



MWS075-00D142C102400

MWS075

MEASURING WHEEL ENCODERS

SICK
Sensor Intelligence.



Ordering information

Type	part no.
MWS075-00D142C102400	1146358

Included in delivery: DUS60E-S4KC0AAA (1), BEF-MWS075-ARM (1)

Other models and accessories → www.sick.com/MWS075

Illustration may differ



Detailed technical data

Performance

Pulses per revolution	2,400
Measuring increment (resolution in mm/pulse)	1)
Repeatability	< 0.1 mm 2)

¹⁾ Value based on measuring wheel circumference. The measuring wheel circumference depends on manufacturing tolerances, wear and tear, the selected spring tensioning force, and the behavior of the measurement wheel surface at different temperatures and on different measurement surfaces. To obtain the most accurate measurement results, we recommend performing a reference run for positioning tasks so that application-specific measuring wheel characteristics can be taken into account.

²⁾ Value is based on the mechanics. Backlash of the measuring wheel mechanics, is at a minimum. This enables a precise and repeatable measurement results.

Interfaces

Communication interface	Incremental
Communication Interface detail	TTL / HTL

Electronics

Connection type	Male connector, M12, 8-pin, universal ¹⁾
Supply voltage	4.75 V ... 30 V
Reverse polarity protection	✓
Short-circuit protection of the outputs	✓

¹⁾ The universal connection is rotatable so that it is possible to position the connector in the radial or axial direction.

Mechanics

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 at 14 N spring travel
Recommended pretension	15 N At 10 mm deflection
Max. permissible working area for the spring (continuous operation)	± 3 mm

¹⁾ One cycle corresponds to an upward and downward movement of ± 3 mm from the recommended pretension position.

²⁾ When mounted from below, the encoder weight during spring pretensioning must be taken into account.

Recommended spring deflection	2 mm ... 13 mm
Service life of spring element	> 1.4 million cycles ¹⁾
Mounting position relative to the measuring object	Preferably from above, from below possible ²⁾
Moment of inertia of the rotor	33 gcm ²
Mounted encoder	DUS60, DUS60E-S4KCOAAA, 1084487
Flange plates	2145869
Mounted mechanic	BEF-MWS075-ARM, 2145180

¹⁾ One cycle corresponds to an upward and downward movement of ± 3 mm from the recommended pretension position.

²⁾ When mounted from below, the encoder weight during spring pretensioning must be taken into account.

Ambient data

EMC	According to EN 61000-6-2 and EN 61000-6-3
Enclosure rating	IP65 ¹⁾
Operating temperature range	-30 °C ... +90 °C
Storage temperature range	-40 °C ... +75 °C, without package

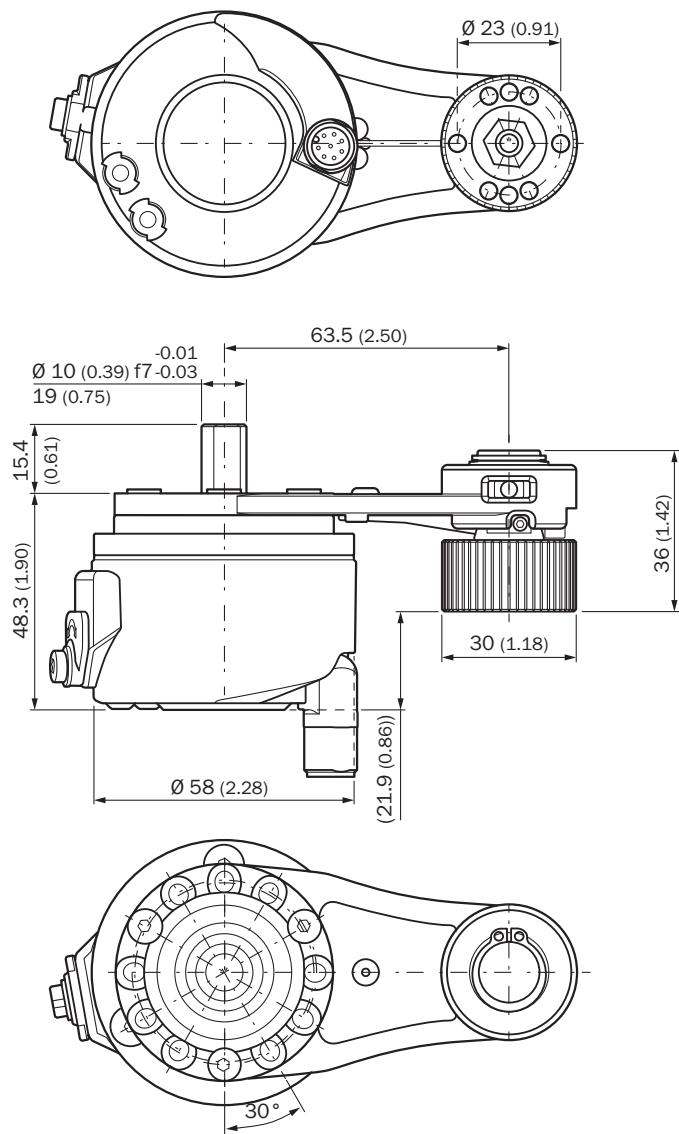
¹⁾ When the mating connector is installed and the DIP switch door is sealed with the encoder housing.

