28.93** | | |
| | **86** | 4.7 | 1.6 | **34.97** | | |
| | **65.8** | 6.2 | 1.2 | **45.56** | | |
| | **59** | 6.4 | 2.3 | **50.89** | **ECP035/423** | **120/240** |
| | **51** | 7.4 | 2.0 | 58.85 | | |
| | **44** | 8.6 | 1.7 | **68.06** | | |
| | **42** | 9.0 | 1.7 | 71.16 | | |
| | **38** | 9.9 | 1.5 | 78.71 | | |
| | **32** | 12 | 1.3 | **92.70** | | |

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i | | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **55** | | | | | | |
| (2850 min$^{-1}$) | **31** | 12 | 1.3 | 95.17 | **ECP035/423** | **120/240** |
| | **30** | 13 | 1.2 | 99.50 | | |
| | **28** | 14 | 1.1 | 107.20 | | |
| | **26** | 14 | 1.0 | 115.07 | | |
| | **24** | 16 | 1.0 | 123.97 | | |
| | **23** | 16 | 0.9 | 129.62 | | |
| | **22** | 18 | 0.9 | 139.13 | | |
| | **20** | 19 | 0.8 | 149.90 | | |
| | **18** | 21 | 0.7 | **168.84** | | |
| | **17** | 21 | 0.7 | 181.24 | | |
| | **15** | 21 | 0.7 | 195.26 | | |
| | **13** | 21 | 0.7 | 236.09 | | |
| | **10** | 21 | 0.7 | **307.54** | | |
| | **811** | 0.53 | 7.5 | **3.70** | **ECP035/521** | **120/240** |
| | **701** | 0.62 | 6.5 | **4.28** | | |
| | **579** | 0.75 | 5.4 | **5.18** | | |
| | **444** | 0.97 | 4.1 | **6.75** | | |
| | **218** | 1.9 | 6.5 | **13.73** | **ECP035/522** | **120/240** |
| | **189** | 2.1 | 5.6 | **15.88** | | |
| | **163** | 2.5 | 4.8 | **18.36** | | |
| | **156** | 2.6 | 4.6 | **19.20** | | |
| | **135** | 3.0 | 4.0 | **22.20** | | |
| | **120** | 3.4 | 3.6 | **25.01** | | |
| | **112** | 3.6 | 3.3 | **26.85** | | |
| | **104** | 3.9 | 3.1 | **28.93** | | |
| | **86** | 4.7 | 2.5 | **34.97** | | |
| | **66** | 6.2 | 2.0 | **45.56** | | |
| | **59** | 6.4 | 3.9 | **50.89** | **ECP035/523** | **120/240** |
| | **51** | 7.4 | 3.4 | **58.85** | | |
| | **44** | 8.6 | 2.9 | **68.06** | | |
| | **42** | 9.0 | 2.8 | **71.16** | | |
| | **38** | 9.9 | 2.5 | **78.71** | | |
| | **32** | 11.7 | 2.1 | **92.70** | | |
| | **31** | 12.0 | 2.1 | **95.17** | | |
| | **30** | 12.5 | 2.0 | **99.50** | | |
| | **28** | 13.5 | 1.9 | **107.20** | | |
| | **26** | 14.5 | 1.7 | **115.07** | | |
| | **24** | 15.6 | 1.6 | **123.97** | | |
| | **23** | 16.3 | 1.5 | **129.62** | | |
| | **22** | 17.5 | 1.4 | **139.13** | | |
| | **20** | 18.9 | 1.3 | **149.90** | | |
| | **18** | 21.3 | 1.2 | **168.84** | | |
| | **17** | 22.8 | 1.1 | **181.24** | | |
| | **15** | 24.6 | 1.0 | **195.26** | | |
| | **13** | 29.7 | 0.8 | **236.09** | | |
| | **10** | 35.7 | 0.7 | **307.54** | | |
| **70** | | | | | | |
| (3000 min$^{-1}$) | **811** | 0.65 | 4.6 | **3.70** | **ECP050/421** | **12E/24E** |
| | **701** | 0.75 | 4.0 | 4.28 | | |
| | **579** | 0.91 | 3.3 | **5.18** | | |
| | **444** | 1.2 | 2.5 | **6.75** | | |
| | **218** | 2.3 | 3.3 | **13.73** | **ECP050/422** | **12E/24E** |
| | **189** | 2.6 | 2.9 | 15.88 | | |
| | **163** | 3.0 | 2.5 | 18.36 | | |
| | **156** | 3.2 | 2.4 | **19.20** | | |
| | **135** | 3.7 | 2.0 | 22.20 | | |
| | **120** | 4.1 | 1.8 | **25.01** | | |
| | **112** | 4.4 | 1.7 | 26.85 | | |
| | **104** | 4.8 | 1.6 | **28.93** | | |
| | **86** | 5.8 | 1.3 | **34.97** | | |
| | **66** | 7.5 | 1.0 | **45.56** | | |



## Dati tecnici per servizio S2

## *Technical data for S2 duty*

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i | | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **70** | | | | | | |
| (2850 min$^{-1}$) | **59** | 7.8 | 1.9 | **50.89** | **ECP050/423** | **12E/24E** |
| | **51** | 9.1 | 1.7 | 58.85 | | |
| | **44** | 10 | 1.4 | **68.06** | | |
| | **42** | 11 | 1.4 | 71.16 | | |
| | **38** | 12 | 1.2 | 78.71 | | |
| | **32** | 14 | 1.1 | **92.70** | | |
| | **31** | 15 | 1.0 | 95.17 | | |
| | **30** | 15 | 1.0 | 99.50 | | |
| | **28** | 17 | 0.9 | 107.20 | | |
| | **26** | 18 | 0.8 | 115.07 | | |
| | **24** | 19 | 0.8 | 123.97 | | |
| | **23** | 20 | 0.8 | 129.62 | | |
| | **22** | 21 | 0.7 | 139.13 | | |
| | **20** | 21 | 0.7 | 149.90 | | |
| | **18** | 21 | 0.7 | **168.84** | | |
| | **17** | 21 | 0.7 | 181.24 | | |
| | **15** | 21 | 0.7 | 195.26 | | |
| | **13** | 21 | 0.7 | 236.09 | | |
| | **9.8** | 21 | 0.7 | **307.54** | | |
| | **163** | 3.0 | 4.0 | 18.36 | **ECP050/522** | **12E/24E** |
| | **156** | 3.2 | 3.8 | **19.20** | | |
| | **135** | 3.7 | 3.3 | 22.20 | | |
| | **120** | 4.1 | 2.9 | **25.01** | | |
| | **112** | 4.4 | 2.7 | 26.85 | | |
| | **104** | 4.8 | 2.5 | **28.93** | | |
| | **86** | 5.8 | 2.1 | **34.97** | | |
| | **66** | 7.5 | 1.6 | **45.56** | | |
| | **59** | 7.8 | 3.2 | **50.89** | **ECP050/523** | **12E/24E** |
| | **51** | 9.1 | 2.8 | 58.85 | | |
| | **44** | 10 | 2.4 | **68.06** | | |
| | **42** | 11 | 2.3 | 71.16 | | |
| | **38** | 12 | 2.1 | 78.71 | | |
| | **32** | 14 | 1.8 | **92.70** | | |
| | **31** | 15 | 1.7 | 95.17 | | |
| | **30** | 15 | 1.6 | 99.50 | | |
| | **28** | 17 | 1.5 | 107.20 | | |
| | **26** | 18 | 1.4 | 115.07 | | |
| | **24** | 19 | 1.3 | 123.97 | | |
| | **23** | 20 | 1.3 | 129.62 | | |
| | **22** | 21 | 1.2 | 139.13 | | |
| | **20** | 23 | 1.1 | 149.90 | | |
| | **18** | 26 | 1.0 | **168.84** | | |
| | **17** | 28 | 0.9 | 181.24 | | |
| | **15** | 30 | 0.8 | 195.26 | | |
| | **13** | 36 | 0.7 | 236.09 | | |
| | **9.8** | 36 | 0.7 | **307.54** | | |
| **100** | | | | | | |
| (3000 min$^{-1}$) | **811** | 0.92 | 4.4 | **3.70** | **ECP070/521** | **120/240** |
| | **701** | 1.1 | 3.8 | 4.28 | | |
| | **579** | 1.3 | 3.1 | **5.18** | | |
| | **444** | 1.7 | 2.4 | **6.75** | | |
| | **218** | 3.2 | 3.8 | **13.73** | **ECP070/522** | **120/240** |
| | **189** | 3.7 | 3.3 | 15.88 | | |
| | **163** | 4.3 | 2.8 | 18.36 | | |
| | **156** | 4.5 | 2.7 | **19.20** | | |
| | **135** | 5.2 | 2.3 | 22.20 | | |
| | **120** | 5.8 | 2.1 | **25.01** | | |
| | **112** | 6.2 | 1.9 | 26.85 | | |
| | **104** | 6.7 | 1.8 | **28.93** | | |
| | **86** | 8.1 | 1.5 | **34.97** | | |
| | **66** | 11 | 1.1 | **45.56** | | |

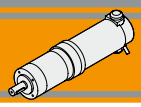
| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i | | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **100** | | | | | | |
| (3000 min$^{-1}$) | **59** | 11 | 2.3 | **50.89** | **ECP070/523** | **120/240** |
| | **51** | 13 | 2.0 | 58.85 | | |
| | **44** | 15 | 1.7 | **68.06** | | |
| | **42** | 15 | 1.6 | 71.16 | | |
| | **38** | 17 | 1.5 | 78.71 | | |
| | **32** | 20 | 1.2 | **92.70** | | |
| | **31** | 21 | 1.2 | 95.17 | | |
| | **30** | 22 | 1.2 | 99.50 | | |
| | **28** | 23 | 1.1 | 107.20 | | |
| | **26** | 25 | 1.0 | 115.07 | | |
| | **24** | 27 | 0.9 | 123.97 | | |
| | **23** | 28 | 0.9 | 129.62 | | |
| | **22** | 30 | 0.8 | 139.13 | | |
| | **20** | 33 | 0.8 | 149.90 | | |
| | **18** | 36 | 0.7 | **168.84** | | |
| | **17** | 36 | 0.7 | 181.24 | | |
| | **15** | 36 | 0.7 | 195.26 | | |
| | **13** | 36 | 0.7 | 236.09 | | |
| | **9.8** | 36 | 0.7 | **307.54** | | |
| | **120.0** | 5.8 | 4.3 | **25.01** | **ECP070/622** | **120/240** |
| | **112** | 6.2 | 4.0 | 26.85 | | |
| | **104** | 6.7 | 3.7 | **28.93** | | |
| | **86** | 8.1 | 3.1 | **34.97** | | |
| | **66** | 11 | 2.4 | **45.56** | | |
| | **59** | 11 | 4.5 | **50.89** | **ECP070/623** | **120/240** |
| | **51** | 13 | 3.9 | 58.85 | | |
| | **44** | 15 | 3.4 | **68.06** | | |
| | **42** | 15 | 3.2 | 71.16 | | |
| | **38** | 17 | 2.9 | 78.71 | | |
| | **32** | 20 | 2.5 | **92.70** | | |
| | **31** | 21 | 2.4 | 95.17 | | |
| | **30** | 22 | 2.3 | 99.50 | | |
| | **28** | 23 | 2.1 | 107.20 | | |
| | **26** | 25 | 2.0 | 115.07 | | |
| | **24** | 27 | 1.9 | 123.97 | | |
| | **23** | 28 | 1.8 | 129.62 | | |
| | **22** | 30 | 1.7 | 139.13 | | |
| | **20** | 33 | 1.5 | 149.90 | | |
| | **18** | 37 | 1.4 | **168.84** | | |
| | **17** | 39 | 1.3 | 181.24 | | |
| | **15** | 42 | 1.2 | 195.26 | | |
| | **13** | 51 | 1.0 | 236.09 | | |
| | **9.8** | 67 | 0.7 | **307.54** | | |
| | **32** | 20 | 4.2 | **92.70** | **ECP070/723** | **120/240** |
| | **31** | 21 | 4.1 | 95.17 | | |
| | **30** | 22 | 3.9 | 99.50 | | |
| | **28** | 23 | 3.6 | 107.20 | | |
| | **26** | 25 | 3.4 | 115.07 | | |
| | **24** | 27 | 3.1 | 123.97 | | |
| | **23** | 28 | 3.0 | 129.62 | | |
| | **22** | 30 | 2.8 | 139.13 | | |
| | **20** | 33 | 2.6 | 149.90 | | |
| | **18** | 37 | 2.3 | **168.84** | | |
| | **17** | 39 | 2.1 | 181.24 | | |
| | **15** | 42 | 2.0 | 195.26 | | |
| | **13** | 51 | 1.6 | 236.09 | | |
| | **9.8** | 67 | 1.3 | **307.54** | | |

## Dati tecnici per servizio S2

## *Technical data for S2 duty*

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i | | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **100** | | | | | | |
| (3000 min$^{-1}$) | **20** | 33 | 3.7 | 149.90 | **ECP070/813** | **120/240** |
| | **18** | 37 | 3.3 | **168.84** | | |
| | **17** | 39 | 3.1 | 181.24 | | |
| | **15** | 42 | 2.8 | 195.26 | | |
| | **13** | 51 | 2.3 | 236.09 | | |
| | **9.8** | 67 | 1.8 | **307.54** | | |
| **140** | | | | | | |
| (3000 min$^{-1}$) | **811** | 1.3 | 3.1 | **3.70** | **ECP100/521** | **120/240/24E** |
| | **701** | 1.5 | 2.7 | 4.28 | | |
| | **579** | 1.8 | 2.2 | **5.18** | | |
| | **444** | 2.3 | 1.7 | **6.75** | | |
| | **218** | 4.4 | 2.7 | **13.73** | **ECP100/522** | **120/240/24E** |
| | **189** | 5.1 | 2.3 | 15.88 | | |
| | **163** | 5.9 | 2.0 | 18.36 | | |
| | **156** | 6.2 | 1.9 | **19.20** | | |
| | **135** | 7.2 | 1.7 | 22.20 | | |
| | **120** | 8.1 | 1.5 | **25.01** | | |
| | **112** | 8.7 | 1.4 | 26.85 | | |
| | **104** | 9.3 | 1.3 | **28.93** | | |
| | **86** | 11 | 1.1 | **34.97** | | |
| | **66** | 15 | 0.8 | **45.56** | | |
| | **59** | 15 | 1.6 | **50.89** | **ECP100/523** | **120/240/24E** |
| | **51** | 18 | 1.4 | 58.85 | | |
| | **44** | 20 | 1.2 | **68.06** | | |
| | **42** | 21 | 1.2 | 71.16 | | |
| | **38** | 24 | 1.1 | 78.71 | | |
| | **32** | 28 | 0.9 | **92.70** | | |
| | **31** | 29 | 0.9 | 95.17 | | |
| | **30** | 30 | 0.8 | 99.50 | | |
| | **28** | 32 | 0.8 | 107.20 | | |
| | **26** | 35 | 0.7 | 115.07 | | |
| | **24** | 36 | 0.7 | 123.97 | | |
| | **23** | 36 | 0.7 | 129.62 | | |
| | **22** | 36 | 0.7 | 139.13 | | |
| | **20** | 36 | 0.7 | 149.90 | | |
| | **18** | 36 | 0.7 | **168.84** | | |
| | **17** | 36 | 0.7 | 181.24 | | |
| | **15** | 36 | 0.7 | 195.26 | | |
| | **13** | 36 | 0.7 | 236.09 | | |
| | **9.8** | 36 | 0.7 | **307.54** | | |
| | **444** | 2.3 | 3.4 | **6.75** | **ECP100/621** | **120/240/24E** |
| | **156** | 6.2 | 4.0 | **19.20** | **ECP100/622** | **120/240/24E** |
| | **135** | 7.2 | 3.5 | 22.20 | | |
| | **120** | 8.1 | 3.1 | **25.01** | | |
| | **112** | 8.7 | 2.9 | 26.85 | | |
| | **104** | 9.3 | 2.7 | **28.93** | | |
| | **86** | 11 | 2.2 | **34.97** | | |
| | **66** | 15 | 1.7 | **45.56** | | |

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i | | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **140** | | | | | | |
| (3000 min$^{-1}$) | **59** | 15 | 3.3 | **50.89** | **ECP100/623** | **120/240/24E** |
| | **51** | 18 | 2.8 | 58.85 | | |
| | **44** | 20 | 2.4 | **68.06** | | |
| | **42** | 21 | 2.3 | 71.16 | | |
| | **38** | 24 | 2.1 | 78.71 | | |
| | **32** | 28 | 1.8 | **92.70** | | |
| | **31** | 29 | 1.7 | 95.17 | | |
| | **30** | 30 | 1.7 | 99.50 | | |
| | **28** | 32 | 1.5 | 107.20 | | |
| | **26** | 35 | 1.4 | 115.07 | | |
| | **24** | 37 | 1.3 | 123.97 | | |
| | **23** | 39 | 1.3 | 129.62 | | |
| | **22** | 42 | 1.2 | 139.13 | | |
| | **20** | 45 | 1.1 | 149.90 | | |
| | **18** | 51 | 1.0 | **168.84** | | |
| | **17** | 55 | 0.9 | 181.24 | | |
| | **15** | 59 | 0.9 | 195.26 | | |
| | **13** | 71 | 0.7 | 236.09 | | |
| | **9.8** | 71 | 0.7 | **307.54** | | |
| | **86** | 11 | 3.7 | **34.97** | **ECP100/722** | **120/240/24E** |
| | **66** | 15 | 2.9 | **45.56** | | |
| | **44** | 20 | 4.1 | **68.06** | **ECP100/723** | **120/240/24E** |
| | **42** | 21 | 3.9 | 71.16 | | |
| | **38** | 24 | 3.5 | 78.71 | | |
| | **32** | 28 | 3.0 | **92.70** | | |
| | **31** | 29 | 2.9 | 95.17 | | |
| | **30** | 30 | 2.8 | 99.50 | | |
| | **28** | 32 | 2.6 | 107.20 | | |
| | **26** | 35 | 2.4 | 115.07 | | |
| | **24** | 37 | 2.3 | 123.97 | | |
| | **23** | 39 | 2.2 | 129.62 | | |
| | **22** | 42 | 2.0 | 139.13 | | |
| | **20** | 45 | 1.9 | 149.90 | | |
| | **18** | 51 | 1.7 | **168.84** | | |
| | **17** | 55 | 1.5 | 181.24 | | |
| | **15** | 59 | 1.4 | 195.26 | | |
| | **13** | 71 | 1.2 | 236.09 | | |
| | **9.8** | 93 | 0.9 | **307.54** | | |
| | **32** | 28 | 4.3 | **92.70** | **ECP100/813** | **120/240/24E** |
| | **31** | 29 | 4.2 | 95.17 | | |
| | **30** | 30 | 4.0 | 99.50 | | |
| | **28** | 32 | 3.7 | 107.20 | | |
| | **26** | 35 | 3.5 | 115.07 | | |
| | **24** | 37 | 3.2 | 123.97 | | |
| | **23** | 39 | 3.1 | 129.62 | | |
| | **22** | 42 | 2.9 | 139.13 | | |
| | **20** | 45 | 2.7 | 149.90 | | |
| | **18** | 51 | 2.4 | **168.84** | | |
| | **17** | 55 | 2.2 | 181.24 | | |
| | **15** | 59 | 2.0 | 195.26 | | |
| | **13** | 71 | 1.7 | 236.09 | | |
| | **9.8** | 93 | 1.3 | **307.54** | | |
| **250** | | | | | | |
| (3000 min$^{-1}$) | **811** | 2.4 | 1.7 | **3.70** | **ECP180/521** | **120/240** |
| | **701** | 2.7 | 1.5 | 4.28 | | |
| | **579** | 3.3 | 1.2 | **5.18** | | |
| | **444** | 4.3 | 0.9 | **6.75** | | |



