



# AFM60A-S1IB018x12

AFS/AFM60 Ethernet

**ABSOLUTE ENCODERS**

**SICK**  
Sensor Intelligence.



### Ordering information

Type	part no.
AFM60A-S1IB018x12	1055331

Other models and accessories → [www.sick.com/AFS\\_AFM60\\_Ethernet](http://www.sick.com/AFS_AFM60_Ethernet)

Illustration may differ



### Detailed technical data

#### Safety-related parameters

<b>MTTF<sub>D</sub> (mean time to dangerous failure)</b>	80 years (EN ISO 13849-1) <sup>1)</sup>
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<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.

#### Performance

<b>Number of steps per revolution (max. resolution)</b>	262,144 (18 bit)
<b>Number of revolutions</b>	4,096 (12 bit)
<b>Max. resolution (number of steps per revolution x number of revolutions)</b>	18 bit x 12 bit (262,144 x 4,096)
<b>Error limits G</b>	0.03° <sup>1)</sup>
<b>Repeatability standard deviation <math>\sigma_r</math></b>	0.002° <sup>2)</sup>

<sup>1)</sup> In accordance with DIN ISO 1319-1, position of the upper and lower error limit depends on the installation situation, specified value refers to a symmetrical position, i.e. deviation in upper and lower direction is the same.

<sup>2)</sup> In accordance with DIN ISO 55350-13; 68.3% of the measured values are inside the specified area.

#### Interfaces

<b>Communication interface</b>	EtherNet/IP™
<b>Encoder profile</b>	V4.1 class3
<b>Data transmission rate (baud rate)</b>	10 Mbit/s, 100 Mbit/s
<b>Transmission medium</b>	CAT-5e cable
<b>Initialization time</b>	Approx. 10 s
<b>RPI (requested packet interval)</b>	5 ms ... 750 ms
<b>Parameterising data</b>	Number of steps per revolution Number of revolutions PRESET Counting direction Sampling rate for speed calculation Unit for output of speed, acceleration and temperature value

	Output of scalable limit values such as: position ranges, speed, acceleration, start-up of the CW/CCW directions of rotation, change of direction of rotation, operating hours and hours of shaft movement (motion) Round axis functionality Heartbeat
<b>Available diagnostics data</b>	Minimum and maximum temperature Maximum speed Power-on counter Operating hours counter power-on/motion Counter of direction changes/number of movements cw/number of movements ccw Number of changes of direction Minimum and maximum operating voltage Signal monitoring for single turn and multi turn
<b>DLR (Device Level Ring)</b>	✓

## Electronics

<b>Connection type</b>	Male connector, 1x, M12, 4-pin, axial <sup>1)</sup> Female connector, 2x, M12, 4-pin, axial <sup>2)</sup>
<b>Supply voltage</b>	10 ... 30 V
<b>Power consumption</b>	≤ 3 W (without load)
<b>Reverse polarity protection</b>	✓

<sup>1)</sup> A-coded.

<sup>2)</sup> D-coded.

## Mechanics

<b>Mechanical design</b>	Solid shaft, Servo flange
<b>Shaft diameter</b>	6 mm
<b>Shaft length</b>	10 mm
<b>Characteristics of the shaft</b>	With flat
<b>Weight</b>	0.2 kg
<b>Shaft material</b>	Stainless steel
<b>Flange material</b>	Aluminum
<b>Housing material</b>	Aluminum
<b>Start up torque</b>	0.5 Ncm (+20 °C)
<b>Operating torque</b>	0.3 Ncm (+20 °C)
<b>Permissible shaft loading</b>	80 N (radial) 40 N (axial)
<b>Operating speed</b>	≤ 9,000 min <sup>-1</sup> <sup>1)</sup>
<b>Moment of inertia of the rotor</b>	6.2 gcm <sup>2</sup>
<b>Bearing lifetime</b>	3 x 10 <sup>9</sup> revolutions
<b>Angular acceleration</b>	≤ 500,000 rad/s <sup>2</sup>

<sup>1)</sup> Allow for self-heating of 3.3 K per 1,000 rpm when designing the operating temperature range.

