

# MWS120-12N2EF18x12

MWS120

**MEASURING WHEEL ENCODERS** 





#### Illustration may differ

## Ordering information

Туре	Part no.
MWS120-12N2EF18x12	1115089

Included in delivery: AFM60A-S4EB018x12 (1), BEF-MR010020R (1), BEF-MWS120-ARM (1)

Encoder and measuring wheel are attached to the measuring arm. See individual components for further technical data

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



#### Detailed technical data

#### Performance

Max. resolution (number of steps per revolution x number of revolutions)	18 bit x 12 bit (262,144 x 4,096)
Measuring increment (resolution in mm/ pulse)	0.0008 1) 2)
Repeatability	< 0.1 mm <sup>3)</sup>

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

# Interfaces

Communication interface	EtherCAT <sup>®</sup>
Communication Interface detail	CoE (CAN over EtherCAT®)
Programmable/configurable	<b>√</b>

#### Electrical data

Connection type	Male connector, Female connector, 1x, 2x, M12, M12, 4-pin, 4-pin, axial, axial
Supply voltage	10 V DC 30 V DC
Reverse polarity protection	-
MTTFd: mean time to dangerous failure	80 years (EN ISO 13849-1) 1) 2)

<sup>1)</sup> 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	200 mm <sup>1)</sup>

<sup>1)</sup> 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.

<sup>&</sup>lt;sup>2)</sup> 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.

<sup>3)</sup> Value is based on the mechanics. Backlash of the measuring wheel mechanics, is at a minimum. This enables a precise and repeatable measurement results.

<sup>&</sup>lt;sup>2)</sup> Value refers to the mounted encoder.

<sup>2)</sup> The right spring tension force for the application shall keep the slippage at a minimum in the application working conditions and measuring surface, without damaging the measuring surface.

<sup>&</sup>lt;sup>3)</sup> The clamping force can be set in 6 fixed increments of 4 N. 4 N corresponds to one increment.

 $<sup>^{</sup>m 4)}$  When mounted from below, the encoder weight during spring pretensioning must be taken into account.

Measuring wheel surface	O-ring NBR70
Mounting	Measuring wheel mounted at the front
Spring arm mechanism material	
Spring element	Stainless steel
Measuring wheel, spring arm	Aluminum
Start up torque	0.5 Ncm
Operating torque	0.3 Ncm
Bearing lifetime	3.0 x 10^9 revolutions
Minimum spring tension force	4 N <sup>2) 3)</sup>
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 <sup>4)</sup>
Mounted encoder	AFM60 EtherCAT®, AFM60A-S4EB018x12, 1059060
Mounted mechanic	BEF-MWS120-ARM, 2118239
Attached measuring wheel	BEF-MR010020R, 2055224

<sup>1)</sup> 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.

#### Ambient data

EMC	According to EN 61000-6-2 and EN 61000-6-3 <sup>1)</sup>
Operating temperature range	-30 °C +80 °C <sup>2)</sup>
Storage temperature range	-40 °C +100 °C <sup>2)</sup>

 $<sup>^{1)}</sup>$  EMC according to the standards quoted is achieved if shielded cables are used.

#### 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

<sup>2)</sup> The right spring tension force for the application shall keep the slippage at a minimum in the application working conditions and measuring surface, without damaging the measuring surface.

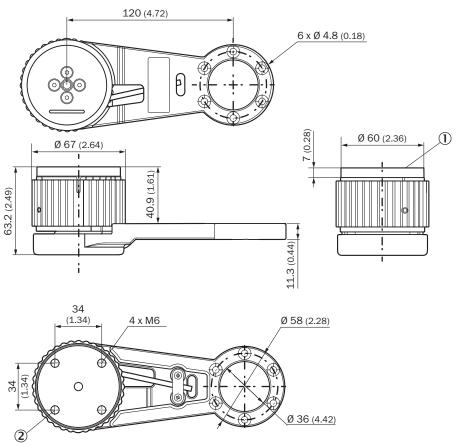
<sup>&</sup>lt;sup>3)</sup> The clamping force can be set in 6 fixed increments of 4 N. 4 N corresponds to one increment.

