

Micro motoriduttori brushless CC epicicloidali

Micro brushless DC planetary gearmotors

Caratteristiche tecniche

Technical features

Le caratteristiche principali dei motoriduttori epicicloidali brushless CC della serie P-PM LN sono:

- Alimentazione in bassa tensione 24 V
- Possibilità di montaggio encoder
- Coppie motori disponibili 0.12 Nm a 0,25 Nm
- Lubrificazione permanente a grasso

Soluzione P:

- Completamente in metallo
- Doppio cuscinetto su albero di uscita

Soluzione PM LN:

- Versione bassa rumorosità della versione P

The main features of brushless DC planetary gearmotors range P-PM LN series are:

- Low voltage power supply 24 V
- Suitable for encoder assembly
- Motor torque ratings available from 0.12 Nm up to 0,25 Nm
- Permanent grease long life lubrication

P solution:

- Completely made out of metal
- Double ball bearing on output shaft


PM LN solution:

- Low noise version of P solution

Designazione

Classification

| RIDUTTORE / GEARBOX | | | | | MOTORE / MOTOR | | |
|---------------------|-------------------|-----------------------------------|------------------------------------|---------------------|----------------|---------------------|--------------------|
| P | 42 | 2 | 46 | - | BLS012.240 | 24V | E |
| Tipo Type | Grandezza Size | Stadi riduttore Gearbox stages | Rapporto in Ratio in | Versione Version | Tipo Type | Tensione Voltage | Opzioni Options |
| P | 42 | 1 | Vedere tabelle See tables | - | BLS012.240 | 24V | - |
| PM | | 2 | | LN | BLS018.240 | 24V | - |
| | | 3 | | | BLS025.24E | 24V | Encoder |



Simbologia

Symbols

| | | | | |
|----------------|---|----------------|-------|---|
| Ns | n° stadi / No. stages | Pn | [W] | Potenza nominale / Nominal power |
| in | rapporto nominale / nominal ratio | V | [V] | Tensione / Voltage |
| ir | rapporto reale / real ratio | I | [A] | Assorbimento / Current |
| M _n | [Nm] coppia in uscita in funzionamento continuativo S1 output torque for continuous operation S1 | IC | | Classe di isolamento termico / Thermal insulation class |
| Rd | rendimento dinamico / efficiency | FF | | Fattore di forma / Form factor |
| R ₂ | [N] massimo carico radiale al centro dell'albero uscita max. radial load at output shaft centre | Mn | [Nm] | Coppia / Torque |
| A ₂ | [N] massimo carico assiale / max. axial load | n ₁ | [Rpm] | Giri / Speed |
| | | IP | | Grado di protezione / Enclosure protection |
| | | Kg | | Peso / Weight |

Lubrificazione

Lubrication

I riduttori epicicloidali sono lubrificati in modo permanente, non richiedono quindi ulteriore manutenzione.

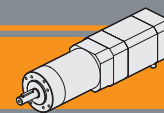
Questo gli consente di essere installati praticamente ovunque. Temperatura ambiente 0 ÷ 40 °C (in assenza di congelamento ed in assenza di condensa).

Per temperature diverse, contattare nostro UT.

Planetary gearboxes are life-time lubricated with grease, therefore they are maintenance free.

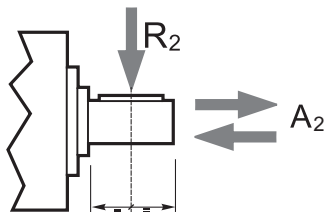
They can be installed in any location. Ambient temperature 0 ÷ 40 °C (in the absence of freezing and condensation).

For temperature outside this range please contact our technical dept.



