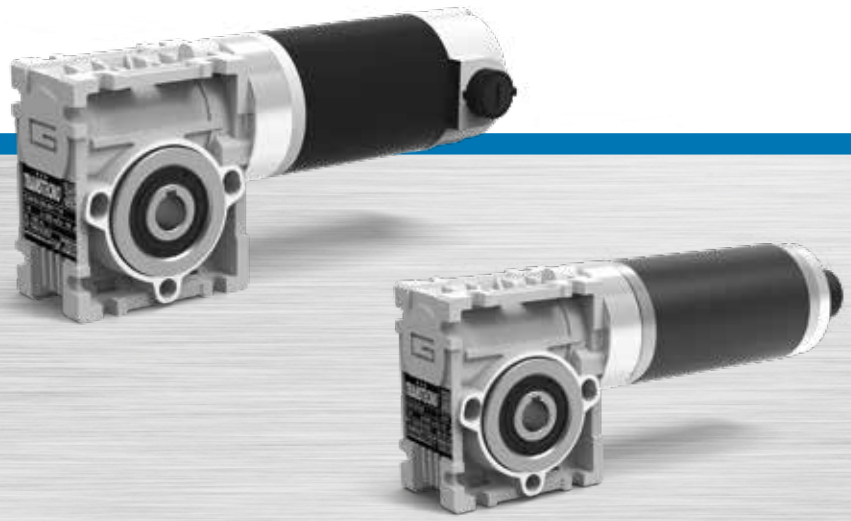
INTECNO
power transmissions

MICRO Gearmotors

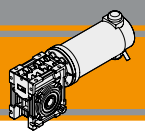
DC

CM

# Micro motoriduttori CC a vite senza fine
# DC Micro wormgearmotors



member of
TRANSTECNO
group






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

*This section replaces any previous edition and revision. If you obtained this catalogue other than through controlled distribution channels, the most up to date content is not guaranteed.* ***In this case the latest version is available on our web site www.intecno-srl.com***

## Caratteristiche tecniche — *Technical features*

Le caratteristiche principali dei motoriduttori in CC a vite senza fine della serie CM sono:

- Alimentazione in bassa tensione 12/24 Vcc
- Possibilità di montaggio encoder
- Potenze motore disponibili da 55 a 250W S2
- Magneti permanenti in ferrite
- Carcasse dei riduttori in pressofusione di alluminio
- Lubrificazione permanente con olio sintetico.

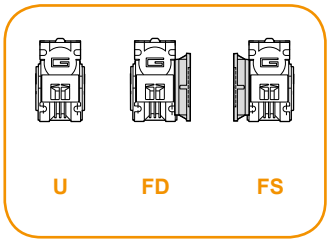
*The main features of DC wormgearmotors range CM are:*

- *Low voltage power supply 12/24 Vdc*
- *Suitable for encoder assembly*
- *Motor power ratings available from 55 to 250W S2*
- *Ferrite permanent magnets*
- *Die-cast aluminum housing*
- *Permanent synthetic oil long-life lubrication.*

## Designazione — *Classification*

| RIDUTTORE / *GEARBOX* | | | | MOTORE / *MOTOR* | | |
|---|---|---|---|---|---|---|
| **CM** | **026** | **20** | **U** | **EC035** | **24V** | **—** |
| Tipo *Type* | Grandezza *Size* | Rapporto in *Ratio in* | Versione *Version* | Tipo *Type* | Tensione *Voltage* | Opzioni *Options* |
| **CM**  | **026**<br>**030** | Vedere tabelle *See tables* | **U**<br>**F** | **EC035**<br>**EC050**<br>**EC070**<br>**EC100**<br>**EC180** | **12V**<br>**24V** | **Encoder**  **I2**<br>**Freno / *Brake***  **C12** |

Versione Riduttore
*Gearbox Version*




## Simbologia — *Symbols*

| | | |
|---|---|---|
| Ns | | n° stadi / *No. stages* |
| in | | rapporto nominale / *nominal ratio* |
| ir | | rapporto reale / *real ratio* |
| $M_n$ | [Nm] | coppia in uscita in funzionamento continuativo S1 *output torque for continuous operation S1* |
| Rd | | rendimento dinamico / *efficiency* |
| $R_2$ | [N] | massimo carico radiale al centro dell'albero uscita max. *radial load at output shaft centre* |
| $A_2$ | [N] | massimo carico assiale / *max. axial load* |

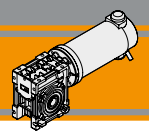
| | | |
|---|---|---|
| Pn | [W] | Potenza nominale / *Nominal power* |
| V | [V] | *Tensione / Voltage* |
| I | [A] | Assorbimento / *Current* |
| IC | | Classe di isolamento termico / *Thermal insulation class* |
| FF | | Fattore di forma / *Form factor* |
| $n_1$ | [Rpm] | Giri / *Speed* |
| IP | | Grado di protezione / *Enclosure protection* |
| Kg | | Peso / *Weight* |

## Lubrificazione — *Lubrication*

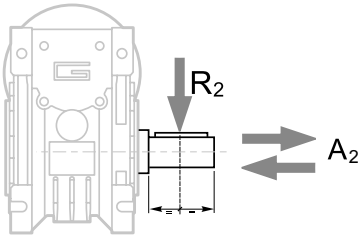
I riduttori a vite senza fine della serie CM026 e CM030 sono lubrificati a vita con olio sintetico di viscosità 320 e possono essere installati in qualunque posizione di montaggio.
Temperatura ambiente 0 ÷ 40 °C (in assenza di congelamento ed in assenza di condensa).
Per temperature diverse, contattare nostro UT.

