

# U FK

## ULTRASONIC FULL METAL TUBULAR M18 SENSOR



M18 full metal ultrasonic sensors for extreme applications (food and pharma).

- Stainless Steel AISI 316L housing
- IP68, IP69K mechanical protection degree
- ECOLAB certification
- IO-Link models



### CODE DESCRIPTION

U FK 1 - A / H P - 1 E IO

|                             |             |                                                                                            |  |  |  |  |  |  |  |  |  |
|-----------------------------|-------------|--------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|
| series                      | <b>U FK</b> | M18 ultrasonic sensor full metal                                                           |  |  |  |  |  |  |  |  |  |
| housing type                | <b>1</b>    | Standard housing                                                                           |  |  |  |  |  |  |  |  |  |
| nominal sensing distance Sn | <b>A</b>    | 50 - 400 mm direct diffuse                                                                 |  |  |  |  |  |  |  |  |  |
|                             | <b>B</b>    | 100 - 1,000 mm direct diffuse                                                              |  |  |  |  |  |  |  |  |  |
| adjustment                  | <b>H</b>    | Remote teaching via cable                                                                  |  |  |  |  |  |  |  |  |  |
| output                      | <b>1</b>    | 0...10 V single voltage analogue output                                                    |  |  |  |  |  |  |  |  |  |
|                             | <b>2</b>    | 4...20 mA single current analogue output                                                   |  |  |  |  |  |  |  |  |  |
|                             | <b>P</b>    | PNP - NO/NC single digital output                                                          |  |  |  |  |  |  |  |  |  |
|                             | <b>W</b>    | IO-Link + PNP, two digital outputs with standard window and adjustable hysteresis function |  |  |  |  |  |  |  |  |  |
|                             | <b>6</b>    | IO-Link + 4 ... 20 mA current analogue output                                              |  |  |  |  |  |  |  |  |  |
|                             | <b>7</b>    | IO-Link + 0 ... 10 V voltage analogue output                                               |  |  |  |  |  |  |  |  |  |
| housing material            | <b>1</b>    | Axial AISI 316L (DIN 1.4404) stainless steel housing                                       |  |  |  |  |  |  |  |  |  |
| cable / exit connector      | <b>E</b>    | M12 plug cable exit                                                                        |  |  |  |  |  |  |  |  |  |
| communication protocol      | <b>IO</b>   | IO-Link                                                                                    |  |  |  |  |  |  |  |  |  |

