



# DBS60E-BJCCC1024

DBS60

INCREMENTAL ENCODERS

**SICK**  
Sensor Intelligence.

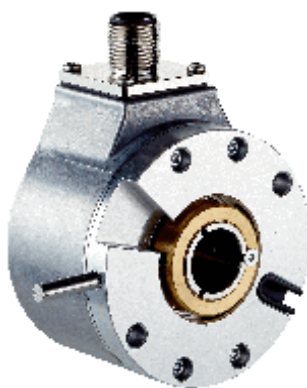


Illustration may differ

### Ordering information

| Type             | part no.   |
|------------------|------------|
| DBS60E-BJCCC1024 | On request |

Other models and accessories → [www.sick.com/DBS60](http://www.sick.com/DBS60)

### Detailed technical data

#### Safety-related parameters

|                                                          |                                          |
|----------------------------------------------------------|------------------------------------------|
| <b>MTTF<sub>D</sub> (mean time to dangerous failure)</b> | 500 years (EN ISO 13849-1) <sup>1)</sup> |
|----------------------------------------------------------|------------------------------------------|

<sup>1)</sup> This product is a standard product and does not constitute a safety component as defined in the Machinery Directive. Calculation based on nominal load of components, average ambient temperature 40 °C, frequency of use 8760 h/a. All electronic failures are considered hazardous. For more information, see document no. 8015532.

#### Performance

|                                 |                                       |
|---------------------------------|---------------------------------------|
| <b>Pulses per revolution</b>    | 1,024                                 |
| <b>Measuring step</b>           | ≤ 90°, electric/pulses per revolution |
| <b>Measuring step deviation</b> | ± 18° / pulses per revolution         |
| <b>Error limits</b>             | Measuring step deviation x 3          |
| <b>Duty cycle</b>               | ≤ 0.5 ± 5 %                           |

#### Interfaces

|                                       |                         |
|---------------------------------------|-------------------------|
| <b>Communication interface</b>        | Incremental             |
| <b>Communication Interface detail</b> | TTL / RS-422            |
| <b>Number of signal channels</b>      | 6-channel               |
| <b>Initialization time</b>            | < 5 ms <sup>1)</sup>    |
| <b>Output frequency</b>               | + 300 kHz <sup>2)</sup> |
| <b>Load current</b>                   | ≤ 30 mA, per channel    |
| <b>Power consumption</b>              | ≤ 0.5 W (without load)  |

<sup>1)</sup> Valid signals can be read once this time has elapsed.

<sup>2)</sup> Up to 450 kHz on request.

#### Electronics

|                                   |                                             |
|-----------------------------------|---------------------------------------------|
| <b>Connection type</b>            | Male connector, M12, 8-pin, radial          |
| <b>Supply voltage</b>             | 10 ... 30 V                                 |
| <b>Reference signal, number</b>   | 1                                           |
| <b>Reference signal, position</b> | 90°, electric, logically gated with A and B |

<sup>1)</sup> Short-circuit opposite to another channel or GND permissible for max. 60 s. No protection signal against U<sub>S</sub>.

|                                                |                 |
|------------------------------------------------|-----------------|
| <b>Reverse polarity protection</b>             | ✓               |
| <b>Short-circuit protection of the outputs</b> | ✓ <sup>1)</sup> |

<sup>1)</sup> Short-circuit opposite to another channel or GND permissible for max. 60 s. No protection signal against  $U_S$ .

