

MWS120-ZZB11AS001

MWS120

MEASURING WHEEL ENCODERS

SICK
Sensor Intelligence.

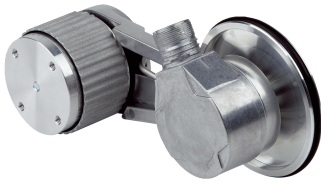


Illustration may differ

Ordering information

Type	part no.
MWS120-ZZB11AS001	1126403

Included in delivery: DFS60A-ZZEA00S02 (1), BEF-MR10500AK-A (1), BEF-MWS120-ARM (1)

Other models and accessories → www.sick.com/MWS120



Detailed technical data

Features

Special device	✓
Specialty	Wheel circumference 500 mm ± 0.2 mm, cross knurl
Standard reference device	MWS120-31B11A00500

Safety-related parameters

MTTF_D (mean time to dangerous failure)	300 years (EN ISO 13849-1) ^{1) 2)}
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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.

²⁾ Value refers to the mounted encoder.

Performance

Pulses per revolution	500
Measuring increment (resolution in mm/pulse)	1 ¹⁾ 2)
Repeatability	< 0.1 mm ³⁾

¹⁾ Calculation example: Circumference of wheel / pulses per revolution = 200 mm / 16384 pulses per revolution = 0,012mm/pulse.

²⁾ 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.

³⁾ 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 / Push pull
Number of signal channels	6-channel

Electronics

Connection type	Special version
Connection type Detail	Male connector, M23, 8-pin, radial

¹⁾ Short-circuit opposite to another channel, US or GND permissible for maximum 30 s.

Supply voltage	10 V ... 32 V
Reverse polarity protection	-
Short-circuit protection of the outputs	✓ ¹⁾

¹⁾ Short-circuit opposite to another channel, US or GND permissible for maximum 30 s.

Mechanics

Measuring wheel circumference	500 mm ±0.2 mm (at 20 °C) ^{1) 2)}
Measuring wheel surface	Cross knurled aluminium
Mounting	Measuring wheel mounted at the front
Spring arm mechanism material	
Spring element	Stainless steel
Measuring wheel core	Aluminum
Start up torque	0.5 Ncm (at 20 °C)
Operating torque	0.3 Ncm (at 20 °C)
Bearing lifetime	3.6 x 10 ¹⁰ revolutions
Minimum spring tension force	4 N ³⁾ 4)
Max. permissible working area for the spring (continuous operation)	± 10 mm
Service life of spring element	> 1.5 million cycles
Mounting position relative to the measuring object	Preferably from above, from below possible ⁵⁾
Mounted encoder	DFS60, DFS60A-ZZEA00S02, 1126240
Mounted mechanic	BEF-MWS120-ARM, 2118239
Attached measuring wheel	BEF-MR10500AK-A, 2125732

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⁾ The contact pressure of the measuring wheel must be set so that it does not damage the measuring surface, but slippage between the measuring wheel and the measuring surface is avoided.

³⁾ The correct spring tensioning force for the application prevents slippage in the application without damaging the measuring surface.

⁴⁾ The clamping force can be set in 6 fixed increments of 4 N. 4 N corresponds to one increment.

⁵⁾ 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
Operating temperature range	-30 °C ... +80 °C ¹⁾
Storage temperature range	-40 °C ... +100 °C ¹⁾

¹⁾ This value reflects the smallest temperature value of the installed products. For more information, please look at the individual data sheets.

