

SICK

DBV50E-00AZZ0S06

DBV50

MEASURING WHEEL ENCODERS

SICK
Sensor Intelligence.



Ordering information

Type	part no.
DBV50E-00AZZ0S06	1110525

Illustration may differ

Other models and accessories → www.sick.com/DBV50



Detailed technical data

Features

Special device	✓
Specialty	Rotatable spring arm, with M6 thread for mounting in the application Without measuring wheel Cable, 8-wire, 2.3 m with JST connector, type PAP-08V-S
Standard reference device	DBS50E-S5AL01024

Safety-related parameters

MTTF_D (mean time to dangerous failure)	600 s (EN ISO 13849-1) ¹⁾
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¹⁾ 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

Pulses per revolution	1,024
Measuring step deviation	± 18° / pulses per revolution
Error limits	± 54°, ± 4 mm/m, subject to the measuring wheel (wheel + surface)
Duty cycle	≤ 0.5 ± 5 %
Initialization time	< 3 ms

Interfaces

Communication interface	Incremental
Communication Interface detail	TTL / RS-422
Number of signal channels	6-channel

Electronics

Operating power consumption (no load)	50 mA
Connection type	Special version
Connection type Detail	Cable, 8-wire, 2.3 m with JST connector, type PAP-08V-S
Supply voltage	4.5 V ... 5.5 V
Load current max.	30 mA
Maximum output frequency	≤ 300 kHz

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

Reference signal, number	1
Reference signal, position	90°, electric, logically gated with A and B
Reverse polarity protection	-
Short-circuit protection of the outputs	✓ ¹⁾

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

Mechanics

Mass	+ 300 g
Encoder material	
Shaft	Stainless steel
Flange	Aluminum
Housing	Aluminum
Cable	PVC
Spring arm mechanism material	
Spring element	Spring steel, anti-corrosive
Start up torque	+ 0.9 Ncm (at 20 °C)
Operating torque	0.6 Ncm (at 20 °C)
Maximum operating speed	3,000 min ⁻¹ ¹⁾
Bearing lifetime	2 x 10 ⁹ revolutions
Maximum travel/deflection of spring arm	300 m
Recommended spring deflection	≤ 14 mm

¹⁾ 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	-30 °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)

Classifications

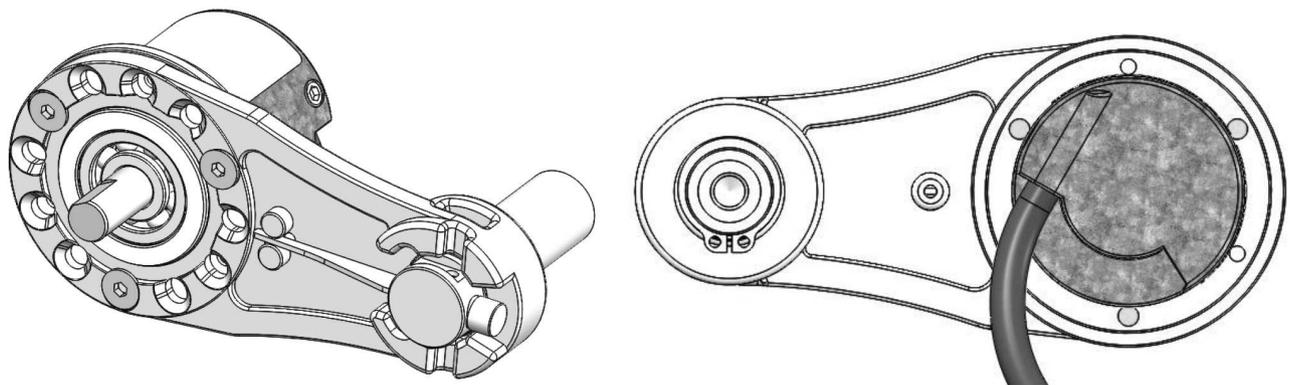
ECLASS 5.0	27270501
ECLASS 5.1.4	27270501
ECLASS 6.0	27270590
ECLASS 6.2	27270590
ECLASS 7.0	27270501
ECLASS 8.0	27270501
ECLASS 8.1	27270501
ECLASS 9.0	27270501
ECLASS 10.0	27270501
ECLASS 11.0	27270501

ECLASS 12.0	27270504
ETIM 5.0	EC001486
ETIM 6.0	EC001486
ETIM 7.0	EC001486
ETIM 8.0	EC001486
UNSPSC 16.0901	41112113

Certificates

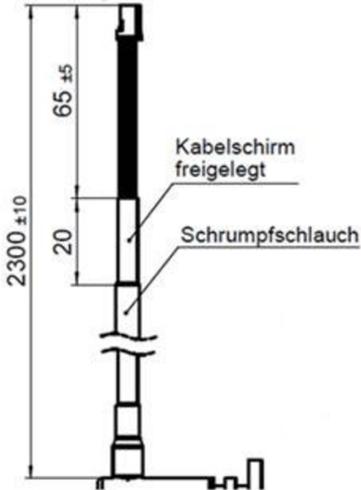
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
China RoHS	✓
cRUus certificate	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

Dimensional drawing



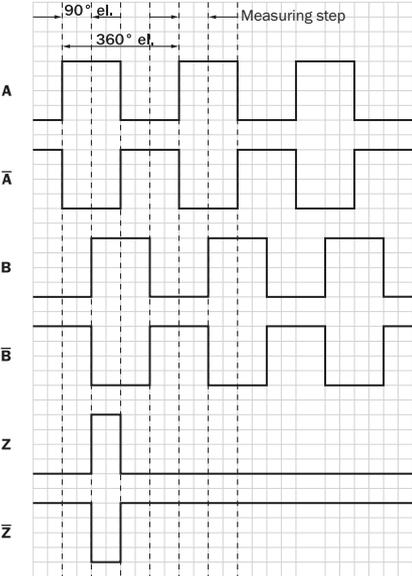
Dimensions in mm (inch)

Dimensional drawing



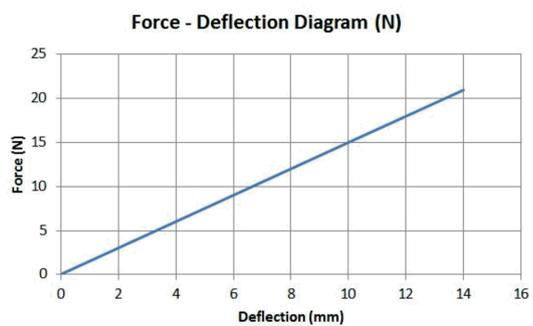
Dimensions in mm (inch)

Diagrams Signal outputs for electrical interfaces TTL and HTL



CW with view on the encoder shaft , compare dimensional drawing.
Interfaces G, P, R perform only the channels A, B, Z.

Diagrams



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