## Dati tecnici per servizio S2

## *Technical data for S2 duty*

| $P_1$ [W] | $n_2$ [$min^{-1}$] | $M_2$ [Nm] | sf | i | | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **250** | | | | | | |
| (3000 $min^{-1}$) | **218** | 8.2 | 1.5 | **13.73** | **ECP180/522** | **120/240** |
| | **189** | 9.5 | 1.3 | 15.88 | | |
| | **163** | 11 | 1.1 | 18.36 | | |
| | **156** | 12 | 1.0 | **19.20** | | |
| | **135** | 13 | 0.9 | 22.20 | | |
| | **120** | 15 | 0.8 | **25.01** | | |
| | **112** | 16 | 0.7 | 26.85 | | |
| | **104** | 17 | 0.7 | **28.93** | | |
| | **86** | 17 | 0.7 | **34.97** | | |
| | **66** | 17 | 0.7 | **45.56** | | |
| | **59** | 28 | 0.9 | **50.89** | | |
| | **51** | 33 | 0.8 | 58.85 | | |
| | **44** | 36 | 0.7 | **68.06** | | |
| | **42** | 36 | 0.7 | 71.16 | | |
| | **38** | 36 | 0.7 | 78.71 | | |
| | **32** | 36 | 0.7 | **92.70** | | |
| | **31** | 36 | 0.7 | 95.17 | | |
| | **30** | 36 | 0.7 | 99.50 | | |
| | **28** | 36 | 0.7 | 107.20 | | |
| | **26** | 36 | 0.7 | 115.07 | **ECP180/523** | **120/240** |
| | **24** | 36 | 0.7 | 123.97 | | |
| | **23** | 36 | 0.7 | 129.62 | | |
| | **22** | 36 | 0.7 | 139.13 | | |
| | **20** | 36 | 0.7 | 149.90 | | |
| | **18** | 36 | 0.7 | **168.84** | | |
| | **17** | 36 | 0.7 | 181.24 | | |
| | **15** | 36 | 0.7 | 195.26 | | |
| | **13** | 36 | 0.7 | 236.09 | | |
| | **9.8** | 36 | 0.7 | **307.54** | | |
| | **811** | 2.4 | 3.4 | **3.70** | **ECP180/621** | **120/240/24E** |
| | **701** | 2.7 | 2.9 | 4.28 | | |
| | **579** | 3.3 | 2.4 | **5.18** | | |
| | **444** | 4.3 | 1.9 | **6.75** | | |
| | **218** | 8.2 | 3.0 | **13.73** | **ECP180/622** | **120/240/24E** |
| | **189** | 9.5 | 2.6 | 15.88 | | |
| | **163** | 11 | 2.3 | 18.36 | | |
| | **156** | 12 | 2.2 | **19.20** | | |
| | **135** | 13 | 1.9 | 22.20 | | |
| | **120** | 15 | 1.7 | **25.01** | | |
| | **112** | 16 | 1.6 | 26.85 | | |
| | **104** | 17 | 1.4 | **28.93** | | |
| | **86** | 21 | 1.2 | **34.97** | | |
| | **66** | 27 | 0.9 | **45.56** | | |
| | **59** | 28 | 1.8 | **50.89** | **ECP180/623** | **120/240/24E** |
| | **51** | 33 | 1.5 | 58.85 | | |
| | **44** | 38 | 1.3 | **68.06** | | |
| | **42** | 40 | 1.3 | 71.16 | | |
| | **38** | 44 | 1.1 | 78.71 | | |
| | **32** | 52 | 1.0 | **92.70** | | |
| | **31** | 53 | 0.9 | 95.17 | | |
| | **30** | 56 | 0.9 | 99.50 | | |
| | **28** | 60 | 0.8 | 107.20 | | |
| | **26** | 64 | 0.8 | 115.07 | | |
| | **24** | 69 | 0.7 | 123.97 | | |
| | **23** | 71 | 0.7 | 129.62 | | |
| | **22** | 71 | 0.7 | 139.13 | | |
| | **20** | 71 | 0.7 | 149.90 | | |
| | **18** | 71 | 0.7 | **168.84** | | |
| | **17** | 71 | 0.7 | 181.24 | | |
| | **15** | 71 | 0.7 | 195.26 | | |
| | **13** | 71 | 0.7 | 236.09 | | |
| | **9.8** | 71 | 0.7 | **307.54** | | |

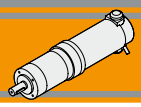
| $P_1$ [W] | $n_2$ [$min^{-1}$] | $M_2$ [Nm] | sf | i | | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **250** | | | | | | |
| (3000 $min^{-1}$) | **163** | 11 | 3.8 | 18.36 | **ECP180/722** | **120/240/24E** |
| | **156** | 12 | 3.6 | **19.20** | | |
| | **135** | 13 | 3.2 | 22.20 | | |
| | **120** | 15 | 2.8 | **25.01** | | |
| | **112** | 16 | 2.6 | 26.85 | | |
| | **104** | 17 | 2.4 | **28.93** | | |
| | **86** | 21 | 2.0 | **34.97** | | |
| | **66** | 27 | 1.5 | **45.56** | | |
| | **59** | 28 | 2.9 | **50.89** | **ECP180/723** | **120/240/24E** |
| | **51** | 33 | 2.5 | 58.85 | | |
| | **44** | 38 | 2.2 | **68.06** | | |
| | **42** | 40 | 2.1 | 71.16 | | |
| | **38** | 44 | 1.9 | 78.71 | | |
| | **32** | 52 | 1.6 | **92.70** | | |
| | **31** | 53 | 1.6 | 95.17 | | |
| | **30** | 56 | 1.5 | 99.50 | | |
| | **28** | 60 | 1.4 | 107.20 | | |
| | **26** | 64 | 1.3 | 115.07 | | |
| | **24** | 69 | 1.2 | 123.97 | | |
| | **23** | 73 | 1.2 | 129.62 | | |
| | **22** | 78 | 1.1 | 139.13 | | |
| | **20** | 84 | 1.0 | 149.90 | | |
| | **18** | 95 | 0.9 | **168.84** | | |
| | **17** | 101 | 0.8 | 181.24 | | |
| | **15** | 109 | 0.8 | 195.26 | | |
| | **13** | 120 | 0.7 | 236.09 | | |
| | **9.8** | 120 | 0.7 | **307.54** | | |
| | **120** | 15 | 4.0 | **25.01** | **ECP180/812** | **120/240/24E** |
| | **112** | 16 | 3.7 | 26.85 | | |
| | **104** | 17 | 3.5 | **28.93** | | |
| | **86** | 21 | 2.9 | **34.97** | | |
| | **66** | 27 | 2.2 | **45.56** | | |
| | **51** | 33 | 3.6 | 58.85 | **ECP180/813** | **120/240/24E** |
| | **44** | 38 | 3.1 | **68.06** | | |
| | **42** | 40 | 3.0 | 71.16 | | |
| | **38** | 44 | 2.7 | 78.71 | | |
| | **32** | 52 | 2.3 | **92.70** | | |
| | **31** | 53 | 2.3 | 95.17 | | |
| | **30** | 56 | 2.2 | 99.50 | | |
| | **28** | 60 | 2.0 | 107.20 | | |
| | **26** | 64 | 1.9 | 115.07 | | |
| | **24** | 69 | 1.7 | 123.97 | | |
| | **23** | 73 | 1.7 | 129.62 | | |
| | **22** | 78 | 1.5 | 139.13 | | |
| | **20** | 84 | 1.4 | 149.90 | | |
| | **18** | 95 | 1.3 | **168.84** | | |
| | **17** | 101 | 1.2 | 181.24 | | |
| | **15** | 109 | 1.1 | 195.26 | | |
| | **13** | 132 | 0.9 | 236.09 | | |
| | **9.8** | 172 | 0.7 | **307.54** | | |

## Dati tecnici per servizio S2

## *Technical data for S2 duty*

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i | | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **250** | | | | | | |
| (3000 min$^{-1}$) | **32** | 52 | 3.8 | **92.70** | **ECP180/1053** | **120/240/24E** |
| | **31** | 53 | 3.7 | 95.17 | | |
| | **30** | 56 | 3.5 | 99.50 | | |
| | **28** | 60 | 3.2 | 107.20 | | |
| | **26** | 64 | 3.0 | 115.07 | | |
| | **24** | 69 | 2.8 | 123.97 | | |
| | **23** | 73 | 2.7 | 129.62 | | |
| | **22** | 78 | 2.5 | 139.13 | | |
| | **20** | 84 | 2.3 | 149.90 | | |
| | **18** | 95 | 2.1 | **168.84** | | |
| | **17** | 101 | 1.9 | 181.24 | | |
| | **15** | 109 | 1.8 | 195.26 | | |
| | **13** | 132 | 1.5 | 236.09 | | |
| | **9.8** | 172 | 1.1 | **307.54** | | |
| | **18** | 95 | 3.2 | **168.84** | **ECP180/1203** | **120/240/24E** |
| | **9.8** | 172 | 1.7 | **307.54** | | |
| **350** | | | | | | |
| (3000 min$^{-1}$) | **811** | 3.3 | 2.4 | **3.70** | **ECP250/621** | **120/240** |
| | **701** | 3.8 | 2.1 | 4.28 | | |
| | **579** | 4.6 | 1.7 | **5.18** | | |
| | **444** | 6.0 | 1.3 | **6.75** | | |
| | **218** | 11.5 | 2.2 | **13.73** | **ECP250/622** | **120/240** |
| | **189** | 13.3 | 1.9 | 15.88 | | |
| | **163** | 15.4 | 1.6 | 18.36 | | |
| | **156** | 16.1 | 1.6 | **19.20** | | |
| | **135** | 18.6 | 1.3 | 22.20 | | |
| | **120** | 21.0 | 1.2 | **25.01** | | |
| | **112** | 22.6 | 1.1 | 26.85 | | |
| | **104** | 24.3 | 1.0 | **28.93** | | |
| | **86** | 29.4 | 0.9 | **34.97** | | |
| | **66** | 38.3 | 0.7 | **45.56** | | |
| | **59** | 39.9 | 1.3 | **50.89** | **ECP250/623** | **120/240** |
| | **51** | 46.1 | 1.1 | 58.85 | | |
| | **44** | 53.4 | 0.9 | **68.06** | | |
| | **42** | 55.8 | 0.9 | 71.16 | | |
| | **38** | 61.7 | 0.8 | 78.71 | | |
| | **32** | 72.7 | 0.7 | **92.70** | | |
| | **32** | 74.6 | 0.7 | 95.17 | | |
| | **30** | 71.0 | 0.7 | 99.50 | | |
| | **28** | 71.0 | 0.7 | 107.20 | | |
| | **26** | 71.0 | 0.7 | 115.07 | | |
| | **24** | 71.0 | 0.7 | 123.97 | | |
| | **23** | 71.0 | 0.7 | 129.62 | | |
| | **22** | 71.0 | 0.7 | 139.13 | | |
| | **20** | 71.0 | 0.7 | 149.90 | | |
| | **18** | 71.0 | 0.7 | **168.84** | | |
| | **17** | 71.0 | 0.7 | 181.24 | | |
| | **15** | 71.0 | 0.7 | 195.26 | | |
| | **13** | 71.0 | 0.7 | 236.09 | | |
| | **9.8** | 71.0 | 0.7 | **307.54** | | |
| | **811** | 3.3 | 4.2 | **3.70** | **ECP250/721** | |
| | **701** | 3.8 | 3.7 | 4.28 | | |
| | **579** | 4.6 | 3.0 | **5.18** | | |
| | **444** | 6.0 | 2.3 | **6.75** | | |

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i | | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **350** | | | | | | |
| (3000 min$^{-1}$) | **218** | 11.5 | 3.6 | **13.73** | **ECP250/722** | **120/240** |
| | **189** | 13.3 | 3.1 | 15.88 | | |
| | **163** | 15.4 | 2.7 | 18.36 | | |
| | **156** | 16.1 | 2.6 | **19.20** | | |
| | **135** | 18.6 | 2.3 | 22.20 | | |
| | **120** | 21.0 | 2.0 | **25.01** | | |
| | **112** | 22.6 | 1.9 | 26.85 | | |
| | **104** | 24.3 | 1.7 | **28.93** | | |
| | **86** | 29.4 | 1.4 | **34.97** | | |
| | **66** | 38.3 | 1.1 | **45.56** | | |
| | **59** | 39.9 | 2.1 | **50.89** | **ECP250/723** | **120/240** |
| | **51** | 46.1 | 1.8 | 58.85 | | |
| | **44** | 53.4 | 1.6 | **68.06** | | |
| | **42** | 55.8 | 1.5 | 71.16 | | |
| | **38** | 61.7 | 1.4 | 78.71 | | |
| | **32** | 72.7 | 1.2 | **92.70** | | |
| | **32** | 74.6 | 1.1 | 95.17 | | |
| | **30** | 78.0 | 1.1 | 99.50 | | |
| | **28** | 84.0 | 1.0 | 107.20 | | |
| | **26** | 90.2 | 0.9 | 115.07 | | |
| | **24** | 97.2 | 0.9 | 123.97 | | |
| | **23** | 101.6 | 0.8 | 129.62 | | |
| | **22** | 109.1 | 0.8 | 139.13 | | |
| | **20** | 117.5 | 0.7 | 149.90 | | |
| | **18** | 120.0 | 0.7 | **168.84** | | |
| | **17** | 120.0 | 0.7 | 181.24 | | |
| | **15** | 120.0 | 0.7 | 195.26 | | |
| | **13** | 120.0 | 0.7 | 236.09 | | |
| | **9.8** | 120.0 | 0.7 | **307.54** | | |
| | **701** | 3.8 | 5.2 | 4.28 | **ECP250/811** | **120/240** |
| | **579** | 4.6 | 4.3 | **5.18** | | |
| | **444** | 6.0 | 3.3 | **6.75** | | |
| | **218** | 11.5 | 5.2 | **13.73** | **ECP250/812** | **120/240** |
| | **189** | 13.3 | 4.5 | 15.88 | | |
| | **163** | 15.4 | 3.9 | 18.36 | | |
| | **156** | 16.1 | 3.7 | **19.20** | | |
| | **135** | 18.6 | 3.2 | 22.20 | | |
| | **120** | 21.0 | 2.9 | **25.01** | | |
| | **112** | 22.6 | 2.7 | 26.85 | | |
| | **104** | 24.3 | 2.5 | **28.93** | | |
| | **86** | 29.4 | 2.0 | **34.97** | | |
| | **66** | 38.3 | 1.6 | **45.56** | | |
| | **59** | 39.9 | 3.0 | **50.89** | **ECP250/813** | **120/240** |
| | **51** | 46.1 | 2.6 | 58.85 | | |
| | **44** | 53.4 | 2.2 | **68.06** | | |
| | **42** | 55.8 | 2.2 | 71.16 | | |
| | **38** | 61.7 | 1.9 | 78.71 | | |
| | **32** | 72.7 | 1.7 | **92.70** | | |
| | **32** | 74.6 | 1.6 | 95.17 | | |
| | **30** | 78.0 | 1.5 | 99.50 | | |
| | **28** | 84.0 | 1.4 | 107.20 | | |
| | **26** | 90.2 | 1.3 | 115.07 | | |
| | **24** | 97.2 | 1.2 | 123.97 | | |
| | **23** | 101.6 | 1.2 | 129.62 | | |
| | **22** | 109.1 | 1.1 | 139.13 | | |
| | **20** | 117.5 | 1.0 | 149.90 | | |
| | **18** | 132.4 | 0.9 | **168.84** | | |
| | **17** | 142.1 | 0.8 | 181.24 | | |
| | **15** | 153.1 | 0.8 | 195.26 | | |
| | **13** | 171.0 | 0.7 | 236.09 | | |
| | **9.8** | 171.0 | 0.7 | **307.54** | | |



## Dati tecnici per servizio S2

## *Technical data for S2 duty*

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i | | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **500** | | | | | | |
| (3000 min$^{-1}$) | **120** | 21.0 | 5.0 | **25.01** | **ECP250/1052** | **120/240** |
| | **112** | 22.6 | 4.7 | 26.85 | | |
| | **104** | 24.3 | 4.3 | **28.93** | | |
| | **86** | 29.4 | 3.6 | **34.97** | | |
| | **66** | 38.3 | 2.7 | **45.56** | | |
| | **59** | 39.9 | 4.9 | **50.89** | **ECP250/1053** | **120/240** |
| | **51** | 46.1 | 4.2 | 58.85 | | |
| | **44** | 53.4 | 3.7 | **68.06** | | |
| | **42** | 55.8 | 3.5 | 71.16 | | |
| | **38** | 61.7 | 3.2 | 78.71 | | |
| | **32** | 72.7 | 2.7 | **92.70** | | |
| | **32** | 74.6 | 2.6 | 95.17 | | |
| | **30** | 78.0 | 2.5 | 99.50 | | |
| | **28** | 84.0 | 2.3 | 107.20 | | |
| | **26** | 90.2 | 2.2 | 115.07 | | |
| | **24** | 97.2 | 2.0 | 123.97 | | |
| | **23** | 101.6 | 1.9 | 129.62 | | |
| | **22** | 109.1 | 1.8 | 139.13 | | |
| | **20** | 117.5 | 1.7 | 149.90 | | |
| | **18** | 132.4 | 1.5 | **168.84** | | |
| | **17** | 142.1 | 1.4 | 181.24 | | |
| | **15** | 153.1 | 1.3 | 195.26 | | |
| | **13** | 185.1 | 1.1 | 236.09 | | |
| | **9.8** | 241.1 | 0.8 | **307.54** | | |
| | **66** | 38.3 | 3.9 | **45.56** | **ECP250/1202** | **120/240** |
| | **32** | 72.7 | 4.1 | **92.70** | **ECP250/1203** | **120/240** |
| | **18** | 132.4 | 2.3 | **168.84** | | |
| | **9.8** | 241.1 | 1.2 | **307.54** | | |
| **500** | | | | | | |
| (3000 min$^{-1}$) | **811** | 4.6 | 1.7 | **3.70** | **ECP350/621** | **120/240** |
| | **701** | 5.4 | 1.5 | 4.28 | | |
| | **579** | 6.5 | 1.2 | **5.18** | | |
| | **444** | 8.5 | 0.9 | **6.75** | | |
| | **218** | 16 | 1.5 | **13.73** | **ECP350/622** | **120/240** |
| | **189** | 19 | 1.3 | 15.88 | | |
| | **163** | 22 | 1.2 | 18.36 | | |
| | **156** | 23 | 1.1 | **19.20** | | |
| | **135** | 26 | 1.0 | 22.20 | | |
| | **120** | 29 | 0.8 | **25.01** | | |
| | **112** | 32 | 0.8 | 26.85 | | |
| | **104** | 34 | 0.7 | **28.93** | | |
| | **86** | 36 | 0.7 | **34.97** | | |
| | **66** | 36 | 0.7 | **45.56** | | |
| | **59** | 56 | 0.9 | **50.89** | **ECP350/623** | **120/240** |
| | **51** | 65 | 0.8 | 58.85 | | |
| | **44** | 71 | 0.7 | **68.06** | | |
| | **42** | 71 | 0.7 | 71.16 | | |
| | **38** | 71 | 0.7 | 78.71 | | |
| | **32** | 71 | 0.7 | **92.70** | | |
| | **31** | 71 | 0.7 | 95.17 | | |
| | **30** | 71 | 0.7 | 99.50 | | |
| | **28** | 71 | 0.7 | 107.20 | | |
| | **26** | 71 | 0.7 | 115.07 | | |
| | **24** | 71 | 0.7 | 123.97 | | |
| | **23** | 71 | 0.7 | 129.62 | | |
| | **22** | 71 | 0.7 | 139.13 | | |
| | **20** | 71 | 0.7 | 149.90 | | |
| | **18** | 71 | 0.7 | **168.84** | | |