<sup>4)</sup> When mounted from below, the encoder weight during spring pretensioning must be taken into account.

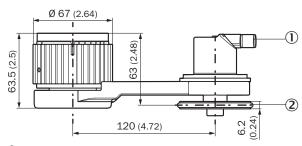
<sup>&</sup>lt;sup>2)</sup> This value reflects the smallest temperature value of the installed products. For more information, please look at the individual data sheets.

ETIM 6.0	EC001486
ETIM 7.0	EC001486
ETIM 8.0	EC001486
UNSPSC 16.0901	41112113

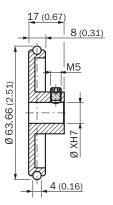
## Dimensional drawing (Dimensions in mm (inch))



- ① Adapter plate
- ② Holes of the adapter plate, maximum thread depth 6 mm



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



# PIN assignment

Male connector



Supply voltage

PIN	Wire color	Signal
1	Brown	U <sub>S</sub> 10 V 30 V
2	White	Not assigned
3	Blue	GND
4	Black	Not assigned

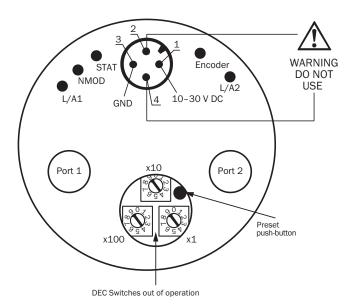
Female connector



Port 1, Port 2

PIN	Wire color	Signal
1	Yellow	T x D+
2	White	R x D+
3	Orange	T x D-
4	Blue	R x D-

# Connection diagram



## Recommended accessories

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

	Brief description	Туре	Part no.		
Mounting bra	Mounting brackets and plates				
	Mounting bracket for MWS120 measuring wheel system and SPEETEC 1D laser surface motion sensors	BEF-WF-MWS-NCV	2113284		
Other mounti	ng accessories				
	Aluminium measuring wheel with 0-ring (NBR70) for 10 mm solid shaft, circumference 200 mm $$	BEF-MR010020R	2055224		
	Aluminium measuring wheel with 0-ring (NBR70) for 10 mm solid shaft, circumference 300 mm $$	BEF-MR010030R	2049278		
	Measuring wheel with 0-ring (NBR70) for 10 mm solid shaft, circumference 500 mm $$	BEF-MR010050R	2055227		
	Aluminum measuring wheel with cross-knurled surface for 10 mm solid shaft, circumference 200 mm	BEF-MR10200AK	4084737		
	Aluminum measuring wheel with smooth polyurethane surface for 10 mm solid shaft, circumference 200 mm	BEF-MR10200AP	4084738		
	Aluminum measuring wheel with ridged polyurethane surface for 10 mm solid shaft, circumference 200 mm $$	BEF-MR10200APG	4084740		
0	Aluminum measuring wheel with studded polyurethane surface for 10 mm solid shaft, circumference 200 mm	BEF-MR10200APN	4084739		