*Permanent synthetic oil long-life lubrication allow to use CM026 and CM030 wormgearbox range in all mounting position.*
*Ambient temperature 0 ÷ 40 °C (in the absence of freezing and condensation).*
*For temperature outside this range please contact our technical dept.*

| | **Quantità di olio** (litri) / ***Oil quantity*** *(litres)* | | | | | |
|---|---|---|---|---|---|---|
| | **B3** | **B8** | **B6** | **B7** | **V5** | **V6** |
| **CM026** | 0.015 | | | | | |
| **CM030** | 0.03 | | | | | |



## Carichi radiali — *Radial loads*

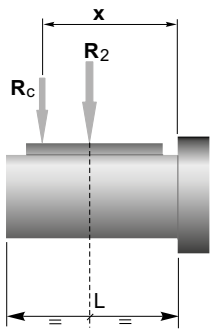



$A_2 = R_2 \times 0.2$

| $n_2$ [$min^{-1}$] | $R_2$ [N] | |
|---|---|---|
| | CM026 | CM030 |
| 187 | 400 | 674 |
| 140 | 490 | 743 |
| 93 | 580 | 851 |
| 70 | 610 | 936 |
| 56 | 610 | 1008 |
| 47 | 610 | 1069 |
| 35 | 610 | 1179 |
| 28 | 610 | 1270 |
| 23 | 610 | 1356 |
| 18 | 610 | 1471 |
| 14 | 610 | 1600 |

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 |
| a | 56 | 65 |
| b | 43 | 50 |
| $R_{2MAX}$ | 610 | 1600 |

## Dati di dentatura — *Toothing data*

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

## Rendimento — *Efficiency*

| | $n_1$ [$min^{-1}$] | Rendimento<br>Efficiency | Rapporto / *Ratio* | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 5 | 7.5 | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 80 | 100 |
| CM026 | 2800 | Rd | 0.89 | 0. 87 | 0. 85 | 0. 83 | 0. 80 | | 0. 73 | 0. 68 | 0. 64 | 0. 60 | | |
| | | Rs | 0. 72 | 0. 71 | 0. 68 | 0. 61 | 0. 56 | | 0. 46 | 0. 41 | 0. 36 | 0. 34 | | |
| CM030 | 2800 | Rd | 0. 89 | 0. 88 | 0. 86 | 0. 84 | 0. 81 | 0. 78 | 0. 74 | 0. 70 | 0. 65 | 0. 62 | 0. 57 | 0. 52 |
| | | Rs | 0. 72 | 0. 67 | 0. 63 | 0. 55 | 0. 50 | 0. 43 | 0. 39 | 0. 35 | 0. 31 | 0. 27 | 0. 23 | 0. 21 |

## Reversibilità e irreversibilità — *Reversibility and irreversibility*

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.

*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* |
|---|---|---|
| > 0.60 | Reversibilità dinamica | Dynamic reversibility |
| 0.50 - 0.60 | Reversibilità dinamica incerta | Uncertain dynamic reversibility |
| 0.40 - 0.50 | Buona irreversibilità dinamica | Good dynamic irreversibility |
| <0.40 | Irreversibilità dinamica | Dynamic irreversibility |
| **Rs** | **Reversibilità e irreversibilità statica** | ***Static reversibility and irreversibility*** |
| > 0.55 | Reversibilità statica | Static reversibility |
| 0.50 - 0.55 | Reversibilità statica incerta | Uncertain static reversibility |
| <0.50 | Irreversibilità statica | Static irreversibility |

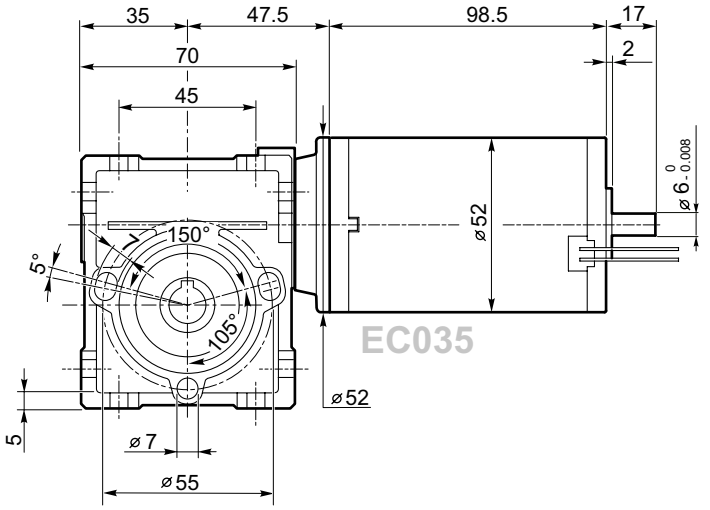
## CM026 con motore CC

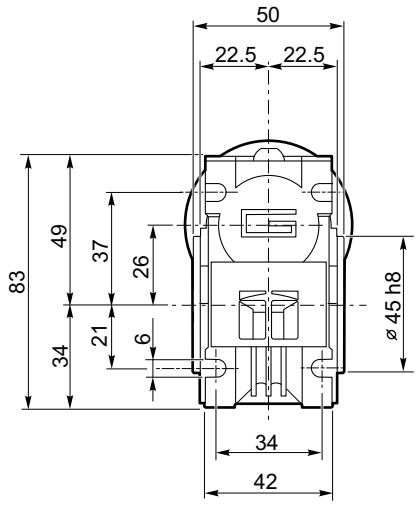
## *CM026 with DC motor*

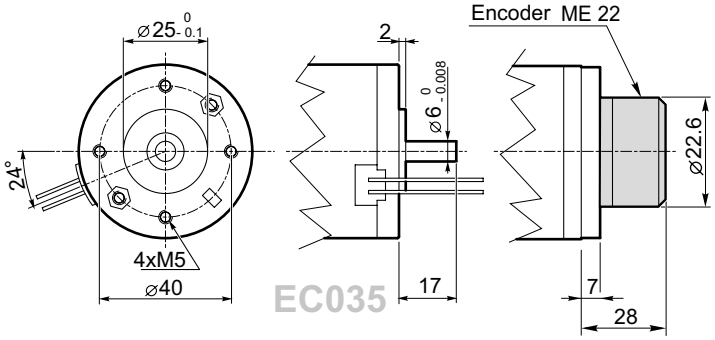
| CM026 $n_1$=3000 rpm | | | EC035 S2 12/24V | |
|---|---|---|---|---|
| ir | $M_n$ [Nm] | Kg | [Nm] | [rpm] |
| 5 | 10 | 0.8 | 0.8 | 600 |
| 7.5 | 11 | | 1.2 | 400 |
| 10 | 11 | | 1.5 | 300 |
| 15 | 11 | | 2.2 | 200 |
| 20 | 11 | | 2.9 | 150 |
| 30 | 12 | | 3.9 | 100 |
| 40 | 11 | | 4.9 | 75 |
| 50 | 10 | | 5.8 | 60 |
| 60 | 9 | | 6.5 | 50 |

| Tipo *Type* | Servizio *Duty* | Pn [ W ] | V [ V ] | I [ A ] | IC | FF | Mn [ Nm ] | n1 [ rpm ] | IP | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| EC035.120 | S2 9' | 55 | 12 | 8.0 | F | 1 | 0.18 | 3000 | 20 | 0.8 |
| EC035.240 | S2 9' | 55 | 24 | 4.0 | | | 0.18 | 3000 | | |