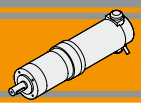
| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i | | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **500** | | | | | | |
| (3000 min$^{-1}$) | **17** | 71 | 0.7 | 181.24 | **ECP350/623** | **120/240** |
| | **15** | 71 | 0.7 | 195.26 | | |
| | **13** | 71 | 0.7 | 236.09 | | |
| | **9.8** | 71 | 0.7 | **307.54** | | |
| | **811** | 4.6 | 3.0 | **3.70** | **ECP350/721** | **120/240** |
| | **701** | 5.4 | 2.6 | 4.28 | | |
| | **579** | 6.5 | 2.2 | **5.18** | | |
| | **444** | 8.5 | 1.7 | **6.75** | | |
| | **218** | 16 | 2.6 | **13.73** | **ECP350/722** | **120/240** |
| | **189** | 19 | 2.2 | 15.88 | | |
| | **163** | 22 | 1.9 | 18.36 | | |
| | **156** | 23 | 1.9 | **19.20** | | |
| | **135** | 26 | 1.6 | 22.20 | | |
| | **120** | 29 | 1.4 | **25.01** | | |
| | **112** | 32 | 1.3 | 26.85 | | |
| | **104** | 34 | 1.2 | **28.93** | | |
| | **86** | 41 | 1.0 | **34.97** | | |
| | **66** | 54 | 0.8 | **45.56** | | |
| | **59** | 56 | 1.5 | **50.89** | **ECP350/723** | **120/240** |
| | **51** | 65 | 1.3 | 58.85 | | |
| | **44** | 75 | 1.1 | **68.06** | | |
| | **42** | 78 | 1.1 | 71.16 | | |
| | **38** | 87 | 1.0 | 78.71 | | |
| | **32** | 102 | 0.8 | **92.70** | | |
| | **31** | 105 | 0.8 | 95.17 | | |
| | **30** | 109 | 0.8 | 99.50 | | |
| | **28** | 118 | 0.7 | 107.20 | | |
| | **26** | 120 | 0.7 | 115.07 | | |
| | **24** | 120 | 0.7 | 123.97 | | |
| | **23** | 120 | 0.7 | 129.62 | | |
| | **22** | 120 | 0.7 | 139.13 | | |
| | **20** | 120 | 0.7 | 149.90 | | |
| | **18** | 120 | 0.7 | **168.84** | | |
| | **17** | 120 | 0.7 | 181.24 | | |
| | **15** | 120 | 0.7 | 195.26 | | |
| | **13** | 120 | 0.7 | 236.09 | | |
| | **9.8** | 120 | 0.7 | **307.54** | | |
| | **701** | 5.4 | 3.7 | 4.28 | **ECP350/811** | **120/240** |
| | **579** | 6.5 | 3.1 | **5.18** | | |
| | **444** | 8.5 | 2.4 | **6.75** | | |
| | **218** | 16 | 3.7 | **13.73** | **ECP350/812** | **120/240** |
| | **189** | 19 | 3.2 | 15.88 | | |
| | **163** | 22 | 2.8 | 18.36 | | |
| | **156** | 23 | 2.7 | **19.20** | | |
| | **135** | 26 | 2.3 | 22.20 | | |
| | **120** | 29 | 2.0 | **25.01** | | |
| | **112** | 32 | 1.9 | 26.85 | | |
| | **104** | 34 | 1.8 | **28.93** | | |
| | **86** | 41 | 1.5 | **34.97** | | |
| | **66** | 54 | 1.1 | **45.56** | | |
| | **59** | 56 | 2.1 | **50.89** | **ECP350/813** | **120/240** |
| | **51** | 65 | 1.9 | 58.85 | | |
| | **44** | 75 | 1.6 | **68.06** | | |
| | **42** | 78 | 1.5 | 71.16 | | |
| | **38** | 87 | 1.4 | 78.71 | | |
| | **32** | 102 | 1.2 | **92.70** | | |
| | **31** | 105 | 1.1 | 95.17 | | |
| | **30** | 109 | 1.1 | 99.50 | | |
| | **28** | 118 | 1.0 | 107.20 | | |

## Dati tecnici per servizio S2

## *Technical data for S2 duty*

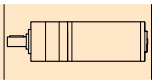
| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i | | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **500** | | | | | | |
| (3000 min$^{-1}$) | **26** | 126 | 0.9 | 115.07 | **ECP350/813** | **120/240** |
| | **24** | 136 | 0.9 | 123.97 | | |
| | **23** | 142 | 0.8 | 129.62 | | |
| | **22** | 153 | 0.8 | 139.13 | | |
| | **20** | 165 | 0.7 | 149.90 | | |
| | **18** | 171 | 0.7 | **168.84** | | |
| | **17** | 171 | 0.7 | 181.24 | | |
| | **15** | 171 | 0.7 | 195.26 | | |
| | **13** | 171 | 0.7 | 236.09 | | |
| | **9.8** | 171 | 0.7 | **307.54** | | |
| | **120** | 29 | 3.6 | **25.01** | **ECP350/1052** | **120/240** |
| | **112** | 32 | 3.3 | 26.85 | | |
| | **104** | 34 | 3.1 | **28.93** | | |
| | **86** | 41 | 2.5 | **34.97** | | |
| | **66** | 54 | 2.0 | **45.56** | | |
| | **59** | 56 | 3.5 | **50.89** | **ECP350/1053** | **120/240** |
| | **51** | 65 | 3.0 | 58.85 | | |
| | **44** | 75 | 2.6 | **68.06** | | |
| | **42** | 78 | 2.5 | 71.16 | | |
| | **38** | 87 | 2.3 | 78.71 | | |
| | **32** | 102 | 1.9 | **92.70** | | |
| | **31** | 105 | 1.9 | 95.17 | | |
| | **30** | 109 | 1.8 | 99.50 | | |
| | **28** | 118 | 1.7 | 107.20 | | |
| | **26** | 126 | 1.5 | 115.07 | | |
| | **24** | 136 | 1.4 | 123.97 | | |
| | **23** | 142 | 1.4 | 129.62 | | |
| | **22** | 153 | 1.3 | 139.13 | | |
| | **20** | 165 | 1.2 | 149.90 | | |
| | **18** | 186 | 1.1 | **168.84** | | |
| | **17** | 199 | 1.0 | 181.24 | | |
| | **15** | 215 | 0.9 | 195.26 | | |
| | **13** | 259 | 0.8 | 236.09 | | |
| | **9.8** | 279 | 0.7 | **307.54** | | |
| | **66** | 54 | 2.8 | **45.56** | **ECP350/1202** | **120/240** |
| | **32** | 102 | 2.9 | **92.70** | **ECP350/1203** | **120/240** |
| | **18** | 186 | 1.6 | **168.84** | | |
| | **9.8** | 338 | 0.9 | **307.54** | | |
| **800** | | | | | | |
| (3000 min$^{-1}$) | **811** | 7.5 | 1.9 | **3.70** | **ECP600/721** | **120/240** |
| | **701** | 8.7 | 1.6 | 4.28 | | |
| | **579** | 11 | 1.3 | **5.18** | | |
| | **444** | 14 | 1.0 | **6.75** | | |
| | **218** | 26 | 1.6 | **13.73** | **ECP600/722** | **120/240** |
| | **189** | 30 | 1.4 | 15.88 | | |
| | **163** | 35 | 1.2 | 18.36 | | |
| | **156** | 37 | 1.1 | **19.20** | | |
| | **135** | 42 | 1.0 | 22.20 | | |
| | **120** | 48 | 0.9 | **25.01** | | |
| | **112** | 51 | 0.8 | 26.85 | | |
| | **104** | 55 | 0.8 | **28.93** | | |
| | **86** | 60 | 0.7 | **34.97** | | |
| | **66** | 60 | 0.7 | **45.56** | | |

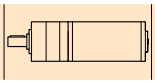
| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i | | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **800** | | | | | | |
| (3000 min$^{-1}$) | **59** | 90 | 0.9 | **50.89** | **ECP600/723** | **120/240** |
| | **51** | 105 | 0.8 | 58.85 | | |
| | **44** | 120 | 0.7 | **68.06** | | |
| | **42** | 120 | 0.7 | 71.16 | | |
| | **38** | 120 | 0.7 | 78.71 | | |
| | **32** | 120 | 0.7 | **92.70** | | |
| | **31** | 120 | 0.7 | 95.17 | | |
| | **30** | 120 | 0.7 | 99.50 | | |
| | **28** | 120 | 0.7 | 107.20 | | |
| | **26** | 120 | 0.7 | 115.07 | | |
| | **24** | 120 | 0.7 | 123.97 | | |
| | **23** | 120 | 0.7 | 129.62 | | |
| | **22** | 120 | 0.7 | 139.13 | | |
| | **20** | 120 | 0.7 | 149.90 | | |
| | **18** | 120 | 0.7 | **168.84** | | |
| | **17** | 120 | 0.7 | 181.24 | | |
| | **15** | 120 | 0.7 | 195.26 | | |
| | **13** | 120 | 0.7 | 236.09 | | |
| | **9.8** | 120 | 0.7 | **307.54** | | |
| | **811** | 7.5 | 2.7 | **3.70** | **ECP600/811** | **120/240** |
| | **701** | 8.7 | 2.3 | 4.28 | | |
| | **579** | 11 | 1.9 | **5.18** | | |
| | **444** | 14 | 1.5 | **6.75** | | |
| | **218** | 26 | 2.3 | **13.73** | **ECP600/812** | **120/240** |
| | **189** | 30 | 2.0 | 15.88 | | |
| | **163** | 35 | 1.7 | 18.36 | | |
| | **156** | 37 | 1.6 | **19.20** | | |
| | **135** | 42 | 1.4 | 22.20 | | |
| | **120** | 48 | 1.3 | **25.01** | | |
| | **112** | 51 | 1.2 | 26.85 | | |
| | **104** | 55 | 1.1 | **28.93** | | |
| | **86** | 67 | 0.9 | **34.97** | | |
| | **66** | 86 | 0.7 | **45.56** | | |
| | **59** | 90 | 1.3 | **50.89** | **ECP600/813** | **120/240** |
| | **51** | 105 | 1.1 | 58.85 | | |
| | **44** | 121 | 1.0 | **68.06** | | |
| | **42** | 127 | 0.9 | 71.16 | | |
| | **38** | 140 | 0.9 | 78.71 | | |
| | **32** | 165 | 0.7 | **92.70** | | |
| | **31** | 169 | 0.7 | 95.17 | | |
| | **30** | 171 | 0.7 | 99.50 | | |
| | **28** | 171 | 0.7 | 107.20 | | |
| | **26** | 171 | 0.7 | 115.07 | | |
| | **24** | 171 | 0.7 | 123.97 | | |
| | **23** | 171 | 0.7 | 129.62 | | |
| | **22** | 171 | 0.7 | 139.13 | | |
| | **20** | 171 | 0.7 | 149.90 | | |
| | **18** | 171 | 0.7 | **168.84** | | |
| | **17** | 171 | 0.7 | 181.24 | | |
| | **15** | 171 | 0.7 | 195.26 | | |
| | **13** | 171 | 0.7 | 236.09 | | |
| | **9.8** | 171 | 0.7 | **307.54** | | |
| | **701** | 8.7 | 4.0 | 4.28 | **ECP600/1051** | **120/240** |
| | **579** | 11 | 3.3 | **5.18** | | |
| | **444** | 14 | 2.6 | **6.75** | | |



## Dati tecnici per servizio S2

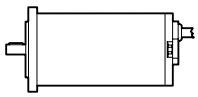
## *Technical data for S2 duty*

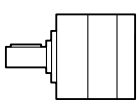
| $P_1$ [W] | $n_2$ [$min^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **800** | | | | | | |
| (3000 $min^{-1}$) | **218** | 26 | 4.0 | **13.73** | **ECP600/1052** | **120/240** |
| | **189** | 30 | 3.5 | 15.88 | | |
| | **163** | 35 | 3.0 | 18.36 | | |
| | **156** | 37 | 2.9 | **19.20** | | |
| | **135** | 42 | 2.5 | 22.20 | | |
| | **120** | 48 | 2.2 | **25.01** | | |
| | **112** | 51 | 2.1 | 26.85 | | |
| | **104** | 55 | 1.9 | **28.93** | | |
| | **86** | 67 | 1.6 | **34.97** | | |
| | **66** | 87 | 1.2 | **45.56** | | |
| | **59** | 90 | 2.2 | **50.89** | **ECP600/1053** | **120/240** |
| | **51** | 105 | 1.9 | 58.85 | | |
| | **44** | 121 | 1.6 | **68.06** | | |
| | **42** | 127 | 1.5 | 71.16 | | |
| | **38** | 140 | 1.4 | 78.71 | | |
| | **32** | 165 | 1.2 | **92.70** | | |
| | **31** | 169 | 1.2 | 95.17 | | |
| | **30** | 177 | 1.1 | 99.50 | | |
| | **28** | 191 | 1.0 | 107.20 | | |
| | **26** | 205 | 1.0 | 115.07 | | |
| | **24** | 220 | 0.9 | 123.97 | | |
| | **23** | 230 | 0.8 | 129.62 | | |
| | **22** | 247 | 0.8 | 139.13 | | |
| | **20** | 267 | 0.7 | 149.90 | | |
| | **18** | 279 | 0.7 | **168.84** | | |
| | **17** | 279 | 0.7 | 181.24 | | |
| | **15** | 279 | 0.7 | 195.26 | | |
| | **13** | 279 | 0.7 | 236.09 | | |
| | **9.8** | 279 | 0.7 | **307.54** | | |

| $P_1$ [W] | $n_2$ [$min^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **800** | | | | | | |
| (3000 $min^{-1}$) | **120** | 48 | 3.1 | **25.01** | **ECP600/1202** | **120/240** |
| | **66** | 87 | 1.7 | **45.56** | | |
| | **59** | 90 | 3.3 | **50.89** | **ECP600/1203** | **120/240** |
| | **32** | 165 | 1.8 | **92.70** | | |
| | **18** | 300 | 1.0 | **168.84** | | |
| | **9.8** | 429 | 0.7 | **307.54** | | |

## Motori applicabili

## *IEC Motor adapters*

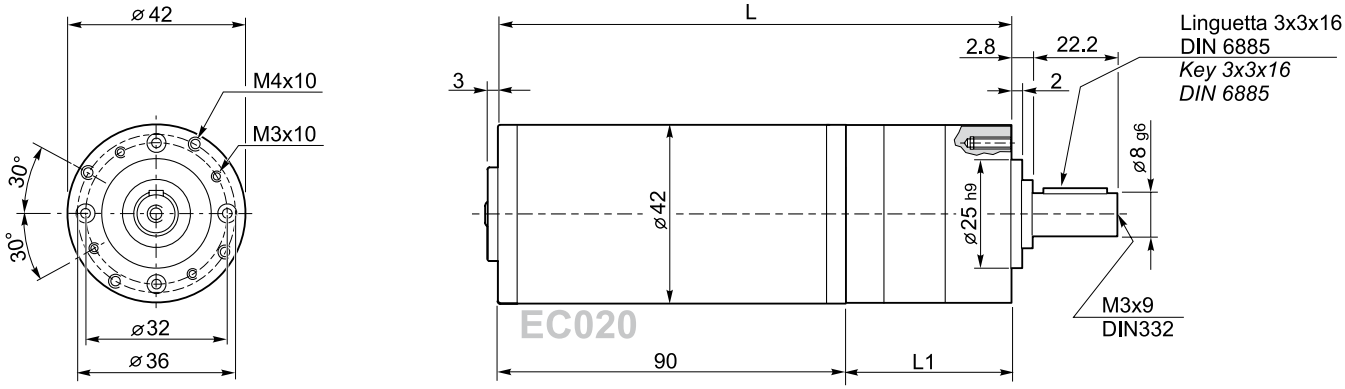


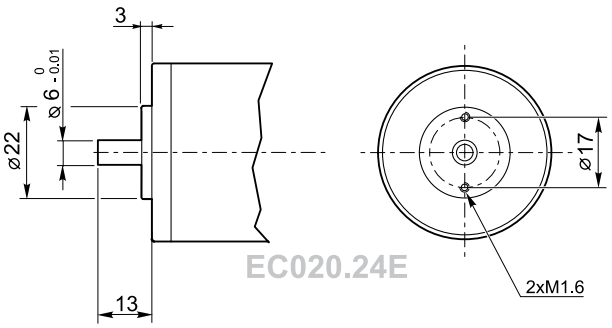


| | | EC | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 020.120<br>020.24E | 035.120<br>035.240 | 050.12E<br>050.24E | 070.120<br>070.240 | 100.120<br>100.240<br>100.24E | 180.120<br>180.240 | 180.24E | 250.120<br>250.240 | 350.120<br>350.240 | 600.120<br>600.240 |
| P | 42 | | | | | | | | | | |
| | 52 | | | | | | | | | | |
| | 62 | | | | | | | | | | |
| | 72 | | | | | | | | | | |
| | 81 | | | | | | | | | | |
| | 105 | | | | | | | | | | |
| | 120 | | | | | | | | | | |

## Dimensioni — *Dimensions*

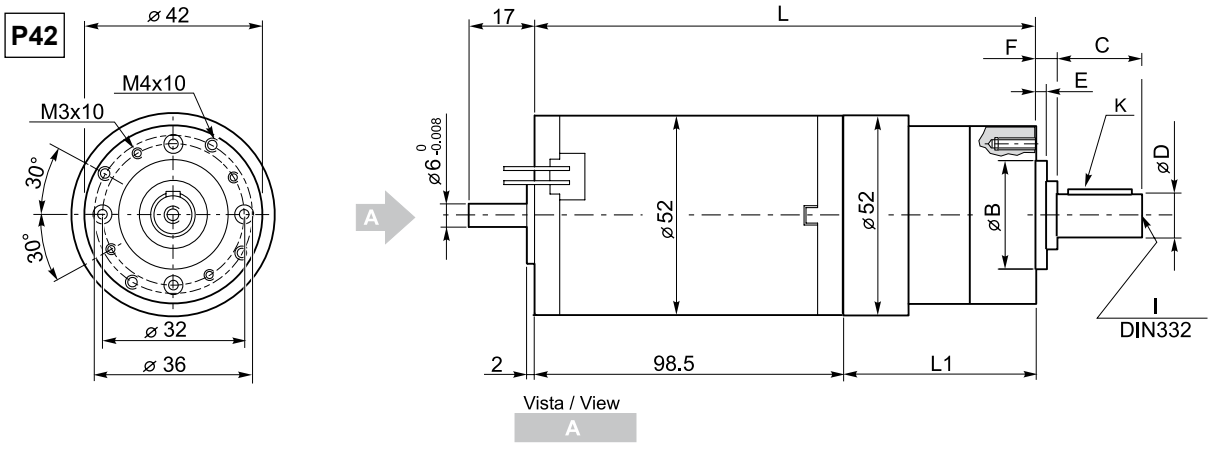
### ECP020/42... U

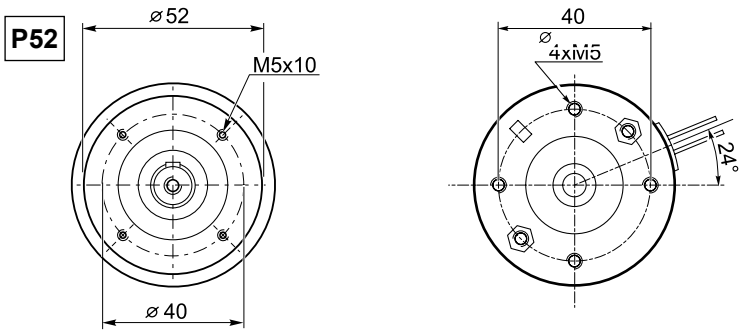


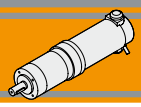

| | Numero di stadi / *Stages number* | | |
|---|---|---|---|
| **ECP020/42...** | **1** | **2** | **3** |
| **L1** | 60 | 73 | 86 |
| **L** | 150 | 163 | 176 |

