

## Scheda tecnica dati

## Informazioni sulla serie di encoder

Cod. art.: 90000350

EI30-P 058 CA

### Contenuto

- Dati tecnici
- Codice articoli



La figura può variare

|                                    |                                  |
|------------------------------------|----------------------------------|
| Encoder_Serie                      | EI 058 CA                        |
| Encoder_Principio di base          | incrementale                     |
| Encoder_Principio di funzionamento | interpolato otticamente          |
| Encoder_Diametro della flangia     | Ø 58 mm                          |
| Encoder_Albero pieno/Albero cavo   | Albero cavo                      |
| Encoder_Dametro dell'albero        | Ø 10 mm                          |
|                                    | Ø 6 mm                           |
|                                    | Ø 8 mm                           |
| Encoder_Tensione di alimentazione  | 10 ... 30 V CC                   |
|                                    | 4,75 ... 5,5 V CC                |
|                                    | 5 ... 30 V DC                    |
| Encoder_Circuito di uscita         | 1 Vss Sin/Cos                    |
|                                    | HTL                              |
|                                    | HTL, inv.                        |
|                                    | TTL                              |
|                                    | TTL, compatibile con RS422, inv. |
| Encoder_Numero di impulsi          | 10000 I/U                        |
|                                    | 10240 I/U                        |
|                                    | 12000 I/U                        |
|                                    | 12500 I/U                        |
|                                    | 1440 I/U                         |
|                                    | 15000 I/U                        |
|                                    | 16384 I/U                        |
|                                    | 20000 I/U                        |
|                                    | 20480 I/U                        |
|                                    | 25000 I/U                        |
|                                    | 2880 I/U                         |
|                                    | 3000 I/U                         |
|                                    | 3600 I/U                         |
|                                    | 4000 I/U                         |
|                                    | 5760 I/U                         |
|                                    | 6000 I/U                         |
|                                    | 7200 I/U                         |
|                                    | 7500 I/U                         |
|                                    | 8000 I/U                         |
|                                    | 9182 I/U                         |

## Dati tecnici

## Encoder EI30 P 058 CA

## Resolution

|                           |                 |
|---------------------------|-----------------|
| Pulses per revolution PPR | up to 25000 PPR |
|---------------------------|-----------------|

## Mechanical Data

|                  |                                  |
|------------------|----------------------------------|
| Flange           | clamping flange                  |
| Flange material  | aluminum                         |
| Housing material | die cast aluminum, powder coated |
| Flange diameter  | Ø 58 mm [Ø 2.283"]               |
| Cam mounting     | pitch 69 mm [2.717 inches]       |

## Shaft(s)

|                 |                                                        |
|-----------------|--------------------------------------------------------|
| Shaft material  | stainless steel                                        |
| Starting torque | approx. 1 Ncm [1.416 in-ozf]<br>at ambient temperature |

|              |                   |
|--------------|-------------------|
| <b>Shaft</b> | Ø 6 mm [Ø 0.236"] |
|--------------|-------------------|

|              |                   |
|--------------|-------------------|
| Shaft length | L: 10 mm [0.394"] |
|--------------|-------------------|

|                                       |                   |
|---------------------------------------|-------------------|
| Max. Permissible shaft loading radial | 220 N [22.433 kp] |
|---------------------------------------|-------------------|

|                                      |                   |
|--------------------------------------|-------------------|
| Max. Permissible shaft loading axial | 120 N [12.236 kp] |
|--------------------------------------|-------------------|

|              |                   |
|--------------|-------------------|
| <b>Shaft</b> | Ø 7 mm [Ø 0.276"] |
|--------------|-------------------|

|              |                   |
|--------------|-------------------|
| Shaft length | L: 19 mm [0.748"] |
|--------------|-------------------|

|                                       |                 |
|---------------------------------------|-----------------|
| Max. Permissible shaft loading radial | 80 N [8.157 kp] |
|---------------------------------------|-----------------|

|                                      |                 |
|--------------------------------------|-----------------|
| Max. Permissible shaft loading axial | 50 N [5.098 kp] |
|--------------------------------------|-----------------|

|              |                   |
|--------------|-------------------|
| <b>Shaft</b> | Ø 8 mm [Ø 0.315"] |
|--------------|-------------------|

|              |                   |
|--------------|-------------------|
| Shaft length | L: 20 mm [0.787"] |
|--------------|-------------------|

|                                       |                   |
|---------------------------------------|-------------------|
| Max. Permissible shaft loading radial | 220 N [22.433 kp] |
|---------------------------------------|-------------------|

|                                      |                   |
|--------------------------------------|-------------------|
| Max. Permissible shaft loading axial | 120 N [12.236 kp] |
|--------------------------------------|-------------------|

|              |                                  |
|--------------|----------------------------------|
| <b>Shaft</b> | Ø 9.525 mm [Ø 3/8"] Order No: 4Z |
|--------------|----------------------------------|

|              |                     |
|--------------|---------------------|
| Shaft length | L: 22.3 mm [0.878"] |
|--------------|---------------------|

|                                       |                   |
|---------------------------------------|-------------------|
| Max. Permissible shaft loading radial | 220 N [22.433 kp] |
|---------------------------------------|-------------------|

|                                      |                   |
|--------------------------------------|-------------------|
| Max. Permissible shaft loading axial | 120 N [12.236 kp] |
|--------------------------------------|-------------------|

|              |                    |
|--------------|--------------------|
| <b>Shaft</b> | Ø 10 mm [Ø 0.394"] |
|--------------|--------------------|

|              |                   |
|--------------|-------------------|
| Shaft length | L: 20 mm [0.787"] |
|--------------|-------------------|

|                                       |                   |
|---------------------------------------|-------------------|
| Max. Permissible shaft loading radial | 220 N [22.433 kp] |
|---------------------------------------|-------------------|

|                                      |                   |
|--------------------------------------|-------------------|
| Max. Permissible shaft loading axial | 120 N [12.236 kp] |
|--------------------------------------|-------------------|

|        |                             |
|--------|-----------------------------|
| Advice | Ø 12 mm [0.472"] on request |
|--------|-----------------------------|

## Bearings

|                       |                                                                                                                                                                    |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bearings type         | 2 precision ball bearings                                                                                                                                          |
| Nominale service life | 1 x 10 <sup>9</sup> revs. at 100 % rated shaft load<br>1 x 10 <sup>10</sup> revs. at 40 % rated shaft load<br>11 x 10 <sup>11</sup> revs. at 20 % rated shaft load |
| Max. operating speed  | 8000 rpm                                                                                                                                                           |