Carichi radiali

Radial loads



| Ns | Carichi Radiali R_2 [N] / Radial Load R_2 [N] |
|----|---|
| | P42 - PM 42 LN |
| 1 | 160 |
| 2 | 230 |
| 3 | 300 |

| Ns | Carichi Assiali A_2 [N] / Axial Load A_2 [N] |
|----|--|
| | P42 - PM 42 LN |
| 1 | 50 |
| 2 | 80 |
| 3 | 110 |

Rapporti

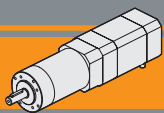
Ratios

| P 42 | | |
|------------|---------------|--------------|
| Ns | in | ir |
| 1 | 4 | 3.7 |
| | 4 | 4.28 |
| | 5 | 5.18 |
| | 7 | 6.75 |
| 2 | 14 | 13.73 |
| | 16 | 15.88 |
| | 18 | 18.36 |
| | 19 | 19.2 |
| | 22 | 22.2 |
| | 25 | 25.01 |
| | 27 | 26.85 |
| | 29 | 28.93 |
| | 35 | 34.97 |
| | 46 | 45.56 |
| 3 | 51 | 50.89 |
| | 59 | 58.85 |
| | 68 | 68.06 |
| | 71 | 71.16 |
| | 79 | 78.71 |
| | 93 | 92.7 |
| | 95 | 95.17 |
| | 100 | 99.5 |
| | 107 | 107.2 |
| | 115 | 115.07 |
| | 124 | 123.97 |
| | 130 | 129.62 |
| | 139 | 139.13 |
| | 150 | 149.9 |
| 169 | 168.84 | |
| 181 | 181.24 | |
| 195 | 195.26 | |
| 236 | 236.09 | |
| 308 | 307.54 | |

| BASSA RUMOROSITA' / LOW NOISE | | |
|-------------------------------|--------|--------|
| PM 42 LN (*) | | |
| Ns | in | ir |
| 1 | 4 | 3.65 |
| | 5 | 4.59 |
| | 5 | 5.36 |
| | 7 | 6.55 |
| 2 | 9 | 8.63 |
| | 14 | 13.53 |
| | 16 | 15.65 |
| | 17 | 17.00 |
| | 19 | 18.92 |
| | 23 | 22.96 |
| | 25 | 24.65 |
| | 28 | 27.76 |
| | 28 | 28.05 |
| | 34 | 33.92 |
| 3 | 45 | 44.69 |
| | 58 | 58.22 |
| | 50 | 50.16 |
| | 58 | 58.01 |
| | 67 | 67.08 |
| | 70 | 70.13 |
| | 81 | 81.11 |
| | 91 | 91.36 |
| | 98 | 98.07 |
| | 102 | 101.89 |
| | 106 | 105.65 |
| | 115 | 114.77 |
| | 123 | 123.20 |
| | 128 | 127.74 |
| | 137 | 136.99 |
| | 145 | 145.36 |
| | 166 | 166.40 |
| | 176 | 175.75 |
| | 192 | 191.54 |
| 232 | 231.59 | |
| 302 | 301.68 | |
| 393 | 392.98 | |