### ECP035/... U



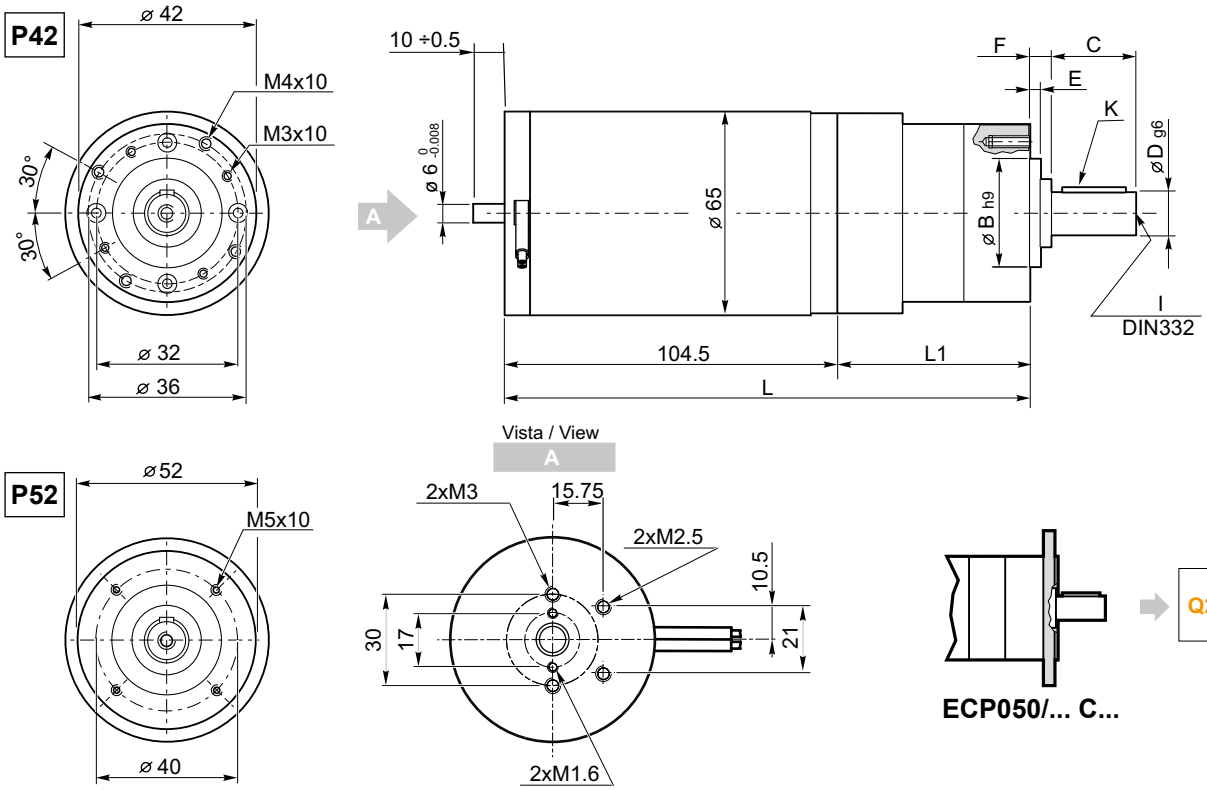




| Tipo *Type* | Numero di stadi *Stages number* | Dimensioni / *Dimensions* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | **L1** | **L** | **B** | **C** | **D** | **E** | **F** | **I** | **K** |
| **ECP035/42...** | **1** | 60 | 158.5 | 25 h9 | 22.2 | 8 g6 | 2 | 2.8 | M3x9 | 3x3x16 |
| | **2** | 73 | 171.5 | | | | | | | |
| | **3** | 86 | 184.5 | | | | | | | |
| **ECP035/52...** | **1** | 72.5 | 175.5 | 32 h8 | 20.8 | 12 h7 | 3 | 4.2 | M4x10 | 4x4x16 |
| | **2** | 86.5 | 189.5 | | | | | | | |
| | **3** | 100.5 | 203.5 | | | | | | | |



## Dimensioni — *Dimensions*

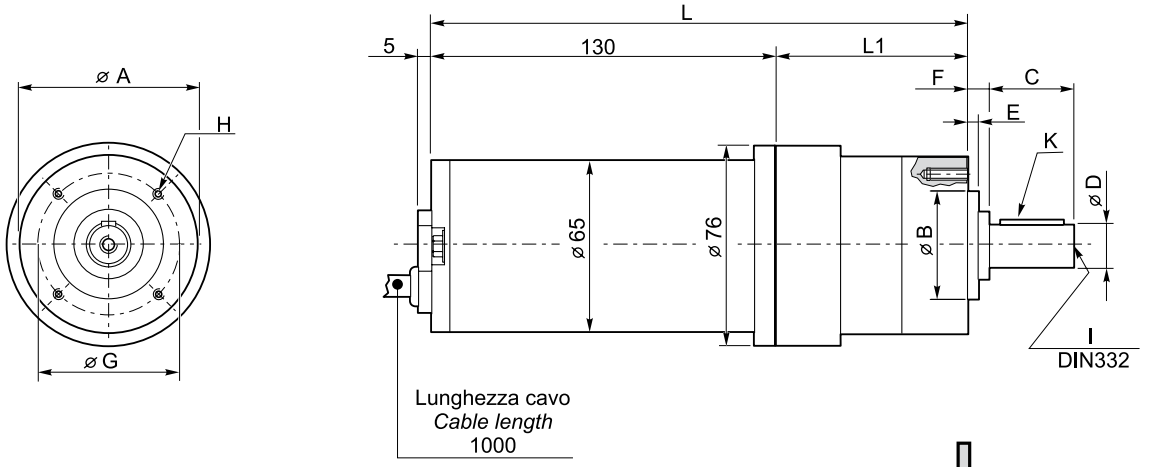
## ECP050/... U

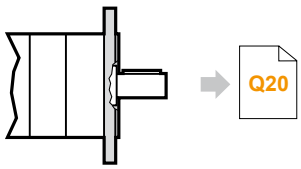



| Tipo *Type* | Numero di stadi *Stages number* | Dimensioni / *Dimensions* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | L1 | L | B | C | D | E | F | I | K |
| ECP050/42... | 1 | 60 | 164.5 | 25 h9 | 22.2 | 8 g6 | 2 | 2.8 | M3x9 | 3x3x16 |
| | 2 | 73 | 177.5 | | | | | | | |
| | 3 | 86 | 190.5 | | | | | | | |
| ECP050/52... | 1 | 72.5 | 177 | 32 h8 | 20.8 | 12 h7 | 3 | 4.2 | M4x10 | 4x4x16 |
| | 2 | 86.5 | 191 | | | | | | | |
| | 3 | 100.5 | 205 | | | | | | | |

**Dimensioni** ***Dimensions***

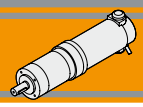
## ECP070/... U



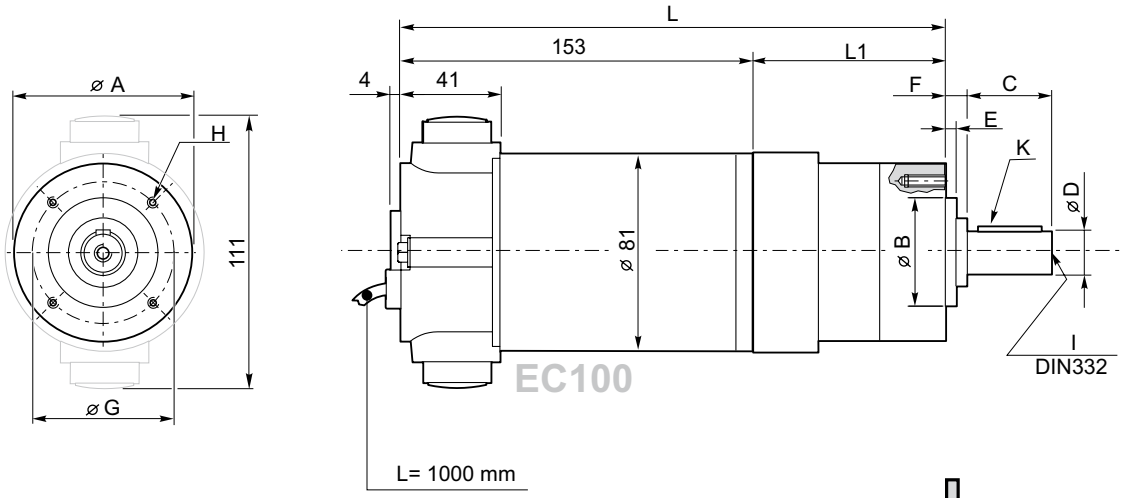

**ECP070/... C...**

| Tipo *Type* | Numero di stadi *Stages number* | Dimensioni / *Dimensions* | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L1 | L | A | B | C | D | E | F | G | H | I | K |
| ECP070/52... | 1 | 74 | 204 | 52 | 32 h8 | 20.8 | 12 h7 | 3 | 4.2 | 40 | M5x10 | M4x10 | 4x4x16 |
| | 2 | 88 | 218 | | | | | | | | | | |
| | 3 | 102 | 232 | | | | | | | | | | |
| ECP070/62... | 1 | 74 | 204 | 62 | 40 j7 | 30 | 14 h7 | 5 | 9 | 52 | M5x10 | M5x12 | 5x5x18 |
| | 2 | 90 | 220 | | | | | | | | | | |
| | 3 | 106 | 236 | | | | | | | | | | |
| ECP070/72... | 1 | 82.4 | 212.4 | 72 | 45 j7 | 40 | 16 h7 | 5 | 9 | 60 | M5x10 | M5x12 | 5x5x30 |
| | 2 | 102 | 232 | | | | | | | | | | |
| | 3 | 121.6 | 251.6 | | | | | | | | | | |
| ECP070/81... | 1 | 91 | 221 | 81 | 50 j7 | 40 | 19 h7 | 5 | 9 | 65 | M6x12 | M6x16 | 6x6x28 |
| | 2 | 113 | 243 | | | | | | | | | | |
| | 3 | 135 | 265 | | | | | | | | | | |

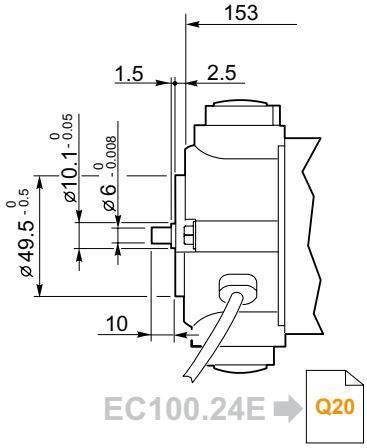


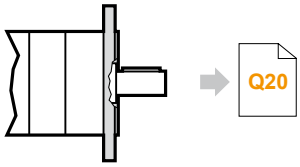
**Dimensioni** *Dimensions*

## ECP100/... U... 120/140




## ECP100/... U... 24E



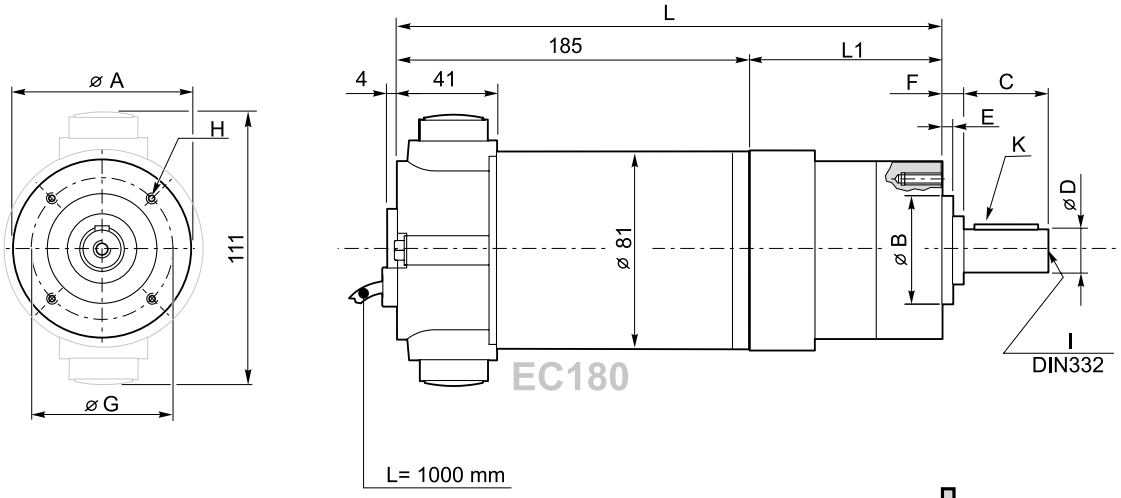




**ECP100/... C...**

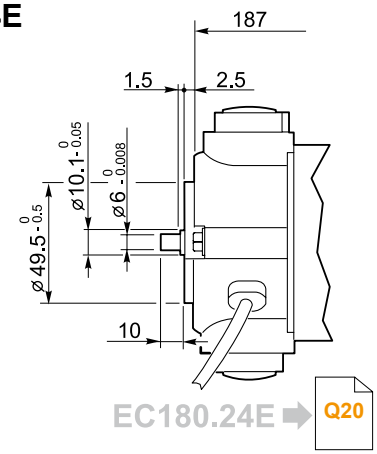
| Tipo *Type* | Numero di stadi *Stages number* | Dimensioni / *Dimensions* | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L1 | L | A | B | C | D | E | F | G | H | I | K |
| ECP100/52... | 1 | 74 | 227 | 52 | 32 h8 | 20.8 | 12 h7 | 3 | 4.2 | 40 | M5x10 | M4x10 | 4x4x16 |
| | 2 | 88 | 241 | | | | | | | | | | |
| | 3 | 102 | 255 | | | | | | | | | | |
| ECP100/62... | 1 | 74 | 227 | 62 | 40 j7 | 30 | 14 h7 | 5 | 9 | 52 | M5x10 | M5x12 | 5x5x18 |
| | 2 | 90 | 243 | | | | | | | | | | |
| | 3 | 106 | 259 | | | | | | | | | | |
| ECP100/72... | 1 | 82.4 | 235.4 | 72 | 45 j7 | 40 | 16 h7 | 5 | 9 | 60 | M5x10 | M5x12 | 5x5x30 |
| | 2 | 102 | 255 | | | | | | | | | | |
| | 3 | 121.6 | 274.6 | | | | | | | | | | |
| ECP100/81... | 1 | 91 | 244 | 81 | 50 j7 | 40 | 19 h7 | 5 | 9 | 65 | M6x12 | M6x16 | 6x6x28 |
| | 2 | 113 | 266 | | | | | | | | | | |
| | 3 | 135 | 288 | | | | | | | | | | |

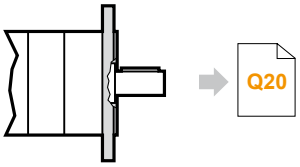
**Dimensioni** *Dimensions*

## ECP180/... U... 120/240



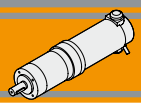

## ECP180/... U... 24E



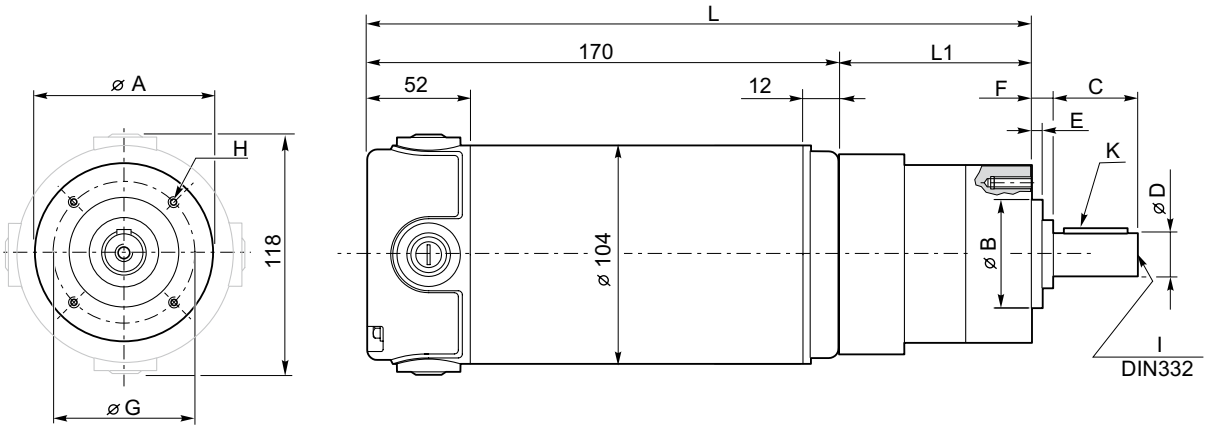

**ECP180/... C...**

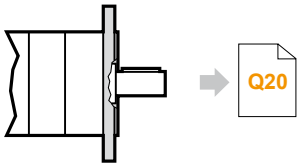
| Tipo *Type* | Numero di stadi *Stages number* | Dimensioni / *Dimensions* | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | EC180 | | EC180.24E | | EC180 - EC180.24E | | | | | | | | | |
| | | L1 | L | L1 | L | A | B | C | D | E | F | G | H | I | K |
| ECP180/52... | 1 | 74 | 259 | | | 52 | 32 h8 | 20.8 | 12 h7 | 3 | 4.2 | 40 | M5x10 | M4x10 | 4x4x16 |
| | 2 | 88 | 273 | | | | | | | | | | | | |
| | 3 | 102 | 287 | | | | | | | | | | | | |
| ECP180/62... | 1 | 74 | 259 | 76 | 263 | 62 | 40 j7 | 30 | 14 h7 | 5 | 9 | 52 | M5x10 | M5x12 | 5x5x18 |
| | 2 | 90 | 275 | 92 | 279 | | | | | | | | | | |
| | 3 | 106 | 291 | 108 | 295 | | | | | | | | | | |
| ECP180/72... | 1 | 82.4 | 267.4 | 88.4 | 275.4 | 72 | 45 j7 | 40 | 16 h7 | 5 | 9 | 60 | M5x10 | M5x12 | 5x5x30 |
| | 2 | 102 | 287 | 108 | 295 | | | | | | | | | | |
| | 3 | 121.6 | 306.6 | 127.6 | 314.6 | | | | | | | | | | |
| ECP180/81... | 1 | 91 | 276 | 94 | 281 | 81 | 50 j7 | 40 | 19 h7 | 5 | 9 | 65 | M6x12 | M6x16 | 6x6x28 |
| | 2 | 113 | 298 | 116 | 303 | | | | | | | | | | |
| | 3 | 135 | 320 | 138 | 325 | | | | | | | | | | |
| ECP180/105... | 1 | 113.4 | 298.4 | 116.4 | 303.4 | 105 | 70 j7 | 50 | 25 h7 | 5 | 9 | 85 | M8x16 | M10x22 | 8x7x40 |
| | 2 | 144.5 | 329.5 | 147.5 | 334.5 | | | | | | | | | | |
| | 3 | 175.5 | 360.5 | 178.5 | 365.5 | | | | | | | | | | |
| ECP180/120... | 1 | 131.6 | 316.6 | 134.5 | 321.4 | 120 | 80 j7 | 73 | 32 k6 | 5 | 15 | 100 | M10x22 | M12 | 10x8x50 |
| | 2 | 165.8 | 350.8 | 168.6 | 355.6 | | | | | | | | | | |
| | 3 | 200 | 385 | 202.8 | 389.8 | | | | | | | | | | |



## Dimensioni — *Dimensions*

### ECP250/... U



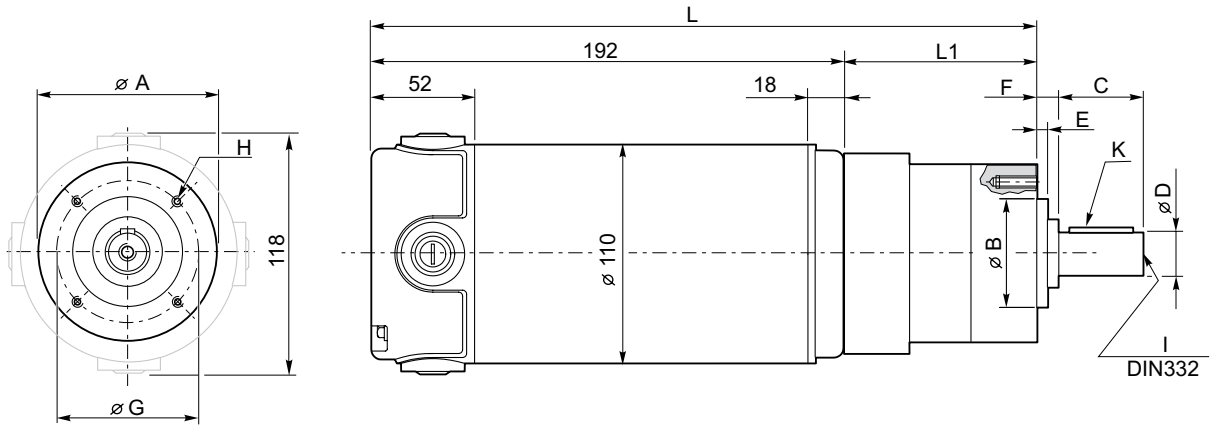



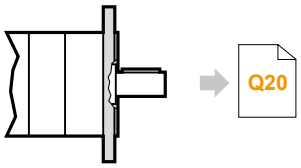

**ECP250/... C...**

| Tipo *Type* | Numero di stadi *Stages number* | Dimensioni / *Dimensions* | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L1 | L | A | B | C | D | E | F | G | H | I | K |
| ECP250/62... | 1 | 76 | 246 | 62 | 40 j7 | 30 | 14 h7 | 5 | 9 | 52 | M5x10 | M5x12 | 5x5x18 |
| | 2 | 92 | 262 | | | | | | | | | | |
| | 3 | 108 | 278 | | | | | | | | | | |
| ECP250/72... | 1 | 85.4 | 255.4 | 72 | 45 j7 | 40 | 16 h7 | 5 | 9 | 60 | M5x10 | M5x12 | 5x5x30 |
| | 2 | 105 | 275 | | | | | | | | | | |
| | 3 | 124.6 | 294.6 | | | | | | | | | | |
| ECP250/81... | 1 | 94 | 264 | 81 | 50 j7 | 40 | 19 h7 | 5 | 9 | 65 | M6x12 | M6x16 | 6x6x28 |
| | 2 | 116 | 286 | | | | | | | | | | |
| | 3 | 138 | 308 | | | | | | | | | | |
| ECP250/105... | 1 | 113.4 | 283.4 | 105 | 70 j7 | 50 | 25 h7 | 5 | 9 | 85 | M8x16 | M10x22 | 8x7x40 |
| | 2 | 144.5 | 314.5 | | | | | | | | | | |
| | 3 | 175.5 | 345.5 | | | | | | | | | | |
| ECP250/120... | 1 | 131.6 | 301.6 | 120 | 80 j7 | 73 | 32 k6 | 5 | 15 | 100 | M10x22 | M12 | 10x8x50 |
| | 2 | 165.8 | 335.8 | | | | | | | | | | |
| | 3 | 200 | 370 | | | | | | | | | | |