	Brief description	Туре	Part no.
	Aluminum measuring wheel with cross-knurled surface for 10 mm solid shaft, circumference 300 mm	BEF-MR10300AK	2115703
	Aluminum measuring wheel with smooth polyurethane surface for 10 mm solid shaft, circumference 300 mm	BEF-MR10300AP	2118512
	Aluminum measuring wheel with ridged polyurethane surface for 10 mm solid shaft, circumference 300 mm	BEF-MR10300APG	2118496
	Aluminum measuring wheel with studded polyurethane surface for 10 mm solid shaft, circumference 300 mm	BEF-MR10300APN	2118494
	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
	Spring arm for linear measurement with contact, spring contact pressure manually adjustable without tools in 6 increments of 4 N from 0 24 N, can be combined with separately available encoders and measuring wheels., MWS120 spring arm (part number: 2118239), 3 pcs. M4 x 16 cylinder head screws for adapter or encoder mounting	BEF-MWS120-ARM	2118239
Plug connecto	ors and cables		
	<ul> <li>Connection type head A: Male connector, M12, 4-pin, straight, D-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Ethernet, PROFINET</li> <li>Cable: 2 m, 4-wire, PUR, halogen-free</li> <li>Description: Ethernet, PROFINET, shielded</li> <li>Application: Drag chain operation, Zones with oils and lubricants</li> </ul>	YM2D24- 020PN1XLEAX	2106171
	<ul> <li>Connection type head A: Male connector, M12, 4-pin, straight, D-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Ethernet, PROFINET</li> <li>Cable: 5 m, 4-wire, PUR, halogen-free</li> <li>Description: Ethernet, PROFINET, shielded</li> <li>Application: Drag chain operation, Zones with oils and lubricants</li> </ul>	YM2D24- 050PN1XLEAX	2106172
	<ul> <li>Connection type head A: Male connector, M12, 4-pin, straight, D-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Ethernet, PROFINET</li> <li>Cable: 10 m, 4-wire, PUR, halogen-free</li> <li>Description: Ethernet, PROFINET, shielded</li> <li>Application: Drag chain operation, Zones with oils and lubricants</li> </ul>	YM2D24- 100PN1XLEAX	2106173
	<ul> <li>Connection type head A: Male connector, M12, 4-pin, angled, D-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Ethernet, PROFINET</li> <li>Cable: 2 m, 4-wire, PUR, halogen-free</li> <li>Description: Ethernet, PROFINET, shielded</li> <li>Application: Drag chain operation, Zones with oils and lubricants</li> </ul>	YN2D24- 020PN1XLEAX	2106174

	Brief description	Туре	Part no.
	<ul> <li>Connection type head A: Male connector, M12, 4-pin, angled, D-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Ethernet, PROFINET</li> <li>Cable: 5 m, 4-wire, PUR, halogen-free</li> <li>Description: Ethernet, PROFINET, shielded</li> <li>Application: Drag chain operation, Zones with oils and lubricants</li> </ul>	YN2D24- 050PN1XLEAX	2106175
	<ul> <li>Connection type head A: Male connector, M12, 4-pin, angled, D-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Ethernet, PROFINET</li> <li>Cable: 10 m, 4-wire, PUR, halogen-free</li> <li>Description: Ethernet, PROFINET, shielded</li> <li>Application: Drag chain operation, Zones with oils and lubricants</li> </ul>	YN2D24- 100PN1XLEAX	2106176
	<ul> <li>Connection type head A: Male connector, M12, 4-pin, angled, D-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Ethernet, PROFINET</li> <li>Cable: 25 m, 4-wire, PUR, halogen-free</li> <li>Description: Ethernet, PROFINET, shielded</li> <li>Application: Drag chain operation, Zones with oils and lubricants</li> </ul>	YN2D24- 250PN1XLEAX	2106180
द्वा विद्व	<ul> <li>Connection type head A: Male connector, M12, 4-pin, angled, D-coded</li> <li>Connection type head B: Male connector, M12, 4-pin, angled, D-coded</li> <li>Signal type: PROFINET</li> <li>Cable: 5 m, 4-wire, CAT5, CAT5e, PUR, halogen-free</li> <li>Description: PROFINET, shielded, Head A: male connector, M12, 4-pin, angled, D coded Head B: male connector, M12, 4-pin, angled, D coded Cable: PUR, halogen-free, shielded, 4 x 0.34 mm², Ø 6.5 mm</li> </ul>	SSL-1204-W05MZ	6050636
5	<ul> <li>Connection type head A: Male connector, RJ45, 4-pin, straight</li> <li>Connection type head B: Male connector, M12, 4-pin, angled, D-coded</li> <li>Signal type: PROFINET, EtherCAT<sup>®</sup></li> <li>Cable: 30 m, 4-wire, CAT5, CAT5e, PVC</li> <li>Description: PROFINET, EtherCAT<sup>®</sup>, shielded</li> </ul>	SSL-2J04-F30MZ	6059450
	<ul> <li>Connection type head A: Male connector, M12, 4-pin, straight, D-coded</li> <li>Connection type head B: Male connector, RJ45, 4-pin, straight</li> <li>Signal type: PROFINET</li> <li>Cable: 5 m, 4-wire, CAT5, CAT5e, PVC</li> <li>Description: PROFINET, shielded, Head A: male connector, M12, 4-pin, straight, D coded Head B: male connector, RJ45, 4-pin, straight Cable: PVC, shielded, 4 x 0.34 mm², Ø 6.5 mm</li> </ul>	SSL-2J04-G05MZ60	6048245
8 8	<ul> <li>Connection type head A: Male connector, M12, 4-pin, straight, D-coded</li> <li>Connection type head B: Male connector, M12, 4-pin, straight, D-coded</li> <li>Signal type: Ethernet, PROFINET</li> <li>Cable: 2 m, 4-wire, PUR, halogen-free</li> <li>Description: Ethernet, PROFINET, shielded</li> <li>Application: Drag chain operation, Zones with oils and lubricants</li> </ul>	YM2D24- 020PN1M2D24	2106159
88	<ul> <li>Connection type head A: Male connector, M12, 4-pin, straight, D-coded</li> <li>Connection type head B: Male connector, RJ45, 4-pin, straight</li> <li>Signal type: Ethernet, PROFINET</li> <li>Cable: 2 m, 4-wire, PUR, halogen-free</li> <li>Description: Ethernet, PROFINET, shielded</li> <li>Application: Drag chain operation, Zones with oils and lubricants</li> </ul>	YM2D24- 020PN1MRJA4	2106182
6.0	<ul> <li>Connection type head A: Male connector, M12, 4-pin, straight, D-coded</li> <li>Connection type head B: Male connector, M12, 4-pin, angled, D-coded</li> <li>Signal type: Ethernet, PROFINET</li> <li>Cable: 2 m, 4-wire, PUR, halogen-free</li> <li>Description: Ethernet, PROFINET, shielded</li> <li>Application: Drag chain operation, Zones with oils and lubricants</li> </ul>	YM2D24- 020PN1N2D24	2106165
8	<ul> <li>Connection type head A: Male connector, M12, 4-pin, straight, D-coded</li> <li>Connection type head B: Male connector, M12, 4-pin, straight, D-coded</li> <li>Signal type: Ethernet, PROFINET</li> <li>Cable: 5 m, 4-wire, PUR, halogen-free</li> <li>Description: Ethernet, PROFINET, shielded</li> <li>Application: Drag chain operation, Zones with oils and lubricants</li> </ul>	YM2D24- 050PN1M2D24	2106160