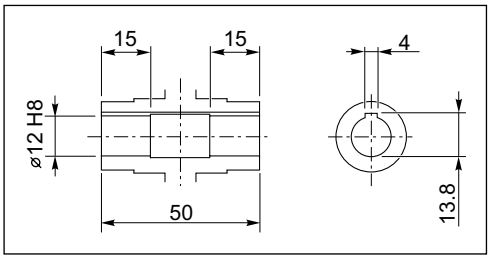
Azionamenti *Drives* → H2



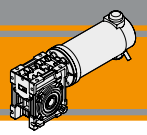




Albero lento cavo / *Hollow output shaft*




EC035: per montaggio encoder serve flangia AS204
*EC035: encoder assembling needs flange AS204*

Encoder → I2



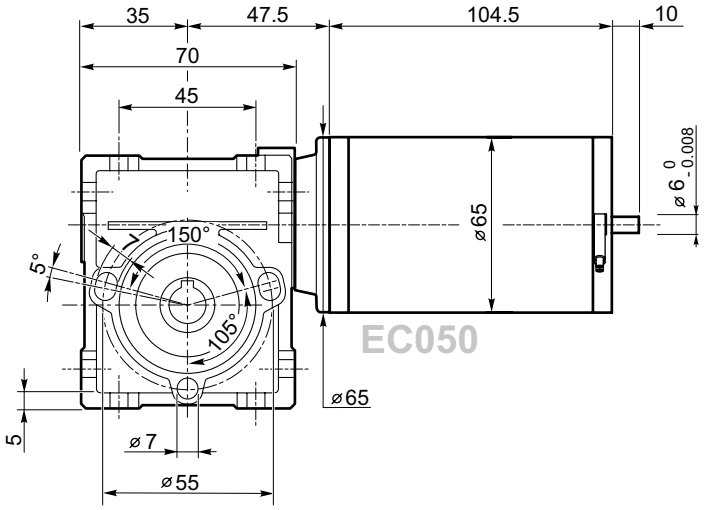
## CM026 con motore CC

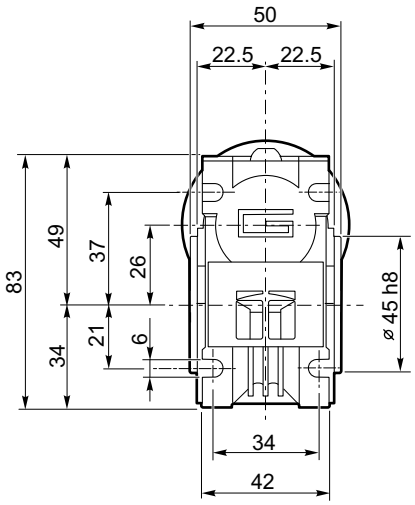
## *CM026 with DC motor*

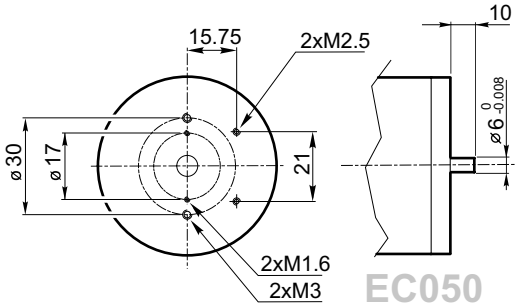
| CM026 $n_1$=3000 rpm | | | EC050 S2 12/24V | |
|---|---|---|---|---|
| ir | $M_n$ [Nm] | Kg | [Nm] | [rpm] |
| 5 | 10 | 0.8 | 1 | 600 |
| 7.5 | 11 | | 1.5 | 400 |
| 10 | 11 | | 2 | 300 |
| 15 | 11 | | 2.8 | 200 |
| 20 | 11 | | 3.6 | 150 |
| 30 | 12 | | 4.8 | 100 |
| 40 | 11 | | 6 | 75 |
| 50 | 10 | | 7 | 60 |
| 60 | 9 | | 8 | 50 |

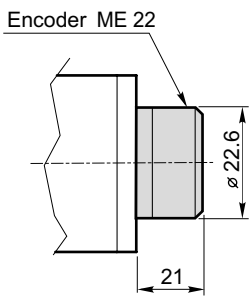
| Tipo *Type* | Servizio *Duty* | Pn [ W ] | V [ V ] | I [ A ] | IC | FF | Mn [ Nm ] | n1 [ rpm ] | IP | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| EC050.12E | S2 9' | 70 | 12 | 9.4 | F | 1 | 0.22 | 3000 | 20 | 1.2 |
| EC050.24E | S2 9' | 70 | 24 | 4.7 | | | 0.22 | | | |