## Mechanics

|                                       |                                                               |
|---------------------------------------|---------------------------------------------------------------|
| <b>Mechanical design</b>              | Blind hollow shaft                                            |
| <b>Shaft diameter</b>                 | 5/8"Front clamp                                               |
| <b>Flange type / stator coupling</b>  | Axial and radial register pin mounting, for 4 mm register pin |
| <b>Weight</b>                         | + 0.25 kg <sup>1)</sup>                                       |
| <b>Shaft material</b>                 | Stainless steel                                               |
| <b>Flange material</b>                | Aluminum                                                      |
| <b>Housing material</b>               | Aluminum                                                      |
| <b>Start up torque</b>                | + 0.5 Ncm (+20 °C)                                            |
| <b>Operating torque</b>               | 0.4 Ncm (+20 °C)                                              |
| <b>Permissible movement static</b>    | ± 0.3 mm (radial)<br>± 0.5 mm (axial) <sup>2)</sup>           |
| <b>Permissible movement dynamic</b>   | ± 0.1 mm (radial)<br>± 0.2 mm (axial) <sup>2)</sup>           |
| <b>Operating speed</b>                | 6,000 min <sup>-1</sup> <sup>3)</sup>                         |
| <b>Maximum operating speed</b>        | 9,000 min <sup>-1</sup> <sup>4)</sup>                         |
| <b>Moment of inertia of the rotor</b> | 50 gcm <sup>2</sup>                                           |
| <b>Bearing lifetime</b>               | 3.6 x 10 <sup>9</sup> revolutions                             |
| <b>Angular acceleration</b>           | ≤ 500,000 rad/s <sup>2</sup>                                  |

<sup>1)</sup> Based on encoder with male connector or cable with male connector.

<sup>2)</sup> Not applicable for stator coupling type C and K.

<sup>3)</sup> Allow for self-heating of 2.6 K per 1,000 rpm when designing the operating temperature range.

<sup>4)</sup> Maximum speed which does not cause mechanical damage to the encoder. Impact on the service life and signal quality is possible. Please note the maximum output frequency.

## Ambient data

|                                      |                                                                              |
|--------------------------------------|------------------------------------------------------------------------------|
| <b>EMC</b>                           | According to EN 61000-6-2 and EN 61000-6-3                                   |
| <b>Enclosure rating</b>              | IP67, housing side (IEC 60529) <sup>1)</sup><br>IP65, shaft side (IEC 60529) |
| <b>Permissible relative humidity</b> | 90 % (Condensation not permitted)                                            |
| <b>Operating temperature range</b>   | -30 °C ... +100 °C, at maximum 3,000 pulses per revolution <sup>2)</sup>     |
| <b>Storage temperature range</b>     | -40 °C ... +100 °C, without package                                          |
| <b>Resistance to shocks</b>          | 250 g, 3 ms (EN 60068-2-27)                                                  |
| <b>Resistance to vibration</b>       | 30 g, 10 Hz ... 2,000 Hz (EN 60068-2-6)                                      |

<sup>1)</sup> With mating connector fitted.

<sup>2)</sup> These values relate to all mechanical versions including recommended accessories unless otherwise noted.

## Classifications

|                     |          |
|---------------------|----------|
| <b>ECLASS 5.0</b>   | 27270501 |
| <b>ECLASS 5.1.4</b> | 27270501 |
| <b>ECLASS 6.0</b>   | 27270590 |

|                       |          |
|-----------------------|----------|
| <b>ECLASS 6.2</b>     | 27270590 |
| <b>ECLASS 7.0</b>     | 27270501 |
| <b>ECLASS 8.0</b>     | 27270501 |
| <b>ECLASS 8.1</b>     | 27270501 |
| <b>ECLASS 9.0</b>     | 27270501 |
| <b>ECLASS 10.0</b>    | 27270501 |
| <b>ECLASS 11.0</b>    | 27270501 |
| <b>ECLASS 12.0</b>    | 27270501 |
| <b>ETIM 5.0</b>       | EC001486 |
| <b>ETIM 6.0</b>       | EC001486 |
| <b>ETIM 7.0</b>       | EC001486 |
| <b>ETIM 8.0</b>       | EC001486 |
| <b>UNSPSC 16.0901</b> | 41112113 |

### Dimensional drawing



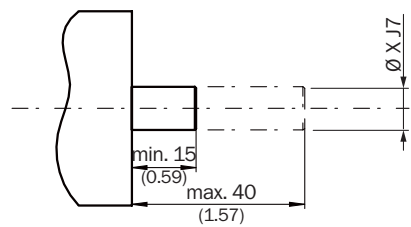
Dimensions in mm (inch)