**Dimensioni** *Dimensions*

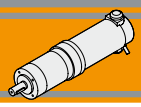
## ECP350/... U



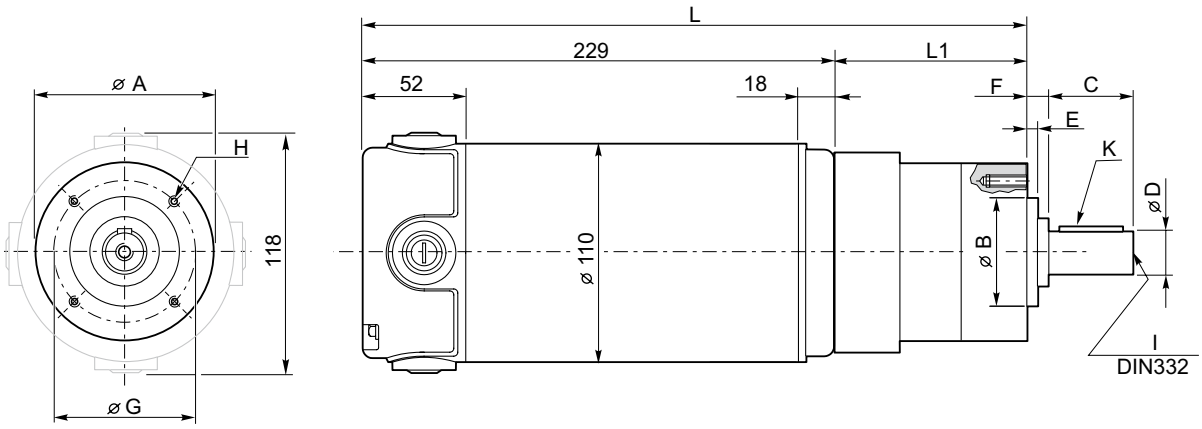

**ECP350/... C...**

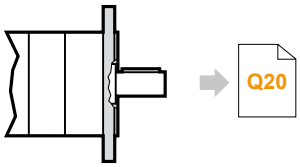
| Tipo *Type* | Numero di stadi *Stages number* | Dimensioni / *Dimensions* | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L1 | L | A | B | C | D | E | F | G | H | I | K |
| ECP350/62... | 1 | 76 | 268 | 62 | 40 j7 | 30 | 14 h7 | 5 | 9 | 52 | M5x10 | M5x12 | 5x5x18 |
| | 2 | 92 | 284 | | | | | | | | | | |
| | 3 | 108 | 300 | | | | | | | | | | |
| ECP350/72... | 1 | 85.4 | 277.4 | 72 | 45 j7 | 40 | 16 h7 | 5 | 9 | 60 | M5x10 | M5x12 | 5x5x30 |
| | 2 | 105 | 297 | | | | | | | | | | |
| | 3 | 124.6 | 316.6 | | | | | | | | | | |
| ECP350/81... | 1 | 94 | 286 | 81 | 50 j7 | 40 | 19 h7 | 5 | 9 | 65 | M6x12 | M6x16 | 6x6x28 |
| | 2 | 116 | 308 | | | | | | | | | | |
| | 3 | 138 | 330 | | | | | | | | | | |
| ECP350/105... | 1 | 113.4 | 305.4 | 105 | 70 j7 | 50 | 25 h7 | 5 | 9 | 85 | M8x16 | M10x22 | 8x7x40 |
| | 2 | 144.5 | 336.5 | | | | | | | | | | |
| | 3 | 175.5 | 367.5 | | | | | | | | | | |
| ECP350/120... | 1 | 131.6 | 323.6 | 120 | 80 j7 | 73 | 32 k6 | 5 | 15 | 100 | M10x22 | M12 | 10x8x50 |
| | 2 | 165.8 | 357.8 | | | | | | | | | | |
| | 3 | 200 | 392 | | | | | | | | | | |



## Dimensioni — *Dimensions*

### ECP600/... U



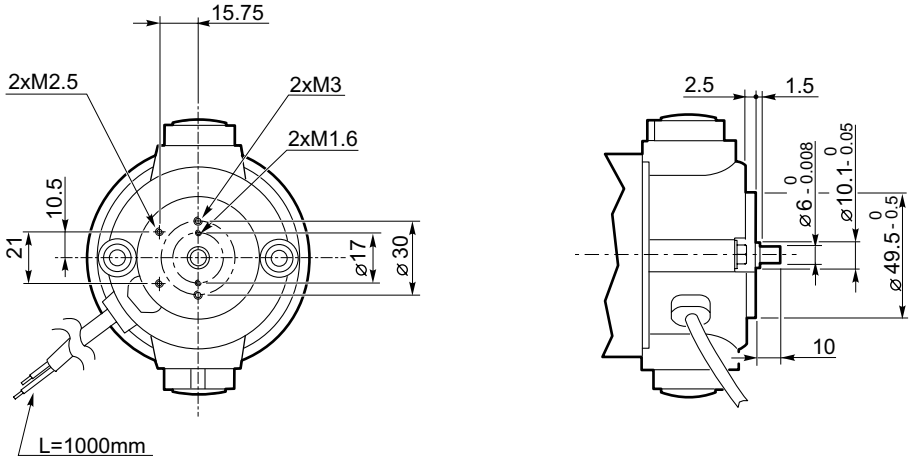




**ECP600/... C...**

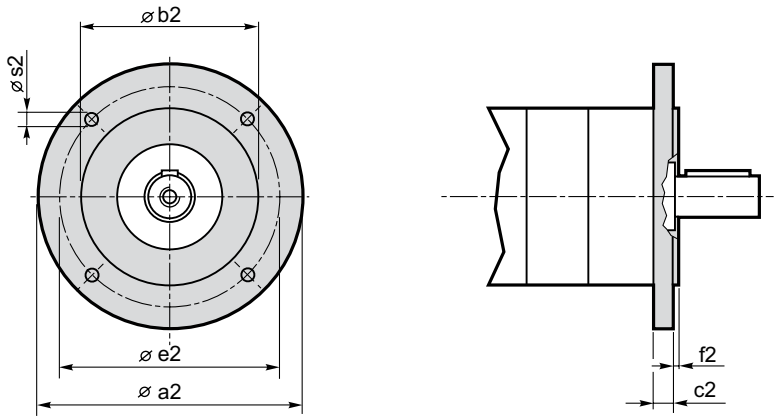
| Tipo *Type* | Numero di stadi *Stages number* | Dimensioni / *Dimensions* | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L1 | L | A | B | C | D | E | F | G | H | I | K |
| ECP600/72... | 1 | 92.4 | 321.4 | 72 | 45 j7 | 40 | 16 h7 | 5 | 9 | 60 | M5x10 | M5x12 | 5x5x30 |
| | 2 | 112 | 341 | | | | | | | | | | |
| | 3 | 131.6 | 360.6 | | | | | | | | | | |
| ECP600/81... | 1 | 101 | 330 | 81 | 50 j7 | 40 | 19 h7 | 5 | 9 | 65 | M6x12 | M6x16 | 6x6x28 |
| | 2 | 123 | 352 | | | | | | | | | | |
| | 3 | 145 | 374 | | | | | | | | | | |
| ECP600/105... | 1 | 120.4 | 349.4 | 105 | 70 j7 | 50 | 25 h7 | 5 | 9 | 85 | M8x16 | M10x22 | 8x7x40 |
| | 2 | 151.5 | 380.5 | | | | | | | | | | |
| | 3 | 182.5 | 411.5 | | | | | | | | | | |
| ECP600/120... | 1 | 133.7 | 362.7 | 120 | 80 j7 | 73 | 32 k6 | 5 | 15 | 100 | M10x22 | M12 | 10x8x50 |
| | 2 | 167.9 | 396.9 | | | | | | | | | | |
| | 3 | 202.1 | 431.1 | | | | | | | | | | |

## Dimensioni — *Dimensions*

**ECP100.24E**
**ECP180.24E**




### ECP.../... C... Flange uscita / *Output flanges*

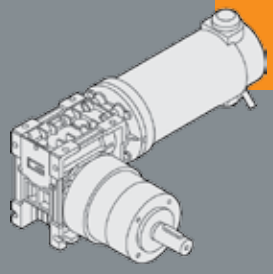



| | Dimensioni / *Dimensions* | | | | | | |
|---|---|---|---|---|---|---|---|
| **P** | **a2** | **b2** | **c2** | **e2** | **f2** | **s2** | **Flangia uscita** *Output flange* |
| **52** | 80 | 50 j7 | 9 | 65 | 2.5 | M5 | **C80** |
| | 90 | 60 j7 | 9 | 75 | 2.5 | 5.5 | **C90** |
| | 105 | 70 j7 | 9 | 85 | 2.5 | 6.5 | **C105** |
| | 120 | 80 j7 | 9 | 100 | 3.0 | 6.5 | **C120** |
| **62** | 80 | 50 j7 | 9 | 65 | 2.5 | M5 | **C80** |
| | 90 | 60 j7 | 9 | 75 | 2.5 | 5.5 | **C90** |
| | 105 | 70 j7 | 9 | 85 | 2.5 | 6.5 | **C105** |
| | 120 | 80 j7 | 9 | 100 | 3.0 | 6.5 | **C120** |
| **72** | 80 | 50 j7 | 9 | 65 | 2.5 | M5 | **C80** |
| | 90 | 60 j7 | 9 | 75 | 2.5 | M5 | **C90** |
| | 105 | 70 j7 | 9 | 85 | 2.5 | 6.5 | **C105** |
| | 120 | 80 j7 | 9 | 100 | 3.0 | 6.5 | **C120** |
| **81** | 90 | 60 j7 | 9 | 75 | 2.5 | M5 | **C90** |
| | 105 | 70 j7 | 9 | 85 | 2.5 | M6 | **C105** |
| | 120 | 80 j7 | 9 | 100 | 3.0 | 6.5 | **C120** |
| **105** | 120 | 80 j7 | 12 | 100 | 3 | M6 | **C120** |
| | 140 | 95 j7 | 12 | 115 | 3.5 | M8 | **C140** |
| | 160 | 110 j7 | 12 | 130 | 3.5 | M8 | **C160** |
| **120** | 140 | 95 j7 | 15 | 115 | 3 | M8 | **C140** |
| | 160 | 110 j7 | 15 | 130 | 3.5 | M8 | **C160** |

TRANSTECNO®
THE MODULAR GEARMOTOR

# ECWMP

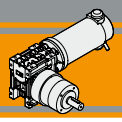
ECWMP



## MOTORIDUTTORI C.C. COMBINATI

## PERMANENT MAGNETS D.C. COMBINATION GEARMOTORS


TRANSTECNO · GENUINE · PRODUCTS ·



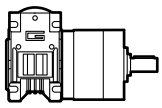
## Caratteristiche tecniche — *Technical features*

L'accoppiamento di un riduttore a vite senza fine con un riduttore epicicloidale consente di ottenere elevati rapporti di riduzione ($i_{max}$ = 1/18452) e di disporre di un gruppo autolubrificato compatto, silenzioso e con un'elevata affidabilità.

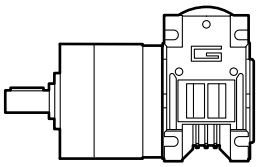
*The coupling of a wormgearbox to a planetary gearbox allows to obtain high reduction ratios ($i_{max}$ = 1/18452) and to get a compact, silent, self lubricated with high reliability group.*

## Designazione — *Classification*

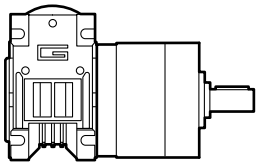
MOTORIDUTTORE / *GEARMOTOR*

| ECWMP | 070/026/52 | | | | | 2 | CD | 90 | 405 | 240 | VS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Tipo *Type* | Grandezza *Size* | | | | | Numero stadi epicicloidale *Planetary stages number* | Versione Riduttore *Gearbox Version* | Flangia Uscita *Output flange* | Rapporto *Ratio* | Versione Motore *Motor Version* | Opzioni *Options* |
| ECWMP  | 070/026/52<br>070/026/62<br>070/030/81 | 100/026/52<br>100/026/62<br>100/030/81 | 180/026/62<br>180/030/81 | 250/030/81 | 350/030/81 | 1<br>2<br>3 | US<br>UD<br>CS<br>CD | 80<br>90<br>105<br>120 | Vedere tabella *See tables* | 120<br>240<br>24E | VS |

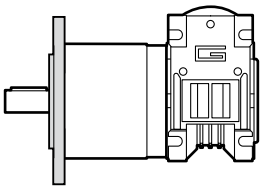
## Versioni — *Versions*



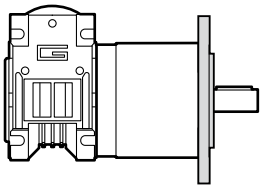
**US**



**UD**



**CS**



**CD**

## Simbologia — *Symbols*

| | | |
|---|---|---|
| $n_1$ | [$min^{-1}$] | Velocità in ingresso / *Input speed* |
| $n_2$ | [$min^{-1}$] | Velocità in uscita / *Output speed* |
| i | | Rapporto di riduzione / *Ratio* |
| $P_1$ | [kW] | Potenza in entrata / *Input power* |
| $M_n$ | [Nm] | Coppia nominale in uscita del riduttore / *Maximum output torque of the gearbox* |
| $M_2$ | [Nm] | Coppia in uscita in funzione di $P_1$ / *Output torque referred to $P_1$* |
| sf | | Fattore di servizio / *Service factor* |
| Rd | % | Rendimento dinamico / *Dynamic efficiency* |
| $A_2$ | N] | Carico assiale ammissibile in uscita / *Permitted output axial load* |
| $R_2$ | [N] | Carico radiale ammissibile in uscita / *Permitted output radial load* |

## Lubrificazione — *Lubrication*

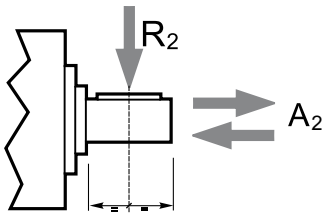
I riduttori a vite senza fine della serie CM sono lubrificati a vita con olio sintetico di viscosità 320 e possono essere installati in qualunque posizione di montaggio.

*Permanent synthetic oil long-life lubrication allow to use CM wormgearbox range in all mounting position.*

I riduttori epicicloidali sono lubrificati in modo permanente, non richiedono quindi ulteriore manutenzione.
Questo gli consente di essere installati praticamente ovunque.
La temperatura di funzionamento consentita va da -30°C a + 140°C; per applicazioni particolari possone essere adottate misure per raggiungere livelli di temperatura maggiori.

*Planetary gearboxes are life-time lubricated with grease, therefore they are maintenancie free.*
*They can be installed in any location.*
*The temperature range is from -30°C up to + 140°C; for special applications, measures can be taken for higher temperature range.*

## Carichi radiali — *Radial loads*




| Numero di stadi *Stages number* | Carichi Radiali $R_2$ [N] *Radial Load $R_2$ [N]* | | |
|---|---|---|---|
| | P52 | P62 | P81 |
| 1 | 200 | 240 | 400 |
| 2 | 320 | 360 | 600 |
| 3 | 450 | 520 | 1000 |

| Numero di stadi *Stages number* | Carichi Assiali $A_2$ [N] *Axial Load $A_2$ [N]* | | |
|---|---|---|---|
| | P52 | P62 | P81 |
| 1 | 60 | 70 | 80 |
| 2 | 100 | 100 | 120 |
| 3 | 150 | 150 | 200 |

## Rapporti — *Ratios*

| Motoriduttore *Gearmotor* | Numero stadi epicicloidale *Planetary stages number* | Rapporto epicicloidale *Planetary ratio* | Rapporto vite senza fine *Wormgearbox ratio* | Rapporto finale *Total ratio* |
|---|---|---|---|---|
| .../026/052<br>.../026/062<br>.../030/081 | 1 | 6.75 | 10 | **67.5** |
| | | | 15 | **101.3** |
| | | | 20 | **135** |
| | | | 30 | **202.5** |
| | | | 40 | **270** |
| | | | 50 | **337.5** |
| | | | 60 | **405** |
| | 2 | 28.93 | 10 | **289.3** |
| | | | 15 | **434.0** |
| | | | 20 | **578.6** |
| | | | 30 | **867.9** |
| | | | 40 | **1157** |
| | | | 50 | **1447** |
| | | | 60 | **1736** |
| | | 34.97 | 60 | **2098** |
| | | 45.56 | 60 | **2734** |

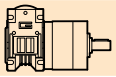
## Rendimento — *Efficiency*

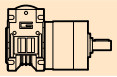
| Motoriduttore *Gearmotor* | $n_1$ [$min^{-1}$] | Rendimento *Efficiency* | Rapporto / *Ratio* | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 67.5 | 101.3 | 135 | 202.5 | 270 | 337.5 | 405 | 289.3 | 434.0 | 578.6 | 867.9 | 1157 | 1447 | 1736 | 2098 | 2734 |
| .../026/052 | 2800 | Rd % | 68 | 66 | 64 | 58 | 54 | 51 | 48 | 64 | 62 | 60 | 54 | 51 | 48 | 45 | 45 | 45 |
| .../026/062 | | | 68 | 66 | 64 | 58 | 54 | 51 | 48 | 64 | 62 | 60 | 54 | 51 | 48 | 45 | 45 | 45 |
| .../030/081 | | | 68 | 67 | 64 | 59 | 56 | 52 | 49 | 64 | 63 | 60 | 55 | 52 | 48 | 46 | 46 | 46 |

**Rendimento teorico del riduttore dopo il rodaggio**
***Theoretical efficiency of the gearbox after the first running period***