	Brief description	Туре	Part no.
6.0	<ul> <li>Connection type head A: Male connector, M12, 4-pin, straight, D-coded</li> <li>Connection type head B: Male connector, M12, 4-pin, angled, D-coded</li> <li>Signal type: Ethernet, PROFINET</li> <li>Cable: 5 m, 4-wire, PUR, halogen-free</li> <li>Description: Ethernet, PROFINET, shielded</li> <li>Application: Drag chain operation, Zones with oils and lubricants</li> </ul>	YM2D24- 050PN1N2D24	2106166
66	<ul> <li>Connection type head A: Male connector, M12, 4-pin, straight, D-coded</li> <li>Connection type head B: Male connector, M12, 4-pin, straight, D-coded</li> <li>Signal type: Ethernet, PROFINET</li> <li>Cable: 10 m, 4-wire, PUR, halogen-free</li> <li>Description: Ethernet, PROFINET, shielded</li> <li>Application: Drag chain operation, Zones with oils and lubricants</li> </ul>	YM2D24- 100PN1M2D24	2106161
88	<ul> <li>Connection type head A: Male connector, M12, 4-pin, straight, D-coded</li> <li>Connection type head B: Male connector, RJ45, 4-pin, straight</li> <li>Signal type: Ethernet, PROFINET</li> <li>Cable: 10 m, 4-wire, PUR, halogen-free</li> <li>Description: Ethernet, PROFINET, shielded</li> <li>Application: Drag chain operation, Zones with oils and lubricants</li> </ul>	YM2D24- 100PN1MRJA4	2106185
6.8	<ul> <li>Connection type head A: Male connector, M12, 4-pin, straight, D-coded</li> <li>Connection type head B: Male connector, M12, 4-pin, angled, D-coded</li> <li>Signal type: Ethernet, PROFINET</li> <li>Cable: 10 m, 4-wire, PUR, halogen-free</li> <li>Description: Ethernet, PROFINET, shielded</li> <li>Application: Drag chain operation, Zones with oils and lubricants</li> </ul>	YM2D24- 100PN1N2D24	2106167
	<ul> <li>Connection type head A: Male connector, M12, 4-pin, angled, D-coded</li> <li>Connection type head B: Male connector, RJ45, 4-pin, straight</li> <li>Signal type: Ethernet, PROFINET</li> <li>Cable: 2 m, 4-wire, PUR, halogen-free</li> <li>Description: Ethernet, PROFINET, shielded</li> <li>Application: Drag chain operation, Zones with oils and lubricants</li> </ul>	YN2D24- 020PN1MRJA4	2106162
	<ul> <li>Connection type head A: Male connector, M12, 4-pin, angled, D-coded</li> <li>Connection type head B: Male connector, M12, 4-pin, angled, D-coded</li> <li>Signal type: Ethernet, PROFINET</li> <li>Cable: 2 m, 4-wire, PUR, halogen-free</li> <li>Description: Ethernet, PROFINET, shielded</li> <li>Application: Drag chain operation, Zones with oils and lubricants</li> </ul>	YN2D24- 020PN1N2D24	2106168
96	<ul> <li>Connection type head A: Male connector, M12, 4-pin, angled, D-coded</li> <li>Connection type head B: Male connector, RJ45, 4-pin, straight</li> <li>Signal type: Ethernet, PROFINET</li> <li>Cable: 5 m, 4-wire, PUR, halogen-free</li> <li>Description: Ethernet, PROFINET, shielded</li> <li>Application: Drag chain operation, Zones with oils and lubricants</li> </ul>	YN2D24- 050PN1MRJA4	2106163
	<ul> <li>Connection type head A: Male connector, M12, 4-pin, angled, D-coded</li> <li>Connection type head B: Male connector, RJ45, 4-pin, straight</li> <li>Signal type: Ethernet, PROFINET</li> <li>Cable: 10 m, 4-wire, PUR, halogen-free</li> <li>Description: Ethernet, PROFINET, shielded</li> <li>Application: Drag chain operation, Zones with oils and lubricants</li> </ul>	YN2D24- 100PN1MRJA4	2106164
	<ul> <li>Connection type head A: Male connector, M12, 4-pin, angled, D-coded</li> <li>Connection type head B: Male connector, M12, 4-pin, angled, D-coded</li> <li>Signal type: Ethernet, PROFINET</li> <li>Cable: 10 m, 4-wire, PUR, halogen-free</li> <li>Description: Ethernet, PROFINET, shielded</li> <li>Application: Drag chain operation, Zones with oils and lubricants</li> </ul>	YN2D24- 100PN1N2D24	2106170
Others			
	<ul> <li>Connection type head A: Female connector, M12, 4-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 2 m, 4-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A14- 020UB3XLEAX	2095607