## Ambient data

<b>EMC</b>	According to EN 61000-6-2 and EN 61000-6-3
<b>Enclosure rating</b>	IP65, shaft side (IEC 60529) IP67, housing side (IEC 60529) <sup>1)</sup>

<sup>1)</sup> With mating connector fitted.

<b>Permissible relative humidity</b>	90 % (Condensation not permitted)
<b>Operating temperature range</b>	-40 °C ... +85 °C
<b>Storage temperature range</b>	-40 °C ... +100 °C, without package
<b>Resistance to shocks</b>	100 g, 6 ms (EN 60068-2-27)
<b>Resistance to vibration</b>	30 g, 10 Hz ... 2,000 Hz (EN 60068-2-6)

<sup>1)</sup> With mating connector fitted.

### Certificates

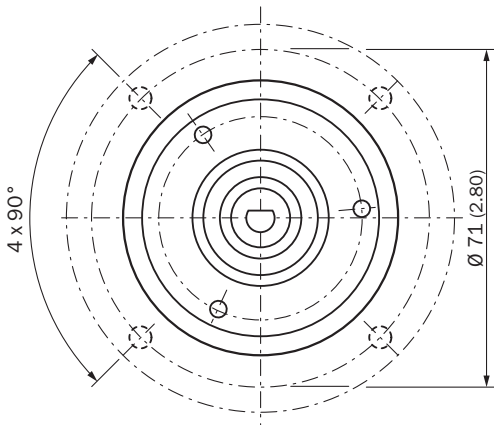
<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>Moroccan declaration of conformity</b>	✓
<b>China RoHS</b>	✓
<b>cTUVus certificate</b>	✓
<b>Ethernet/IP certificate</b>	✓
<b>Information according to Art. 3 of Data Act (Regulation EU 2023/2854)</b>	✓

### Classifications

<b>ECLASS 5.0</b>	27270502
<b>ECLASS 5.1.4</b>	27270502
<b>ECLASS 6.0</b>	27270590
<b>ECLASS 6.2</b>	27270590
<b>ECLASS 7.0</b>	27270502
<b>ECLASS 8.0</b>	27270502
<b>ECLASS 8.1</b>	27270502
<b>ECLASS 9.0</b>	27270502
<b>ECLASS 10.0</b>	27270502
<b>ECLASS 11.0</b>	27270502
<b>ECLASS 12.0</b>	27270502
<b>ETIM 5.0</b>	EC001486
<b>ETIM 6.0</b>	EC001486
<b>ETIM 7.0</b>	EC001486
<b>ETIM 8.0</b>	EC001486
<b>UNSPSC 16.0901</b>	41112113

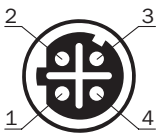


### Attachment specifications Mounting requirements for half-shell servo clamp



All dimensions in mm (inch)

