

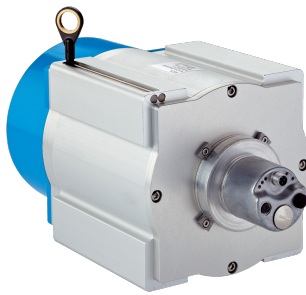


# BTF19-I1BM5099

HighLine

WIRE DRAW ENCODERS

**SICK**  
Sensor Intelligence.



### Ordering information

| Type           | Part no. |
|----------------|----------|
| BTF19-I1BM5099 | 1061011  |

**Included in delivery:** AFM60A-S1IB018x12 (1), MRA-F190-150D2 (1)

Product is supplied fully assembled. See individual components for further technical data

Other models and accessories → [www.sick.com/HighLine](http://www.sick.com/HighLine)



### Detailed technical data

#### Performance

|   |                           |
|---|---------------------------|
| <b>Measurement range</b>                | 0 m ... 50 m              |
| <b>Encoder</b>                          | Absolute encoders         |
| <b>Resolution (wire draw + encoder)</b> | 0.002 mm <sup>1) 2)</sup> |
| <b>Repeatability</b>                    | ≤ 5 mm <sup>3)</sup>      |
| <b>Linearity</b>                        | ≤ ± 2 mm <sup>3)</sup>    |
| <b>Hysteresis</b>                       | ≤ 10 mm <sup>3)</sup>     |

<sup>1)</sup> The values shown have been rounded.

<sup>2)</sup> Example calculation based on the BTF08 with PROFINET: 200 mm (wire draw length per revolution - see Mechanical data): 262,144 (number of steps per revolution) = 0.001 mm (resolution of wire draw + encoder combination).

<sup>3)</sup> Value applies to wire draw mechanism.

#### Interfaces

|                                  |              |
|----------------------------------|--------------|
| <b>Communication interface</b>   | EtherNet/IP™ |
| <b>Programmable/configurable</b> | ✓            |

#### Electrical data

|  |  |
|--|--|
| <b>Connection type</b>                       | Male connector, Female connector, 1x, 2x, M12, M12, 4-pin, 4-pin, axial, axial |
| <b>Supply voltage</b>                        | 10 V DC ... 30 V DC  |
| <b>Power consumption</b>                     | ≤ 3 W (without load)   |
| <b>MTTFd: mean time to dangerous failure</b> | 80 years (EN ISO 13849-1) <sup>1)</sup>  |

<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

|                                |   |
|--------------------------------|---|
| <b>Weight</b>                  | 16.7 kg   |
| <b>Measuring wire material</b> | Highly flexible stranded steel 1,4401 stainless steel V4A |
| <b>Measuring wire diameter</b> | 1.35 mm   |

<sup>1)</sup> These values were measured at an ambient temperature of 25 °C. There may be variations at other temperatures.

<sup>2)</sup> Average values, which depend on the application.

<sup>3)</sup> The service life depends on the type of load. This is influenced by environmental conditions, the installation location, the measuring range in use, the traversing speed, and acceleration.

|   |  |
|---|--|
| <b>Weight (measuring wire)</b>                  | 7.1 g/m  |
| <b>Housing material, wire draw mechanism</b>    | Aluminum (anodized), aluminum die cast (nickel-plated) |
| <b>Spring return force</b>                      | 18 N ... 37 N <sup>1)</sup>                            |
| <b>Length of wire pulled out per revolution</b> | 491.5 mm   |
| <b>Life of wire draw mechanism</b>              | Typ. 1,000,000 cycles <sup>2) 3)</sup>                 |
| <b>Actual wire draw length</b>                  | 50.2 m   |
| <b>Wire acceleration</b>                        | 18 m/s <sup>2</sup>                                    |
| <b>Operating speed</b>                          | 4 m/s  |
| <b>Mounted encoder</b>                          | AFM60 EtherNet/IP, AFM60A-S1IB018X12, 1055331          |
| <b>Mounted mechanic</b>                         | MRA-F190-150D2, 6028630                                |

<sup>1)</sup> These values were measured at an ambient temperature of 25 °C. There may be variations at other temperatures.