XF7 values see shaft diameter table for blind hollow shaft

- ① Zero pulse mark on housing
- ② register pin is the zero pulse mark
- ③ depth
- ④ register pin can be removed
- ⑤ rubber insert, material: NBR
- ⑥ male connector tolerance in relation to hole pattern

| TypeBlind hollow shaft           | Shaft diameter XF7 |
|----------------------------------|--------------------|
| DBS60x-BAxxxxxxxDBS60x-B1xxxxxxx | 6 mm               |
| DBS60x-BBxxxxxxxDBS60x-B2xxxxxxx | 8 mm               |
| DBS60x-BCxxxxxxxDBS60x-B3xxxxxxx | 3/8"               |
| DBS60x-BDxxxxxxxDBS60x-B4xxxxxxx | 10 mm              |
| DBS60x-BExxxxxxxDBS60x-B5xxxxxxx | 12 mm              |
| DBS60x-BFxxxxxxxDBS60x-B6xxxxxxx | 1/2"               |
| DBS60x-BGxxxxxxxDBS60x-B7xxxxxxx | 14 mm              |
| DBS60x-BHxxxxxxxDBS60x-B8xxxxxxx | 15 mm              |
| DBS60x-BJxxxxxxx                 | 5/8"               |
| -                                |                    |

Attachment specifications Blind hollow shaft



customer side

| TypeBlind hollow shaft           | Shaft diameter xj7 |
|----------------------------------|--------------------|
| DBS60x-BAxxxxxxxDBS60x-B1xxxxxxx | 6 mm               |
| DBS60x-BBxxxxxxxDBS60x-B2xxxxxxx | 8 mm               |
| DBS60x-BCxxxxxxxDBS60x-B3xxxxxxx | 3/8"               |
| DBS60x-BDxxxxxxxDBS60x-B4xxxxxxx | 10 mm              |
| DBS60x-BExxxxxxxDBS60x-B5xxxxxxx | 12 mm              |
| DBS60x-BFxxxxxxxDBS60x-B6xxxxxxx | 1/2"               |
| DBS60x-BGxxxxxxxDBS60x-B7xxxxxxx | 14 mm              |
| DBS60x-BHxxxxxxxDBS60x-B8xxxxxxx | 15 mm              |
| DBS60x-BJxxxxxxx                 | 5/8"               |
| -                                |                    |

PIN assignment



view of M12 male device connector on cable / housing

| Wire colors (cable connection) | Male connector M12, 8-pin | Male connector M23, 12-pin | TTL/HTL 6-channel signal | Explanation                         |
|--------------------------------|---------------------------|----------------------------|--------------------------|-------------------------------------|
| Brown                          | 1                         | 6                          | A-                       | Signal wire                         |
| White                          | 2                         | 5                          | A                        | Signal wire                         |
| Black                          | 3                         | 1                          | B-                       | Signal wire                         |
| Pink                           | 4                         | 8                          | B                        | Signal wire                         |
| Yellow                         | 5                         | 4                          | Z-                       | Signal wire                         |
| Purple                         | 6                         | 3                          | Z                        | Signal wire                         |
| Blue                           | 7                         | 10                         | GND                      | Ground connection                   |
| Red                            | 8                         | 12                         | +U <sub>s</sub>          | Supply voltage                      |
| -                              | -                         | 9                          | Not assigned             | Not assigned                        |
| -                              | -                         | 2                          | Not assigned             | Not assigned                        |
| -                              | -                         | 11                         | Not assigned             | Not assigned                        |
| -                              | -                         | 7                          | Not assigned             | Not assigned                        |
| Screen                         | Screen                    | Screen                     | Screen                   | Screen connected to encoder housing |

Diagrams

Pulses per revolution



Diagrams Signal outputs for electrical interfaces TTL and HTL



Cw with view on the encoder shaft in direction "A", compare dimensional drawing.