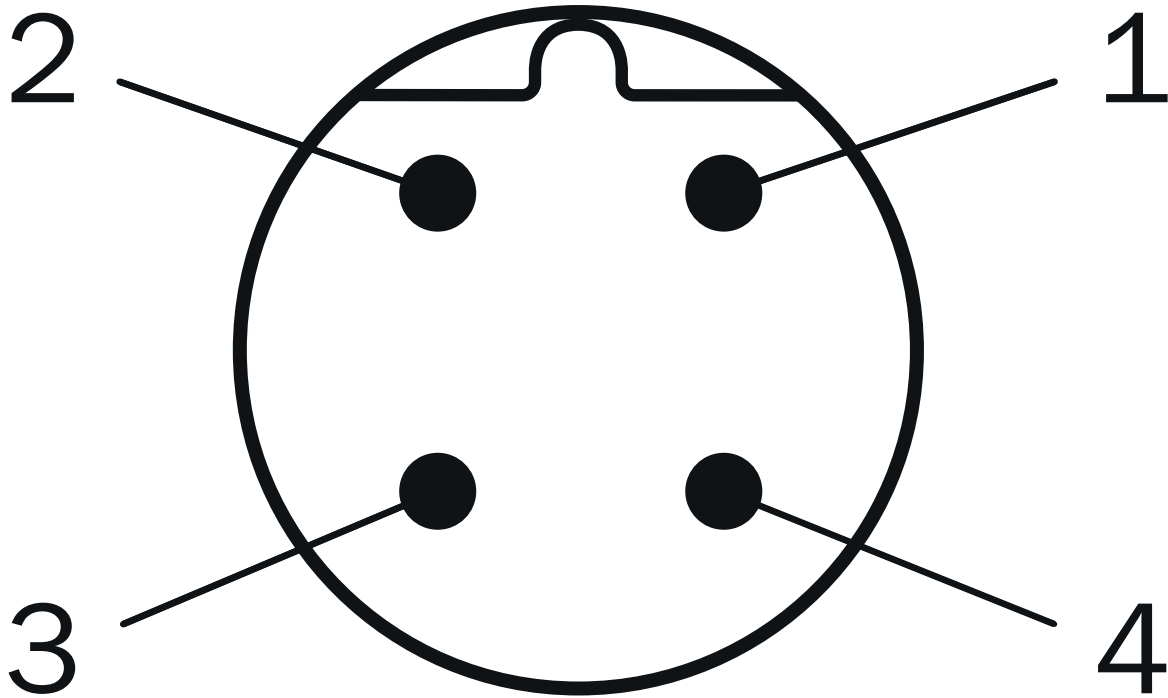
### Anschlussbelegung Female connector



Port 1, Port 2

PIN	Signal
1	T x D+
2	R x D+
3	T x D-
4	R x D-

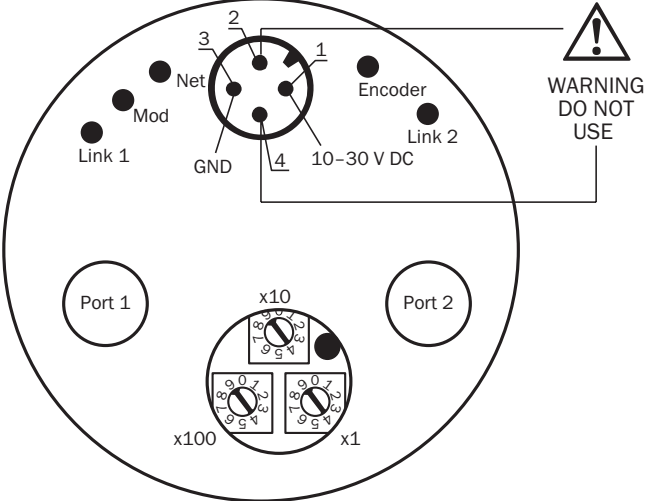
## Anschlussbelegung Male connector



## Supply voltage

PIN	Signal
1	10 V ... 30 V
2	Not assigned
3	GND
4	Not assigned

Connection diagram



## Recommended accessories





Other models and accessories → [www.sick.com/AFS\\_AFM60\\_Ethernet](http://www.sick.com/AFS_AFM60_Ethernet)

