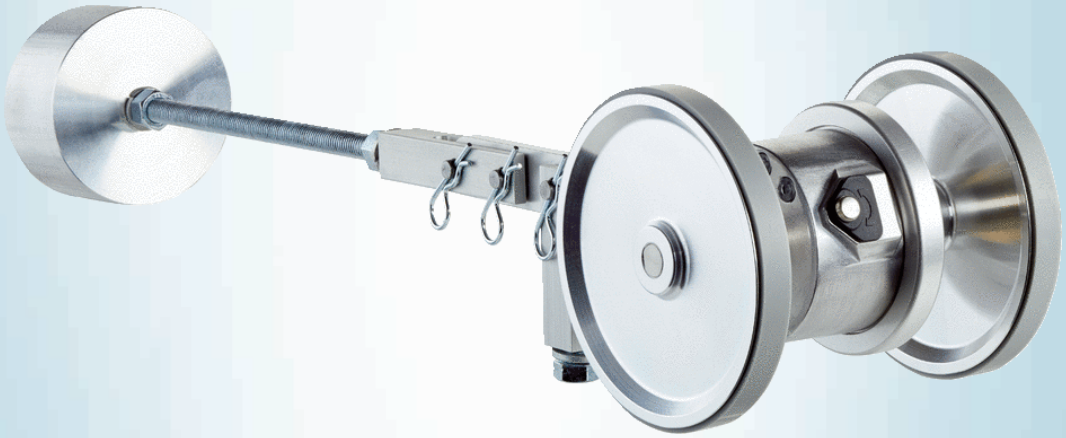
Product data sheet



DUV60E-D4KCJZZZS08

DUV60

MEASURING WHEEL ENCODERS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	Part no.
DUV60E-D4KCJZZZS08	1096816

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

Detailed technical data

Features

Special device	✓
Specialty	1 ... 24 pulses per revolution Reference signal 270° Switching frequency filter, selectable by DIP switch
Standard reference device	DUV60E-D4KCJAAA, 1084929

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

Pulses per revolution	1 ... 24 [1]
Resolution in pulses/mm	0.125 mm/pulse to 304.8 mm/pulse (type-dependent)
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 [2]

[1] Available pulses per revolution see type code.

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

Interfaces

Communication interface	Incremental
Communication Interface detail	TTL / HTL
Parameterising data	DIP switch, selectable output

Electrical data

Operating power consumption (no load)	120 mA
Connection type	Male connector, M12, 8-pin, universal [1]
Pulses per revolution	✓
Output voltage	✓

[1] The universal connection is rotatable so that it is possible to position the conector in the radial or axial direction.

Direction of rotation	✓
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	180°, electric, gated with A
Reverse polarity protection	✓
Short-circuit protection of the outputs	✓

[1] The universal connection is rotatable so that it is possible to position the conector in the radial or axial direction.

Mechanical data

Measuring wheel circumference	12 ″
Measuring wheel surface	Smooth plastic (urethane) [1]
Spring arm design	Counter-weight, under-belt yoke 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 [1]

[1] When the mating connector is installed and the DIP switch door is sealed with the encoder housing.

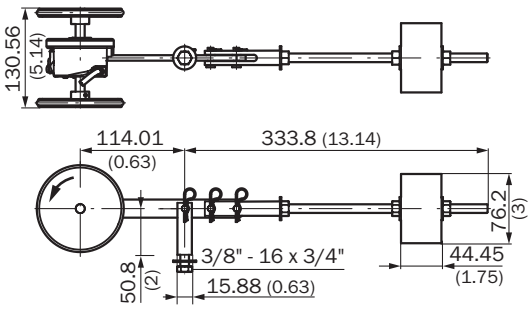
Permissible relative humidity	90 % (Condensation not permitted)
Operating temperature range	–30 °C ... +70 °C
Storage temperature range	–40 °C ... +75 °C

[1] When the mating connector is installed and the DIP switch door is sealed with the encoder housing.

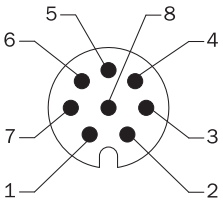
Classifications

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))

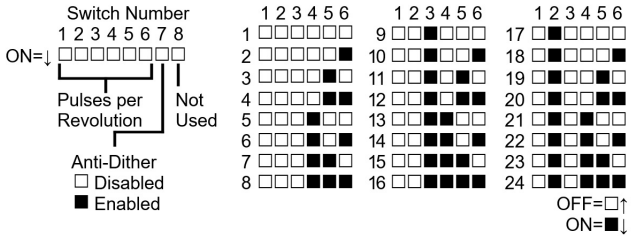


PIN assignment

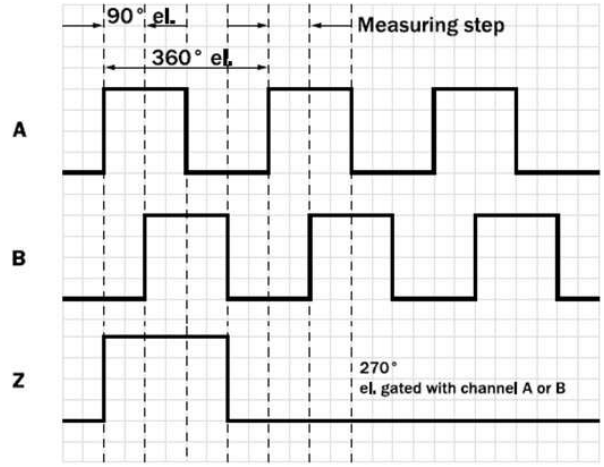


Pin	Function	Description
1	A_	Signal
2	A	Signal
3	B_	Signal
4	B	Signal
5	Z_	Signal
6	Z	Signal
7	GND	Ground connection
8	U_s	Supply Voltage

Diagrams

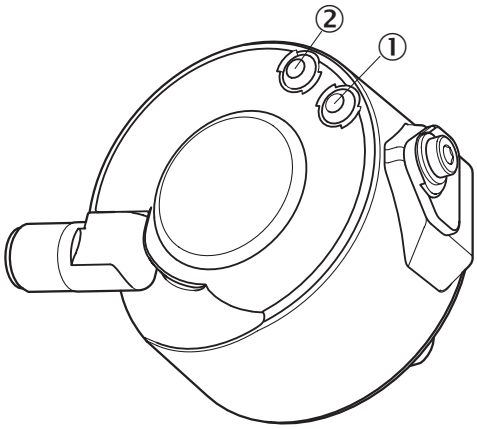


When Anti-Dither is active (enabled), Channel B is disabled and will remain LOW.



Adjustments

Status indicator LED



① Signal
② Fault/Power

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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.

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