Certificates

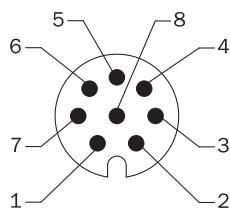
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
China-RoHS	✓

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 View of M12 male device connector on encoder


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

Wire colors (cable connection)	Male connector M12, 4-pin	Male connector M12, 8-pin	Output function				Explanation
			A	B	C	D	
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

Recommended accessories

Other models and accessories → www.sick.com/MWS075

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"> Description: Mounting bracket for MWS075 Suitable for: MWS075 	BEF-WF-MWS075	2145906

	Brief description	Type	part no.
measuring wheels and measuring wheel mechanics			
	<ul style="list-style-type: none"> Product segment: Measuring wheels and measuring wheel mechanics Product family: Measuring wheels Description: Aluminium measuring wheel with O-ring (NBR70) for 10 mm solid shaft, circumference 200 mm 	BEF-MR010020R	2055224
	<ul style="list-style-type: none"> Product segment: Measuring wheels and measuring wheel mechanics Product family: Measuring wheels Description: Aluminium measuring wheel with O-ring (NBR70) for 10 mm solid shaft, circumference 300 mm 	BEF-MR010030R	2049278
	<ul style="list-style-type: none"> Product segment: Measuring wheels and measuring wheel mechanics Product family: Measuring wheels Description: Measuring wheel with O-ring (NBR70) for 10 mm solid shaft, circumference 500 mm 	BEF-MR010050R	2055227
	<ul style="list-style-type: none"> Product segment: Measuring wheels and measuring wheel mechanics Product family: Measuring wheels Description: Aluminum measuring wheel with cross-knurled surface for 10 mm solid shaft, circumference 200 mm 	BEF-MR10200AK	4084737
	<ul style="list-style-type: none"> Product segment: Measuring wheels and measuring wheel mechanics Product family: Measuring wheels Description: Aluminum measuring wheel with smooth polyurethane surface for 10 mm solid shaft, circumference 200 mm 	BEF-MR10200AP	4084738
	<ul style="list-style-type: none"> Product segment: Measuring wheels and measuring wheel mechanics Product family: Measuring wheels Description: Aluminum measuring wheel with ridged polyurethane surface for 10 mm solid shaft, circumference 200 mm 	BEF-MR10200APG	4084740
	<ul style="list-style-type: none"> Product segment: Measuring wheels and measuring wheel mechanics Product family: Measuring wheels 	BEF-MR10200APN	4084739

	Brief description	Type	part no.
	<ul style="list-style-type: none">Description: Aluminum measuring wheel with studded polyurethane surface for 10 mm solid shaft, circumference 200 mm		
	<ul style="list-style-type: none">Product segment: Measuring wheels and measuring wheel mechanicsProduct family: Measuring wheelsDescription: Aluminum measuring wheel with cross-knurled surface for 10 mm solid shaft, circumference 300 mm	BEF-MR10300AK	2115703
	<ul style="list-style-type: none">Product segment: Measuring wheels and measuring wheel mechanicsProduct family: Measuring wheelsDescription: Aluminum measuring wheel with smooth polyurethane surface for 10 mm solid shaft, circumference 300 mm	BEF-MR10300AP	2118512
	<ul style="list-style-type: none">Product segment: Measuring wheels and measuring wheel mechanicsProduct family: Measuring wheelsDescription: Aluminum measuring wheel with ridged polyurethane surface for 10 mm solid shaft, circumference 300 mm	BEF-MR10300APG	2118496
	<ul style="list-style-type: none">Product segment: Measuring wheels and measuring wheel mechanicsProduct family: Measuring wheelsDescription: Aluminum measuring wheel with studded polyurethane surface for 10 mm solid shaft, circumference 300 mm	BEF-MR10300APN	2118494
	<ul style="list-style-type: none">Product segment: Measuring wheels and measuring wheel mechanicsProduct family: Measuring wheelsDescription: Aluminum measuring wheel with cross-knurled surface for 10 mm solid shaft, circumference 500 mm	BEF-MR10500AK	4084733
	<ul style="list-style-type: none">Product segment: Measuring wheels and measuring wheel mechanicsProduct family: Measuring wheelsDescription: Aluminum measuring wheel with cross knurled surface for solid shaft 10 mm, circumference 500 mm +/-0,2 mm (circumferential tolerance at 20 °C. Circumferential tolerance depends on the temperature coefficient of the material)	BEF-MR10500AK-A	2125732
	<ul style="list-style-type: none">Product segment: Measuring wheels and measuring wheel mechanicsProduct family: Measuring wheelsDescription: Aluminum measuring wheel with smooth polyurethane surface for 10 mm solid shaft, circumference 500 mm	BEF-MR10500AP	4084734
	<ul style="list-style-type: none">Product segment: Measuring wheels and measuring wheel mechanicsProduct family: Measuring wheelsDescription: Aluminum measuring wheel with ridged polyurethane surface for 10 mm solid shaft, circumference 500 mm	BEF-MR10500APG	4084736
	<ul style="list-style-type: none">Product segment: Measuring wheels and measuring wheel mechanicsProduct family: Measuring wheelsDescription: Aluminum measuring wheel with studded polyurethane surface for 10 mm solid shaft, circumference 500 mm	BEF-MR10500APN	4084735