	Brief description	Туре	Part no.
No.	<ul> <li>Connection type head A: Female connector, M12, 4-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 5 m, 4-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A14- 050UB3XLEAX	2095608
A.C.	<ul> <li>Connection type head A: Female connector, M12, 4-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 10 m, 4-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A14- 100UB3XLEAX	2095609
No.	<ul> <li>Connection type head A: Female connector, M12, 4-pin, straight, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 25 m, 4-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YF2A14- 250UB3XLEAX	2095615
3	<ul> <li>Connection type head A: Female connector, M12, 4-pin, angled, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 2 m, 4-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YG2A14- 020UB3XLEAX	2095766
7	<ul> <li>Connection type head A: Female connector, M12, 4-pin, angled, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 5 m, 4-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YG2A14- 050UB3XLEAX	2095767
	<ul> <li>Connection type head A: Female connector, M12, 4-pin, angled, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 10 m, 4-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YG2A14- 100UB3XLEAX	2095768
3	<ul> <li>Connection type head A: Female connector, M12, 4-pin, angled, A-coded</li> <li>Connection type head B: Flying leads</li> <li>Signal type: Sensor/actuator cable</li> <li>Cable: 25 m, 4-wire, PUR, halogen-free</li> <li>Description: Sensor/actuator cable, unshielded</li> <li>Application: Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>	YG2A14- 250UB3XLEAX	2095771
	• Connection type head A: Female connector, M12, 4-pin, angled • Description: Unshielded, Head A: female connector, M12, 4-pin, angled, unshielded, for power supply, for cable diameter 3 mm 6.5 mm Head B: - • Connection systems: Screw-type terminals • Permitted cross-section: ≤ 0.75 mm²	DOS-1204-W	6007303
<b>©</b> ○0	<ul> <li>Connection type head A: Female connector, M12, 4-pin, D-coded</li> <li>Connection type head B: Female connector, RJ45, 8-pin</li> <li>Signal type: Ethernet</li> <li>Cable: CAT5, CAT5e</li> <li>Description: Ethernet, shielded</li> <li>Note: Cabinet through</li> </ul>	Feedthrough fe- male connector Ethernet RJ45	6048180
	<ul> <li>Connection type head A: Female connector, M12, 4-pin, straight, D-coded</li> <li>Signal type: PROFINET</li> <li>Cable: CAT5, CAT5e</li> <li>Description: PROFINET, shielded, Head A: female connector, M12, 4-pin, straight, D-coded, shielded, PROFINET, EtherCAT, for cable diameter 4 mm 8 mm</li> <li>Connection systems: IDC quick connection</li> <li>Permitted cross-section: 0.14 mm² 0.34 mm²</li> </ul>	DOS-1204-GZ	6048263