| Supply voltage  | Output            |
|-----------------|-------------------|
| 4,5 V ... 5,5 V | TTL               |
| 10 V ... 30 V   | TTL               |
| 10 V ... 27 V   | HTL               |
| 4,5 V ... 30 V  | TTL/HTL universal |
| 4,5 V ... 30 V  | TTL               |

### Recommended accessories

Other models and accessories → [www.sick.com/DBS60](http://www.sick.com/DBS60)

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                                                                                                                   | Type                | part no. |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------|
| connectors and cables                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                     |                     |          |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Flying leads</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> SSI, Incremental, HIPERFACE®</li> <li>• <b>Items supplied:</b> By the meter</li> <li>• <b>Cable:</b> 8-wire, PUR, halogen-free</li> <li>• <b>Description:</b> SSI, shielded, Incremental, HIPERFACE®</li> </ul>                          | LTG-2308-MWENC      | 6027529  |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Flying leads</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> SSI, Incremental</li> <li>• <b>Items supplied:</b> By the meter</li> <li>• <b>Cable:</b> 11-wire, PUR</li> <li>• <b>Description:</b> SSI, shielded, Incremental</li> </ul>                                                               | LTG-2411-MW         | 6027530  |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Flying leads</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> SSI, Incremental</li> <li>• <b>Items supplied:</b> By the meter</li> <li>• <b>Cable:</b> 12-wire, PUR, halogen-free</li> <li>• <b>Description:</b> SSI, shielded, Incremental</li> </ul>                                                 | LTG-2512-MW         | 6027531  |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Flying leads</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> SSI, TTL, HTL, Incremental</li> <li>• <b>Items supplied:</b> By the meter</li> <li>• <b>Cable:</b> 12-wire, UV and saltwater-resistant, PUR, halogen-free</li> <li>• <b>Description:</b> SSI, shielded, TTL, HTL, Incremental</li> </ul> | LTG-2612-MW         | 6028516  |
|   | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 8-pin, straight</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Incremental, SSI</li> <li>• <b>Cable:</b> 2 m, 8-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Incremental, shielded SSI</li> <li>• <b>Connection systems:</b> Flying leads</li> </ul>                | DOL-1208-G02MAC1    | 6032866  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 8-pin, straight</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Incremental, SSI</li> <li>• <b>Cable:</b> 5 m, 8-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Incremental, shielded SSI</li> <li>• <b>Connection systems:</b> Flying leads</li> </ul>                | DOL-1208-G05MAC1    | 6032867  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 8-pin, straight</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Incremental, SSI</li> <li>• <b>Cable:</b> 10 m, 8-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Incremental, shielded SSI</li> <li>• <b>Connection systems:</b> Flying leads</li> </ul>               | DOL-1208-G10MAC1    | 6032868  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 8-pin, straight</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Incremental, SSI</li> <li>• <b>Cable:</b> 20 m, 8-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Incremental, shielded SSI</li> <li>• <b>Connection systems:</b> Flying leads</li> </ul>               | DOL-1208-G20MAC1    | 6032869  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 8-pin, straight</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Incremental, SSI</li> <li>• <b>Cable:</b> 25 m, 8-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Incremental, shielded SSI</li> <li>• <b>Connection systems:</b> Flying leads</li> </ul>               | DOL-1208-G25MAC1    | 6067859  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 8-pin, straight, A-coded</li> <li>• <b>Signal type:</b> Incremental, SSI</li> <li>• <b>Cable:</b> CAT5, CAT5e</li> <li>• <b>Description:</b> Incremental, shielded SSI</li> <li>• <b>Connection systems:</b> IDC quick connection</li> <li>• <b>Permitted cross-section:</b> 0.14 mm² ... 0.34 mm²</li> </ul>        | DOS-1208-GA01       | 6045001  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 8-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Male connector, M12, 8-pin, straight, A-coded</li> <li>• <b>Cable:</b> 20 m, 8-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Shielded</li> </ul>                                                                                         | YF2AA8-200S01M-KA18 | 2099208  |