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 8-pin, straight Connection type head B: Flying leads Signal type: Incremental, SSI Cable: 2 m, 8-wire, PUR, halogen-free Description: Incremental, shieldedSSI Connection systems: Flying leads 	DOL-1208-G02MAC1	6032866
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 8-pin, straight Connection type head B: Flying leads Signal type: Incremental, SSI Cable: 5 m, 8-wire, PUR, halogen-free Description: Incremental, shieldedSSI Connection systems: Flying leads 	DOL-1208-G05MAC1	6032867
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 8-pin, straight Connection type head B: Flying leads Signal type: Incremental, SSI Cable: 10 m, 8-wire, PUR, halogen-free Description: Incremental, shieldedSSI Connection systems: Flying leads 	DOL-1208-G10MAC1	6032868
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 8-pin, straight Connection type head B: Flying leads Signal type: Incremental, SSI Cable: 20 m, 8-wire, PUR, halogen-free Description: Incremental, shieldedSSI Connection systems: Flying leads 	DOL-1208-G20MAC1	6032869
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 8-pin, angled Connection type head B: Flying leads Cable: 2 m, 8-wire, PVC Description: Shielded Connection systems: Flying leads 	DOL-1208-W02MA	6020992
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 8-pin, angled Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 2 m, 8-wire, PUR, halogen-free Description: Sensor/actuator cable, shielded Connection systems: Flying leads 	DOL-1208-W02MAS01	6029224
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 8-pin, angled Connection type head B: Flying leads Cable: 2 m, 8-wire, PUR, halogen-free Description: Unshielded 	DOL-1208-W02MC	6035623
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 8-pin, angled Connection type head B: Flying leads Cable: 5 m, 8-wire, PVC Description: Shielded Connection systems: Flying leads 	DOL-1208-W05MA	6021033
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 8-pin, angled Connection type head B: Flying leads Cable: 5 m, 8-wire, PUR Description: Unshielded 	DOL-1208-W05MC	6035624
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 8-pin, angled Connection type head B: Flying leads Cable: 10 m, 8-wire, PUR, halogen-free Description: Unshielded 	DOL-1208-W10MC	6035625
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 8-pin, straight, A-coded Signal type: Incremental, SSI Cable: CAT5, CAT5e Description: Incremental, shieldedSSI Connection systems: IDC quick connection Permitted cross-section: 0.14 mm² ... 0.34 mm² 	DOS-1208-GA01	6045001
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 8-pin, angled Connection type head B: Flying leads Signal type: HIPERFACE[®], Incremental Cable: 2 m, 8-wire, PUR, halogen-free 	DOL-1208-W02MAC1	6037724

	Brief description	Type	part no.
	<ul style="list-style-type: none">• Description: HIPERFACE®, shieldedIncremental• Connection type head A: Female connector, M12, 8-pin, angled• Connection type head B: Flying leads• Signal type: HIPERFACE®, Incremental• Cable: 5 m, 8-wire, PUR, halogen-free• Description: HIPERFACE®, shieldedIncremental	DOL-1208-W05MAC1	6037725
	<ul style="list-style-type: none">• Connection type head A: Female connector, M12, 8-pin, angled• Connection type head B: Flying leads• Signal type: HIPERFACE®, Incremental• Cable: 10 m, 8-wire, PUR, halogen-free• Description: HIPERFACE®, shieldedIncremental	DOL-1208-W10MAC1	6037726
	<ul style="list-style-type: none">• Connection type head A: Female connector, M12, 8-pin, angled• Connection type head B: Flying leads• Signal type: HIPERFACE®, Incremental• Cable: 20 m, 8-wire, PUR• Description: HIPERFACE®, shieldedIncremental	DOL-1208-W20MAC1	6037727

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."

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