## Dati tecnici per servizio S2

## *Technical data for S2 duty*

| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **100** | | | | | | |
| (3000 min$^{-1}$) | **44.4** | 14 | 1.8 | 67.5 | **070/026/521** | 120/240 |
| | **29.6** | 21 | 1.2 | 101.3 | | |
| | **22.2** | 25 | 1.0 | 135.0 | | |
| | **14.8** | 25 | 1.0 | 202.5 | | |
| | **11.1** | 25 | 1.0 | 270.0 | | |
| | **10.4** | 25 | 1.0 | 289.3 | **070/026/522** | 120/240 |
| | **8.9** | 25 | 1.0 | 337.5 | **070/026/521** | 120/240 |
| | **7.4** | 25 | 1.0 | 405 | | |
| | **6.9** | 25 | 1.0 | 434 | **070/026/522** | 120/240 |
| | **5.2** | 25 | 1.0 | 579 | | |
| | **3.5** | 25 | 1.0 | 868 | | |
| | **2.6** | 25 | 1.0 | 1157 | | |
| | **2.1** | 25 | 1.0 | 1447 | | |
| | **1.7** | 25 | 1.0 | 1736 | | |
| | **1.4** | 25 | 1.0 | 2098 | | |
| | **1.1** | 25 | 1.0 | 2734 | | |
| | **44.4** | 14 | 2.8 | 67.5 | **070/026/621** | 120/240 |
| | **29.6** | 21 | 1.9 | 101.3 | | |
| | **22.2** | 27 | 1.5 | 135.0 | | |
| | **14.8** | 37 | 1.1 | 202.5 | | |
| | **11.1** | 40 | 1.0 | 270.0 | | |
| | **10.4** | 50 | 1.0 | 289.3 | **070/026/622** | 120/240 |
| | **8.9** | 40 | 1.0 | 337.5 | **070/026/621** | 120/240 |
| | **7.4** | 40 | 1.0 | 405.0 | | |
| | **6.9** | 50 | 1.0 | 434.0 | **070/026/622** | 120/240 |
| | **5.2** | 50 | 1.0 | 578.6 | | |
| | **3.5** | 50 | 1.0 | 867.9 | | |
| | **2.6** | 50 | 1.0 | 1157 | | |
| | **2.1** | 50 | 1.0 | 1447 | | |
| | **1.7** | 50 | 1.0 | 1736 | | |
| | **1.4** | 50 | 1.0 | 2098 | | |
| | **1.1** | 50 | 1.0 | 2734 | | |
| | **44.4** | 14 | 5.6 | 67.5 | **070/030/811** | 120/240 |
| | **29.6** | 21 | 3.8 | 101.3 | | |
| | **22.2** | 27 | 2.9 | 135.0 | | |
| | **14.8** | 37 | 2.2 | 202.5 | | |
| | **11.1** | 47 | 1.7 | 270.0 | | |
| | **10.4** | 58 | 2.1 | 289.3 | **070/030/812** | 120/240 |
| | **8.9** | 54 | 1.5 | 337.5 | **070/030/811** | 120/240 |
| | **7.4** | 62 | 1.3 | 405.0 | | |
| | **6.9** | 85 | 1.4 | 434.0 | **070/030/812** | 120/240 |
| | **5.2** | 109 | 1.1 | 578.6 | | |
| | **3.5** | 120 | 1.0 | 867.9 | | |
| | **2.6** | 120 | 1.0 | 1157 | | |
| | **2.1** | 120 | 1.0 | 1447 | | |
| | **1.7** | 120 | 1.0 | 1736 | | |
| | **1.4** | 120 | 1.0 | 2098 | | |
| | **1.1** | 120 | 1.0 | 2734 | | |

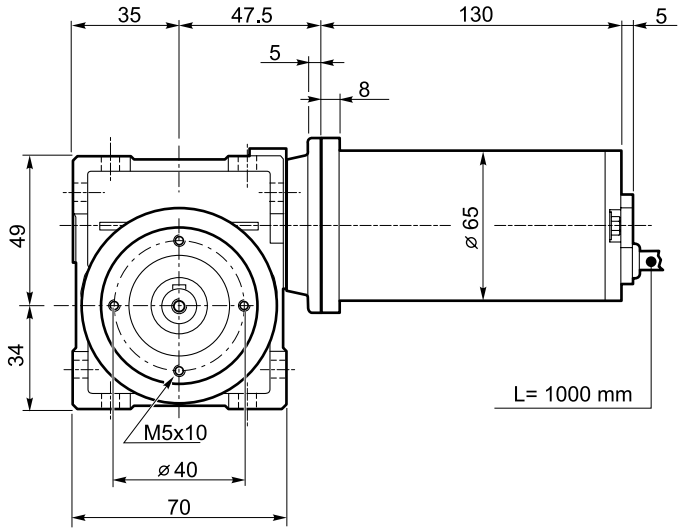
| $P_1$ [W] | $n_2$ [min$^{-1}$] | $M_2$ [Nm] | sf | i |  | Versione motore *Motor version* |
|---|---|---|---|---|---|---|
| **140** | | | | | | |
| (3000 min$^{-1}$) | **44.4** | 20 | 1.3 | 67.5 | **100/026/521** | 120/240/24E |
| | **29.6** | 25 | 1.0 | 101.3 | | |
| | **44.4** | 20 | 2.0 | 67.5 | **100/026/621** | 120/240/24E |
| | **29.6** | 29 | 1.4 | 101.3 | | |
| | **22.2** | 37 | 1.1 | 135.0 | | |
| | **14.8** | 40 | 1.0 | 202.5 | | |
| | **44.4** | 20 | 4.0 | 67.5 | **100/030/811** | 120/240/24E |
| | **29.6** | 29 | 2.7 | 101.3 | | |
| | **22.2** | 38 | 2.1 | 135.0 | | |
| | **14.8** | 52 | 1.6 | 202.5 | | |
| | **11.1** | 65 | 1.2 | 270.0 | | |
| | **10.4** | 80 | 1.5 | 289.3 | **100/030/812** | 120/240/24E |
| | **8.9** | 75 | 1.1 | 337.5 | **100/030/811** | 120/240/24E |
| | **7.4** | 80 | 1.0 | 405.0 | | |
| | **6.9** | 120 | 1.0 | 434.0 | **100/030/812** | 120/240/24E |
| | **5.2** | 120 | 1.0 | 578.6 | | |
| **250** | | | | | | |
| (3000 min$^{-1}$) | **44.4** | 37 | 1.1 | 67.5 | **180/026/621** | 120/240 |
| | **29.6** | 40 | 1.0 | 101.3 | | |
| | **22.2** | 40 | 1.0 | 135.0 | | |
| | **44.4** | 37 | 2.2 | 67.5 | **180/030/811** | 120/240/24E |
| | **29.6** | 54 | 1.5 | 101.3 | | |
| | **22.2** | 70 | 1.1 | 135.0 | | |
| | **14.8** | 80 | 1.0 | 202.5 | | |
| | **11.1** | 80 | 1.0 | 270.0 | | |
| | **10.4** | 120 | 1.0 | 289.3 | **180/030/812** | 120/240/24E |
| | **8.9** | 80 | 1.0 | 337.5 | **180/030/811** | 120/240/24E |
| **350** | | | | | | |
| (3000 min$^{-1}$) | **44.4** | 52 | 1.5 | 67.5 | **250/030/811** | 120/240 |
| | **29.6** | 76 | 1.1 | 101.3 | | |
| | **22.2** | 80 | 1.0 | 135.0 | | |
| | **14.8** | 80 | 1.0 | 202.5 | | |
| | **11.1** | 80 | 1.0 | 270.0 | | |
| **500** | | | | | | |
| (3000 min$^{-1}$) | **44.4** | 73 | 1.1 | 67.5 | **350/030/811** | 120/240 |
| | **29.6** | 80 | 1.0 | 101.3 | | |
| | **22.2** | 80 | 1.0 | 135.0 | | |

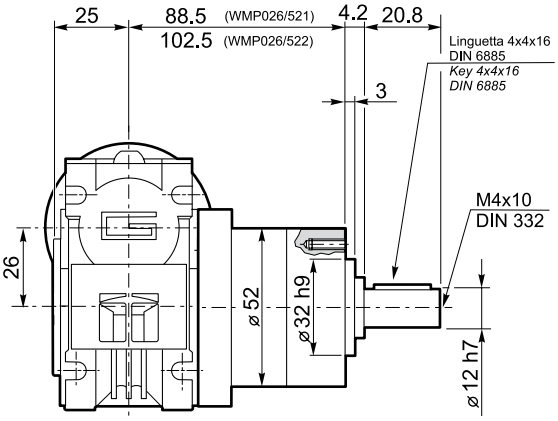
**Nota:** Verificare sempre che la coppia M2 utilizzata non ecceda il valore indicato nelle caselle in grigio

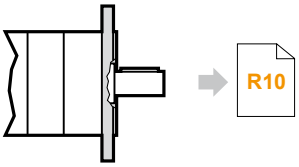
***Note:*** *Please check that the output torque M2 does not exceed the value into the grey areas*