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Type                | part no. |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------|
|    | <ul style="list-style-type: none"> <li>• <b>Permitted cross-section:</b> <math>\leq 0.25 \text{ mm}^2</math></li> <li>• <b>Note:</b> Drag chain use</li> <li>• <b>Application:</b> Drag chain operation</li> </ul>                                                                                                                                                                                                                                                                                    |                     |          |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 8-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Male connector, M12, 8-pin, straight, A-coded</li> <li>• <b>Cable:</b> 2 m, 8-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Shielded</li> <li>• <b>Permitted cross-section:</b> <math>\leq 0.25 \text{ mm}^2</math></li> <li>• <b>Note:</b> Drag chain use</li> <li>• <b>Application:</b> Drag chain operation</li> </ul>  | YF2AA8-020S01M-KA18 | 2099207  |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 8-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Male connector, M12, 8-pin, straight, A-coded</li> <li>• <b>Cable:</b> 5 m, 8-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Shielded</li> <li>• <b>Permitted cross-section:</b> <math>\leq 0.25 \text{ mm}^2</math></li> <li>• <b>Note:</b> Drag chain use</li> <li>• <b>Application:</b> Drag chain operation</li> </ul>  | YF2AA8-050S01M-KA18 | 2099209  |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 8-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Male connector, M12, 8-pin, straight, A-coded</li> <li>• <b>Cable:</b> 10 m, 8-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Shielded</li> <li>• <b>Permitted cross-section:</b> <math>\leq 0.25 \text{ mm}^2</math></li> <li>• <b>Note:</b> Drag chain use</li> <li>• <b>Application:</b> Drag chain operation</li> </ul> | YF2AA8-100S01M-KA18 | 2099210  |
|   | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 8-pin, angled</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> HIPERFACE<sup>®</sup>, Incremental</li> <li>• <b>Cable:</b> 2 m, 8-wire, PUR, halogen-free</li> <li>• <b>Description:</b> HIPERFACE<sup>®</sup>, shieldedIncremental</li> </ul>                                                                                                                    | DOL-1208-W02MAC1    | 6037724  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 8-pin, angled</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> HIPERFACE<sup>®</sup>, Incremental</li> <li>• <b>Cable:</b> 5 m, 8-wire, PUR, halogen-free</li> <li>• <b>Description:</b> HIPERFACE<sup>®</sup>, shieldedIncremental</li> </ul>                                                                                                                    | DOL-1208-W05MAC1    | 6037725  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 8-pin, angled</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> HIPERFACE<sup>®</sup>, Incremental</li> <li>• <b>Cable:</b> 10 m, 8-wire, PUR, halogen-free</li> <li>• <b>Description:</b> HIPERFACE<sup>®</sup>, shieldedIncremental</li> </ul>                                                                                                                   | DOL-1208-W10MAC1    | 6037726  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 8-pin, angled</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> HIPERFACE<sup>®</sup>, Incremental</li> <li>• <b>Cable:</b> 20 m, 8-wire, PUR</li> <li>• <b>Description:</b> HIPERFACE<sup>®</sup>, shieldedIncremental</li> </ul>                                                                                                                                 | DOL-1208-W20MAC1    | 6037727  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 8-pin, angled</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Cable:</b> 2 m, 8-wire, PVC</li> <li>• <b>Description:</b> Shielded</li> <li>• <b>Connection systems:</b> Flying leads</li> </ul>                                                                                                                                                                                   | DOL-1208-W02MA      | 6020992  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 8-pin, angled</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 2 m, 8-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, shielded</li> <li>• <b>Connection systems:</b> Flying leads</li> </ul>                                                                                         | DOL-1208-W02MAS01   | 6029224  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 8-pin, angled</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Cable:</b> 2 m, 8-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Unshielded</li> </ul>                                                                                                                                                                                                                      | DOL-1208-W02MC      | 6035623  |
|  | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 8-pin, angled</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Cable:</b> 5 m, 8-wire, PVC</li> <li>• <b>Description:</b> Shielded</li> </ul>                                                                                                                                                                                                                                      | DOL-1208-W05MA      | 6021033  |