## Machinery Directive: basic data safety integrity level

|                              |                                                                  |
|------------------------------|------------------------------------------------------------------|
| MTTF <sub>d</sub>            | 200 a                                                            |
| Mission time (TM)            | 25 a                                                             |
| Nominale service life (L10h) | 1 x 10 <sup>11</sup> revs. at 20 % rated shaft load and 8000 rpm |
| Diagnostic coverage (DC)     | 0 %                                                              |

## Electrical Data

|                                  |                                                                                                                                                                           |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power supply/Current consumption | 4,75 VDC up to 5,5 VDC: typ. 70 mA (100 mA only C3, D3)                                                                                                                   |
| Power supply/Current consumption | 5 VDC up to 30 VDC: typ. 70 mA                                                                                                                                            |
| Power supply/Current consumption | 10 VDC up to 30 VDC: typ. 70 mA (100 mA only C2, C4, D4)                                                                                                                  |
| Operating principle              | optical                                                                                                                                                                   |
| Output circuit                   | TTL<br>TTL, RS422 compatible, inv.<br>HTL<br>HTL, inv. 1 Vpp sin/cos                                                                                                      |
| Pulse frequency                  | TTL ≤ 5000 ppr: max. 200 kHz<br>HTL ≤ 5000 ppr: max. 200 kHz<br>TTL more than 1200 ppr: max. 2 MHz<br>HTL more than 1200 ppr: max. 600 kHz<br>1 Vpp sin/cos: max. 100 kHz |
| Channels                         | B<br>N<br>and inverted signals                                                                                                                                            |
| Load                             | max. 40 mA / channel<br>@ 1 Vpp sin/cos: min. 120 Ohm                                                                                                                     |
| Circuit protection               | circuit type C4, C6, D4, D6 only                                                                                                                                          |

## Accuracy

|                    |                                                                                       |
|--------------------|---------------------------------------------------------------------------------------|
| Phase offset       | 90° ± max. 7.5 % of the period duration                                               |
| pulse-/pause-ratio | ≤5000 ppr: 50 % ± max. 7 %<br>Output circuits C2, C3, C4, D3, D4:<br>50 % ± max. 10 % |

## Environmental data

|                                  |                                           |
|----------------------------------|-------------------------------------------|
| ESD (DIN EN 61000-4-2):          | 8 kV                                      |
| Burst (DIN EN 61000-4-4):        | 2 kV                                      |
| includes EMC:                    | DIN EN 61000-6-2<br>DIN EN 61000-6-3      |
| Vibration:<br>(DIN EN 60068-2-6) | 50 m/s <sup>2</sup> (10 Hz up to 2000 Hz) |
| Shock:<br>(DIN EN 60068-2-27)    | 1000 m/s <sup>2</sup> (6 ms)              |
| Electrical Safety:               | according DIN VDE 0160                    |

## Duty information

|                        |          |
|------------------------|----------|
| Customs tariff number: | 90318020 |
| Country of origin:     | Germany  |

## Dati tecnici

### Encoder EI30 P 058 CA

#### General Data

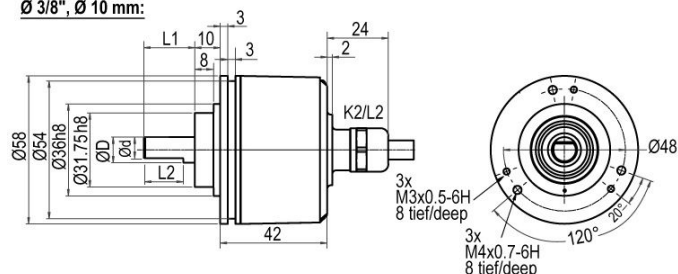
|                                 |                                                                                                                                                                                                                                                                  |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Weight                          | approx. 250 g [8.818 oz]                                                                                                                                                                                                                                         |
| Connections                     | cable or connector outlet                                                                                                                                                                                                                                        |
| Protection rating<br>(EN 60529) | Housing: IP65, IP67;<br>shaft sealed: IP65                                                                                                                                                                                                                       |
| Operating temperature           | Connector: -40 °C up to +85 °C,<br>Cable: -20 °C up to +80 °C<br>(Option LT: -40 °C up to +85 °C).<br>Connector: -40 °F up to +185 °F,<br>Cable: -4 °F up to +176 °F,<br>Option LT: -40 °F up to +185 °F<br>1 Vpp: -10 °C up to +70 °C<br>[+14 °F up to +158 °F] |

#### General Data

|                     |                                                                                                                                                                                                            |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Storage temperature | Connector: -40 °C up to +85 °C,<br>Cable: -30 °C up to +80 °C<br>(Option LT: -40 °C up to +85 °C)<br>Connector: -40 °F up to +185 °F,<br>cable: -22 °F up to +176 °F,<br>(Option LT: -40 °F up to +185 °F) |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Cable connection A-N, A-C, axial, with 2 m cable

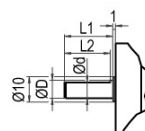
Ø 3/8", Ø 10 mm:



D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799]  
D = 10f7 L1 = 20 d = 9 L2 = 15

All dimensions in mm

Ø 6 mm, Ø 7 mm, Ø 8 mm:



D = 6f7 L1 = 10 d = 5.5 L2 = 9  
D = 7f7 L1 = 19  
D = 8h8 L1 = 19 d = 7.5 L2 = 15

#### Description

N inv. poss.

|     |                                            |   |
|-----|--------------------------------------------|---|
| A-N | axial, shield not connected                | • |
| A-C | axial, shield connected to encoder housing | • |

