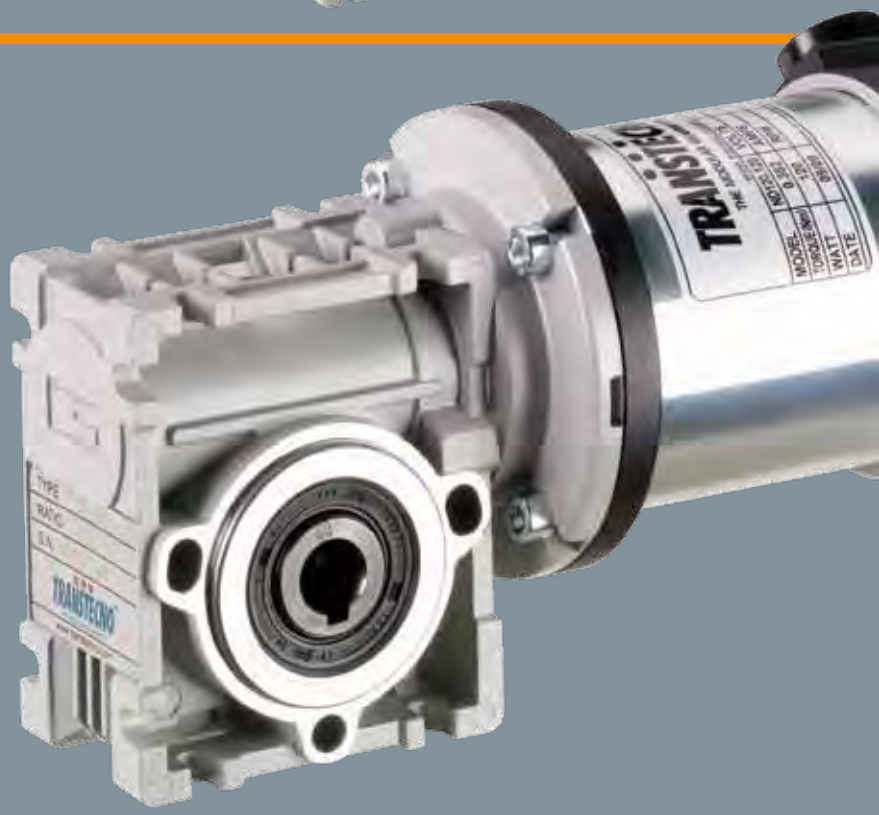
TRANSTECNO™

THE MODULAR GEARMOTOR

DC



PRODUCTS • TRANSTECNO • GENUINE •

Indice — Index

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 to better understand the subject matters and data dealt with. 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).

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.

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*

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

- 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.

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

- *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*

h/d	sf — 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*

h/d	sf — 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*

h/d	sf — 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, puleg-ge, ecc. determina delle forze radiali che debbono necessaria-mente 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 ridut-tore 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 cal-culated 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 me-desime condizioni.

Keep in mind that values R_2 refer to loads that act on the center-line of the output shaft (considering the shaft protrudes). As a re-sult, 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 allowa-ble 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 (riportato a pag. C4 e H4) e n_2 il numero di giri richiesti in uscita al motoriduttore.

where Rd stands for the dynamic efficiency (indicated on page C4 and H4) 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

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

TRANSTECNO™

THE MODULAR GEARMOTOR

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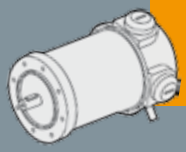
ND



MOTORI ELETTRICI C.C. A TERRE RARE

RARE EARTH D.C. ELECTRIC MOTORS

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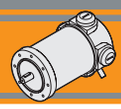


Caratteristiche tecniche

Technical features

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.

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.

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

The main feature of ND rare earth permanent magnet motors are:

- 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 24Vcc
- Potenza 160W S2
- Elevate coppie di spunto
- Maggiori coppie e potenze rispetto ai corrispettivi motori a magneti permanenti
- Predisposizione encoder

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

Classe di isolamento termico

Thermal insulation class

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.

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

Duty cycle

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.

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

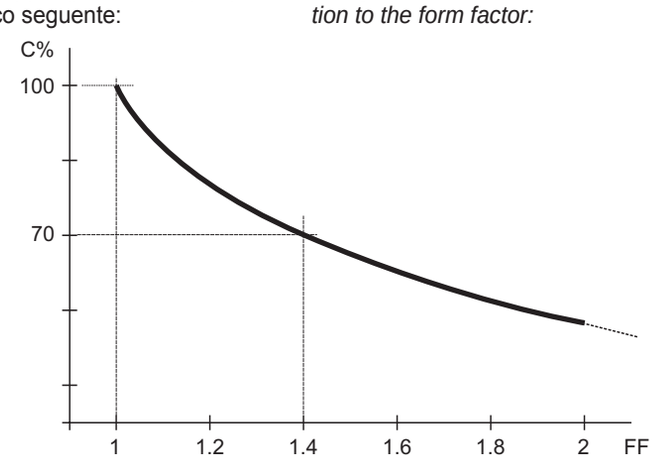
Form factor

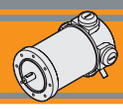
Indica quanta componente spuria alternata è presente nella alimentazione CC del motore. Più alto è il fattore ed inferiore è l'efficienza del motore. Alimentatori ad SCR = F.F 1.40. Alimentazione pura da batteria = FF 1 Alimentazione da transistori (modulazione PWM) = FF 1.05.

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.

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

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. *Protected against solid matters (over Ø 50 mm)*	**1**	Protetto contro la caduta verticale di gocce d'acqua. *Protected against drops of water falling vertically*
2	Protetto da corpi solidi superiori a Ø 12 mm. *Protected against solid matters (over Ø 12 mm)*	**2**	Protetto contro la caduta verticale di gocce d'acqua con inclinazione max di 15° *Protected against drops of water falling up to 15°*
3	Protetto da corpi solidi superiori a Ø 2.5 mm. *Protected against solid matters (over Ø 2.5 mm)*	**3**	Protetto contro la pioggia. *Rain proof fixture*
4	Protetto da corpi solidi superiori a Ø 1 mm. *Protected against solid matters (over Ø 1 mm)*	**4**	Protetto contro gli spruzzi. *Splash proof fixture*
5	Protetto contro la polvere *Dust proof*	**5**	Protetto contro getti d'acqua *Water jet proof*
6	Totalmente protetto contro la polvere *Fully dust proof*	**6**	Protetto dalle ondate *Wave proof*
7	N.A.	**7**	Protetto contro immersione *Watertight immersion fixture.*
8	N.A.	**8**	Protetto contro immersione/sommersione prolungata *Watertight immersion fixture for a long time.*

Classe di isolamento termico

Insulation class

Classe / *Class*	Δ t °C Temp. ambiente: 40°C *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

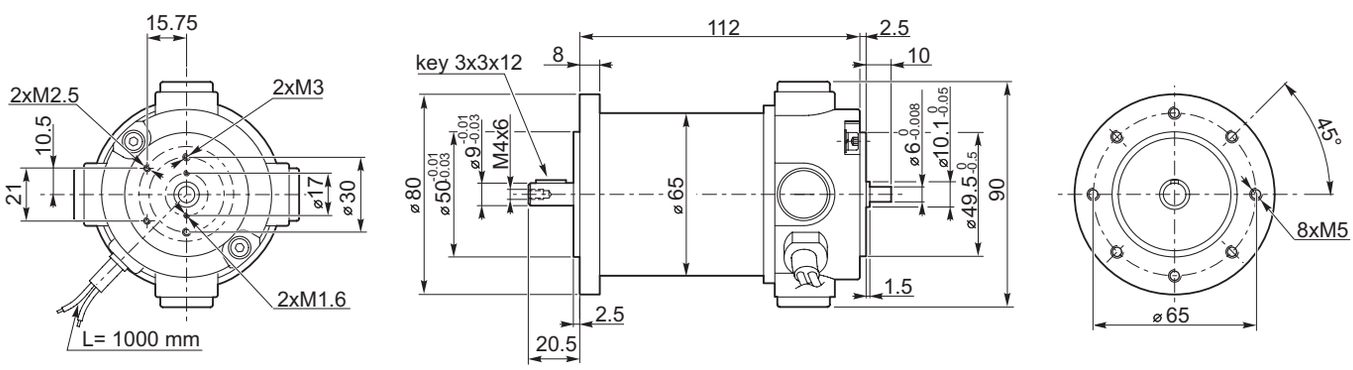
Caratteristiche / *Features*

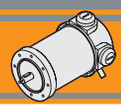
Costruzione	Tubolare, senza ventilazione
Grandezza	Ø 65 mm
Potenza	160 W S2 (120 W S1)
Magneti	4 magneti in terre rare
Supporti	Cuscinetti a sfera
Fori di montaggio	8
Alimentazione	Bassa tensione, 12 o 24 Vcc
Spazzole	N° 4 di composto grafite-rame
Cavo di alimentazione	Lunghezza: 1000 mm

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	*Lenght: 1000 mm*

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 30'	160		19			0.51			
ND120.240	**S1**	120	24	6.9			0.38			
	S2 30'	160		9.0			0.51			

Dimensioni / *Dimensions*

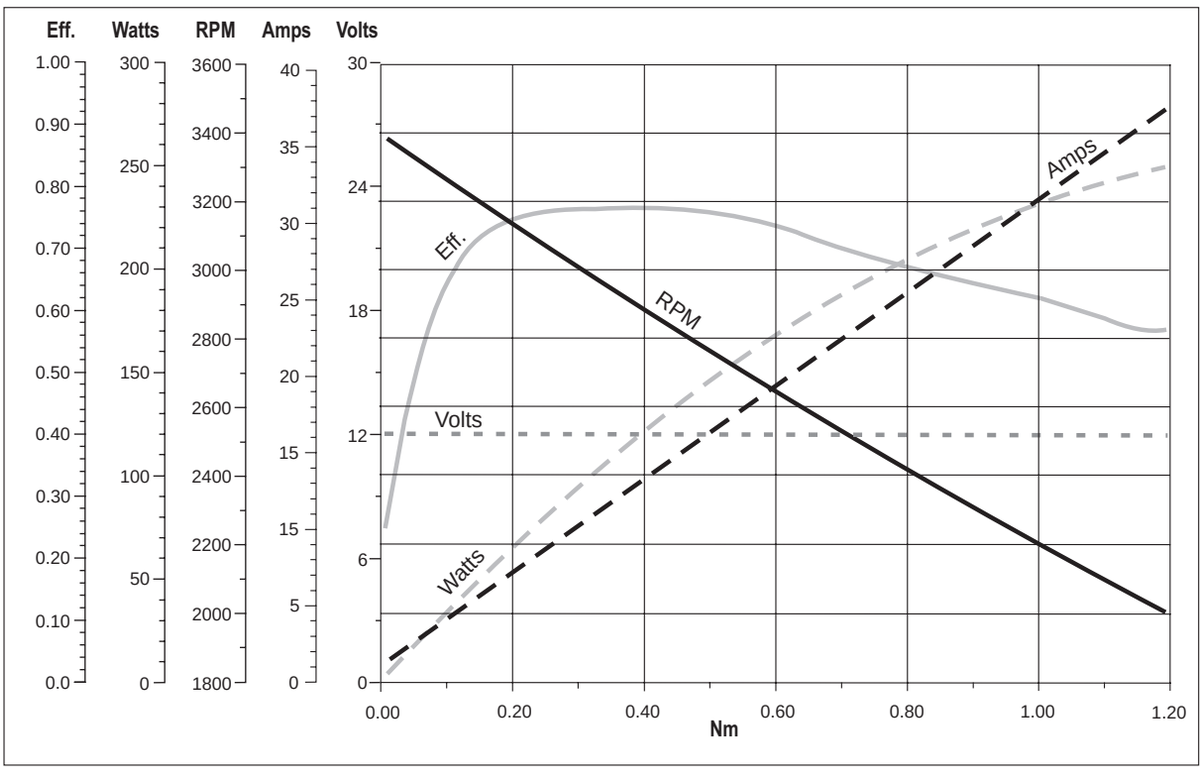




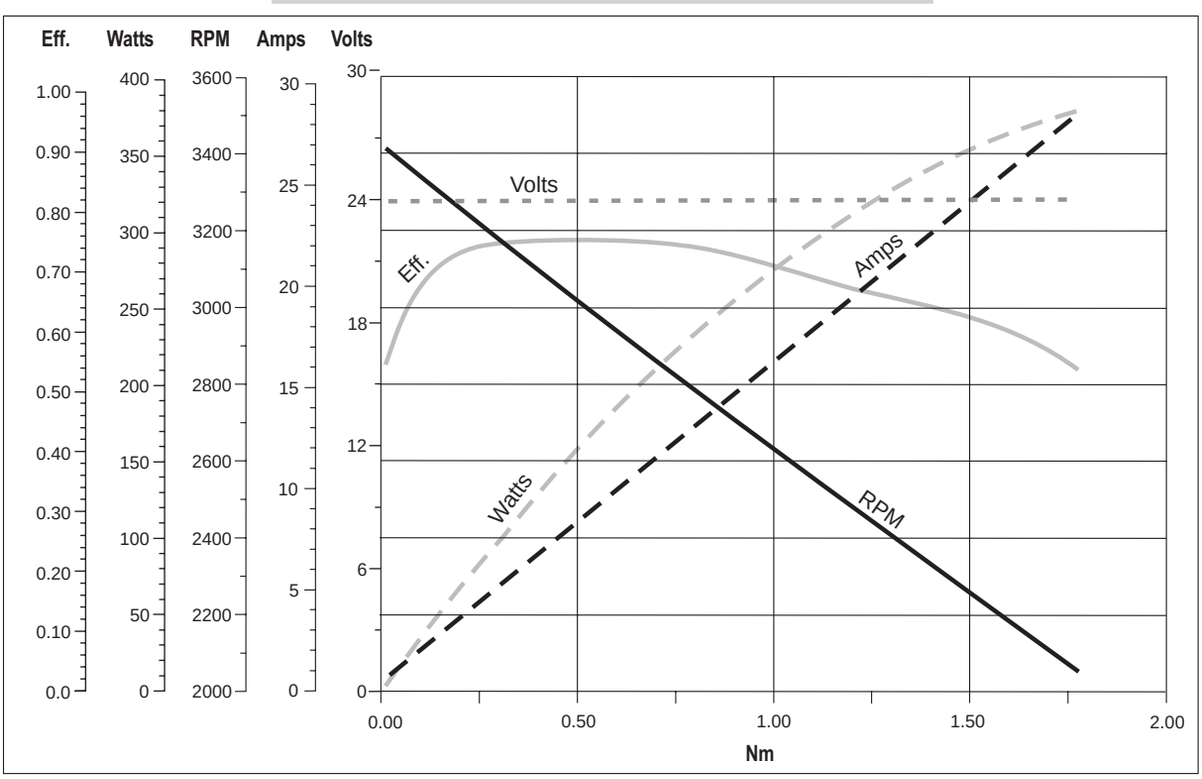
ND120.120 - ND120.240

Prestazioni *Performances*

ND120.120



ND120.240

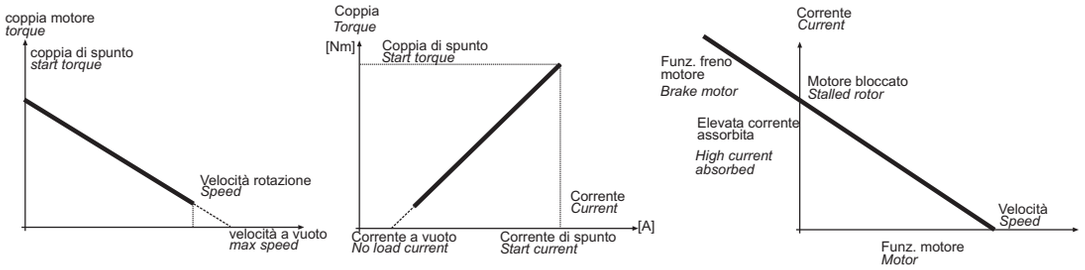


Legenda / Glossario dei grafici

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.

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.

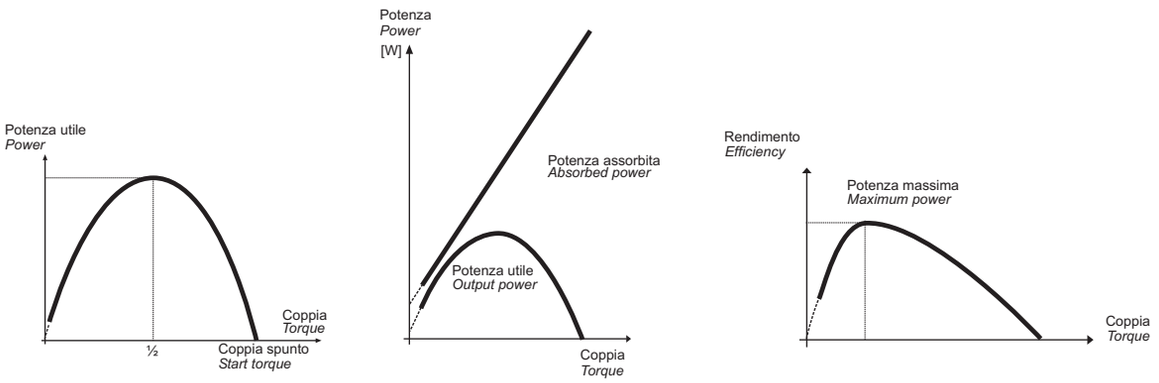


La potenza utile (potenza all'albero) si ricava dalla formula:

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

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.

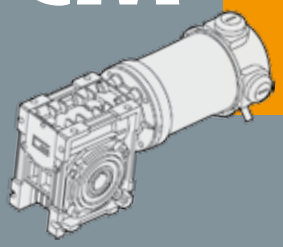
S	—	Servizio	*Duty*
Pn	[W]	Potenza in uscita	*Rated power*
Pa	[W]	Potenza assorbita	*Absorbed power*
Mn	[Nm]	Coppia nominale	*Rated torque*
V	[V]	Tensione	*Voltage*
I	[A]	Corrente assorbita	*Absorbed current*
n_1	[min^{-1}]	Numero giri motore	*Motor speed*
Sv	[rad/s]	Velocità angolare	*Angular speed*
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*

TRANSTECNO™

THE MODULAR GEARMOTOR

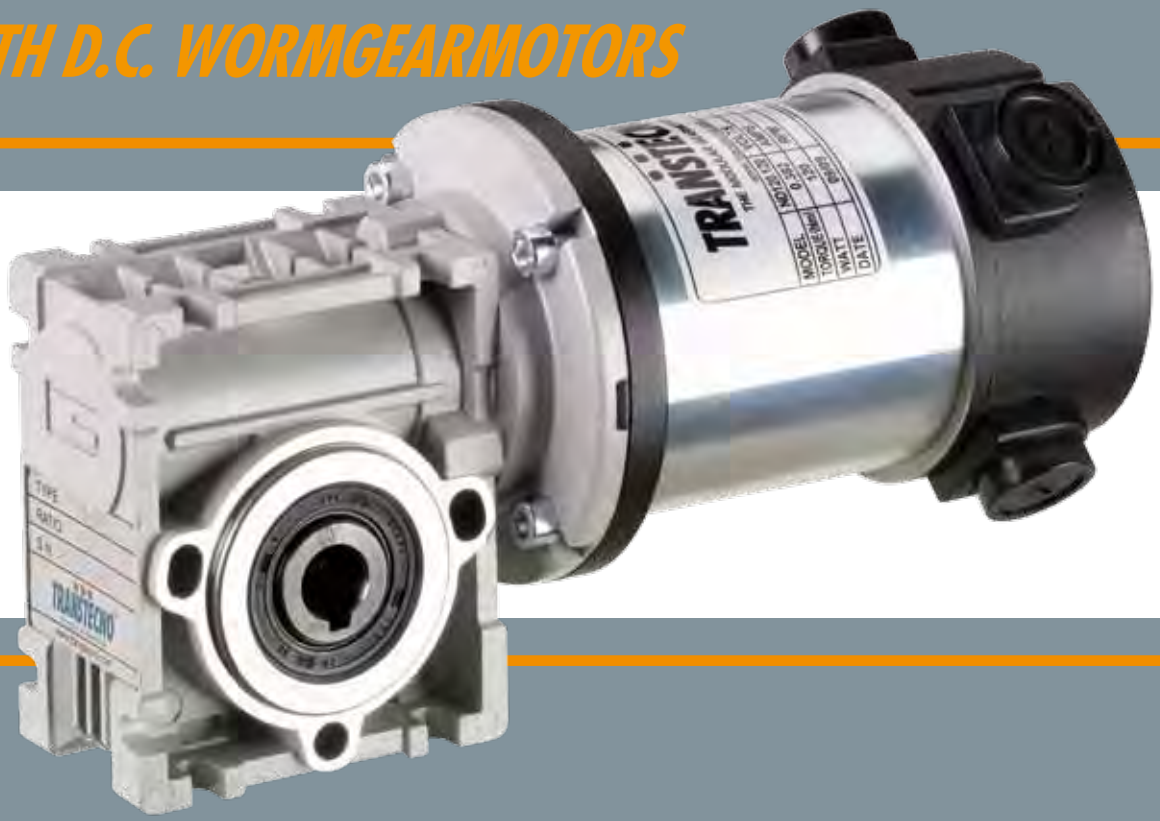
NDCM

NDCM



MOTORIDUTTORI C.C. A VITE SENZA FINE

RARE EARTH D.C. WORMGEARMOTORS



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Caratteristiche tecniche — *Technical features*

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

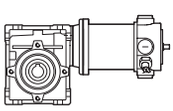
- Alimentazione in bassa tensione 12/24 Vcc
- Possibilità di montaggio encoder
- Potenza motore disponibile 160 W S2
- Magneti in terre rare
- Carcasse dei riduttori a vite senza fine in pressofusione di alluminio
- Lubrificazione permanente con olio sintetico

The main features of NDCM D.C. gearmotors range are:

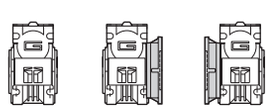
- Low voltage power supply 12/24 Vdc
- Suitable for encoder assembly
- Motor power rating available 160 W S2
- Rare earth magnets
- Die-cast aluminum housing on wormgearboxes
- Permanent synthetic oil long-life lubrication

Designazione — *Designation*

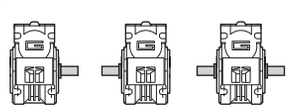
MOTORIDUTTORE / *GEARMOTOR*

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**	**U** **FD** **FS** **FLD** **FLS** **FBD** **FBS**	Vedere tabella *See tables*	**SZDX** **SZSX** **DZ**	**BRDX** **BRSX**	**0°** **90°** **180°** **270°**	**120 — 240**	**VS**

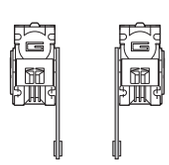
Versione Riduttore *Gearbox Version*



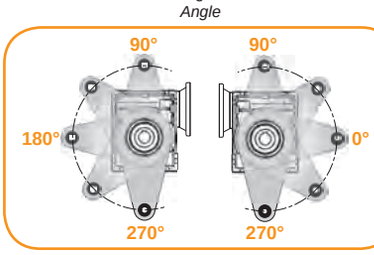
Albero di uscita *Output shaft*



Braccio di reazione *Torque arm*



Angolo *Angle*



Simbologia — *Symbols*

n_1	[min^{-1}]	Velocità in ingresso / *Input speed*
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*
Rs	%	Rendimento statico / *Static efficiency*
R_2	[N]	Carico radiale ammissibile in uscita / *Permitted output radial load*
Z		Numero di principi della vite / *Worm starts*
β		Angolo d'elica / *Helix angle*

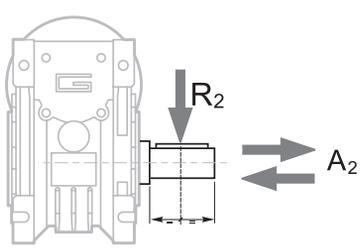
Lubrificazione — *Lubrication*

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*** *(liters)*	
	Per tutte le posizioni di montaggio / *For all mounting positions*	
CM026	0.02	Lubrificazione a vita / *Life lubricated*
CM030	0.04	
CM040	0.08	

Carichi radiali — *Radial loads*

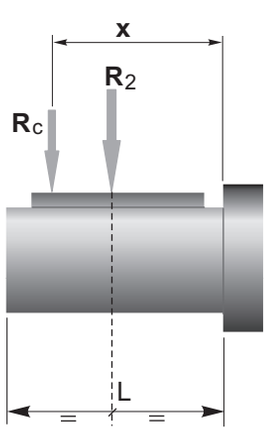


$A_2 = R_2 \times 0.2$

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

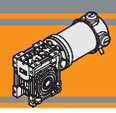
Dati di dentatura — *Toothing data*

	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*

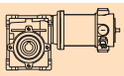
	n_1 [min^{-1}]	Rendimento *Efficiency*	Rapporto / *Ratio*											
			5	**7.5**	**10**	**15**	**20**	**25**	**30**	**40**	**50**	**60**	**80**	**100**
CM026	2800	Rd	89	87	85	83	80		73	68	64	60		
	1400		87	84	83	78	74		66	61	57	53		
	900		84	83	80	75	71		61	57	52	48		
		Rs	72	71	68	61	56		46	41	36	34		
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



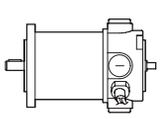
Dati tecnici per servizio S2

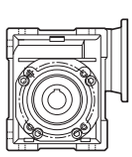
Technical data for S2 duty

P_1 [W]	n_2 [min^{-1}]	M_2 [Nm]	sf	i		Versione motore *Motor version*
160						
(3000 min^{-1})	**600**	2.3	4.4	5	**120/026**	120/240
	400	3.3	3.3	7.5		
	300	4.3	2.5	10		
	200	6.3	1.7	15		
	150	8.1	1.3	20		
	100	11	1.1	30		
	75	14	0.8	40		
	60	14	0.7	50		
	50	13	0.7	60		
	600	2.3	5.7	5	**120/030**	120/240
	400	3.4	4.5	7.5		
	300	4.4	3.7	10		
	200	6.4	2.5	15		
	150	8.3	1.7	20		
	120	9.9	1.5	25		
	100	11	1.6	30		
	75	14	1.1	40		
	60	17	0.9	50		
	50	19	0.7	60		
	38	17	0.7	80		
	30	16	0.7	100		
	150	8.5	3.7	20	**120/040**	120/240
	120	10	2.7	25		
	100	12	3.2	30		
	75	15	2.3	40		
	60	18	1.8	50		
	50	20	1.4	60		
	38	24	1.1	80		
	30	29	0.8	100		

Motori applicabili

IEC Motor adapters



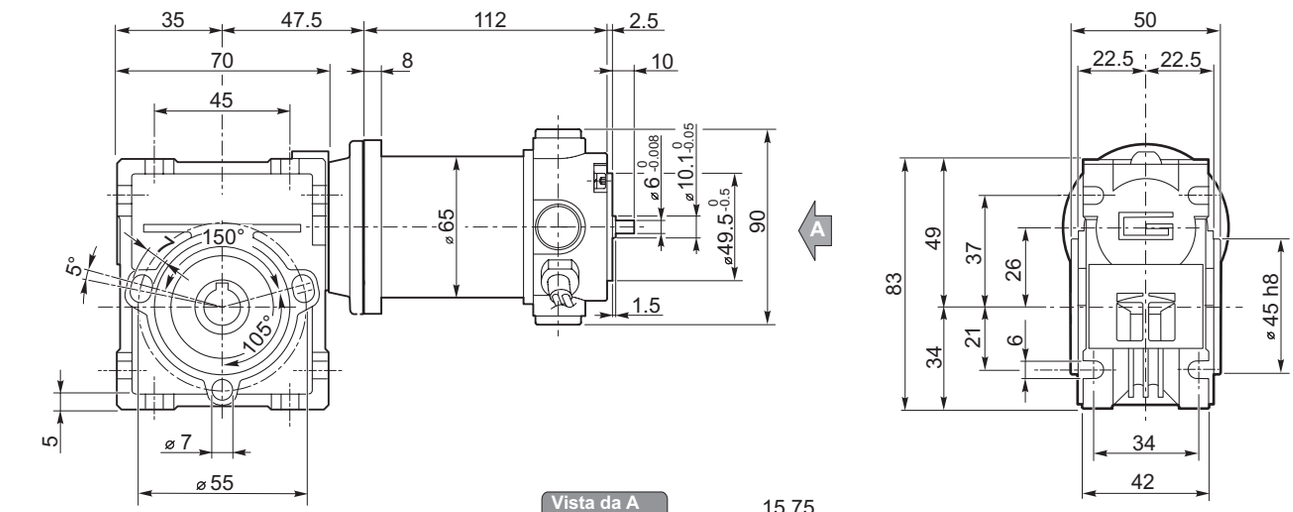


		ND
		120.120 **120.240**
CM	**026**	5-60
	030	5-100
	040	5-100

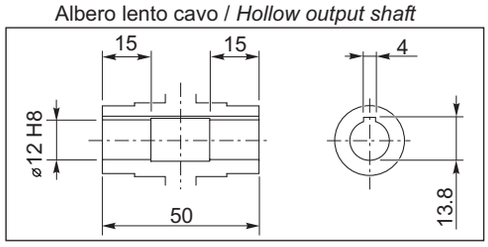
5-60 Rapporti di riduzione i
Ratio i

Dimensioni ***Dimensions***

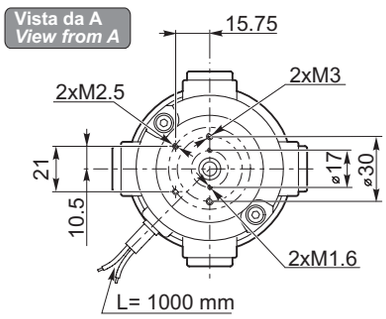
NDCM120/026 U



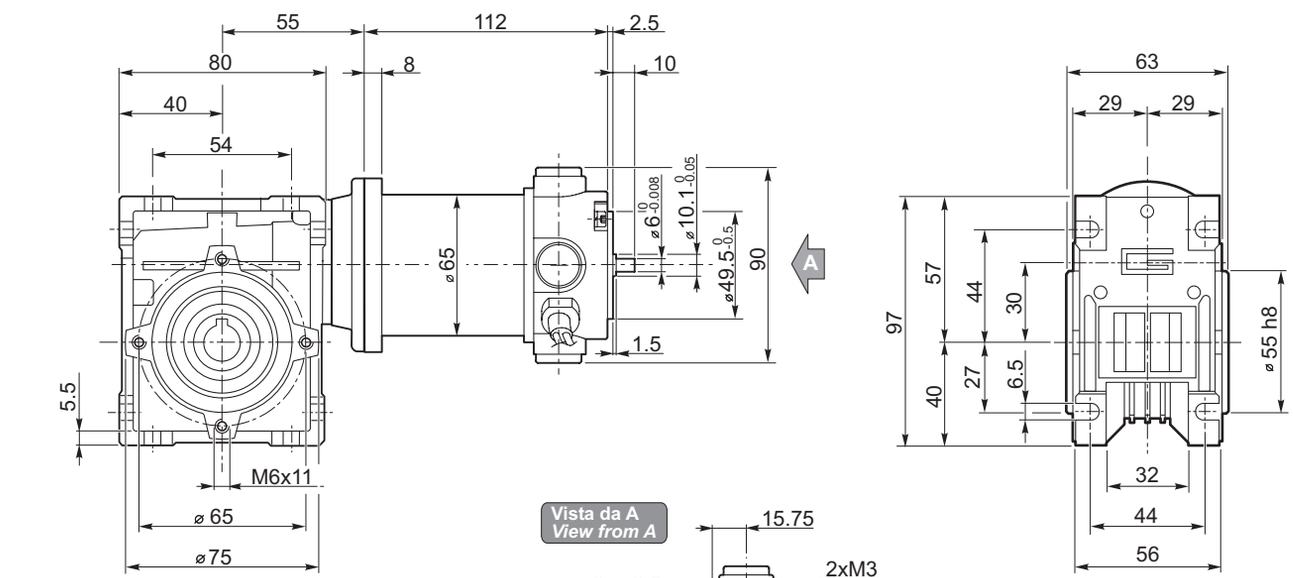
Albero lento cavo / *Hollow output shaft*



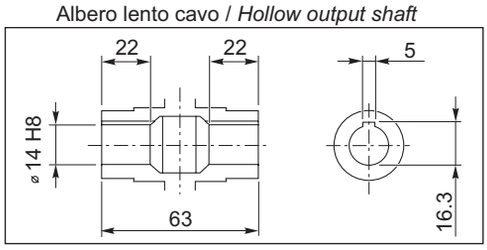
Vista da A / *View from A*



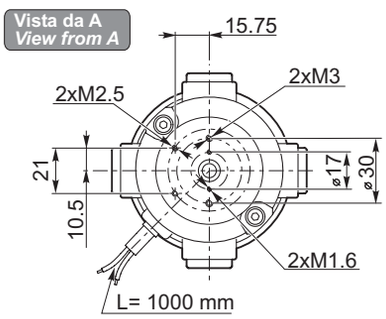
NDCM120/030 U

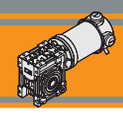


Albero lento cavo / *Hollow output shaft*



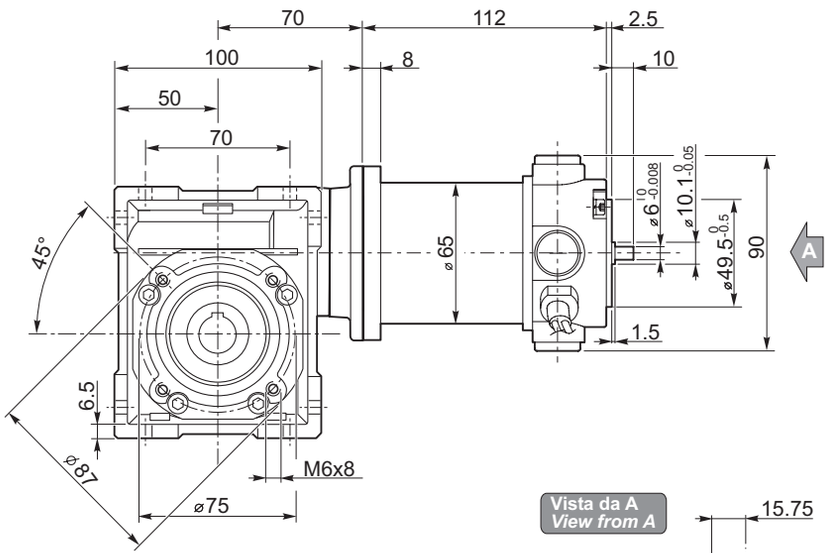
Vista da A / *View from A*

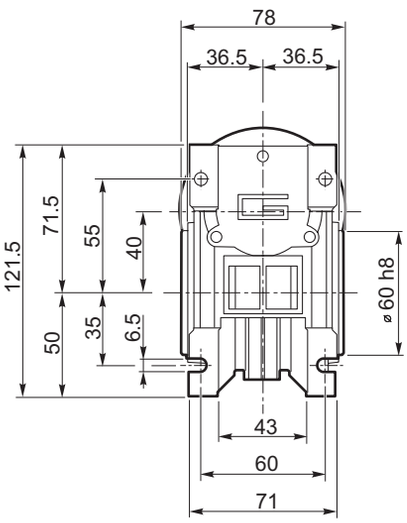




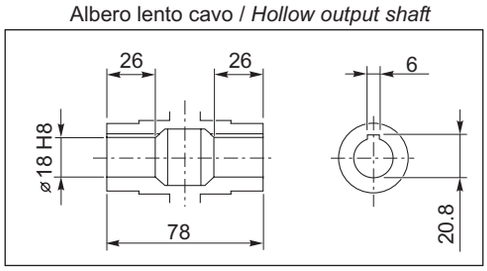
Dimensioni — *Dimensions*

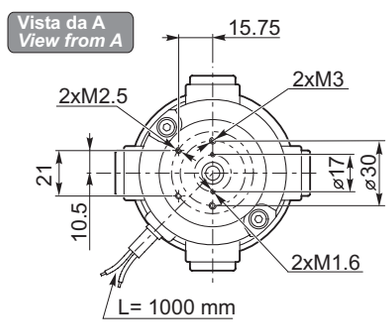
NDCM120/040 U



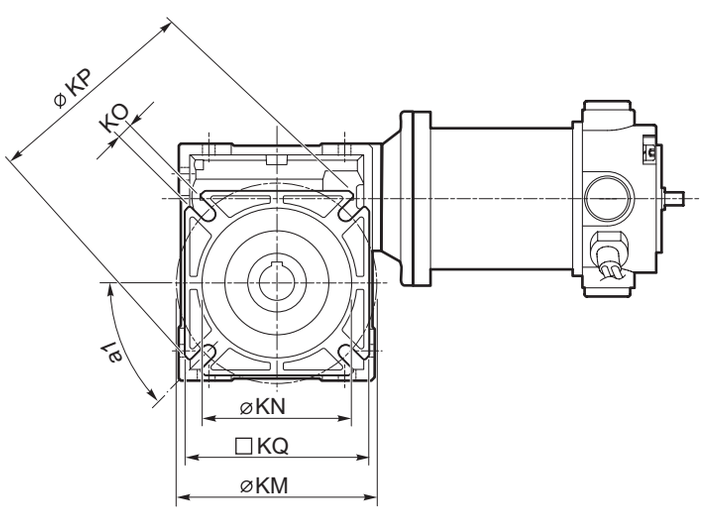


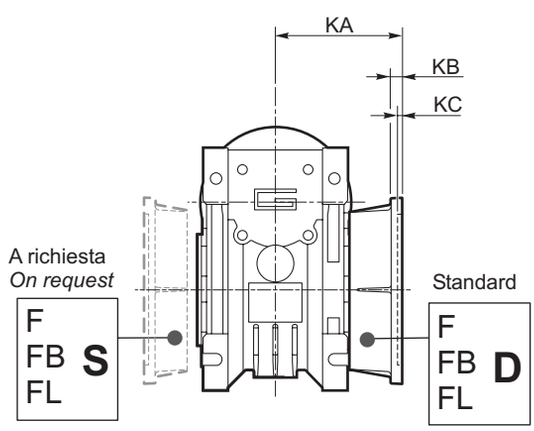
Albero lento cavo / *Hollow output shaft*





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

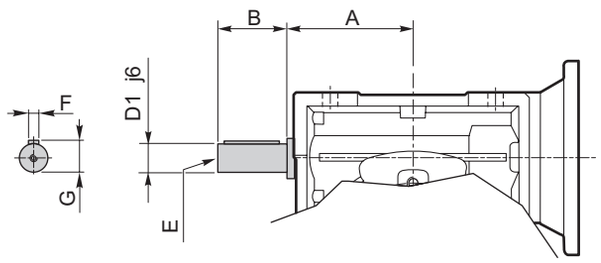




CM		CM..F								CM..FB								CM..FL							
	a1	KA	KB	KC	KM	KN H8	KO	KP	KQ	KA	KB	KC	KM	KN H8	KO	KP	KQ	KA	KB	KC	KM	KN H8	KO	KP	KQ
026	45°	45	6	4.5	55-69	40	6.5(n.4)	75	70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
030	45°	54.5	6	4	68	50	6.5(n.4)	80	70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
040	45°	67	7.5	4.5	80-95	60	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

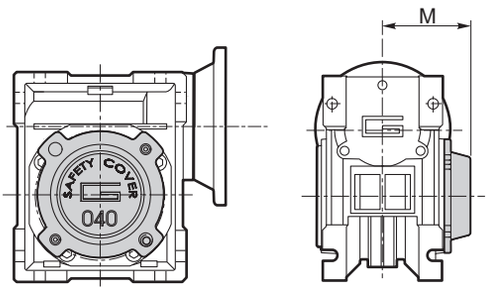
Opzioni *Options*

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*



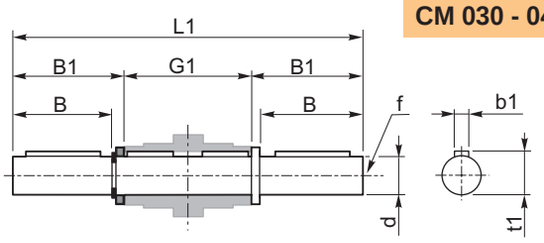
	M
CM 030	47
CM 040	54.5

Accessori *Accessories*

Albero lento *Output shaft*

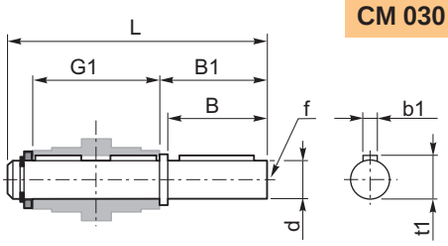
DZ

CM 030 - 040



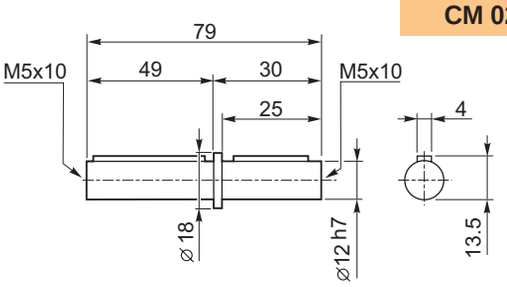
SZ

CM 030 - 040



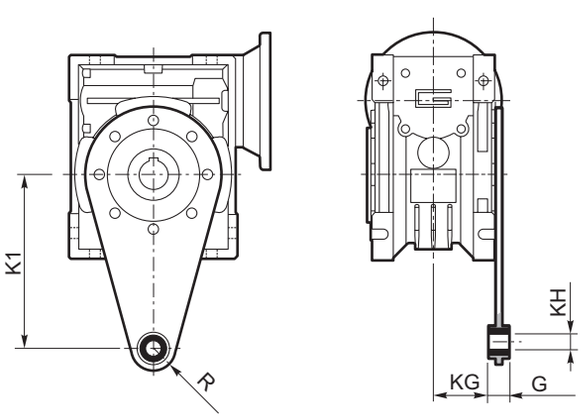
	d h7	B	B1	G1	L	L1	f	b1	t1
CM 030	14	30	32.5	63	102	128	M6	5	16
CM 040	18	40	43	78	128	164	M6	6	20.5

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

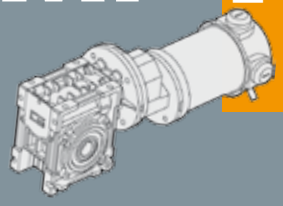


TRANSTECNO™

THE MODULAR GEARMOTOR

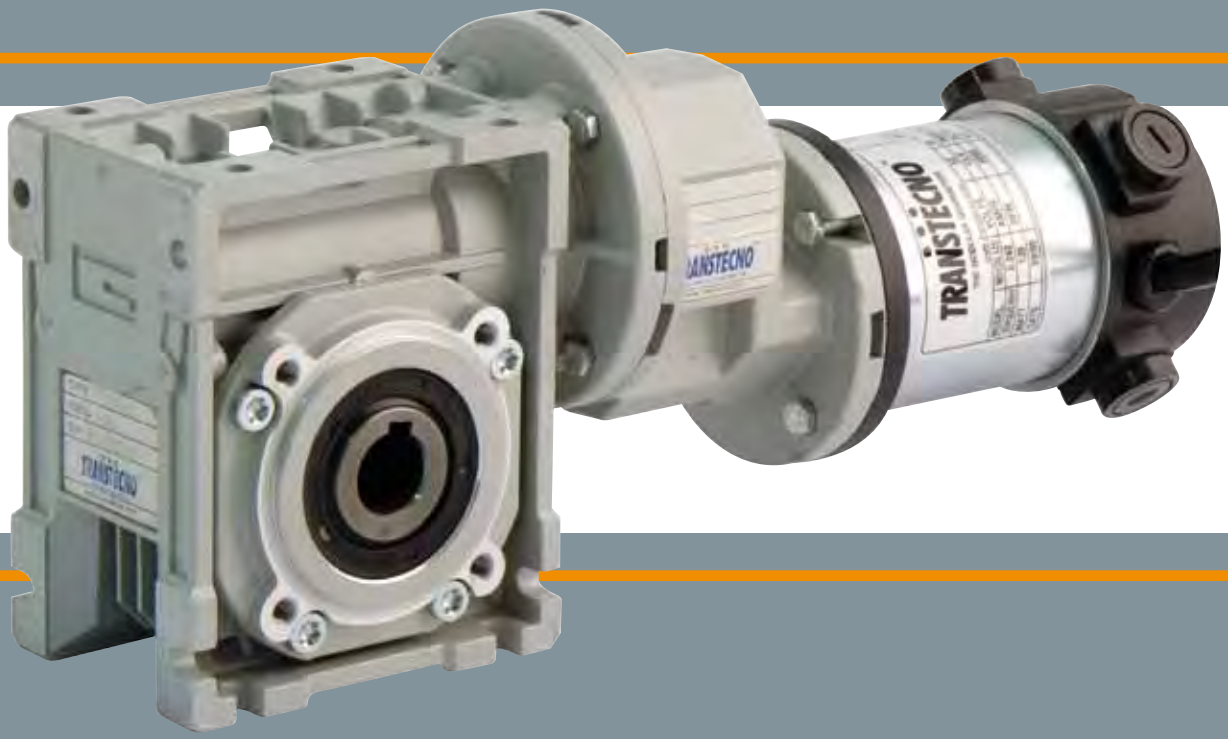
NDCMP

NDCMP



MOTORIDUTTORI C.C. CON PRECOPPIA

RARE EARTH D.C. PRE-STAGE GEARMOTORS



PRODUCTS • TRANSTECNO • GENUINE

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
- Potenza motore disponibile 160W 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. *gearmotors range are:*

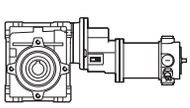
- *Low voltage power supply 12/24 Vdc*
- *Suitable for encoder assembly*
- *Motor power rating available 160W S2*
- *Rare earth magnets*
- *Die-cast aluminum housing on pre-stage and wormgearboxes*
- *Permanent synthetic oil long-life lubrication.*

Designazione

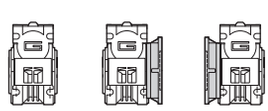
Designation

MOTORIDUTTORE / *GEARMOTOR*

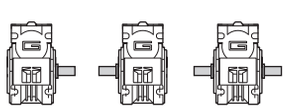
NDCMP	120/056/030	U	90	SZDX	BRSX	90	240	VS
Tipo *Type*	Grandezza *Size*	Versione Riduttore *Gearbox Version*	Rapporto *Ratio*	Albero di uscita *Output shaft*	Braccio di reazione *Torque arm*	Angolo *Angle*	Versione Motore *Motor Version*	Opzioni *Options*
NDCMP	**120/056/030** **120/056/040**	**U** **FD** **FS** **FLD** **FLS** **FBD** **FBS**	Vedere tabella *See tables*	**SZDX** **SZSX** **DZ**	**BRDX** **BRSX**	**0°** **90°** **180°** **270°**	**120 — 240**	**VS**



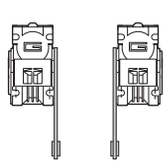
Versione Riduttore
Gearbox Version



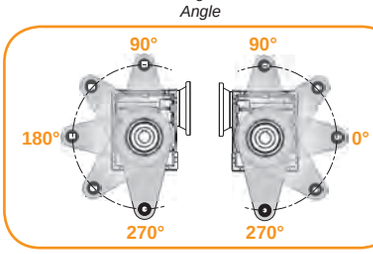
Albero di uscita
Output shaft



Braccio di reazione
Torque arm



Angolo
Angle



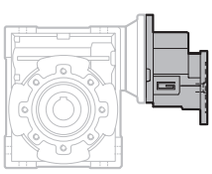
Simbologia — *Symbols*

n_1	[min^{-1}]	Velocità in ingresso / *Input speed*	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*

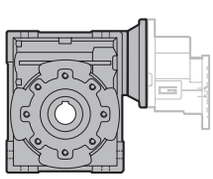
Lubrificazione — *Lubrication*

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.

