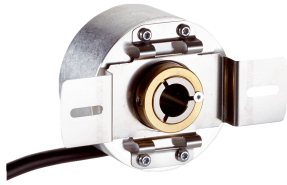


## DBS60 Core

Rugged, versatile incremental encoder for industrial applications

INCREMENTAL ENCODERS

**SICK**  
Sensor Intelligence.



### Technical data overview

<b>Pulses per revolution</b>	0 ... 10,000 <sup>1)</sup>
<b>Mechanical design</b>	Solid shaft, Servo flange Solid shaft, face mount flange Blind hollow shaft Through hollow shaft, rear clamping Through hollow shaft, Front clamp
<b>Shaft diameter</b>	6 mm <sup>2)</sup> 6 mm 10 mm <sup>2)</sup> 10 mm 12 mm 5/8" 8 mm 3/8" 1/2" 14 mm 15 mm 6 mm shaft isolated 8 mm shaft isolated 3/8" shaft isolated 10 mm shaft isolated 12 mm shaft isolated 1/2" shaft isolated 14 mm shaft isolated 15 mm shaft isolated
<b>Connection type</b>	Male connector, M23, 12-pin, radial Male connector, M12, 8-pin, radial Cable, 8-wire, universal Cable, 8-wire, with male connector, M12, 8-pin, universal Cable, 8-wire, with male connector, M23, 12-pin, universal
<b>Communication interface</b>	Incremental
<b>Communication Interface detail</b>	TTL / RS-422 HTL / Push pull TTL / HTL
<b>Supply voltage</b>	4.5 ... 5.5 V 10 ... 30 V 10 ... 27 V 4.5 ... 30 V
<b>Enclosure rating</b>	IP67 IP65 (depending on type)
<b>Output frequency</b>	+ 300 kHz
<b>Operating temperature range</b>	-20 °C ... +85 °C <sup>3)</sup> -30 °C ... +100 °C <sup>3)</sup> -30 °C ... +85 °C <sup>3)</sup>

<sup>1)</sup> Available pulses per revolution see type code.

<sup>2)</sup> Others on request.

<sup>3)</sup> These values relate to all mechanical versions including recommended accessories unless otherwise noted.

### Product description

The DBS60 Core is a rugged incremental encoder with a diameter of 58 mm and a compact mounting depth. The portfolio includes solid shaft models with face mount flange and servo flange as well as hollow shaft designs (blind/through hollow shaft) for shafts up to a size of 5/8 inches (15.875 mm). The hollow shafts are available with shaft insulation and with a clamp on the rear housing on request. In addition to the standard interfaces for TTL and HTL, the DBS60 Core also offers two universal interfaces with a large voltage range which unites the 5 V TTL and 24 V HTL as well as 5 V TTL and 24 V TTL in one version. Due to its high enclosure rat-

ing, rugged design and a resolution of up to 10,000 pulses, the DBS60 Core is the ideal product for standard use in various industries.

### At a glance

- Face mount and servo flange with various hole patterns
- Hollow shafts up to 5/8 inches in diameter, optionally insulated; front and rear clamping
- Housing diameter 58 mm, compact installation depth
- Number of lines up to 10,000 pulses
- Cable connection, M12 and M23 male connector, radial
- TTL/HTL and TTL interfaces with voltage range 4.5 V DC ... 30 V DC

### Your benefits

- Diverse installation options thanks to different flange and shaft versions as well as flange and stator couplings with different assembly hole patterns
- Hollow shaft clamp on the rear housing facilitates mounting
- Various connection types enable flexible cabling
- Compact housing dimensions save valuable space
- The encoder is protected from high shaft temperatures and currents due to the insulated hollow shaft
- Rugged design with large bearing distance allows high shaft loads and a longer service life
- Only a few product variants due to electrical interfaces with a large voltage range, which reduces storage costs

### Fields of application

Measuring of position, speed and distance in applications with low to medium requirements on the encoder. Developed for applications in factory and logistics automation, e.g. in