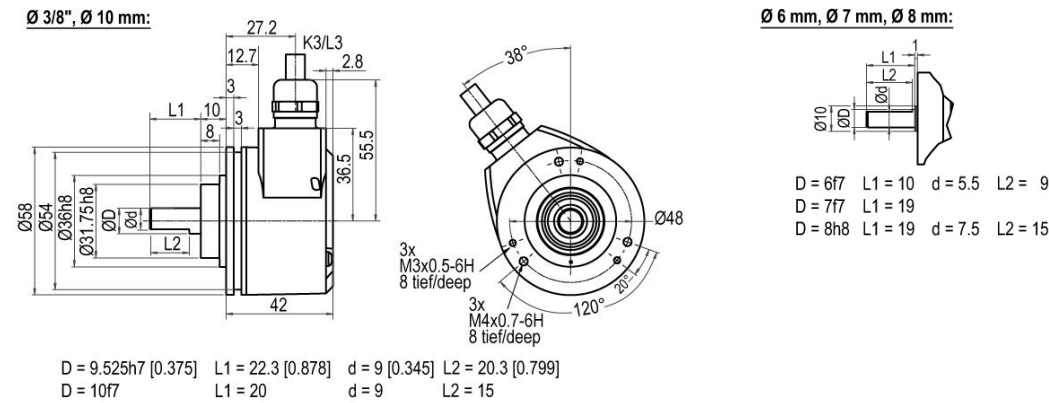
#### Assignments

|         | A-N, A-C              | A-N, A-C                         | A-C  |
|---------|-----------------------|----------------------------------|------|
| Circuit | C3, C4, C5,<br>C6, C7 | D3, D4, D5,<br>D6, C1, C2,<br>D7 | D8   |
| GND     | WH                    | WH                               | WH   |
| (+) Vcc | BN                    | BN                               | BN   |
| A       | GN                    | GN                               | GN   |
| B       | YE                    | YE                               | GY   |
| N       | GY                    | GY                               | –    |
| –       | –                     | –                                | –    |
| A inv.  | –                     | RD                               | YE   |
| B inv.  | –                     | BK,<br>(BU at LT)                | PK   |
| N inv.  | –                     | VT                               | –    |
| Shield  | flex                  | flex                             | flex |

Dati tecnici

Encoder EI30 P 058 CA

Cable connection R-N, R-C, radial, with 2 m cable



Description

N inv. poss.

|     |                                             |   |
|-----|---------------------------------------------|---|
| R-N | radial, shield not connected                | • |
| R-C | radial, shield connected to encoder housing | • |

Assignments

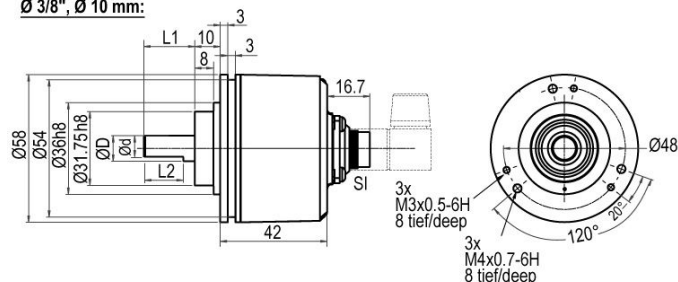
|         | R-N, R-C           | R-N, R-C                   | R-C  |
|---------|--------------------|----------------------------|------|
| Circuit | C3, C4, C5, C6, C7 | D3, D4, D5, D6, C1, C2, D7 | D8   |
| GND     | WH                 | WH                         | WH   |
| (+) Vcc | BN                 | BN                         | BN   |
| A       | GN                 | GN                         | GN   |
| B       | YE                 | YE                         | GY   |
| N       | GY                 | GY                         | -    |
| -       | -                  | -                          | -    |
| A inv.  | -                  | RD                         | YE   |
| B inv.  | -                  | BK, (BU at LT)             | PK   |
| N inv.  | -                  | VT                         | -    |
| Shield  | flex               | flex                       | flex |

## Dati tecnici

### Encoder EI30 P 058 CA

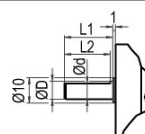
#### Connector (M16x0.75) A, axial, 5-, 6-, 8-, 12-pin

Ø 3/8", Ø 10 mm:



D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799]  
D = 10f7 L1 = 20 d = 9 L2 = 15

Ø 6 mm, Ø 7 mm, Ø 8 mm:



D = 6f7 L1 = 10 d = 5.5 L2 = 9  
D = 7f7 L1 = 19  
D = 8h8 L1 = 19 d = 7.5 L2 = 15

All dimensions in mm

#### Description

N inv. poss.

|            |                                                       |   |
|------------|-------------------------------------------------------|---|
| <b>A5</b>  | axial, 5-pin, Connector connected to encoder housing  | — |
| <b>A6</b>  | axial, 6-pin, Connector connected to encoder housing  | — |
| <b>A8</b>  | axial, 8-pin, Connector connected to encoder housing  | • |
| <b>A12</b> | axial, 12-pin, Connector connected to encoder housing | • |

#### Assignments

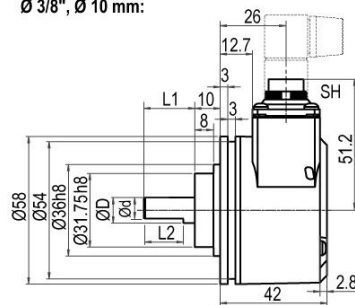
|                | <b>A5</b><br>5-pin | <b>A6</b><br>6-pin | <b>A8</b><br>8-pin         | <b>A8</b><br>8-pin | <b>A12</b><br>12-pin       | <b>A12</b><br>12-pin |
|----------------|--------------------|--------------------|----------------------------|--------------------|----------------------------|----------------------|
|                |                    |                    |                            |                    |                            |                      |
| <b>Circuit</b> | C3, C4, C5, C6, C7 | C3, C4, C5, C6, C7 | C1, C2, D3, D4, D5, D6, D7 | D8                 | C1, C2, D3, D4, D5, D6, D7 | D8                   |
| <b>GND</b>     | 1                  | 6                  | 1                          | 1                  | K, L                       | K, L                 |
| <b>(+) Vcc</b> | 2                  | 1                  | 2                          | 2                  | M, B                       | M, B                 |
| <b>A</b>       | 3                  | 2                  | 3                          | 3                  | E                          | E                    |
| <b>B</b>       | 4                  | 4                  | 4                          | 4                  | H                          | H                    |
| <b>N</b>       | 5                  | 3                  | 5                          | —                  | C                          | —                    |
| <b>—</b>       | —                  | —                  | —                          | —                  | —                          | —                    |
| <b>A inv.</b>  | —                  | —                  | 6                          | 6                  | F                          | F                    |
| <b>B inv.</b>  | —                  | —                  | 7                          | 7                  | A                          | A                    |
| <b>N inv.</b>  | —                  | —                  | 8                          | —                  | D                          | —                    |
| <b>n. c.</b>   | —                  | 5                  | —                          | 5, 8               | G, J                       | D, G, J              |
| <b>Shield</b>  | —                  | —                  | —                          | —                  | —                          | —                    |

## Dati tecnici

### Encoder EI30 P 058 CA

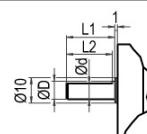
#### Connector (M16x0.75) R, radial, 5-, 6-, 8-, 12-pin