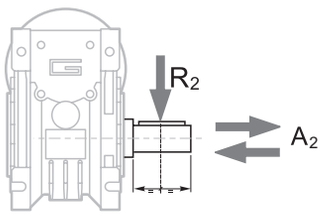


CMP
056/030 **056**/040
Lubrificazione a vita *Life lubricated*



NDCMP	**Quantità di olio** (litri) / ***Oil quantity*** *(liters)* **Tutte le posizioni di montaggio / *For all mounting position***	
056/030	0.04	Lubrificazione a vita *Life lubricated*
056/040	0.08	

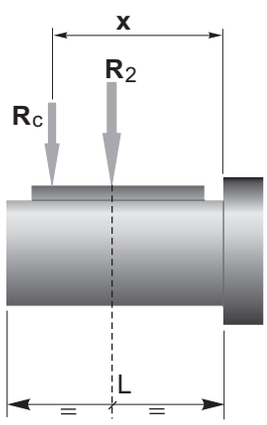
Carichi radiali — *Radial loads*



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:



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

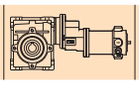
$$R \leq R_c$$

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

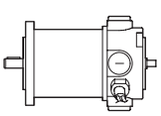
Dati tecnici per servizio S2

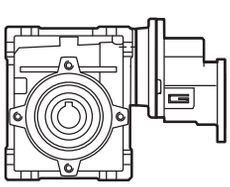
Technical data for S2 duty

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		
	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		

Motori applicabili

IEC Motor adapters





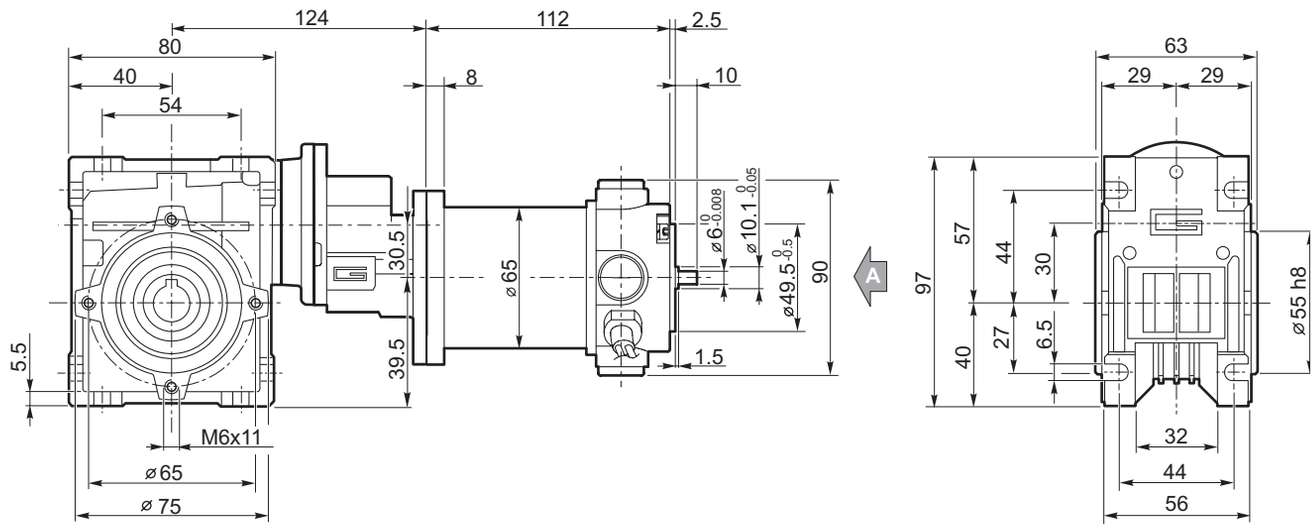
		ND
		120.120 **120.240**
CMP	**056/030**	120
	056/040	300

120

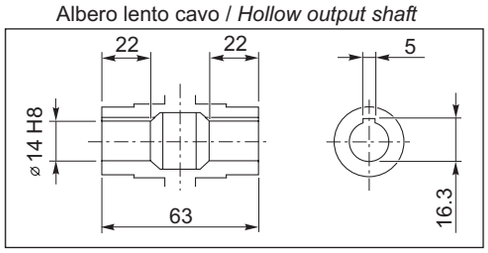
Rapporto di riduzione massimo i_{max}
Maximum ratio i_{max}

Dimensioni *Dimensions*

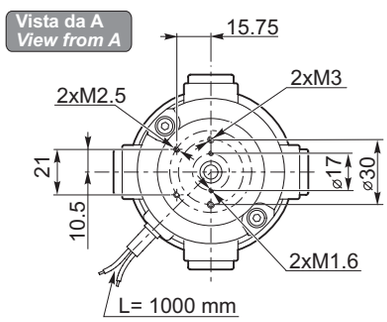
NDCMP120/056/030 U

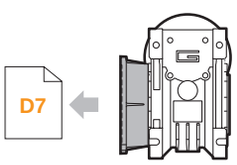


Albero lento cavo / *Hollow output shaft*



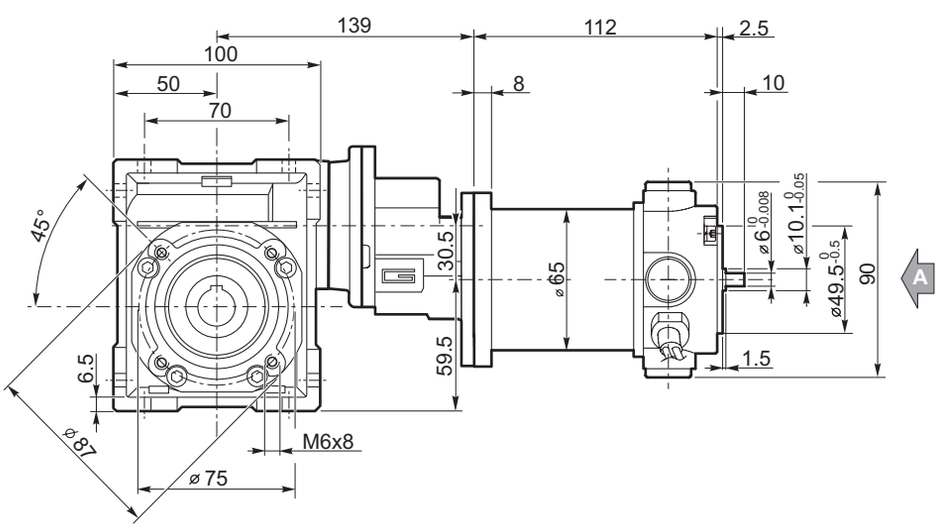
Vista da A / *View from A*

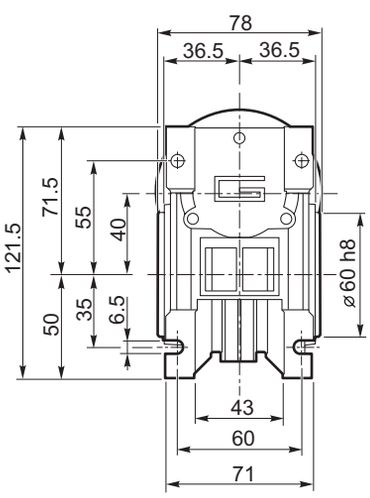




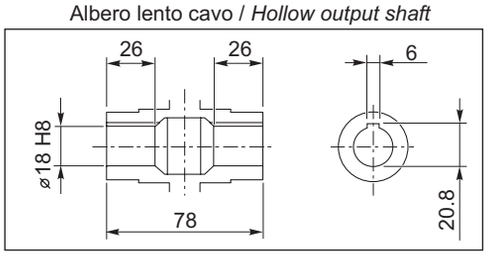
NDCMP120/056/030 F

NDCMP120/056/040 U

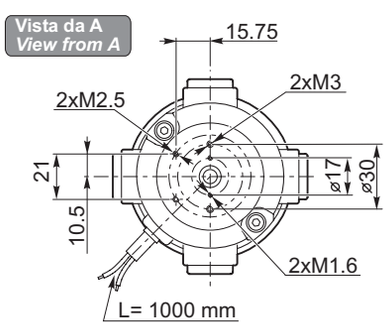


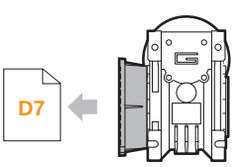


Albero lento cavo / *Hollow output shaft*



Vista da A / *View from A*

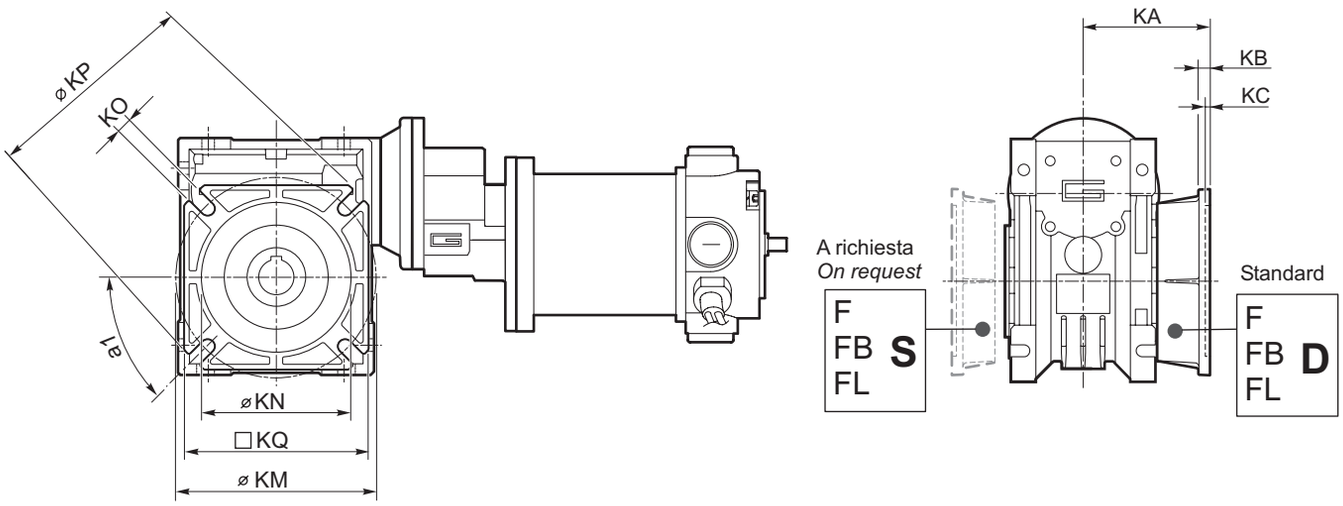




NDCMP120/056/040 F
NDCMP120/056/040 FB
NDCMP120/056/040 FL

Dimensioni — *Dimensions*

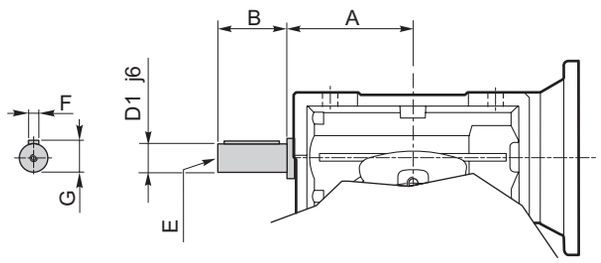
NDCMP.../... F... Flange uscita / *Output flanges*



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

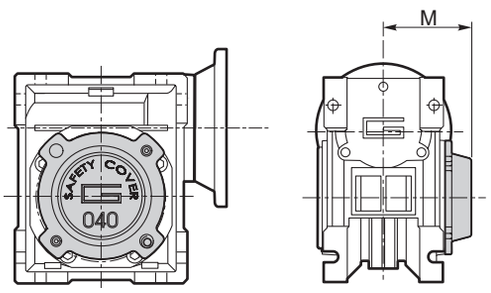
Opzioni / *Options*

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*

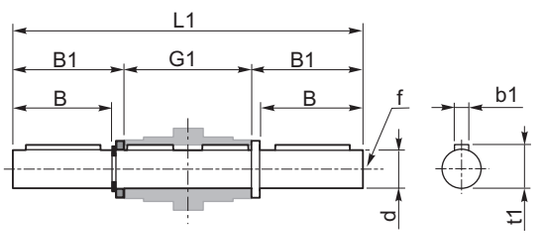


	M
CM 030	47
CM 040	54.5

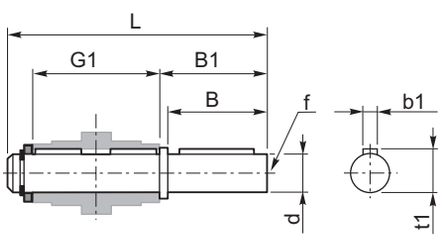
Accessori / *Accessories*

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

DZ



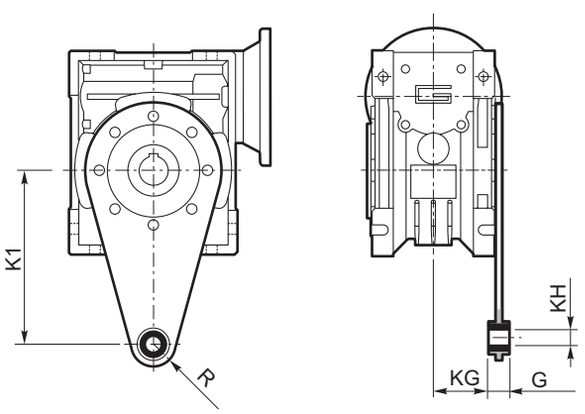
SZ



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



TRANSTECNO™

THE MODULAR GEARMOTOR

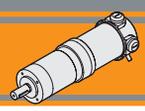
NDP

NDP

MOTORIDUTTORI C.C. EPICICLOIDALI

RARE EARTH D.C. PLANETARY GEARMOTORS

PRODUCTS • TRANSTECNO • GENUINE •



ENERGY SAVING

Caratteristiche tecniche — *Technical features*

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

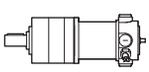
- Alimentazione in bassa tensione 12/24 Vcc
- Possibilità di montaggio encoder
- Potenza motore disponibile 160W S2
- Magneti in Neodimio
- Entrata ed uscita coassiali
- Design compatto
- Lubrificazione permanente a grasso
- Possono essere installati in qualunque posizione di montaggio.

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

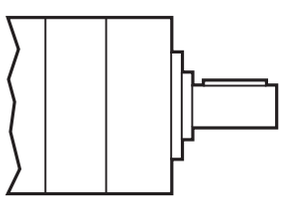
- *Low voltage power supply 12/24 Vdc*
- *Suitable for encoder assembly*
- *Motor power rating available 160W S2*
- *Neodyum magnets*
- *Coaxial arrangement of the input and output*
- *Compact design*
- *Permanent grease oil long-life lubrication*
- *Can be intalled in all mounting position.*

Designazione — *Designation*

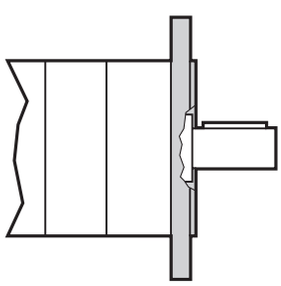
MOTORIDUTTORE / *GEARMOTOR*

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** **120/62** **120/72** **120/81**	**1** **2** **3**	**U** **C**	**80** **90** **105** **120**	Vedere tabella *See tables*	**120** **240**

Versioni — *Versions*



U



C

Simbologia — *Symbols*

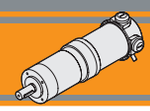
n_1	[min^{-1}]	Velocità in ingresso / *Input speed*
n_2	[min^{-1}]	Velocità in uscita / *Output speed*
i		Rapporto di riduzione / *Ratio*
P_1	[kW]	Potenza in entrata / *Input power*
M_2	[Nm]	Coppia in uscita in funzione di P_1 / *Output torque referred to P_1*

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*

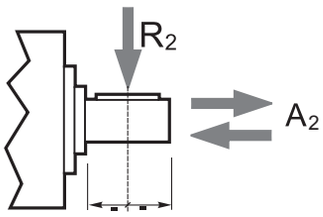
Lubrificazione — *Lubrication*

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]*			
	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

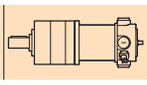
Rendimento — *Efficiency*

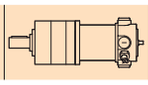
Rendimento *Efficiency*	Per tutte le grandezze di riduttori della serie P *For all gearbox sizes of P range*		
	Numero di stadi / *Stages number*		
	1	2	3
Rd %	80	75	70

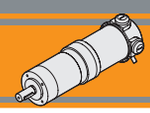
Rendimento medio per velocità nominale in ingresso 3000 rpm
Average efficiency with input rated speed 3000 rpm

Dati tecnici per servizio S2

Technical data for S2 duty

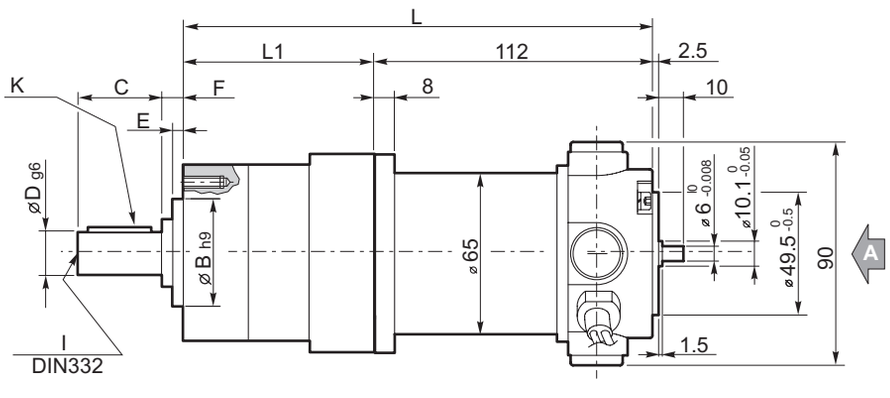
P_1 [W]	n_2 [min^{-1}]	M_2 [Nm]	sf	i		Versione motore *Motor version*
160						
(3000 min^{-1})	**811**	1.5	2.6	**3.70**	**NDP120/521**	**120/240**
	701	1.7	2.3	4.28		
	579	2.1	1.9	**5.18**		
	444	2.8	1.5	**6.75**		
	218	5.3	2.3	**13.73**	**NDP120/522**	**120/240**
	189	6.1	2.0	15.88		
	163	7.0	1.7	18.36		
	156	7.3	1.6	**19.20**		
	135	8.5	1.4	22.20		
	120	9.6	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	2.1	3.8	**5.18**	**NDP120/621**	**120/240**
	444	2.8	2.9	**6.75**		
	218	5.3	4.8	**13.73**	**NDP120/622**	**120/240**
	189	6.1	4.1	15.88		
	163	7.0	3.6	18.36		
	156	7.3	3.4	**19.20**		
	135	8.5	2.9	22.20		
	120	9.6	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**		

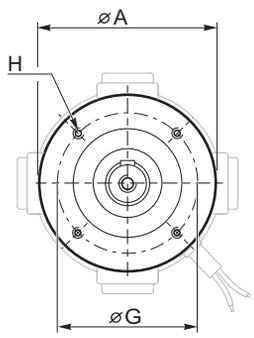
P_1 [W]	n_2 [min^{-1}]	M_2 [Nm]	sf	i		Versione motore *Motor version*
160						
(3000 min^{-1})	**59**	18	2.8	**50.89**	**NDP120/623**	**120/240**
	51	21	2.4	58.85		
	44	24	2.1	**68.06**		
	42	25	2.0	71.16		
	38	28	1.8	78.71		
	32	33	1.5	**92.70**		
	32	34	1.5	95.17		
	30	36	1.4	99.50		
	28	38	1.3	107.20		
	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**		

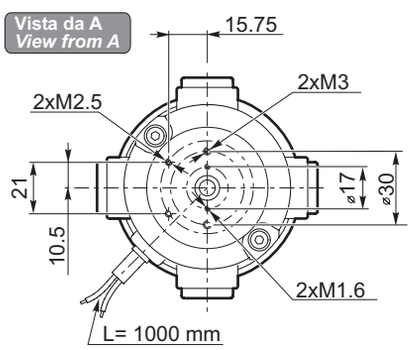


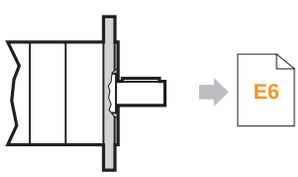
Dimensioni — *Dimensions*

NDP120/... U







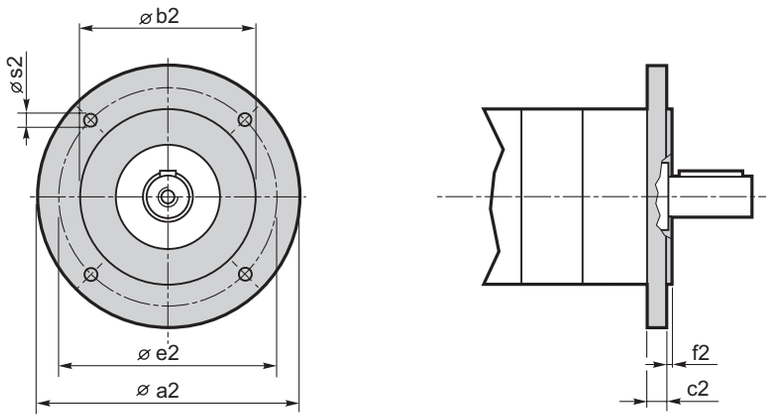


NDP120/... C...

Tipo *Type*	Numero di stadi *Stages number*	Dimensioni / *Dimensions*											
		L1	L	A	B	C	D	E	F	G	H	I	K
NDP120/52...	1	76	188	52	32 h8	20.8	12 h7	3	4.2	40	M5x10	M4x10	4x4x16
	2	90	202										
	3	104.5	216.5										
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	78	190	72	45 j7	40	16 h7	5	9	60	M5x10	M5x12	5x5x30
	2	97.5	209.5										
	3	117	229										
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*

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



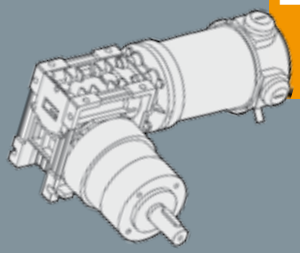
	Dimensioni / *Dimensions*						
P	**a2**	**b2**	**c2**	**e2**	**f2**	**s2**	**Flangia uscita** ***Output flange***
52	80	50 j7	9	65	2.5	M5	**C80**
	90	60 j7	9	75	2.5	5.5	**C90**
	105	70 j7	9	85	2.5	6.5	**C105**
	120	80 j7	9	100	3.0	6.5	**C120**
62	80	50 j7	9	65	2.5	M5	**C80**
	90	60 j7	9	75	2.5	5.5	**C90**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

TRANSTECNO™

THE MODULAR GEARMOTOR

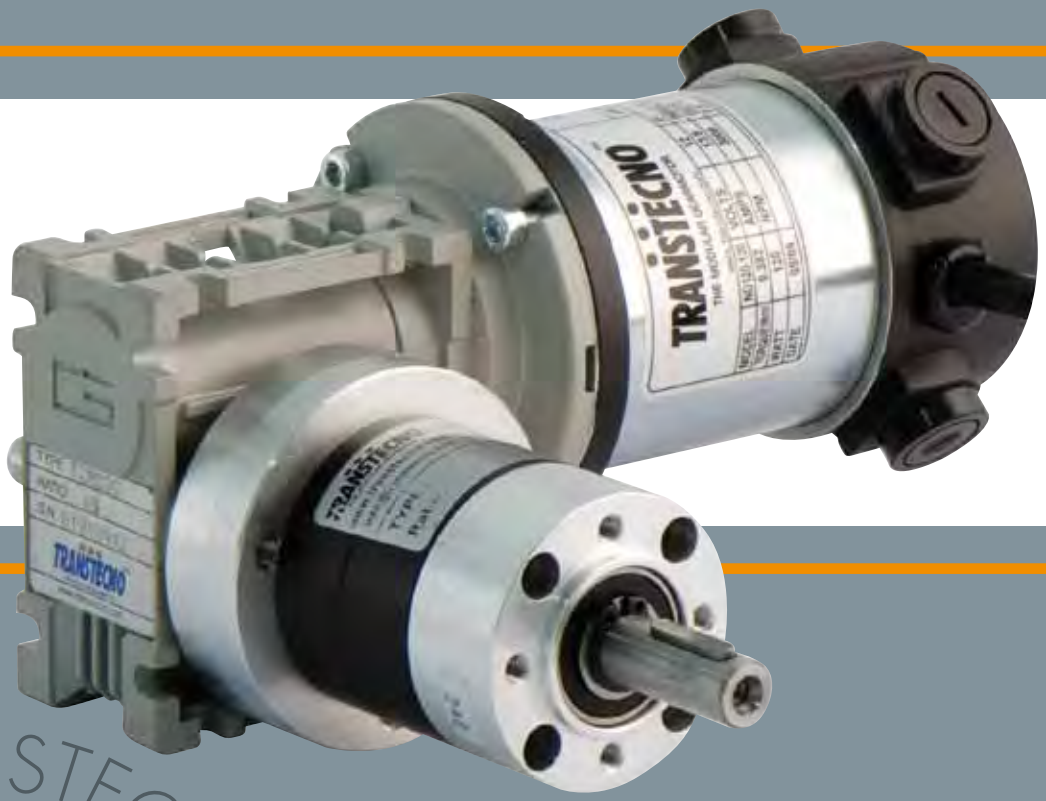
NDWMP

NDWMP



MOTORIDUTTORI C.C. COMBINATI

RARE EARTH D.C. COMBINATION GEARMOTORS



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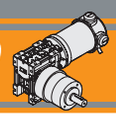


Caratteristiche tecniche — *Technical features*

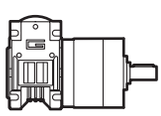
L'accoppiamento di un riduttore a vite senza fine con un riduttore epicicloidale consente di ottenere elevati rapporti di riduzione (i_{max} = 1/18452) e di disporre di un gruppo autolubrificato compatto, silenzioso e con un'elevata affidabilità.

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.

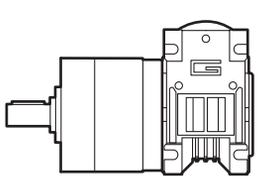
Designazione — *Designation*

MOTORIDUTTORE / *GEARMOTOR*

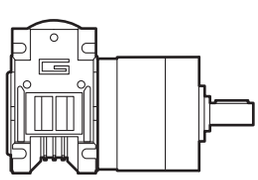
NDWMP	120/026/52	2	CD	90	405	240	VS
Tipo *Type*	Grandezza *Size*	Numero stadi epicicloidale *Planetary stages number*	Versione Riduttore *Gearbox Version*	Flangia Uscita *Output flange*	Rapporto *Ratio*	Versione Motore *Motor Version*	Opzioni *Options*
NDWMP	**120/026/52** **120/026/62** **120/030/81**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



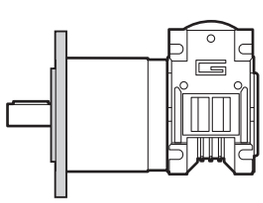
Versioni — *Versions*



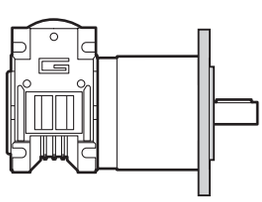
US



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*

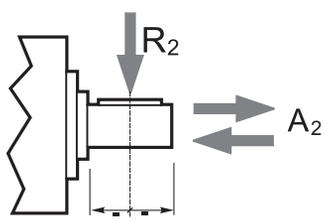
I riduttori a vite senza fine della serie CM sono lubrificati a vita con olio sintetico di viscosità 320 e possono essere installati in qualunque posizione di montaggio.

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 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 .../026/62 .../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**

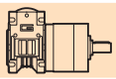
Rendimento — *Efficiency*

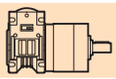
Motoriduttore *Gearmotor*	n_1 [min^{-1}]	Rendimento *Efficiency*	Rapporto / *Ratio*															
			67.5	**101.3**	**135**	**202.5**	**270**	**337.5**	**405**	**289.3**	**434.0**	**578.6**	**867.9**	**1157**	**1447**	**1736**	**2098**	**2734**
.../026/52	2800	Rd %	68	66	64	58	54	51	48	64	62	60	54	51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

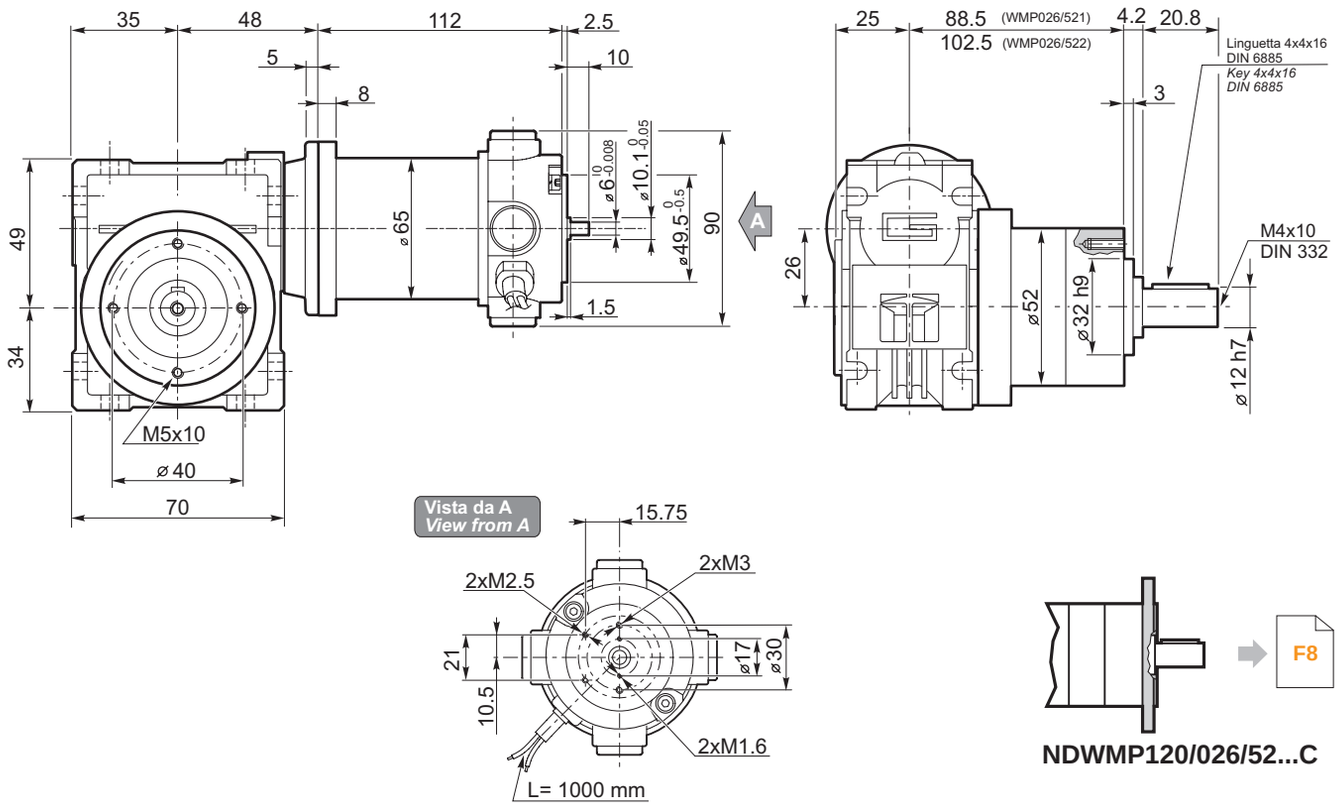
P_1 [W]	n_2 [min^{-1}]	M_2 [Nm]	sf	i		Versione motore *Motor version*
160						
(3000 min^{-1})	**6.9**	50	1.0	434.0	**120/026/622**	120/240
	5.2	50	1.0	578.6		
	3.5	50	1.0	867.9		
	2.6	50	1.0	1157		
	2.1	50	1.0	1447		
	1.7	50	1.0	1736		
	1.4	50	1.0	2098		
	1.1	50	1.0	2734		
	44.4	24	3.4	67.5	**120/030/811**	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	**100/030/812**	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		
	2.1	120	1.0	1447		
	1.7	120	1.0	1736		
	1.4	120	1.0	2098		
	1.1	120	1.0	2734		

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*

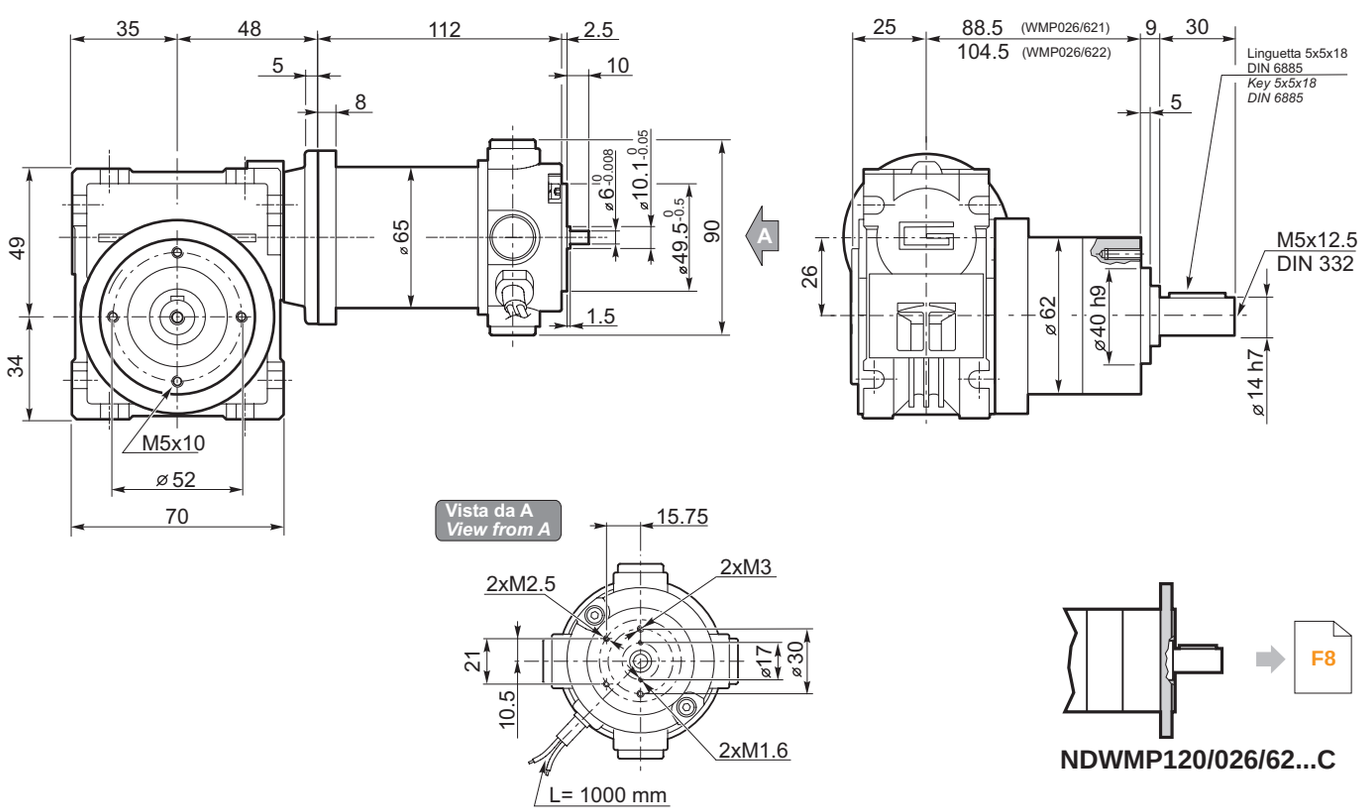
Dimensioni *Dimensions*

NDWMP120/026/52...U



NDWMP120/026/52...C

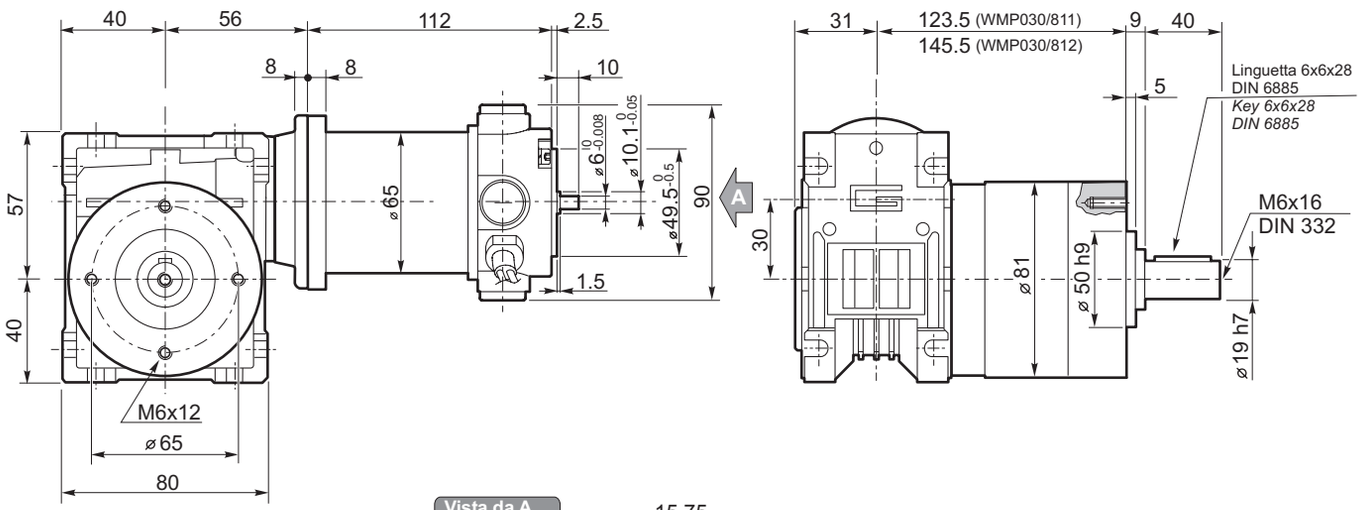
NDWMP120/026/62...U

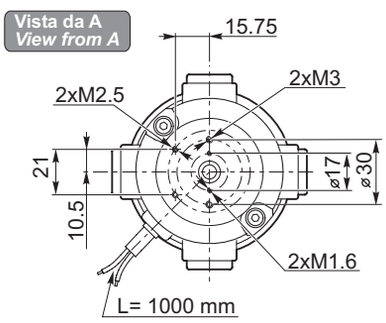


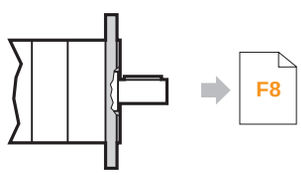
NDWMP120/026/62...C

Dimensioni ***Dimensions***

NDWMP120/030/81...U



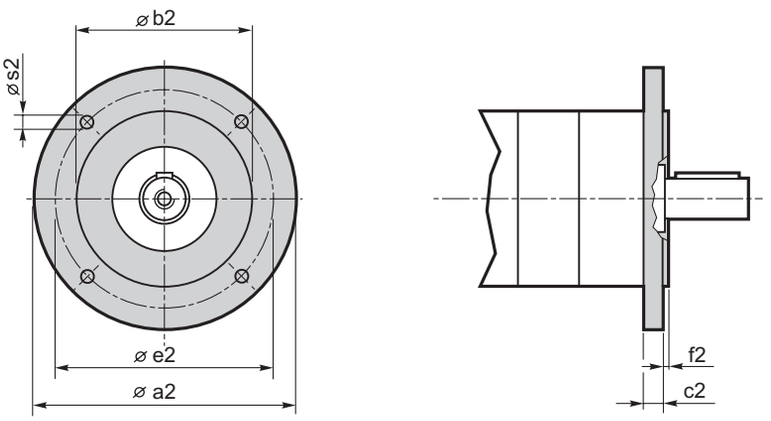




NDWMP120/030/81...C

Dimensioni — *Dimensions*

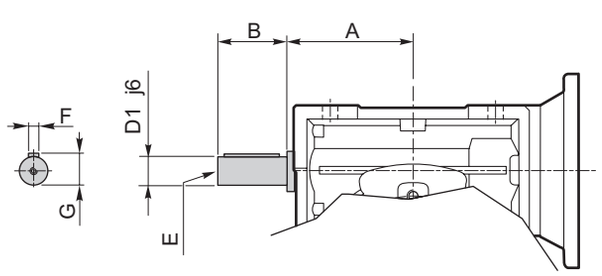
NDWMP.../.../... C... Flange uscita / *Output flanges*



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

TRANSTECNO™

THE MODULAR GEARMOTOR

EC

MOTORI ELETTRICI C.C. A MAGNETI PERMANENTI

PERMANENT MAGNETS D.C. ELECTRIC MOTORS

PRODUCTS • TRANSTECNO • GENUINE •

Caratteristiche tecniche

Technical features

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

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*

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

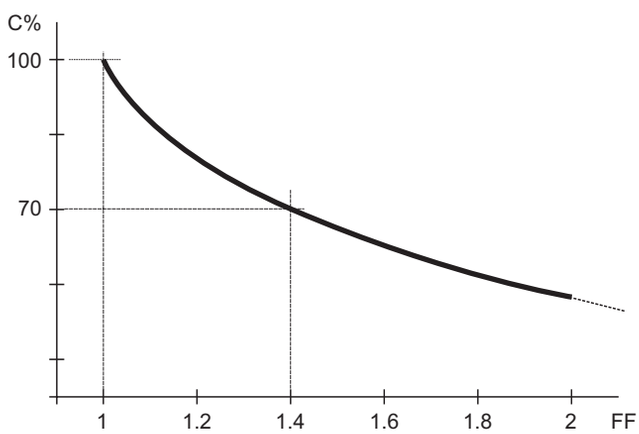
Indica quanta componente spuria alternata è presente nella alimentazione CC del motore. Più alto è il fattore ed inferiore è l'efficienza del motore. Alimentatori ad SCR = F.F 1.40. Alimentazione pura da batteria = FF 1. Alimentazione da transistori (modulazione PWM) = FF 1.05.

