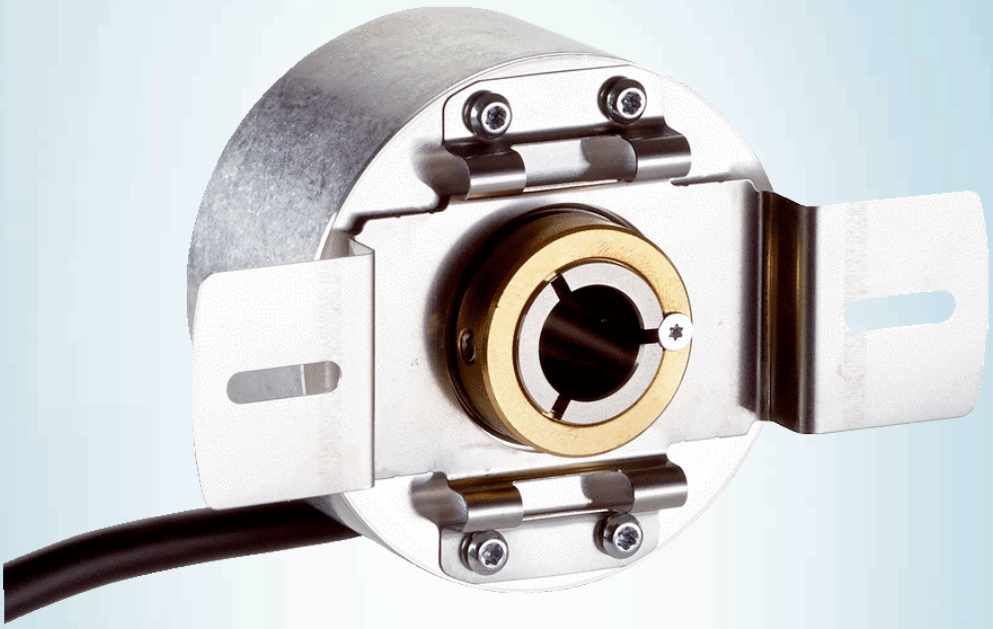
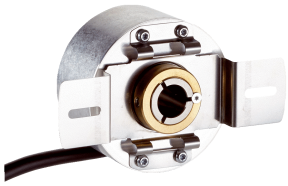
Product family overview



DBS60

Rugged, universal use incremental encoder

SICK
Sensor Intelligence.



Technical data overview

Pulses per revolution	0 ... 10,000 [1]
Mechanical design	Solid shaft, face mount flange Solid shaft, Square flange Blind hollow shaft Solid shaft, Servo flange Through hollow shaft, rear clamping Through hollow shaft, Front clamp
Shaft diameter	10 mm 6 mm 8 mm 12 mm 14 mm 15 mm 3/8″ 5/8″ 10 mm, shaft isolated 15 mm, shaft isolated 6 mm, shaft isolated 8 mm, shaft isolated 3/8″, shaft isolated 12 mm, shaft isolated 1/2″, shaft isolated 14 mm, shaft isolated 1/2″
Connection type	Male connector, M12, 8-pin, radial Cable, 8-wire, radial Male connector, M23, 12-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
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 IP69K IP65 (depending on type)
Output frequency	≤ 300 kHz
Operating temperature range	
4.5 V ... 5.5 V, TTL, RS-422	–20 °C ... +85 °C –20 °C ... +85 °C [2]
10 V ... 30 V, TTL, RS-422	–30 °C ... +100 °C –30 °C ... +85 °C –30 °C ... +100 °C [2] –30 °C ... +85 °C [2]
10 V ... 27 V, HTL, Push pull	–20 °C ... +85 °C –20 °C ... +85 °C [2]
4.5 V ... 30 V, TTL, HTL	–30 °C ... +100 °C –30 °C ... +85 °C

[1] Available pulses per revolution see type code.

[2] These values relate to all mechanical versions including recommended accessories unless otherwise noted.

	–30 °C ... +100 °C [2] –30 °C ... +85 °C [2]
4.5 V ... 30 V, TTL, RS-422	–20 °C ... +85 °C [2]

[1] Available pulses per revolution see type code.