Azionamenti *Drives* → H2

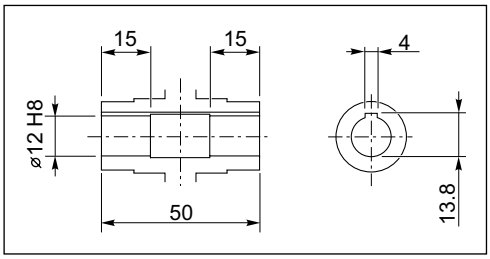



Albero lento cavo / *Hollow output shaft*




Encoder → I2

Freno / *Brake* → C12

## CM026 con motore CC

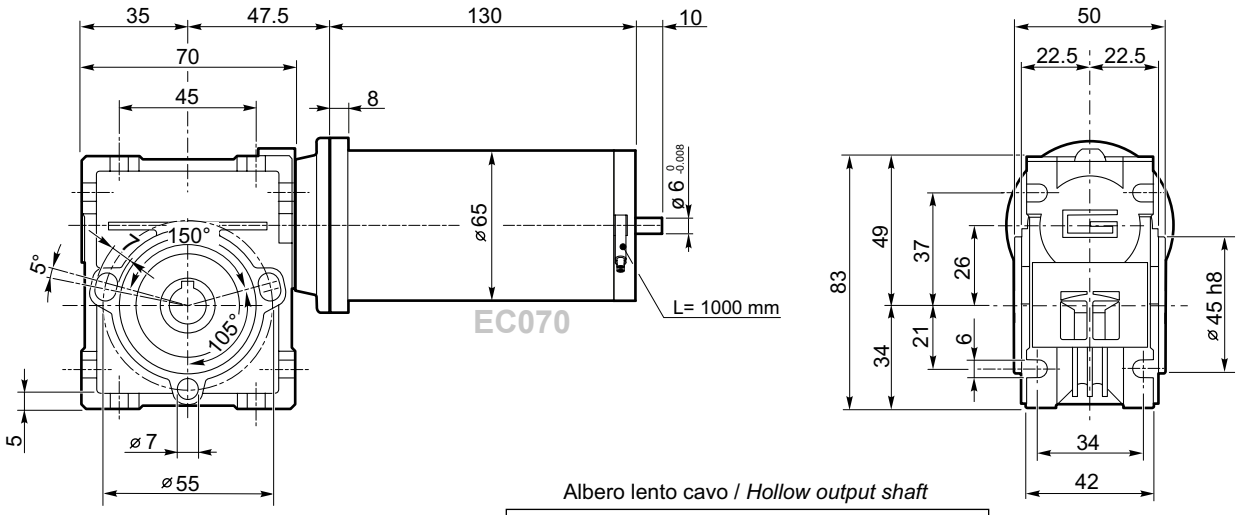
## *CM026 with DC motor*

| CM026 $n_1$=3000 rpm | | | EC070 | | | |
|---|---|---|---|---|---|---|
| | | | S1 12/24 V | | S2 12/24 V | |
| ir | $M_n$ [Nm] | Kg | [ Nm ] | [ rpm ] | [ Nm ] | [ rpm ] |
| 5 | 10 | 0.8 | 0.98 | 600 | 1.38 | 600 |
| 7.5 | 11 | | 1.44 | 400 | 2.03 | 400 |
| 10 | 11 | | 1.87 | 300 | 2.63 | 300 |
| 15 | 11 | | 2.74 | 200 | 3.86 | 200 |
| 20 | 11 | | 3.52 | 150 | 4.96 | 150 |
| 30 | 12 | | 4.82 | 100 | 6.79 | 100 |
| 40 | 11 | | 5.98 | 75 | 8.43 | 75 |
| 50 | 10 | | 7.04 | 60 | 9.92 | 60 |
| 60 | 9 | | 7.92 | 50 | 11.16 | 50 |

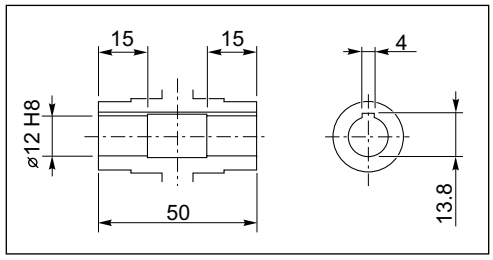
Nota: le caselle in colore grigio indicano il superamento della coppia massima sopportata dal riduttore per il servizio in S1.
*N.B.: boxes in grey indicate that maximum torque withstood by gear reducer for service in S1 is exceeded.*

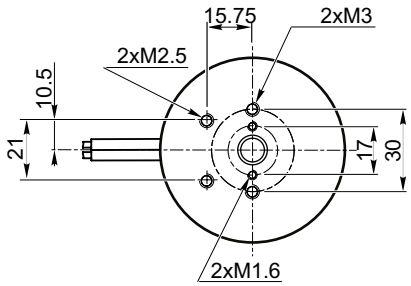
| Tipo *Type* | Servizio *Duty* | Pn [ W ] | V [ V ] | I [ A ] | IC | FF | Mn [ Nm ] | n1 [ rpm ] | IP | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| EC070.12E | S1 | 70 | 12 | 8.4 | F | 1 | 0.22 | 3000 | 20 | 1.7 |
| | S2 20' | 100 | | 11.8 | | | 0.31 | | | |
| EC070.24E | S1 | 70 | 24 | 4.2 | | | 0.22 | | | |
| | S2 20' | 100 | | 5.9 | | | 0.31 | | | |