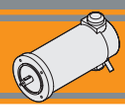
Qualitativamente l' andamento della coppia (percentuale) rispetto al fattore di forma è indicato nel grafico seguente:

Form factor

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. *Protected against solid matters (over Ø 50 mm)*	**1**	Protetto contro la caduta verticale di gocce d'acqua. *Protected against drops of water falling vertically*
2	Protetto da corpi solidi superiori a Ø 12 mm. *Protected against solid matters (over Ø 12 mm)*	**2**	Protetto contro la caduta verticale di gocce d'acqua con inclinazione max di 15° *Protected against drops of water falling up to 15°*
3	Protetto da corpi solidi superiori a Ø 2,5 mm. *Protected against solid matters (over Ø 2,5 mm)*	**3**	Protetto contro la pioggia. *Rain proof fixture*
4	Protetto da corpi solidi superiori a Ø1 mm. *Protected against solid matters (over Ø1 mm)*	**4**	Protetto contro gli spruzzi. *Splash proof fixture*
5	Protetto contro la polvere *Dust proof*	**5**	Protetto contro getti d'acqua *Water jet proof*
6	Totalmente protetto contro la polvere *Fully dust proof*	**6**	Protetto dalle ondate *Wave proof*
7	N.A.	**7**	Protetto contro immersione *Watertight immersion fixture.*
8	N.A.	**8**	Protetto contro immersione/sommersione prolungata *Watertight immersion fixture for a long time.*

Classe di isolamento termico

Insulation class

Classe / *Class*	Δ t °C Temp. ambiente: 40°C *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*

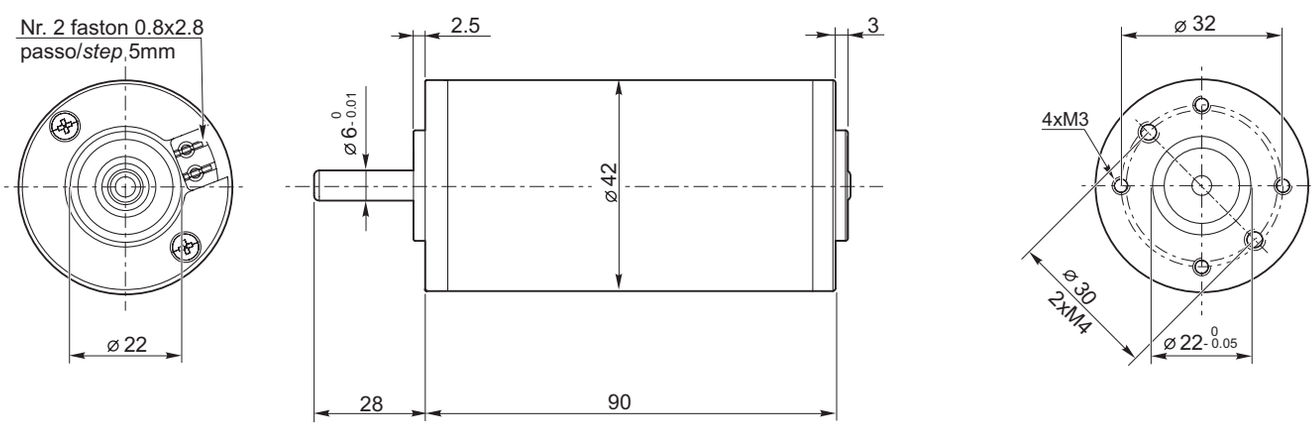
Costruzione	Tubolare, senza ventilazione
Grandezza	Ø 42 mm
Potenza	30 W S2 (20 W S1)
Magneti	2
Supporti	Cuscinetti a sfera
Fori di montaggio	4
Alimentazione	Bassa tensione, 12 o 24 Vcc
Spazzole	N° 2 di composto grafite-rame
Cavo di alimentazione	Connettori faston (0.8 x 2.8 mm)
Opzioni	Filtro EMC
	Encoder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

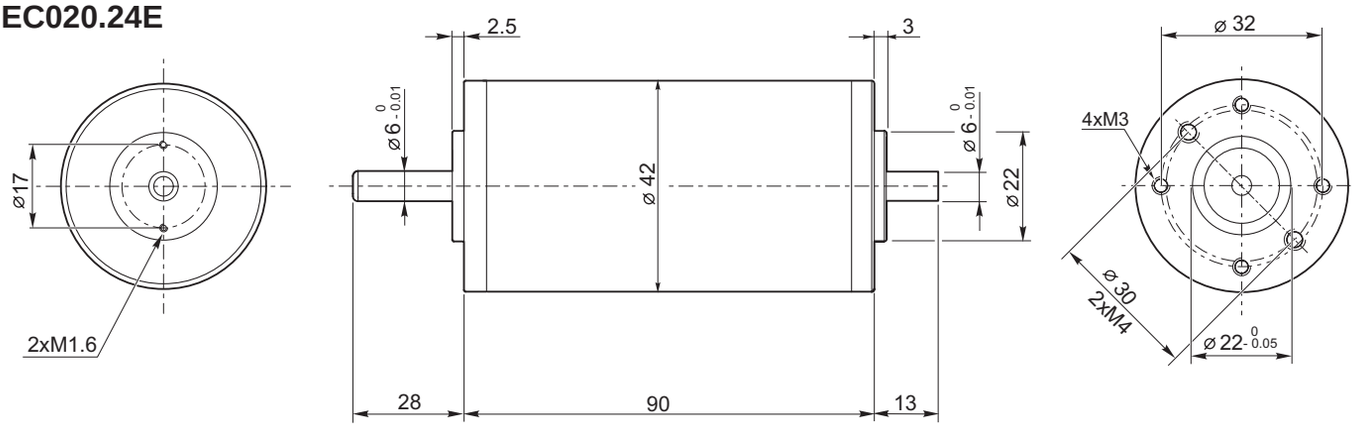
Tipo Type	S	Pn [W]	V [V]	I [A]	IC	FF	Mn [Nm]	n_1 [min^{-1}]	IP	Kg
EC020.120	**S1**	20	12	3.2	B	1	0.06	2850	20	0.4
	S2 6'	30		4.0			0.08			
EC020.24E	**S1**	20	24	1.5			0.06			
	S2 6'	30		2.0			0.08			

Dimensioni / *Dimensions*

EC020.120



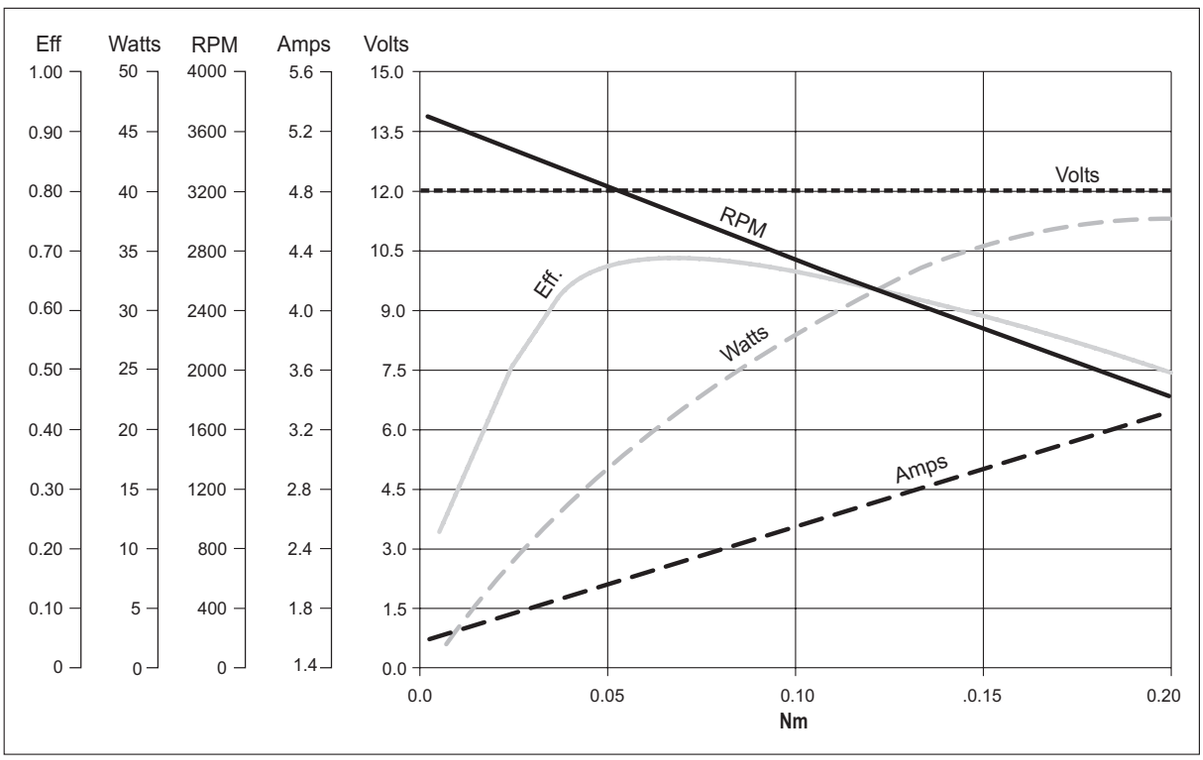
EC020.24E



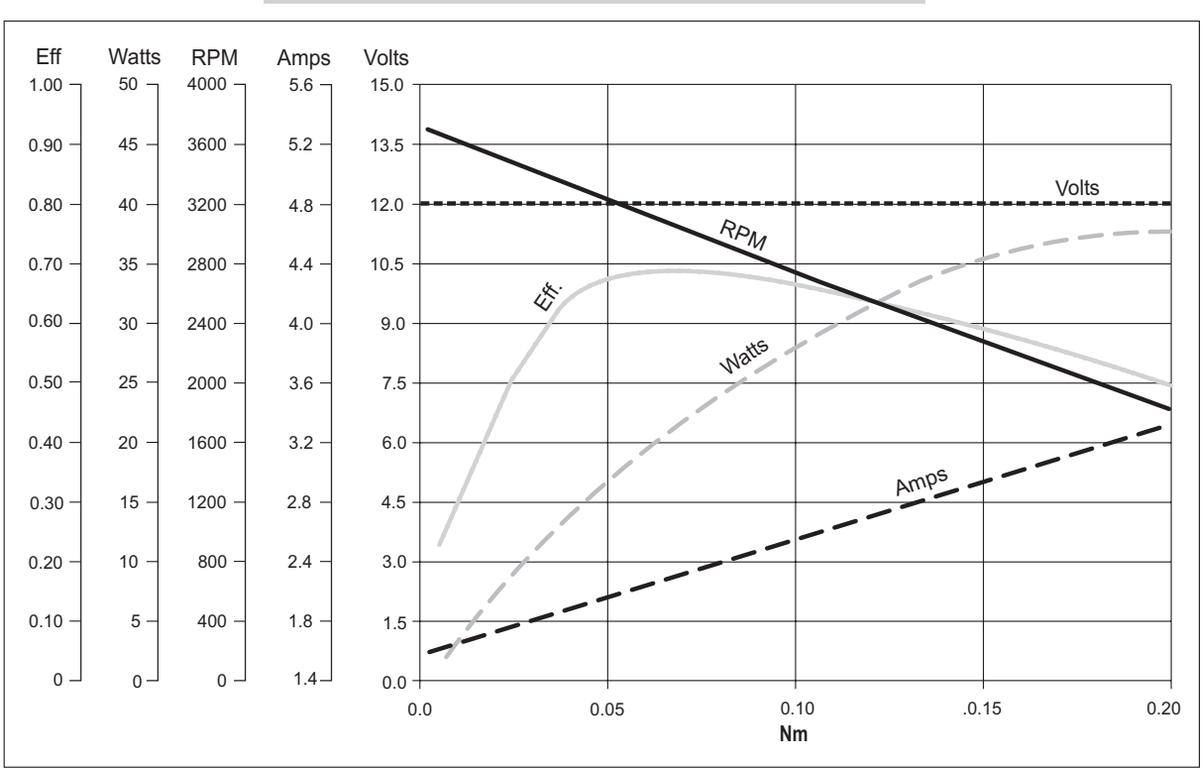
EC020.120 - EC020.24E

Prestazioni *Performances*

EC020.120



EC020.24E



EC035.120 - EC035.240

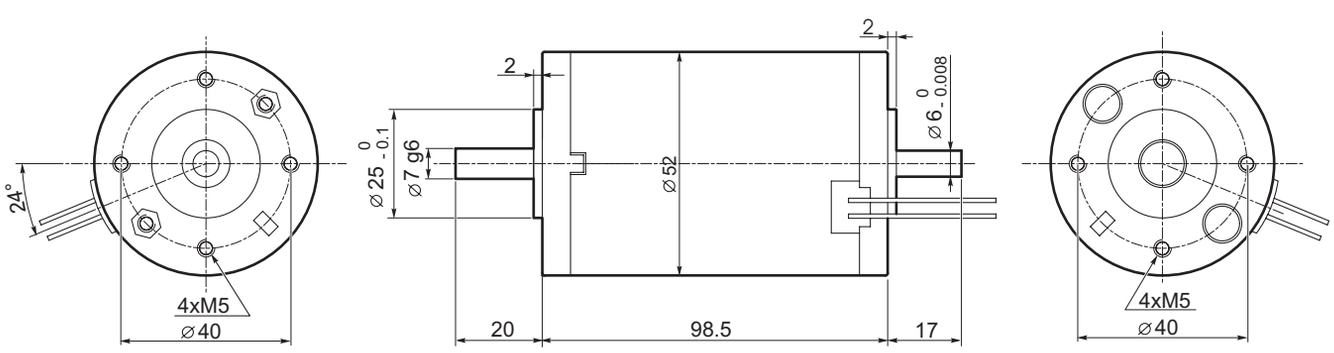
Caratteristiche / *Features*

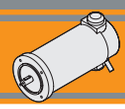
Costruzione	Tubolare, senza ventilazione
Grandezza	Ø 51.5 mm
Potenza	55 W S2 (35 W S1)
Magneti	2
Supporti	Cuscinetti a sfera
Fori di montaggio	4
Alimentazione	Bassa tensione, 12 o 24 Vcc
Spazzole	N° 2 interne di composto grafite-rame
Cavo di alimentazione	Lunghezza: 200 mm
Opzioni	Encoder magnetico max. 1 imp/giro, max.2 canali

Construction	*Tubular, without fan*
Size	*Ø 51.5 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	*Lenght: 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*

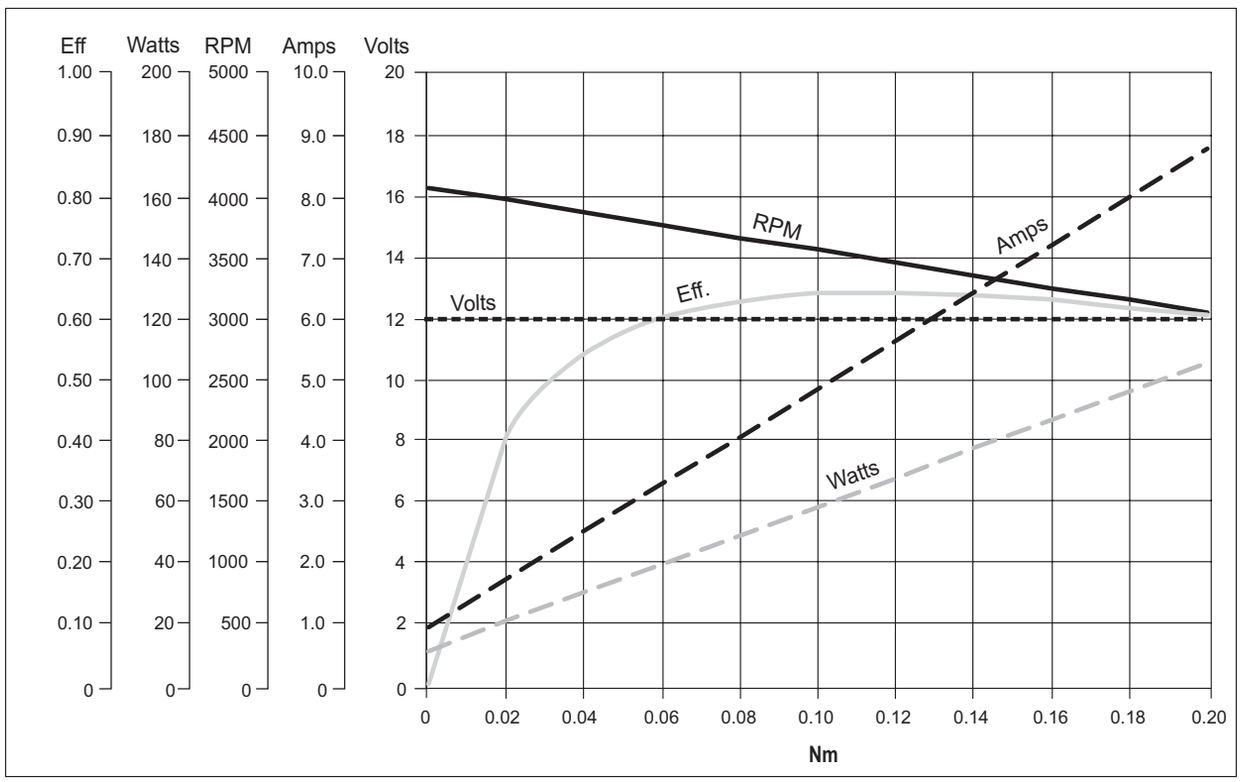




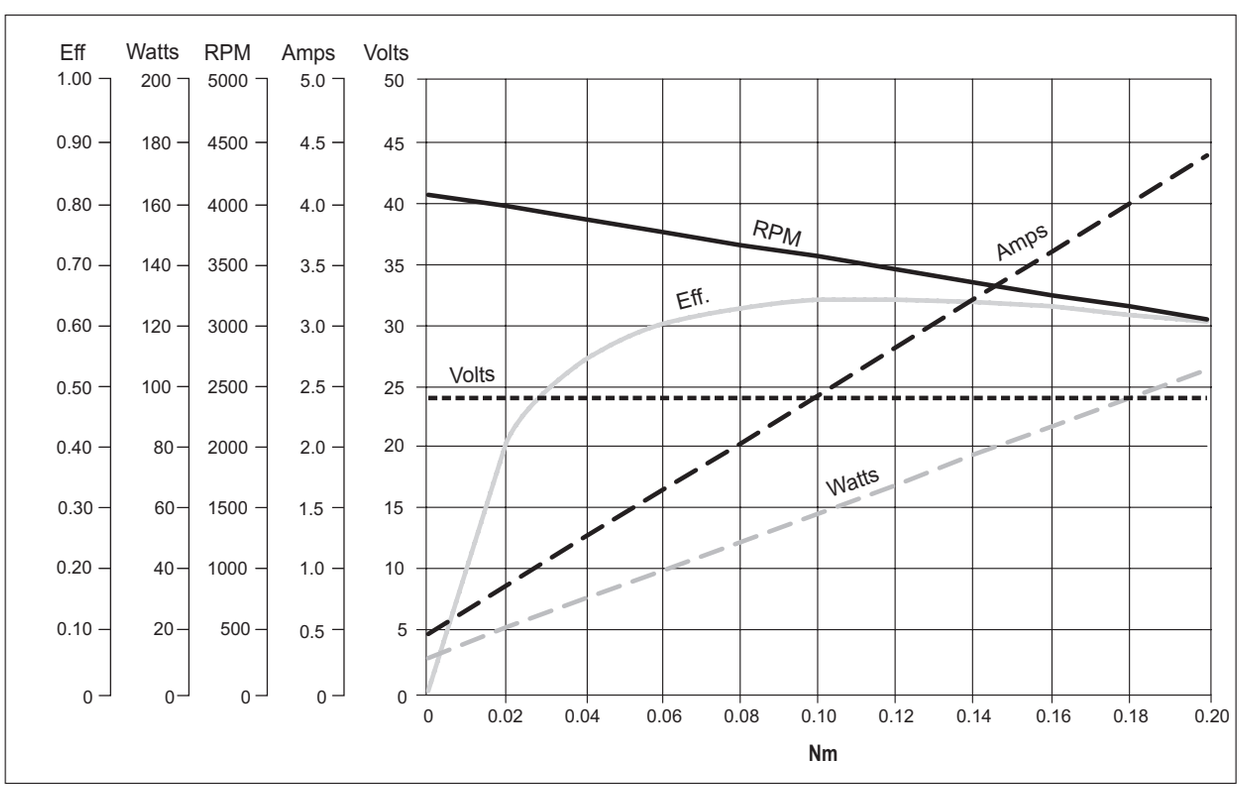
EC035.120 - EC035.240

Prestazioni *Performances*

EC035.120



EC035.240



EC050.120 - EC050.240

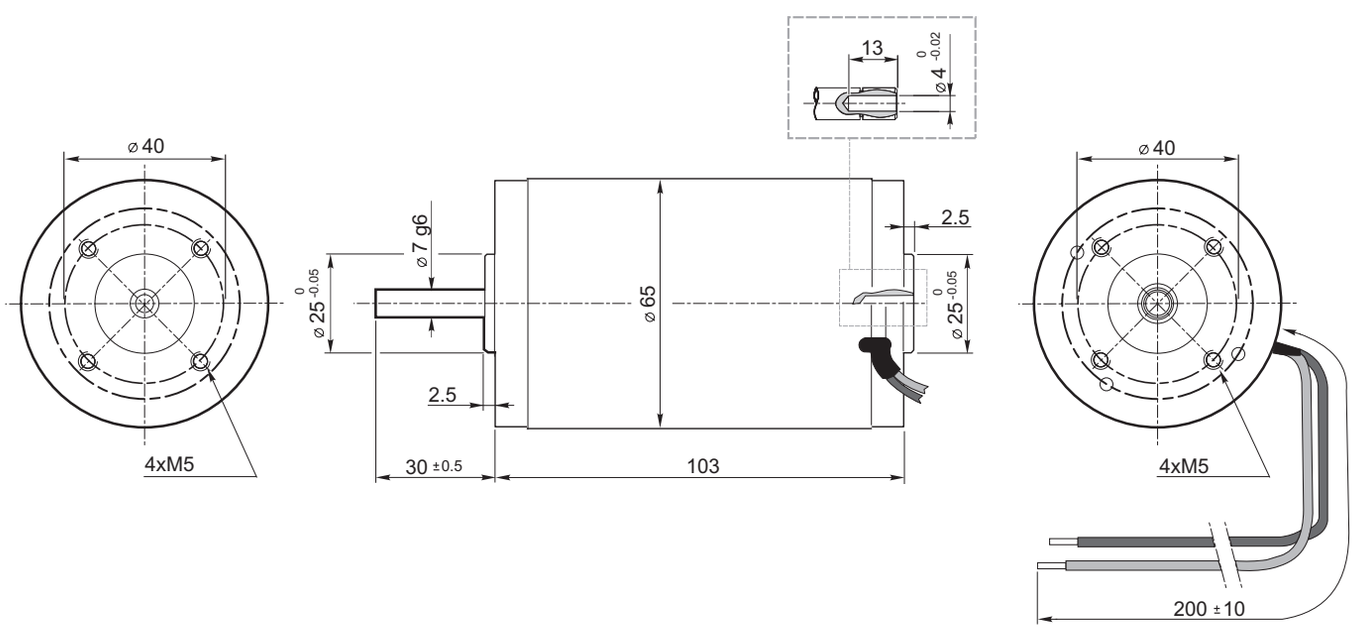
Caratteristiche / *Features*

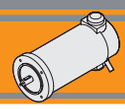
Costruzione	Tubolare, senza ventilazione
Grandezza	Ø 63 mm
Potenza	70 W S2 (50 W S1)
Magneti	2
Supporti	Cuscinetti a sfera
Fori di montaggio	4
Alimentazione	Bassa tensione, 12 o 24 Vcc
Spazzole	N° 2 interne di composto grafite-rame
Cavo di alimentazione	Lunghezza: 200 mm

Construction	*Tubular, without fan*
Size	*Ø 63 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	*Lenght: 200 mm*

Tipo Type	S	Pn [W]	V [V]	I [A]	IC	FF	Mn [Nm]	n_1 [min^{-1}]	IP	Kg
EC050.120	**S1**	50	12	6.8	F	1	0.16	3000	44	1.2
	S2 15'	70		9.4			0.22			
EC050.240	**S1**	50	24	3.4			0.16			
	S2 15'	70		4.7			0.22			

Dimensioni / *Dimensions*

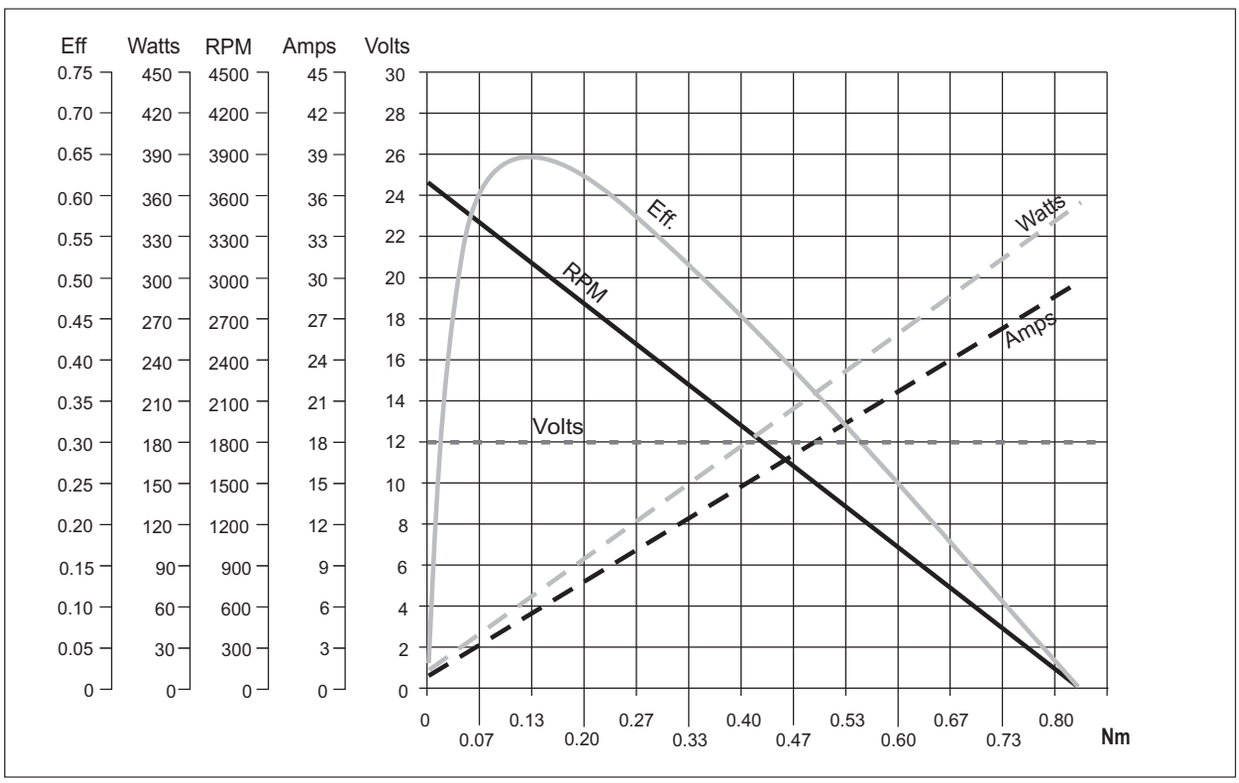




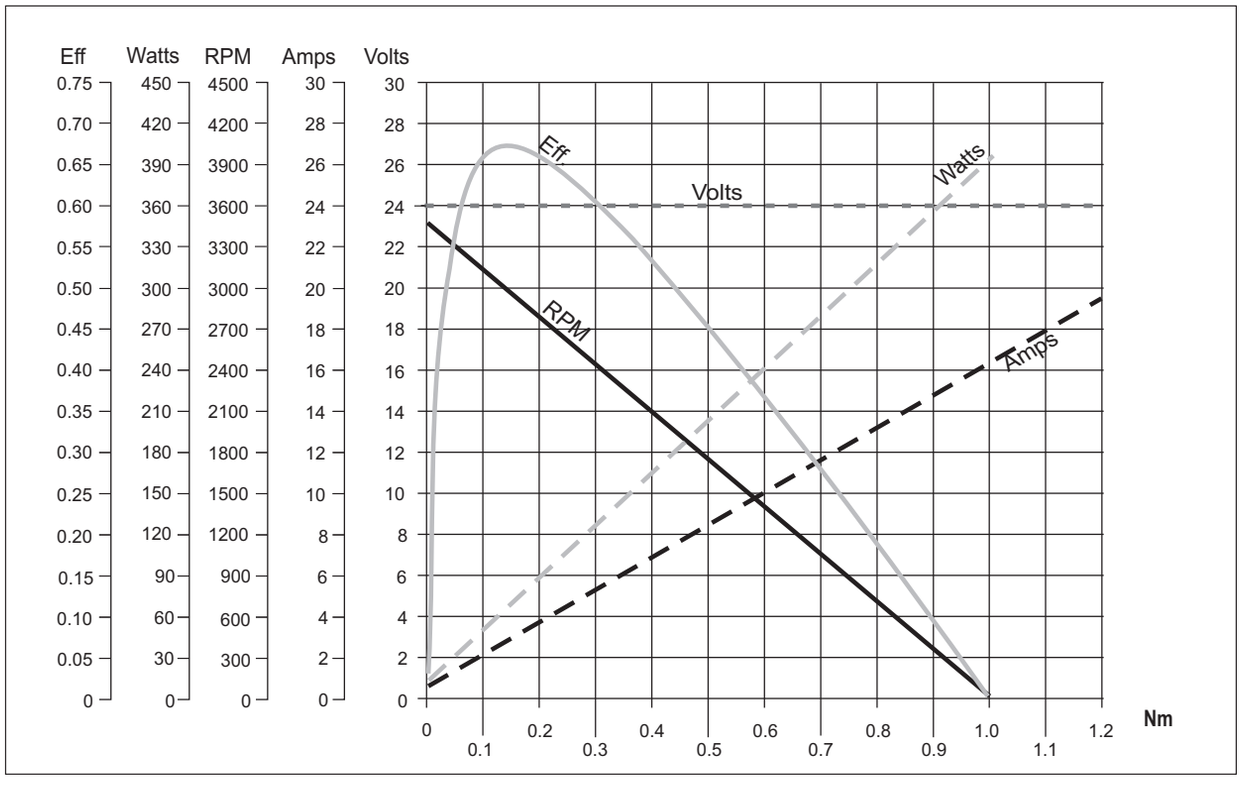
EC050.120 - EC050.240

Prestazioni ***Performances***

EC050.120



EC050.240



EC070.120 - EC070.240

Caratteristiche / *Features*

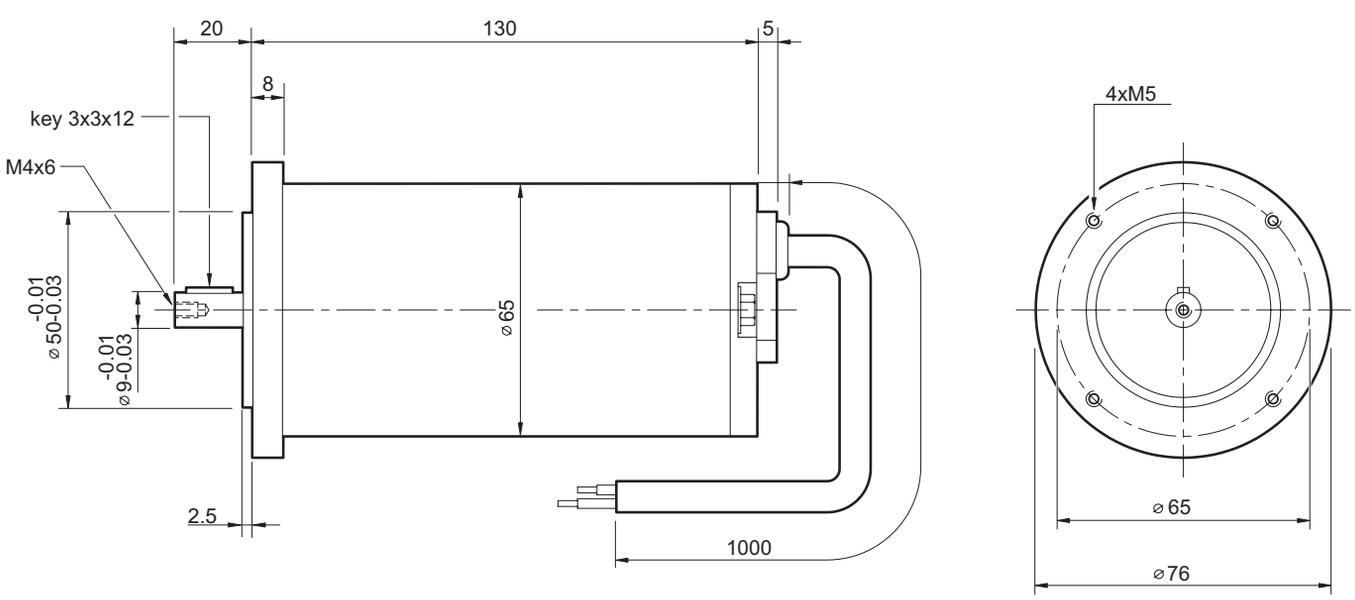
Costruzione	Tubolare, senza ventilazione
Grandezza	Ø 65 mm
Potenza	100 W S2
Magneti	2
Supporti	Cuscinetti a sfera
Fori di montaggio	4
Alimentazione	Bassa tensione, 12 o 24 Vcc
Spazzole	N° 2 interne di composto grafite-rame
Cavo di alimentazione	Lunghezza: 1000 mm

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	*Lenght: 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.

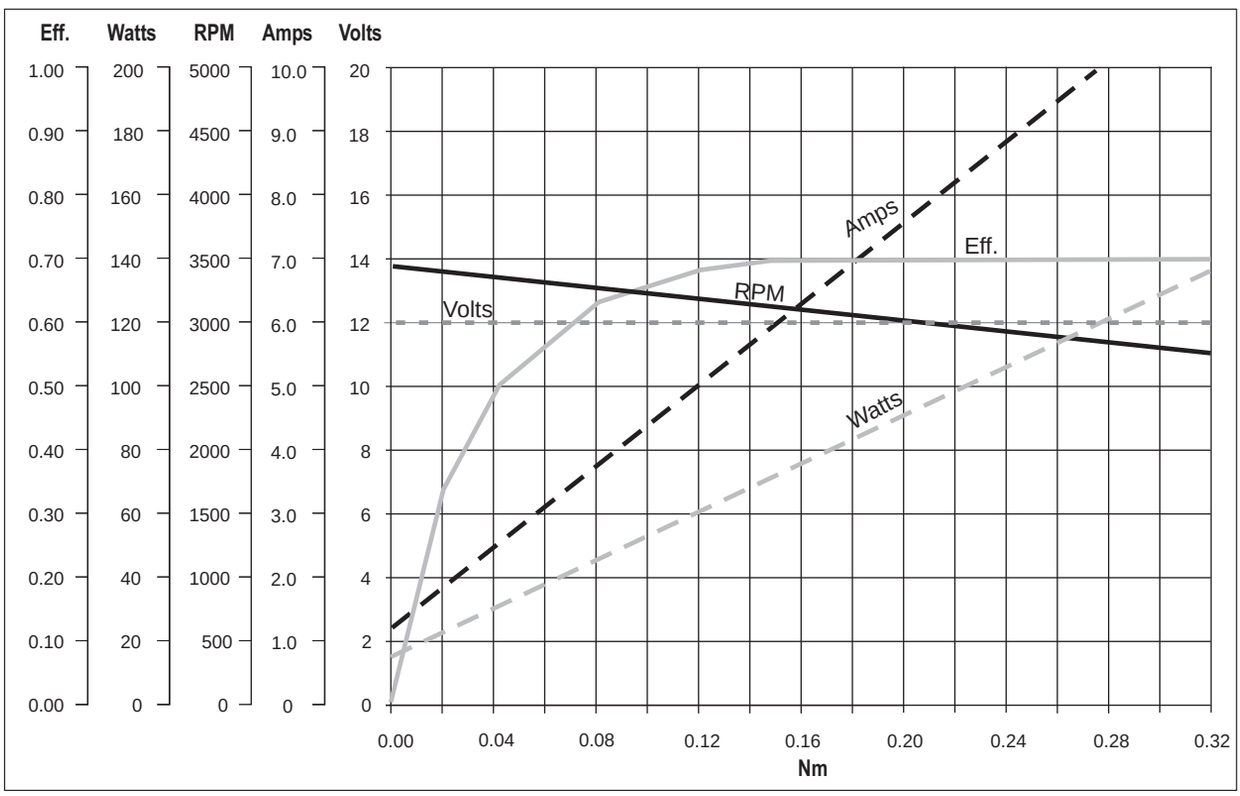
Dimensioni / *Dimensions*



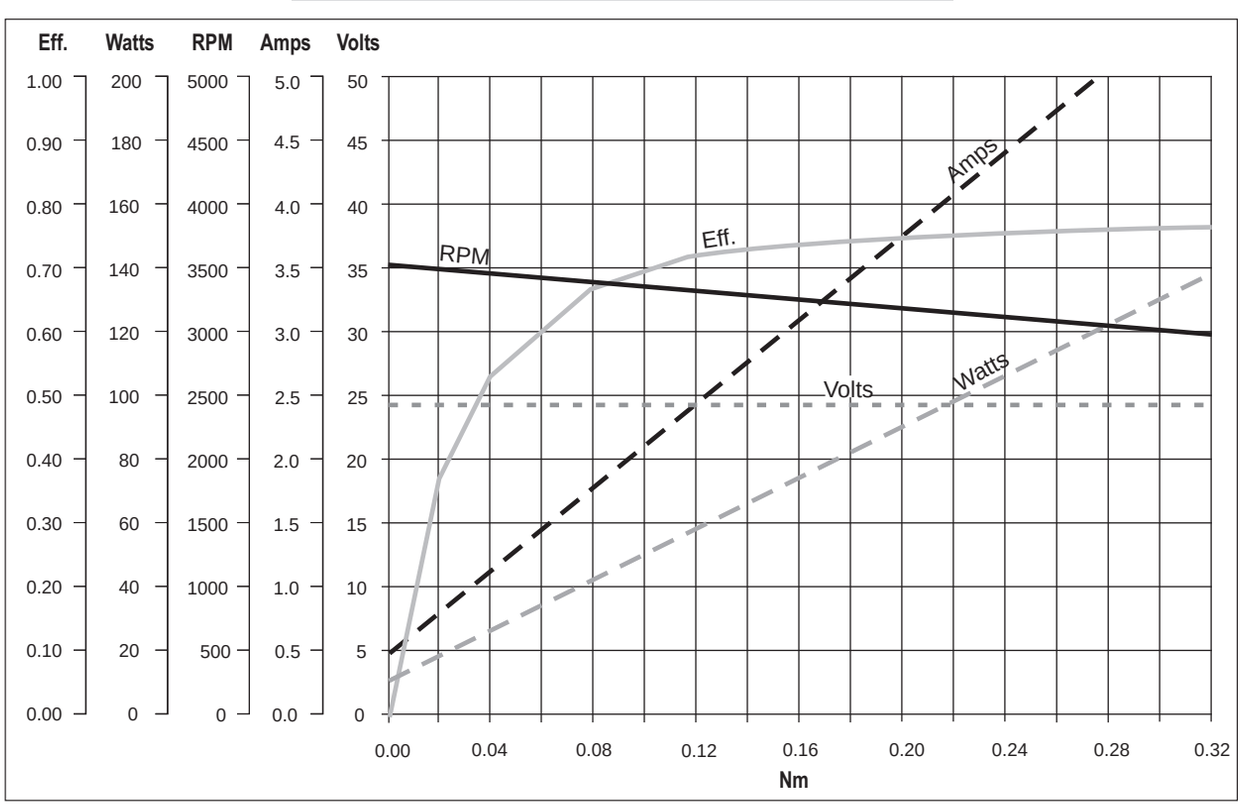
EC070.120 - EC070.240

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	*Lenght: 1000 mm*
Rear shaft	*Standard only EC100.24E*

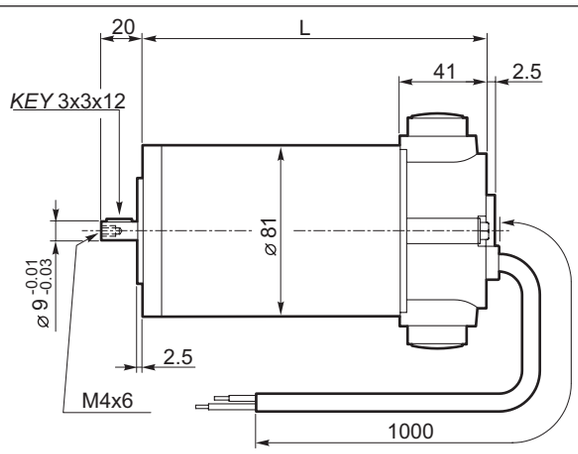
Tipo Type	S	Pn [W]	V [V]	I [A]	IC	FF	Mn [Nm]	n_1 [min^{-1}]	IP	Kg
EC100.120	**S1**	100	12	12	F	1	0.31	3000	44	2.7
	S2 25'	140		16.8			0.43			
EC100.240	**S1**	100	24	6			0.31			
	S2 25'	140		8.4			0.43			
EC100.24E	**S1**	100		6			0.31			
	S2 25'	140		8.4			0.43			

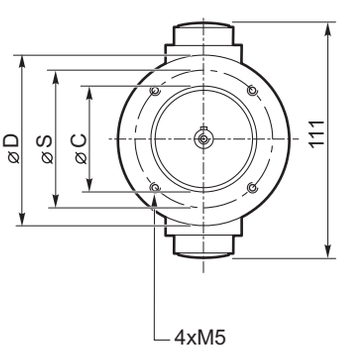
Dimensioni / *Dimensions*

EC100.120
EC100.240

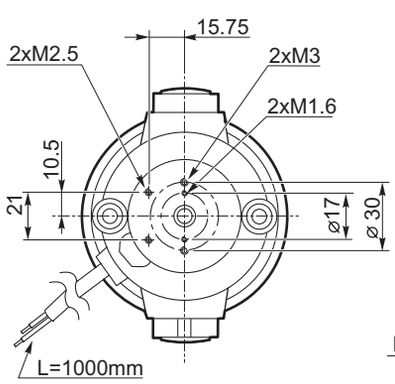
56 B14	
L	153
D	80
S	65
C (-0.03 / -0.01)	50
63B14*	
L	155
D	90
S	75
C (-0.03 / -0.01)	60

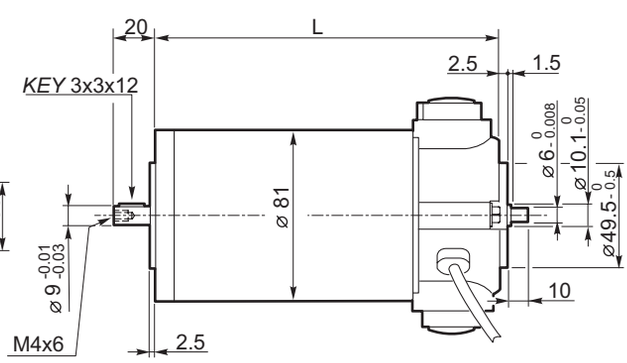
* Usare boccola 9/11
** Use sleeve 9/11*

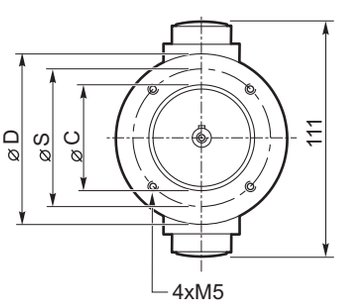


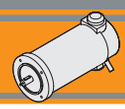


EC100.24E





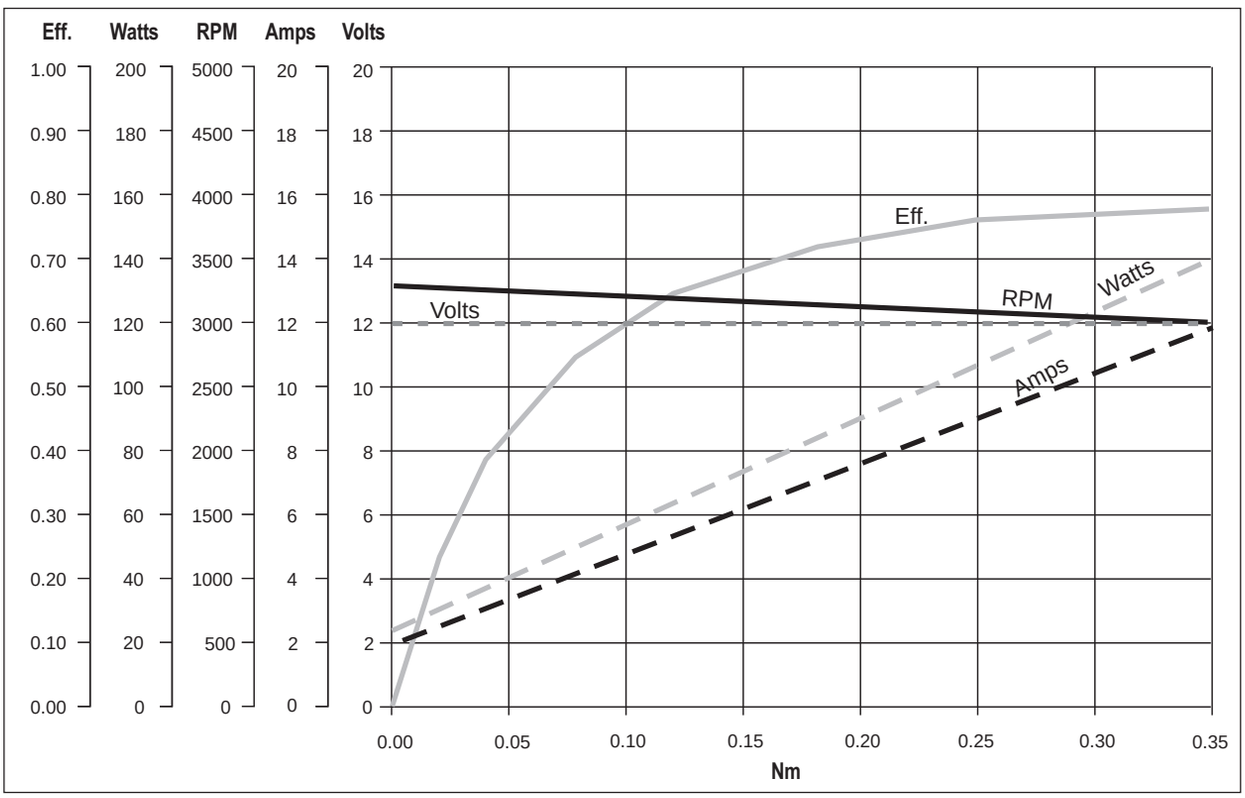




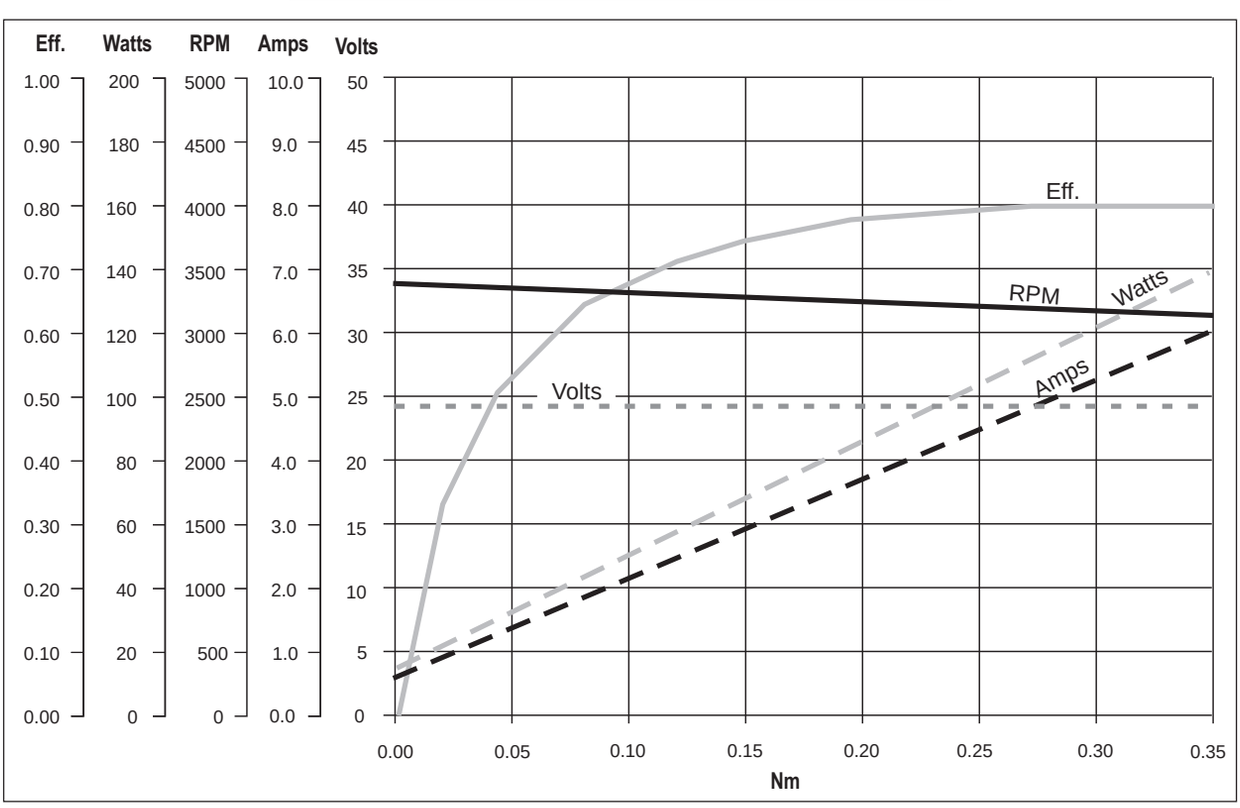
EC100.120 - EC100.240 - EC100.24E

Prestazioni ***Performances***

EC100.120



EC100.240 - EC100.24E



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

Caratteristiche / *Features*

Costruzione	Tubolare, senza ventilazione	*Construction*	*Tubular, without fan*
Grandezza	Ø 80 mm	*Size*	*Ø 80 mm*
Potenza	250 W S2 (180 W S1)	*Power*	*250 W S2 (180 W S1)*
Magneti	2	*Magnets*	*2*
Supporti	Cuscinetti a sfera	*Bearings*	*Ball bearings*
Fori di montaggio	4	*Mounting holes*	*4*
Alimentazione	Bassa tensione, 12 o 24 Vcc	*Power supply*	*Low voltage, 12 or 24 Vdc*
Spazzole	N° 2 di composto grafite-rame	*Brushes*	*2 inside brushes made of graphite/copper composite*
Dimensione spazzole	LxPxH = 17.1 x 6.5 x 16.7 mm	*Brushes size*	*LxPxH = 17.1 x 6.5 x 16.7 mm*
Cavo di alimentazione	Lunghezza:1000 mm	*Electric cable*	*Lenght: 1000 mm*
Bisporgenza	Standard solo EC180.24E	*Rear shaft*	*Standard only EC180.24E*

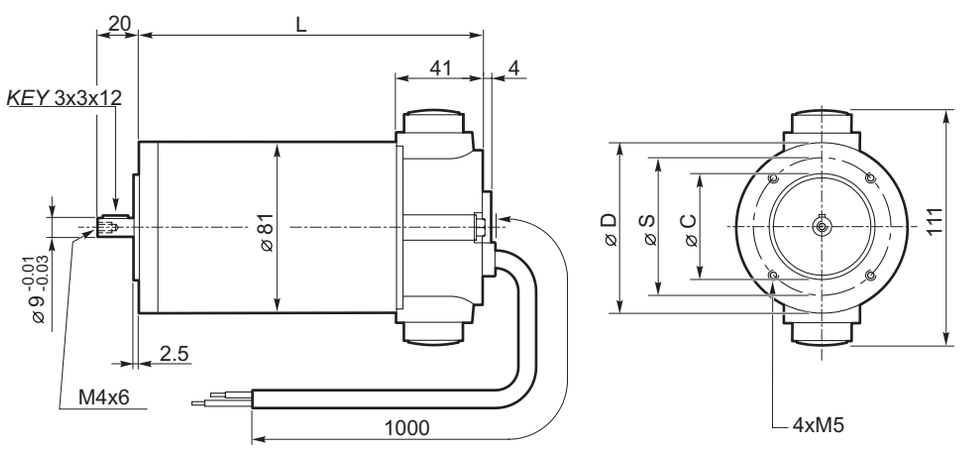
Tipo Type	S	Pn [W]	V [V]	I [A]	IC	FF	Mn [Nm]	n_1 [min^{-1}]	IP	Kg
EC180.120	**S1**	180	12	21.5	F	1	0.57	3000	IP44	3.4
	S2 25'	250		30			0.8			
EC180.240	**S1**	180	24	10.8			0.57			
	S2 25'	250		15			0.8			
EC180.24E	**S1**	180		10.8			0.57			
	S2 25'	250		15			0.8			

