

# DBS36E-BBCP00S25

DBS36/50

**INCREMENTAL ENCODERS**

**SICK**  
Sensor Intelligence.

Illustration may differ

## Ordering information

Type	part no.
DBS36E-BBCP00S25	1077056

Other models and accessories → [www.sick.com/DBS36\\_50](http://www.sick.com/DBS36_50)

## Detailed technical data

## Features

<b>Special device</b>	✓
<b>Specialty</b>	Cable, 8-wire universal, 1,0 m, with male connector M12, 8-pin

## Safety-related parameters

<b>MTTF<sub>D</sub> (mean time to dangerous failure)</b>	600 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>	2,500
<b>Measuring step</b>	90°, electric/pulses per revolution
<b>Measuring step deviation</b>	± 18° / pulses per revolution
<b>Error limits</b>	± 54° / pulses per revolution
<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>	< 3 ms
<b>Output frequency</b>	≤ 300 kHz
<b>Load current</b>	≤ 30 mA
<b>Power consumption</b>	≤ 0.5 W (without load)

## Electronics

<b>Connection type</b>	Special version
<b>Connection type Detail</b>	Cable, 8-wire universal, 1,0 m, with male connector M12, 8-pin
<b>Supply voltage</b>	7 ... 30 V
<b>Reference signal, number</b>	1
<b>Reference signal, position</b>	90°, electric, logically gated with A and B

<sup>1)</sup> The short-circuit rating is only given if Us and GND are connected correctly.

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

<sup>1)</sup> The short-circuit rating is only given if Us and GND are connected correctly.

Mechanics

Mechanical design	Blind hollow shaft
Shaft diameter	8 mmFront clamp <sup>1)</sup>
Weight	+ 150 g (with connecting cable)
Shaft material	Stainless steel
Flange material	Aluminum
Housing material	Aluminum
Material, cable	PVC
Start up torque	+ 0.5 Ncm (+20 °C)
Operating torque	0.4 Ncm (+20 °C)
Permissible movement static	± 0.3 mm (radial) ± 0.5 mm (axial) <sup>2)</sup>
Permissible movement dynamic	± 0.1 mm (radial) ± 0.2 mm (axial) <sup>2)</sup>
Operating speed	6,000 min <sup>-1</sup> <sup>3)</sup>
Maximum operating speed	≤ 8,000 min <sup>-1</sup> <sup>4)</sup>
Moment of inertia of the rotor	0.8 gcm <sup>2</sup>
Bearing lifetime	2 x 10 <sup>9</sup> revolutions
Angular acceleration	≤ 500,000 rad/s <sup>2</sup>

- <sup>1)</sup> Order collets for 5 mm, 6 mm and 1/4" mm separately as accessories.  
<sup>2)</sup> Higher values are possible using limited bearing life.  
<sup>3)</sup> Allow for self-heating of 4.7 K per 1,000 rpm when designing the operating temperature range.  
<sup>4)</sup> No permanent operation. Decreasing signal quality.

Ambient data

EMC	According to EN 61000-6-2 and EN 61000-6-3 (class A)
Enclosure rating	IP65
Permissible relative humidity	90 % (Condensation not permitted)
Operating temperature range	-20 °C ... +85 °C, -35 °C ... +95 °C on request
Storage temperature range	-40 °C ... +100 °C, without package
Resistance to shocks	100 g, 6 ms (EN 60068-2-27)
Resistance to vibration	20 g, 10 Hz ... 2,000 Hz (EN 60068-2-6)

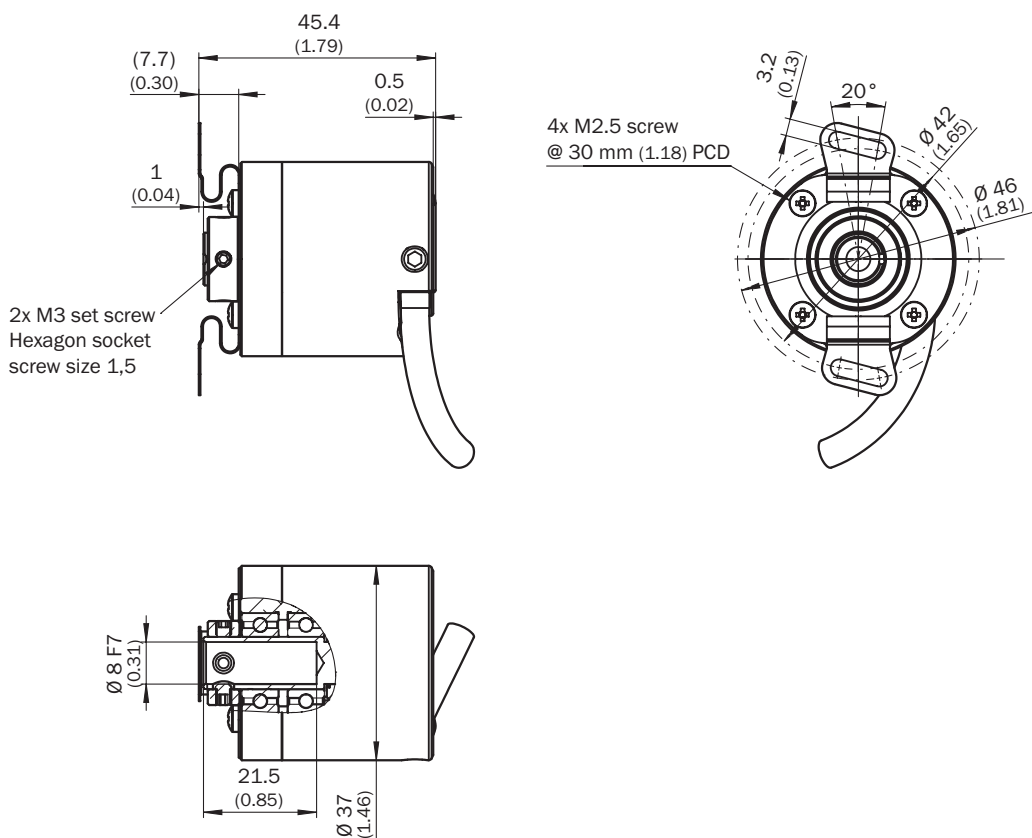
Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
China-RoHS	✓
cRUus certificate	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

### Classifications

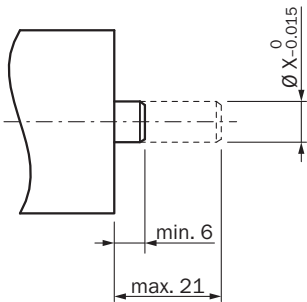
<b>ECLASS 5.0</b>	27270501
<b>ECLASS 5.1.4</b>	27270501
<b>ECLASS 6.0</b>	27270590
<b>ECLASS 6.2</b>	27270590
<b>ECLASS 7.0</b>	27270501
<b>ECLASS 8.0</b>	27270501
<b>ECLASS 8.1</b>	27270501
<b>ECLASS 9.0</b>	27270501
<b>ECLASS 10.0</b>	27270501
<b>ECLASS 11.0</b>	27270501
<b>ECLASS 12.0</b>	27270501
<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 Blind hollow shaft, cable



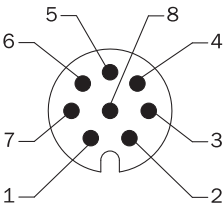
Dimensions in mm (inch)

Attachment specifications



	Encoder	
6 mm	DBS36E-BA	2056390Premounted
5 mm	DBS36E-BB	2066991
6 mm		2056390
1/4"		On request
8 mm		Not required

PIN assignment



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

## 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)