(*) PM42 LN : disponibili a richiesta / on request

Rapporti preferenziali
Preferred ratios



Micro motoriduttori brushless CC epicicloidali

Micro brushless DC planetary gearmotors

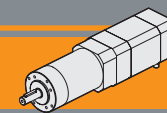
P42 con motore brushless CC

P42 with DC brushless motor

| P42 | | | | | | | | BLS012.240 | | | | BLS018.240 | | | |
|-----|-----|---------------|------------------------|------|-----------------------|-----------------------|-----|--|---------|--------------------------------------|---------|--|---------|--------------------------------------|---------|
| | | | | | | | | Coppia nominale Rated torque 24V | | Coppia massima Peak torque 24V | | Coppia nominale Rated torque 24V | | Coppia massima Peak torque 24V | |
| Ns | in | ir | M _n [Nm] | Rd | R ₂ [N] | A ₂ [N] | Kg | [Nm] | [rpm] | [Nm] | [rpm] | [Nm] | [rpm] | [Nm] | [rpm] |
| 1 | 4 | 3.70 | 3 | 0.8 | 160 | 50 | 0.4 | 0.37 | 1081 | 0.74 | 1081 | 0.55 | 1081 | 1.10 | 1081 |
| | 7 | 6.75 | | | | | | 0.68 | 593 | 1.35 | 593 | 1.00 | 593 | 2.00 | 593 |
| 2 | 14 | 13.73 | 7.5 | 0.75 | 230 | 80 | 0.5 | 1.29 | 291 | 2.57 | 291 | 1.91 | 291 | 3.81 | 291 |
| | 25 | 25.01 | | | | | | 2.34 | 160 | 4.69 | 160 | 3.47 | 160 | 6.94 | 160 |
| | 46 | 45.56 | | | | | | 4.27 | 88 | 8.54 | 88 | 6.32 | 88 | 12.64 | 88 |
| 3 | 68 | 68.06 | 15 | 0.7 | 300 | 110 | 0.6 | 5.96 | 59 | 11.91 | 59 | 8.81 | 59 | 17.63 | 59 |
| | 93 | 92.70 | | | | | | 8.11 | 43 | 16.22 | 43 | 12.00 | 43 | 24.01 | 43 |
| | 169 | 168.84 | | | | | | 14.77 | 24 | 29.55 | 24 | 21.86 | 24 | 43.73 | 24 |
| | 308 | 307.54 | | | | | | 26.91 | 13 | 53.82 | 13 | 39.83 | 13 | 79.65 | 13 |

Nota: le caselle in colore grigio indicano il superamento della coppia massima sopportata dal riduttore per il servizio in S1.
Per vedere tutti i rapporti di riduzione disponibili, vedere tabella a pag. C3

N.B.: boxes in grey indicate that maximum torque withstood by gear reducer for service in S1 is exceeded.
See the table on page C3 for all available ratios.

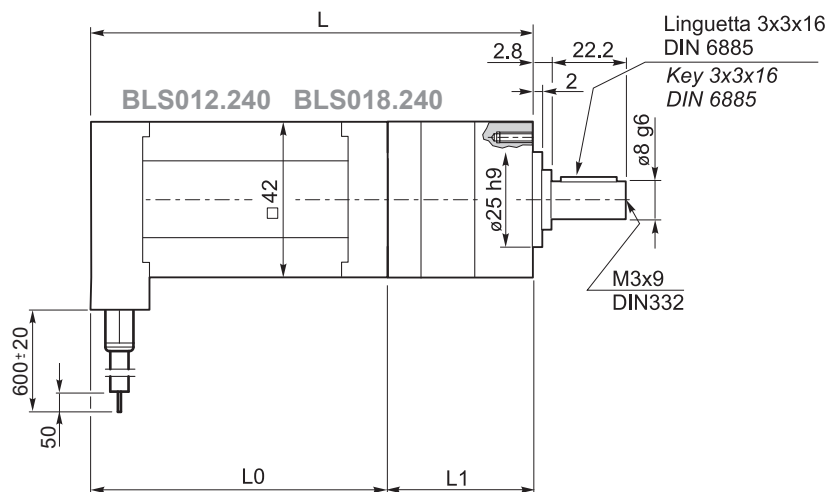
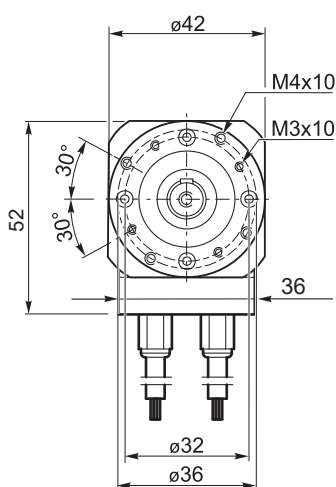