Dimensioni / *Dimensions*

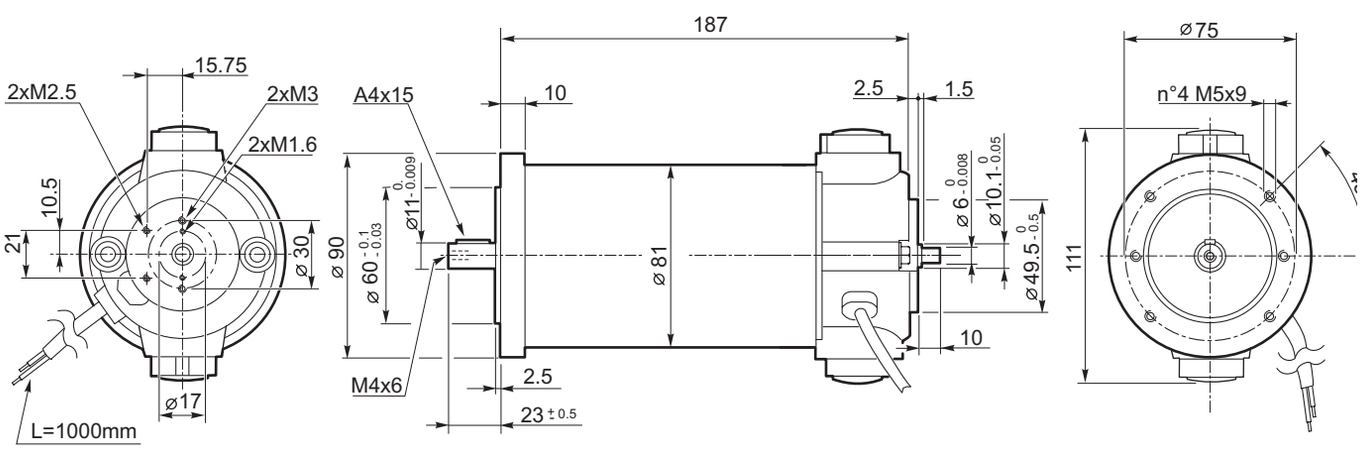
EC180.120
EC180.240

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*



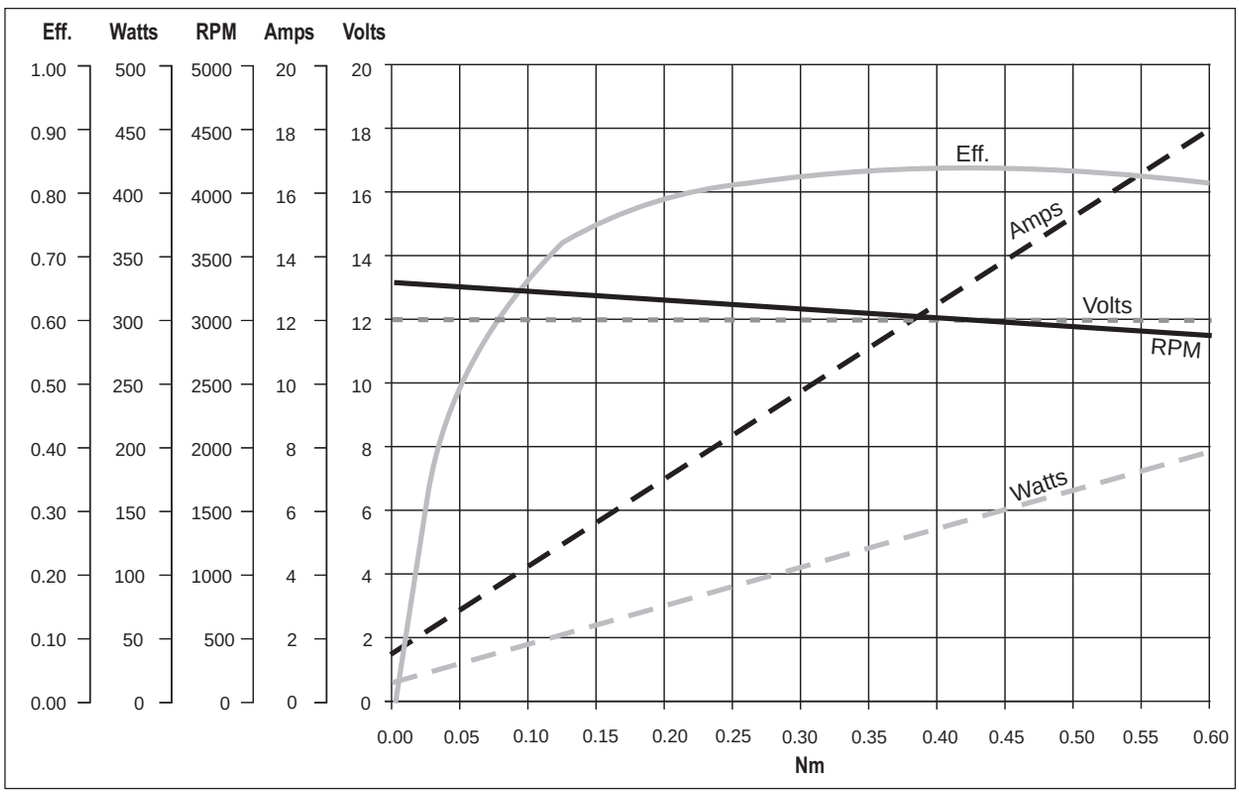
EC180.24E



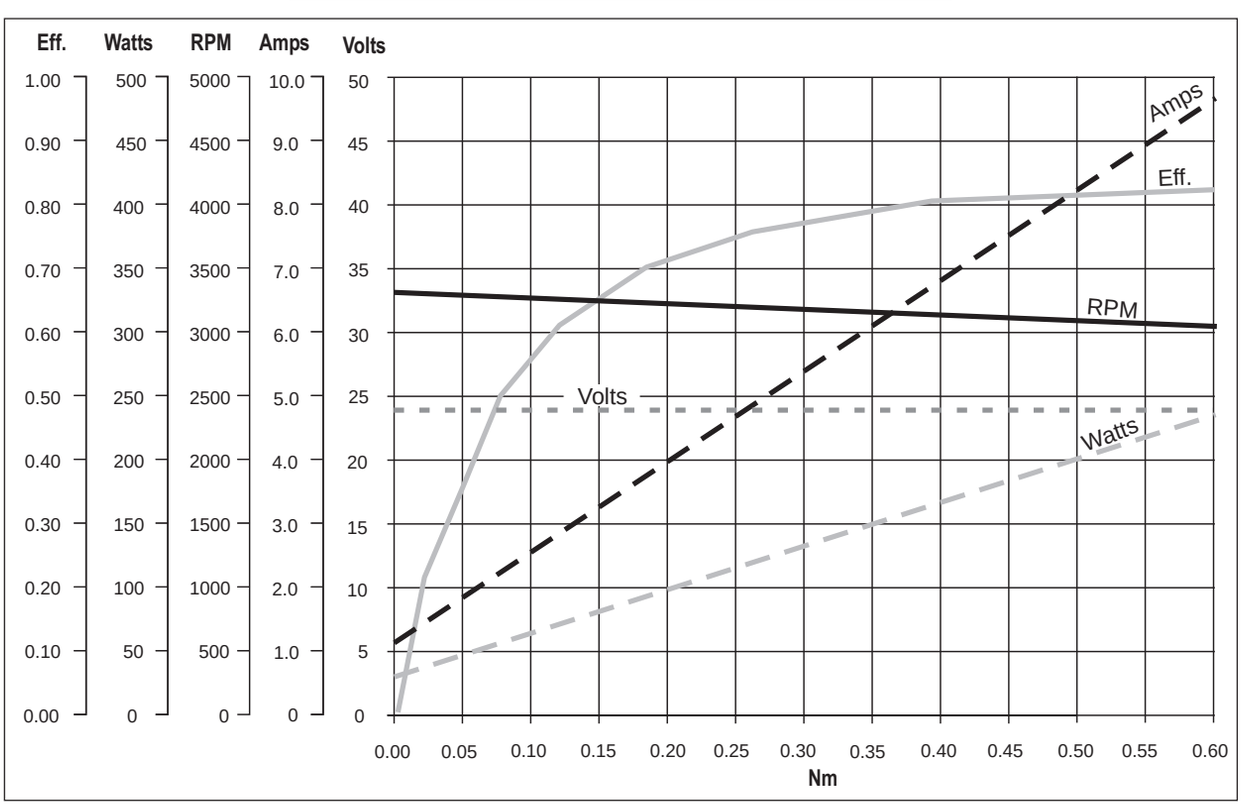
EC180.120 - EC180.240 - EC180.24E

Prestazioni *Performances*

EC180.120



EC180.240 - EC180.24E



EC350.120 - EC350.240

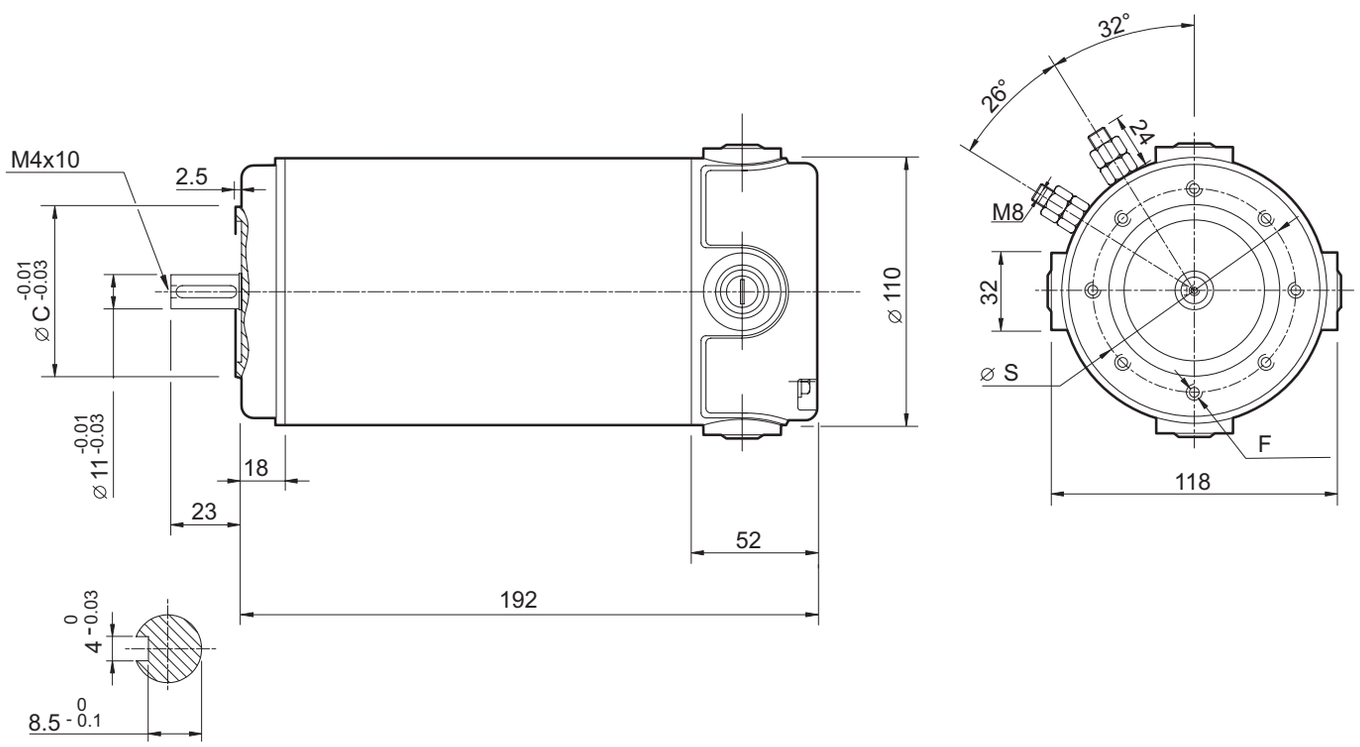
Caratteristiche / *Features*

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

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*

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
	S2 30'	500		58.8			1.57			
EC350.240	**S1**	350	24	21			1.12			5.3
	S2 30'	500		29.4			1.57			

Dimensioni / *Dimensions*



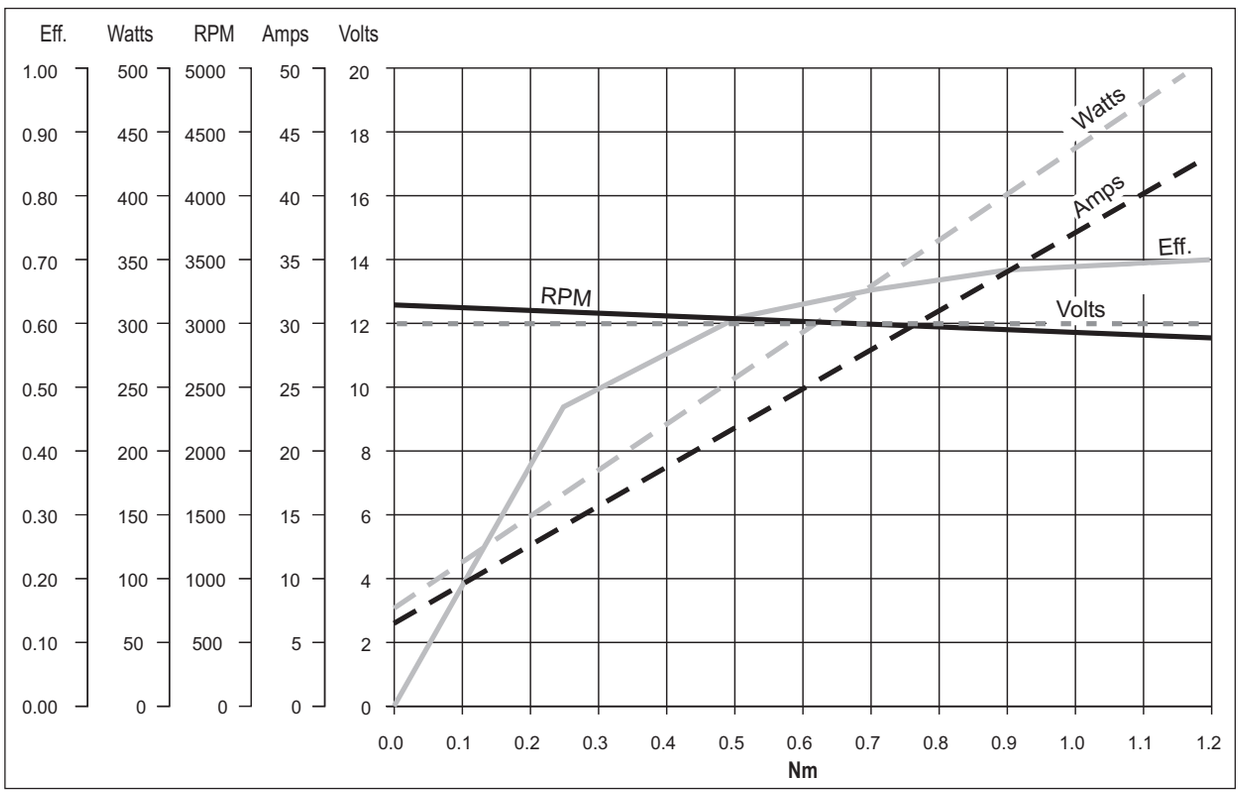
63 B14		71 B14*	
S	75	**S**	85
C (-0.03 / -0.01)	60	**C** (-0.03 / -0.01)	70
F	8 - M5	**F**	8 - M6

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

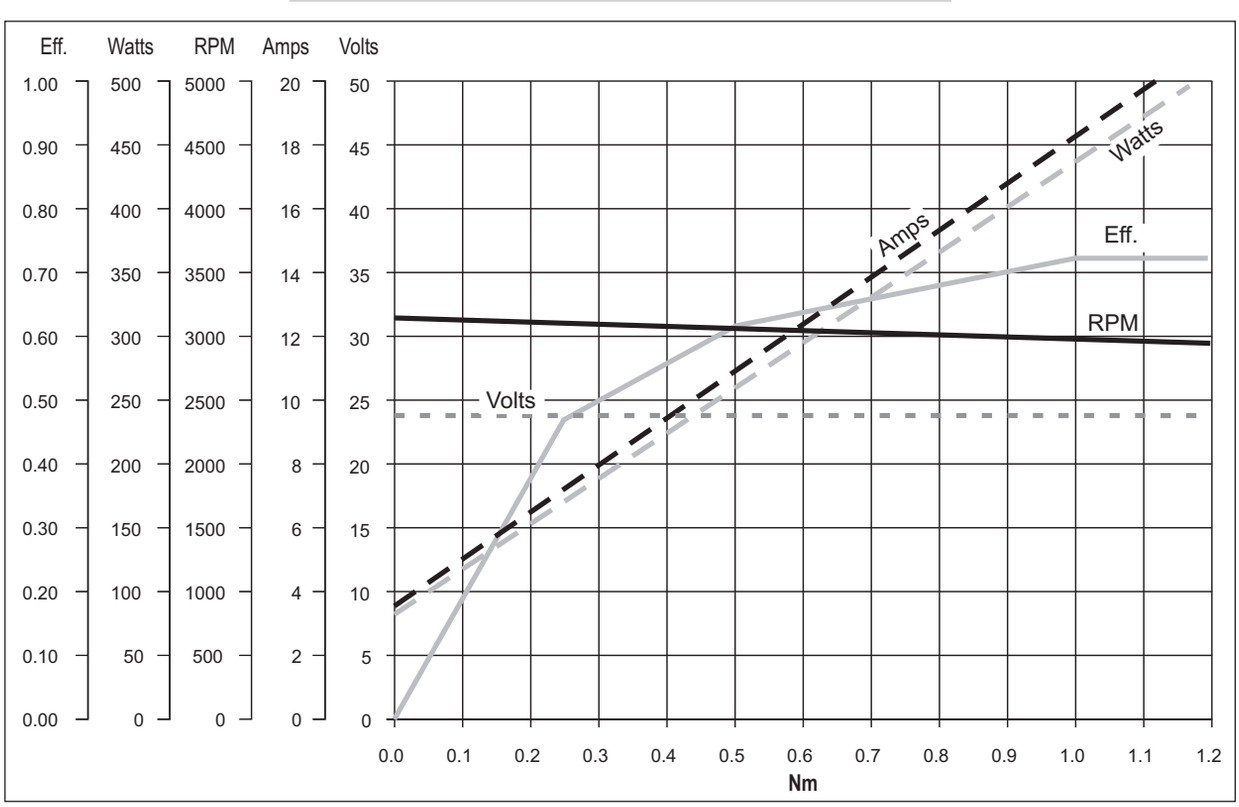
EC350.120 - EC350.240

Prestazioni *Performances*

EC350.120



EC350.240



EC600.120 - EC600.240

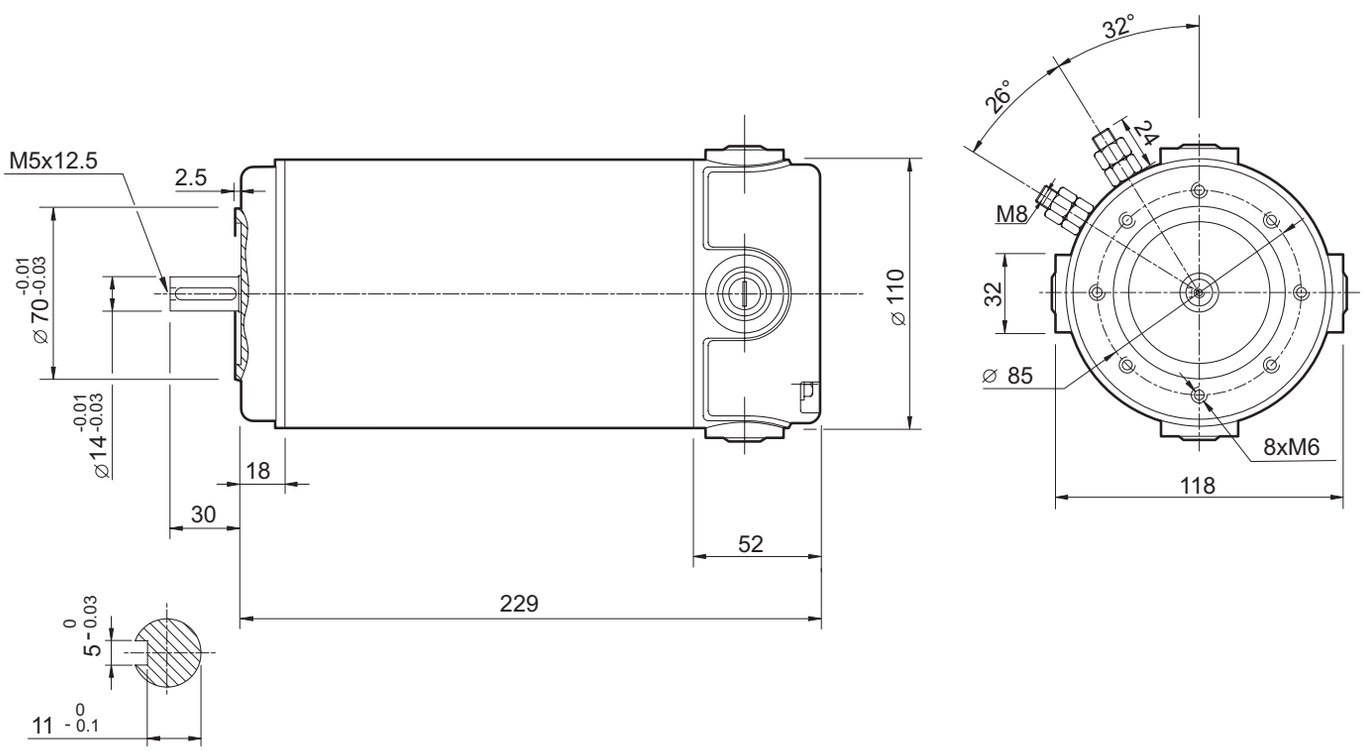
Caratteristiche / *Features*

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

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*

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
	S2 30'	800		94.4			2.54			
EC600.240	**S1**	600	24	35.5			1.91			7.1
	S2 30'	800		47.2			2.54			

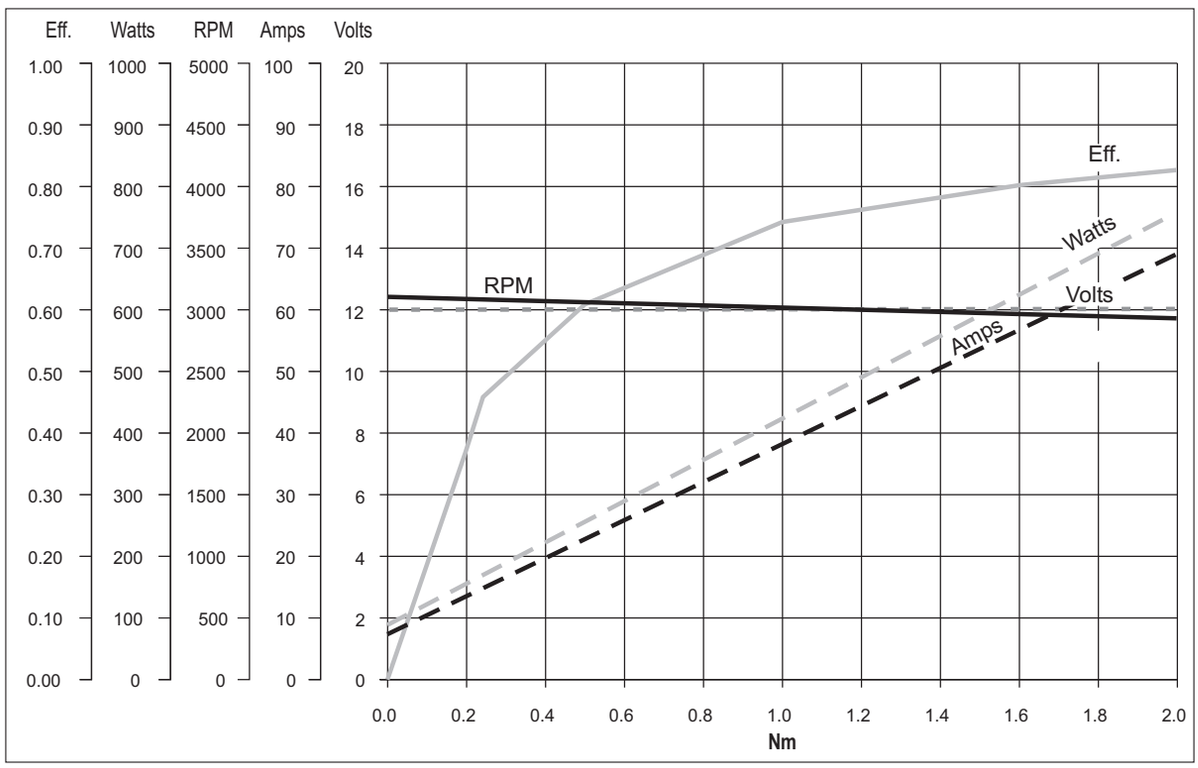
Dimensioni / *Dimensions*



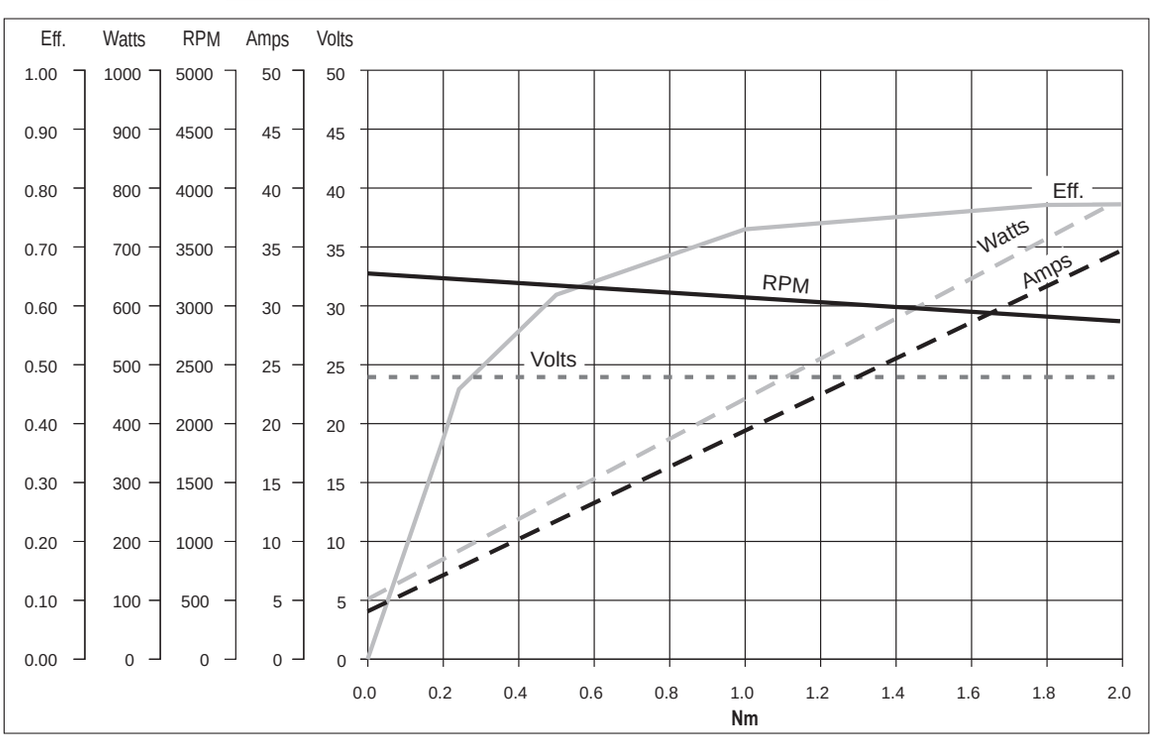
EC600.120 - EC600.240

Prestazioni ***Performances***

EC600.120



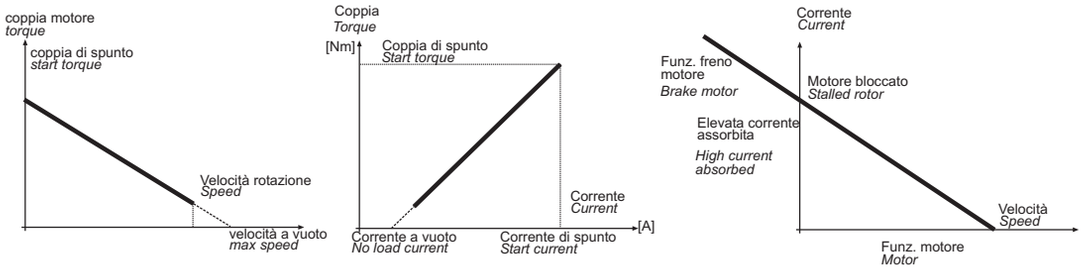
EC600.240



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.

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.

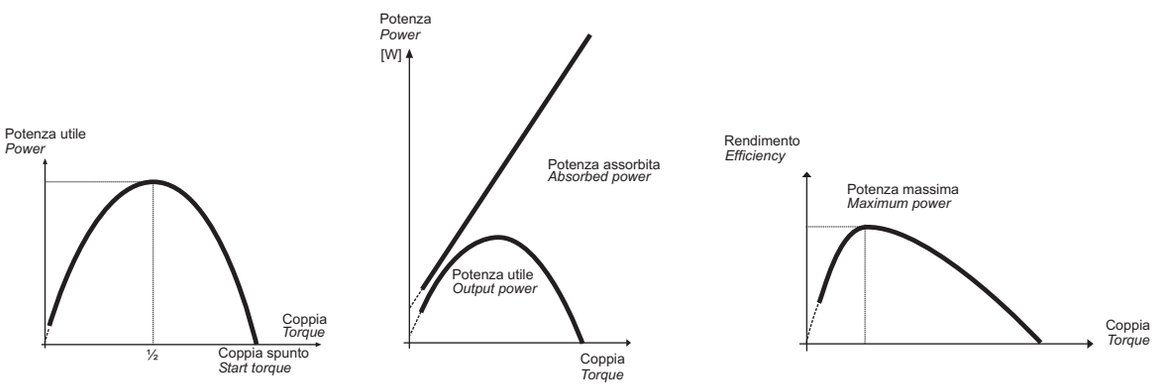


La potenza utile (potenza all' albero) si ricava dalla formula:

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

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.

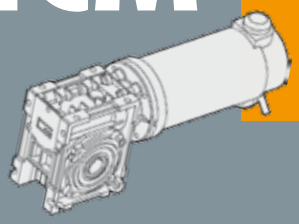
S	—	Servizio	*Duty*
Pn	[W]	Potenza in uscita	*Rated power*
Pa	[W]	Potenza assorbita	*Absorbed power*
Mn	[Nm]	Coppia nominale	*Rated torque*
V	[V]	Tensione	*Voltage*
I	[A]	Corrente assorbita	*Absorbed current*
n1	[min-1]	Numero giri motore	*Motor speed*
Sv	[rad/s]	Velocità angolare	*Angular speed*
IC	—	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*

TRANSTECNO™

THE MODULAR GEARMOTOR

ECM

ECM



MOTORIDUTTORI C.C. A VITE SENZA FINE

PERMANENT MAGNETS D.C. WORMGEARMOTORS

TRANSTECNO · GENUINE · PRODUCTS ·

Caratteristiche tecniche — *Technical features*

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

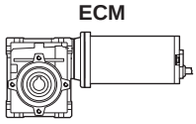
- Alimentazione in bassa tensione 12/24 Vcc
- Possibilità di montaggio encoder
- Potenza motore disponibili da 30 a 800W S2
- Magneti in ferrite
- Carcasse dei riduttori in pressofusione di alluminio
- Lubrificazione permanente con olio sintetico.

The main features of ECM D.C. gearmotors range are:

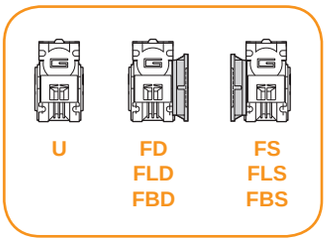
- *Low voltage power supply 12/24 Vdc*
- *Suitable for encoder assembly*
- *Motor power ratings available from 30 to 800W S2*
- *Ferrite magnets*
- *Die-cast aluminum housing*
- *Permanent synthetic oil long-life lubrication.*

Designazione — *Designation*

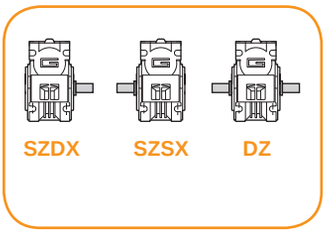
MOTORIDUTTORE / *GEARMOTOR*

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** **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**

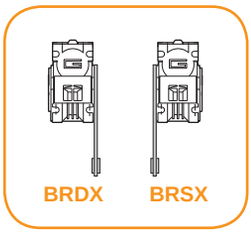
Versione Riduttore *Gearbox Version*



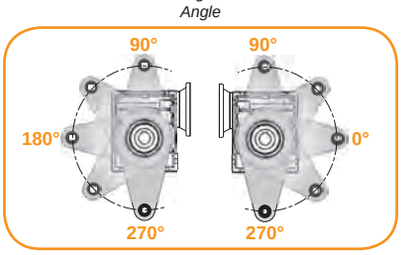
Albero di uscita *Output shaft*



Braccio di reazione *Torque arm*



Angolo *Angle*



Simbologia — *Symbols*

n_1	[min^{-1}]	Velocità in ingresso / *Input speed*
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*
Rs	%	Rendimento statico / *Static efficiency*
R_2	[N]	Carico radiale ammissibile in uscita / *Permitted output radial load*
Z		Numero di principi della vite / *Worm starts*
β		Angolo d'elica / *Helix angle*

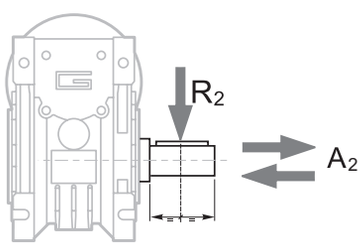
Lubrificazione — *Lubrication*

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*** *(liters)*						
	B3	**B8**	**B6**	**B7**	**V5**	**V6**	
CM026	0.02						Lubrificazione a vita *Life lubricated*
CM030	0.04						
CM040	0.08						
CM050	0.15						
CM063	0.30						

Carichi radiali — *Radial loads*

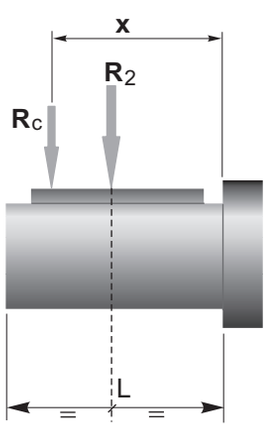


$A_2 = R_2 \times 0.2$

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 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		4	3	2	2	2	1	1	1	1	1	1
	β		23° 54'	18° 23'	12° 29'	10° 6'	8° 28'	6° 19'	5° 5'	4° 15'	3° 39'	2°51'	2° 20'
CM063	Z		4	3	2	2	2	1	1	1	1	1	1
	β		24° 31'	18° 53'	12° 50'	10° 24'	8° 44'	6° 30'	5° 14'	4° 23'	3° 47'	2° 57'	2° 25'

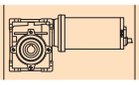
Rendimento — *Efficiency*

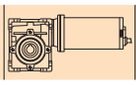
	n_1 [min^{-1}]	Rendimento Efficiency	Rapporto / *Ratio*											
			5	7.5	10	15	20	25	30	40	50	60	80	100
CM026	2800	Rd	89	87	85	83	80		73	68	64	60		
	1400		87	84	83	78	74		66	61	57	53		
	900		84	83	80	75	71		61	57	52	48		
		Rs	72	71	68	61	56		46	41	36	34		
CM030	2800	Rd	89	88	86	84	81	78	74	70	65	62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

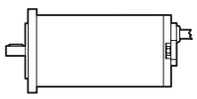
Technical data for S2 duty

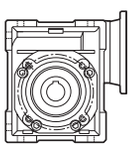
P_1 [W]	n_2 [min^{-1}]	M_2 [Nm]	sf	i		Versione motore *Motor version*
100						
(3000 min^{-1})	**600**	1.4	7.1	5	**ECM070/026**	120/240
	400	2.1	5.3	7.5		
	300	2.7	4.1	10		
	200	4.0	2.8	15		
	150	5.1	2.2	20		
	100	7.0	1.7	30		
	75	8.7	1.3	40		
	60	10	1.0	50		
	50	11	0.8	60		
	600	1.4	9.2	5	**ECM070/030**	120/240
	400	2.1	7.1	7.5		
	300	2.7	5.8	10		
	200	4.0	4.0	15		
	150	5.2	2.7	20		
	120	6.2	2.4	25		
	100	7.1	2.5	30		
	75	8.9	1.8	40		
	60	10	1.4	50		
	50	12	1.2	60		
	38	15	0.8	80		
	30	17	0.7	100		
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		
	200	5.6	2.8	15	**ECM100/030**	120/240/24E
	150	7.2	1.9	20		
	120	8.7	1.7	25		
	100	10	1.8	30		
	75	12	1.3	40		
	60	14	1.0	50		
	50	17	0.8	60		
	38	20	0.6	80		
	30	16	0.7	100		
	100	10	3.7	30	**ECM100/040**	120/240/24E
	75	13	2.6	40		
	60	15	2.1	50		
	50	18	1.6	60		
	38	21	1.3	80		
	30	25	1.0	100		
250						
(3000 min^{-1})	**600**	3.5	2.8	5	**ECM180/026**	120/240
	400	5.2	2.1	7.5		
	300	6.8	1.6	10		
	200	10	1.1	15		
	150	13	0.9	20		
	100	17	0.7	30		
	75	16	0.7	40		
	60	14	0.7	50		
	50	13	0.7	60		
	600	3.5	3.7	5	**ECM180/030**	120/240/24E
	400	5.3	2.9	7.5		
	300	6.8	2.3	10		
	200	10	1.6	15		
	150	13	1.1	20		
	120	16	1.0	25		
	100	18	1.0	30		
	75	22	0.7	40		
	60	21	0.7	50		
	50	20	0.7	60		
	38	17	0.7	80		
	30	16	0.7	100		
	200	10	3.5	15	**ECM180/040**	120/240/24E
	150	13	2.3	20		
	120	16	1.8	25		

P_1 [W]	n_2 [min^{-1}]	M_2 [Nm]	sf	i		Versione motore *Motor version*
250						
(3000 min^{-1})	**100**	18	2.1	30	**ECM180/040**	120/240/24E
	75	23	1.5	40		
	60	27	1.2	50		
	50	32	0.9	60		
	38	38	0.7	80		
	30	34	0.7	100		
	75	24	2.5	40	**ECM180/050**	120/240/24E
	60	28	2.0	50		
	50	32	1.6	60		
	38	39	1.2	80		
	30	46	0.9	100		
500						
(3000 min^{-1})	**600**	7.1	1.8	5	**ECM350/030**	120/240
	400	11	1.4	7.5		
	300	14	1.2	10		
	200	20	0.8	15		
	150	20	0.7	20		
	120	21	0.7	25		
	100	26	0.7	30		
	75	23	0.7	40		
	60	21	0.7	50		
	600	7.2	4.0	5	**ECM350/040**	120/240
	400	11	2.9	7.5		
	300	14	2.4	10		
	200	20	1.7	15		
	150	26	1.2	20		
	120	32	0.9	25		
	100	37	1.0	30		
	75	46	0.7	40		
	60	46	0.7	50		
	50	41	0.7	60		
	38	39	0.7	80		
	30	34	0.7	100		
	200	21	3.0	15	**ECM350/050**	120/240
	150	27	2.1	20		
	120	33	1.6	25		
	100	37	1.8	30		
	75	47	1.3	40		
	60	57	1.0	50		
	50	65	0.8	60		
	38	66	0.7	80		
	30	61	0.7	100		
800						
(3000 min^{-1})	**600**	11	2.5	5	**ECM600/040**	120/240
	400	17	1.8	7.5		
	300	22	1.5	10		
	200	32	1.1	15		
	150	42	0.7	20		
	120	40	0.7	25		
	100	54	0.7	30		
	75	49	0.7	40		
	400	17	3.3	7.5	**ECM600/050**	120/240
	300	22	2.7	10		
	200	33	1.9	15		
	150	43	1.3	20		
	120	52	1.0	25		
	100	60	1.1	30		
	75	75	0.8	40		
	60	81	0.7	50		
	50	74	0.7	60		
	38	66	0.7	80		
	200	33	3.5	15	**ECM600/063**	120/240
	150	43	2.4	20		
	120	53	1.8	25		
	100	60	2.1	30		
	75	77	1.4	40		
	60	93	1.1	50		
	50	107	0.9	60		
	38	132	0.7	80		
	30	114	0.7	100		

Motori applicabili

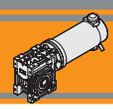
IEC Motor adapters





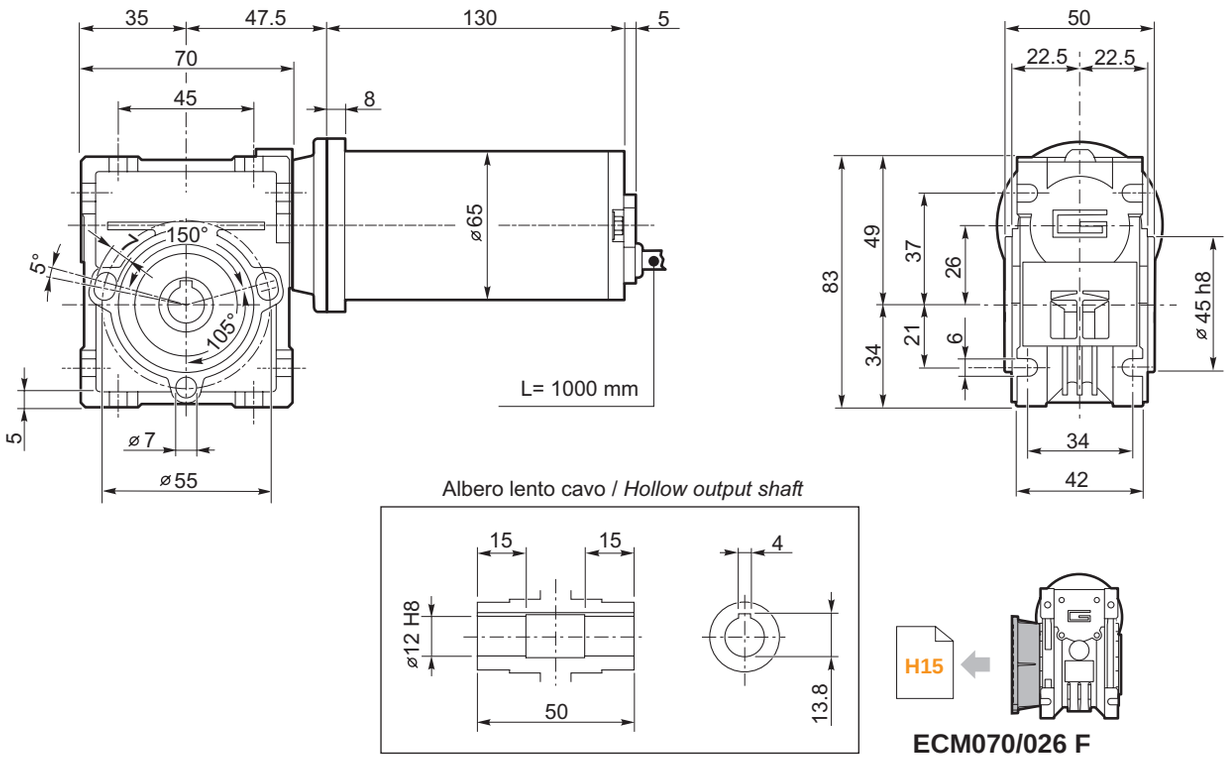
		EC						
		070.120 070.240	100.120 100.240	100.24E	180.120 180.240	180.24E	350.120 350.240	600.120 600.240
CM	026	5-60	5-60		5-60			
	030	5-100	5-100		5-100	5-50	5-50	
	040		5-100		5-100	5-100	5-100	5-40
	050				40-100	7.5-100	7.5-100	7.5-80
	063							7.5-100

5-100 Rapporti di riduzione i
Ratio i



Dimensioni ***Dimensions***

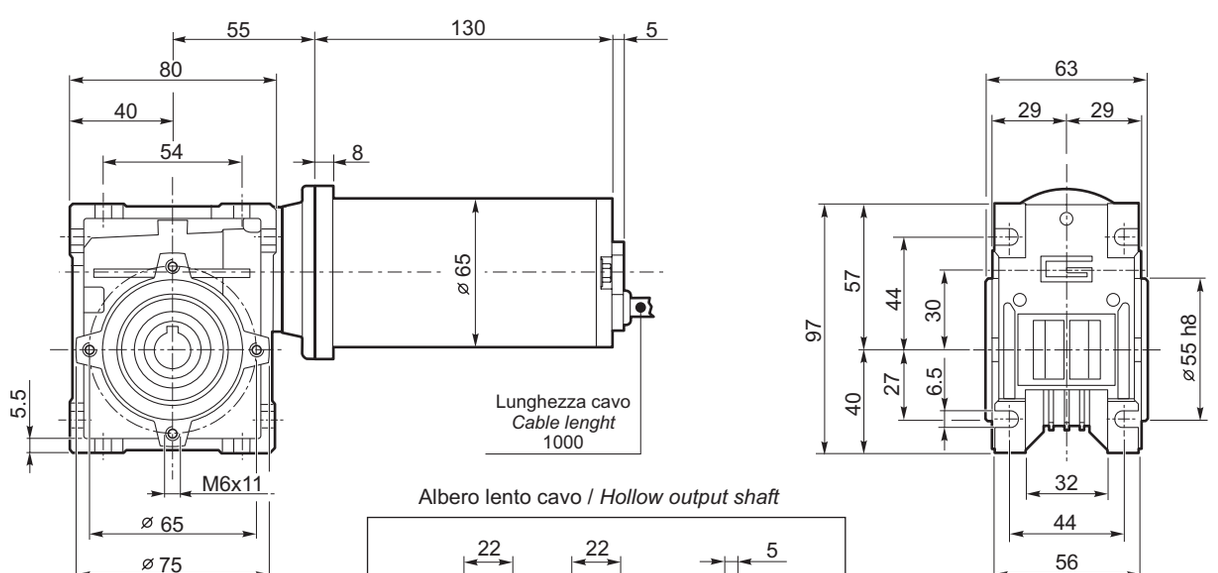
ECM070/026 U



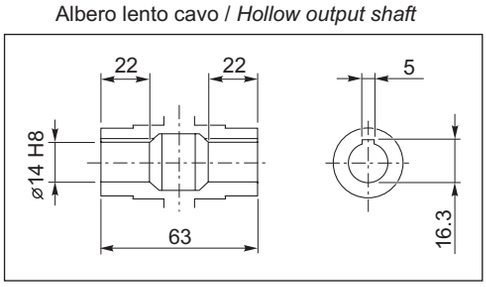
Albero lento cavo / *Hollow output shaft*

