Online data sheet

DUV60E-32KCHACA

DUV60

MEASURING WHEEL ENCODERS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	Part no.
DUV60E-32KCHACA	1094067

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

Detailed technical data

Performance

Linear resolution	0.125 mm/pulse to 304.8 mm/pulse (type-dependent)
Pulses per revolution	1 ... 1800 [1]
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.

Electrical data

Electrical interface	4.75 V ... 30 V, TTL/HTL DIP switch, selectable output [1]
Connection type	Male connector, universal [2]
DIP switch parameters	
Pulses per revolution	✓
Output voltage	✓
Direction of rotation	✓
Power consumption max. without load	≤ 1.25 W
Load current max.	≤ 30 mA, per channel
Maximum output frequency	60 kHz
Reference signal, number	1

[1] The output is not selectable for DIP switch configurations E, F, and G. The output voltage value is dependent on the supply voltage.

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

[3] 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.

Reference signal, position	180°, electric, gated with A
Reverse polarity protection	✓
Short-circuit protection of the outputs	✓
MTTFd: mean time to dangerous failure	275 years (EN ISO 13849-1) [3]

[1] The output is not selectable for DIP switch configurations E, F, and G. The output voltage value is dependent on the supply voltage.

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

[3] 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.

Mechanical data

Measuring wheel circumference	300 mm
Measuring wheel surface	O-ring NBR70 [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 [1]
Permissible relative humidity	90 % (condensation of the optical scanning not permitted)
Working temperature range	–30 °C ... +70 °C

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

Storage temperature range	–40 °C ... +75 °C

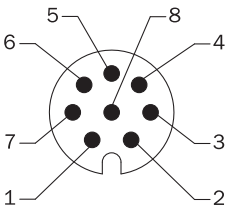
[1] When the mating connector is installed and the DIP switch door is sealed with the encoder housing.

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
ETIM 5.0	EC001486
ETIM 6.0	EC001486
UNSPSC 16.0901	41112113

PIN assignment

View of M12 male device connector on encoder



Recommended accessories

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

	Brief description	Type	Part no.
Mounting brackets and plates			
	Mounting bracket for dual wheeled encoder systems, spring tension underbelt mount with flange bracket, Aluminum	BEF-MK-FA	2088626
	Mounting bracket for encoders with two mounting brackets, counterweight, mounting from below with mounting fork, Aluminum	BEF-MK-GG10Z	2057023
	Mounting bracket for dual wheeled encoder systems, overbelt yoke mount, Aluminum	BEF-MK-YOKE2A	2088625
	Mounting bracket for dual wheeled encoder systems, spring tension underbelt yoke mount, Aluminum	BEF-MK-YOKEUB	2088522

	Brief description	Type	Part no.
	Mounting bracket for encoder with spigot 36 mm	BEF-WF-MRS	2084709
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
	Plastic measuring wheel with smooth plastic surface (Hytrel) for 10 mm solid shaft, circumference 500 mm	BEF-MR-010050	5312989
	Measuring wheel with O-ring (NBR70) for 6 mm solid shaft, circumference 300 mm	BEF-MR006030R	2055634
	Measuring wheel with O-ring (NBR70) for 10 mm solid shaft, circumference 500 mm	BEF-MR010050R	2055227
	Aluminum measuring wheel with cross-knurled surface for 10 mm solid shaft, circumference 500 mm	BEF-MR10500AK	4084733
	Aluminum measuring wheel with smooth polyurethane surface for 10 mm solid shaft, circumference 500 mm	BEF-MR10500AP	4084734
	Aluminum measuring wheel with ridged polyurethane surface for 10 mm solid shaft, circumference 500 mm	BEF-MR10500APG	4084736
	Aluminum measuring wheel with studded polyurethane surface for 10 mm solid shaft, circumference 500 mm	BEF-MR10500APN	4084735
	O-ring for measuring wheels (circumference 300 mm)	BEF-OR-083-050	2064076
	O-ring for measuring wheels (circumference 500 mm)	BEF-OR-145-050	2064074
Plug connectors and cables			
	Head A: cable Head B: Flying leads Cable: SSI, PUR, halogen-free, shielded	LTG-2308-MWENC	6027529
	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, 8-pin, straight Head B: Flying leads Cable: PUR, halogen-free, shielded, 2 m	DOL-1208-G02MAC1	6032866
	Head A: female connector, M12, 8-pin, straight Head B: Flying leads Cable: PUR, halogen-free, shielded, 5 m	DOL-1208-G05MAC1	6032867
	Head A: female connector, M12, 8-pin, straight Head B: Flying leads Cable: PUR, halogen-free, shielded, 10 m	DOL-1208-G10MAC1	6032868
	Head A: female connector, M12, 8-pin, straight Head B: Flying leads Cable: PUR, halogen-free, shielded, 20 m	DOL-1208-G20MAC1	6032869

	Brief description	Type	Part no.
	Head A: female connector, M12, 8-pin, straight, A-coded Head B: - Cable: Incremental, SSI, shielded	DOS-1208-GA01	6045001
	Head A: male connector, M12, 8-pin, straight, A-coded Head B: - Cable: Incremental, shielded	STE-1208-GA01	6044892

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