<sup>2)</sup> Average values, which depend on the application.

<sup>3)</sup> The service life depends on the type of load. This is influenced by environmental conditions, the installation location, the measuring range in use, the traversing speed, and acceleration.

### Ambient data

|                                    |   |
|------------------------------------|---|
| <b>EMC</b>                         | According to EN 61000-6-2 and EN 61000-6-3 <sup>1)</sup>          |
| <b>Enclosure rating</b>            | IP31, mounted mechanic<br>IP67, Encoder (IEC 60529) <sup>2)</sup> |
| <b>Operating temperature range</b> | -30 °C ... +70 °C   |

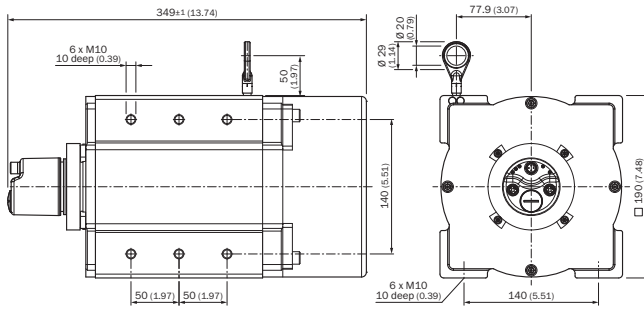
<sup>1)</sup> EMC according to the standards quoted is achieved if shielded cables are used.

<sup>2)</sup> With mating connector fitted.

### Classifications

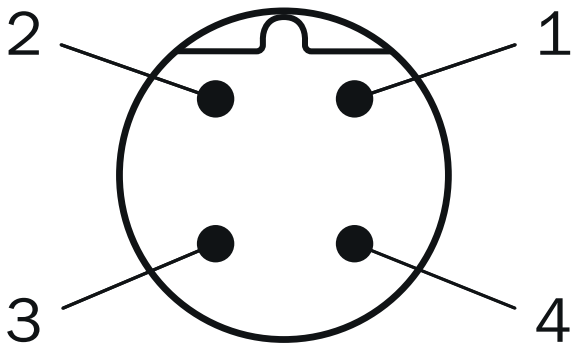
|                       |          |
|-----------------------|----------|
| <b>ECLASS 5.0</b>     | 27270590 |
| <b>ECLASS 5.1.4</b>   | 27270590 |
| <b>ECLASS 6.0</b>     | 27270590 |
| <b>ECLASS 6.2</b>     | 27270590 |
| <b>ECLASS 7.0</b>     | 27270590 |
| <b>ECLASS 8.0</b>     | 27270590 |
| <b>ECLASS 8.1</b>     | 27270590 |
| <b>ECLASS 9.0</b>     | 27270590 |
| <b>ECLASS 10.0</b>    | 27270613 |
| <b>ECLASS 11.0</b>    | 27270503 |
| <b>ECLASS 12.0</b>    | 27270503 |
| <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 |

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



### PIN assignment

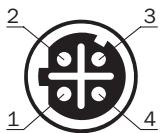
Male connector



Supply voltage

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

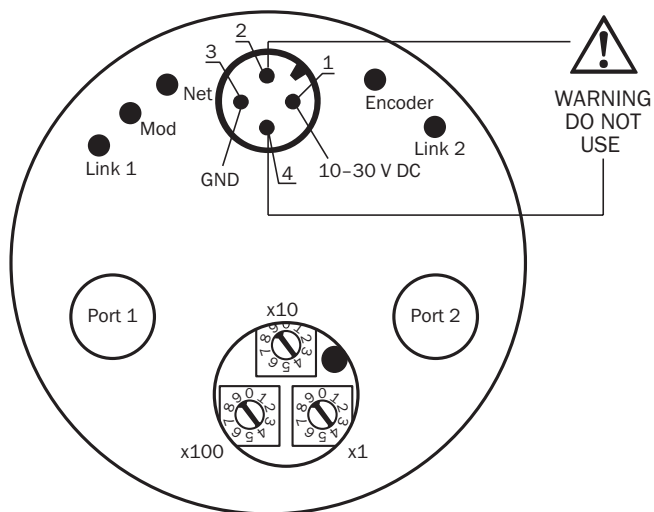
Female connector



Port 1, Port 2






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




Connection diagram



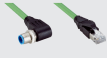
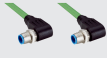