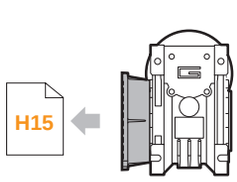
ECM070/026 F

ECM070/030 U



Albero lento cavo / *Hollow output shaft*

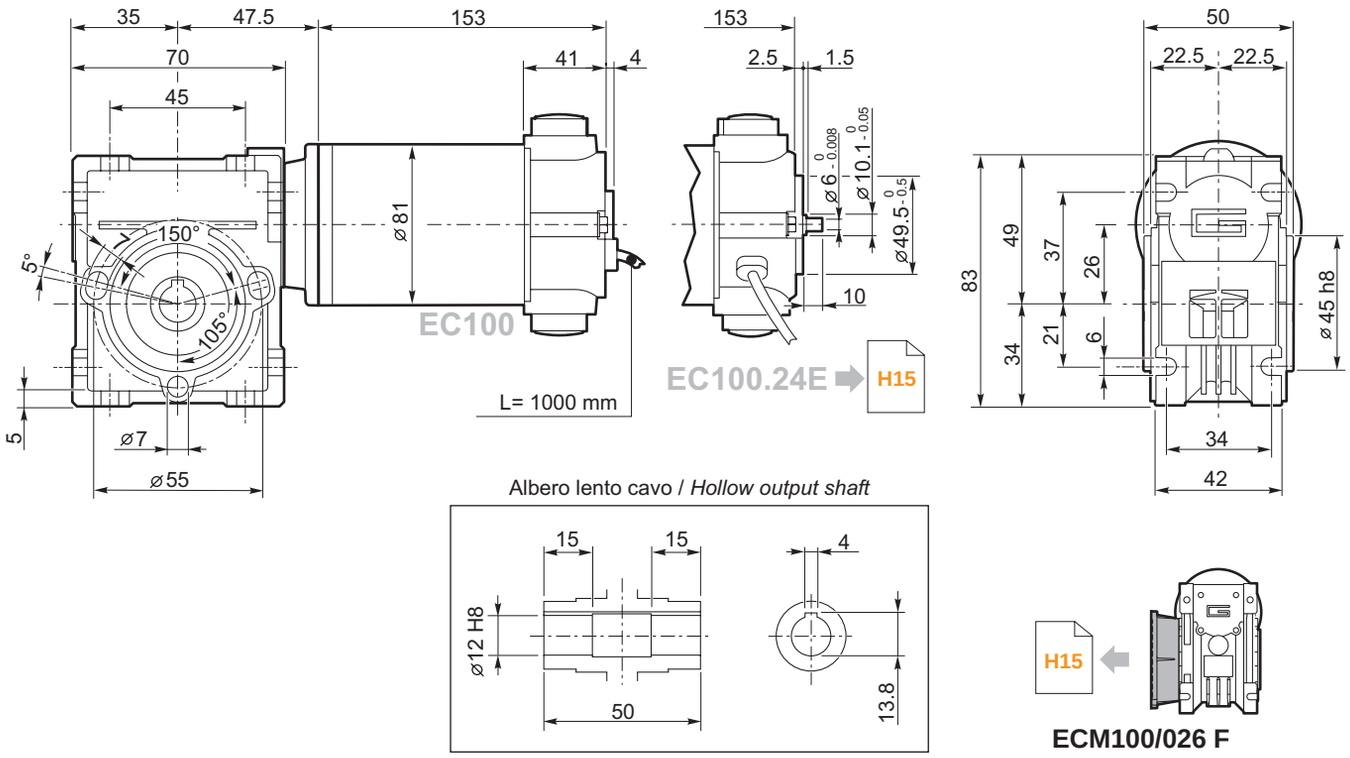




ECM070/030 F

Dimensioni *Dimensions*

ECM100/026 U



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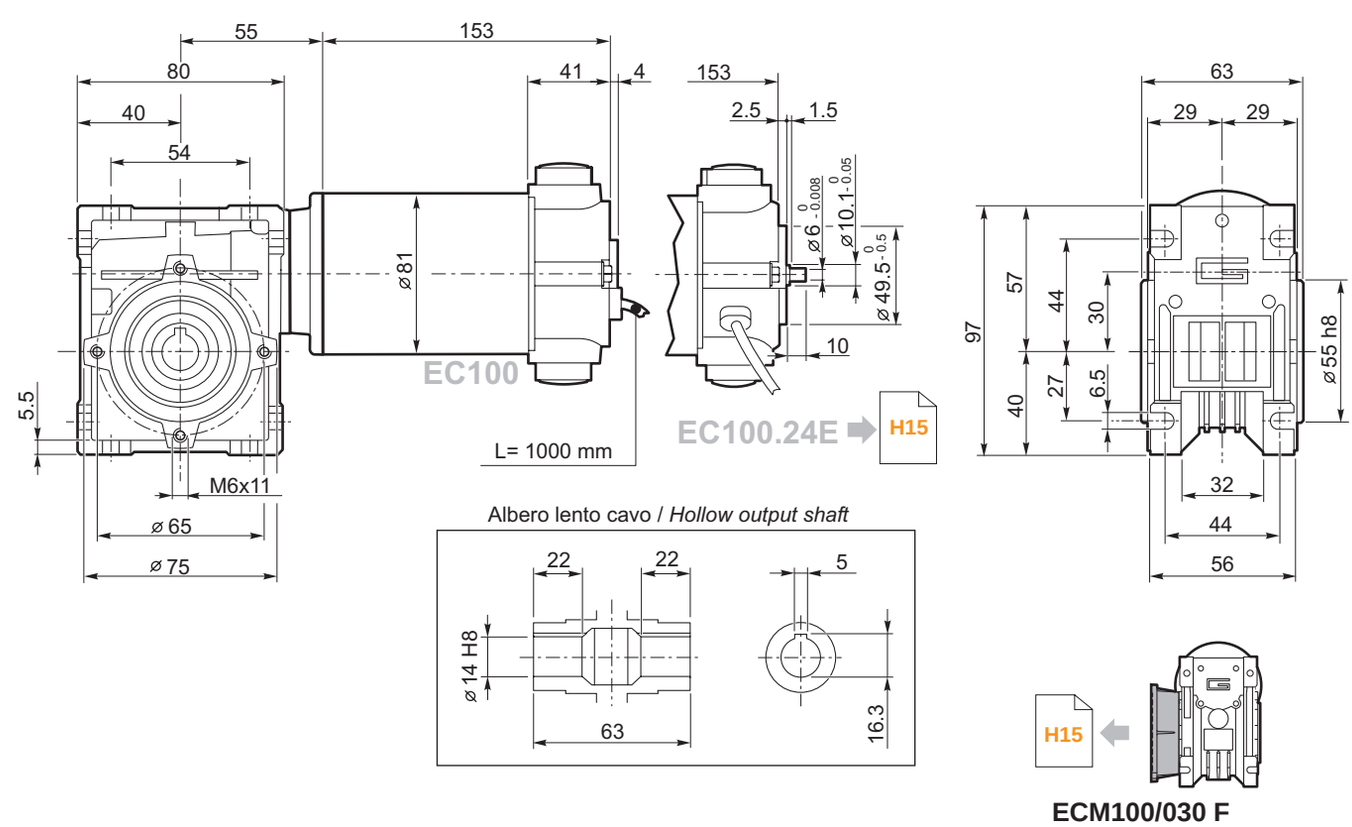
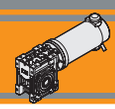
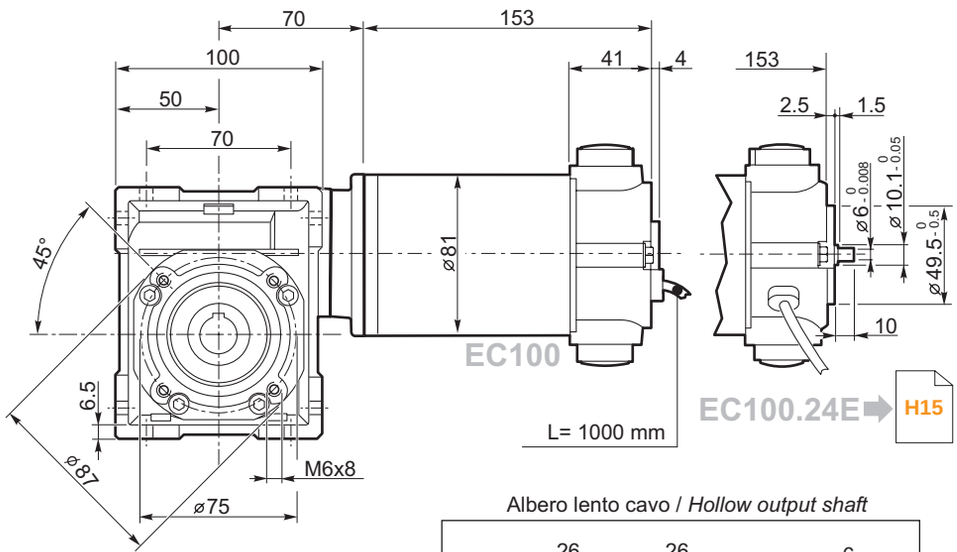
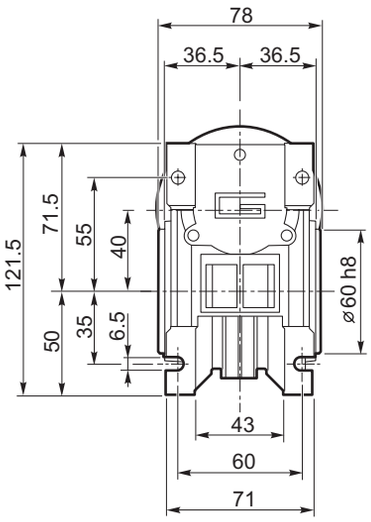




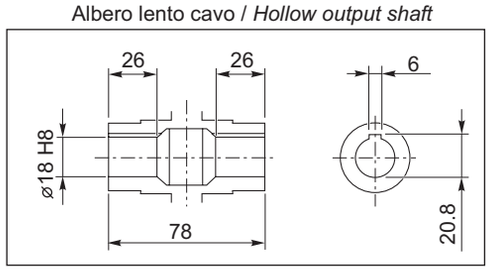
Dimensioni ***Dimensions***

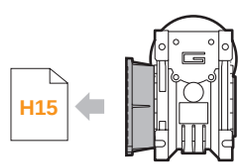
ECM100/040 U





Albero lento cavo / *Hollow output shaft*

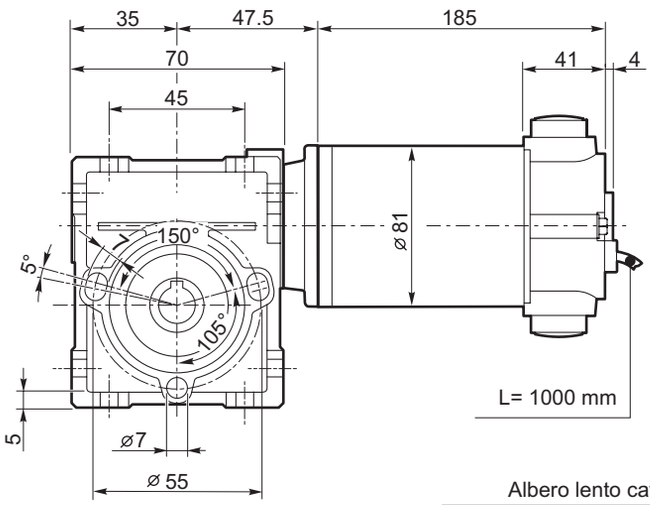


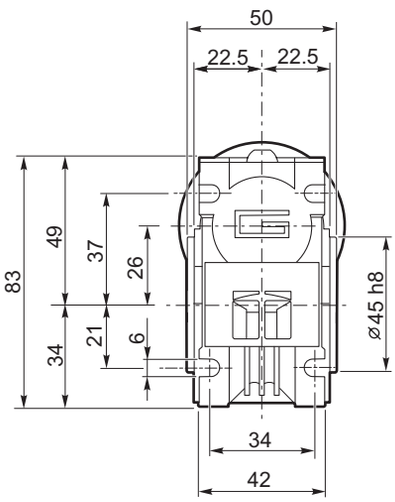


ECM100/040 F
ECM100/040 FL
ECM100/040 FB

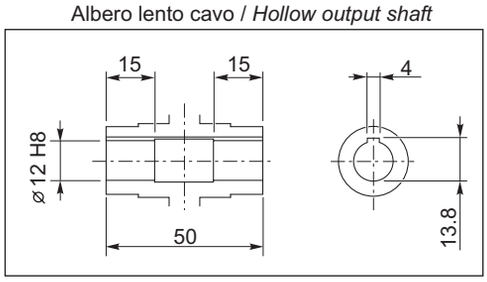
Dimensioni *Dimensions*

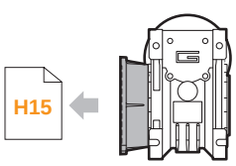
ECM180/026 U





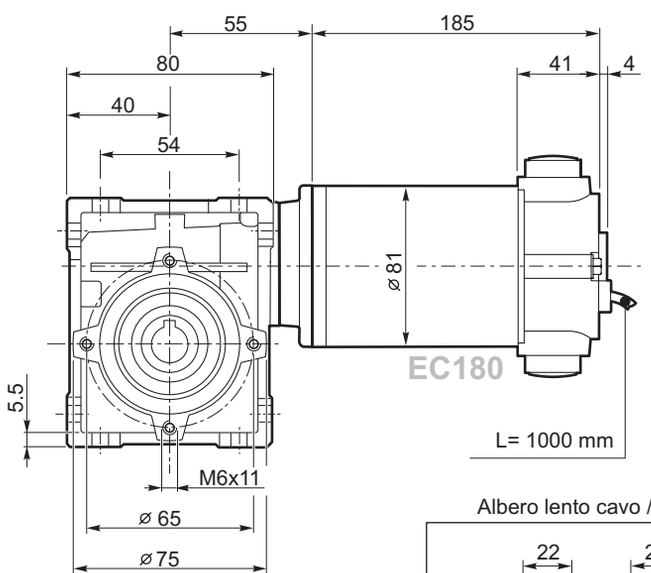
Albero lento cavo / *Hollow output shaft*

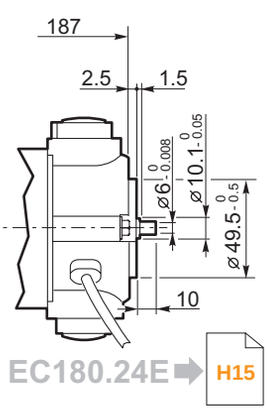


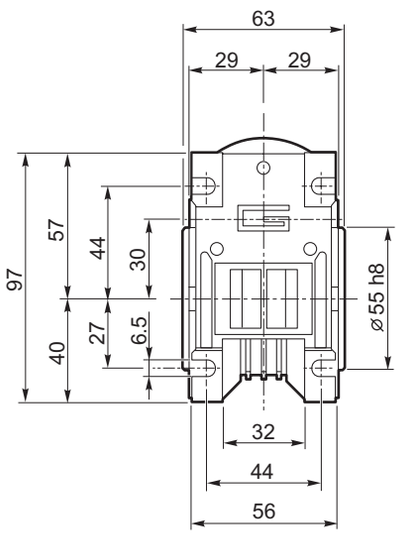


ECM180/026 F

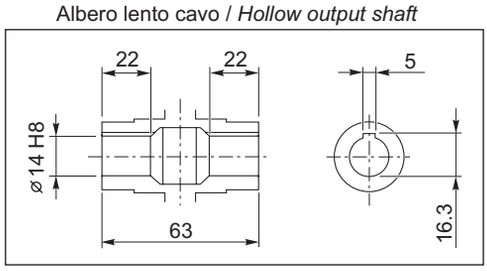
ECM180/030 U

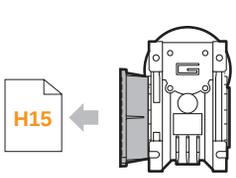






Albero lento cavo / *Hollow output shaft*

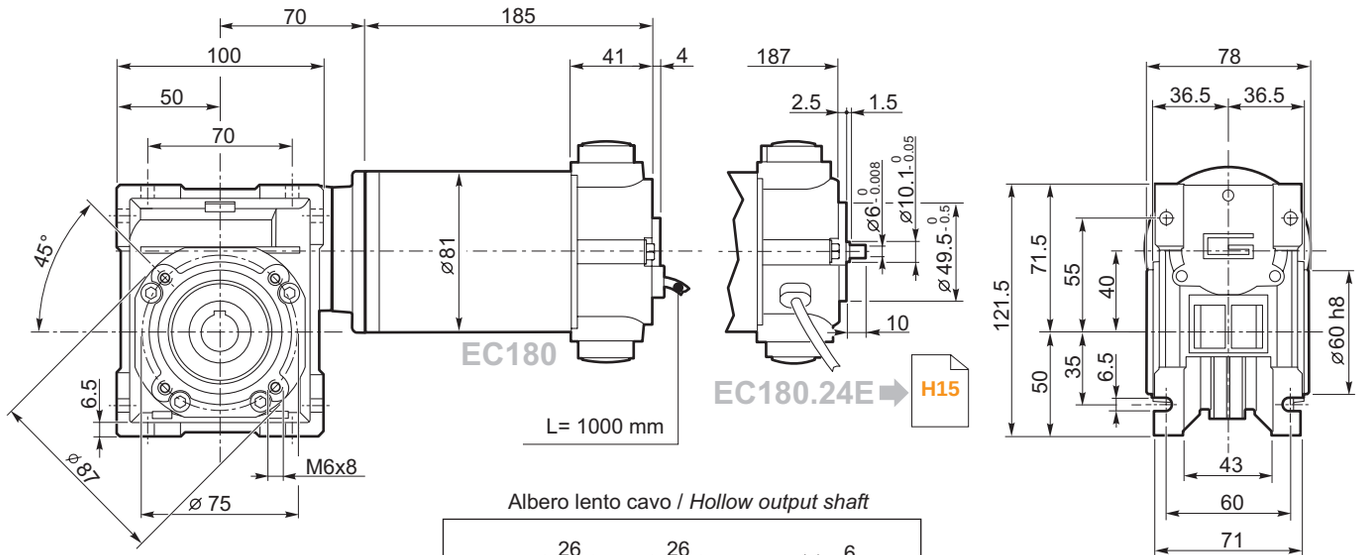




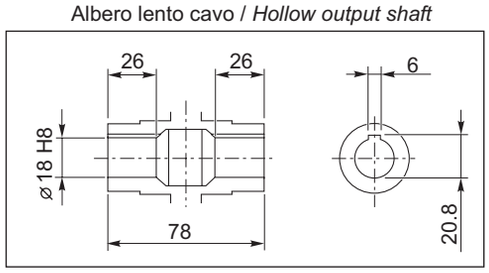
ECM180/030 F

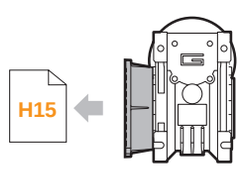
Dimensioni *Dimensions*

ECM180/040 U



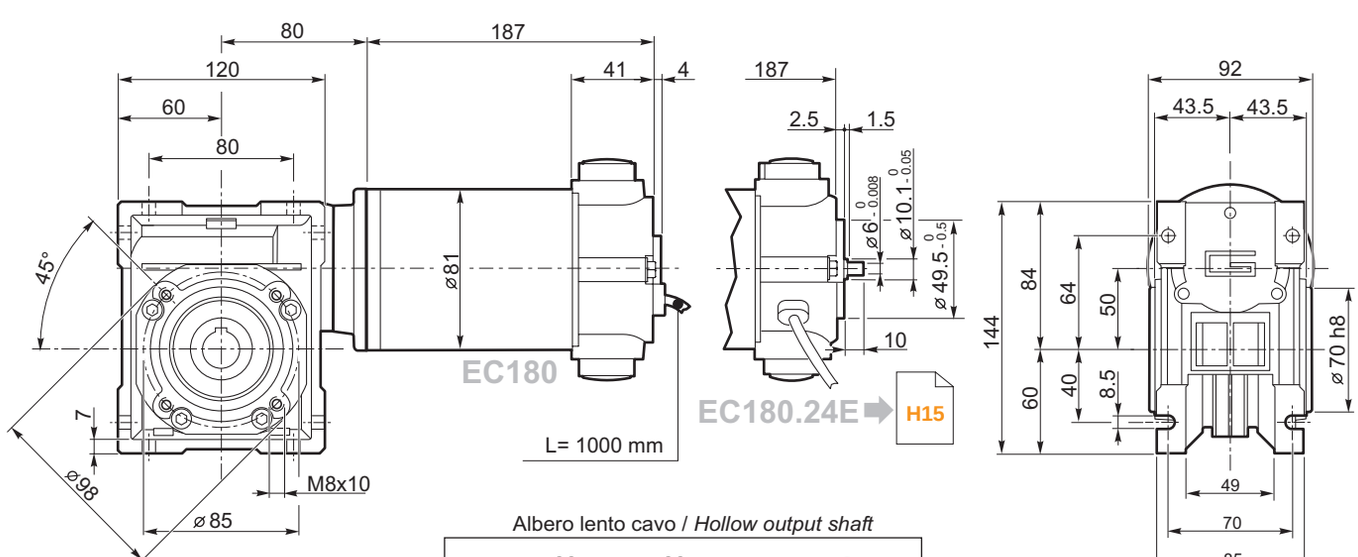
Albero lento cavo / *Hollow output shaft*



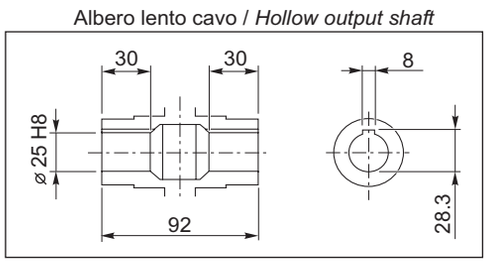


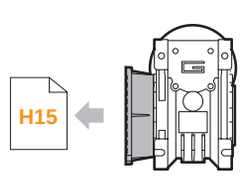
ECM180/040 F
ECM180/040 FL
ECM180/040 FB

ECM180/050 U



Albero lento cavo / *Hollow output shaft*

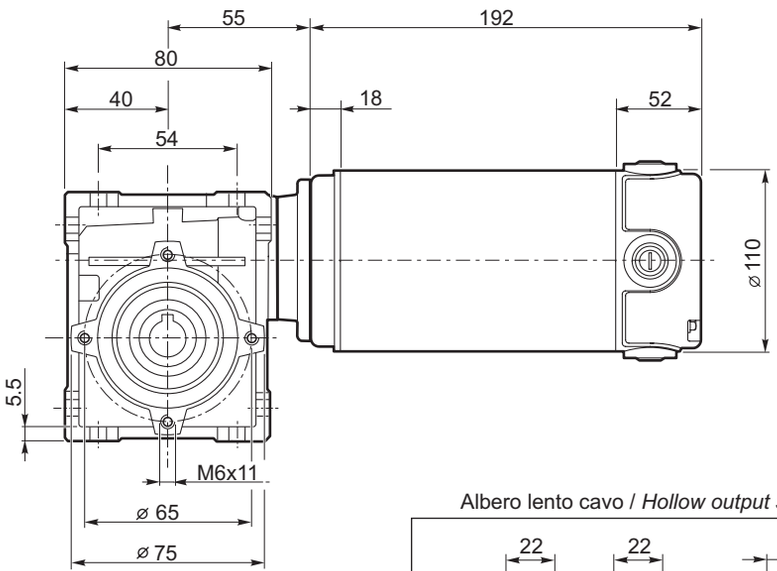


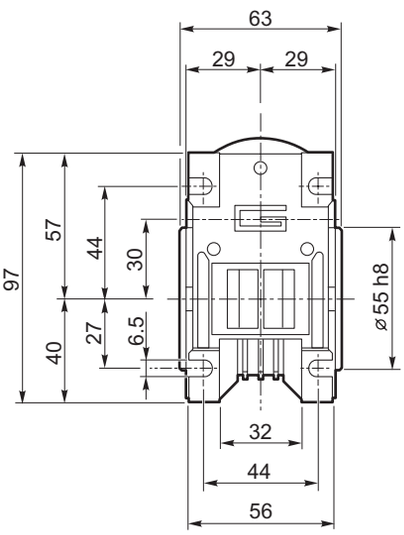


ECM180/050 F
ECM180/050 FL
ECM180/050 FB

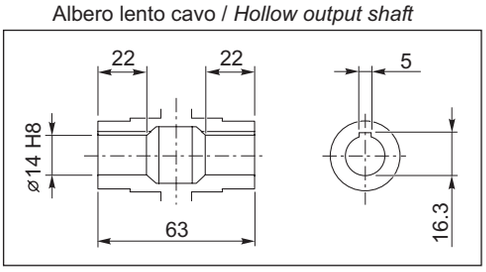
Dimensioni *Dimensions*

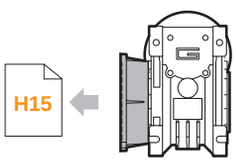
ECM350/030 U





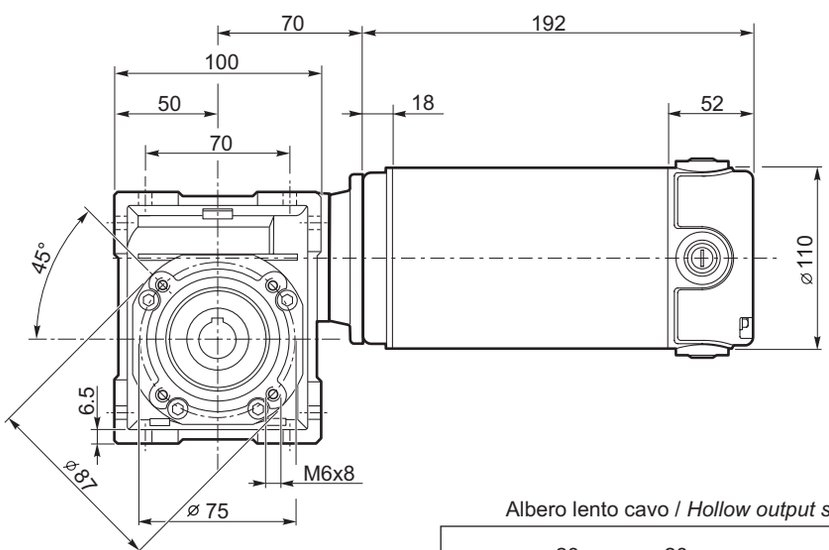
Albero lento cavo / *Hollow output shaft*

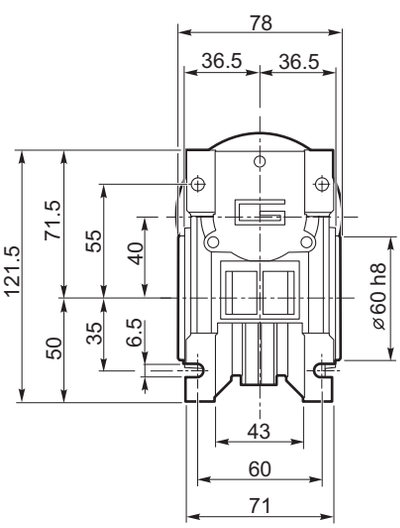




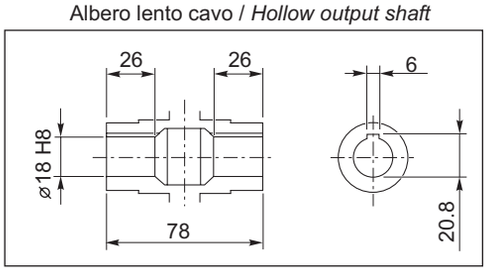
ECM350/030 F

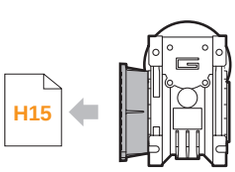
ECM350/040 U





Albero lento cavo / *Hollow output shaft*

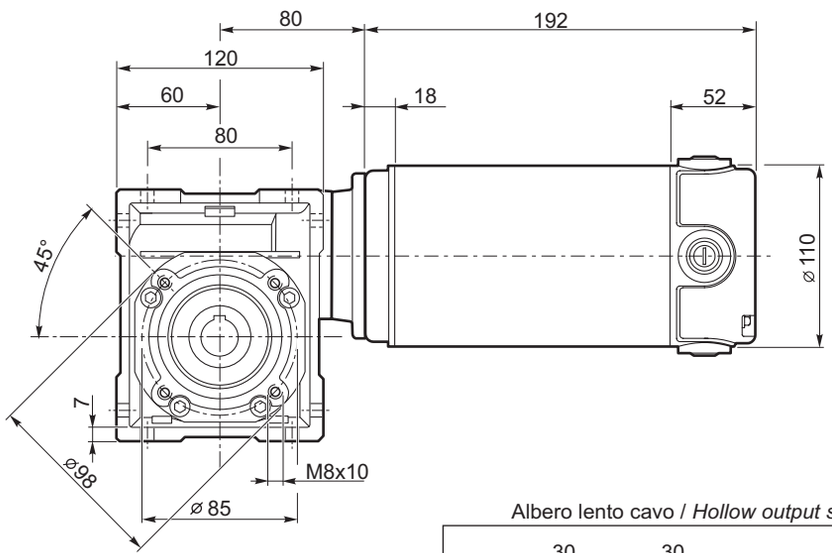


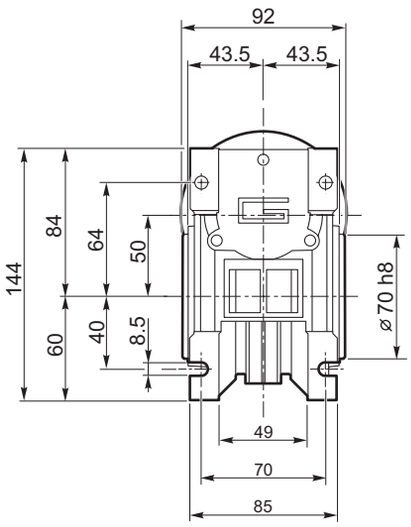


ECM350/040 F
ECM350/040 FL
ECM350/040 FB

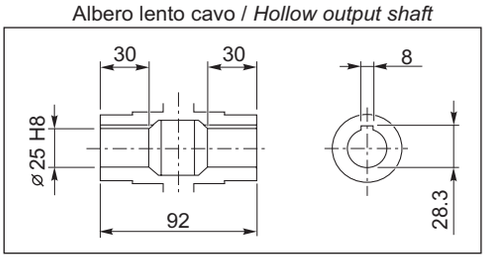
Dimensioni ***Dimensions***

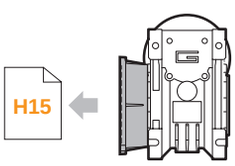
ECM350/050 U





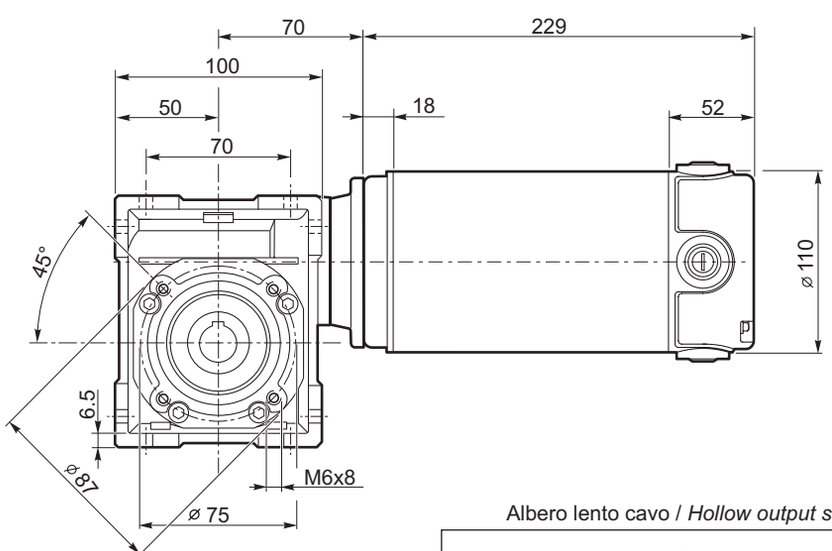
Albero lento cavo / *Hollow output shaft*

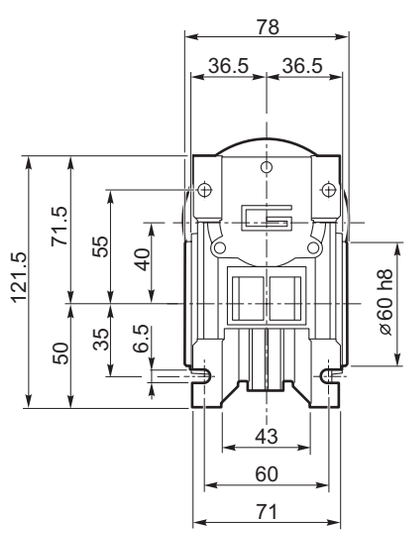




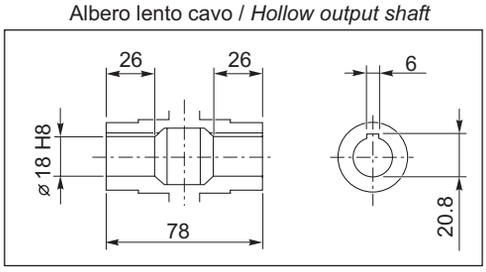
ECM350/050 F
ECM350/050 FL
ECM350/050 FB

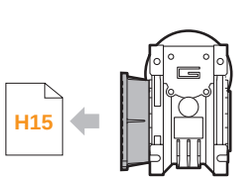
ECM600/040 U





Albero lento cavo / *Hollow output shaft*

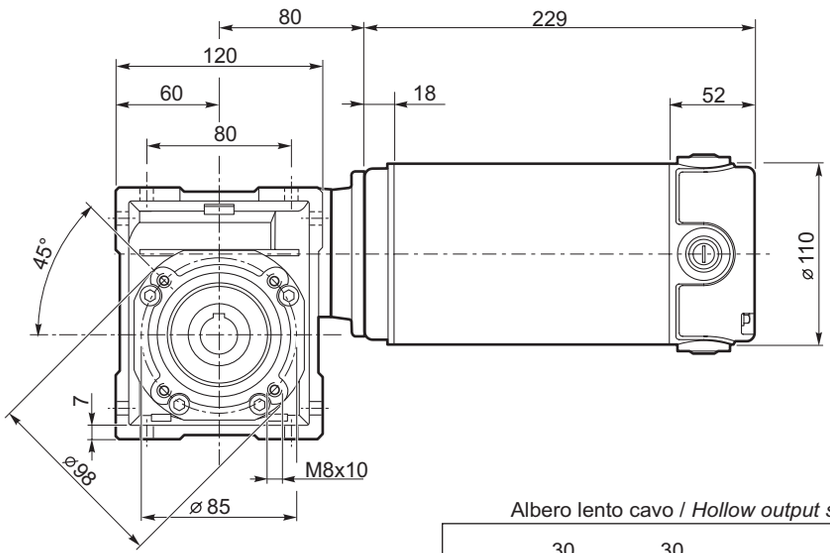


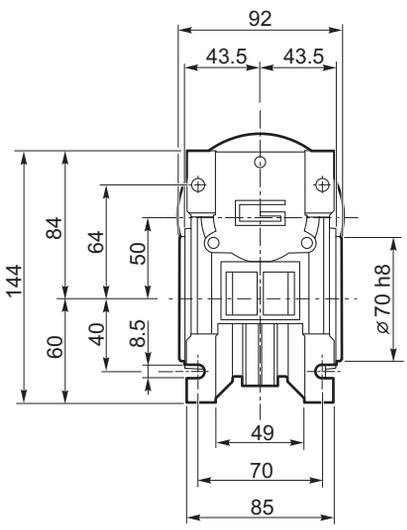


ECM600/040 F
ECM600/040 FL
ECM600/040 FB

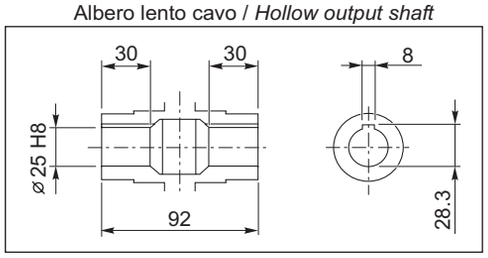
Dimensioni *Dimensions*

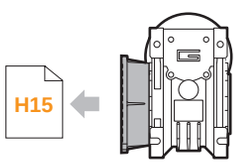
ECM600/050 U





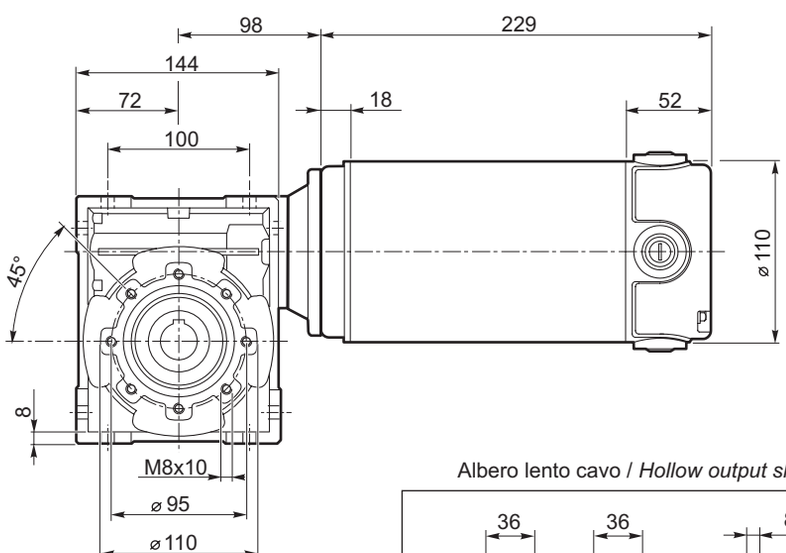
Albero lento cavo / *Hollow output shaft*

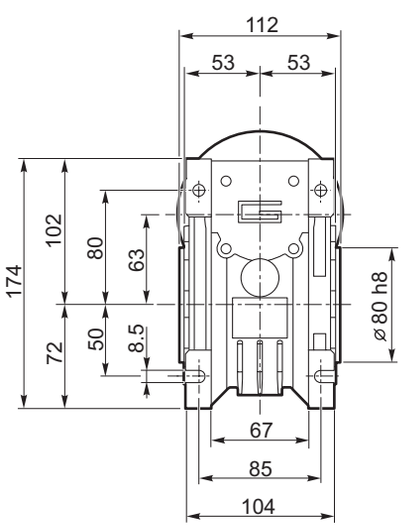




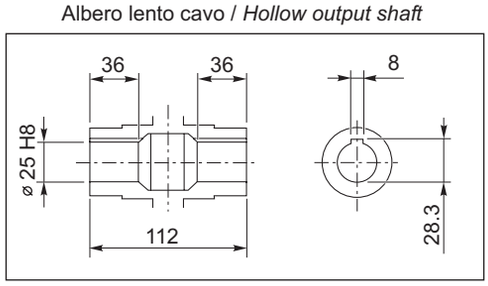
ECM600/050 F
ECM600/050 FL
ECM600/050 FB

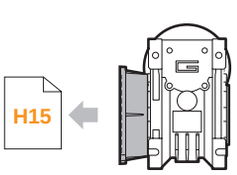
ECM600/063 U





Albero lento cavo / *Hollow output shaft*

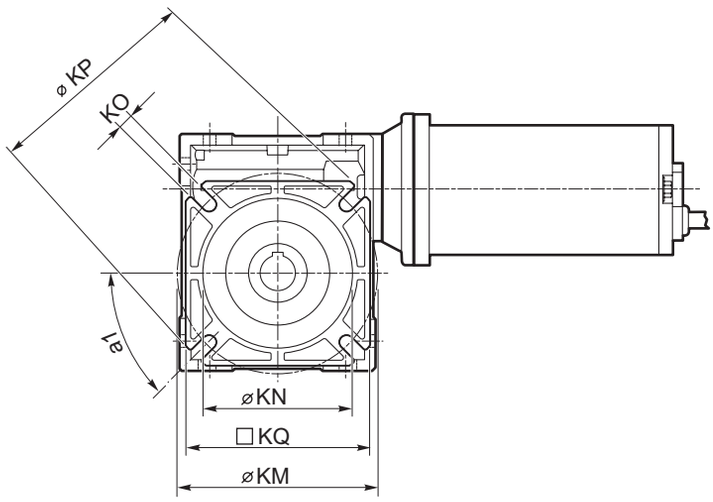


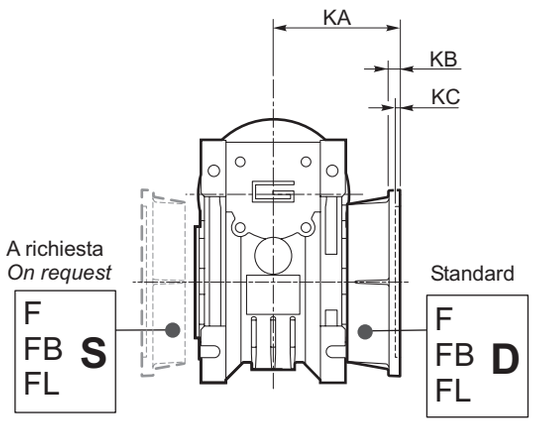


ECM600/063 F
ECM600/063 FL
ECM600/063 FB

Dimensioni — *Dimensions*

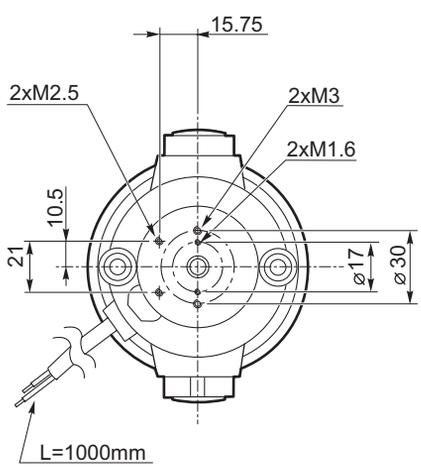
ECM.../... F... Flange uscita / *Output flanges*

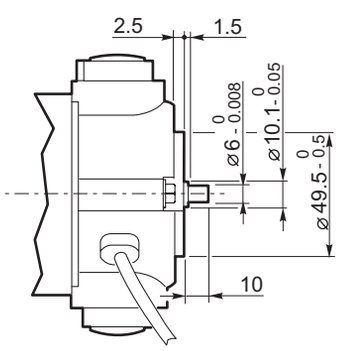




CM		CM..F								CM..FB								CM..FL							
	a1	KA	KB	KC	KM	KN H8	KO	KP	KQ	KA	KB	KC	KM	KN H8	KO	KP	KQ	KA	KB	KC	KM	KN H8	KO	KP	KQ
026	45°	45	6	4.5	55-69	40	6.5(n.4)	75	70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
030	45°	54.5	6	4	68	50	6.5(n.4)	80	70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
040	45°	67	7.5	4	80-95	60	9(n.4)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

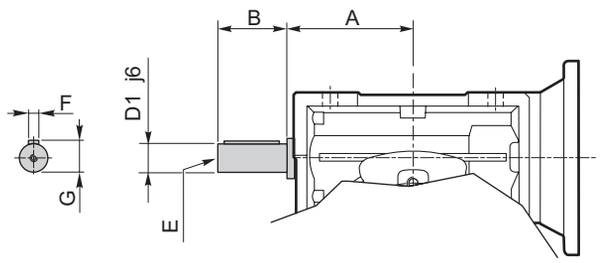
EC100.24E
EC180.24E





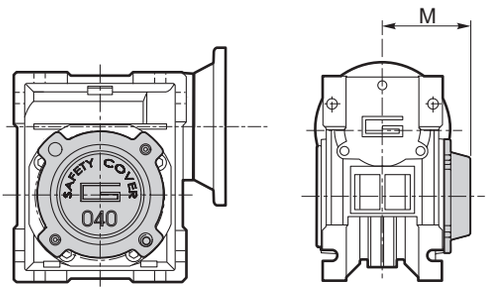
Opzioni — *Options*

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*



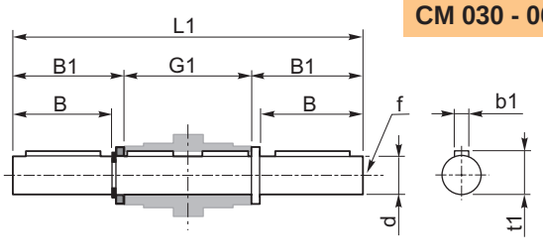
	M
CM 030	47
CM 040	54.5
CM 050	62.5
CM 063	73

Accessori — *Accessories*

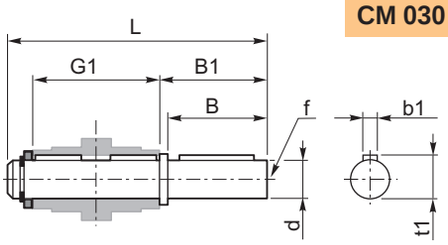
Albero lento — *Output shaft*

CM 030 - 063

DZ

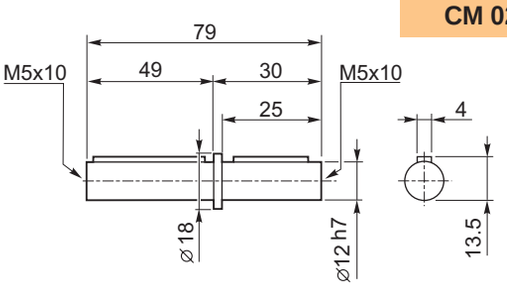


SZ



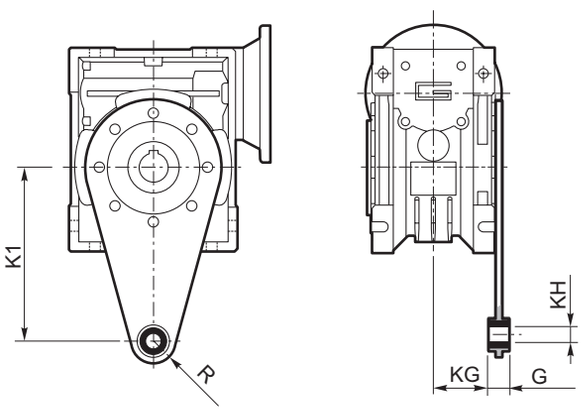
	d h7	B	B1	G1	L	L1	f	b1	t1
CM 030	14	30	32.5	63	102	128	M6	5	16
CM 040	18	40	43	78	128	164	M6	6	20.5
CM 050	25	50	53.5	92	153	199	M10	8	28
CM 063	25	50	53.5	112	173	219	M10	8	28

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

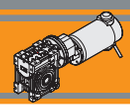
ECMP

ECMP

MOTORIDUTTORI C.C. CON PRECOPPIA

PERMANENT MAGNETS D.C. PRE-STAGE GEARMOTORS

TRANSTECNO · GENUINE · PRODUCTS



ENERGY SAVING

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 30 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. gearmotors range are:

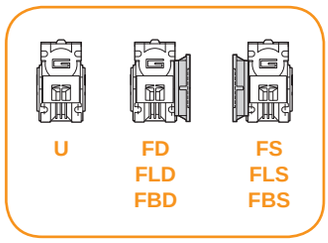
- *Low voltage power supply 12/24 Vdc*
- *Suitable for encoder assembly*
- *Motor power ratings available from 30 up to 800W S2*
- *Ferrite magnets*
- *Die-cast aluminum housing on pre-stage and wormgearboxes*
- *Permanent synthetic oil long-life lubrication.*

Designazione — *Designation*

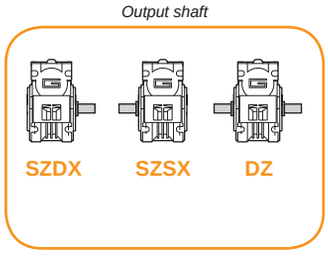
MOTORIDUTTORE / *GEARMOTOR*

ECMP	070/056/030	U	90	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*
ECMP	**070/056/030** **070/056/040** **350/063/050** **100/056/030** **100/056/040** **100/063/050** **180/056/030** **180/056/040** **180/063/040** **180/063/050** **180/063/063** **350/063/063** **350/071/050** **600/071/050** **600/071/063** **600/071/075**	**U** **FD** **FS** **FLD** **FLS** **FBD** **FBS**	Vedere tabella *See tables*	**SZDX** **SZSX** **DZ**	**BRDX** **BRSX**	**0°** **90°** **180°** **270°**	**120** **240** **24E**	**VS**

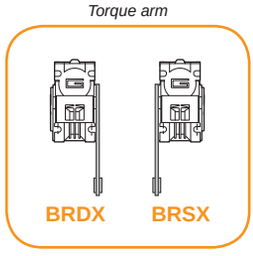
Versione Riduttore *Gearbox Version*



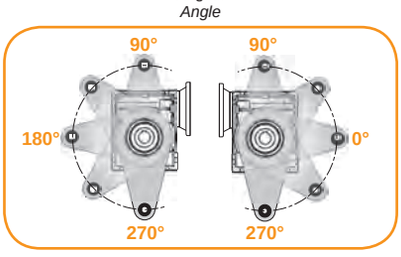
Albero di uscita *Output shaft*



Braccio di reazione *Torque arm*



Angolo *Angle*



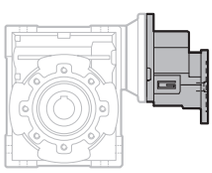
Simbologia — *Symbols*

n_1	[min^{-1}]	Velocità in ingresso / *Input speed*	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*

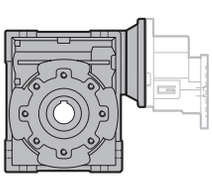
Lubrificazione — *Lubrication*

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.