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"> <li><b>Description:</b> Unshielded</li> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li><b>Connection systems:</b> Screw-type terminals</li> <li><b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> </ul>	DOS-1204-W	6007303
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, straight, D-coded</li> <li><b>Connection type head B:</b> Male connector, M12, 4-pin, straight, D-coded</li> <li><b>Signal type:</b> Ethernet</li> <li><b>Cable:</b> 5 m, 4-wire, CAT5, CAT5e, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded</li> </ul>	SSL-1204-G05ME90	6045277
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, straight, D-coded</li> <li><b>Connection type head B:</b> Male connector, M12, 4-pin, straight, D-coded</li> <li><b>Signal type:</b> Ethernet</li> <li><b>Cable:</b> 10 m, 4-wire, CAT5, CAT5e, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded</li> </ul>	SSL-1204-G10ME90	6045279
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, straight, D-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Ethernet</li> <li><b>Cable:</b> 2 m, 4-wire, CAT5, CAT5e, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded</li> </ul>	STL-1204-G02ME90	6045284
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, straight, D-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Ethernet</li> <li><b>Cable:</b> 5 m, 4-wire, CAT5, CAT5e, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded</li> </ul>	STL-1204-G05ME90	6045285
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, straight, D-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Ethernet</li> <li><b>Cable:</b> 10 m, 4-wire, CAT5, CAT5e, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded</li> </ul>	STL-1204-G10ME90	6045286
	<ul style="list-style-type: none"> <li><b>Description:</b> Ethernet, shielded</li> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, D-coded</li> <li><b>Signal type:</b> Ethernet</li> <li><b>Cable:</b> CAT5, CAT5e</li> <li><b>Connection systems:</b> IDC quick connection</li> <li><b>Permitted cross-section:</b> 0.14 mm<sup>2</sup> ... 0.34 mm<sup>2</sup></li> </ul>	DOS-1204-GE	6048153
	<ul style="list-style-type: none"> <li><b>Description:</b> Ethernet, shielded</li> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, angled, D-coded</li> <li><b>Signal type:</b> Ethernet</li> <li><b>Cable:</b> CAT5, CAT5e</li> <li><b>Connection systems:</b> IDC quick connection</li> <li><b>Permitted cross-section:</b> 0.14 mm<sup>2</sup> ... 0.34 mm<sup>2</sup></li> </ul>	DOS-1204-WE	6048154
	<ul style="list-style-type: none"> <li><b>Description:</b> Ethernet, shielded</li> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, straight, D-coded</li> <li><b>Signal type:</b> Ethernet</li> <li><b>Cable:</b> CAT5, CAT5e</li> <li><b>Connection systems:</b> IDC quick connection</li> <li><b>Permitted cross-section:</b> 0.14 mm<sup>2</sup> ... 0.34 mm<sup>2</sup></li> </ul>	STE-1204-GE01	6048151
	<ul style="list-style-type: none"> <li><b>Description:</b> Ethernet, shielded</li> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, angled, D-coded</li> <li><b>Signal type:</b> Ethernet</li> <li><b>Cable:</b> CAT5, CAT5e</li> <li><b>Connection systems:</b> IDC quick connection</li> <li><b>Permitted cross-section:</b> 0.14 mm<sup>2</sup> ... 0.34 mm<sup>2</sup></li> </ul>	STE-1204-WE	6048152
	<ul style="list-style-type: none"> <li><b>Description:</b> Gigabit Ethernet, shielded</li> <li><b>Connection type head A:</b> Male connector, RJ45, 8-pin, straight, EIA/TIA 568A/B</li> <li><b>Signal type:</b> Gigabit Ethernet</li> <li><b>Cable:</b> CAT6A</li> <li><b>Connection systems:</b> IDC quick connection</li> <li><b>Permitted cross-section:</b> 4.5 mm<sup>2</sup> ... 8 mm<sup>2</sup></li> </ul>	STE-0J08-GE	6048150
	<ul style="list-style-type: none"> <li><b>Description:</b> Ethernet, shielded</li> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, D-coded</li> <li><b>Connection type head B:</b> Female connector, RJ45, 8-pin</li> <li><b>Signal type:</b> Ethernet</li> <li><b>Cable:</b> CAT5, CAT5e</li> </ul>	Feedthrough female connector Ethernet RJ45	6048180