Recommended accessories

Other models and accessories → [www.sick.com/HighLine](http://www.sick.com/HighLine)



|   | Brief description   | Type                                       | Part no. |
|---|---|--|----------|
| <b>Wire draw mechanism</b>  |   |  |          |
|  | HighLine wire draw mechanism for servo flange with 6 mm shaft, measuring range 0 m ... 50 m   | MRA-F190-150D2                             | 6028630  |
| <b>Flanges</b>  |   |  |          |
|  | Flange adapter for HighLine wire draw mechanisms, adaption of face mount flange with centering hub 20 mm to 50 mm servo flange, Aluminum, including 3 countersunk screws M3 x 10  | BEF-FA-020-050WDE                          | 2073776  |
| <b>Other mounting accessories</b>   |   |  |          |
|  | Joint ball for later insertion in wire end ring with 20 mm diameter. The use of this joint ball enables movement in multiple levels of freedom.   | Joint protection for wire rope BTF/PRF/MRA | 5318683  |
|  | Compressed air attachment for MRA-F080... and MRA-F130... HighLine wire draw mechanism  | MRA-F-P                                    | 6073769  |
| <b>Plug connectors and cables</b>   |   |  |          |
|  | <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, M12 male connector D-coded straight to open end</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, M12 male connector D-coded straight to open end</li> </ul> | STL-1204-G05ME90                           | 6045285  |

|   | Brief description   | Type   | Part no.           |
|---|---|--|--------------------|
|  | <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, M12 male connector D-coded straight to open end</li> </ul>  | STL-1204-G10ME90   | 6045286            |
|   | <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</li> <li><b>Cable:</b> 2 m, 4-wire, CAT5, CAT5e, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded, M12 male connector D-coded angled to open end</li> </ul>   | STL-1204-W02ME90   | 6047912            |
|   | <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</li> <li><b>Cable:</b> 10 m, 4-wire, CAT5, CAT5e, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded, M12 male connector D-coded angled to open end</li> </ul>  | STL-1204-W10ME90   | 6047914            |
|   | <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</li> <li><b>Cable:</b> 25 m, 4-wire, CAT5, CAT5e, PUR, halogen-free</li> <li><b>Description:</b> Ethernet, shielded, M12 male connector D-coded angled to open end</li> </ul>  | STL-1204-W25ME90   | 6047915            |
|  | <ul style="list-style-type: none"> <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>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>  | YF2A14-020UB3XLEAX   | 2095607            |
|   | <ul style="list-style-type: none"> <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>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>  | YF2A14-050UB3XLEAX   | 2095608            |
|   | <ul style="list-style-type: none"> <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>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with oils and lubricants, Drag chain operation, Robot</li> </ul> | YF2A14-100UB3XLEAX   | 2095609            |
|   | <ul style="list-style-type: none"> <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>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with oils and lubricants, Drag chain operation, Robot</li> </ul> | YF2A14-250UB3XLEAX   | 2095615            |
|   | <ul style="list-style-type: none"> <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>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>    | YG2A14-020UB3XLEAX   | 2095766            |
|   | <ul style="list-style-type: none"> <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>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>    | YG2A14-050UB3XLEAX   | 2095767            |
|   |    | <ul style="list-style-type: none"> <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>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with oils and lubricants, Drag chain operation, Robot</li> </ul> | YG2A14-050UB3XLEAX |

