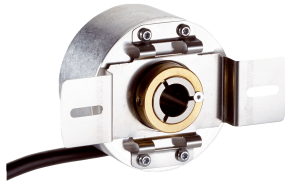


DBS60

Rugged, universal use incremental encoder

INCREMENTAL ENCODERS

SICK
Sensor Intelligence.



Technical data overview

Pulses per revolution	0 ... 10,000 ¹⁾ 0 ... 5,000 ¹⁾
Mechanical design	Solid shaft, Servo flange Solid shaft, face mount flange Blind hollow shaft Through hollow shaft, rear clamping Through hollow shaft, Front clamp Solid shaft, Square flange
Shaft diameter	6 mm ²⁾ 6 mm 10 mm ²⁾ 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
Connection type	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 Cable, 8-wire, radial
Communication interface	Incremental
Communication Interface detail	TTL / RS-422 HTL / Push pull TTL / HTL
Supply voltage	4.5 ... 5.5 V 10 ... 30 V 10 ... 27 V 4.5 ... 30 V
Enclosure rating	IP67 IP65 IP69K (depending on type)
Output frequency	+ 300 kHz
Operating temperature range	-20 °C ... +85 °C ³⁾ -30 °C ... +100 °C ³⁾ -30 °C ... +85 °C ³⁾ -20 °C ... +85 °C -30 °C ... +100 °C -30 °C ... +85 °C

¹⁾ Available pulses per revolution see type code.

²⁾ Others on request.

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

Product description

The DBS60 is a rugged incremental encoder with a 60 mm diameter and small installation depth. The device comes in an aluminum or stainless-steel housing and offers lots of mechanical interfaces. The DBS60 Inox variants can even withstand harsh ambient conditions due to their fully stainless steel design and rugged shaft seal. The IP69K DBS60I-W variant with its patented deflector screen is the ideal solution for applications in washdown environments. In addition to the interfaces for TTL and HTL, the DBS60 also offers two universal interfaces with a wide voltage range. Due to the high enclosure rating, rugged design, and a resolution of up to 10,000 pulses per revolution, the DBS60 is suitable for applications in many different industries.

At a glance

- Pulses per revolution: Up to 10,000
- Housing diameter: 60 mm
- Solid shaft, blind hollow shaft, and through hollow shaft
- Enclosure rating: IP67, IP69K
- Communication interfaces: TTL/RS-422, HTL/Push Pull, universal interface (TTL, HTL)
- Connection type: M12 or M23 male connector, cable, cable with M12 or M23 male connector
- Stainless steel or aluminum housing

Your benefits

- Various installation options and connection types allow flexible cabling
- Compact housing dimensions save valuable space
- With its insulated hollow shafts, the encoder is protected against damage from any eddy currents or higher temperatures transmitted by the shaft
- Stainless steel housing provides corrosion protection against environmental influences
- Protection against water ingress with IP enclosure rating up to IP69K
- Reliable operation in harsh washdown environments with hot water and high pressure in the food and beverages industry

Fields of application

Measurement of position, speed and displacement in factory and logistics automation, e.g., in storage and transport logistics, the food and beverages industry, medical technology, at ports and offshore plants, asynchronous motors, elevators, and packaging machines

Type											
E	Eco ¹⁾										
B	Basic ²⁾										
I	Inox										

Mechanical type	
B	Blind hollow shaft
R	Through hollow shaft clamping at the back ³⁾
T	Through hollow shaft ³⁾

Shaft diameter	
A	Ø 6 mm
B	Ø 8 mm
C	Ø 3/8" ³⁾
D	Ø 10 mm
E	Ø 12 mm
F	Ø 1/2" ³⁾
G	Ø 14 mm
H	Ø 15 mm
J	Ø 5/8" ³⁾ ⁴⁾
1	Ø 6 mm, shaft insulated ³⁾
2	Ø 8 mm, shaft insulated ³⁾
3	Ø 3/8", shaft insulated ³⁾
4	Ø 10 mm, shaft insulated ³⁾
5	Ø 12 mm, shaft insulated ³⁾
6	Ø 1/2", shaft insulated ³⁾
7	Ø 14 mm, shaft insulated ³⁾
8	Ø 15 mm, shaft insulated ³⁾

Communication interface	
A	4.5 ... 5.5 V, TTL/RS-422, 6 channel ⁵⁾
C	10 V ... 30 V, TTL/RS-422, 6 channel ⁵⁾
E	10 V ... 27 V, HTL/push pull, 6 channel ⁵⁾
F	4.5 V ... 30 V, TTL/HTL universal, 6 channel ⁵⁾
H	4.5 V ... 30 V, TTL/RS-422, 6 channel ⁶⁾

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

Stator coupling/flange type	
0	2-sided stator coupling, slot, screw hole circle 63–83 mm
1	As 0, but with 10,000 pulse resolution ³⁾
A	Without stator coupling, flange with 4 x M2.5 ³⁾
B	Stator coupling, 2-sided, screw hole circle 63 mm ³⁾
C	Axial and radial register pin mounting, for 4 mm register pin ³⁾
D	1-sided stator coupling, slot, screw hole circle radius 31.5–48.5 mm ³⁾
E	1-sided stator coupling, slots, screw hole circle radius 32.25–142.75 mm ³⁾
G	1-sided stator coupling, slot, screw hole circle radius 32.1–37.6 mm ³⁾
K	Without stator coupling, flange with 3 x M3, 3 x M4, axial register pin mounting, for 4 mm register pin ³⁾

Resolution	
0004 ... 0000	

D	B	S	6	0		-											
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- 1) Pulses per revolution 4 ... 5,000.
 2) Pulses per revolution 6,000 ... 10,000.
 3) Only in combination with type E and B.
 4) Order collets for 6 mm (plastic only) 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 insulation upon request.
 5) Only in combination with type E and I.
 6) Only in combination with type B.
 7) Other pulses on request.
 8) Only with electrical interface H from 6,000 pulses per revolution.

Pulses per revolution

	DBS60E / DBS60I	DBS60B (only with electrical interface H)
Pulses per revolution	0004	-
Pulses per revolution	0005	-
Pulses per revolution	0010	-
Pulses per revolution	0020	-
Pulses per revolution	0048	-
Pulses per revolution	0050	-
Pulses per revolution	0060	-
Pulses per revolution	0100	-
Pulses per revolution	0125	-
Pulses per revolution	0128	-
Pulses per revolution	0180	-
Pulses per revolution	0250	-
Pulses per revolution	0360	-
Pulses per revolution	0500	-
Pulses per revolution	0512	-
Pulses per revolution	0600	-
Pulses per revolution	1000	-
Pulses per revolution	1024	-
Pulses per revolution	1200	-
Pulses per revolution	1500	-
Pulses per revolution	2000	-
Pulses per revolution	2048	-
Pulses per revolution	2400	-
Pulses per revolution	2500	-
Pulses per revolution	3000	-
Pulses per revolution	3600	-
Pulses per revolution	4096	-
Pulses per revolution	5000	-
Pulses per revolution	-	6000
Pulses per revolution	-	7200
Pulses per revolution	-	8192
Pulses per revolution	-	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.”

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