- Asynchronous motors
- Elevators
- Packaging machines
- Warehousing and transport logistics

Type code

Other models and accessories → [www.sick.com/DBS60\\_Core](http://www.sick.com/DBS60_Core)

Hollow shaft

**Type**

E	Eco: Pulses per revolution 4 ... 5,000
B	Basic: Pulses per revolution 6,000 ... 10,000

**Shaft type**

B	Blind hollow shaft
R	Through hollow shaft clamping at the back
T	Through hollow shaft

**Shaft diameter**

A	6 mm
B	8 mm
C	3/8"
D	10 mm
E	12 mm
F	1/2"
G	14 mm
H	15 mm
J	5/8" <sup>1)</sup>
1	6 mm, shaft isolated
2	8 mm, shaft isolated
3	3/8", shaft isolated
4	10 mm, shaft isolated
5	12 mm, shaft isolated
6	1/2", shaft isolated
7	14 mm, shaft isolated
8	15 mm, shaft isolated

**Communication interface**

A	4.5 V ... 5.5 V, TTL/RS-422 <sup>2)</sup>
C	10 V ... 30 V, TTL/RS-422 <sup>2)</sup>
E	10 V ... 27 V, HTL/push pull <sup>2)</sup>
F	4.5 V ... 30 V, TTL/HTL universal <sup>2)</sup>
H	4.5 V ... 30 V, TTL/RS-422 <sup>3)</sup>

**Connection type**

A	Male connector, M23, 12-pin, radial
C	Male connector, M12, 8-pin, radial
J	Cable, 8-wire, universal, 0.5 m
K	Cable, 8-wire, universal, 1.5 m
L	Cable, 8-wire, universal, 3 m
M	Cable, 8-wire, universal, 5 m
N	Cable, 8-wire, universal, 10 m
P	Cable, 8-wire, with male connector, M12, 8-pin, universal, 0.5 m
Q	Cable, 8-wire, with male connector, M23, 12-pin, universal, 0.5 m

**Stator coupling/flange design**

0	2-sided stator coupling, slot, screw hole circle 63–83 mm
1	As 0, but with 10,000 pulse resolution
A	Without stator coupling, flange with 4 x M2.5
B	Stator coupling, 2-sided, screw hole circle 63 mm
C	Axial and radial register pin mounting, for 4 mm register pin
D	1-sided stator coupling, slot, screw hole circle radius 31.5–48.5 mm
K	Without stator coupling, flange with 3 x M3, 3 x M4, axial register pin mounting, for 4 mm register pin

**Resolution**

00001 ...	Pulses per revolution <sup>4) 5) 6)</sup>
10,000	



<sup>1)</sup> Order collets for 6 mm (only plastic) 8 mm, 3/8" 10 mm, 12 mm, 1/2" 14 mm and 15 mm separately as accessories (see recommended accessories). No collets are necessary for 5/8" shaft diameter. Also possible with isolation upon request.

- 2) Only for type E.
- 3) Only for type B.
- 4) 0000 = 10,000, see "Pulses per revolution" table.
- 5) Other pulses upon request.
- 6) Only with communication interface H from 6,000 pulses per revolution.

Pulses per revolution (other pulses upon request)

DBS60E	DBS60B (only with communication interface H)
0004	-
0005	-
0010	-
0020	-
0048	-
0050	-
0060	-
0100	-
0125	-
0128	-
0180	-
0250	-
0360	-
0500	-
0512	-
0600	-
1000	-
1024	-
1200	-
1500	-
2000	-
2048	-
2400	-
2500	-
3000	-
3600	-
4096	-
5000	-
-	6000
-	7200
-	8192
-	10000