# TECHNICAL SPECIFICATIONS

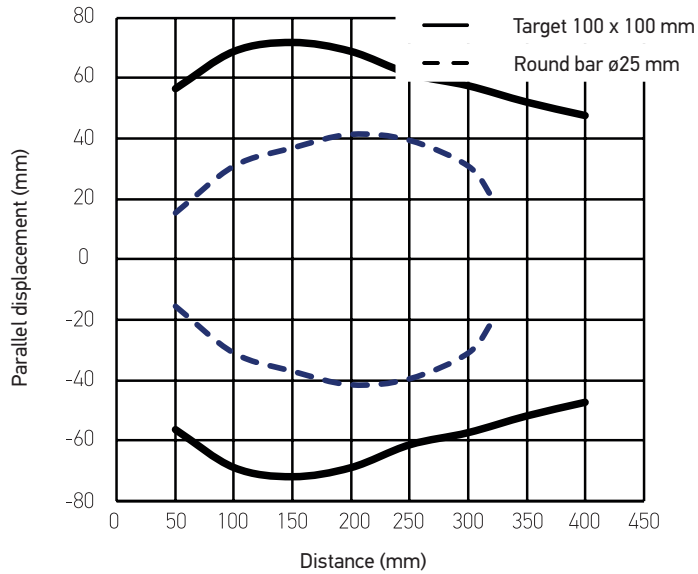
|                                   | UFK1A/**-****                                                                    | UFK1B/**-****   |
|-----------------------------------|----------------------------------------------------------------------------------|-----------------|
| GENERAL DATA                      |                                                                                  |                 |
| Operating principle               | Diffuse reflection                                                               |                 |
| DETECTION CAPABILITIES            |                                                                                  |                 |
| Nominal sensing distance          | 50 ... 400 mm                                                                    | 100 ... 1000 mm |
| Thermal drift                     | ± 2%                                                                             |                 |
| Repeatability                     | 0,5% of full scale value                                                         |                 |
| Resolution                        | 1 mm                                                                             |                 |
| Hysteresis                        | 1 %                                                                              |                 |
| EMISSION DATA                     |                                                                                  |                 |
| Beam angle                        | 8±1 °                                                                            |                 |
| 300                               | 300 kHz                                                                          | 200 kHz         |
| FUNCTIONS                         |                                                                                  |                 |
| Sensitivity adjustment            | Io-Link, Remote Teaching via cable                                               |                 |
| INPUT/OUTPUT                      |                                                                                  |                 |
| Maximum switching frequency       | 10 Hz                                                                            | 6 Hz            |
| Response time max                 | 200 ms                                                                           |                 |
| Output type                       | 0...10 V, 4...20 mA, PNP, IO-Link + 0...10 V, IO-Link + 4...20 mA, IO-Link + PNP |                 |
| Output function                   | Analogue Output, Digital Output, Io-Link + Analogue Output, Io-Link + Digital    |                 |
| ELECTRICAL DATA                   |                                                                                  |                 |
| Supply voltage                    | 10 ... 30 V                                                                      |                 |
| Maximum residual ripple           | 5%                                                                               |                 |
| Leakage current                   | ≤ 10 µA @30 V                                                                    |                 |
| Maximum No-load absorption        | 50mA                                                                             |                 |
| Maximum DC load current           | 100 mA                                                                           |                 |
| Short circuit protection          | ●                                                                                |                 |
| Reverse polarity protection       | ●                                                                                |                 |
| Impulsive overvoltage protections | ●                                                                                |                 |
| Delay to availability             | 300 ms                                                                           |                 |
| MECHANICAL DATA                   |                                                                                  |                 |
| Dimensions                        | M18/ L = 98.6 mm                                                                 |                 |
| Material                          | Stainless Steel AISI-316L                                                        |                 |
| Active part material              | Stainless Steel AISI-316L                                                        |                 |
| Connections                       | M12                                                                              |                 |
| Weight                            | 75.00 g                                                                          |                 |
| ENVIRONMENTAL DATA                |                                                                                  |                 |
| Operating Temperature             | -10 ... 70 °C                                                                    | -20 ... 70 °C   |
| Mechanical Protection             | IP67, IP68, IP69K                                                                |                 |

## AVAILABLE MODELS

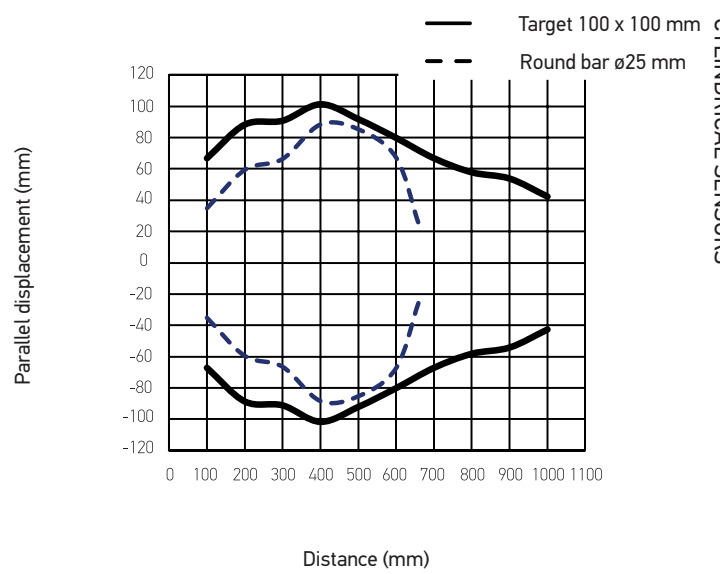
| Nominal sen-<br>sing distance | Sensitivity<br>adjustment      | 0...10 V    | 4...20 mA   | PNP         | IO-Link + 0...10 V | IO-Link +<br>4...20mA | IO-Link + PNP |
|-------------------------------|--------------------------------|-------------|-------------|-------------|--------------------|-----------------------|---------------|
| 50 ... 400 mm                 | Remote Tea-<br>ching via cable | UFK1A/H1-1E | UFK1A/H2-1E | UFK1A/HP-1E | -                  | -                     | -             |
|                               | Io-Link                        | -           | -           | -           | UFK1A/H7-1EIO      | UFK1A/H6-1EIO         | UFK1A/HW-1EIO |
| 100 ... 1000 mm               | Remote Tea-<br>ching via cable | UFK1B/H1-1E | UFK1B/H2-1E | UFK1B/HP-1E | -                  | -                     | -             |
|                               | Io-Link                        | -           | -           | -           | UFK1B/H7-1EIO      | UFK1B/H6-1EIO         | UFK1B/HW-1EIO |