Azionamenti *Drives* → H2

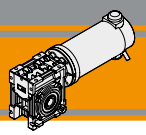



Albero lento cavo / *Hollow output shaft*




Freno / *Brake* → C12
Encoder → I2



## CM026 con motore CC

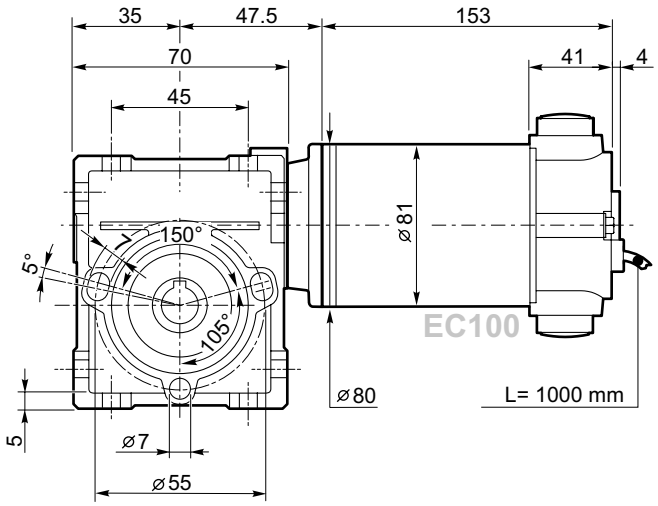
## *CM026 with DC motor*

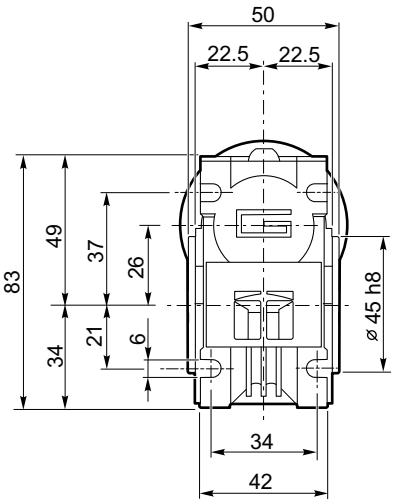
| CM026 $n_1$=2800 rpm | | | EC100 S1 12/24 V | | EC100 S2 12/24 V | |
|---|---|---|---|---|---|---|
| ir | $M_n$ [Nm] | Kg | [ Nm ] | [ rpm ] | [ Nm ] | [ rpm ] |
| 5 | 10 | 0.8 | 1.38 | 600 | 1.92 | 600 |
| 7.5 | 11 | | 2.03 | 400 | 2.81 | 400 |
| 10 | 11 | | 2.63 | 300 | 3.65 | 300 |
| 15 | 11 | | 3.86 | 200 | 5.36 | 200 |
| 20 | 11 | | 4.96 | 150 | 6.88 | 150 |
| 30 | 12 | | 6.79 | 100 | 9.42 | 100 |
| 40 | 11 | | 8.43 | 75 | 11.69 | 75 |
| 50 | 10 | | 9.92 | 60 | 13.76 | 60 |
| 60 | 9 | | 11.16 | 50 | 15.48 | 50 |

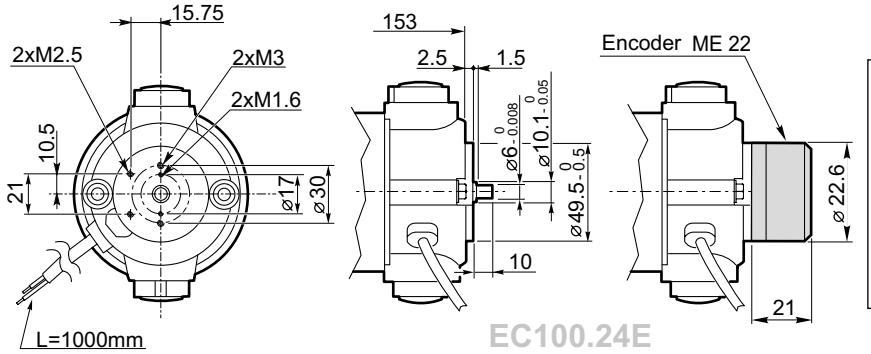
Nota: le caselle in colore grigio indicano il superamento della coppia massima sopportata dal riduttore per il servizio in S1.
*N.B.: boxes in grey indicate that maximum torque withstood by gear reducer for service in S1 is exceeded.*

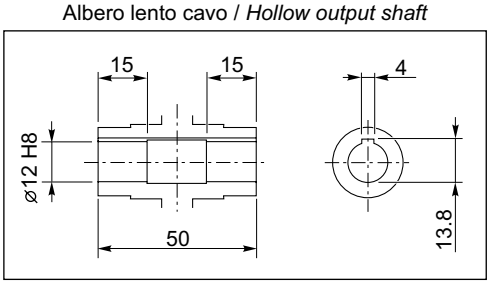
| Tipo *Type* | Servizio *Duty* | Pn [ W ] | V [ V ] | I [ A ] | IC | FF | Mn [ Nm ] | n1 [ rpm$^{1}$] | IP | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| EC100.120 | S1 | 100 | 12 | 12 | F | 1 | 0.31 | 3000 | 40 | 2.7 |
| | S2 25' | 140 | | 16.8 | | | 0.43 | | | |
| EC100.240 EC100.24E | S1 | 100 | 24 | 6 | | | 0.31 | | | |
| | S2 25' | 140 | | 8.4 | | | 0.43 | | 20 | |

Azionamenti *Drives* → H2




Freno / *Brake* → C12
Encoder → I2

## CM030 con motore CC

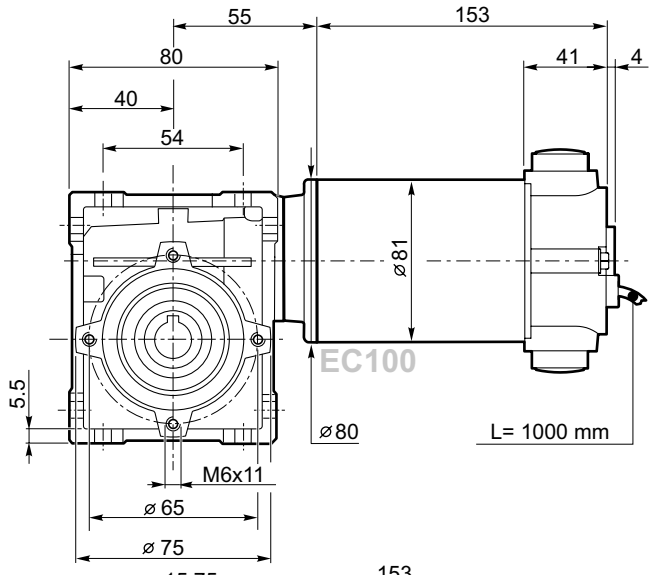
## *CM030 with DC motor*

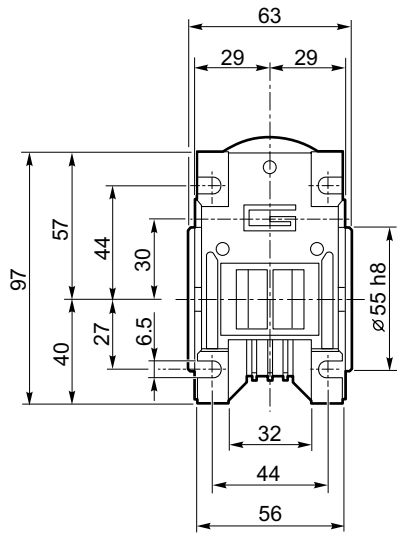
| CM030 $n_1$=3000 rpm | | | EC100 S1 12/24 V | | EC100 S2 12/24 V | |
|---|---|---|---|---|---|---|
| ir | $M_n$ [Nm] | Kg | [ Nm ] | [ rpm ] | [ Nm ] | [ rpm ] |
| 5 | 13 | 1.2 | 1.4 | 600 | 1.9 | 600 |
| 7.5 | 15 | | 2 | 400 | 2.8 | 400 |
| 10 | 16 | | 2.7 | 300 | 3.7 | 300 |
| 15 | 16 | | 3.9 | 200 | 5.4 | 200 |
| 20 | 14 | | 5 | 150 | 6.9 | 150 |
| 25 | 15 | | 6 | 120 | 8.3 | 120 |
| 30 | 18 | | 6.9 | 100 | 9.6 | 100 |
| 40 | 16 | | 8.7 | 75 | 12.1 | 75 |
| 50 | 15 | | 10 | 60 | 13.9 | 60 |
| 60 | 14 | | 11.5 | 50 | 16.0 | 50 |
| 80 | 12 | | 14.1 | 37.5 | 19.6 | 37.5 |
| 100 | 11 | | 16.1 | 30 | 22.3 | 30 |