Solid shaft

Type

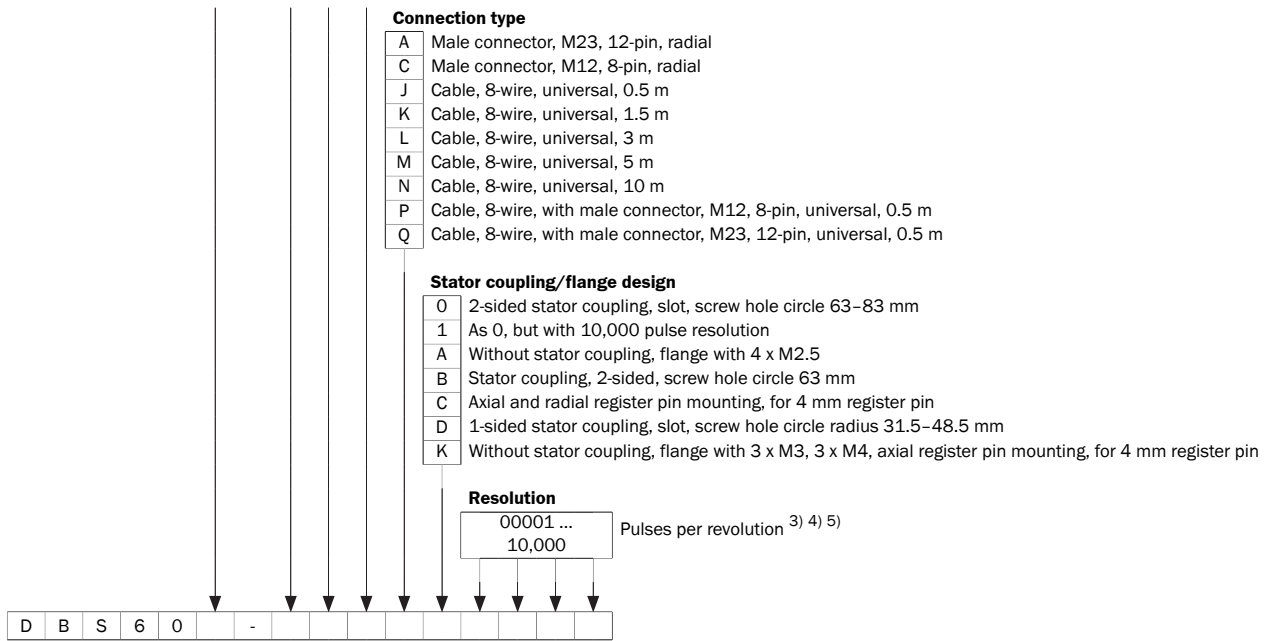
- E Eco: Pulses per revolution 4 ... 5,000
- B Basic: Pulses per revolution 6,000 ... 10,000

Mechanical design

- S 1 Solid shaft, servo flange, 6 mm x 10 mm
- S 3 Solid shaft, face mount flange, 6 mm x 10 mm
- S 4 Solid shaft, face mount flange, 10 mm x 19 mm

Communication interface

- A 4.5 V ... 5.5 V, TTL/RS-422 <sup>1)</sup>
- C 10 V ... 30 V, TTL/RS-422 <sup>1)</sup>
- E 10 V ... 27 V, HTL/push pull <sup>1)</sup>
- F 4.5 V ... 30 V, TTL /HTL universal <sup>1)</sup>
- H 4.5 V ... 30 V, TTL/RS-422 <sup>2)</sup>



- 1) Only for type E.
- 2) Only for type B.
- 3) 0000 = 10,000, see "Pulses per revolution" table.
- 4) Other pulses upon request.
- 5) Only with communication interface H from 6000 pulses per revolution.

**Pulses per revolution (other pulses upon request)**

DBS60E	DBS60B (only with communication interface H)
0004	-
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0360	-
0500	-
0512	-
0600	-
1000	-
1024	-
1200	-
1500	-
2000	-
2048	-
2400	-
2500	-
3000	-

<b>DBS60E</b>	<b>DBS60B (only with communication interface H)</b>
3600	-
4096	-
5000	-
-	6000
-	7200
-	8192
-	10000

## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)