P42 con motore brushless CC

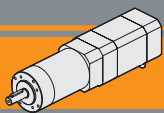
P42 with DC brushless motor

| Tipo Type | Numero di poli Number of poles | Numero di fasi Number of phase | Tensione Rated voltage [V] | Numero di giri Rated speed [rpm] | Coppia nominale Rated torque [Nm] | Potenza nominale Rated power [W] |
|------------|-----------------------------------|---------------------------------------|-------------------------------|------------------------------------|-------------------------------------|------------------------------------|
| BLS012.240 | 8 | 3 | 24 | 4000 | 0.125 | 52.5 |
| BLS018.240 | 8 | 3 | 24 | 4000 | 0.185 | 77.5 |
| Tipo Type | Coppia massima Peak torque [Nm] | Corrente nominale Rated current [A] | Resistenza Resistance [ohm] | Induttanza Inductance [mH] | Corrente massima Peak current [A] | Peso Weight [kg] |
| BLS012.240 | 0.25 | 3.5 | 0.8 | 1.2 | 7.0 | 0.45 |
| BLS018.240 | 0.37 | 5.0 | 0.55 | 0.8 | 10.0 | 0.65 |

Azionamenti Drives



| P42 | Ns | L1 | BLS012.240 | | | BLS018.240 | | |
|-----|----|----|------------|-----|------|------------|-----|------|
| | | | L0 | L | Kg | L0 | L | Kg |
| P42 | 1 | 67 | 71 | 138 | 0.70 | 91 | 158 | 0.90 |
| | 2 | 80 | | 151 | 0.81 | | 171 | 1.01 |
| | 3 | 93 | | 164 | 0.92 | | 184 | 1.12 |



Micro motoriduttori brushless CC epicycloidali

Micro brushless DC planetary gearmotors

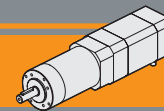
P42 con motore brushless CC

P42 with DC brushless motor

| P42 | | | | | | | | BLS025.24E | | | |
|-----|-----|--------|------------------------|------|-----------------------|-----------------------|-----|--|---------|--------------------------------------|---------|
| | | | | | | | | Coppia nominale Rated torque 24V | | Coppia massima Peak torque 24V | |
| Ns | in | ir | M _n [Nm] | Rd | R ₂ [N] | A ₂ [N] | Kg | [Nm] | [rpm] | [Nm] | [rpm] |
| 1 | 4 | 3.7 | 3 | 0.8 | 160 | 50 | 0.4 | 0.74 | 1081 | 1.48 | 1081 |
| | 7 | 6.75 | | | | | | 1.35 | 593 | 2.70 | 593 |
| 2 | 14 | 13.73 | 7.5 | 0.75 | 230 | 80 | 0.5 | 2.57 | 291 | 5.14 | 291 |
| | 25 | 25.01 | | | | | | 4.70 | 160 | 9.40 | 160 |
| | 46 | 45.56 | | | | | | 8.54 | 88 | 17.08 | 88 |
| 3 | 68 | 68.06 | 15 | 0.7 | 300 | 110 | 0.6 | 11.90 | 59 | 23.80 | 59 |
| | 93 | 92.7 | | | | | | 16.20 | 43 | 32.40 | 43 |
| | 169 | 168.84 | | | | | | 29.55 | 24 | 59.10 | 24 |
| | 308 | 307.54 | | | | | | 53.82 | 13 | 107.64 | 13 |

Nota: le caselle in colore grigio indicano il superamento della coppia massima sopportata dal riduttore per il servizio in S1.
Per vedere tutti i rapporti di riduzione disponibili, vedere tabella a pag. E3

