Data sheet

DUV60E-Z4KZHAZAS06

DUV60

MEASURING WHEEL ENCODERS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
DUV60E-Z4KZHAZAS06	1090984

Other models and accessories ➜ www.sick.com/DUV60

Detailed technical data

Features

Special device	✓
Specialty	1500 pulses per revolution Includes 5 m mating cable (part no.: 6032867, DOL-1208-G05MAC1) Mounting holes in bracket compatible with anti anti-static brush
Standard reference device	DUV60E-D4KCHADA, 1090983

Safety-related parameters

$MTTF_D$ (mean time to dangerous failure)	275 years (EN ISO 13849-1) [1]

[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

Resolution in pulses/mm	5 pulses/mm
Measuring step	90° electric/pulses per revolution
Measuring step deviation	± 18°, / pulses per revolution
Error limits	Measuring step deviation x 3
Duty cycle	0.5 ± 5 %
Initialization time	< 5 ms [1]

[1] Valid positional data can be read once this time has elapsed.

Interfaces

Communication interface	Incremental
Communication Interface detail	HTL
Number of signal channels	6-channel, A, AN, B, BN, Z, ZN

Electrical data

Operating power consumption (no load)	120 mA
Connection type	Cable, with male connector, M12, 8-pin, universal, 5 m
Power consumption max. without load	≤ 1.25 W
Supply voltage	4.75 V ... 30 V
Load current max.	≤ 30 mA, per channel

Maximum output frequency	60 kHz
Reference signal, number	1
Reference signal, position	90°, electric, logically gated with A and B
Reverse polarity protection	✓
Short-circuit protection of the outputs	✓

Mechanical data

Measuring wheel circumference	300 mm
Measuring wheel surface	Smooth plastic (urethane) [1]
Spring arm design	Spring tension, under-belt flange mount
Mass	0.9 kg [2]
Encoder material	
Shaft	Stainless steel
Flange	Aluminum
Housing	Aluminum
Cable	PVC
Spring arm mechanism material	
Spring element	Spring steel
Measuring wheel, spring arm	Aluminum
Yoke	Aluminum
Counterweight	Aluminum
Start up torque	0.5 Ncm
Operating torque	0.4 Ncm
Operating speed	1,500 min^{-1}
Bearing lifetime	3.6 x 10^9 revolutions
Maximum travel/deflection of spring arm	40 mm [3]
Recommended pretension	20 mm [3]
Max. permissible working area for the spring (continuous operation)	± 10 mm

[1] The surface of a measuring wheel is subject to wear. This depends on contact pressure, acceleration behavior in the application, traversing speed, measurement surface, mechanical alignment of the measuring wheel, temperature, and ambient conditions. We recommend you regularly check the condition of the measuring wheel and replace as required.

[2] Based on an encoder with a plug connector output and urethane rollers, no mounting necessary (arm mount).

[3] Only applies to variants with spring arm mounting.

Ambient data

EMC	According to EN 61000-6-2 and EN 61000-6-3
Enclosure rating	IP65
Permissible relative humidity	90 % (Condensation not permitted)
Operating temperature range	–30 °C ... +70 °C
Storage temperature range	–40 °C ... +75 °C

Certificates

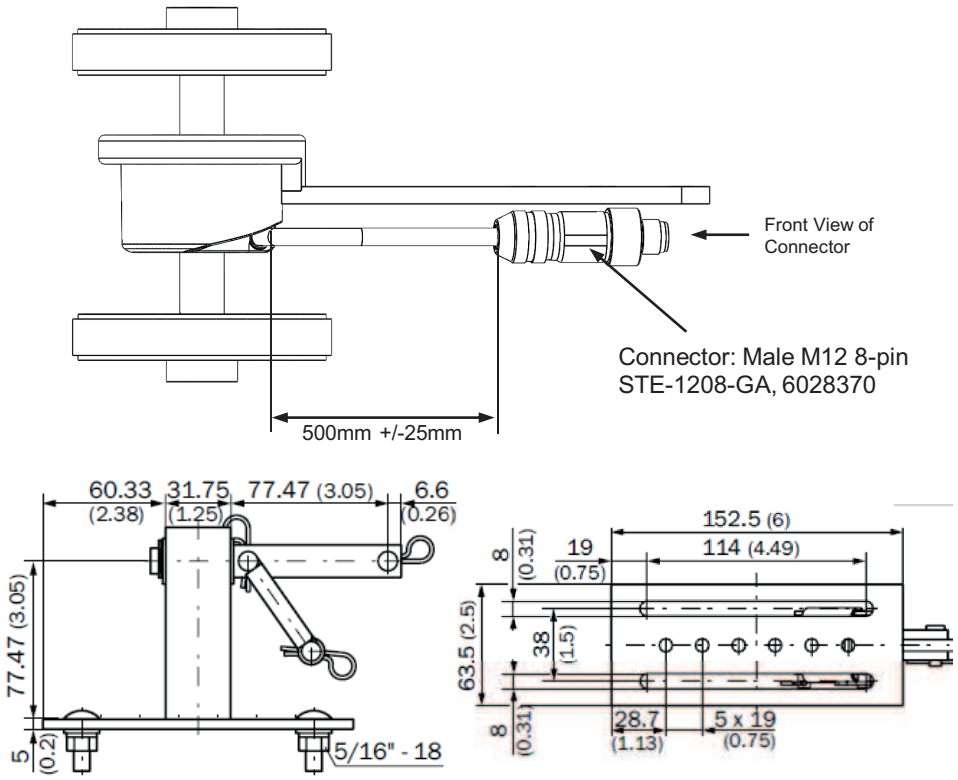
EU declaration of conformity	✓
UK declaration of conformity	✓

ACMA declaration of conformity	✓
China-RoHS	✓
cULus certificate	✓

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	27270790
ECLASS 11.0	27270707
ECLASS 12.0	27270504
ETIM 5.0	EC001486
ETIM 6.0	EC001486
ETIM 7.0	EC001486
ETIM 8.0	EC001486
UNSPSC 16.0901	41112113

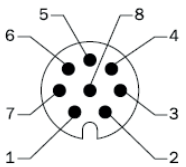
Dimensional drawing



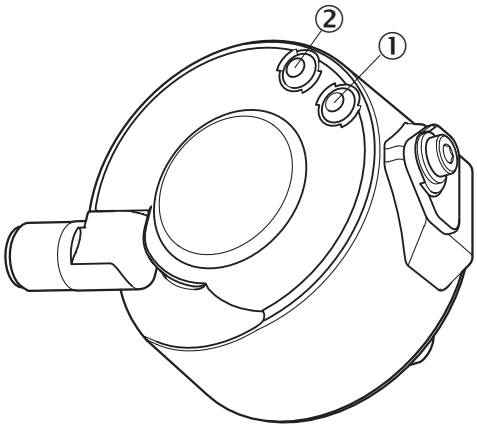
Dimensions in mm (inch)

PIN assignment

M12 8-pin	Signal	Wire Color	Description
1	A-	Brown	Channel A complement
2	A	White	Channel A
3	B-	Black	Channel B complement
4	B	Pink	Channel B
5	Z-	Yellow	Marker channel complement
6	Z	Violet	Marker channel
7	GND	Blue	Ground connection (-)
8	Us	Red	Supply voltage (+)
-	Case	Case	Case ground
-	Shield	Shield	Shielding



Adjustments Status indicator LED



① Signal
② Fault/Power

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