|   | Brief description  | Type               | Part no. |
|---|--|--------------------|----------|
|   | <ul style="list-style-type: none"> <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>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with oils and lubricants, Drag chain operation, Robot</li> </ul>                  | YG2A14-100UB3XLEAX | 2095768  |
|   | <ul style="list-style-type: none"> <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>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with oils and lubricants, Drag chain operation, Robot</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> 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, PROFINET, shielded</li> <li>• <b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>                                    | YN2D24-050PN1XLEAX | 2106175  |
|    | <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, 5 m cable, M12 male connector straight to M12 male connector straight</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, 10 m cable, M12 male connector straight to M12 male connector straight</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> 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, PROFINET, shielded</li> <li>• <b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul> | YM2D24-020PN1M2D24 | 2106159  |
|  | <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, PROFINET, shielded</li> <li>• <b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>         | YM2D24-020PN1MRJA4 | 2106182  |
|  | <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>  | YM2D24-050EA1MRJA4 | 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> 5 m, 4-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Ethernet, PROFINET, shielded</li> <li>• <b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>         | YM2D24-050PN1MRJA4 | 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, 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, PROFINET, shielded</li> <li>• <b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>        | YM2D24-100PN1MRJA4 | 2106185  |

|   | Brief description   | Type               | Part no. |
|---|---|--------------------|----------|
|    | <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, PROFINET, shielded</li> <li>• <b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>  | YN2D24-020PN1MRJA4 | 2106162  |
|    | <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, PROFINET, shielded</li> <li>• <b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>  | YN2D24-020PN1N2D24 | 2106168  |
|    | <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, PROFINET, shielded</li> <li>• <b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>  | YN2D24-050PN1MRJA4 | 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> 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, PROFINET, shielded</li> <li>• <b>Application:</b> Drag chain operation, Zones with oils and lubricants</li> </ul>   | YN2D24-100PN1MRJA4 | 2106164  |
|    | <ul style="list-style-type: none"> <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>Description:</b> Ethernet, shielded, Head A: female connector, M12, 4-pin, straight, D-coded, shielded, for cable diameter 4 mm ... 8 mm Head B: -</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>Connection type head A:</b> Female connector, M12, 4-pin, angled</li> <li>• <b>Description:</b> Unshielded, Head A: female connector, M12, 4-pin, angled, unshielded, for power supply, for cable diameter 3 mm ... 6.5 mm Head B: -</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> 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>Description:</b> Ethernet, shielded, Head A: female connector, M12, 4-pin, angled, D-coded, shielded, for cable diameter 4 mm ... 8 mm Head B: -</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>Connection type head A:</b> Male connector, RJ45, 8-pin, straight</li> <li>• <b>Signal type:</b> EtherNet/IP™</li> <li>• <b>Cable:</b> CAT5, CAT5e</li> <li>• <b>Description:</b> EtherNet/IP™, shielded, Head A: male connector, RJ45, 8-pin, straight, shielded, EtherNet/IP, for cable diameter 4.5 mm ... 8 mm Head B: -</li> <li>• <b>Connection systems:</b> IDC quick connection</li> <li>• <b>Permitted cross-section:</b> 0.13 mm<sup>2</sup> ... 0.23 mm<sup>2</sup></li> </ul> | STE-0J08-GE        | 6048150  |
|  | <ul style="list-style-type: none"> <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>Description:</b> Ethernet, shielded, Head A: male connector, M12, 4-pin, straight, D coded, shielded, for cable diameter 4 mm ... 8 mm Head B: -</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  |



|   | Brief description  | Type                                       | Part no. |
|---|--|--|----------|
|  | <ul style="list-style-type: none"> <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>Description:</b> Ethernet, shielded, Head A: male connector, M12, 4-pin, angled, D coded, shielded, for cable diameter 4 mm ... 8 mm Head B: -</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>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> <li>• <b>Description:</b> Ethernet, shielded</li> <li>• <b>Note:</b> Cabinet through</li> </ul>  | Feedthrough female connector Ethernet RJ45 | 6048180  |

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