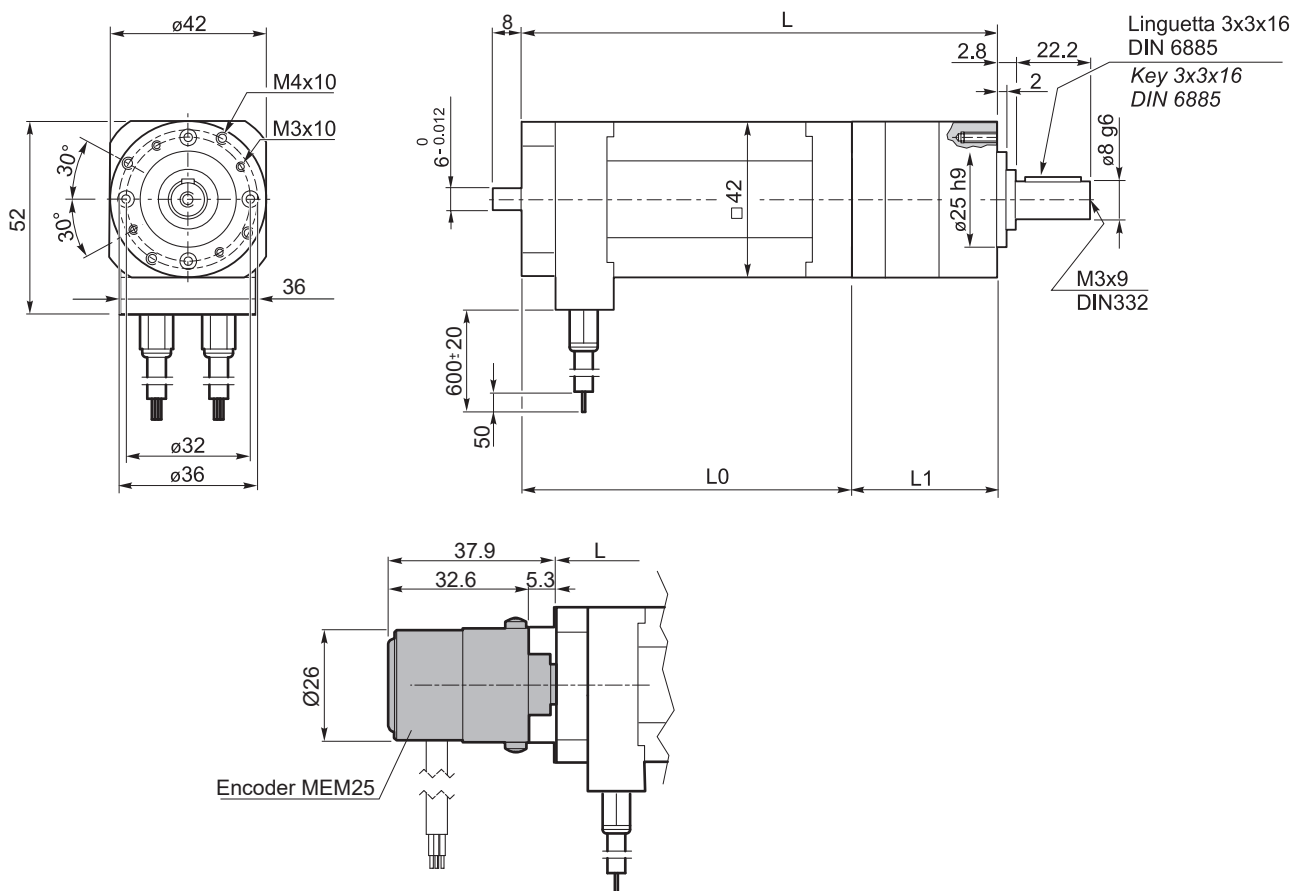
*N.B.: boxes in grey indicate that maximum torque withstood by gear reducer for service in S1 is exceeded.
See the table on page E3 for all available ratios.*



P42 con motore brushless CC

P42 with DC brushless motor

| Tipo Type | Numero di poli Number of poles | Numero di fasi Number of phase | Tensione Rated voltage [V] | Numero di giri Rated speed [rpm] | Coppia nominale Rated torque [Nm] | Coppia massima Peak torque [Nm] |
|--------------|--|---|-------------------------------------|--|---|---|
| BLS025.24E | 8 | 3 | 24 | 4000 | 0.25 | 0.50 |
| | Potenza nominale Rated power [W] | Corrente nominale Rated current [A] | Resistenza Resistance [ohm] | Induttanza Inductance [mH] | Corrente massima Peak current [A] | Peso Weight [kg] |
| | 105 | 7 | 0.3 | 0.5 | 14 | 0.8 |