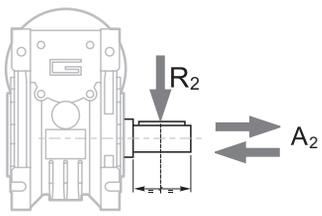


CMP		
056/030 **056**/040	**063**/040 **063**/050 **063**/063	**071**/050 **071**/063 **071**/075
Lubrificazione a vita - *Life lubricated*		



CMP	**Quantità di olio** (litri) / ***Oil quantity*** *(liters)* Per tutte le posizioni di montaggio / *For all mounting positions*	
056/030	0.04	Lubrificazione a vita *Life lubricated*
056/040 - 063/040	0.08	
063/050 - 071/050	0.15	
063/063 - 071/063	0.30	
071/075	0.55	

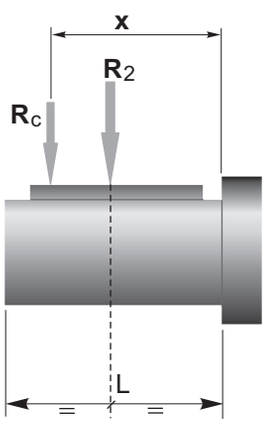
Carichi radiali — *Radial loads*



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:

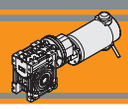


$$R_c = \frac{R_2 \cdot a}{(b+x)} \leq R_{2MAX}$$

$$R \leq R_c$$

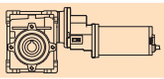
a, b = valori riportati nella tabella
a, b = values given in the table

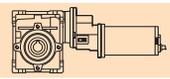
	CM				
	030	040	050	063	075
a	65	84	101	120	131
b	50	64	76	95	101
R_{2MAX}	1600	3000	4200	5800	6700



Dati tecnici per servizio S2

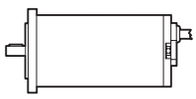
Technical data for S2 duty

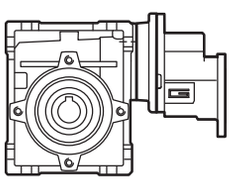
P_1 [W]	n_2 [min^{-1}]	M_2 [Nm]	sf	i		Versione motore *Motor version*
100						
(3000 min^{-1})	**50**	13	1.7	60	**ECMP070/056/030**	120/240
	40	16	1.4	75		
	33	17	1.6	90		
	25	22	1.1	120		
	20	25	0.9	150		
	50	14	3.2	60	**ECMP070/056/040**	120/240
	40	16	2.7	75		
	33	19	3.0	90		
	25	22	2.1	120		
	20	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	**ECMP100/056/040**	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*
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	70	1.1	60	**ECMP350/071/050**	120/240
	40	84	0.9	75		
	33	95	1.0	90		
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

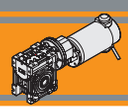
IEC Motor adapters





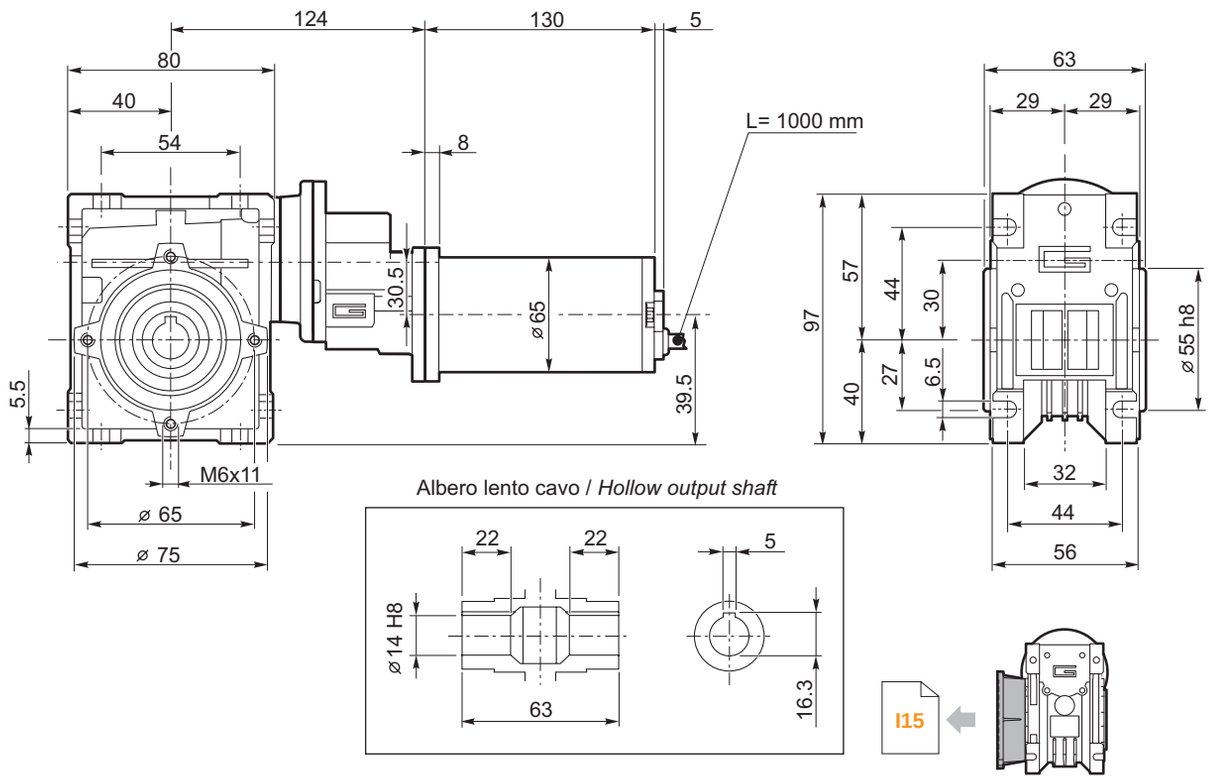
		EC					
		070.120 070.240	100.120 100.240 100.24E	180.120 180.240	180.24E	350.120 350.240	600.120 600.240
CMP	056/030	150	150	150			
	056/040	300	300	300			
	063/040		120	120	120		
	063/050		240	240	240	240	
	063/063			300	300	300	
	071/050					75	75
	071/063						180
	071/075						300

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



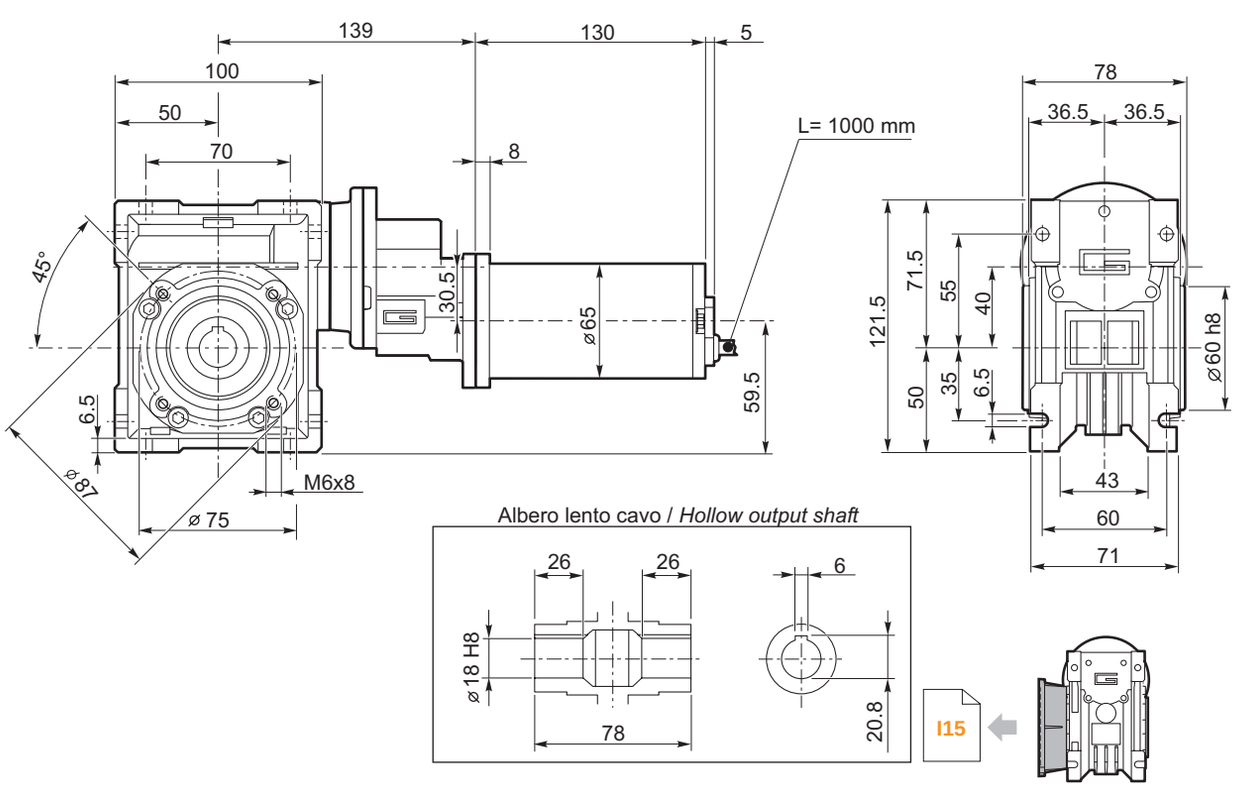
Dimensioni *Dimensions*

ECMP070/056/030 U



ECMP070/056/030 F

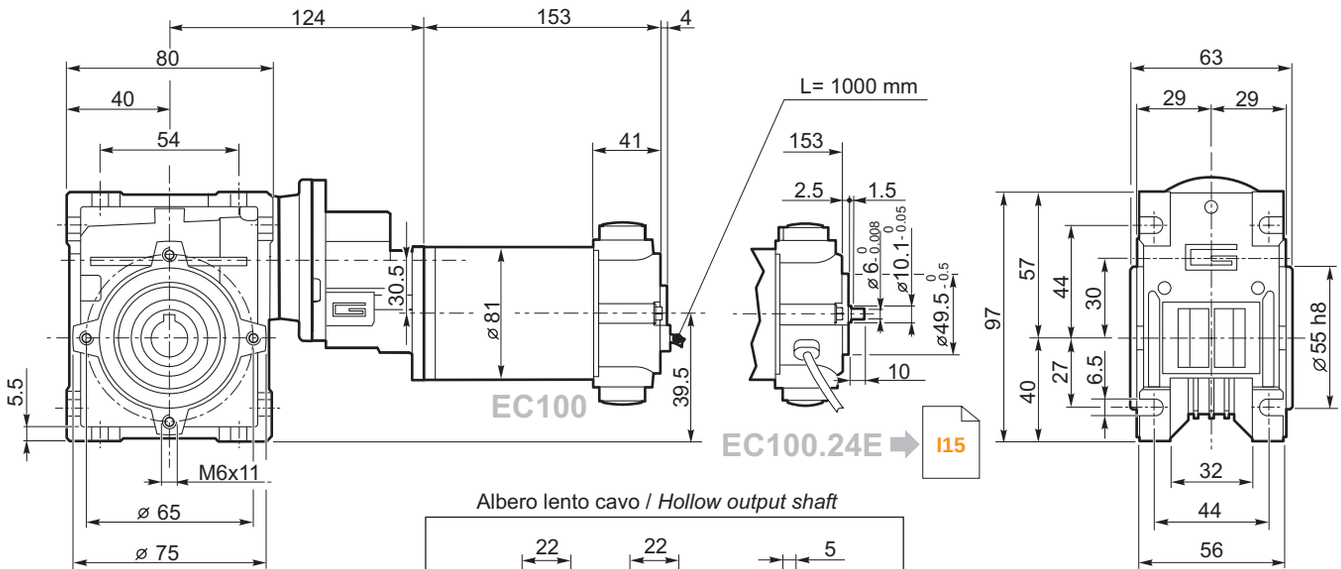
ECMP070/056/040 U



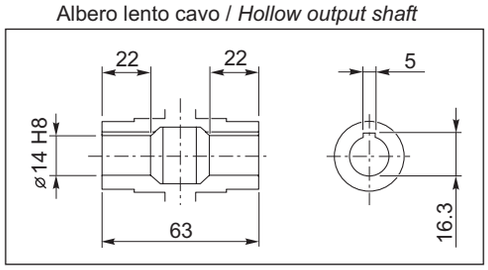
ECMP070/056/040 F
ECMP070/056/040 FL
ECMP070/056/040 FB

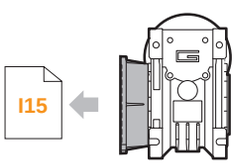
Dimensioni *Dimensions*

ECMP100/056/030 U



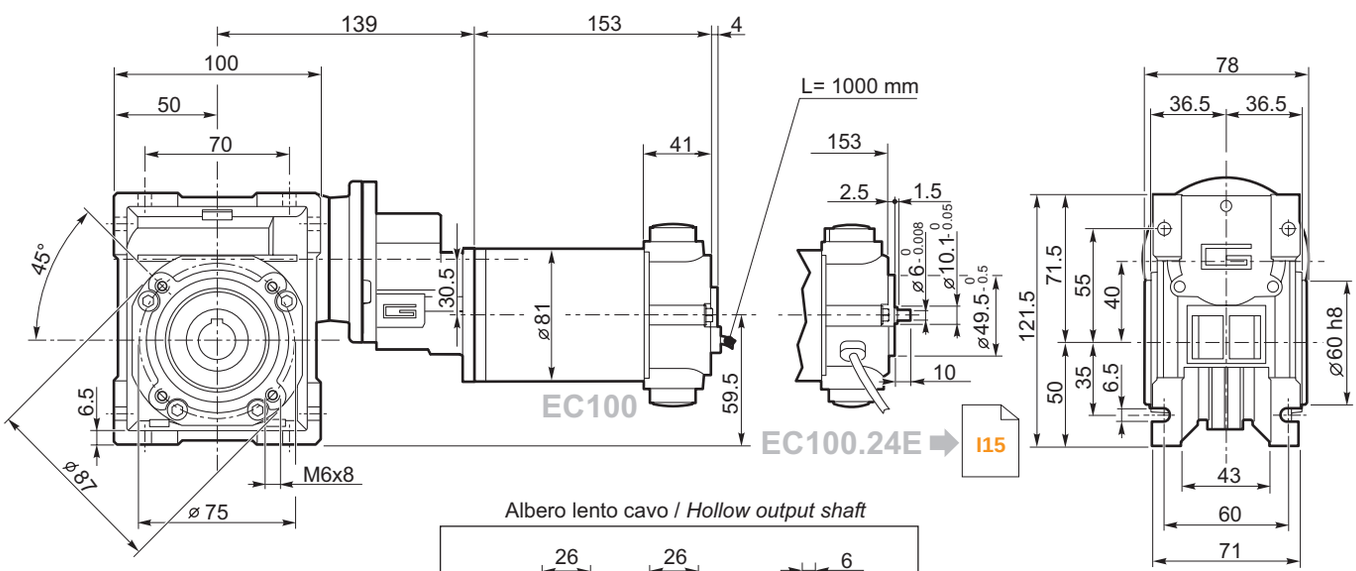
Albero lento cavo / *Hollow output shaft*



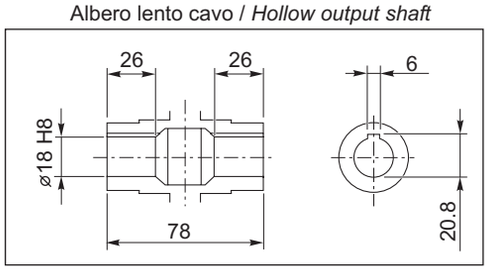


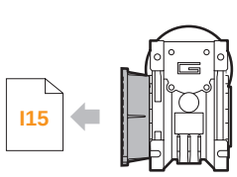
ECMP100/056/030 F

ECMP100/056/040 U

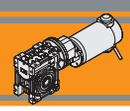


Albero lento cavo / *Hollow output shaft*



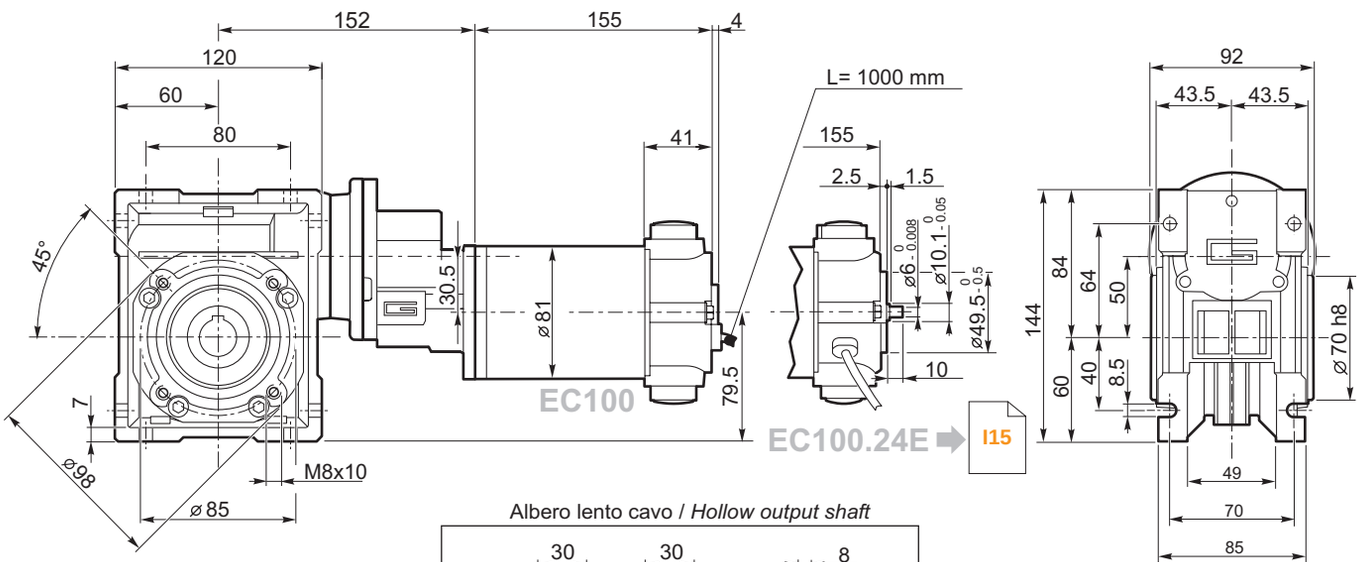


ECMP100/056/040 F
ECMP100/05/040 FL
ECMP100/05/040 FB

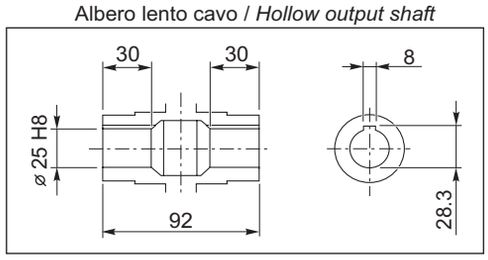


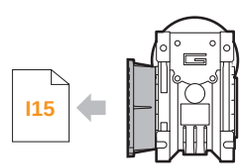
Dimensioni *Dimensions*

ECMP100/063/050 U



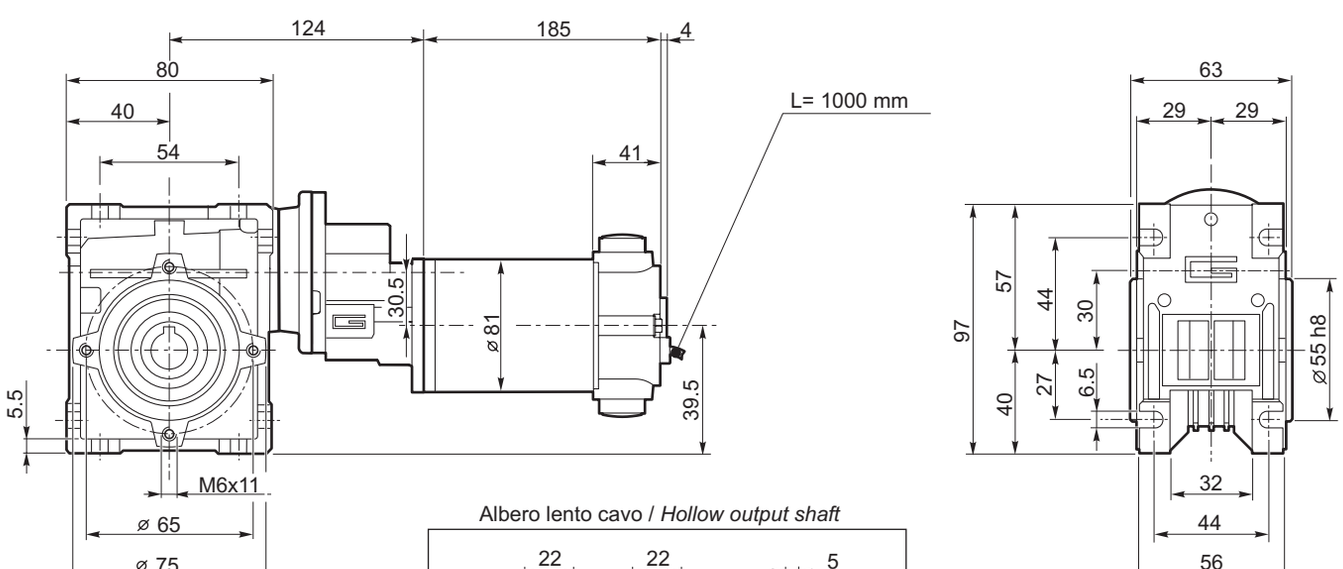
Albero lento cavo / *Hollow output shaft*



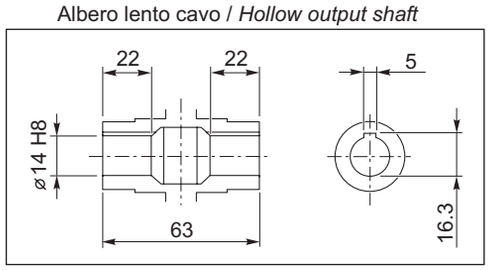


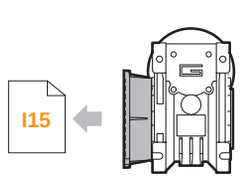
ECMP100/063/050 F
ECMP100/063/050 FL
ECMP100/063/050 FB

ECMP180/056/030 U



Albero lento cavo / *Hollow output shaft*

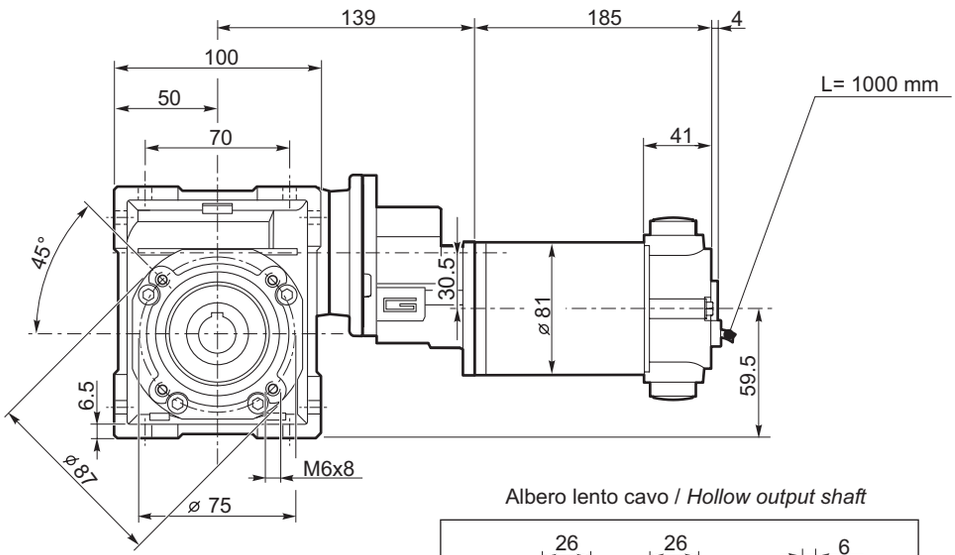


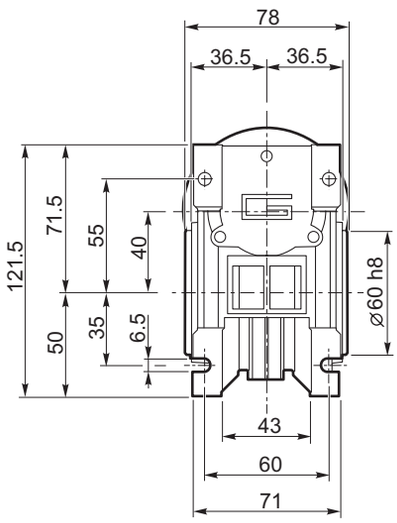


ECMP180/056/030 F

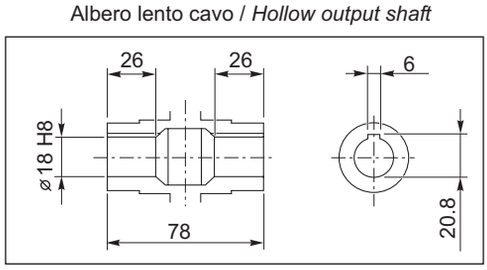
Dimensioni *Dimensions*

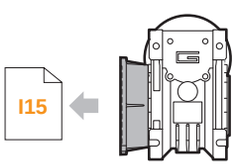
ECMP180/056/040 U





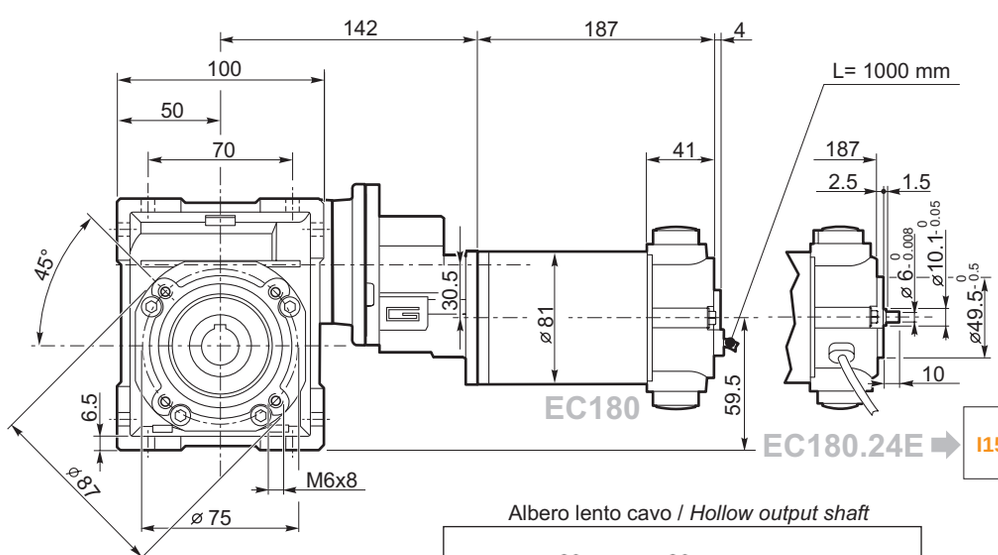
Albero lento cavo / *Hollow output shaft*

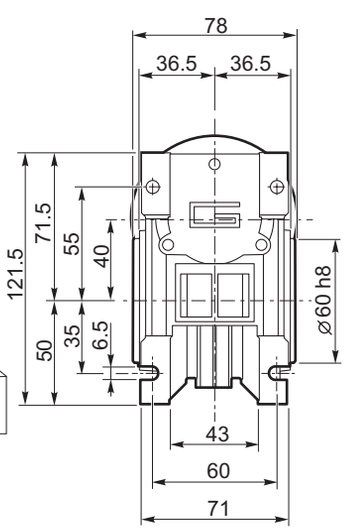




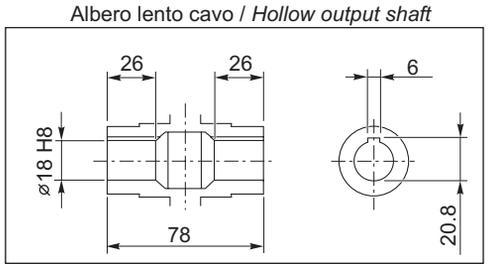
ECMP180/056/040 F
ECMP180/056/040 FL
ECMP180/056/040 FB

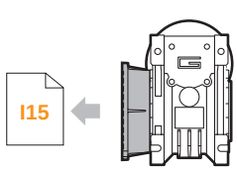
ECMP180/063/040 U



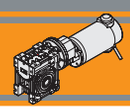


Albero lento cavo / *Hollow output shaft*



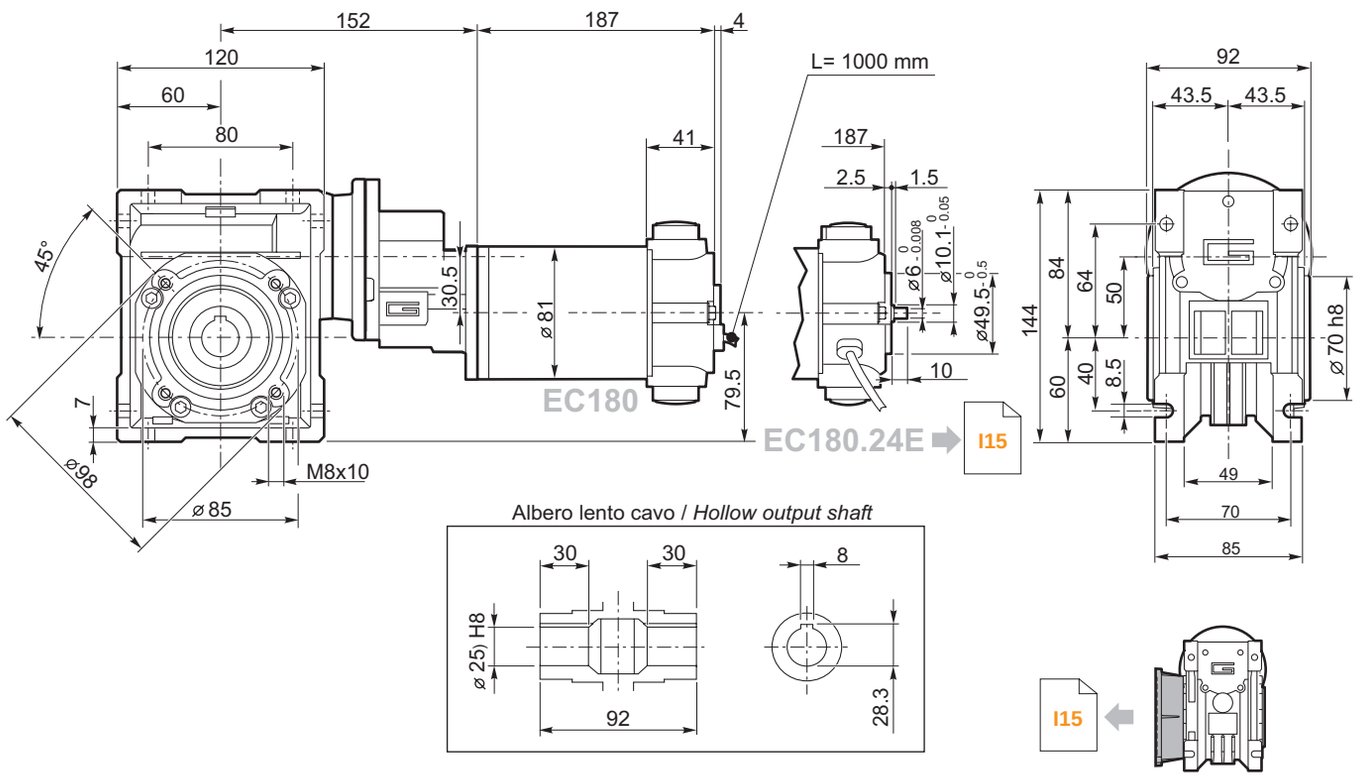


ECMP180/063/040 F
ECMP180/063/040 FL
ECMP180/063/040 FB



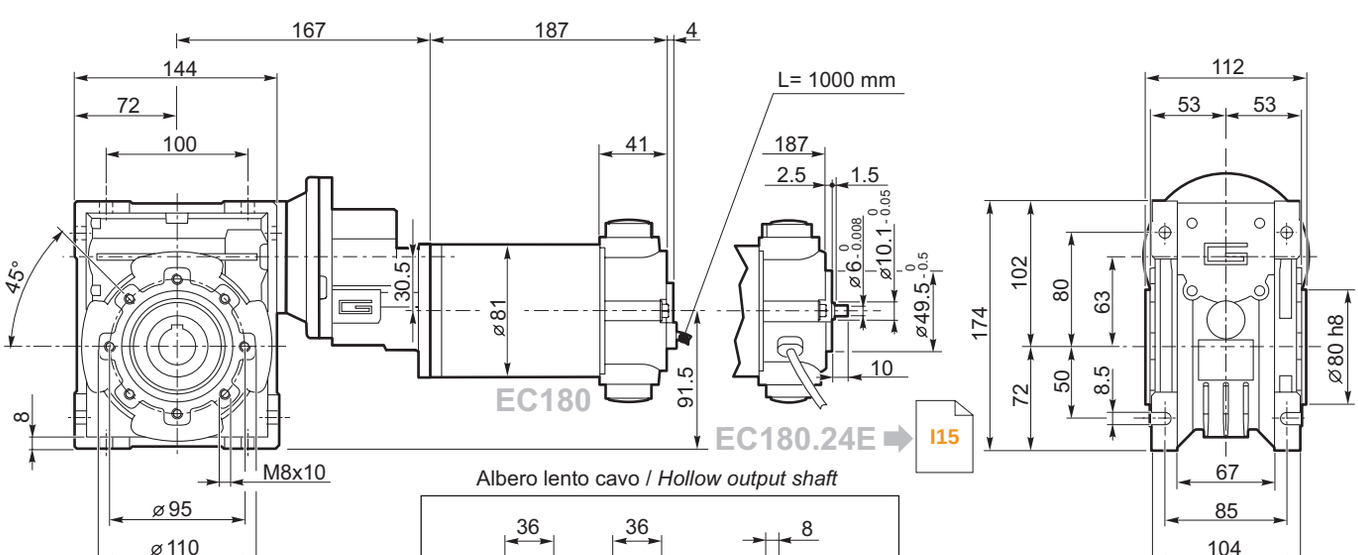
Dimensioni *Dimensions*

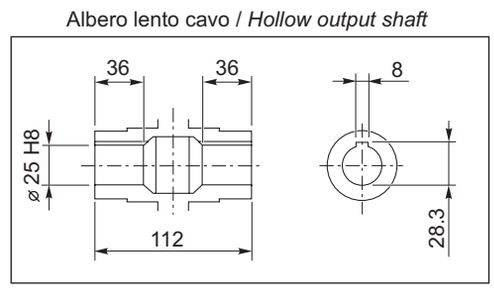
ECMP180/063/050 U

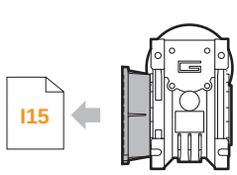


ECMP180/063/050 F
ECMP180/063/050 FL
ECMP180/063/050 FB

ECMP180/063/063 U



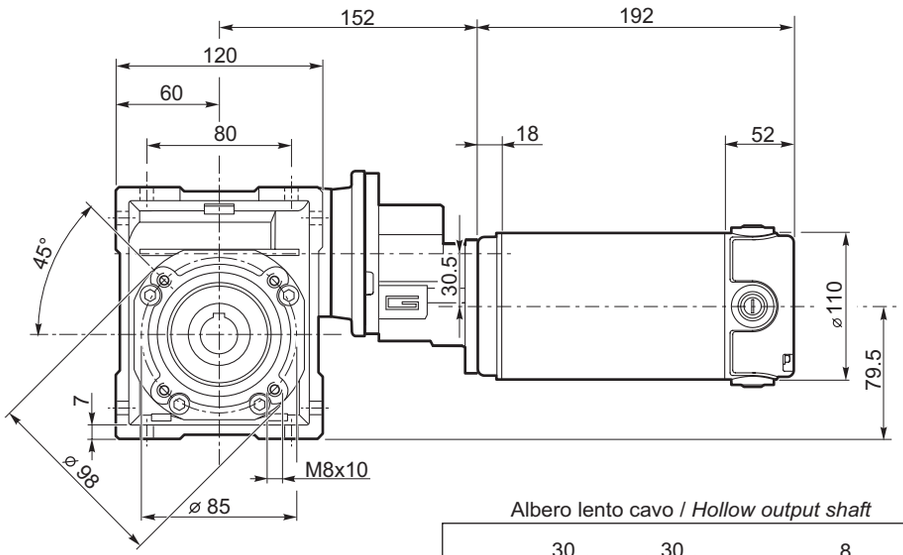


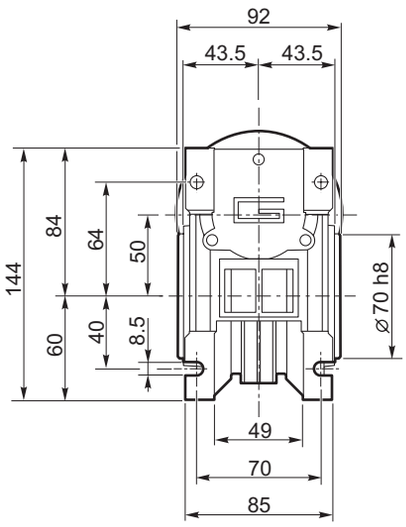


ECMP180/063/063 F
ECMP180/063/063 FL
ECMP180/063/063 FB

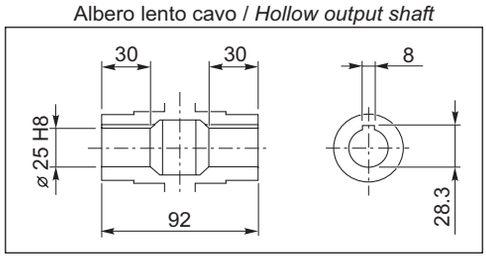
Dimensioni *Dimensions*

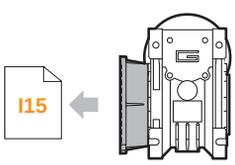
ECMP350/063/050 U





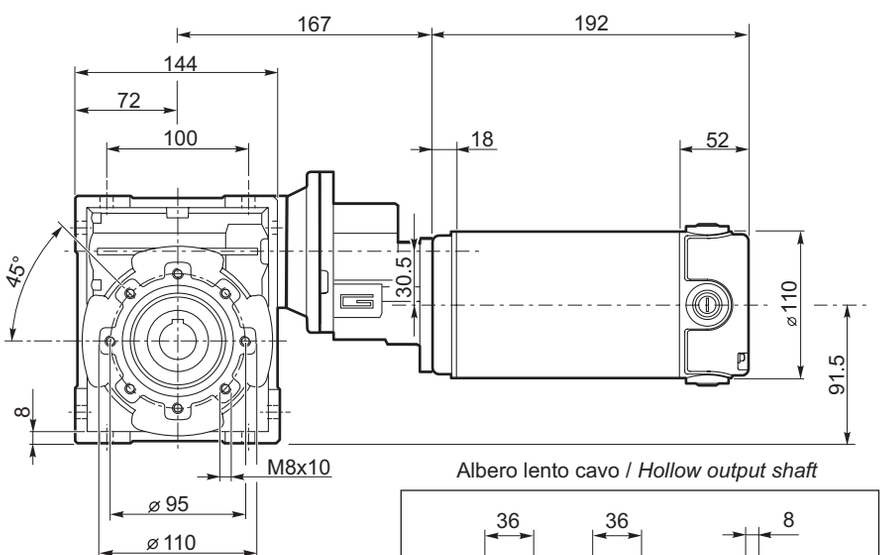
Albero lento cavo / *Hollow output shaft*

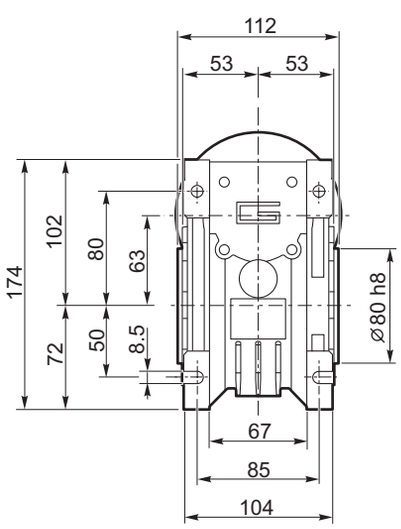




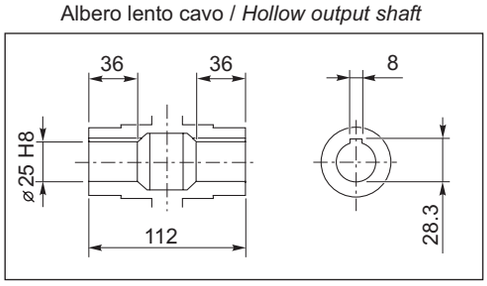
ECMP350/063/050 F
ECMP350/063/050 FL
ECMP350/063/050 FB

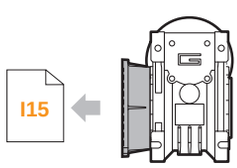
ECMP350/063/063 U



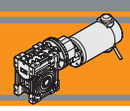


Albero lento cavo / *Hollow output shaft*



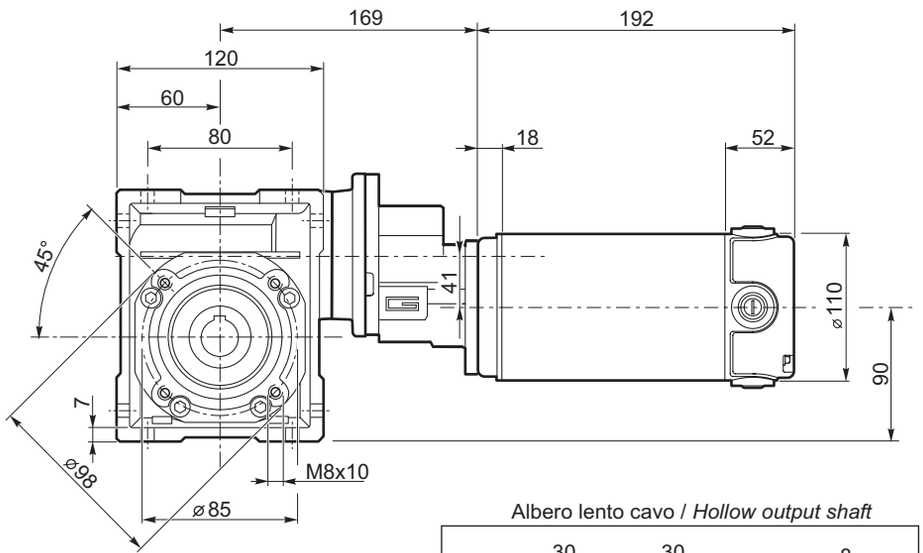


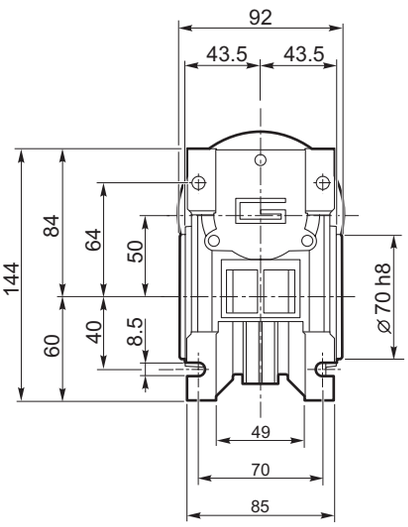
ECMP350/063/063 F
ECMP350/063/063 FL
ECMP350/063/063 FB



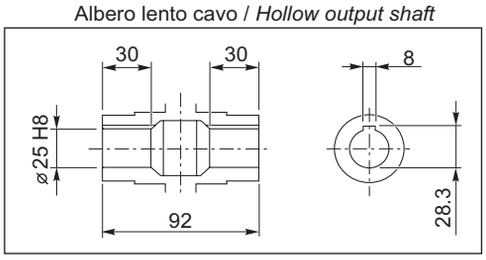
Dimensioni ***Dimensions***

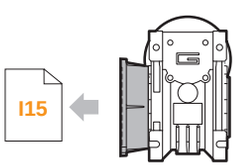
ECMP350/071/050 U





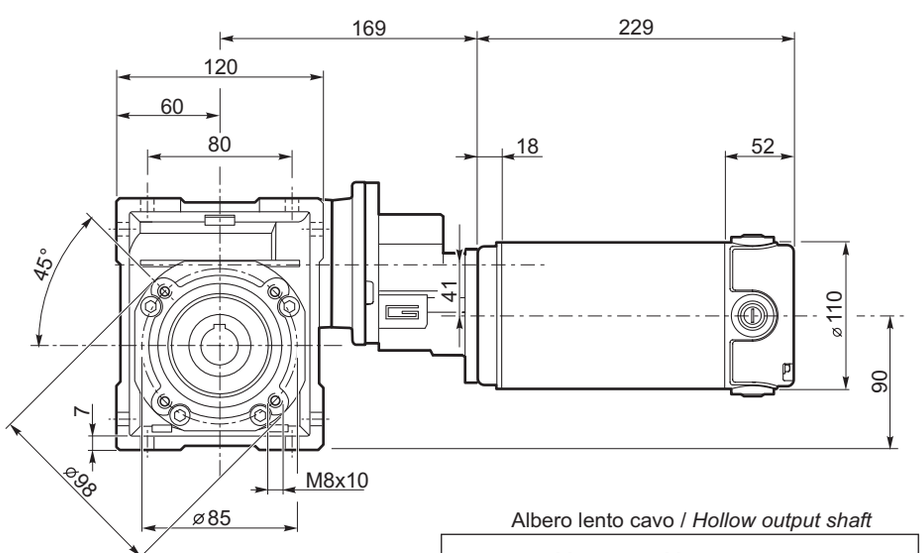
Albero lento cavo / *Hollow output shaft*

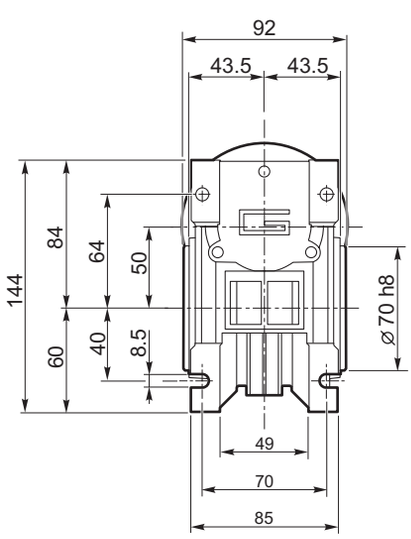




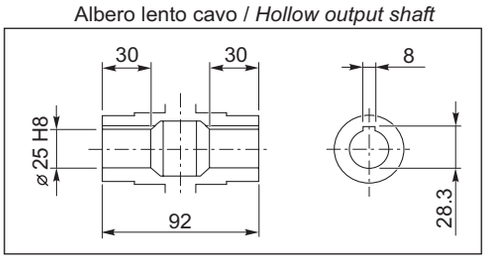
ECMP350/071/050 F
ECMP350/071/050 FL
ECMP350/071/050 FB

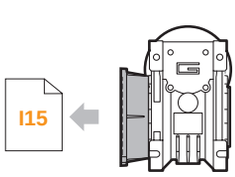
ECMP600/071/050 U





Albero lento cavo / *Hollow output shaft*

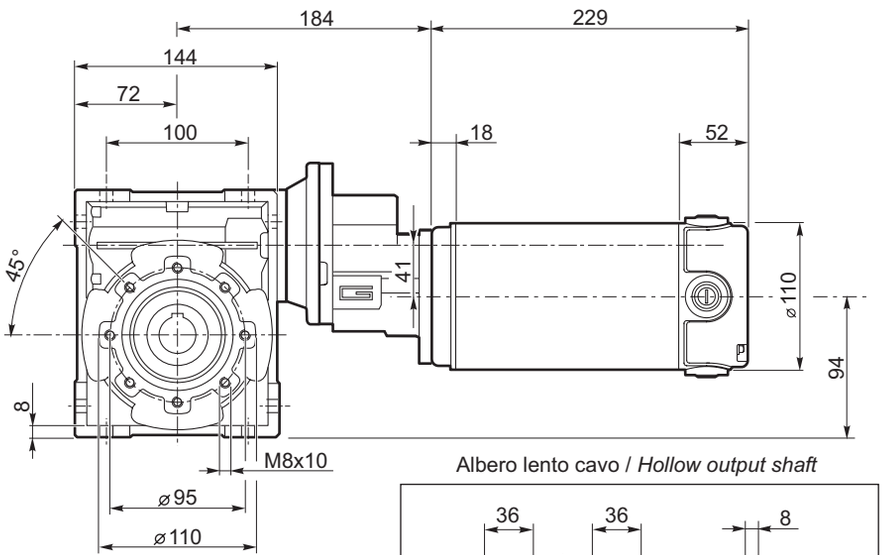




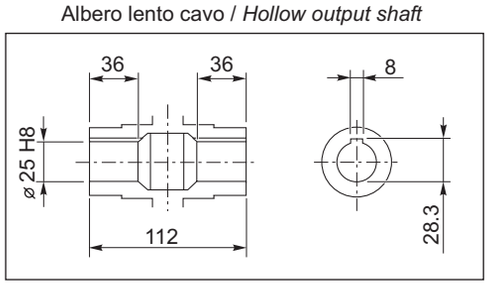
ECMP600/071/050 F
ECMP600/071/050 FL
ECMP600/071/050 FB