[2] 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 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 resolution, 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 code

Other models and accessories ➜ www.sick.com/DBS60

Hollow shaft

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	(0000 = 10,000) pulses per revolution possible. For pulses see "Pulses per revolution" [7] [8]

D	B	S	6	0		-									

[1] Pulses per revolution 4 ... 5,000.
[2] Pulses per revolution 5,001 ... 10,000.
[3] Only in combination with type E and B.
[4] No collets are necessary for 5/8" shaft diameter.
[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 5,001 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	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

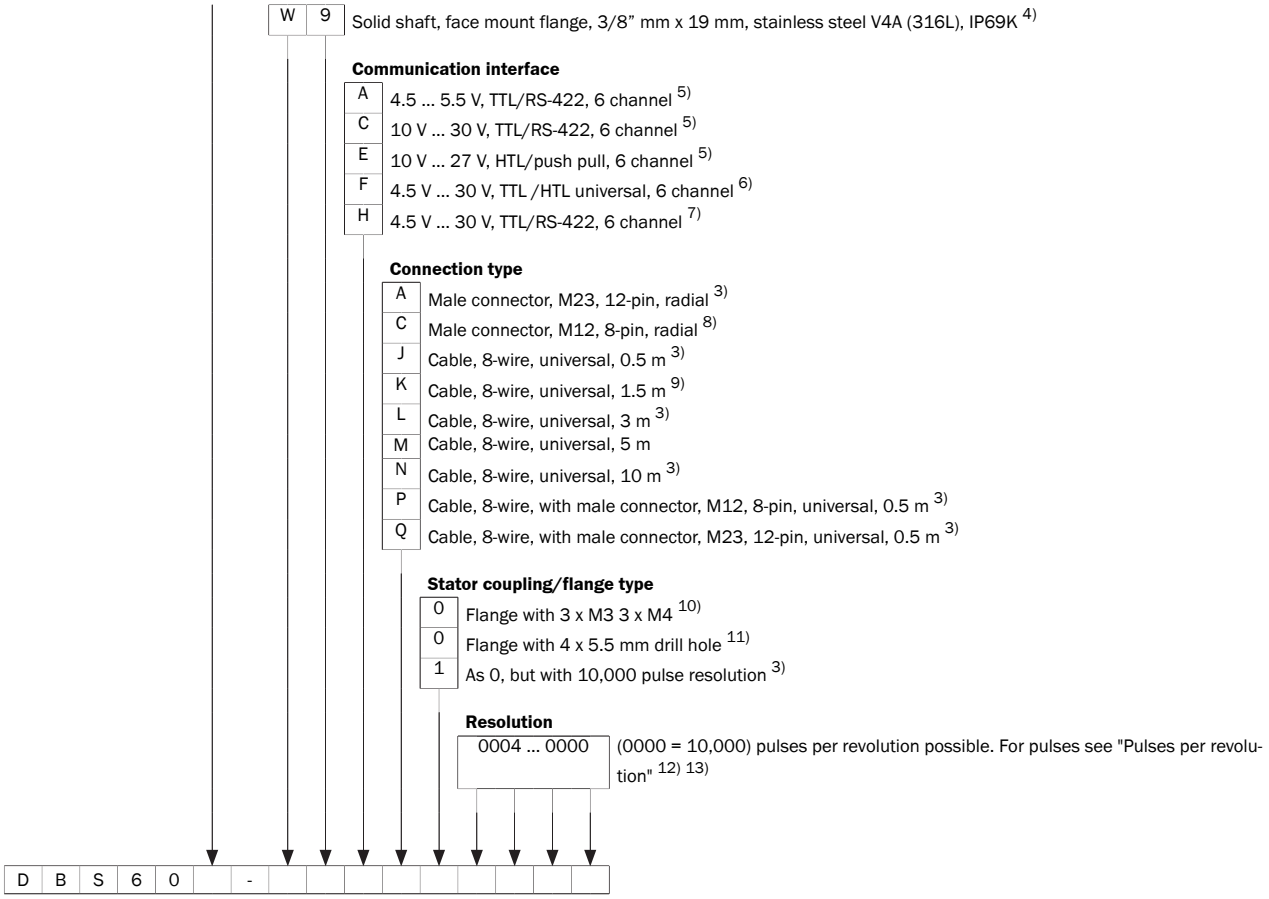
Solid shaft

Type

E	Eco [1]
B	Basic [2]
I	Inox

Mechanical type

S	1	Solid shaft, servo flange, 6 mm x 10 mm [3]
S	3	Solid shaft, face mount flange, 6 mm x 10 mm [3]
S	4	Solid shaft, face mount flange, 10 mm x 19 mm [4]
Q	4	Solid shaft, square flange, 10 mm x 19 mm [4]
W	4	Solid shaft, face mount flange, 10 mm x 19 mm, stainless steel V4A (316L), IP69K [4]



1) Pulses per revolution 4 ... 5,000.
2) Pulses per revolution 5,001 ... 10,000.
3) Only in combination with type E and B.
4) Only in combination with type I.
5) Only in combination with type E and I, for type I only in combination with mechanical type S4 and Q4.
6) Only in combination with type E and I.
7) Only in combination with type B.
8) For type I only in combination with mechanical type S4 and Q4.
9) For type I only in combination with mechanical type W4 and W9.
10) For type I only in combination with mechanical type S4, W4 and W9.
11) For type I only in combination with mechanical type Q4.
12) Other pulses on request.
13) Only with electrical interface H from 5,001 pulses per revolution.

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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Contacts and other locations –www.sick.com