Brushless
DC - IP66
P - PM

| P42 | Ns | L1 | BL025.24E | | |
|-----|----|----|-----------|-----|------|
| | | | L0 | L | kg |
| | 1 | 67 | 118 | 185 | 1.05 |
| | 2 | 80 | 118 | 198 | 1.16 |
| | 3 | 93 | 118 | 211 | 1.27 |



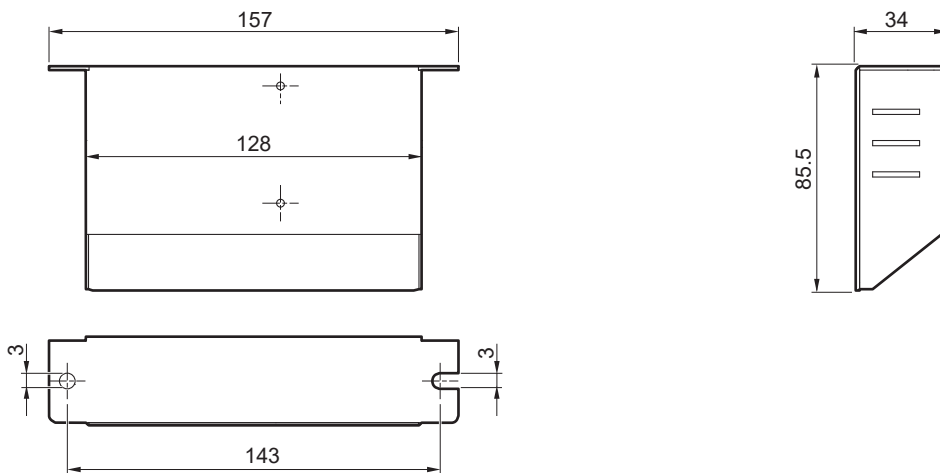
BLD07-IT

**AZIONAMENTO 4Q
PER MOTORI BRUSHLESS**

**DRIVE 4Q
FOR BRUSHLESS MOTORS**

Dimensioni

Dimensions



Collegamenti

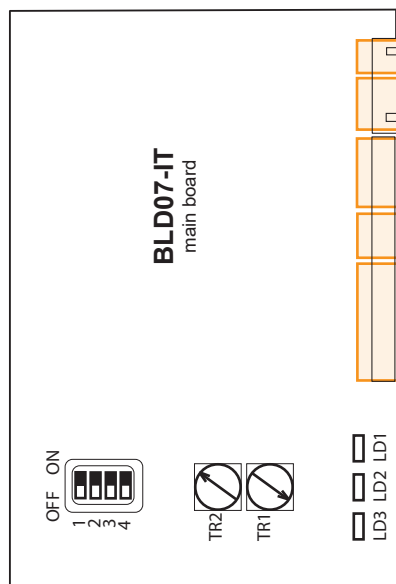
Connections

L'azionamento BLD07-IT è dotato di:

- connettore estraibile a 5 morsetti per la parte di potenza;
- tre connettori estraibili, per un totale di 16 morsetti, per la gestione dei segnali in ingresso ed in uscita.