Ø 3/8", Ø 10 mm:



D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799]  
D = 10f7 L1 = 20 d = 9 L2 = 15

Ø 6 mm, Ø 7 mm, Ø 8 mm:



D = 6f7 L1 = 10 d = 5.5 L2 = 9  
D = 7f7 L1 = 19  
D = 8h8 L1 = 19 d = 7.5 L2 = 15

All dimensions in mm

#### Description

N inv. poss.

|            |                                                        |   |
|------------|--------------------------------------------------------|---|
| <b>R5</b>  | radial, 5-pin, Connector connected to encoder housing  | — |
| <b>R6</b>  | radial, 6-pin, Connector connected to encoder housing  | — |
| <b>R8</b>  | radial, 8-pin, Connector connected to encoder housing  | • |
| <b>R12</b> | radial, 12-pin, Connector connected to encoder housing | • |

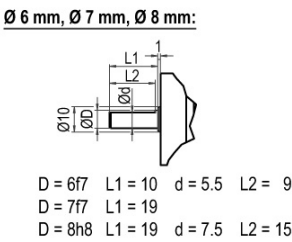
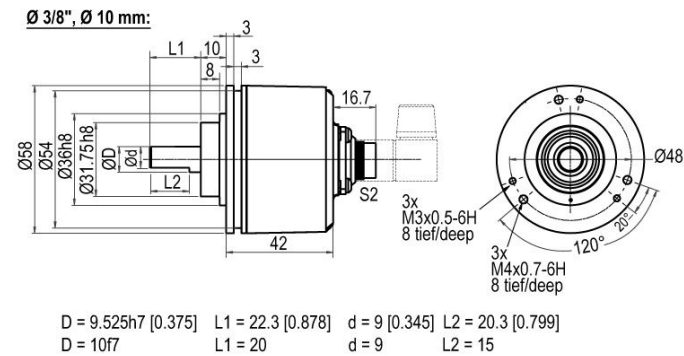
#### Assignments

|                | R5<br>5-pin        | R6<br>6-pin        | R8<br>8-pin                | R8<br>8-pin | R12<br>12-pin              | R12<br>12-pin |
|----------------|--------------------|--------------------|----------------------------|-------------|----------------------------|---------------|
|                |                    |                    |                            |             |                            |               |
| <b>Circuit</b> | C3, C4, C5, C6, C7 | C3, C4, C5, C6, C7 | C1, C2, D3, D4, D5, D6, D7 | D8          | C1, C2, D3, D4, D5, D6, D7 | D8            |
| <b>GND</b>     | 1                  | 6                  | 1                          | 1           | K, L                       | K, L          |
| <b>(+) Vcc</b> | 2                  | 1                  | 2                          | 2           | M, B                       | M, B          |
| <b>A</b>       | 3                  | 2                  | 3                          | 3           | E                          | E             |
| <b>B</b>       | 4                  | 4                  | 4                          | 4           | H                          | H             |
| <b>N</b>       | 5                  | 3                  | 5                          | —           | C                          | —             |
| <b>—</b>       | —                  | —                  | —                          | —           | —                          | —             |
| <b>A inv.</b>  | —                  | —                  | 6                          | 6           | F                          | F             |
| <b>B inv.</b>  | —                  | —                  | 7                          | 7           | A                          | A             |
| <b>N inv.</b>  | —                  | —                  | 8                          | —           | D                          | —             |
| <b>n. c.</b>   | —                  | 5                  | —                          | 5, 8        | G, J                       | D, G, J       |
| <b>Shield</b>  | —                  | —                  | —                          | —           | —                          | —             |

Dati tecnici

Encoder EI30 P 058 CA

Connector (M16x0.75) A7, axial, 7-pin



All dimensions in mm

| Description                                             | N inv. poss. |
|---------------------------------------------------------|--------------|
| A7 axial, 7-pin, Connector connected to encoder housing | —            |

Assignments

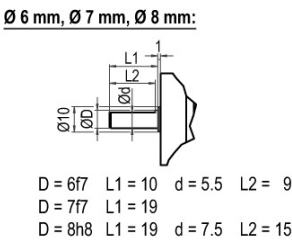
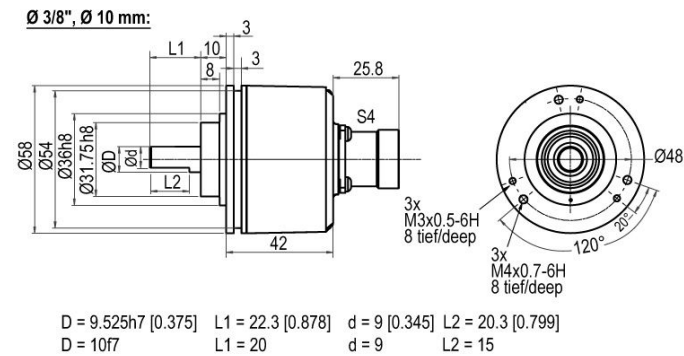
| A7                                                                                  |                    |
|-------------------------------------------------------------------------------------|--------------------|
| 7-pin                                                                               |                    |
|  |                    |
| Circuit                                                                             | C3, C4, C5, C6, C7 |
| GND                                                                                 | 1                  |
| (+) Vcc                                                                             | 2                  |
| A                                                                                   | 3                  |
| B                                                                                   | 4                  |
| N                                                                                   | 5                  |
| —                                                                                   | —                  |
| A inv.                                                                              | —                  |
| B inv.                                                                              | —                  |
| N inv.                                                                              | —                  |
| n. c.                                                                               | 6, 7               |
| Shield                                                                              | —                  |

| Circuit | C3, C4, C5, C6, C7 |
|---------|--------------------|
| GND     | 1                  |
| (+) Vcc | 2                  |
| A       | 3                  |
| B       | 4                  |
| N       | 5                  |
| –       | –                  |
| A inv.  | –                  |
| B inv.  | –                  |
| N inv.  | –                  |
| n. c.   | 6, 7               |
| Shield  | –                  |

Dati tecnici

Encoder EI30 P 058 CA

Connector (M23) A12M, axial, 12-pin



All dimensions in mm

| Description                                                | N inv. poss. |
|------------------------------------------------------------|--------------|
| A12M axial, 12-pin, Connector connected to encoder housing | —            |