**Dimensioni** *Dimensions*

## ECWMP070/026/52...U

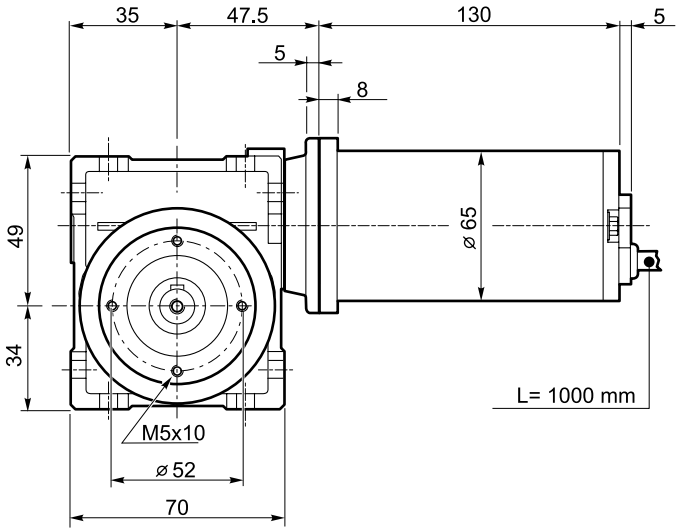


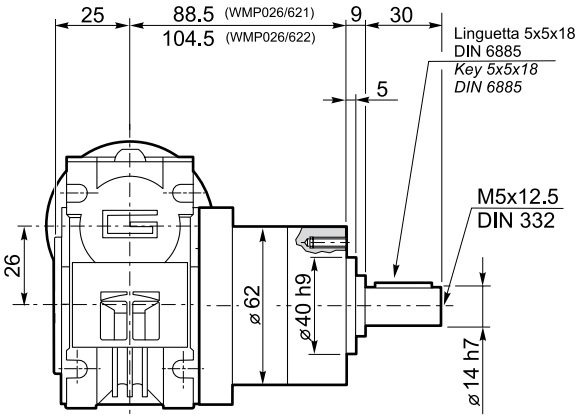



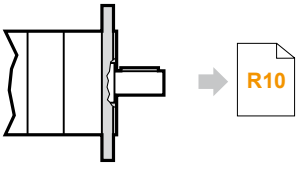




**ECWMP070/026/52...C**

## ECWMP070/026/62...U



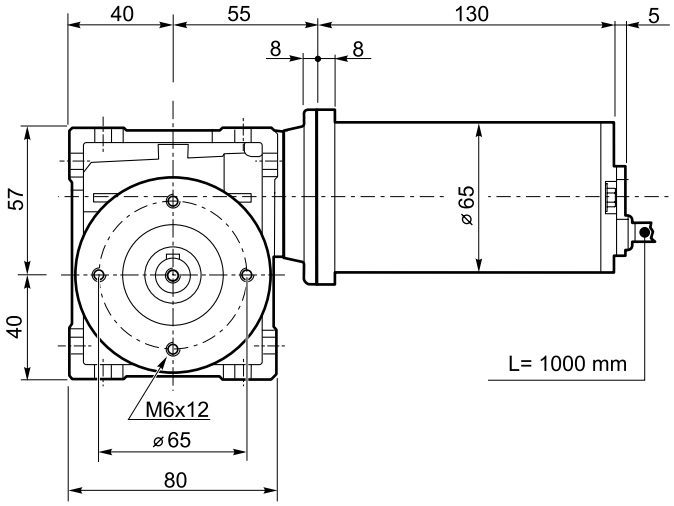



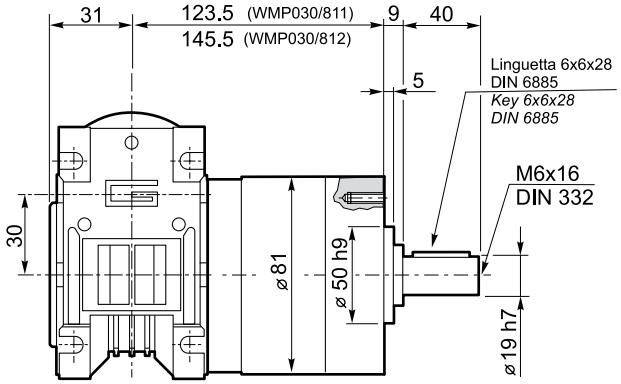



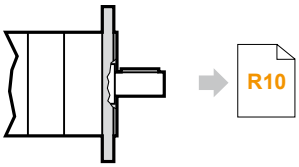

**ECWMP070/026/62...C**

**Dimensioni** ***Dimensions***

## ECWMP070/030/81...U

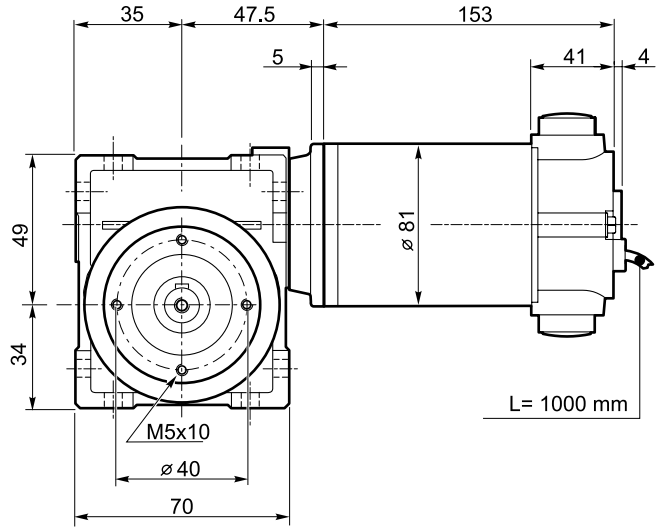


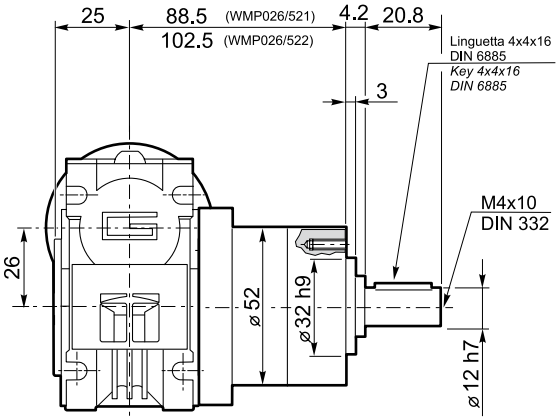



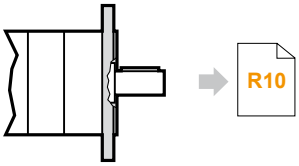




**ECWMP070/030/81...C**

## ECWMP100/026/52...U



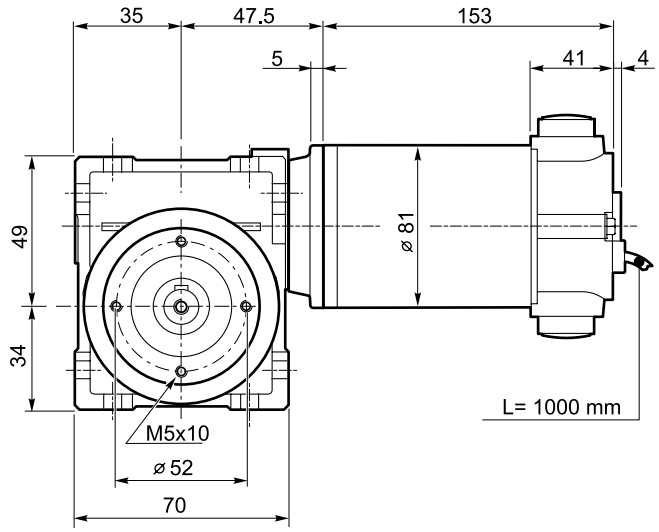



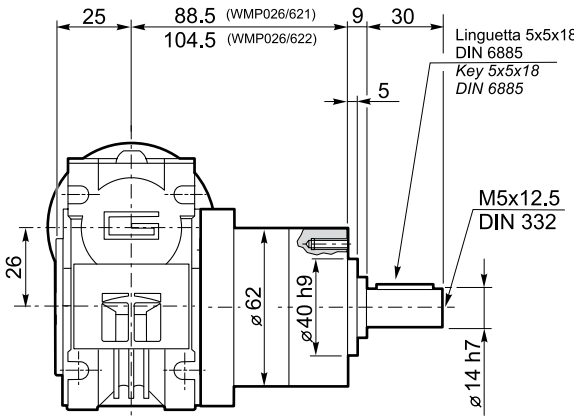



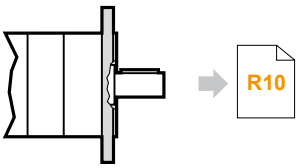

**ECWMP100/026/52...C**

**Dimensioni** | ***Dimensions***

## ECWMP100/026/62...U

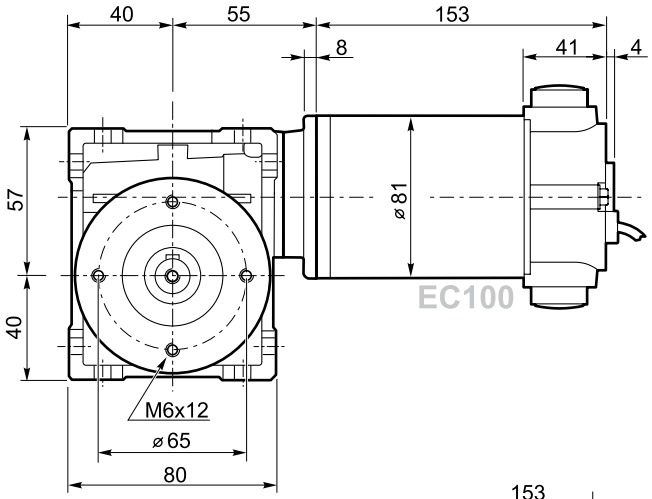


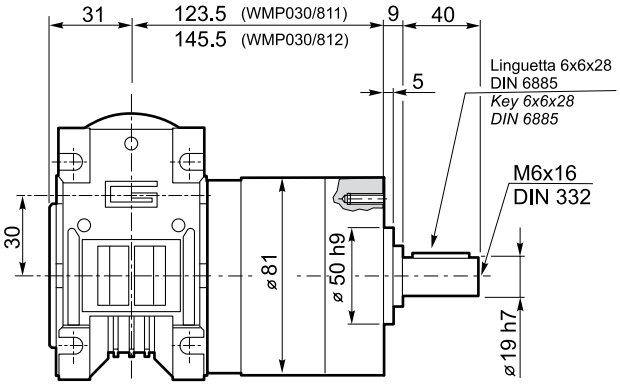



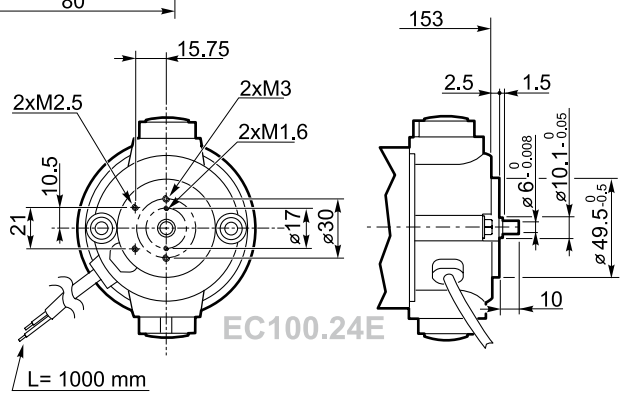



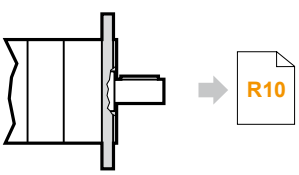

**ECWMP100/026/62...C**

## ECWMP100/030/81...U



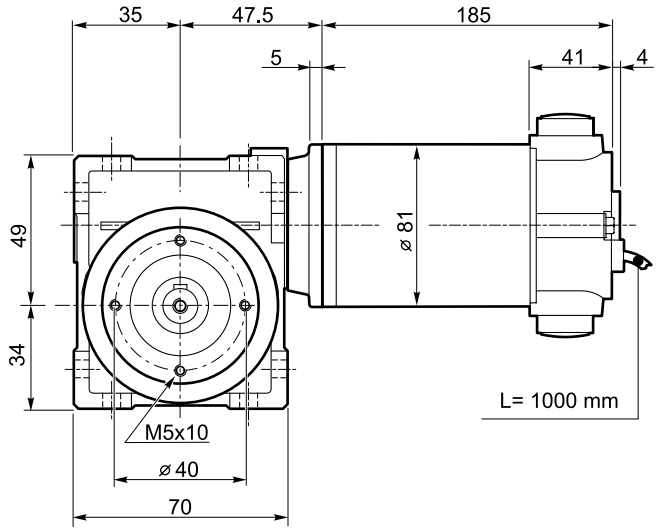



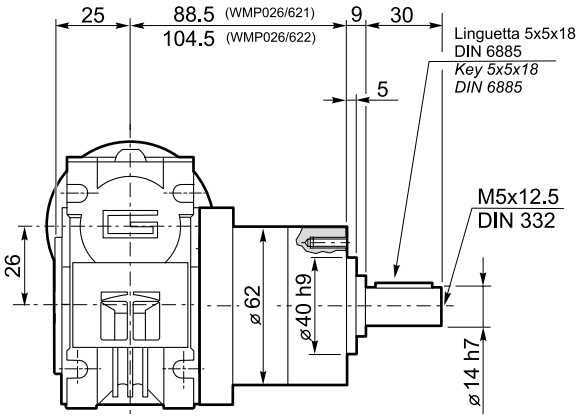



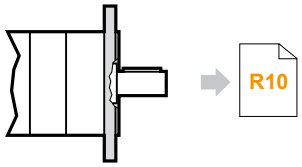

**ECWMP100/030/81...C**

**Dimensioni** *Dimensions*

## ECWMP180/026/62...U

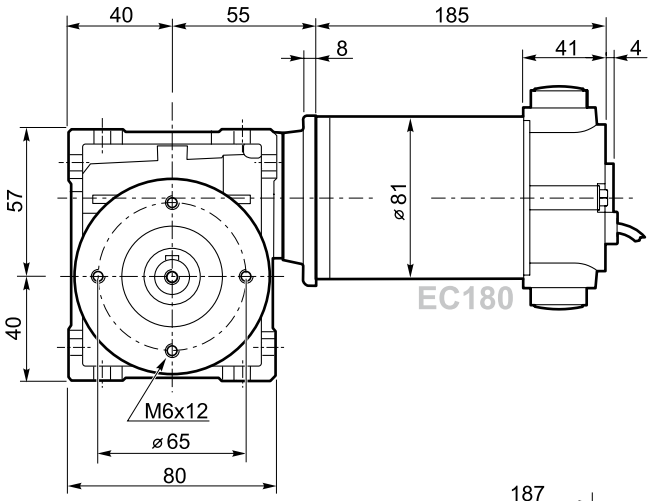


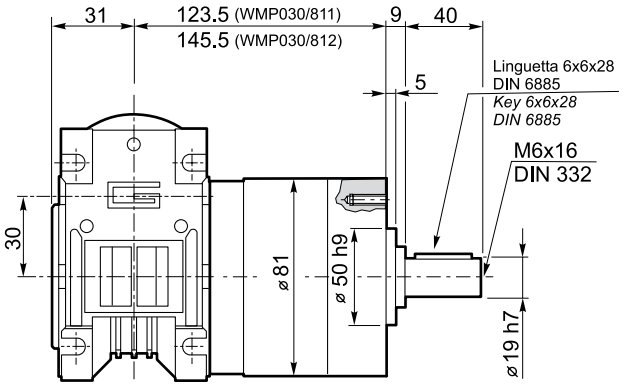



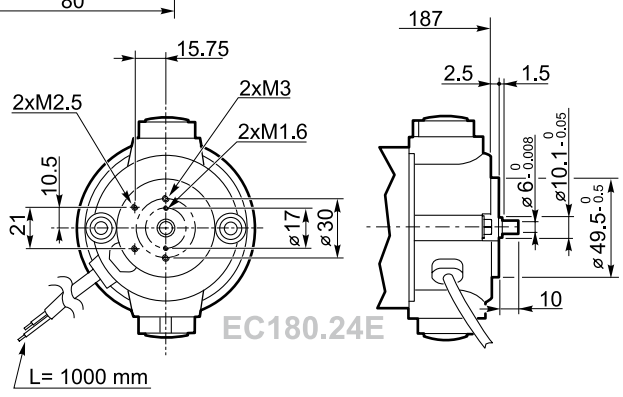



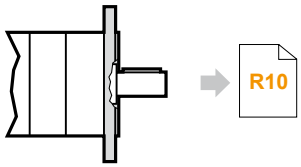

**ECWMP180/026/62...C**

## ECWMP180/030/81...U



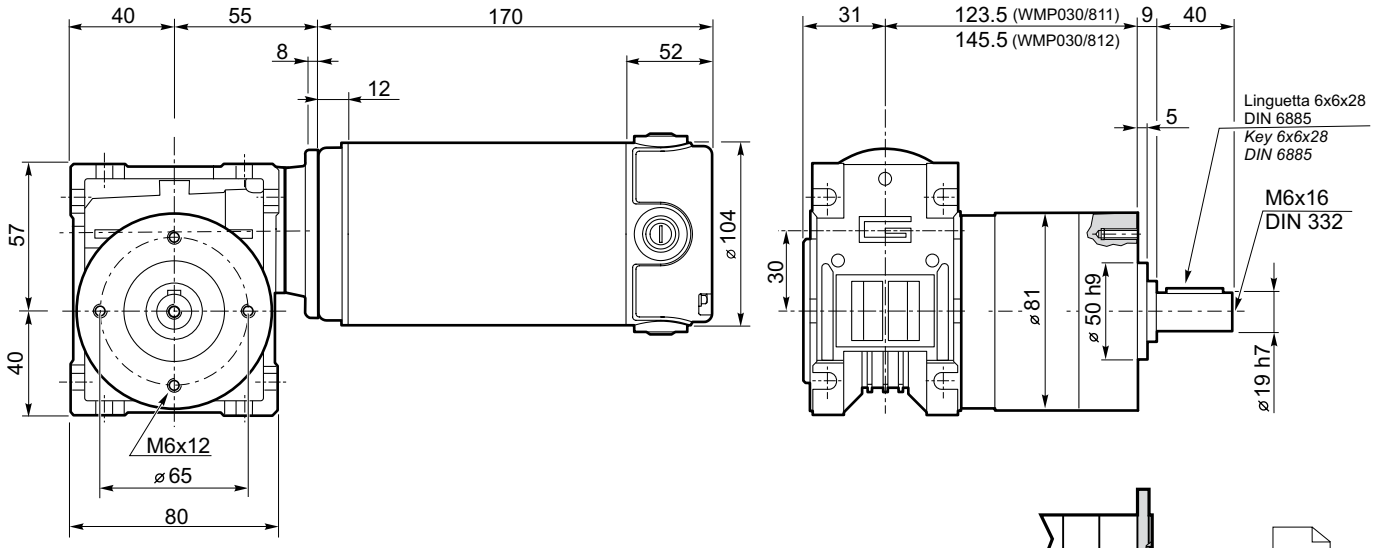



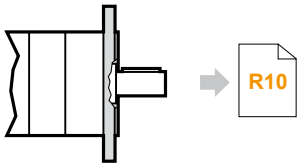




**ECWMP180/030/81...C**

**Dimensioni** *Dimensions*

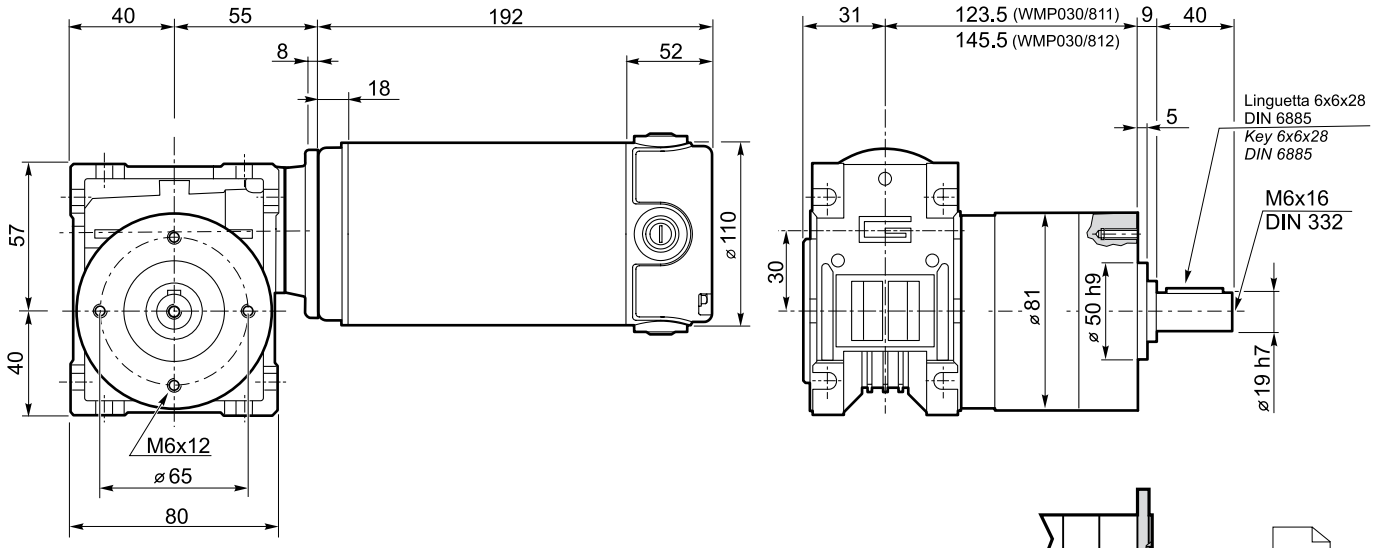
## ECWMP250/030/81...U

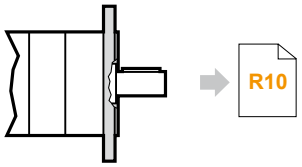



**ECWMP250/030/81...C**

## ECWMP350/030/81...U

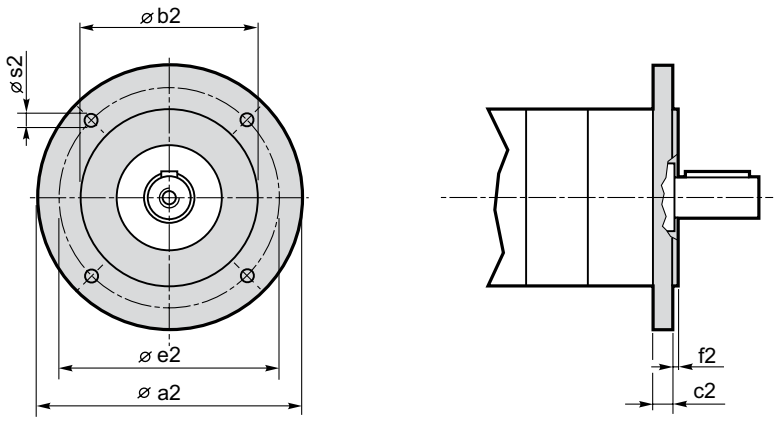



**ECWMP350/030/81...C**

## Dimensioni — *Dimensions*

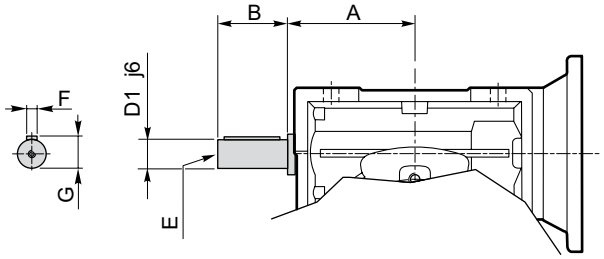
### ECWMP.../.../... C... Flange uscita / *Output flanges*




| P | Dimensioni / *Dimensions* | | | | | | |
|---|---|---|---|---|---|---|---|
| | a2 | b2 | c2 | e2 | f2 | s2 | Flangia uscita *Output flange* |
| 52 | 80 | 50 j7 | 9 | 65 | 2.5 | M5 | **C80** |
| | 90 | 60 j7 | 9 | 75 | 2.5 | 5.5 | **C90** |
| | 105 | 70 j7 | 9 | 85 | 2.5 | 6.5 | **C105** |
| | 120 | 80 j7 | 9 | 100 | 3.0 | 6.5 | **C120** |
| 62 | 80 | 50 j7 | 9 | 65 | 2.5 | M5 | **C80** |
| | 90 | 60 j7 | 9 | 75 | 2.5 | 5.5 | **C90** |
| | 105 | 70 j7 | 9 | 85 | 2.5 | 6.5 | **C105** |
| | 120 | 80 j7 | 9 | 100 | 3.0 | 6.5 | **C120** |
| 81 | 90 | 60 j7 | 9 | 75 | 2.5 | M5 | **C90** |
| | 105 | 70 j7 | 9 | 85 | 2.5 | M6 | **C105** |
| | 120 | 80 j7 | 9 | 100 | 3.0 | 6.5 | **C120** |

## Opzioni — *Options*

### VS - Vite sporgente / *Extended input shaft*




| | A | B | $D_1$ j6 | E | F | G |
|---|---|---|---|---|---|---|
| **CM 030** | 45 | 20 | 9 | M4 | 3 | 10.2 |

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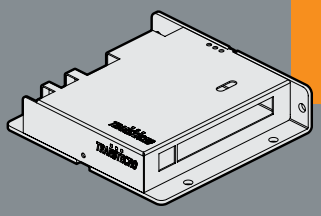
PLN



# AZIONAMENTI PER MOTORI C.C.

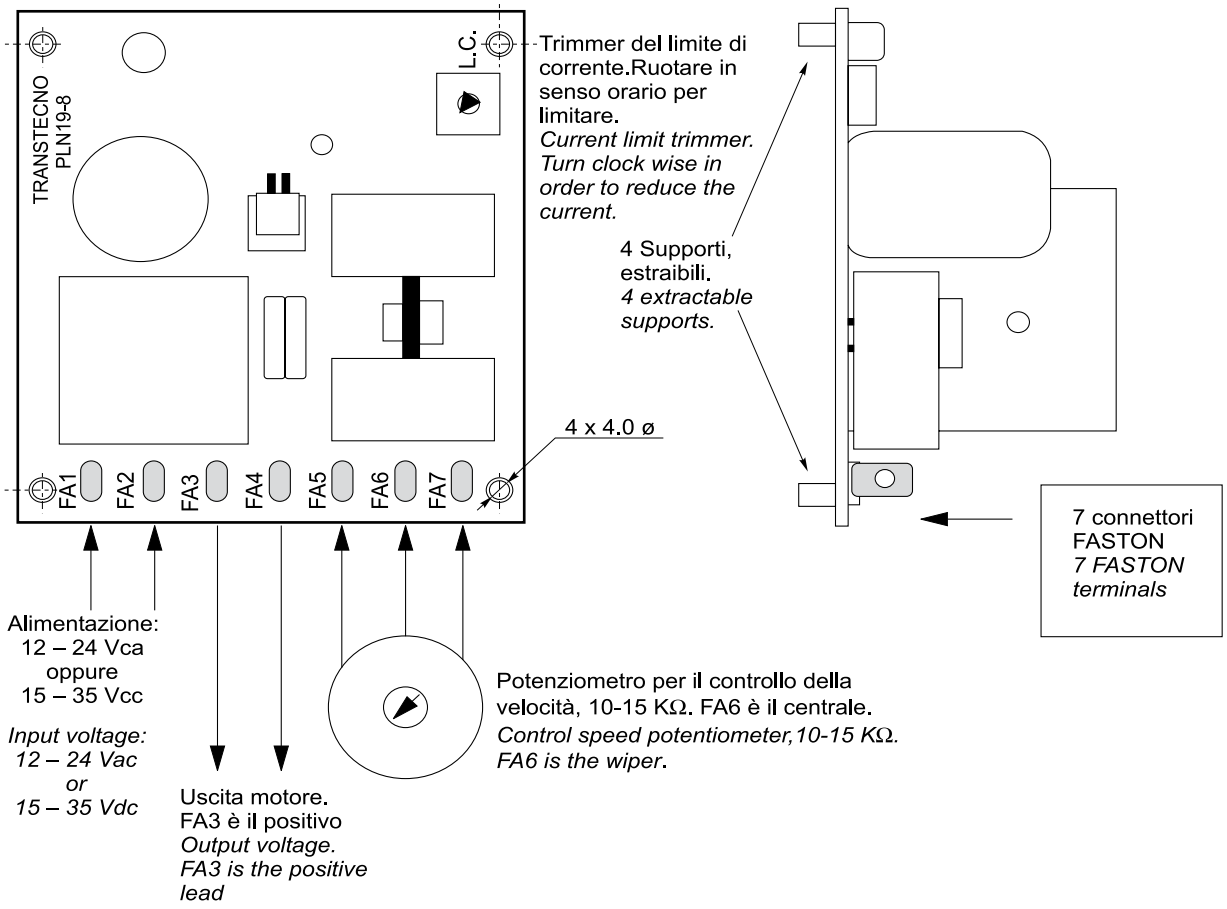
# D.C. MOTOR CONTROLS


TRANSTECNO · GENUINE · PRODUCTS ·

## AZIONAMENTO UNIDIREZIONALE PWM PER LA REGOLAZIONE DI VELOCITA' DEI MOTORI A CORRENTE CONTINUA A BASSA TENSIONE

## *LOW VOLTAGE SINGLE DIRECTION PWM DC MOTORS CONTROL*

### *SCHEMA DEI COLLEGAMENTI - MAIN CONNECTION DIAGRAM*




**Attenzione:** se si scollega il potenziometro con la scheda alimentata, il motore ruota alla velocità nominale.

***Warning:*** *if speed pot is disconnected when the board is powered, the motor runs at its maximum speed.*

### Caratteristiche tecniche

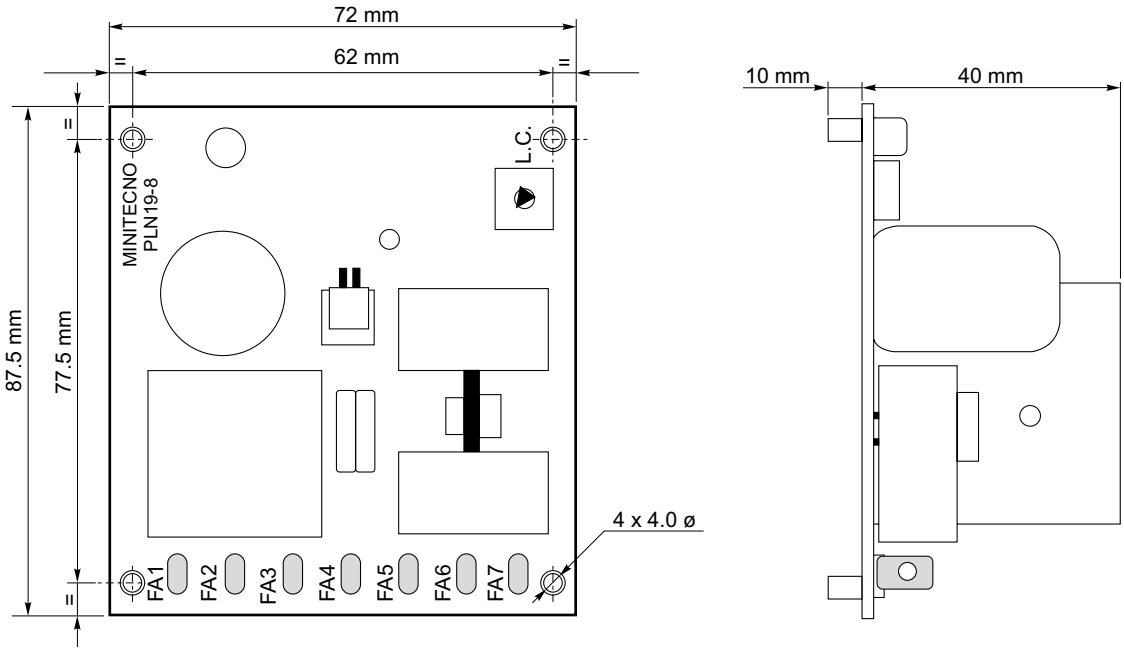
### *Technical features*

- Alimentazione ai terminali FA1 e FA2:
  12 - 24 Vca oppure 15 - 35 Vcc.
- Regolazione della velocità mediante potenziometro 10-15 KΩ.
- Trimmer di Limitazione della corrente, per adattare la scheda anche a motori di piccole potenze. Per limitare l' erogazione di corrente, ruotare in senso orario il trimmer.
- Uscita motore ai terminali FA3 e FA4, regolabile da 0 a Vcc MAX che è proporzionale alla tensione di ingresso. Con 35 Vcc di alimentazione, l'uscita MAX è circa 30 Vcc.
- Corrente di uscita (*): Massima corrente ammessa: 8 A in ambiente ventilato, servizio continuo.
- Peso: 0.120 Kg.