The BLD07-IT drive is equipped with:

- removable connector with 5 terminals for the power part;
- 3 removable connectors, for a total of 16 terminals, for the management of the input and output signal.



| | | |
|------------|-----------------------------|------------------------------|
| V+ | Alimentazione: positivo Vcc | Voltage supply: positive Vdc |
| GND | Alimentazione: negativo | Voltage supply: negative |

| | | |
|----------|---------------|---------------|
| U | Motore fase U | Motor phase U |
| V | Motore fase V | Motor phase V |
| W | Motore fase W | Motor phase W |

| | | |
|-----------|---------------------------------------|------------------------------|
| H- | Alimentazione sensore Hall (negativo) | Sensor Hall (negative) |
| HW | Sensore Hall: fase W | Hall sensor phase W |
| HV | Sensore Hall: fase V | Hall sensor phase V |
| HU | Sensore Hall: fase U | Hall sensor phase U |
| H+ | Alimentazione sensore Hall (+12V) | Sensor Hall: positive (+12V) |

| | | |
|-------------|---------------------------|-----------------------|
| +10V | Potenziometro esterno 10k | External pot. 10k |
| SIG | Segnale analogico 0/+10V | Analogo Signal 0/+10V |
| GND | | |

| | | |
|--------------|---|---|
| FREQ | Uscita onda quadra proporzionale alla velocità (NPN open coll.) | Square wave output proportional to the speed (NPN Open coll.) |
| FAULT | Uscita di allarme (NPN open coll.) | Alarm output (NPN open coll.) |
| +12V | Sorgente tensione | Voltage source |
| F/R | Senso di marcia | Selection of the direction |
| R/S | Avvio/arresto | Start/stop |
| GND | Comune R/S e F/R | R/S and F/R Common for commands |
| IN1 | Input digitale | Digital input |
| IN2 | Input digitale | Digital input |



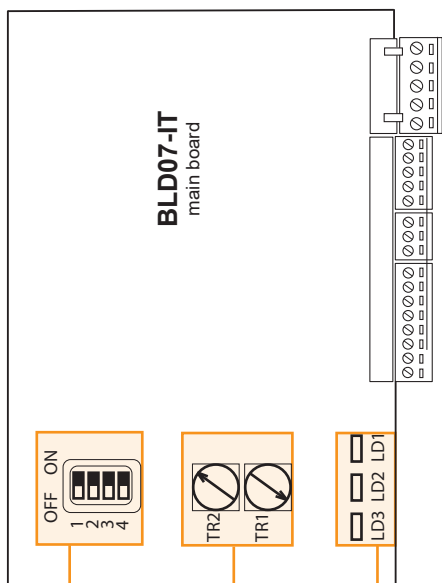
BLD07-IT

**AZIONAMENTO 4Q
PER MOTORI BRUSHLESS**

**DRIVE 4Q
FOR BRUSHLESS MOTORS**

Collegamenti

Connections



| Led | | |
|--|------------------------------------|---|
| LD1 | Verde - power ON | Green - power ON |
| LD2 | Rosso - allarme in corso | Red - alarm |
| LD3 | Giallo - superamento corrente max. | Yellow - the drive is in limit of current |
| Presenti 2 Leds per la chiusura dei contatti R/S e F/R | | 2 LEDs for the closing of R/S and F/R |

| Trimmer | | |
|------------|---|--|
| TR1 | Regolazione velocità (crescente con rotazione oraria) | External speed pot (clockwise to increase) |
| TR2 | Limitazione corrente (crescente con rotazione antioraria) | Current limitation (counter clockwise to increase) |

| Dip Switch | | |
|------------|--|--|
| 1 | OFF = Controllo velocità da pot. interno TR1 | Internal speed pot TR1 |
| | ON = Controllo velocità da pot. esterno o segnale analogico 0/+10V | External speed pot or analog signal 0/+10V |
| 2 | OFF = Funzionamento in anello chiuso | Operating in closed loop |
| | ON = Funzionamento in anello aperto | Operating in open loop |
| 3 | OFF = Rampe rapide (0.1 s) | Fast Acceleration (about 0.1 sec) |
| | ON = Rampe lente (1.0 s) | Slow acceleration (about 1.0 sec) |
| 4 | OFF = per motori a 4 poli | 4 poles motors |
| | ON = per motori a 8 poli | 8 poles motors |