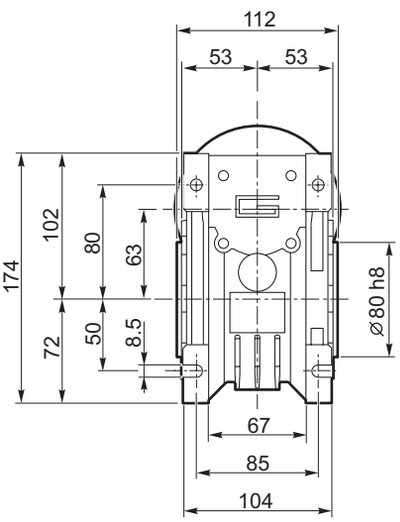
Dimensioni *Dimensions*

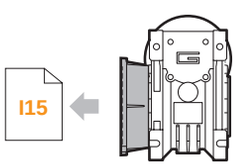
ECMP600/071/063 U



Albero lento cavo / *Hollow output shaft*

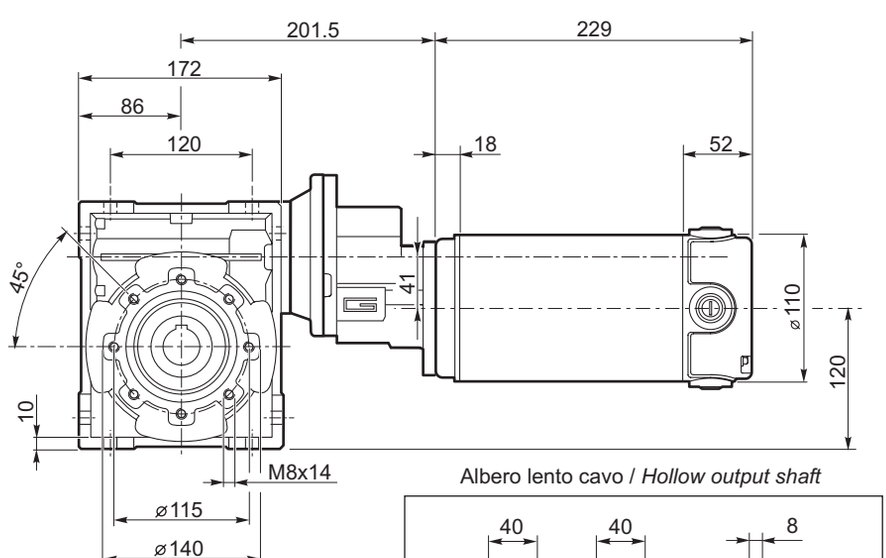




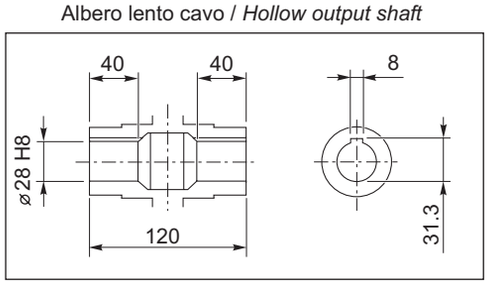


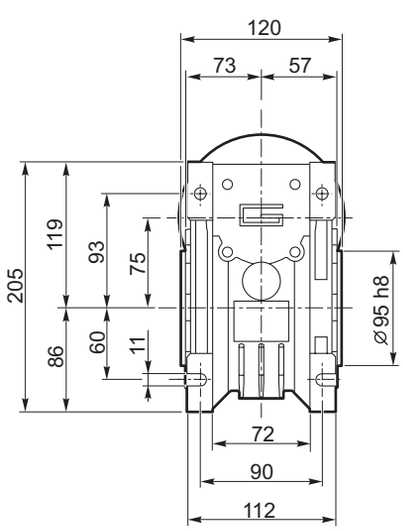
ECMP600/071/063 F
ECMP600/071/063 FL
ECMP600/071/063 FB

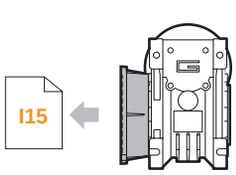
ECMP600/071/075 U



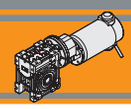
Albero lento cavo / *Hollow output shaft*





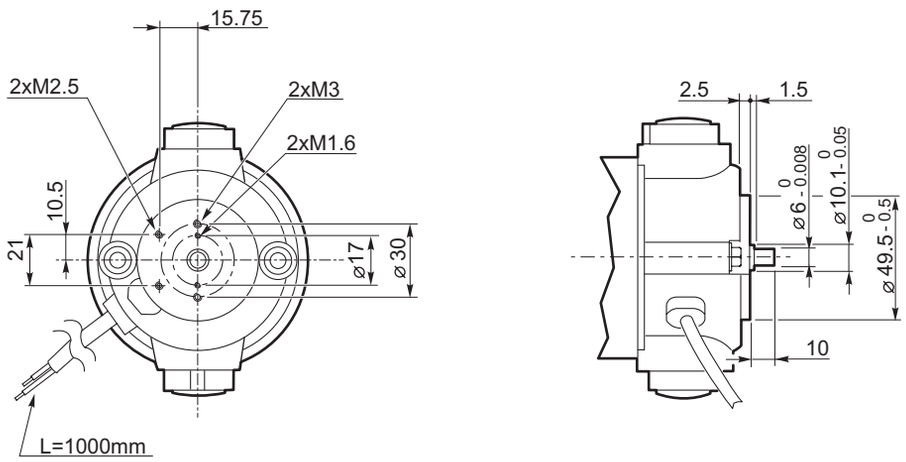


ECMP600/071/075 F

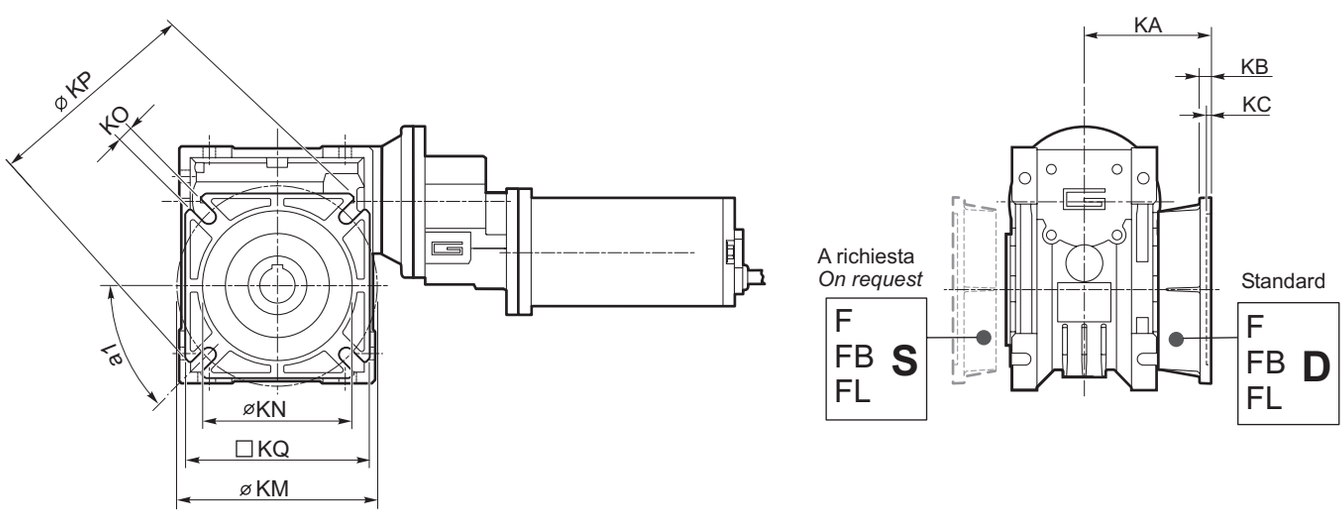


Dimensioni — *Dimensions*

EC100.24E
EC180.24E



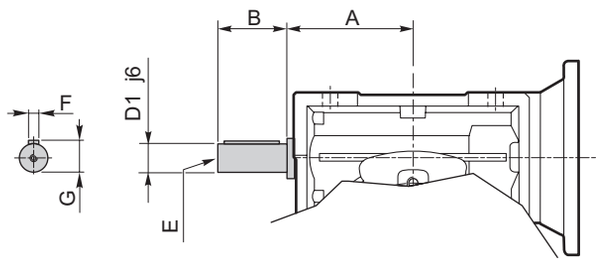
ECMP.../... F... Flange uscita / *Output flanges*



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	10(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	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—

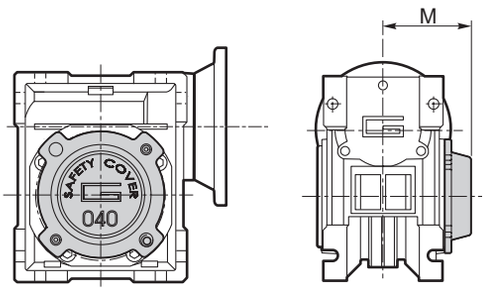
Opzioni / *Options*

VS - Vite sporgente / *Extended input shaft*



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

SC - *Safety cover*



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

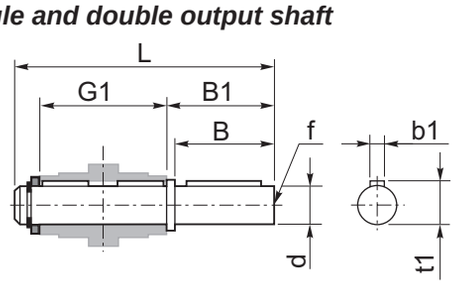
Accessori / *Accessories*

Albero lento semplice e doppio

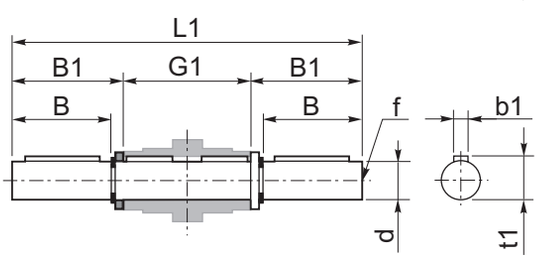
CMP	d h7	B	B1	G1	L	L1	f	b1	t1
056/030	14	30	32.5	63	102	128	M6	5	16
056/040 063/040	18	40	43	78	128	164	M6	6	20.5
063/050	25	50	53.5	92	153	199	M10	8	28
063/063 071/063 080/063	25	50	53.5	112	173	219	M10	8	28
071/075	28	60	63.5	120	192	247	M10	8	31

Single and double output shaft

SZ



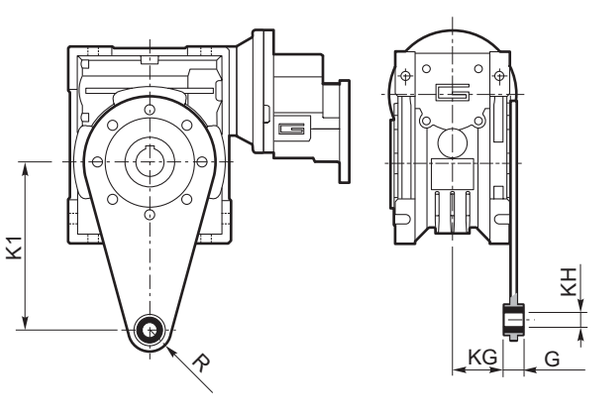
DZ



Braccio di reazione

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

Torque arm

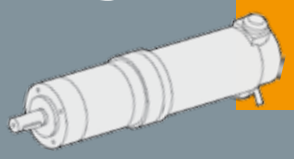


TRANSTECNO™

THE MODULAR GEARMOTOR

ECP

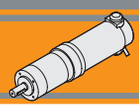
ECP



MOTORIDUTTORI C.C. EPICICLOIDALI

PERMANENT MAGNETS D.C. PLANETARY GEARMOTORS

PRODUCTS • TRANSTECNO • GENUINE •



ENERGY SAVING

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. gearmotors range are:

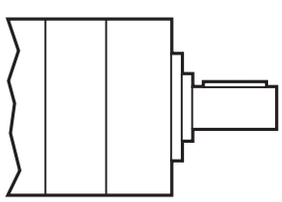
- *Low voltage power supply 12/24 Vdc*
- *Suitable for encoder assembly*
- *Motor power ratings available from 30 up to 800W S2*
- *Ferrite magnets*
- *Coaxial arrangement of the input and output*
- *Compact design*
- *Permanent grease oil long-life lubrication*
- *Can be intalled in all mounting position.*

Designazione — *Designation*

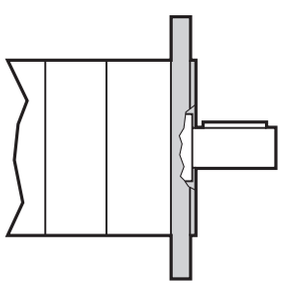
MOTORIDUTTORE / *GEARMOTOR*

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	**020/42 035/42 050/42 070/52 100/52 180/52 350/62 600/72** **070/62 100/62 180/62 350/72 600/81** **070/72 100/72 180/72 350/81 600/72** **070/81 100/81 180/81 350/105 600/105** **180/105 350/120 600/120**	**1** **2** **3**	**U** **C**	**80** **90** **105** **120**	Vedere tabella *See tables*	**120** **240** **24E**

Versioni — *Versions*



U



C

Simbologia — *Symbols*

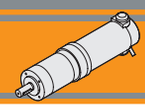
n_1	[min^{-1}]	Velocità in ingresso / *Input speed*
n_2	[min^{-1}]	Velocità in uscita / *Output speed*
i		Rapporto di riduzione / *Ratio*
P_1	[kW]	Potenza in entrata / *Input power*
M_2	[Nm]	Coppia in uscita in funzione di P_1 / *Output torque referred to P_1*

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*

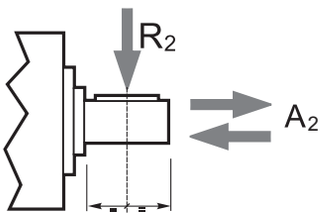
Lubrificazione — *Lubrication*

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

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

30

P_1 [W]	n_2 [min^{-1}]	M_2 [Nm]	sf	i		Versione motore *Motor version*
(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

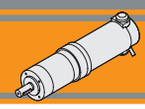
P_1 [W]	n_2 [min^{-1}]	M_2 [Nm]	sf	i		Versione motore *Motor version*
(3000 min^{-1})	**811**	0.53	5.6	**3.70**	**ECP035/421**	**120/240**
	701	0.62	4.9	4.28		
	579	0.75	4.0	**5.18**		
	444	0.97	3.1	**6.75**		
	218	1.9	4.0	**13.73**	**ECP035/422**	**120/240**
	189	2.1	3.5	15.88		
	163	2.5	3.0	18.36		
	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**		

55

P_1 [W]	n_2 [min^{-1}]	M_2 [Nm]	sf	i		Versione motore *Motor version*
(3000 min^{-1})	**32**	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**		

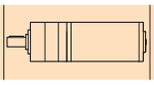
70

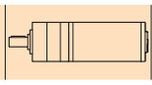
P_1 [W]	n_2 [min^{-1}]	M_2 [Nm]	sf	i		Versione motore *Motor version*
(3000 min^{-1})	**811**	0.65	4.6	**3.70**	**ECP050/421**	**120/240**
	701	0.75	4.0	4.28		
	579	0.91	3.3	**5.18**		
	444	1.2	2.5	**6.75**		
	218	2.3	3.3	**13.73**	**ECP050/422**	**120/240**
	189	2.6	2.9	15.88		
	163	3.0	2.5	18.36		
	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**		
	59	7.8	1.9	**50.89**	**ECP050/423**	**120/240**
	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**		
	32	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**	**120/240**
	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**		



Dati tecnici per servizio S2

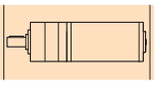
Technical data for S2 duty

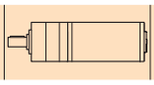
P_1 [W]	n_2 [min^{-1}]	M_2 [Nm]	sf	i		Versione motore *Motor version*
70						
(3000 min^{-1}) **59**	7.8	3.2	**50.89**	**ECP050/523**		**120/240**
51	9.1	2.8	58.85			
44	10	2.4	**68.06**			
42	11	2.3	71.16			
38	12	2.1	78.71			
32	14	1.8	**92.70**			
32	15	1.7	95.17			
30	15	1.6	99.50			
28	17	1.5	107.20			
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**			
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**			
32	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**			

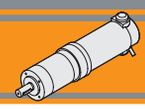
P_1 [W]	n_2 [min^{-1}]	M_2 [Nm]	sf	i		Versione motore *Motor version*
100						
(3000 min^{-1}) **120.0**	5.8	4.3	**25.01**	**ECP070/622**		**120/240**
112	6.2	4.0	26.85			
104	6.7	3.7	**28.93**			
86	8.1	3.1	**34.97**			
66	11	2.4	**45.56**			
59	11	4.5	**50.89**	**ECP070/623**		**120/240**
51	13	3.9	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**			
32	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**
32	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**			
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			

Dati tecnici per servizio S2

Technical data for S2 duty

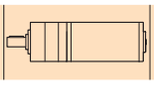
P_1 [W]	n_2 [min^{-1}]	M_2 [Nm]	sf	i		Versione motore *Motor version*
140						
(3000 min^{-1}) **120**	8.1	1.5	**25.01**	**ECP100/522**		**120/240/24E**
112	8.7	1.4	26.85			
104	9.3	1.3	**28.93**			
86	11	1.1	**34.97**			
66	15	0.8	**45.56**			
59	15	1.6	**50.89**	**ECP100/523**		**120/240/24E**
51	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**			
32	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**			
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**			
32	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**			

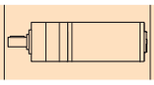
P_1 [W]	n_2 [min^{-1}]	M_2 [Nm]	sf	i		Versione motore *Motor version*
140						
(3000 min^{-1}) **44**	20	4.1	**68.06**	**ECP100/723**		**120/240/24E**
42	21	3.9	71.16			
38	24	3.5	78.71			
32	28	3.0	**92.70**			
32	29	2.9	95.17			
30	30	2.8	99.50			
28	32	2.6	107.20			
26	35	2.4	115.07			
24	37	2.3	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**
32	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**	**EC180/521**		**120/240**
701	2.7	1.5	4.28			
579	3.3	1.2	**5.18**			
444	4.3	0.9	**6.75**			
218	8.2	1.5	**13.73**	**EC180/522**		**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**	**EC180/523**		**120/240**
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**			
32	36	0.7	95.17			
30	36	0.7	99.50			
28	36	0.7	107.20			



Dati tecnici per servizio S2

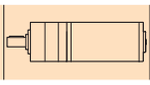
Technical data for S2 duty

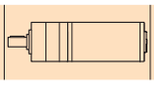
P_1 [W]	n_2 [min^{-1}]	M_2 [Nm]	sf	i		Versione motore *Motor version*
250						
(3000 min^{-1})	**26**	36	0.7	115.07	**EC180/523**	**120/240**
	24	36	0.7	123.97		
	23	36	0.7	129.62		
	22	36	0.7	139.13		
	20	36	0.7	149.90		
	18	36	0.7	**168.84**		
	17	36	0.7	181.24		
	15	36	0.7	195.26		
	13	36	0.7	236.09		
	9.8	36	0.7	**307.54**		
	811	2.4	3.4	**3.70**	**EC180/621**	**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**	**EC180/622**	**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**	**EC180/623**	**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**		
	32	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**		
	163	11	3.8	18.36	**EC180/722**	**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**	**EC180/723**	**120/240/24E**
	51	33	2.5	58.85		
	44	38	2.2	**68.06**		
	42	40	2.1	71.16		

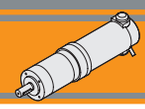
P_1 [W]	n_2 [min^{-1}]	M_2 [Nm]	sf	i		Versione motore *Motor version*
250						
(3000 min^{-1})	**38**	44	1.9	78.71	**EC180/723**	**120/240/24E**
	32	52	1.6	**92.70**		
	32	53	1.6	95.17		
	30	56	1.5	99.50		
	28	60	1.4	107.20		
	26	64	1.3	115.07		
	24	69	1.2	123.97		
	23	73	1.2	129.62		
	22	78	1.1	139.13		
	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**	**EC180/812**	**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	**EC180/813**	**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**		
	32	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**		
	32	52	3.8	**92.70**	**EC180/1053**	**120/240/24E**
	32	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**		
	22	78	3.9	139.13	**EC180/1203**	**120/240/24E**
	20	84	3.6	149.90		
	18	95	3.2	**168.84**		

Dati tecnici per servizio S2

Technical data for S2 duty

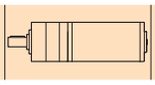
P_1 [W]	n_2 [min^{-1}]	M_2 [Nm]	sf	i		Versione motore *Motor version*
250						
(3000 min^{-1})	**17**	101	3.0	181.24	**EC180/1203**	**120/240/24E**
	15	109	2.7	195.26		
	13	132	2.3	236.09		
	9.8	172	1.7	**307.54**		
500						
(3000 min^{-1})	**811**	4.6	1.7	**3.70**	**ECP350/621**	**120/240**
	701	5.4	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**		
	32	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**		
	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**		
	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**		

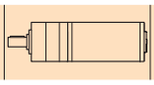
P_1 [W]	n_2 [min^{-1}]	M_2 [Nm]	sf	i		Versione motore *Motor version*
500						
(3000 min^{-1})	**59**	56	1.5	**50.89**	**ECP350/723**	**120/240**
	51	65	1.3	58.85		
	44	75	1.1	**68.06**		
	42	78	1.1	71.16		
	38	87	1.0	78.71		
	32	102	0.8	**92.70**		
	32	105	0.8	95.17		
	30	109	0.8	99.50		
	28	118	0.7	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**		
	32	105	1.1	95.17		
	30	109	1.1	99.50		
	28	118	1.0	107.20		
	26	126	0.9	115.07		
	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**		



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}) **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**			
32	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**			
86	41	3.6	**34.97**	**ECP350/1202**		**120/240**
66	54	2.8	**45.56**			
44	75	4.0	**68.06**	**ECP350/1203**		**120/240**
42	78	3.8	71.16			
38	87	3.5	78.71			
32	102	2.9	**92.70**			
32	105	2.9	95.17			
30	109	2.7	99.50			
28	118	2.5	107.20			
26	126	2.4	115.07			
24	136	2.2	123.97			
23	142	2.1	129.62			
22	153	2.0	139.13			
20	165	1.8	149.90			
18	186	1.6	**168.84**			
17	199	1.5	181.24			
15	215	1.4	195.26			
13	259	1.2	236.09			
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**			
32	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**			
32	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

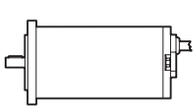
Technical data for S2 duty

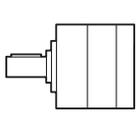
P_1 [W]	n_2 [min^{-1}]	M_2 [Nm]	sf	i	Versione motore *Motor version*	
800						
(3000 min^{-1})	**218**	26	4.0	**13.73**	**ECP600/1052**	**120/240**
	189	30	3.5	15.88		
	163	35	3.0	18.36		
	156	37	2.9	**19.20**		
	135	42	2.5	22.20		
	120	48	2.2	**25.01**		
	112	51	2.1	26.85		
	104	55	1.9	**28.93**		
	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**		
	32	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})	**135**	42	3.5	22.20	**ECP600/1202**	**120/240**
	120	48	3.1	**25.01**		
	112	51	2.9	26.85		
	104	55	2.7	**28.93**		
	86	67	2.3	**34.97**		
	66	87	1.7	**45.56**		
	59	90	3.3	**50.89**	**ECP600/1203**	**120/240**
	51	105	2.9	58.85		
	44	121	2.5	**68.06**		
	42	127	2.4	71.16		
	38	140	2.1	78.71		
	32	165	1.8	**92.70**		
	32	169	1.8	95.17		
	30	177	1.7	99.50		
	28	191	1.6	107.20		
	26	205	1.5	115.07		
	24	220	1.4	123.97		
	23	230	1.3	129.62		
	22	247	1.2	139.13		
	20	267	1.1	149.90		
	18	300	1.0	**168.84**		
	17	322	0.9	181.24		
	15	347	0.9	195.26		
	13	420	0.7	236.09		
	9.8	429	0.7	**307.54**		

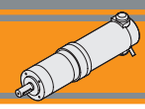
Motori applicabili

IEC Motor adapters



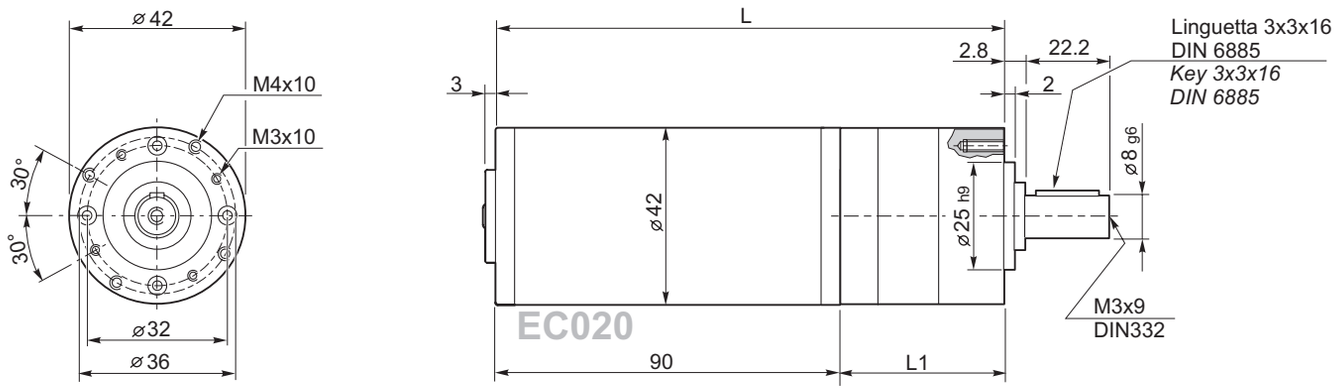


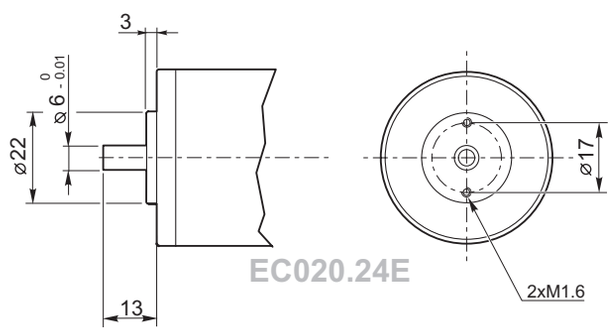
		EC								
		020.120 020.24E	**035.120 035.240**	**050.120 050.240**	**070.120 070.240**	**100.120 100.240 100.24E**	**180.120 180.240**	**180.24E**	**350.120 350.240**	**600.120 600.240**
P	**42**									
	52									
	62									
	72									
	81									
	105									
	120									



Dimensioni ***Dimensions***

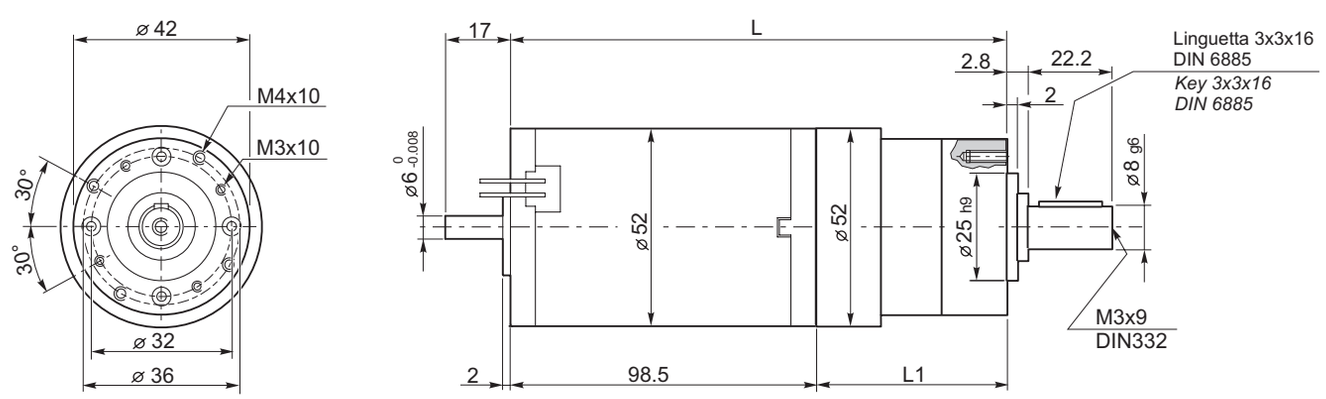
ECP020/42... U





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

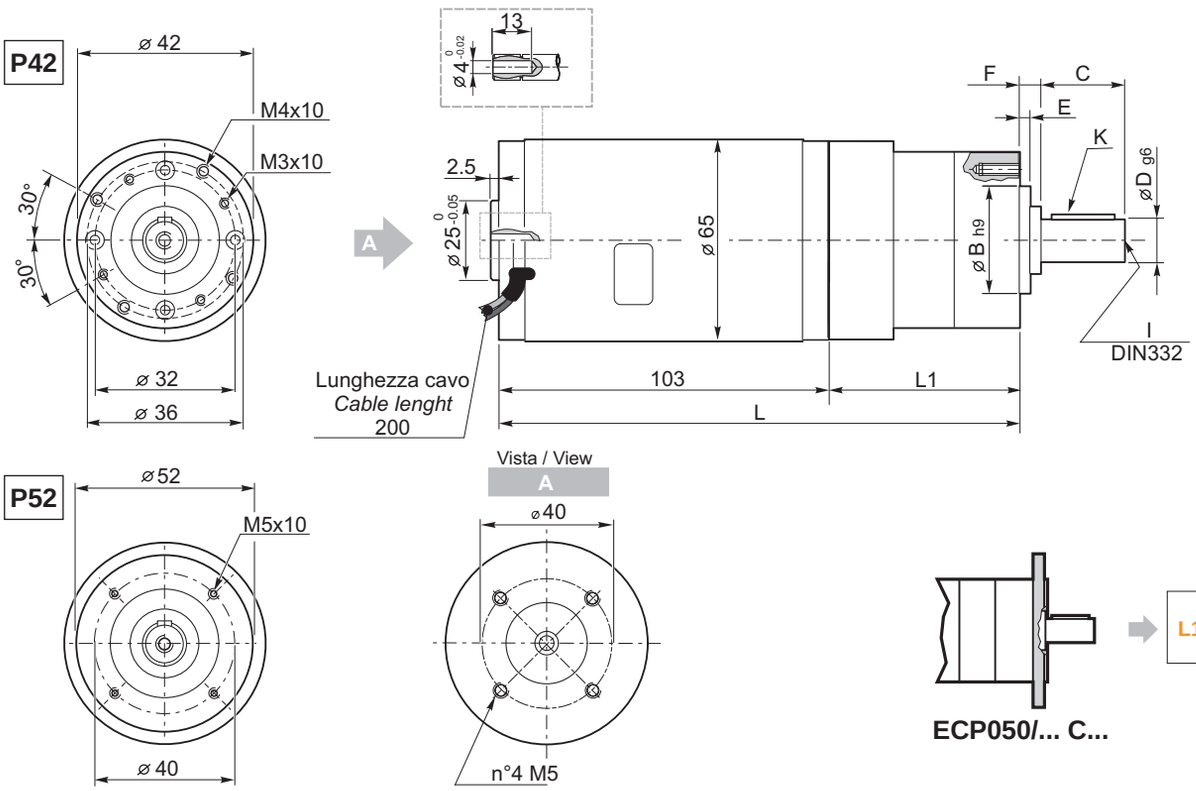
ECP035/42... U



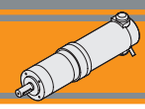
	Numero di stadi / *Stages number*		
ECP035/42...	**1**	**2**	**3**
L1	60	73	86
L	158.5	171.5	184.5

Dimensioni — *Dimensions*

ECP050/... U

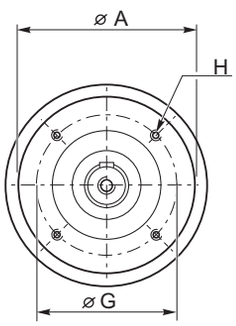


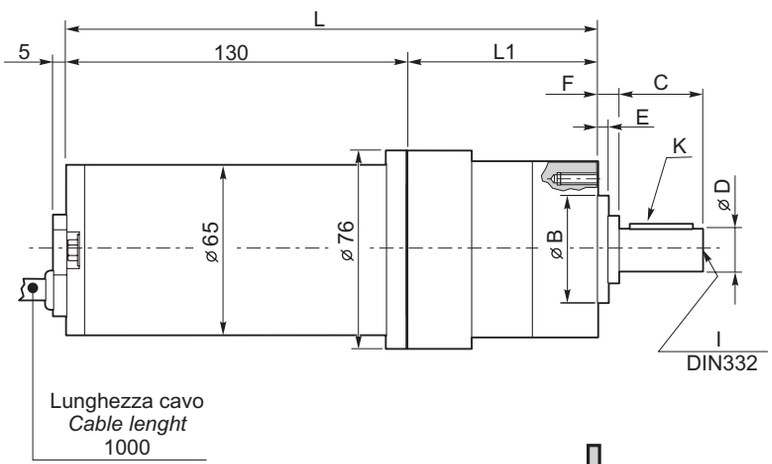
Tipo *Type*	Numero di stadi *Stages number*	Dimensioni / *Dimensions*								
		L1	L	B	C	D	E	F	I	K
ECP050/42...	1	60	163	25 h9	22.2	8 g6	2	2.8	M3x9	3x3x16
	2	73	176							
	3	86	189							
ECP050/52...	1	72.5	175.5	32 h8	20.8	12 h7	3	4.2	M4x10	4x4x16
	2	86.5	189.5							
	3	100.5	203.5							

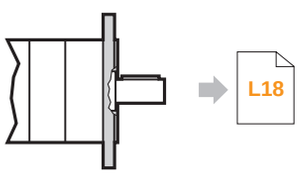


Dimensioni ***Dimensions***

ECP070/... U





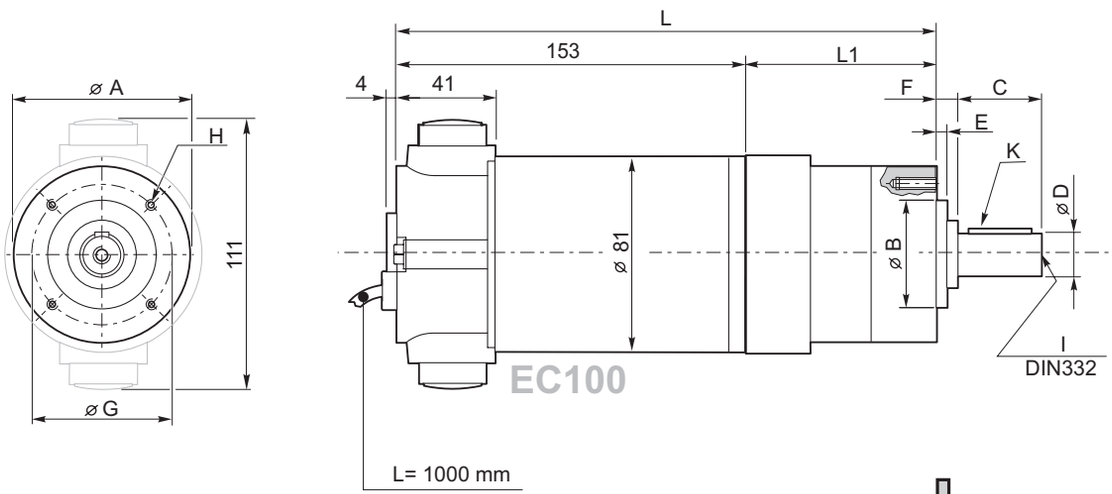


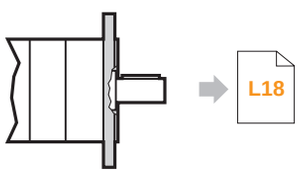
ECP070/... C...

Tipo *Type*	Numero di stadi *Stages number*	Dimensioni / *Dimensions*											
		L1	L	A	B	C	D	E	F	G	H	I	K
ECP070/52...	1	76	206	52	32 h8	20.8	12 h7	3	4.2	40	M5x10	M4x10	4x4x16
	2	90	220										
	3	104.5	234.5										
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	78	208	72	45 j7	40	16 h7	5	9	60	M5x10	M5x12	5x5x30
	2	97.5	227.5										
	3	117	247										
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***

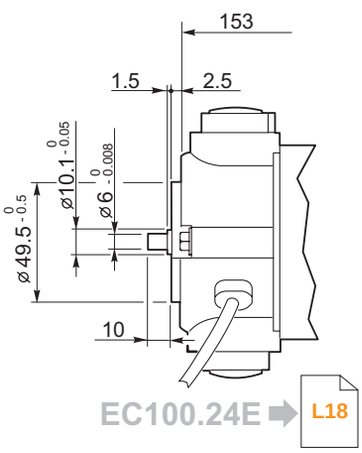
ECP100/... U... 120/140



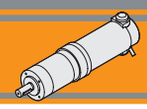


ECP100/... C...

ECP100/... U... 24E

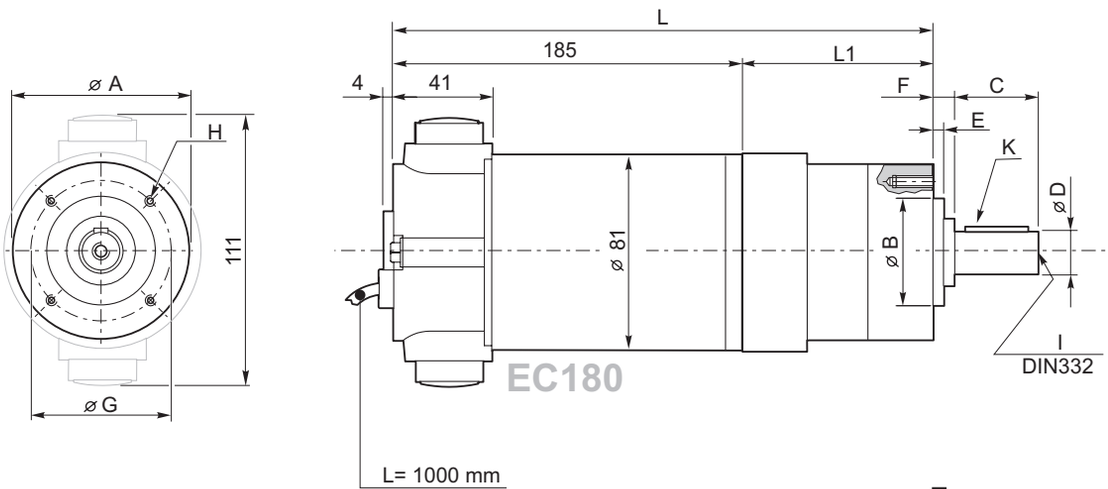


Tipo *Type*	Numero di stadi *Stages number*	Dimensioni / *Dimensions*											
		L1	L	A	B	C	D	E	F	G	H	I	K
ECP100/52...	1	74	227	52	32 h8	20.8	12 h7	3	4.2	40	M5x10	M4x10	4x4x16
	2	88	241										
	3	102	255										
ECP100/62...	1	74	227	62	40 j7	30	14 h7	5	9	52	M5x10	M5x12	5x5x18
	2	90	243										
	3	106	259										
ECP100/72...	1	78	231	72	45 j7	40	16 h7	5	9	60	M5x10	M5x12	5x5x30
	2	97.5	250.5										
	3	117	270										
ECP100/81...	1	91	244	81	50 j7	40	19 h7	5	9	65	M6x12	M6x16	6x6x28
	2	113	266										
	3	135	288										

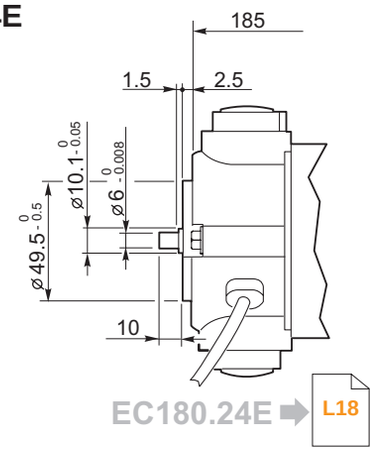


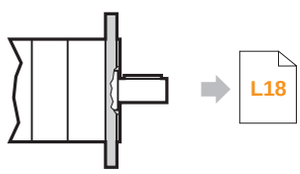
Dimensioni — *Dimensions*

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



ECP180/... U... 24E



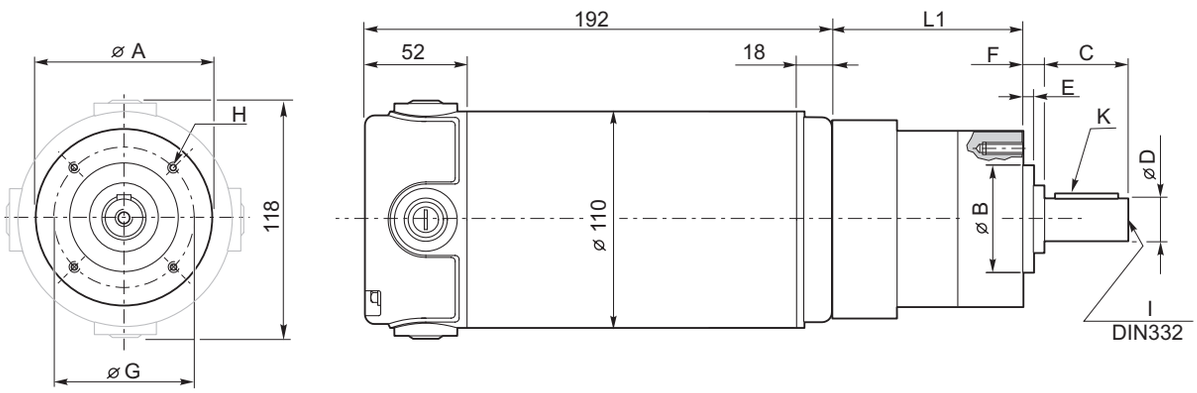


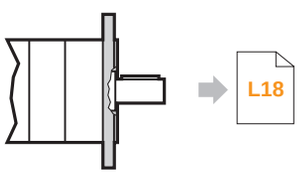
ECP180/... C...

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	76	261			52	32 h8	20.8	12 h7	3	4.2	40	M5x10	M4x10	4x4x16
	2	90	275												
	3	104.5	289.5												
ECP180/62...	1	74	259	77	264	62	40 j7	30	14 h7	5	9	52	M5x10	M5x12	5x5x18
	2	90	275	93	280										
	3	106	291	109	296										
ECP180/72...	1	78	263	78	268	72	45 j7	40	16 h7	5	9	60	M5x10	M5x12	5x5x30
	2	97.5	282.5	100.5	287.5										
	3	117	302	120	308										
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	103.5	288.5	106.5	293.5	105	70 j7	50	25 h7	5	9	85	M8x16	M10x22	8x7x40
	2	134.5	319.5	137.5	324.5										
	3	165.5	350.5	168.5	355.5										
ECP180/120...	1	121	306	124	311	120	80 j7	73	32 k6	5	15	100	M10x22	M12	10x8x50
	2	155	340	158	345										
	3	189.5	374.5	192.5	379.5										

Dimensioni — *Dimensions*

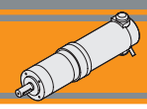
ECP350/... U





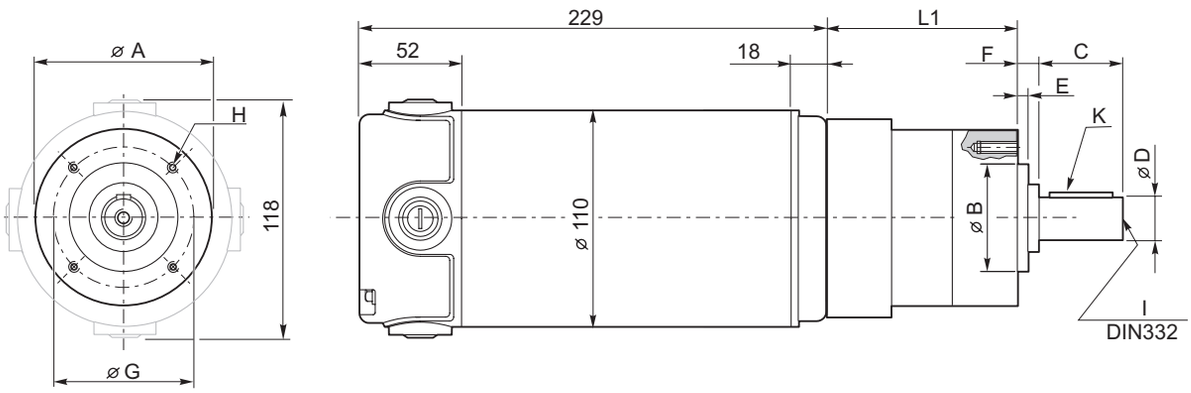
ECP350/... C...

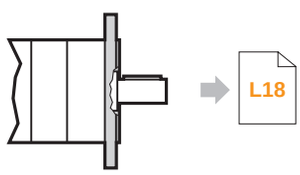
Tipo *Type*	Numero di stadi *Stages number*	Dimensioni / *Dimensions*											
		L1	L	A	B	C	D	E	F	G	H	I	K
ECP350/62...	1	76	268	62	40 j7	30	14 h7	5	9	52	M5x10	M5x12	5x5x18
	2	92	284										
	3	108	300										
ECP350/72...	1	81	273	72	45 j7	40	16 h7	5	9	60	M5x10	M5x12	5x5x30
	2	100.5	292.5										
	3	120	312										
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	107.5	299.5	105	70 j7	50	25 h7	5	9	85	M8x16	M10x22	8x7x40
	2	138.5	327.5										
	3	169.5	361.5										
ECP350/120...	1	124	316	120	80 j7	73	32 k6	5	15	100	M10x22	M12	10x8x50
	2	158.5	350.5										
	3	192.5	384.5										



Dimensioni — *Dimensions*

ECP600/... U



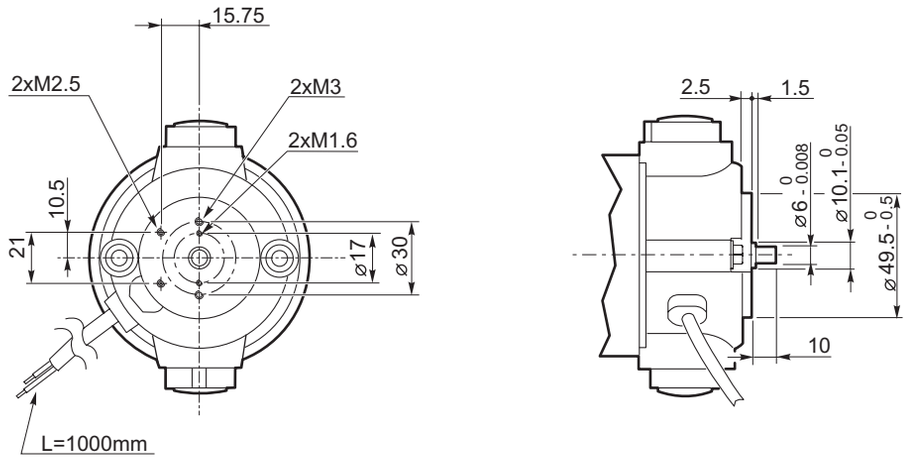


ECP600/... C...

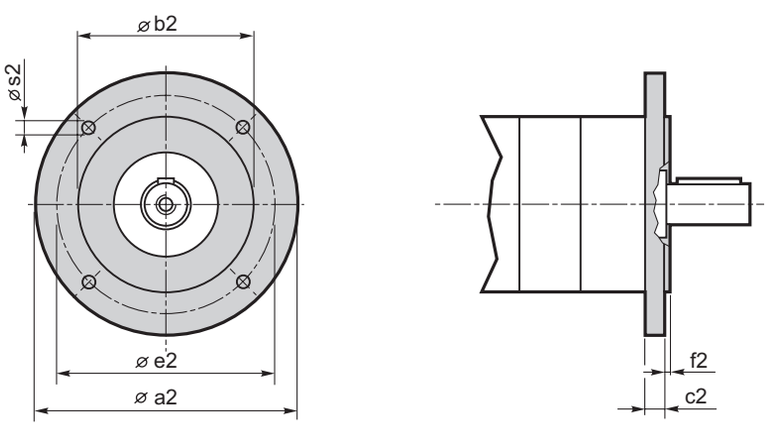
Tipo *Type*	Numero di stadi *Stages number*	Dimensioni / *Dimensions*											
		L1	L	A	B	C	D	E	F	G	H	I	K
ECP600/72...	1	88	317	72	45 j7	40	16 h7	5	9	60	M5x10	M5x12	5x5x30
	2	107.5	336.5										
	3	127	356										
ECP600/81...	1	101	330	81	50 j7	40	19 h7	5	9	65	M6x12	M6x16	6x6x28
	2	123	352										
	3	145	374										
ECP600/105...	1	113.5	342.5	105	70 j7	50	25 h7	5	9	85	M8x16	M10x22	8x7x40
	2	144.5	373.5										
	3	175.5	404.5										
ECP600/120...	1	131	360	120	80 j7	73	32 k6	5	15	100	M10x22	M12	10x8x50
	2	165.5	394.5										
	3	199.5	428.5										

Dimensioni — *Dimensions*

ECP100.24E
ECP180.24E



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



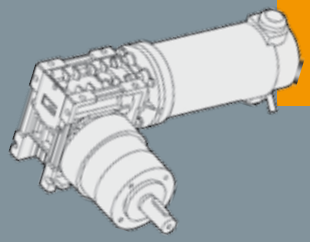
	Dimensioni / *Dimensions*						
P	**a2**	**b2**	**c2**	**e2**	**f2**	**s2**	**Flangia uscita** *Output flange*
52	80	50 j7	9	65	2.5	M5	**C80**
	90	60 j7	9	75	2.5	5.5	**C90**
	105	70 j7	9	85	2.5	6.5	**C105**
	120	80 j7	9	100	3.0	6.5	**C120**
62	80	50 j7	9	65	2.5	M5	**C80**
	90	60 j7	9	75	2.5	5.5	**C90**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

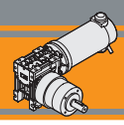
ECWMP



MOTORIDUTTORI C.C. COMBINATI

PERMANENT MAGNETS D.C. COMBINATION GEARMOTORS

PRODUCTS • TRANSTECNO • GENUINE



Caratteristiche tecniche — *Technical features*

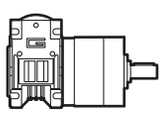
L'accoppiamento di un riduttore a vite senza fine con un riduttore epicicloidale consente di ottenere elevati rapporti di riduzione (i_{max} = 1/18452) e di disporre di un gruppo autolubrificato compatto, silenzioso e con un'elevata affidabilità.