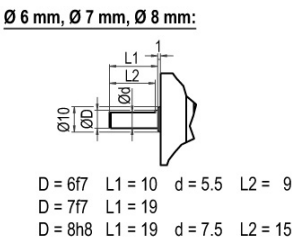
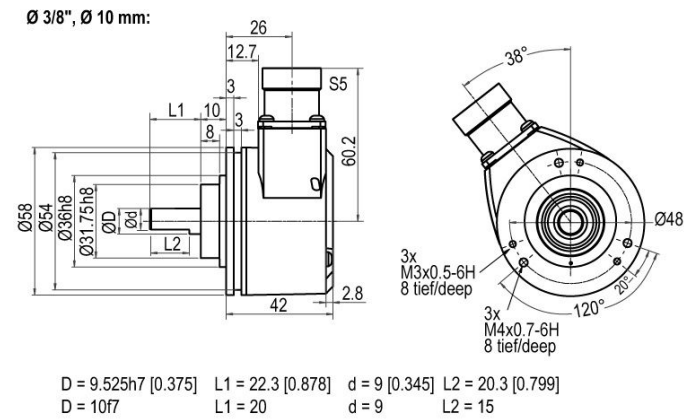
Assignments

|         | A12M<br>12-pin       | A12M<br>12-pin             | A12M<br>12-pin    |
|---------|----------------------|----------------------------|-------------------|
|         |                      |                            |                   |
| Circuit | C3, C4, C5, C6, C7   | C1, C2, D3, D4, D5, D6, D7 | D8                |
| GND     | 10                   | 10                         | 10                |
| (+) Vcc | 12                   | 12                         | 12                |
| A       | 5                    | 5                          | 5                 |
| B       | 8                    | 8                          | 8                 |
| N       | 3                    | 3                          | —                 |
| —       | —                    | —                          | —                 |
| A inv.  | —                    | 6                          | 6                 |
| B inv.  | —                    | 1                          | 1                 |
| N inv.  | —                    | 4                          | —                 |
| n. c.   | 1, 2, 4, 6, 7, 9, 11 | 2, 7, 9, 11                | 2, 3, 4, 7, 9, 11 |
| Shield  | —                    | —                          | —                 |

Dati tecnici

Encoder EI30 P 058 CA

Connector (M23) R12M, radial, 12-pin



All dimensions in mm

| Description                                                 | N inv. poss. |
|-------------------------------------------------------------|--------------|
| R12M radial, 12-pin, Connector connected to encoder housing | •            |

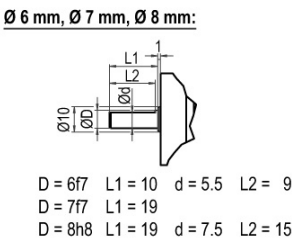
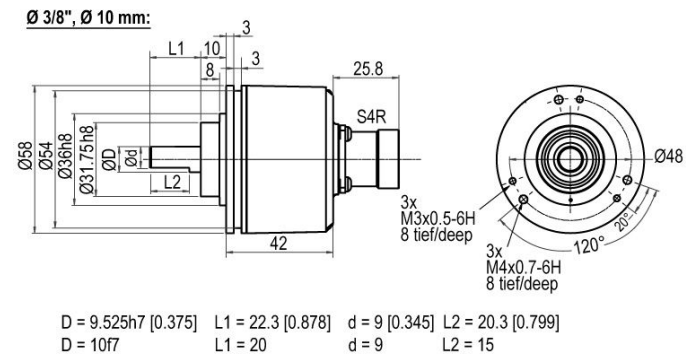
Assignments

|         | R12M                 | R12M                       | R12M              |
|---------|----------------------|----------------------------|-------------------|
|         | 12-pin               | 12-pin                     | 12-pin            |
|         |                      |                            |                   |
| Circuit | C3, C4, C5, C6, C7   | C1, C2, D3, D4, D5, D6, D7 | D8                |
| GND     | 10                   | 10                         | 10                |
| (+) Vcc | 12                   | 12                         | 12                |
| A       | 5                    | 5                          | 5                 |
| B       | 8                    | 8                          | 8                 |
| N       | 3                    | 3                          | —                 |
| —       | —                    | —                          | —                 |
| A inv.  | —                    | 6                          | 6                 |
| B inv.  | —                    | 1                          | 1                 |
| N inv.  | —                    | 4                          | —                 |
| n. c.   | 1, 2, 4, 6, 7, 9, 11 | 2, 7, 9, 11                | 2, 3, 4, 7, 9, 11 |
| Shield  | —                    | —                          | —                 |

Dati tecnici

Encoder EI30 P 058 CA

Connector (M23) AC, axial, 12-pin (clockwise)



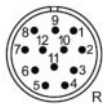
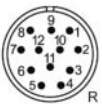
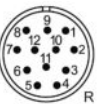
All dimensions in mm

Description

N inv. poss.

AC12 axial, 12-pin, Connector connected to encoder housing

Assignments

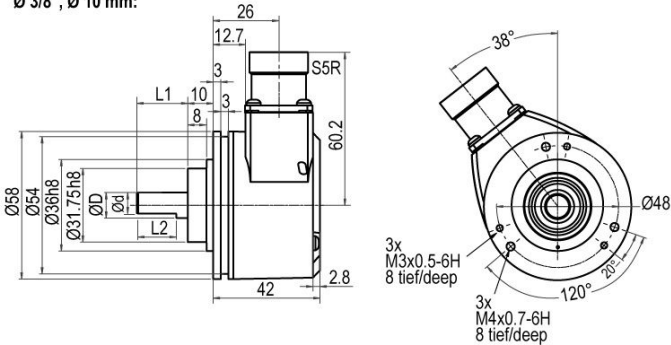
|         | AC12                                                                                | AC12                                                                                | AC12                                                                                |
|---------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|         | 12-pin                                                                              | 12-pin                                                                              | 12-pin                                                                              |
|         |  |  |  |
| Circuit | C3, C4, C5, C6, C7                                                                  | C1, C2, D3, D4, D5, D6, D7                                                          | D8                                                                                  |
| GND     | 10                                                                                  | 10                                                                                  | 10                                                                                  |
| (+) Vcc | 12                                                                                  | 12                                                                                  | 12                                                                                  |
| A       | 5                                                                                   | 5                                                                                   | 5                                                                                   |
| B       | 8                                                                                   | 8                                                                                   | 8                                                                                   |
| N       | 3                                                                                   | 3                                                                                   | —                                                                                   |
| —       | —                                                                                   | —                                                                                   | —                                                                                   |
| A inv.  | —                                                                                   | 6                                                                                   | 6                                                                                   |
| B inv.  | —                                                                                   | 1                                                                                   | 1                                                                                   |
| N inv.  | —                                                                                   | 4                                                                                   | —                                                                                   |
| n. c.   | 1, 2, 4, 6, 7, 9, 11                                                                | 2, 7, 9, 11                                                                         | 2, 3, 4, 7, 9, 11                                                                   |
| Shield  | —                                                                                   | —                                                                                   | —                                                                                   |