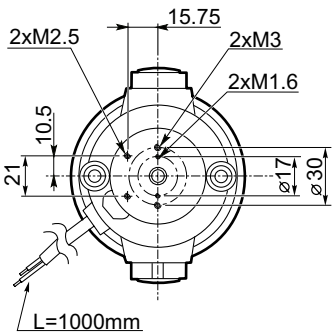
Nota: le caselle in colore grigio indicano il superamento della coppia massima sopportata dal riduttore per il servizio in S1.
*N.B.: boxes in grey indicate that maximum torque withstood by gear reducer for service in S1 is exceeded.*

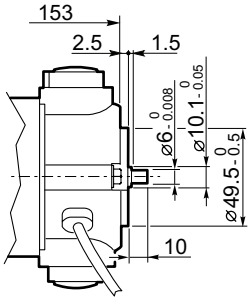
| Tipo *Type* | Servizio *Duty* | Pn [ W ] | V [ V ] | I [ A ] | IC | FF | Mn [ Nm ] | n1 [ rpm$^{-1}$] | IP | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| EC100.120 | S1 | 100 | 12 | 12 | F | 1 | 0.31 | 3000 | 40 | 2.7 |
| | S2 25' | 140 | | 16.8 | | | 0.43 | | | |
| EC100.240 EC100.24E | S1 | 100 | 24 | 6 | | | 0.31 | | | |
| | S2 25' | 140 | | 8.4 | | | 0.43 | | 20 | |

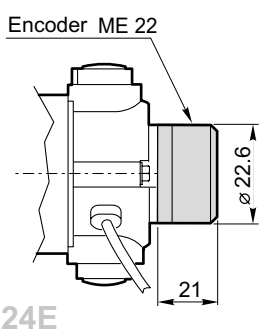
Azionamenti *Drives* H2

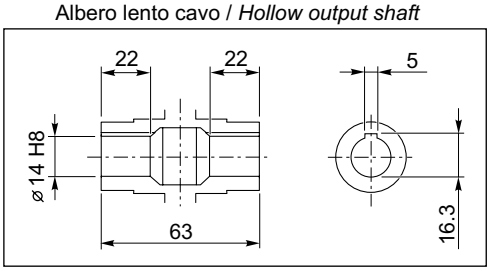


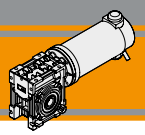




Freno / *Brake* C12

Encoder I2



## CM030 con motore CC

## *CM030 with DC motor*

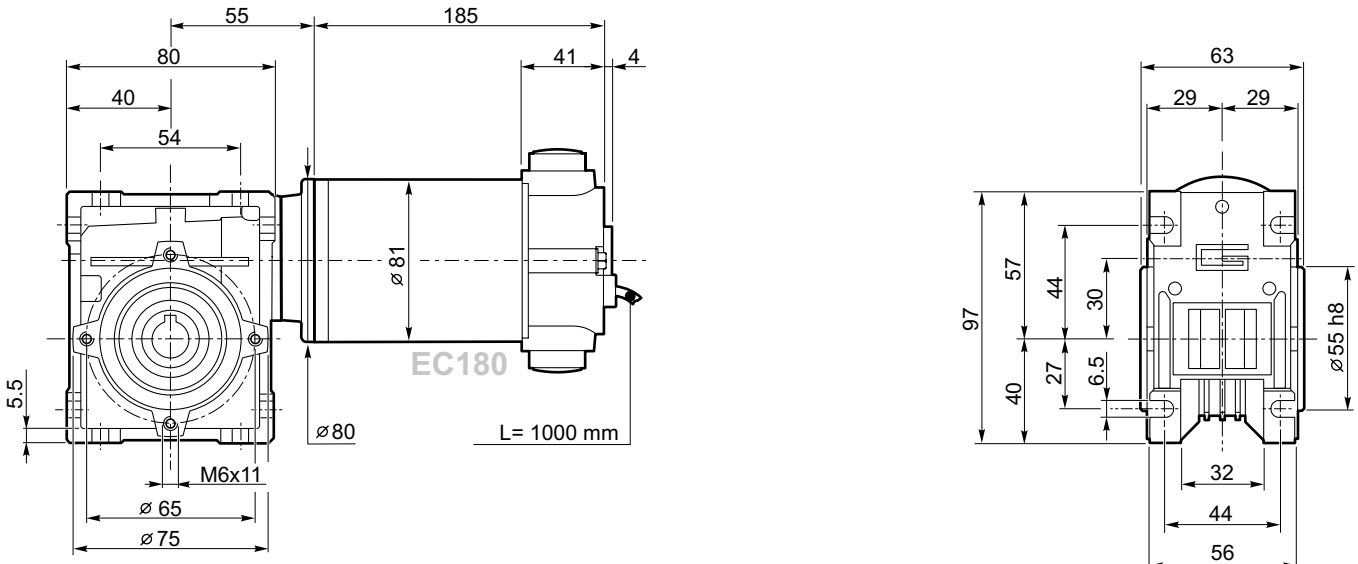
| CM030 $n_1$=3000 rpm | | | EC180 S1 12/24 V | | EC180 S2 12/24 V | |
|---|---|---|---|---|---|---|
| ir | $M_n$ [Nm] | Kg | [ Nm ] | [ rpm ] | [ Nm ] | [ rpm ] |
| 5 | 13 | 1.2 | 2.6 | 600 | 3.6 | 600 |
| 7.5 | 15 | | 3.7 | 400 | 5.2 | 400 |
| 10 | 16 | | 5.0 | 300 | 7.0 | 300 |
| 15 | 16 | | 7.2 | 200 | 10.1 | 200 |
| 20 | 14 | | 9.2 | 150 | 12.9 | 150 |
| 25 | 15 | | 11.0 | 120 | 15.5 | 120 |
| 30 | 18 | | 12.7 | 100 | 17.8 | 100 |
| 40 | 16 | | 16.0 | 75 | 22.5 | 75 |
| 50 | 15 | | 18.4 | 60 | 25.8 | 60 |
| 60 | 14 | | 21.1 | 50 | 29.7 | 50 |
| 80 | 12 | | 25.9 | 37.5 | 36.4 | 37.5 |
| 100 | 11 | | 29.6 | 30 | 41.5 | 30 |

