Product data sheet

DUV60E-00KFHAAA

DUV60

MEASURING WHEEL ENCODERS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	Part no.
DUV60E-00KFHAAA	1096059

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

Detailed technical data

Performance

Pulses per revolution	1 ... 2400 [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, 4-pin, universal [1]
Pulses per revolution	✓
Output voltage	✓
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	✓

[1] The universal connection is rotatable so that it is possible to position the conector in the radial or axial direction.
[2] 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.

Short-circuit protection of the outputs	✓
MTTFd: mean time to dangerous failure	275 years (EN ISO 13849-1) [2]

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Mechanical data

Measuring wheel circumference	Without measuring wheel
Spring arm design	Spring tension, under-belt flange mount
Mass	0.45 kg [1]
Encoder material	
Shaft	Stainless steel
Flange	Aluminum
Housing	Aluminum
Cable	PVC
Spring arm mechanism material	
Spring element	Spring steel
Measuring wheel, spring arm	Aluminum
Start up torque	1.2 Ncm
Operating torque	1.1 Ncm
Operating speed	1,500 min^{-1}
Bearing lifetime	3.6 x 10^9 revolutions
Maximum travel/deflection of spring arm	14 mm [2]
Recommended pretension	10 mm [2]
Max. permissible working area for the spring (continuous operation)	± 3 mm
Service life of spring element	> 1.4 million cycles [2]

[1] Based on encoder with male connector.

[2] 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]
Permissible relative humidity	90 % (Condensation not permitted)
Operating temperature range	–30 °C ... +70 °C
Storage temperature range	–40 °C ... +75 °C

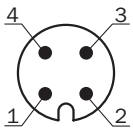
[1] When the mating connector is installed and the DIP switch door is sealed with the encoder housing.

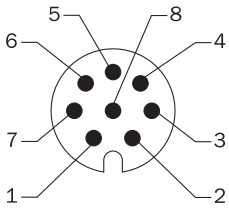
Classifications

eCl@ss 5.0	27270501
eCl@ss 5.1.4	27270501
eCl@ss 6.0	27270590
eCl@ss 6.2	27270590

eCl@ss 7.0	27270501
eCl@ss 8.0	27270501
eCl@ss 8.1	27270501
eCl@ss 9.0	27270501
eCl@ss 10.0	27270790
eCl@ss 11.0	27270707
eCl@ss 12.0	27270504
ETIM 5.0	EC001486
ETIM 6.0	EC001486
ETIM 7.0	EC001486
ETIM 8.0	EC001486
UNSPSC 16.0901	41112113

PIN assignment

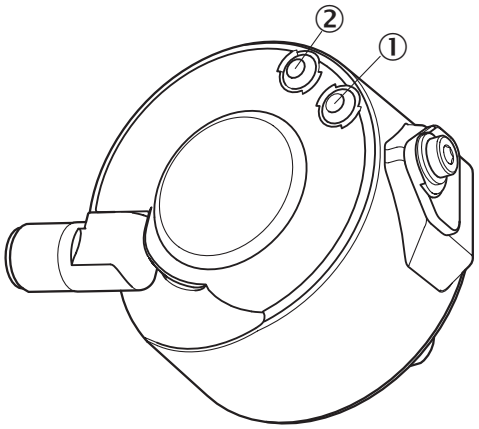




Wire colors (cable connection)	Male connector M12, 4-pin	Male connector M12, 8-pin	Output function				Explanation
			A	B	C	D	
Brown	-	1	A-	CW-	A-	A-	Signal
White	4	2	A	CW	A	A	Signal
Black	-	3	B-	CCW-	Direction-	B-	Signal
Pink	2	4	B	CCW	Direction	Fault (M12, 4-pin) B (M12, 8-pin and cable connection)	Signal
Yellow	-	5	Z-	Fault-	Fault-	Fault-	Signal
Violet	-	6	Z	Fault	Fault	Fault	Signal
Blue	3	7	GND	GND	GND	GND	Ground connection
Red	1	8	U_S	U_S	U_S	U_S	Supply voltage
-	-	-	Case	Case	Case	Case	Earth fault protection
Shielding	-	-	Shielding	Shielding	Shielding	Shielding	Shielding

Adjustments

Status indicator LED



① Signal
② Fault/Power

Recommended accessories

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

	Brief description	Type	Part no.
Other mounting accessories			
	Measuring wheel shaft kit for dual wheel DUV60, includes 10mm shaft and collet, for measuring wheels with 10 mm bore	BEF-MK-DUV10	2088713
	Measuring wheel shaft kit for dual wheel DUV60, includes 3/8" shaft and collet, for measuring wheels with 3/8" bore	BEF-MK-DUV38	2088715
Plug connectors and cables			
	Head A: Flying leads Head B: Flying leads Cable: CANopen, DeviceNet™, shielded Wire shield Al-Pt film, overall shield C-screen tin-plated	LTG-2804-MW	6028328
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: PUR, halogen-free, shielded, 2 m	DOL-1204-G02MAC	2088079
	Head A: female connector, M12, 4-pin, straight Head B: Flying leads Cable: PUR, halogen-free, shielded, 5 m	DOL-1204-G05MAC	6038621
	Head A: female connector, M12, 4-pin, straight Head B: Flying leads Cable: Welding spark resistant, PUR, halogen-free, shielded, 10 m	DOL-1204-G10MAC	6041797
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, shielded, 20 m	DOL-1204-G20MAC	2088080
	Head A: female connector, M12, 5-pin, straight Cable: CANopen, DeviceNet™, shielded	DOS-1205-GA	6027534

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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.

For us, that is “Sensor Intelligence.”

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