Dati tecnici

Encoder EI30 P 058 CA

Connector (M23) RC, radial, 12-pin (clockwise)

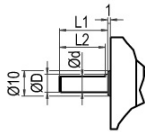
Ø 3/8", Ø 10 mm:



D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799]  
D = 10f7 L1 = 20 d = 9 L2 = 15

All dimensions in mm

Ø 6 mm, Ø 7 mm, Ø 8 mm:



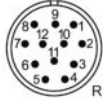
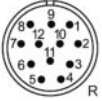
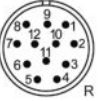
D = 6f7 L1 = 10 d = 5.5 L2 = 9  
D = 7f7 L1 = 19  
D = 8h8 L1 = 19 d = 7.5 L2 = 15

Description

N inv. poss.

RC12 radial, 12-pin, Connector connected to encoder housing

Assignments

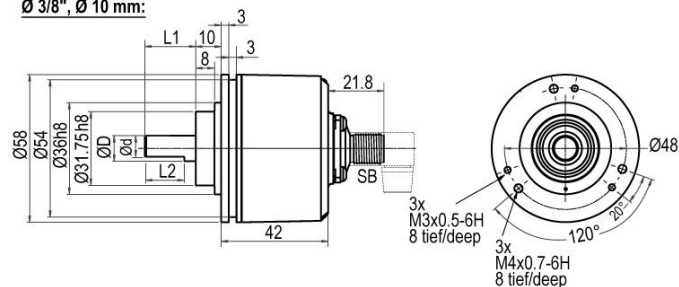
|         | RC12                                                                                | RC12                                                                                | RC12                                                                                |
|---------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|         | 12-pin                                                                              | 12-pin                                                                              | 12-pin                                                                              |
|         |  |  |  |
| Circuit | C3, C4, C5, C6, C7                                                                  | C1, C2, D3, D4, D5, D6, D7                                                          | D8                                                                                  |
| GND     | 10                                                                                  | 10                                                                                  | 10                                                                                  |
| (+) Vcc | 12                                                                                  | 12                                                                                  | 12                                                                                  |
| A       | 5                                                                                   | 5                                                                                   | 5                                                                                   |
| B       | 8                                                                                   | 8                                                                                   | 8                                                                                   |
| N       | 3                                                                                   | 3                                                                                   | —                                                                                   |
| —       | —                                                                                   | —                                                                                   | —                                                                                   |
| A inv.  | —                                                                                   | 6                                                                                   | 6                                                                                   |
| B inv.  | —                                                                                   | 1                                                                                   | 1                                                                                   |
| N inv.  | —                                                                                   | 4                                                                                   | —                                                                                   |
| n. c.   | 1, 2, 4, 6, 7, 9, 11                                                                | 2, 7, 9, 11                                                                         | 2, 3, 4, 7, 9, 11                                                                   |
| Shield  | —                                                                                   | —                                                                                   | —                                                                                   |

## Dati tecnici

### Encoder EI30 P 058 CA

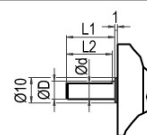
#### Sensor-connector (M12x1) AS, axial, 4-, 5-, 8-, 12-pin

Ø 3/8", Ø 10 mm:



D = 9.525h7 [0.375] L1 = 22.3 [0.878] d = 9 [0.345] L2 = 20.3 [0.799]  
D = 10f7 L1 = 20 d = 9 L2 = 15

Ø 6 mm, Ø 7 mm, Ø 8 mm:



D = 6f7 L1 = 10 d = 5.5 L2 = 9  
D = 7f7 L1 = 19  
D = 8h8 L1 = 19 d = 7.5 L2 = 15

All dimensions in mm

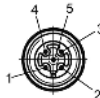
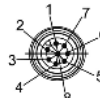
#### Description

N inv. poss.

|             |                                                       |   |
|-------------|-------------------------------------------------------|---|
| <b>AS4</b>  | axial, 4-pin, Connector connected to encoder housing  | — |
| <b>AS5</b>  | axial, 5-pin, Connector connected to encoder housing  | — |
| <b>AS8</b>  | axial, 8-pin, Connector connected to encoder housing  | • |
| <b>AS12</b> | axial, 12-pin, Connector connected to encoder housing | • |

#### Assignments

|                | <b>AS4</b><br>4-pin | <b>AS5</b><br>5-pin | <b>AS8</b><br>8-pin        | <b>AS8</b><br>8-pin | <b>AS12</b><br>12-pin      |
|----------------|---------------------|---------------------|----------------------------|---------------------|----------------------------|
|                |                     |                     |                            |                     |                            |
| <b>Circuit</b> | C3, C4, C5, C6, C7  | C3, C4, C5, C6, C7  | D3, D4, D5, D6, D7, C1, C2 | D8                  | D3, D4, D5, D6, D7, C1, C2 |
| <b>GND</b>     | 3                   | 3                   | 1                          | 1                   | 3                          |
| <b>(+) Vcc</b> | 1                   | 1                   | 2                          | 2                   | 1                          |
| <b>A</b>       | 2                   | 4                   | 3                          | 3                   | 4                          |
| <b>B</b>       | 4                   | 2                   | 4                          | 5                   | 6                          |
| <b>N</b>       | —                   | 5                   | 5                          | —                   | 8                          |
| <b>—</b>       | —                   | —                   | —                          | —                   | —                          |
| <b>A inv.</b>  | —                   | —                   | 6                          | 4                   | 9                          |
| <b>B inv.</b>  | —                   | —                   | 7                          | 6                   | 7                          |
| <b>N inv.</b>  | —                   | —                   | 8                          | —                   | 10                         |
| <b>n. c.</b>   | —                   | —                   | —                          | 7, 8                | 2, 5, 11, 12               |
| <b>Shield</b>  | —                   | —                   | —                          | —                   | —                          |