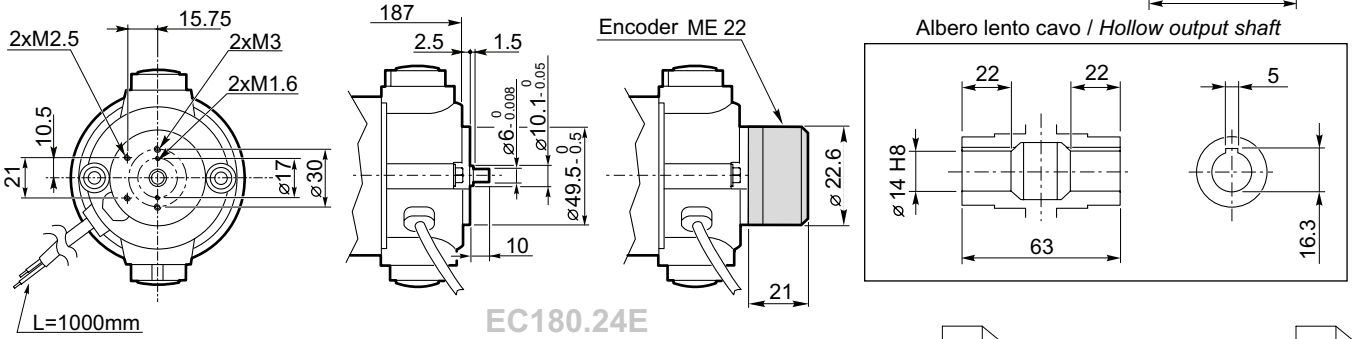
Nota: le caselle in colore grigio indicano il superamento della coppia massima sopportata dal riduttore per il servizio in S1.
*N.B.: boxes in grey indicate that maximum torque withstood by gear reducer for service in S1 is exceeded.*

Nota: su rapporti 60, 80 e 100 non è possibile montare motore EC180.24E
*Note: on ratio 60, 80 and 100 is not possible to assembly motor EC180.24E*

| Tipo *Type* | Servizio *Duty* | Pn [ W ] | V [ V ] | I [ A ] | IC | FF | Mn [ Nm ] | n1 [ rpm$^{-1}$] | IP | Kg |
|---|---|---|---|---|---|---|---|---|---|---|
| EC180.120 | S1 | 180 | 12 | 21.5 | F | 1 | 0.57 | 3000 | 40 | 3.4 |
| | S2 25' | 250 | | 30 | | | 0.8 | | | |
| EC180.240 EC180.24E | S1 | 180 | 24 | 10.8 | | | 0.57 | | | |
| | S2 25' | 250 | | 15 | | | 0.8 | | 20 | |

Azionamenti *Drives* → H2



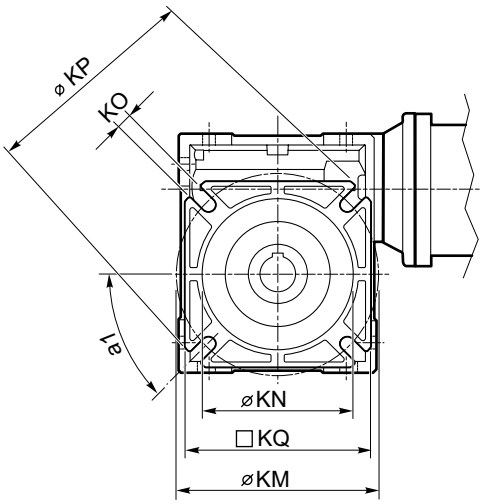



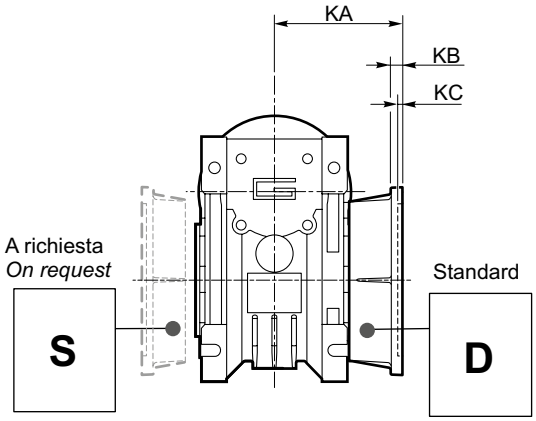

Freno / *Brake* → C12

Encoder → I2

## Dimensioni — *Dimensions*

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

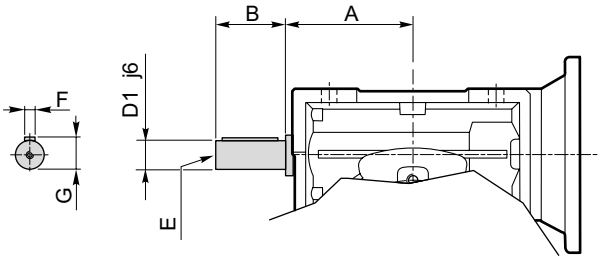



| CM | CM..F | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | a1 | KA | KB | KC | KM | KN H8 | KO | KP | KQ |
| 026 | 45° | 45 | 6 | 4.5 | 55-69 | 40 | 6.5(n.4) | 75 | 70 |
| 030 | 45° | 54.5 | 6 | 4 | 68 | 50 | 6.5(n.4) | 80 | 70 |