|                                                                                   | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Type           | part no. |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------|
|  | <ul style="list-style-type: none"> <li>• <b>Connection systems:</b> Flying leads</li> <li>• <b>Connection type head A:</b> Female connector, M12, 8-pin, angled</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Cable:</b> 5 m, 8-wire, PUR</li> <li>• <b>Description:</b> Unshielded</li> </ul>                                                                                                                                                                                                                                                                                                                            | DOL-1208-W05MC | 6035624  |
|                                                                                   | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 8-pin, angled</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Cable:</b> 10 m, 8-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Unshielded</li> </ul>                                                                                                                                                                                                                                                                                                                                                                | DOL-1208-W10MC | 6035625  |
| Mounting systems                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                |          |
|  | <ul style="list-style-type: none"> <li>• <b>Description:</b> Bearing bracket for hollow shaft encoders, fastening screws included the Bearing Block is intended for very large radial and axial shaft loads. Particularly for application on: Belt pulleys, Chain pinions, Friction wheels. It is designed this way to enable fitting of encoder with blind hollow shaft with <math>\varnothing 12</math> mm. Operating speed max. 6,000 rpm<sup>-1</sup>, axial shaft load 100 N, radial shaft load 100 N, bearing service life <math>3.6 \times 10^9</math> revolutions</li> <li>• <b>Items supplied:</b> Fastening screws included</li> </ul> | BEF-FA-B12-010 | 2042728  |