|                | RS4<br>4-pin                                                                        | RS5<br>5-pin                                                                        | RS8<br>8-pin                                                                        | RS8<br>8-pin                                                                        | RS12<br>12-pin                                                                       |
|----------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                |  |  |  |  |  |
| <b>Circuit</b> | C3, C4, C5, C6, C7                                                                  | C3, C4, C5, C6, C7                                                                  | C1, C2, D3, D4, D5, D6, D7                                                          | D8                                                                                  | C1, C2, D3, D4, D5, D6, D7                                                           |
| <b>GND</b>     | 3                                                                                   | 3                                                                                   | 1                                                                                   | 1                                                                                   | 3                                                                                    |
| <b>(+) Vcc</b> | 1                                                                                   | 1                                                                                   | 2                                                                                   | 2                                                                                   | 1                                                                                    |
| <b>A</b>       | 2                                                                                   | 4                                                                                   | 3                                                                                   | 3                                                                                   | 4                                                                                    |
| <b>B</b>       | 4                                                                                   | 2                                                                                   | 4                                                                                   | 5                                                                                   | 6                                                                                    |
| <b>N</b>       | —                                                                                   | 5                                                                                   | 5                                                                                   | —                                                                                   | 8                                                                                    |
| <b>—</b>       | —                                                                                   | —                                                                                   | —                                                                                   | —                                                                                   | —                                                                                    |
| <b>A inv.</b>  | —                                                                                   | —                                                                                   | 6                                                                                   | 4                                                                                   | 9                                                                                    |
| <b>B inv.</b>  | —                                                                                   | —                                                                                   | 7                                                                                   | 6                                                                                   | 7                                                                                    |
| <b>N inv.</b>  | —                                                                                   | —                                                                                   | 8                                                                                   | —                                                                                   | 10                                                                                   |
| <b>n. c.</b>   | —                                                                                   | —                                                                                   | —                                                                                   | 7, 8                                                                                | 2, 5, 11, 12                                                                         |
| <b>Shield</b>  | —                                                                                   | —                                                                                   | —                                                                                   | —                                                                                   | —                                                                                    |

## Dati tecnici

### Encoder EI30 P 058 CA

#### Options

##### Low-friction bearings

##### Order key

The encoder EI30 P 058 CA is also available as a particularly smooth- running low-friction encoder. The starting torque is thereby changed to  $\leq 0.5$  Ncm [0.708 in-ozf] and the protection class at the shaft input to IP50.

LB

##### IP67 all around

The encoder EI30 P 058 CA can be supplied in a full IP67 version. Shaft  $\varnothing$  10 mm [0.394"] without flat. IP67 not at 1 Vpp Sin/Cos. IP67 not at shaft  $\varnothing$  7 mm [0.2761"].

IP

Max. RPM: 3500 rpm  
 Permitted Shaft-Loading, axial: 100 N [10.197 kp]  
 Permitted Shaft-Loading, radial: 110 N [11.216 kp]  
 Max. PPR: 25000 ppr  
 Starting-torque: approx. 4 Ncm [5.664 in-ozf] at ambient temperature

##### Low temperature

##### Order key

The encoder EI30 P 058 CA with the output circuit types C1, C2, C3, C4, C5, C6, D3, D4, D5, D6 is also available with the extended temperature range  $-40$  °C up to  $+85$  °C [ $-40$  °F up to  $+185$  °F] (measured at the flange).

LT

##### Pressure equalising membrane

##### Order key

The EI30 P 058 CA shaft encoder is also optionally available with a pressure equalising membrane. This prevents water from penetrating into the encoder housing in the case of high air humidity.

PE

The IP67 protection level, temperature range and salt spray resistance are maintained. Resistant to chemicals and solvents in accordance with DIN EN ISO 2812-1.

##### Cable length

##### Order key

The encoder EI30 P 058 CA can be supplied with more than 2 m cable.  
 The maximum cable length depends on the supply voltage and the frequency.

XXX = Decimeter

Please extend the standard order code with a three figure number, specifying the cable length in decimetres.  
 Example: 5 m cable = 050

## Dati tecnici

## Encoder EI30 P 058 CA

## Example Order No.

## Type

EI30 P 058 CA

EI30 P 058 CA

EI30 P 058 CA

## Shaft

10

06; 07; 08; 4Z; 10

## Pulses per revolution PPR:

5000

2, 5, 10, 15, 20, 25, 30, 36, 40, 48, 50, 60, 64, 72, 90, 100, 120, 125, 128, 150, 160, 180, 200, 216, 240, 250, 254, 256, 300, 314, 320, 360, 400, 500, 512, 571, 600, 720, 750, 768, 800, 900, 1000, 1024, 1200, 1250, 1270, 1440, 1500, 1800, 2000, 2048, 2400, 2500, 2880, 3000, 3600, 4000, 4096, 4685, 5000, 5760, 6000, 7200, 7500, 8000, 8192, 10000, 10240, 12000, 12500, 15000, 16384, 20000, 20480, 25000  
 1 Vpp Sin/Cos only 1024, 2048  
 Other PPRs on request

## Channels:

N

B, N (SIN: B)

## Output circuit

C6

Resolution  
PPRPower supply  
VDC

Output circuit

—

Order key

up to 2500

5 - 30

HTL (TTL at 5 VDC)

—

C7

5 - 30

HTL, inv. (TTL/RS422 comp. at 5 VDC)