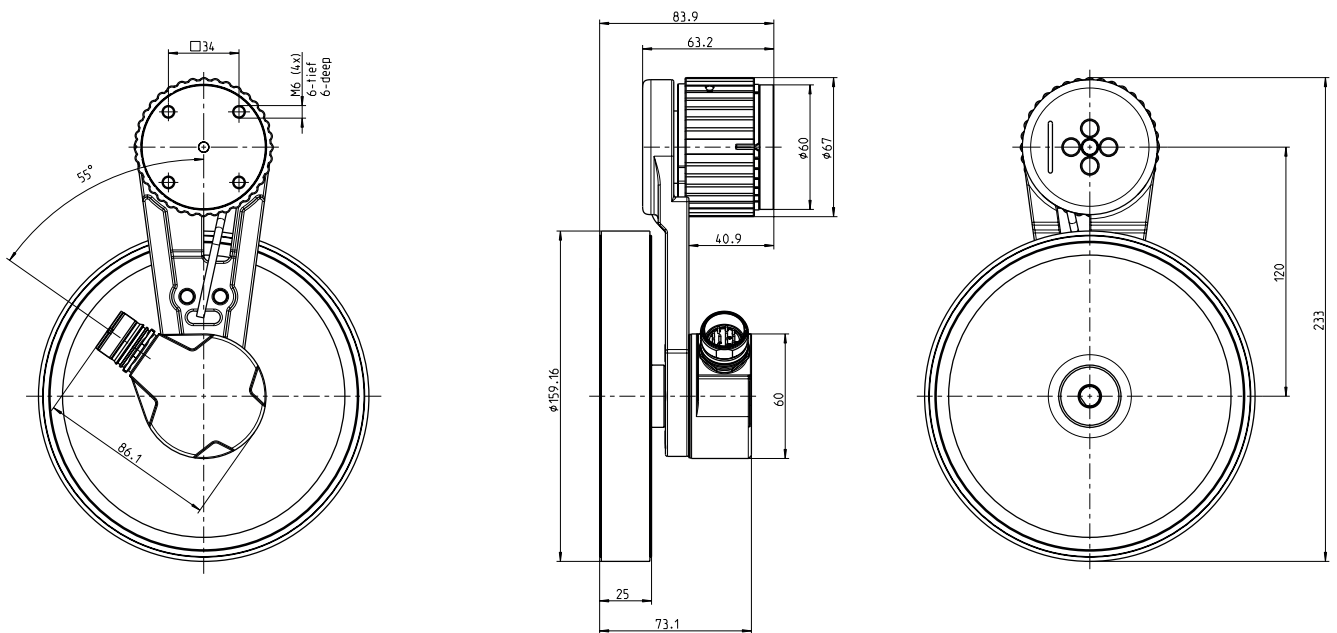
Certificates

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

Classifications

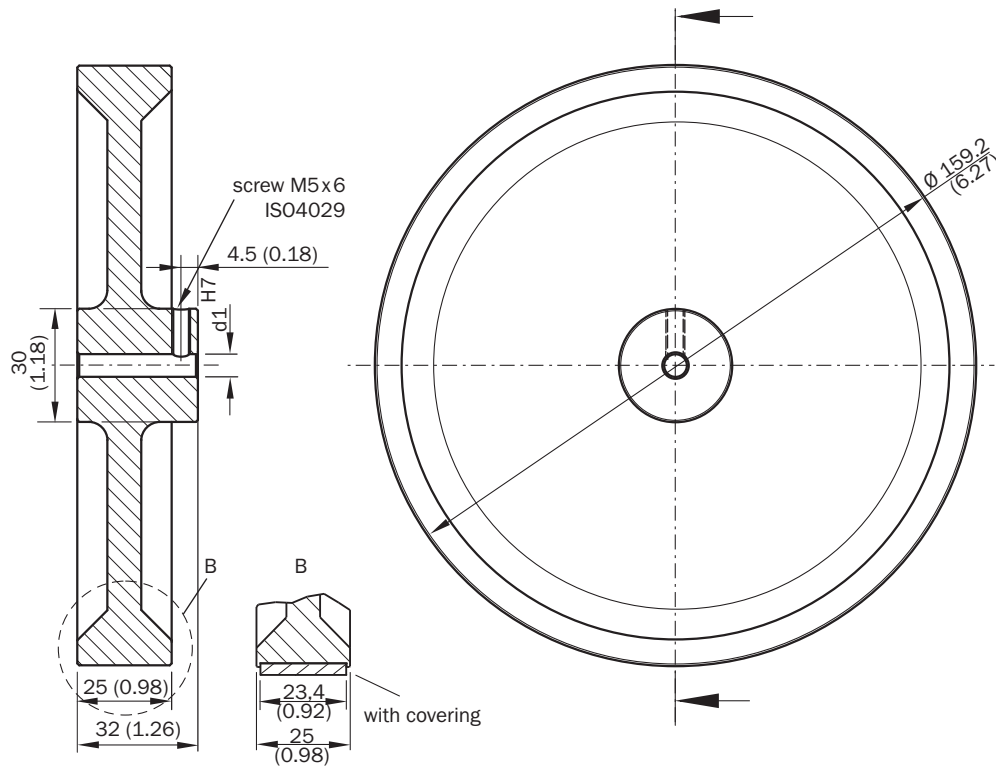
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ECLASS 5.1.4	27270501
ECLASS 6.0	27270590
ECLASS 6.2	27270590
ECLASS 7.0	27270501
ECLASS 8.0	27270501
ECLASS 8.1	27270501
ECLASS 9.0	27270501
ECLASS 10.0	27270790
ECLASS 11.0	27270707
ECLASS 12.0	27270504
ETIM 5.0	EC001486
ETIM 6.0	EC001486
ETIM 7.0	EC001486
ETIM 8.0	EC001486
UNSPSC 16.0901	41112113

Dimensional drawing



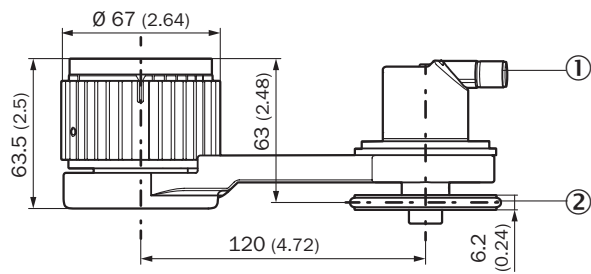
Dimensions in mm (inch)

Dimensional drawing



Dimensions in mm (inch)

Dimensional drawing



Dimensions in mm (inch)

- ① Please refer to the dimensional drawings in the respective data sheet for the installed encoder.
- ② The measuring wheel circumference and surface depend on the installed measuring wheel.

SICK AT A GLANCE

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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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