|                                                                                     | Brief description                                                                                                                                                                                                                                                            | Type          | part no. |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------|
| shaft adaptation                                                                    |                                                                                                                                                                                                                                                                              |               |          |
|    | <ul style="list-style-type: none"><li>• <b>Product segment:</b> Shaft adaptation</li><li>• <b>Product:</b> Collets</li><li>• <b>Description:</b> Collet metal for hollow shaft, shaft diameter 11 mm, outer diameter 5/8" (15.875 mm)</li></ul>                              | SPZ-58Z-011-M | 2094671  |
|    | <ul style="list-style-type: none"><li>• <b>Product segment:</b> Shaft adaptation</li><li>• <b>Product:</b> Collets</li><li>• <b>Description:</b> Collet plastic (PEEK) insulated for hollow shaft, shaft diameter 15 mm, outer diameter 5/8" (15.875 mm)</li></ul>           | SPZ-58Z-015-P | 2076233  |
|    | <ul style="list-style-type: none"><li>• <b>Product segment:</b> Shaft adaptation</li><li>• <b>Product:</b> Collets</li><li>• <b>Description:</b> Collet plastic (PEEK) insulated for hollow shaft, shaft diameter 14 mm, outer diameter 5/8" (15.875 mm)</li></ul>           | SPZ-58Z-014-P | 2076232  |
|    | <ul style="list-style-type: none"><li>• <b>Product segment:</b> Shaft adaptation</li><li>• <b>Product:</b> Collets</li><li>• <b>Description:</b> Collet plastic (PEEK) insulated for hollow shaft, shaft diameter 12 mm, outer diameter 5/8" (15.875 mm)</li></ul>           | SPZ-58Z-012-P | 2076231  |
|    | <ul style="list-style-type: none"><li>• <b>Product segment:</b> Shaft adaptation</li><li>• <b>Product:</b> Collets</li><li>• <b>Description:</b> Collet plastic (PEEK) insulated for hollow shaft, shaft diameter 10 mm, outer diameter 5/8" (15.875 mm)</li></ul>           | SPZ-58Z-010-P | 2076230  |
|    | <ul style="list-style-type: none"><li>• <b>Product segment:</b> Shaft adaptation</li><li>• <b>Product:</b> Collets</li><li>• <b>Description:</b> Collet plastic (PEEK) insulated for hollow shaft, shaft diameter 8 mm, outer diameter 5/8" (15.875 mm)</li></ul>            | SPZ-58Z-008-P | 2076229  |
|    | <ul style="list-style-type: none"><li>• <b>Product segment:</b> Shaft adaptation</li><li>• <b>Product:</b> Collets</li><li>• <b>Description:</b> Collet plastic (PEEK) insulated for hollow shaft, shaft diameter 6 mm, outer diameter 5/8" (15.875 mm)</li></ul>            | SPZ-58Z-006-P | 2076228  |
|   | <ul style="list-style-type: none"><li>• <b>Product segment:</b> Shaft adaptation</li><li>• <b>Product:</b> Collets</li><li>• <b>Description:</b> Collet plastic (PEEK) insulated for hollow shaft, shaft diameter 1/2" (12.7 mm), outer diameter 5/8" (15.875 mm)</li></ul>  | SPZ-58Z-12Z-P | 2076227  |
|  | <ul style="list-style-type: none"><li>• <b>Product segment:</b> Shaft adaptation</li><li>• <b>Product:</b> Collets</li><li>• <b>Description:</b> Collet plastic (PEEK) insulated for hollow shaft, shaft diameter 3/8" (9.525 mm), outer diameter 5/8" (15.875 mm)</li></ul> | SPZ-58Z-38Z-P | 2076226  |
|  | <ul style="list-style-type: none"><li>• <b>Product segment:</b> Shaft adaptation</li><li>• <b>Product:</b> Collets</li><li>• <b>Description:</b> Collet metal for hollow shaft, shaft diameter 1/2" (12.7 mm), outer diameter 5/8" (15.875 mm)</li></ul>                     | SPZ-58Z-12Z-M | 2076225  |
|  | <ul style="list-style-type: none"><li>• <b>Product segment:</b> Shaft adaptation</li><li>• <b>Product:</b> Collets</li><li>• <b>Description:</b> Collet metal for hollow shaft, shaft diameter 3/8" (9.525 mm), outer diameter 5/8" (15.875 mm)</li></ul>                    | SPZ-58Z-38Z-M | 2076224  |
|  | <ul style="list-style-type: none"><li>• <b>Product segment:</b> Shaft adaptation</li><li>• <b>Product:</b> Collets</li><li>• <b>Description:</b> Collet metal for hollow shaft, shaft diameter 15 mm, outer diameter 5/8" (15.875 mm)</li></ul>                              | SPZ-58Z-015-M | 2076223  |
|  | <ul style="list-style-type: none"><li>• <b>Product segment:</b> Shaft adaptation</li><li>• <b>Product:</b> Collets</li><li>• <b>Description:</b> Collet metal for hollow shaft, shaft diameter 14 mm, outer diameter 5/8" (15.875 mm)</li></ul>                              | SPZ-58Z-014-M | 2076222  |
|  | <ul style="list-style-type: none"><li>• <b>Product segment:</b> Shaft adaptation</li><li>• <b>Product:</b> Collets</li><li>• <b>Description:</b> Collet metal for hollow shaft, shaft diameter 12 mm, outer diameter 5/8" (15.875 mm)</li></ul>                              | SPZ-58Z-012-M | 2076221  |
|  | <ul style="list-style-type: none"><li>• <b>Product segment:</b> Shaft adaptation</li><li>• <b>Product:</b> Collets</li><li>• <b>Description:</b> Collet metal for hollow shaft, shaft diameter 10 mm, outer diameter 5/8" (15.875 mm)</li></ul>                              | SPZ-58Z-010-M | 2076220  |
|  | <ul style="list-style-type: none"><li>• <b>Product segment:</b> Shaft adaptation</li><li>• <b>Product:</b> Collets</li><li>• <b>Description:</b> Collet metal for hollow shaft, shaft diameter 8 mm, outer diameter 5/8" (15.875 mm)</li></ul>                               | SPZ-58Z-008-M | 2076219  |



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