—

D7

up to 5000

4.75 - 5.5

TTL

—

C5

4.75 - 5.5

TTL, RS422 comp., inverted

—

D5

10 - 30

HTL

—

C6

10 - 30

HTL inverted

—

D6

10 - 30

TTL, RS422 comp., inverted

—

C1

(higher frequency) 1200  
up to 25000

4.75 - 5.5

TTL

—

C3

4.75 - 5.5

TTL, RS422 comp., inverted

—

D3

10 - 30

HTL

—

C4

10 - 30

HTL inverted

—

D4

10 - 30

TTL, RS422 comp., inverted

—

C2

1024, 2048

4.75 - 5.5

1 Vpp sin/cos

—

D8

## Dati tecnici

## Encoder EI30 P 058 CA

## Electrical connections

|     | Description                                             | N inv. poss. | Order key |
|-----|---------------------------------------------------------|--------------|-----------|
| A-N | <b>Cable: length (2 m standard)</b>                     |              |           |
|     | axial, shield not connected                             | •            | A-N       |
|     | axial, shield connected to encoder housing              | •            | A-C       |
|     | radial, shield not connected                            | •            | R-N       |
|     | radial, shield connected to encoder housing             | •            | R-C       |
|     | <b>Connector: (shield connected to encoder housing)</b> |              |           |
|     | connector, M16x0.75, 5-pin, axial                       | –            | A5        |
|     | connector, M16x0.75, 5-pin, radial                      | –            | R5        |
|     | connector, M16x0.75, 6-pin, axial                       | –            | A6        |
|     | connector, M16x0.75, 6-pin, radial                      | –            | R6        |
|     | connector, M16x0.75, 8-pin, axial                       | •            | A8        |
|     | connector, M16x0.75, 8-pin, radial                      | •            | R8        |
|     | connector, M16x0.75, 12-pin, axial                      | •            | A12       |
|     | connector, M16x0.75, 12-pin, radial                     | •            | R12       |
|     | connector, M16x0.75, 7-pin, axial                       | –            | A7        |
|     | connector, M16x0.75, 7-pin, radial                      | –            | R7        |
|     | connector, M23, 12-pin, axial                           | •            | A12M      |
|     | connector, clockwise pin count, M23, 12-pin, axial      | •            | AC12      |
|     | connector, M23, 12-pin, radial                          | •            | R12M      |
|     | connector, clockwise pin count, M23, 12-pin, radial     | •            | RC12      |
|     | sensor-connector, M12x1, 4-pin, axial                   | –            | AS4       |
|     | sensor-connector, M12x1, 4-pin, radial                  | –            | RS4       |
|     | sensor-connector, M12x1, 5-pin, axial                   | –            | AS5       |
|     | sensor-connector, M12x1, 5-pin, radial                  | –            | RS5       |
|     | sensor-connector, M12x1, 8-pin, axial                   | •            | AS8       |
|     | sensor-connector, M12x1, 8-pin, radial                  | •            | RS8       |
|     | sensor-connector, M12x1, 12-pin, axial                  | •            | AS12      |
|     | sensor-connector, M12x1, 12-pin, radial                 | •            | RS12      |

## Options

| Description                  | Order key       |
|------------------------------|-----------------|
| Low-friction bearings        | LB              |
| IP67                         | IP              |
| Low temperature              | LT              |
| Pressure equalising membrane | PE              |
| Without option               | Empty           |
| Cable length                 | XXX = Decimeter |

Example  
Order No.:

EI30 P 058 CA 10 5000 N C6 A-N EI30 P 058 CA

Your enco-  
der

Codice articoli

Denominazione articolo: EABB CCCDDEE FFFFFFF GHJJKK LLMNNOPPP RR

|        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A      | <b>Tipo di econder rotativo</b><br>I: Incrementale<br>S: Assoluto, monogiro<br>M: Assoluto, multigiro                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| BB     | <b>Serie</b><br>10: Entry<br>30: Basic<br>50: Extended<br>70: Advanced                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| CCC    | <b>Diametro della flangia</b><br>024: 24 mm<br>036: 36 mm<br>058: 58 mm<br>063: 63 mm<br>067: 67 mm<br>070: 70 mm<br>080: 80 mm<br>100: 100 mm<br>115: 115 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| DD     | <b>Tipo di flangia</b><br>BB: Albero cavo con foro cieco<br>CC: Flangia di serraggio (forma costruttiva compatta)<br>CF: Flangia di serraggio (alimenti e bevande)<br>CH: Flangia di serraggio (versione per carichi pesanti)<br>CL: Flangia di serraggio<br>HI: Albero cavo (isolato)<br>HO: Albero cavo<br>HT: Albero cavo (supporto di coppia speciale)<br>RC: Flangia circolare (36/40 flangia di serraggio, 58 con albero da 6 mm)<br>RE: Flangia circolare (fori ampliati)<br>RN: Flangia circolare<br>SC: Accoppiamento statore<br>SF: Flangia a vite (53 flangia di serraggio, 58 alimenti e bevande)<br>SI: Servoflangia (carico sull'albero maggiorato e protezione IP)<br>AQ: Flangia quadrata<br>SR: Flangia a vite (36/40 flangia di serraggio, 58 resistente alla corrosione)<br>SY: Sincro (incrementale), Servo (36), Sincro (58) (assoluto)<br>TM: Tachimetro (115 con albero da 1 mm, 58 feedback motore)<br>TS: Tachimetro (albero da 10 mm) |
| EE     | <b>Diametro dell'albero/del foro</b><br>06: 6 mm<br>07: 7 mm<br>08: 8 mm<br>08: 8 mm<br>10: 10 mm<br>11: 11 mm<br>12: 12 mm<br>14: 14 mm<br>15: 15 mm<br>06-72: Foro cavo/foro cieco (6 ... 72 mm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| FFFFFF | <b>Segnale/risoluzione</b><br>Axxxx: A<br>Bxxxx: AB<br>Nxxxx: ABN<br>P16384: Programmabile<br>xx: Monogiro, 1 ... 16 Bit<br>xx: Multigiro, 0 ... 43 Bit (00 con monogiro)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| G      | <b>Separazione galvanica (solo valore assoluto)</b><br>0: senza<br>1: con                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| HH     | <b>Alimentazione di tensione (solo valore assoluto)</b><br>0: 10 ... 32 V DC/con separazione galvanica<br>1: 4,75 ... 5,5 V DC<br>2: 18 ... 30 V DC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| J      | <b>Principio di funzionamento</b><br>M: magnetico<br>O: Ottico<br>P: interpolato otticamente                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

## Codice articoli

|            |                                                                                                                                                                                                        |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>KK</b>  | <b>Interfaccia</b><br>01: RS485<br>07: SSI binario<br>08: SSI Gray<br>35: CANopen<br>38: EtherCAT<br>48: PROFINET<br>58: EtherNet/IP                                                                   |
| <b>LL</b>  | <b>Collegamento elettrico</b><br>M08: Connettore circolare M8<br>M12: Connettore circolare M12<br>M16: Connettore circolare M16<br>M23: Connettore circolare M23<br>M12BC: Connettore bus con calotta. |
| <b>M</b>   | <b>Uscita cavi</b><br>A: Assiale<br>R: Radiale<br>T: Tangenziale                                                                                                                                       |
| <b>NN</b>  | <b>Numero di poli</b><br>xx: Numero di poli                                                                                                                                                            |
| <b>O</b>   | <b>Connettore schermato (cavo da 2 m) (opzionale)</b><br>C: collegato<br>N: non collegato                                                                                                              |
| <b>PPP</b> | <b>Lunghezza del cavo</b><br>xxx: Lunghezza del cavo (in dm)                                                                                                                                           |

### Avviso



È possibile trovare una lista con tutti i tipi di apparecchi disponibili sul sito di Leuze all'indirizzo [www.leuze.com](http://www.leuze.com).