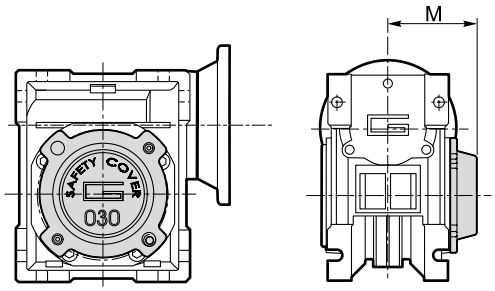
## Opzioni — *Options*

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

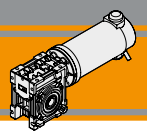



| | A | B | $D_1$ j6 | E | F | G |
|---|---|---|---|---|---|---|
| CM 030 | 45 | 20 | 9 | M4 | 3 | 10.2 |

### SC - *Safety cover*




| | M |
|---|---|
| CM 030 | 47 |

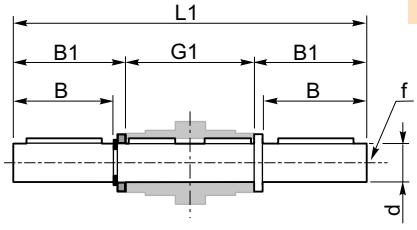


## Accessori — *Accessories*

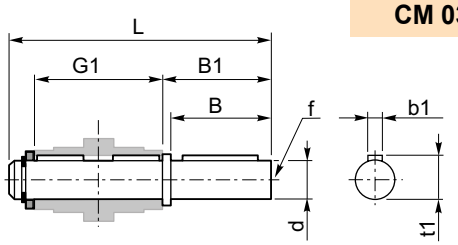
### Albero lento — *Output shaft*

**CM 030**

DZ

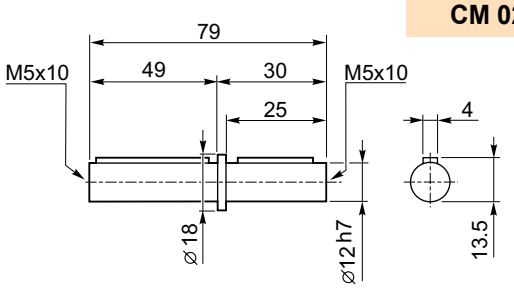



SZ



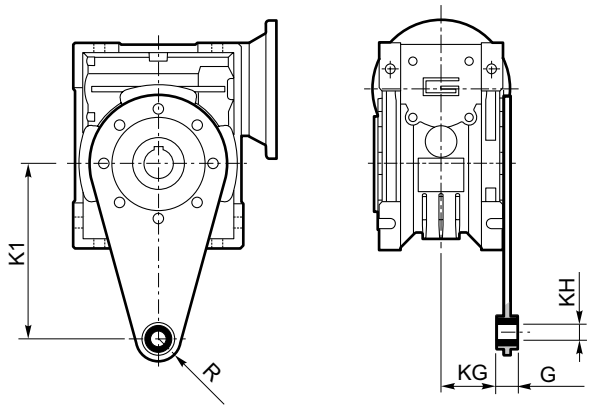

| | d h7 | B | B1 | G1 | L | L1 | f | b1 | t1 |
|---|---|---|---|---|---|---|---|---|---|
| **CM 030** | 14 | 30 | 32.5 | 63 | 102 | 128 | M6 | 5 | 16 |

**CM 026**




### Braccio di reazione — *Torque arm*

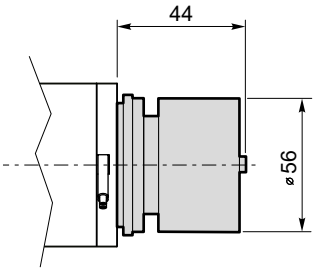
| | K1 | G | KG | KH | R |
|---|---|---|---|---|---|
| **CM 030** | 85 | 14 | 23 | 8 | 15 |



**Freno** ***Brake***

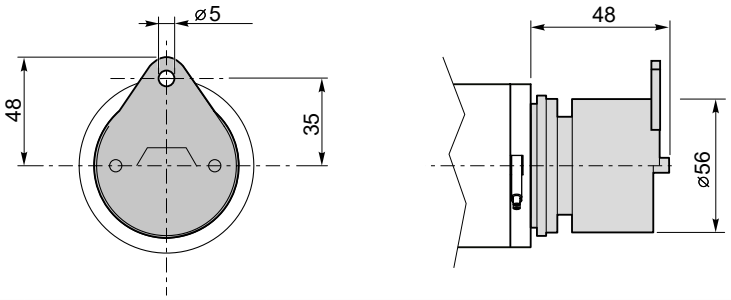
## Freno / *Brake*

### EC050...BR
### EC070...BR



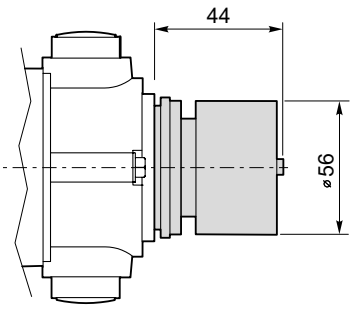

## Freno con leva di sblocco/ *Brake with hand release*

### EC050...BRL
### EC070...BRL

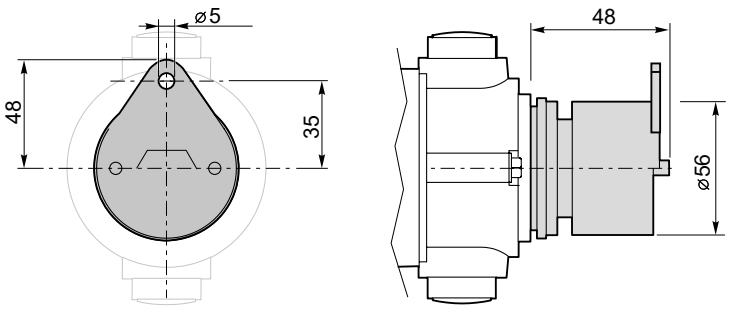



| | **Pn** [W] | **V** [V] | **Mn** [Nm] | **$n_1$** [$min^{-1}$] |
|---|---|---|---|---|
| **Caratteristiche del freno / *Break features*** | 14 | 12<br>24 | 2 | 3000 |

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




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




| | **Pn** [W] | **V** [V] | **Mn** [Nm] | **$n_1$** [$min^{-1}$] |
|---|---|---|---|---|
| **Caratteristiche del freno / *Break features*** | 14 | 12<br>24 | 2 | 3000 |

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