	Brief description	Type	part no.
	<ul style="list-style-type: none"> <li><b>Note:</b> Cabinet through</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 4-wire, PUR, halogen-free</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A14-020UB3XLEAX	2095607
	<ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 4-wire, PUR, halogen-free</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A14-050UB3XLEAX	2095608
	<ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 10 m, 4-wire, PUR, halogen-free</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A14-100UB3XLEAX	2095609
	<ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 25 m, 4-wire, PUR, halogen-free</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A14-250UB3XLEAX	2095615
	<ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 4-wire, PUR, halogen-free</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YG2A14-020UB3XLEAX	2095766
	<ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 4-wire, PUR, halogen-free</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YG2A14-050UB3XLEAX	2095767
	<ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 10 m, 4-wire, PUR, halogen-free</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YG2A14-100UB3XLEAX	2095768
	<ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 25 m, 4-wire, PUR, halogen-free</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YG2A14-250UB3XLEAX	2095771
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, angled, D-coded</li> <li><b>Connection type head B:</b> Male connector, M12, 4-pin, angled, D-coded</li> <li><b>Signal type:</b> Ethernet, PROFINET</li> <li><b>Cable:</b> 2 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded, PROFINET</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>	YN2D24-020P-N1N2D24	2106168
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, straight, D-coded</li> <li><b>Connection type head B:</b> Male connector, M12, 4-pin, angled, D-coded</li> <li><b>Signal type:</b> Ethernet, PROFINET</li> <li><b>Cable:</b> 2 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded, PROFINET</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>	YM2D24-020P-N1N2D24	2106165
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, straight, D-coded</li> <li><b>Connection type head B:</b> Male connector, M12, 4-pin, angled, D-coded</li> <li><b>Signal type:</b> Ethernet, PROFINET</li> <li><b>Cable:</b> 5 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded, PROFINET</li> </ul>	YM2D24-050P-N1N2D24	2106166

	Brief description	Type	part no.
	<ul style="list-style-type: none"> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, straight, D-coded</li> <li><b>Connection type head B:</b> Male connector, M12, 4-pin, angled, D-coded</li> <li><b>Signal type:</b> Ethernet, PROFINET</li> <li><b>Cable:</b> 10 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded, PROFINET</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>	YM2D24-100P-N1N2D24	2106167
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, straight, D-coded</li> <li><b>Connection type head B:</b> Male connector, M12, 4-pin, straight, D-coded</li> <li><b>Signal type:</b> Ethernet, PROFINET</li> <li><b>Cable:</b> 2 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded, PROFINET</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>	YM2D24-020P-N1M2D24	2106159
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, angled, D-coded</li> <li><b>Connection type head B:</b> Male connector, RJ45, 4-pin, straight</li> <li><b>Signal type:</b> Ethernet, PROFINET</li> <li><b>Cable:</b> 2 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded, PROFINET</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>	YN2D24-020P-N1MRJA4	2106162
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, straight, D-coded</li> <li><b>Connection type head B:</b> Male connector, RJ45, 4-pin, straight</li> <li><b>Signal type:</b> Ethernet, PROFINET</li> <li><b>Cable:</b> 10 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded, PROFINET</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>	YM2D24-100P-N1MRJA4	2106185
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, straight, D-coded</li> <li><b>Connection type head B:</b> Male connector, RJ45, 4-pin, straight</li> <li><b>Signal type:</b> Ethernet, PROFINET</li> <li><b>Cable:</b> 5 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded, PROFINET</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>	YM2D24-050P-N1MRJA4	2106184
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, straight, D-coded</li> <li><b>Connection type head B:</b> Male connector, RJ45, 8-pin, straight</li> <li><b>Signal type:</b> Ethernet</li> <li><b>Cable:</b> 5 m, 4-wire, AWG26, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, twisted pair, shielded</li> </ul>	YM2D24-050EA1M-RJA4	6034415
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, straight, D-coded</li> <li><b>Connection type head B:</b> Male connector, RJ45, 4-pin, straight</li> <li><b>Signal type:</b> Ethernet, PROFINET</li> <li><b>Cable:</b> 2 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded, PROFINET</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>	YM2D24-020P-N1MRJA4	2106182
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, angled, D-coded</li> <li><b>Connection type head B:</b> Male connector, RJ45, 4-pin, straight</li> <li><b>Signal type:</b> Ethernet, PROFINET</li> <li><b>Cable:</b> 10 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded, PROFINET</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>	YN2D24-100P-N1MRJA4	2106164
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, angled, D-coded</li> <li><b>Connection type head B:</b> Male connector, RJ45, 4-pin, straight</li> <li><b>Signal type:</b> Ethernet, PROFINET</li> <li><b>Cable:</b> 5 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded, PROFINET</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>	YN2D24-050P-N1MRJA4	2106163
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, angled, D-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Ethernet, PROFINET</li> <li><b>Cable:</b> 5 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded, PROFINET</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>	YN2D24-050P-N1XLEAX	2106175
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, angled, D-coded</li> <li><b>Connection type head B:</b> Male connector, RJ45, 4-pin, straight</li> <li><b>Signal type:</b> Ethernet, PROFINET</li> <li><b>Cable:</b> 3 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded, PROFINET</li> </ul>	YN2D24-030P-N1MRJA4	2144265