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.

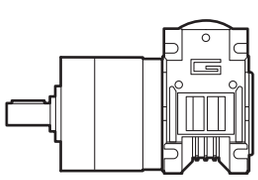
Designazione — *Designation*

MOTORIDUTTORE / *GEARMOTOR*

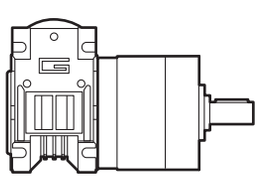
ECWMP	070/026/52				2	CD	90	405	240	VS
Tipo *Type*	Grandezza *Size*				Numero stadi epicicloidale *Planetary stages number*	Versione Riduttore *Gearbox Version*	Flangia Uscita *Output flange*	Rapporto *Ratio*	Versione Motore *Motor Version*	Opzioni *Options*
ECWMP	**070/026/52** **070/026/62** **070/030/81**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



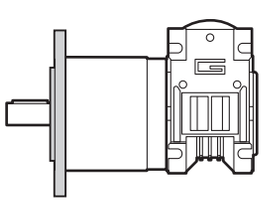
Versioni — *Versions*



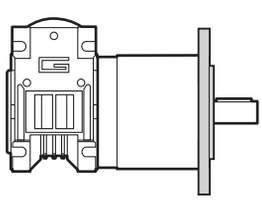
US



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*

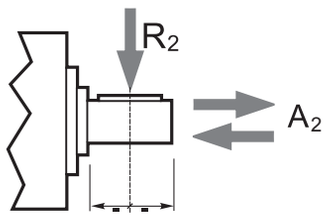
I riduttori a vite senza fine della serie CM sono lubrificati a vita con olio sintetico di viscosità 320 e possono essere installati in qualunque posizione di montaggio.

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*

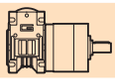
Motoriduttore *Gearmotor*	Numero stadi epicicloidale *Planetary stages number*	Rapporto epicicloidale *Planetary ratio*	Rapporto vite senza fine *Wormgearbox ratio*	Rapporto finale *Total ratio*
.../026/052 .../026/062 .../030/081	1	6.75	10	**67.5**
			15	**101.3**
			20	**135**
			30	**202.5**
			40	**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**

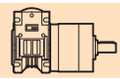
Rendimento — *Efficiency*

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		

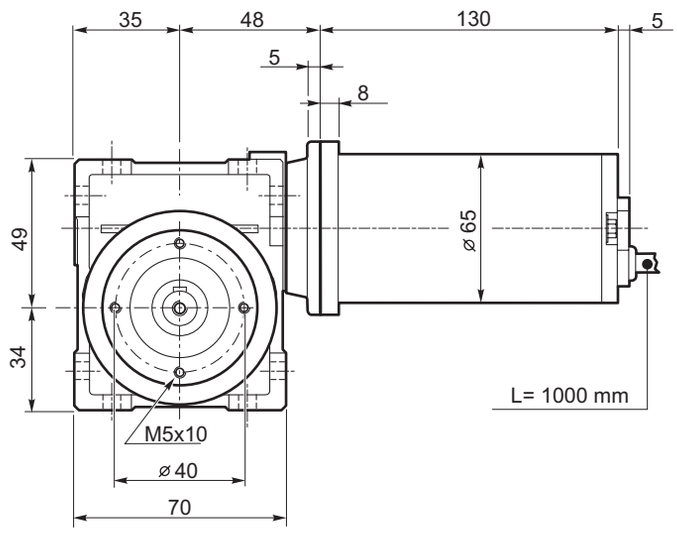
P_1 [W]	n_2 [min^{-1}]	M_2 [Nm]	sf	i		Versione motore *Motor version*
140						
(3000 min^{-1})	**44.4**	20	1.3	67.5	**100/026/521**	120/240/24E
	29.6	25	1.0	101.3		
	44.4	20	2.0	67.5	**100/026/621**	120/240/24E
	29.6	29	1.4	101.3		
	22.2	37	1.1	135.0		
	14.8	40	1.0	202.5		
	44.4	20	4.0	67.5	**100/030/811**	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**	25	1.0	67.5	**180/026/521**	120/240
	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
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		

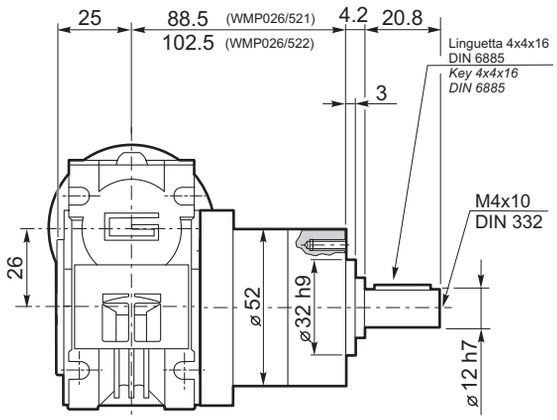
Nota: Verificare sempre che la coppia M2 utilizzata non ecceda il valore indicato nelle caselle in grigio

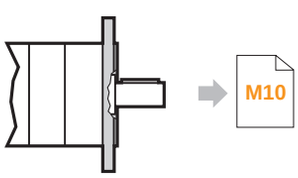
Note: *Please check that the output torque M2 does not exceed the value into the grey areas*

Dimensioni ***Dimensions***

ECWMP070/026/52...U

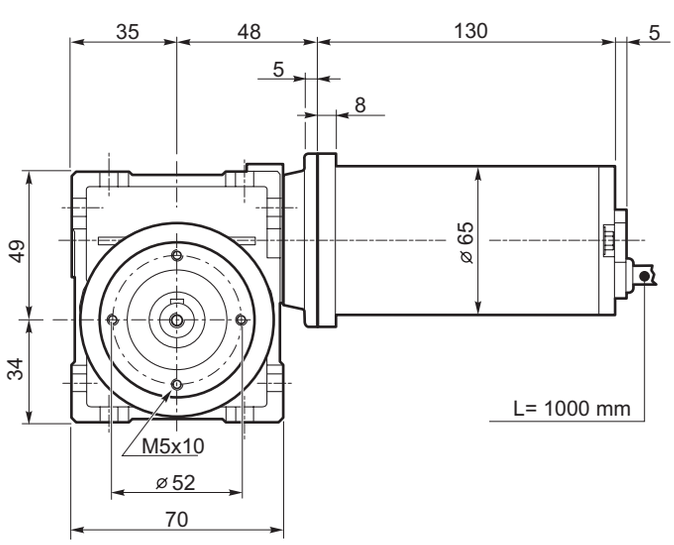


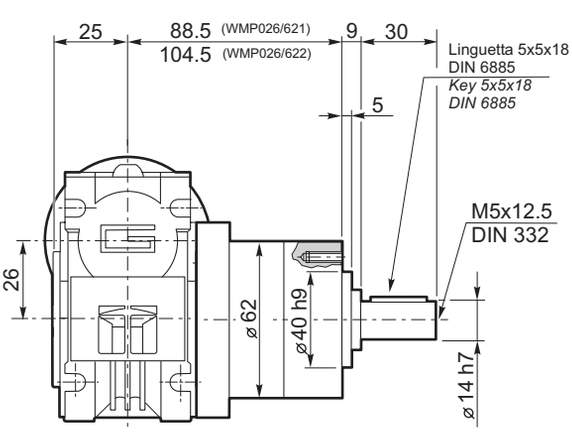


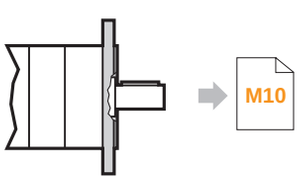


ECWMP070/026/52...C

ECWMP070/026/62...U



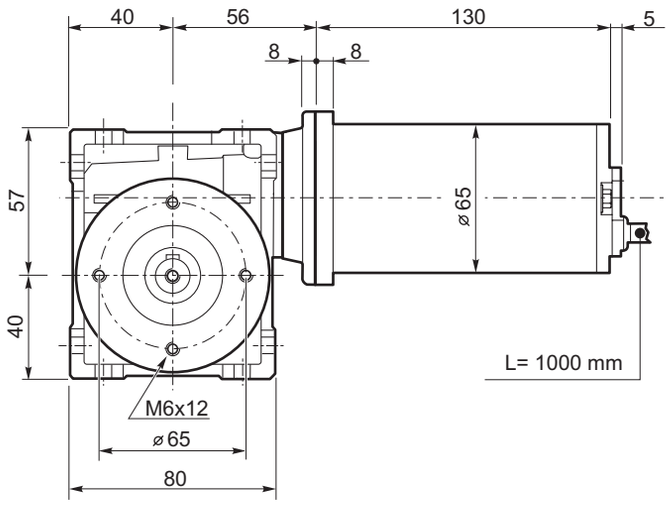


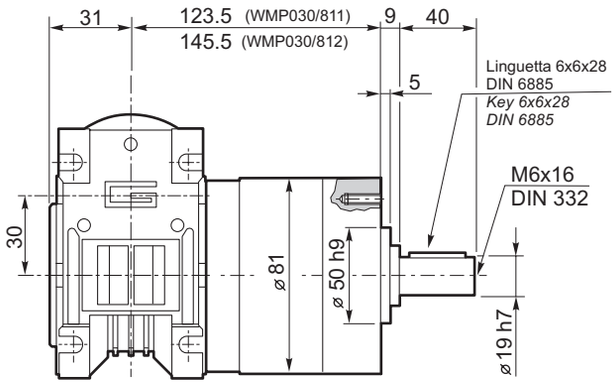


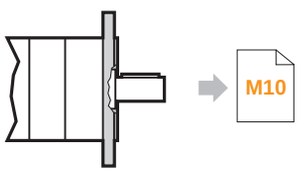
ECWMP070/026/62...C

Dimensioni ***Dimensions***

ECWMP070/030/81...U

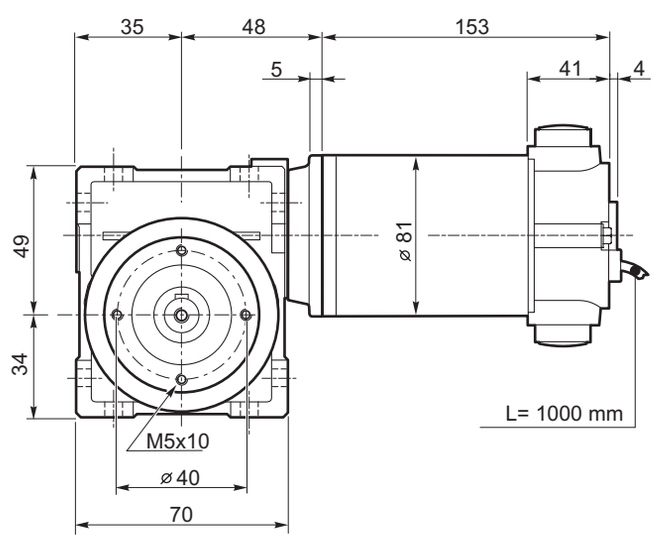


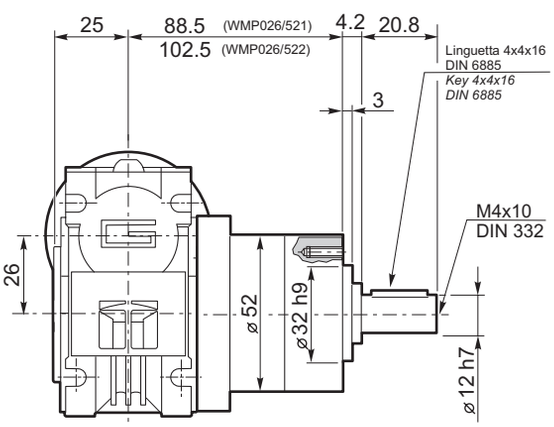


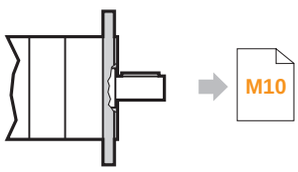


ECWMP070/030/81...C

ECWMP100/026/52...U



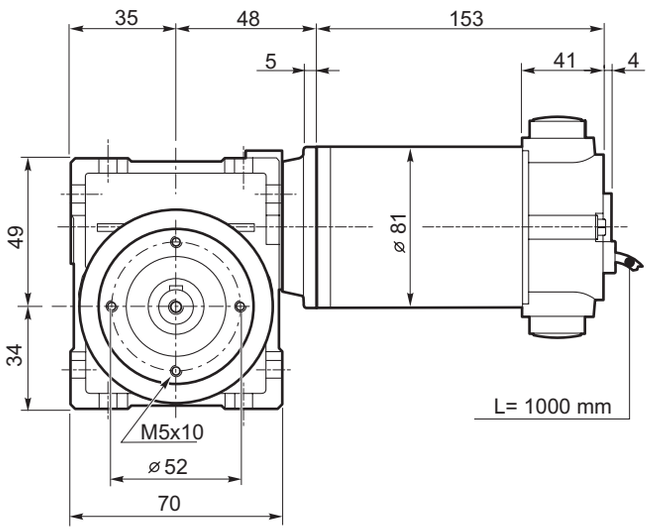


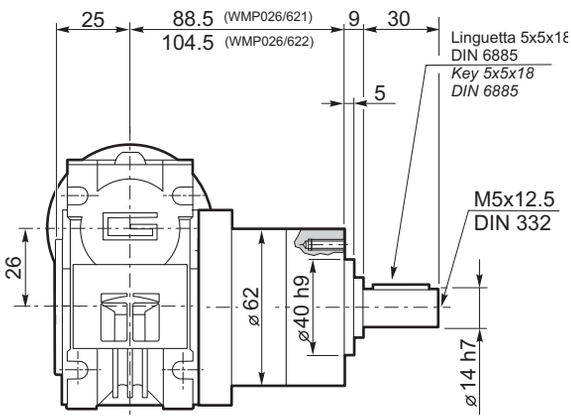


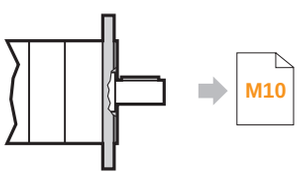
ECWMP100/026/52...C

Dimensioni | ***Dimensions***

ECWMP100/026/62...U

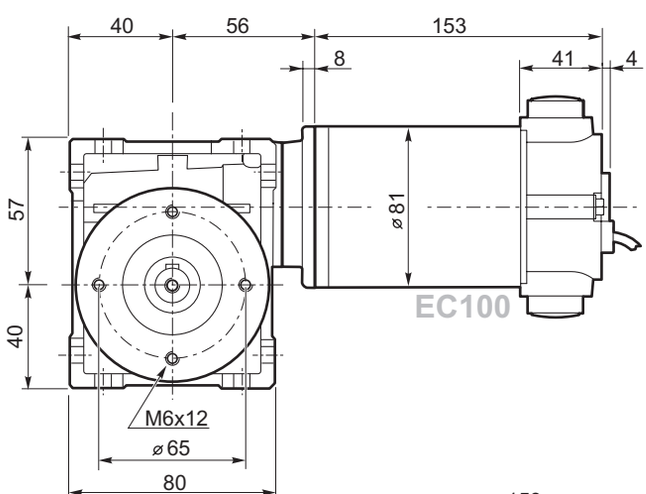


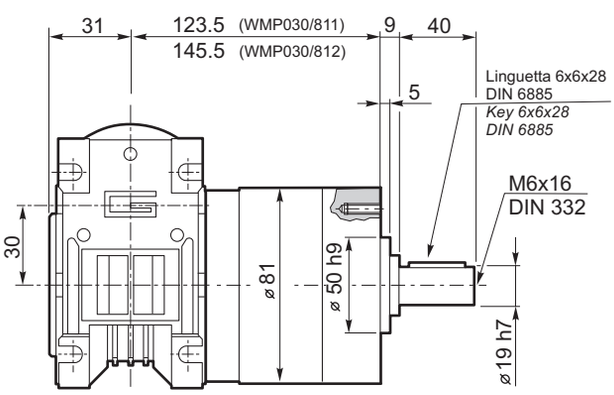


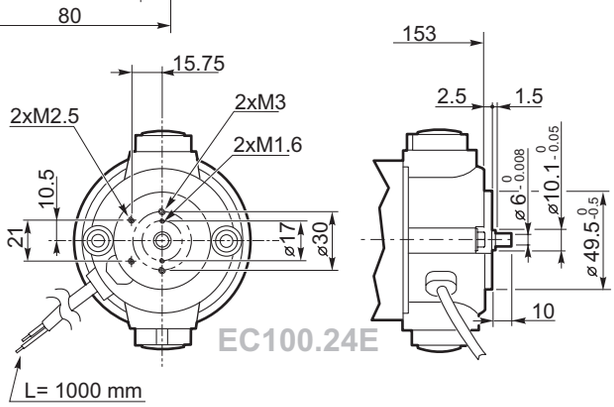


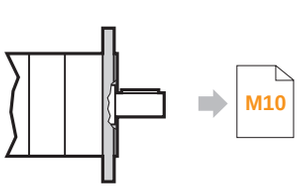
ECWMP100/026/62...C

ECWMP100/030/81...U







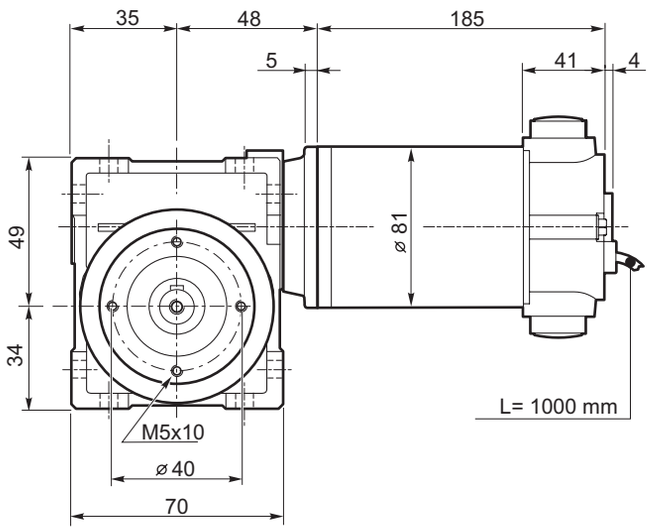


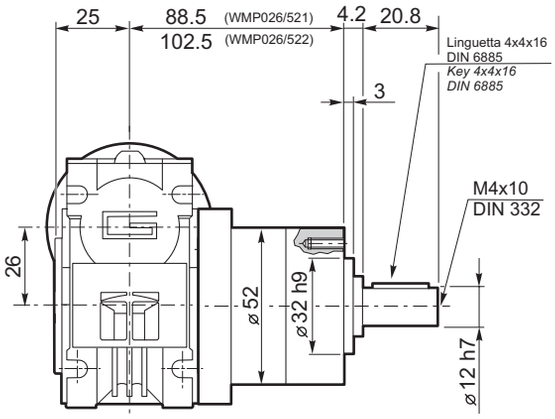
ECWMP100/030/81...C

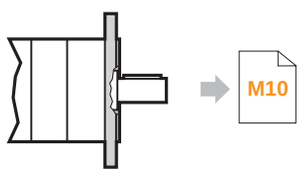
ECWMP

Dimensioni ***Dimensions***

ECWMP180/026/52...U

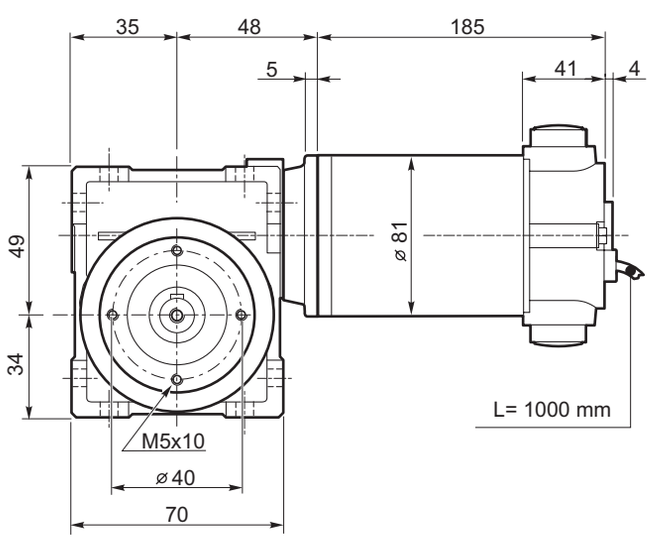


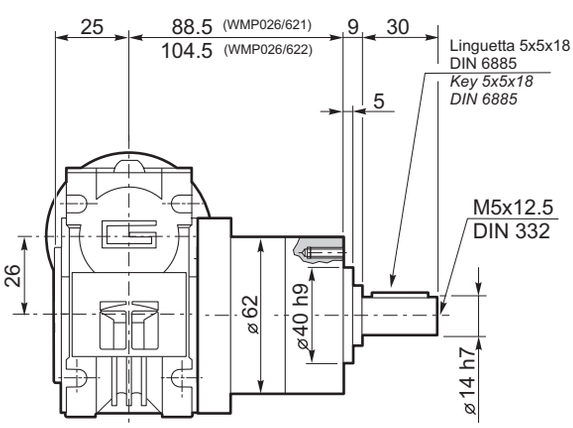


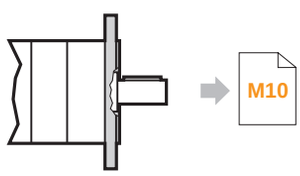


ECWMP180/026/52...C

ECWMP180/026/62...U



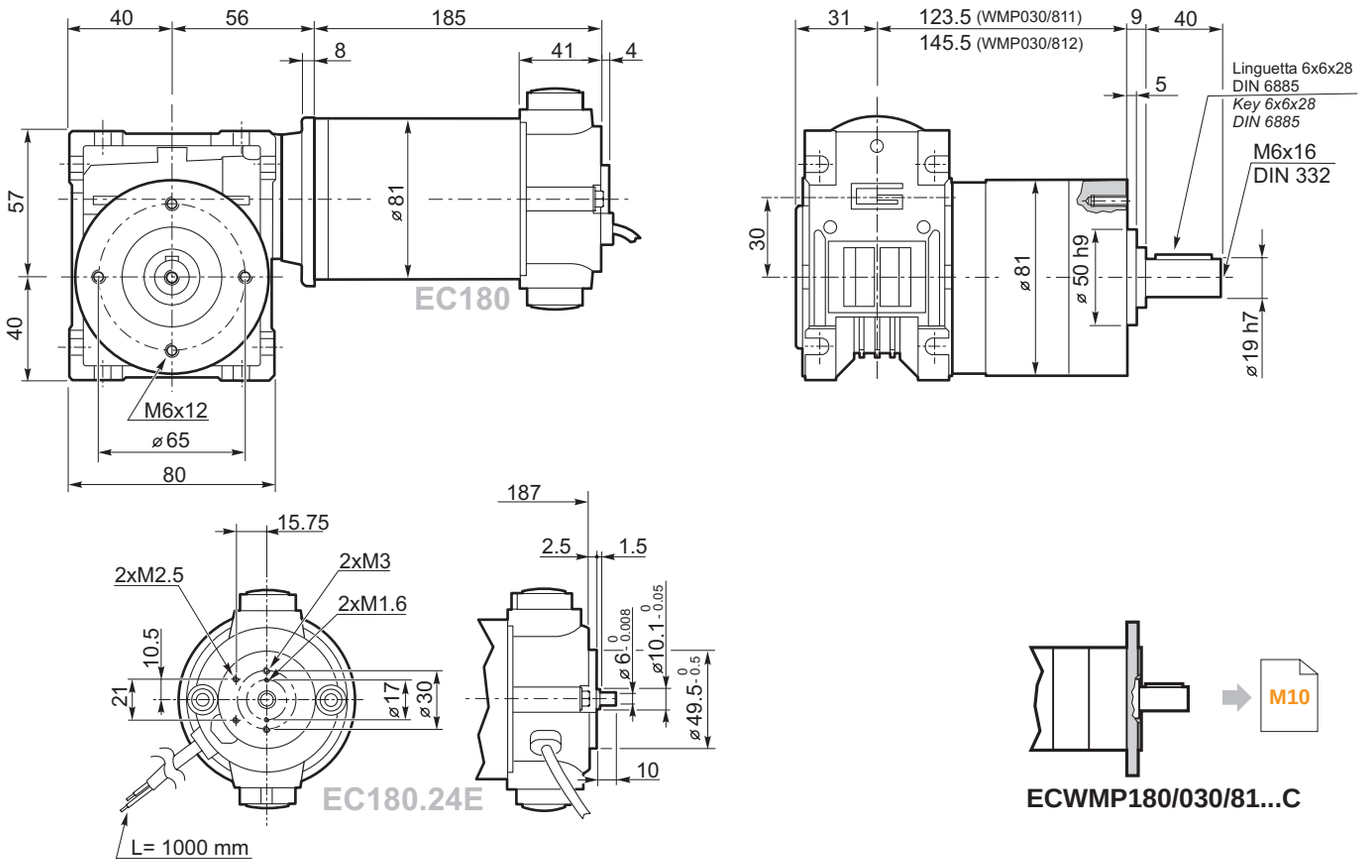




ECWMP180/026/62...C

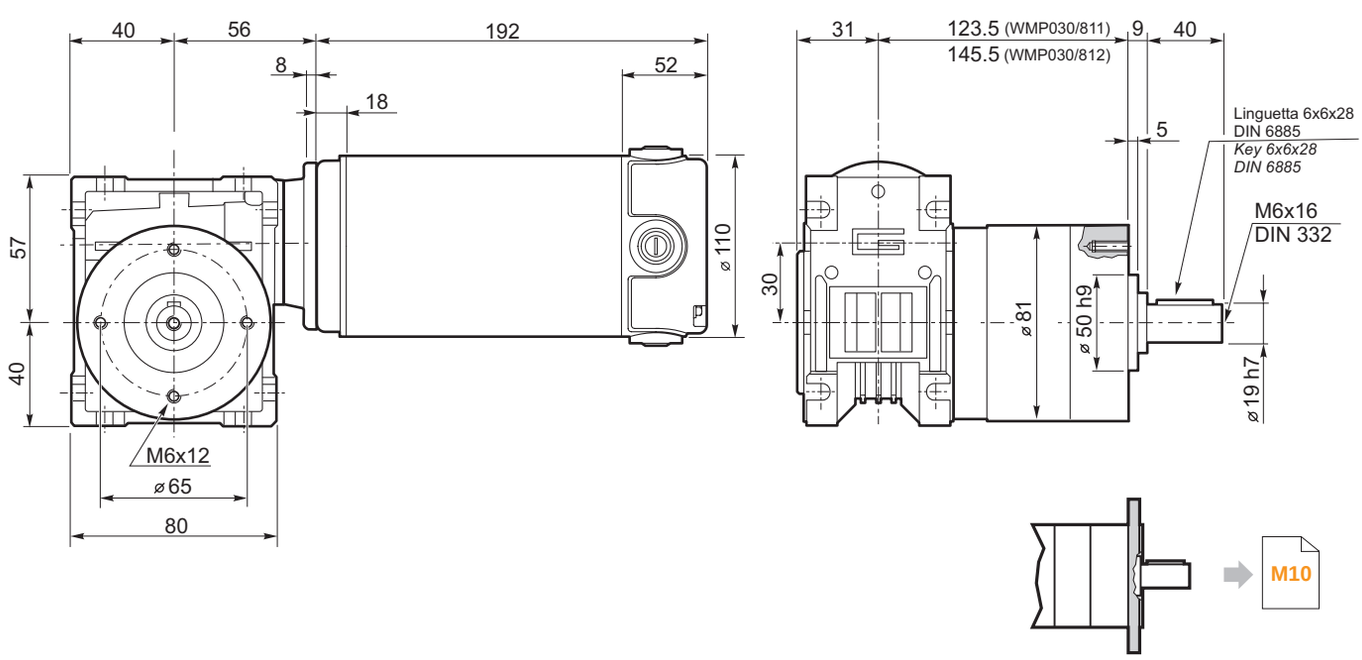
Dimensioni *Dimensions*

ECWMP180/030/81...U



ECWMP180/030/81...C

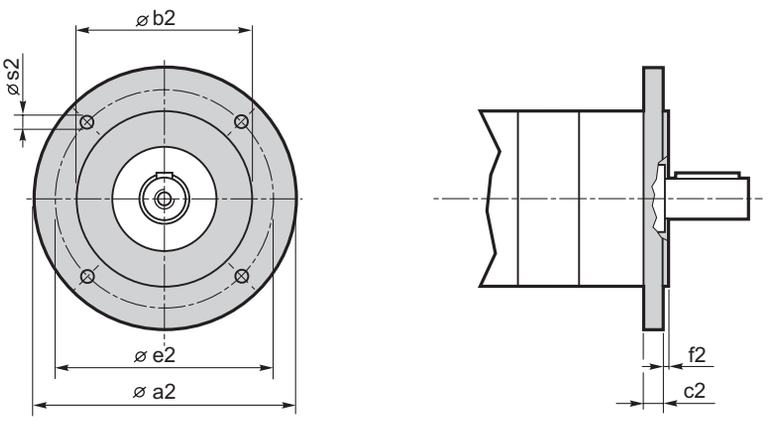
ECWMP350/030/81...U



ECWMP350/030/81...C

Dimensioni — *Dimensions*

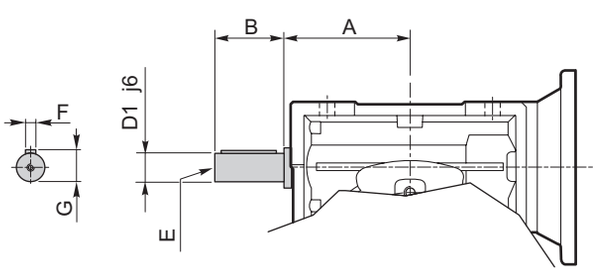
ECWMP.../.../... C... Flange uscita / *Output flanges*



	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**
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

TRANSTECNO™

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AZIONAMENTI PER MOTORI C.C.

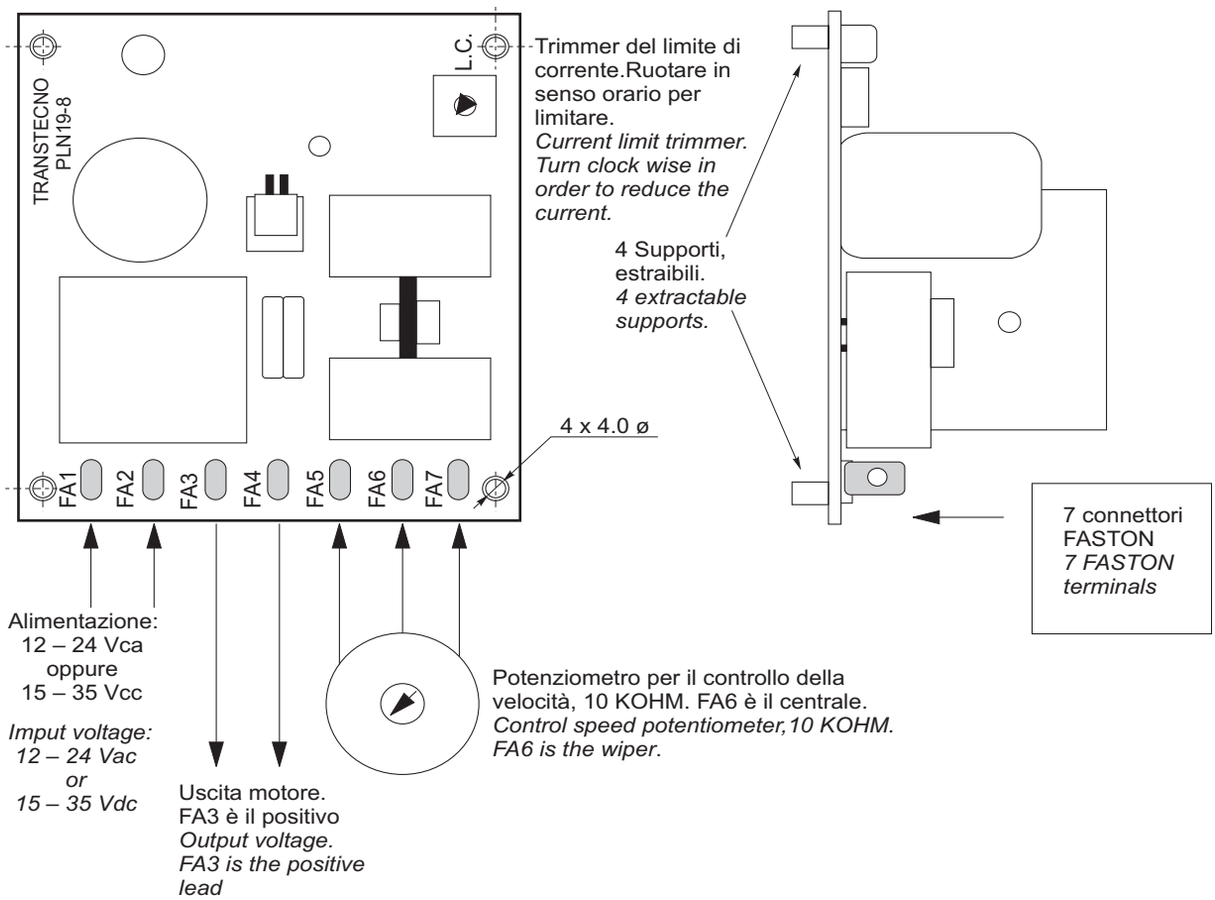
D.C. MOTOR CONTROLS

PRODUCTS • TRANSTECNO • GENUINE •

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.*

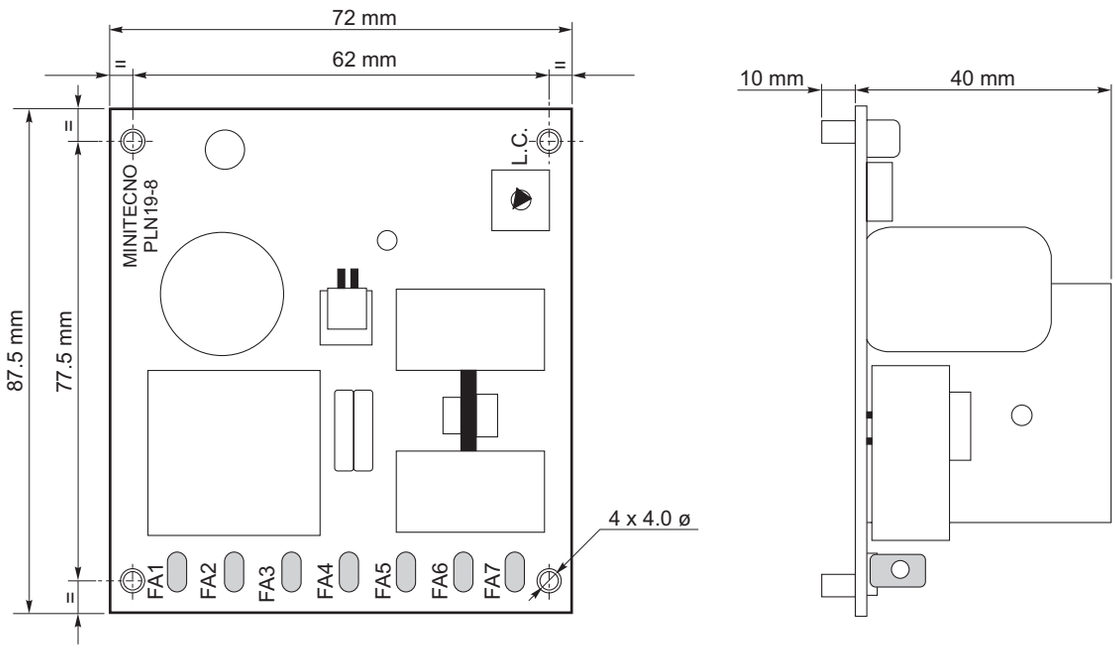
Caratteristiche tecniche

Technical features

- Alimentazione ai terminali FA1 e FA2:
  12 - 24 Vca oppure 15 - 35 Vcc.
- Regolazione della velocità mediante potenziometro 10 KOHM.
- 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 KOHM.*
- *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*

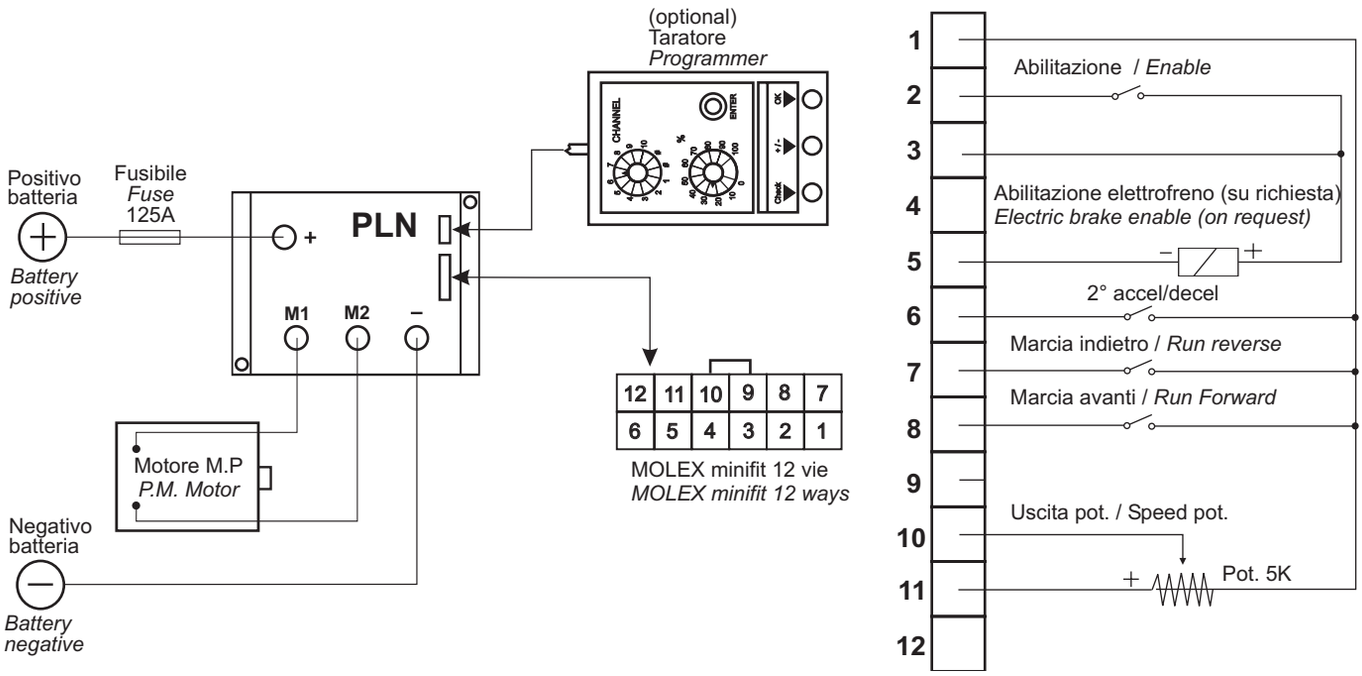
(*) il valore massimo di corrente motore deve essere utilizzato in **ambiente ventilato**. In ambienti non ventilati e per temperatura ambiente di 45 °C, ridurre la corrente motore massima a 4 A; servizio continuo.

(*) *the maximum output current value is available to be used **in a ventilated environment.** Derate the maximum output current down to 4 A if environment is not ventilated and its 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



Caratteristiche tecniche

Technical features

- Scheda bidirezionale a transistor a ricircolo di corrente.
- Selezionabili i seguenti parametri (con programmatore opzionale):
  - rampa di accelerazione: 0.5 - 3 sec
  - rampa di decelerazione: 0.5 - 3 sec
  - limite massima velocità avanti
  - limite massima velocità indietro
  - seconda rampa di accelerazione
  - seconda rampa di decelerazione
- Temperatura di lavoro: -20°C / + 40°C (< 0°C suggerito resistore di riscaldamento)
- Diagnostica tramite LED rosso
- Frequenza di commutazione: 15kHz
- Robusto alloggiamento
- Velocità regolabile con potenziometro 5Kohm o con segnale 0-5 Vcc (0-10 Vcc a richiesta)

- *Transistor bidirectional drive with regenerative current system.*
- *Following settings can be adjust by optional programming console:*
  - *acceleration ramp: 0.5 - 3 sec*
  - *deceleration ramp : 0.5 - 3 sec*
  - *max forward speed*
  - *max reverse speed*
  - *second acceleration ramp*
  - *second deleration ramp*
- *Room temperature: -20°C / + 40°C (< 0°C suggested heat resistor)*
- *RED LED: system diagnosis*
- *Switching frequency: 15kHz*
- *Rugged enclosure*
- *5 K Speed pot or 0-5 Vdc external signal for speed regulation (0-10 Vdc on request)*

Modello *Model number*	Tensione di alimentazione *DC input voltage* [Vdc]	Tensione di uscita *Motor voltage* (1) [Vdc]	Corrente di uscita nominale *DC load current* [A]	Corrente di picco motore *Maximum load current* [A]	Campo di alimentazione *Power supply range* [Vdc]
PLN1206	12	0 - 12	20	50 (1 min.)	10 ÷ 18
PLN1212	12	0 - 12	40	85 (1 min.)	10 ÷ 18
PLN2406	24	0 - 24	20	50 (1 min.)	16 ÷ 34
PLN2412	24	0 - 24	40	85 (1 min.)	16 ÷ 34

(1) Tensione di uscita: 36 Vcc a richiesta - *Motor voltage: 36 Vdc on request*

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*

Modello *Model number*	Larghezza Width [mm]	Altezza Height [mm]	Profondità Depth [mm]	Peso weight [Kg]	Fori Fissaggio Fixing holes [mm]
PLN1206	160	105	60	0.60	83 x 140
PLN1212	180	120	60	0.85	104 x 164
PLN2406	160	105	60	0.60	83 x 140
PLN2412	180	120	60	0.85	104 x 164

Programmatore (opzionale) — *Programmer (optional)*

La scheda è predisposta per l'utilizzo di un programmatore portatile (opzionale) che consente di selezionare e modificare i principali parametri di funzionamento, nonché di effettuare la diagnostica della scheda.

1. Selezione parametro
2. Regolazione taratura
3. Pulsante di conferma
4. LED verde di alimentazione corretta
5. LED giallo, di allarme inversione polarità
6. LED rosso di allarme e diagnostica

Procedura di programmazione

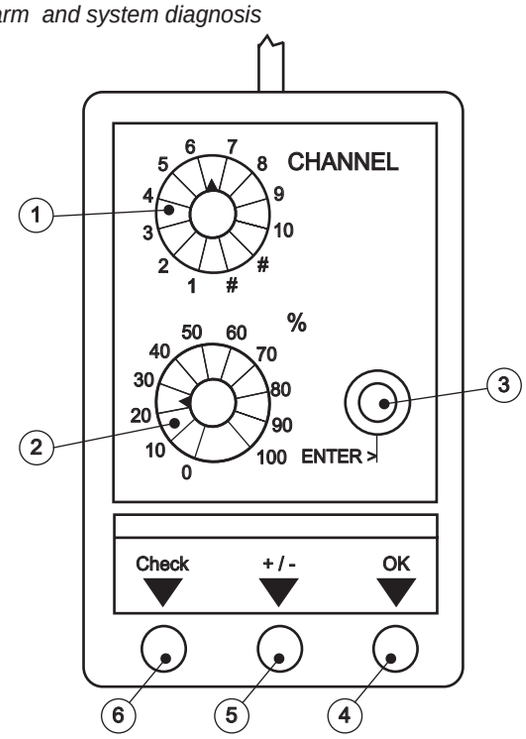
- Selezionare il parametro con selettore (1).
- Regolare il valore desiderato col taratore (2); il selettore varia in modo continuo e una scala graduata da 0 a 100% facilita l'operazione.
- Premere il pulsante di conferma per almeno 0.5 sec. Il LED rosso lampeggia ad indicare che il dato è stato acquisito.

Set up procedure

- *Select the parameter to be changed, with the parameter selector (1).*
- *Turn cursor (2) to select the parameter to be changed in continuous mode. A graduated scale that shows the value entered is provided on the console. The scale ranges from: 0% - 100%.*
- *Hold down key ENTER at least 0.5 seconds. When the microprocessor has acquired the set value, the red diagnostic LED flashes briefly.*

The hand-held set up - diagnostic console (optional) allows the drives to be easily adjusted for better performances and to be checked for alarm and system diagnosis.

1. *Parameter selector*
2. *Percentage setting*
3. *Enter*
4. *Green LED power on*
5. *Yellow LED system power supply polarity reversed.*
6. *Alarm and system diagnosis*



Lista parametri

1. Accelerazione 0.5 ÷ 3 sec. (valore di default: circa 1 sec.)
2. Decelerazione 0.5 ÷ 3 sec. (valore di default: circa 1 sec.)
3. Limite massima velocità avanti (valore di default: 100%)
4. Limite massima velocità indietro (valore di default: 100%)
5. N.A.
6. N.A.
7. Seconda accelerazione 0.5 ÷ 3 sec. (val. di default: circa 1 sec.)
8. Seconda decelerazione 0.5 ÷ 3 sec. (val. di default: circa 1 sec.)
9. N.A.

Nota: i valori di accelerazione e decelerazione sono da intendersi dalla minima alla massima tensione e viceversa.

Settings

1. *Acceleration 0.5 ÷ 3 sec. (default: about 1 sec.)*
2. *Deceleration 0.5 ÷ 3 sec. (default: about 1 sec.)*
3. *Max forward speed (default: 100%)*
4. *Max reverse speed (default: 100%)*
5. N.A.
6. N.A.
7. Second acceleration 0.5 ÷ 3 sec. (default: about 1 sec.)
8. Second deceleration 0.5 ÷ 3 sec. (default: about 1 sec.)
9. N.A.

Note: accel. and decel. time is to change from minimum to max speed and viceversa

Simbologia — *Symbols*

→	Monodirezionale	*Single direction*
↔	Bidirezionale	*Bidirectional*
▲	Disponibili rampe di acc e dec (selezionabili tramite taratore opzionale)	*Available acc. and decel. ramp (selection by optional programmer)*
═	In abbinamento con qs motore, la scheda può funzionare in servizio continuo	*Together with this motor, the drive can work in continuous duty*
⩲	In abbinamento con qs motore , la scheda può funzionare solo in servizio intermittente	*Together with this motor, the drive can work only in intermittent duty*
n.a.	Selezione non disponibile	*Not available selection*
*	Contattare il Servizio Tecnico	*Contact out Technical Service*

Motori applicabili — *Suitable motors*

Tipo *Type*	Alimentazione *Supply*	Dati *Data*	Motori applicabili *Suitable motors*	Servizio *Duty*	
				S1	S2
PLN19-8	9 -12 Vac 12 Vdc	→	**EC020.120**	═	═
			EC020.24E	═	═
			EC035.120	═	⩲
			EC035.240	═	═
			EC050.120	⩲	n.a.
			EC050.240	═	═
			EC070.240	═	⩲
			EC100.240	⩲	n.a.
			EC100.24E	⩲	n.a.
PLN1206	12 Vdc	↔ ▲	**EC020.120**	═	═
			EC035.120	═	═
			EC050.120	═	═
			EC070.120	═	═
			EC100.120	═	═
			EC180.120	═	⩲
			ND120.120	═	═
PLN2406	24 Vdc	↔ ▲	**EC020.24E**	═	═
			EC035.240	═	═
			EC050.240	═	═
			EC070.240	═	═
			EC100.240	═	═
			EC100.24E	═	═
			EC180.240	═	═
			EC180.24E	═	═
			EC350.240	═	⩲
			ND120.240	═	═
PLN1212	12 Vdc	↔ ▲	**EC180.120**	═	═
			EC350.120	═	⩲
			EC600.120	⩲	*
PLN2412	24 Vdc	↔ ▲	**EC350.240**	═	═
			EC600.240	═	⩲

* Contattare il Servizio Tecnico / *Contact our Technical Service*

Note

Note

Questo catalogo annulla e sostituisce ogni precedente edizione o revisione. Ci riserviamo inoltre il diritto di apportare modifiche senza preavviso.

This catalogue supersedes any previous edition and revision. We reserve the right to implement modifications without notice.

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