- *Line voltage at terminals FA1 and FA2:*
  *12 – 24 Vac or 15 – 35 Vdc.*
- *The speed of the drive is to be controlled by potentiometer, 10-15 KΩ.*
- *Current Limit trimmer, in order to suit the board for small motors. In order to limit the current, turn clock wise the trimmer.*
- *Output voltage from terminals FA3 and FA4, from 0 up to Vdc MAX which is proportional to the input voltage. With 35 Vdc input voltage, the max output voltage is about 30 Vdc.*
- *Output current (*): Maximum output current allowed: 8 A in a ventilated environment, continuous duty.*
- *Weight: 0.120 Kg.*

## Dimensioni

## *Dimensions*




## Opzioni

## *Options*

1. Potenziometro 10 kΩ
2. Supporto per montaggio su guida DIN

1. *Speed potentiometer 10 kΩ*
2. *DIN mounting support*

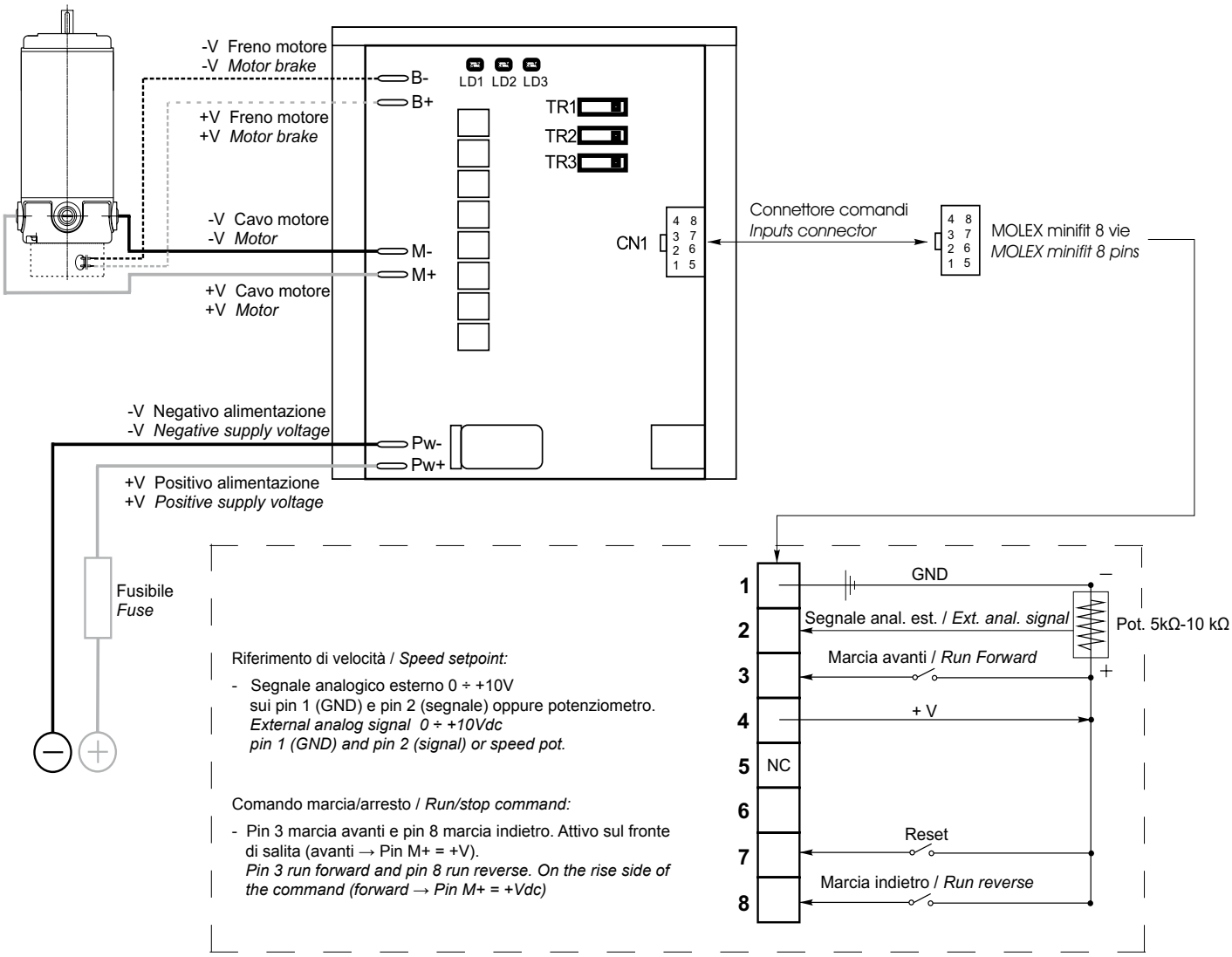
(*) il valore massimo di corrente motore deve essere utilizzato in **ambiente ventilato**. In ambienti non ventilati e per temperatura ambiente di 45 °C, ridurre la corrente motore massima a 4 A; servizio continuo.

(*) *the maximum output current value must be used **in a ventilated environment.** Derate the maximum output current down to 4 A if the environment is not ventilated and the temperature is about 45 °C; continuous duty.*

## AZIONAMENTO BIDIREZIONALE PWM PER LA REGOLAZIONE DI VELOCITA' DEI MOTORI A CORRENTE CONTINUA A BASSA TENSIONE

## *LOW VOLTAGE BIDIRECTIONAL PWM DC MOTORS CONTROL*

### *SCHEMA DEI COLLEGAMENTI - MAIN CONNECTION DIAGRAM*




**Fusibile:**
150-200% della corrente motore. Max 3 volte la corrente nominale della scheda, con intervento entro pochi secondi.

***Fuse:***
*150-200 % rated motor current. Max 3 times rated current of the drive (trip time in few seconds).*

**Trimmer multigiro:**

TR1: Accelerazione: selezione da 0.5 a 10 sec.

TR2: Limite di corrente: riduce il limite di corrente nominale da 100% a circa 30% (corrente di picco 3 volte la corrente selezionata).

TR3: Decelerazione: selezione da 0.5 a 10 sec.

***Multiturn trimmers:***

*TR1: Acceleration time: from 0.5 to 10 sec.*

*TR2: Current limitation: rated current limited from 100% to about 30% (peak current 3 times the selected limited current).*

*TR3: Deceleration time: from 0.5 to 10 sec.*

**LED:**

LD1: Visualizza lo stato di funzionamento con limite di corrente attivo (il motore assorbe più della corrente selezionata e l'azionamento opera in limitazione).

LD2: Stato dell'azionamento: lampeggio veloce e continuo = funzionamento normale, lampeggio lento e codificato = presenza di un allarme

LD3: Segnalazione presenza alimentazione.

***LED:***

*LD1: ON when the drive runs under current limitation (motor requires more than the rated current and drive supplies only limited current).*

*LD2: Status: quick continuous flash = drive ok, slow coded flash = fault).*

*LD3: Power ON*

## Caratteristiche tecniche

## *Technical features*

- Scheda bidirezionale a transistor a ricircolo di corrente.
- Selezionabili i seguenti parametri (mediante trimmer):
  - rampa di accelerazione: 0.5 - 10 sec
  - rampa di decelerazione: 0.5 - 10 sec
  - limite corrente 100%-30% circa
- Temperatura di lavoro: 0°C / +40°C (allarme sotto zero)
- Diagnostica tramite LED
- Frequenza di commutazione: 16kHz
- Dotata di coperchio
- Velocità regolabile con potenziometro 5-10 kΩ o con segnale 0-10 Vcc
- Limitazione della corrente regolabile
- Sensore termico di protezione

- *Transistor bidirectional drive with regenerative current system.*
- *Following settings can be adjusted (by built in trimmers):*
  - *acceleration ramp: 0.5 - 10 sec*
  - *deceleration ramp: 0.5 - 10 sec*
  - *current limit 100% - about 30%*
- *Room temperature: 0°C / +40°C (alarm below zero)*
- *LED for system diagnosis*
- *Switching frequency: 16kHz*
- *Covered*
- *5-10 kΩ Speed pot. or 0-10 Vdc external signal for speed regulation*
- *Variable current limit*
- *Thermal sensor for protection*

| Modello<br>*Model number* | Tensione di alimentazione<br>*DC input voltage*<br>[Vdc] | Tensione di uscita<br>*Motor voltage*<br>[Vdc]* | Corrente di uscita nominale<br>*DC load current*<br>[A] | Corrente di picco motore<br>*Maximum load current*<br>[A]** | Campo di alimentazione<br>*Power supply range*<br>[Vdc] |
|---|---|---|---|---|---|
| **PLN20** | 12 ÷ 24 | 0 ÷ Vin | 20 | 60 (4 sec) | 10 ÷ 30 |
| **PLN40** | 12 ÷24 | 0 ÷ Vin | 40 | 120 (4 sec) | 10 ÷ 30 |

* L'azionamento riduce la tensione nominale di 1-2 Vcc. Il fenomeno è normale e fisiologico. Se serve ottenere 24 ÷ 12 Vcc in uscita sotto ogni condizione di carico, si suggerisce di sovralimentare di un paio di volt.

** Un timer impone il limite con un andamento temporale iperbolico, cioè quanta più corrente eroga e tanto meno è il tempo per il quale ciò è ammesso, prima che appunto la scheda vada in limitazione. Alla corrente di picco (x 3 volte quella nominale) la scheda funziona per pochi secondi.

** The drive reduces the rated voltage of 1-2 Vdc. This is normal and physiological. If 24 ÷12 VDC output is required under all load conditions, it is advisable to supercharge a couple of volts.*

*** A timer imposes a limit with a temporary hyperbolic performance, which means the more current is requested, the less time is permitted with this current before the drive is limited. When the current reaches its peak (3 times the rated value) the drive will work for a few seconds.*

## Dotazioni

## *Equipment*

| | PLN20<br>PLN40 |
|---|---|
| Trimmer di selezione ACCEL, DECEL e LIMITE di CORRENTE / *Selection Trimmer ACCEL, DECEL, CURRENT LIMIT* | ■ |
| 2 contatti: marcia avanti e marcia indietro / *2 contacts : forward and reverse* | ■ |
| Riferimento di velocità / *Speed setpoint reference* | ■ |
| 3 LEDs di segnalazione / *3 LEDs signals* | ■ |
| Segnale di comando di eventuale freno negativo di stazionamento / *Command signal for possible negative electromagnetic brake* | ■ |
| Predisposizione per montaggio a libro e a zoccolo / *Arranged for 2 different ways of mounting* | ■ |
| Memorizzazione e segnalazione degli allarmi / *Memory storage and report of allarm* | ■ |
| 2 ingressi digitali ausiliari / *2 auxiliary digital inputs* | ■# |

# uno impegnato dal reset / *one comitted by reset*

## Manuale

Per approfondimenti si raccomanda di scaricare il manuale d'uso dal nostro sito **www.transtecno.com** alla pagina dei prodotti.

## *User manual*

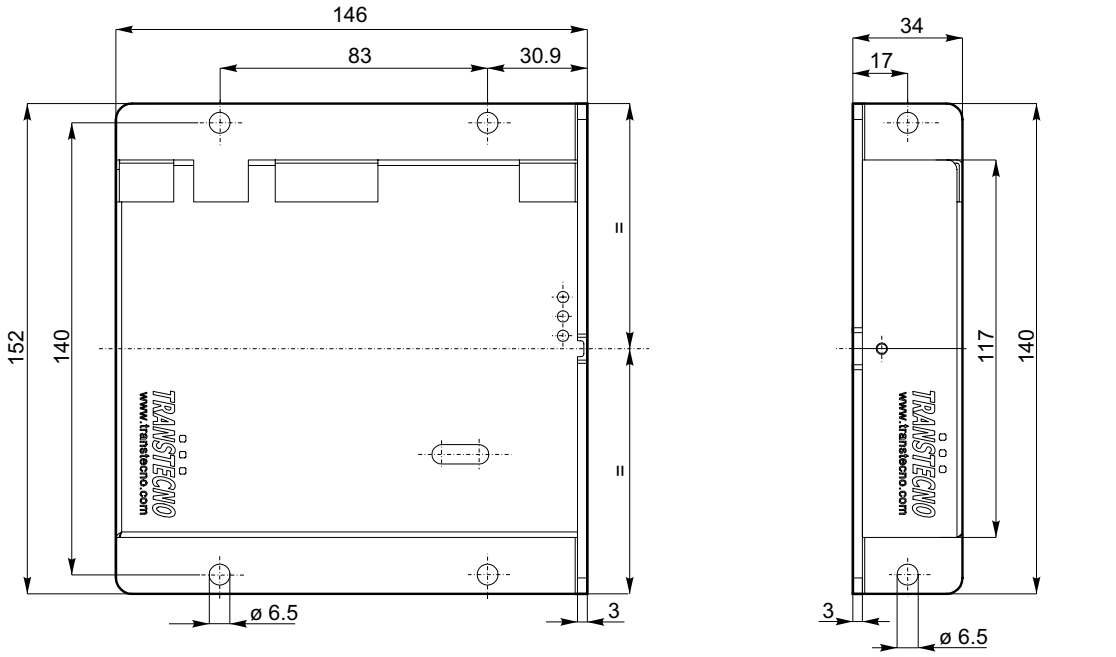
*Please, download the user manual for more information from our web site **www.transtecno.com** from the product page.*

**AZIONAMENTO BIDIREZIONALE PWM PER LA REGOLAZIONE DI VELOCITA' DEI MOTORI A CORRENTE CONTINUA A BASSA TENSIONE**

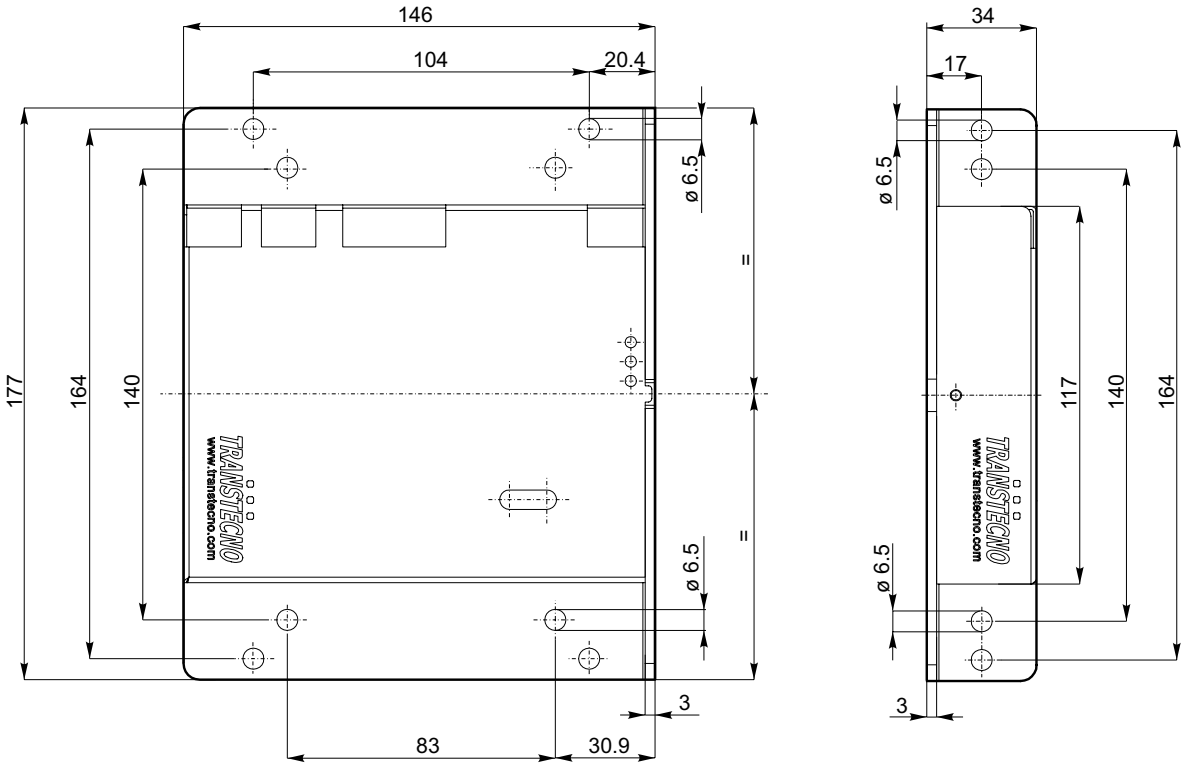
***LOW VOLTAGE BIDIRECTIONAL PWM DC MOTORS CONTROL***

## Dimensioni / *Dimensions*

**PLN20**




**PLN40**



## GUIDA alla selezione dell'azionamento

## *Drive selection GUIDE*

| Corrente di uso del motore | ≤ | Corrente nominale dell'azionamento |
|---|---|---|

| *Real motor current* | ≤ | *Rated current of the drive* |
|---|---|---|

Attenzione: la reale corrente assorbita dal motore può essere diversa da quella indicata in targhetta.

PLN19-8 = max 6 A

PLN20 = max 22 A

PLN40 = max 44 A

Vedere sotto la tabella per esemplificazioni

*Warning: the real absorbed current by the motor can be different from the one written on the nameplate.*

*PLN19-8 = max 6 A*

*PLN20 = max 22 A*

*PLN40 = max 44 A*

*See the table below for quick reference*

| Codice motore *Motor code* | Corrente motore *Motor current* S1 | Scheda-Drive (servizio motore-motor duty) S1 | Corrente motore *Motor current* S2 | Scheda-Drive (servizio motore-motor duty) S2 |
|---|---|---|---|---|
| **EC020.120** | 3.2 | PLN19-8 – PLN20 | 4 | PLN19-8 – PLN20 |
| **EC020.240** | 1.5 | PLN19-8 – PLN20 | 2 | PLN19-8 - PLN20 |
| **EC035.120** | 5.2 | PLN19-8 – PLN20 | 8 | PLN20 |
| **EC035.240** | 2.6 | PLN19-8 - PLN20 | 4 | PLN19-8 - PLN20 |
| **EC050.120** | 6.8 | PLN20 | 9.4 | PLN20 |
| **EC050.240** | 3.4 | PLN19-8 - PLN20 | 4.7 | PLN19-8 - PLN20 |
| **EC070.120** | 8.4 | PLN20 | 11.8 | PLN20 |
| **EC070.240** | 4.2 | PLN19-8 - PLN20 | 5.9 | PLN19-8 - PLN20 |
| **EC100.120** | 12 | PLN20 | 16.8 | PLN20 |
| **EC100.240** | 6 | PLN19-8 - PLN20 | 8.4 | PLN20 |
| **EC100.24E** | 6 | PLN19-8 - PLN20 | 8.4 | PLN20 |
| **ND100.120** | 13.9 | PLN20 | 19 | PLN20 |
| **ND100.240** | 6.9 | PLN20 | 9.0 | PLN20 |
| **EC180.120** | 21.5 | PLN20 | 30 | PLN40 |
| **EC180.240** | 10.8 | PLN20 | 15 | PLN20 |
| **EC180.24E** | 10.8 | PLN20 | 15 | PLN20 |
| **ND180.120** | 20 | PLN20 | 30 | PLN40 |
| **ND180.240** | 10 | PLN20 | 14 | PLN20 |
| **EC250.120** | 30 | PLN40 | 39 | PLN40 |
| **EC250.240** | 15 | PLN20 | 19.5 | PLN20 |
| **EC350.120** | 42 | PLN40 | 58.8 | ---- |
| **EC350.120BR** | | | | |
| **EC350.240** | 21 | PLN20 | 29.4 | PLN40 |
| **EC350.240BR** | | | | |
| **EC600.240** | 35.5 | PLN40 | 47 | PLN40 |
| **EC600.240BR** | | | | |

## HEADQUARTERS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