	Brief description	Type	part no.
	<ul style="list-style-type: none"> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 0.6 m, 4-wire, PUR, halogen-free</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A14-C60UB3XLEAX	2145654
	<ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 1 m, 4-wire, PUR, halogen-free</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A14-010UB3XLEAX	2145655
	<ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 3 m, 4-wire, PUR, halogen-free</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A14-030UB3XLEAX	2145656
	<ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 0.6 m, 4-wire, PUR, halogen-free</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YG2A14-C60UB3XLEAX	2145657
	<ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 1 m, 4-wire, PUR, halogen-free</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YG2A14-010UB3XLEAX	2145658
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, angled, D-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Ethernet, PROFINET</li> <li><b>Cable:</b> 20 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded, PROFINET</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>	YN2D24-200P-N1XLEAX	2122743
	<ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 20 m, 4-wire, PUR, halogen-free</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YG2A14-200UB3XLEAX	2095770
	<ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 20 m, 4-wire, PUR, halogen-free</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A14-200UB3XLEAX	2095611
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, angled, D-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Ethernet, PROFINET</li> <li><b>Cable:</b> 10 m, 4-wire, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded, PROFINET</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>	YN2D24-100P-N1XLEAX	2106176
	<ul style="list-style-type: none"> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, angled, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 30 m, 4-wire, PUR, halogen-free</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YG2A14-300UB3XLEAX	2154444

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"> <li><b>Description:</b> Mounting bell for encoder with servo flange, 50 mm spigot</li> <li><b>Items supplied:</b> Mounting kit included</li> </ul>	BEF-MG-50	5312987
shaft adaptation			
	<ul style="list-style-type: none"> <li><b>Product segment:</b> Shaft adaptation</li> <li><b>Product:</b> Shaft couplings</li> <li><b>Description:</b> Bellows coupling, shaft diameter 6 mm / 6 mm, maximum shaft offset: radial <math>\pm 0.25</math> mm, axial <math>\pm 0.4</math> mm, angular <math>\pm 4^\circ</math>; max. speed 10,000 rpm, <math>-30^\circ\text{C}</math> to <math>+120^\circ\text{C}</math>, max. torque 120 Ncm; material: stainless steel bellows, aluminum hub</li> </ul>	KUP-0606-B	5312981
	<ul style="list-style-type: none"> <li><b>Product segment:</b> Shaft adaptation</li> <li><b>Product:</b> Shaft couplings</li> <li><b>Description:</b> Bellows coupling, shaft diameter 6 mm / 10 mm, maximum shaft offset: radial <math>\pm 0.25</math> mm, axial <math>\pm 0.4</math> mm, angular <math>\pm 4^\circ</math>; max. speed 10,000 rpm, <math>-30^\circ\text{C}</math> to <math>+120^\circ\text{C}</math>, max. torque 120 Ncm; material: stainless steel bellows, aluminum hub</li> </ul>	KUP-0610-B	5312982
	<ul style="list-style-type: none"> <li><b>Product segment:</b> Shaft adaptation</li> <li><b>Product:</b> Shaft couplings</li> <li><b>Description:</b> Spring washer coupling, shaft diameter 6 mm / 10 mm, Maximum shaft offset: radial <math>\pm 0.3</math> mm, axial <math>\pm 0.4</math> mm, angular <math>\pm 2.5^\circ</math>; max. speed 12,000 rpm, <math>-10^\circ</math> to <math>+80^\circ\text{C}</math>, max. torque 60 Ncm; material: aluminum flange, glass fiber-reinforced polyamide membrane and hardened steel coupling pin</li> </ul>	KUP-0610-F	5312985

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