# MWS120-12N2EF18x12 | MWS120

MEASURING WHEEL ENCODERS

	Brief description	Туре	Part no.
	<ul> <li>Connection type head A: Female connector, M12, 4-pin, angled, D-coded</li> <li>Signal type: PROFINET</li> <li>Cable: CAT5, CAT5e</li> <li>Description: PROFINET, shielded, Head A: female connector, M12, 4-pin, angled, D-coded, shielded, for cable diameter 4 mm 8 mm</li> <li>Connection systems: IDC quick connection</li> <li>Permitted cross-section: 0.14 mm² 0.34 mm²</li> </ul>	DOS-1204-WZ	6048264
	<ul> <li>Connection type head A: Male connector, RJ45, 4-pin, straight</li> <li>Signal type: Ethernet, PROFINET, EtherCAT<sup>®</sup></li> <li>Cable: CAT5, CAT5e</li> <li>Description: Ethernet, PROFINET, EtherCAT<sup>®</sup>, shielded, Head A: male connector, RJ45, 4-pin, straight, shielded, PROFINET, EtherCAT, for cable diameter 4.5 mm 8 mm</li> <li>Connection systems: IDC quick connection</li> <li>Permitted cross-section: 4 mm<sup>2</sup> 8 mm<sup>2</sup></li> </ul>	STE-0J04-GZ	6048260
Co	<ul> <li>Connection type head A: Male connector, M12, 4-pin, straight, D-coded</li> <li>Signal type: PROFINET</li> <li>Cable: CAT5, CAT5e</li> <li>Description: PROFINET, shielded, Head A: male connector, M12, 4-pin, straight, D coded, shielded, for cable diameter 4 mm 8 mm</li> <li>Connection systems: IDC quick connection</li> <li>Permitted cross-section: 0.14 mm² 0.34 mm²</li> </ul>	STE-1204-GZ	6048261
	<ul> <li>Connection type head A: Male connector, M12, 4-pin, angled, D-coded</li> <li>Signal type: PROFINET</li> <li>Cable: CAT5, CAT5e</li> <li>Description: PROFINET, shielded, Head A: male connector, M12, 4-pin, angled, D coded, shielded, for cable diameter 4 mm 8 mm</li> <li>Connection systems: IDC quick connection</li> <li>Permitted cross-section: 0.14 mm² 0.34 mm²</li> </ul>	STE-1204-WZ	6048262

# 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