## RESPONSE DIAGRAMS

UFK1A/\*\*-\*\*\*\* Parallel displacement

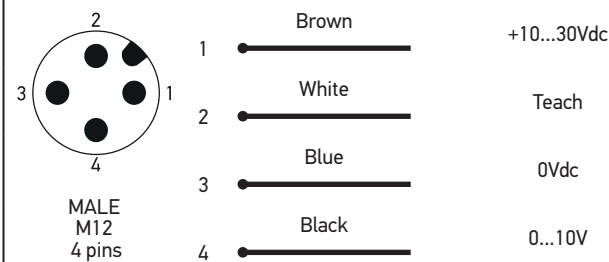


UFK1B/\*\*-\*\*\*\* Parallel displacement

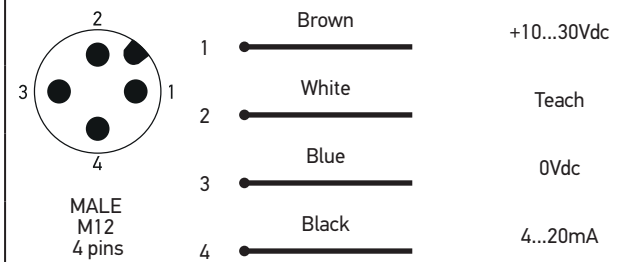


## CONNECTIONS

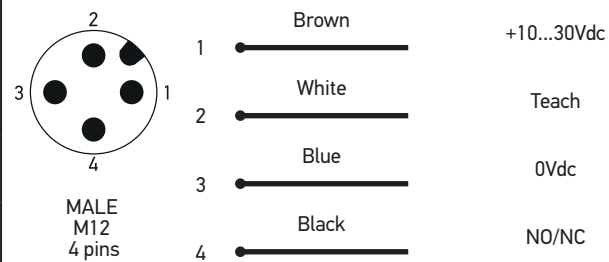
UFK1\*/H1-1E



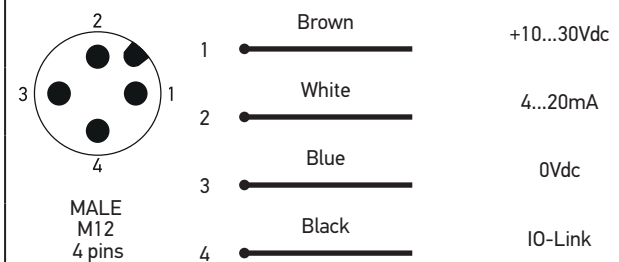
UFK1\*/H2-1E



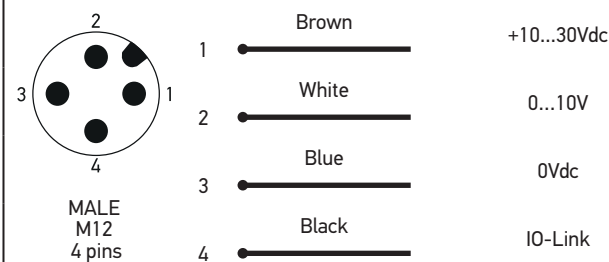
UFK1\*/HP-1E



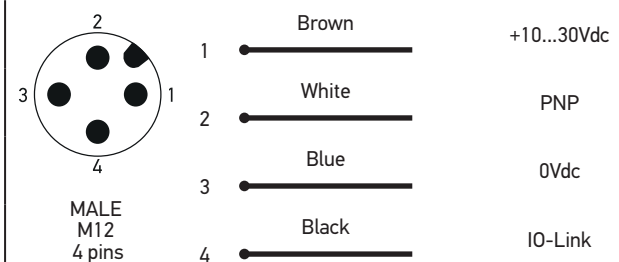
UFK1\*/H6-1EIO

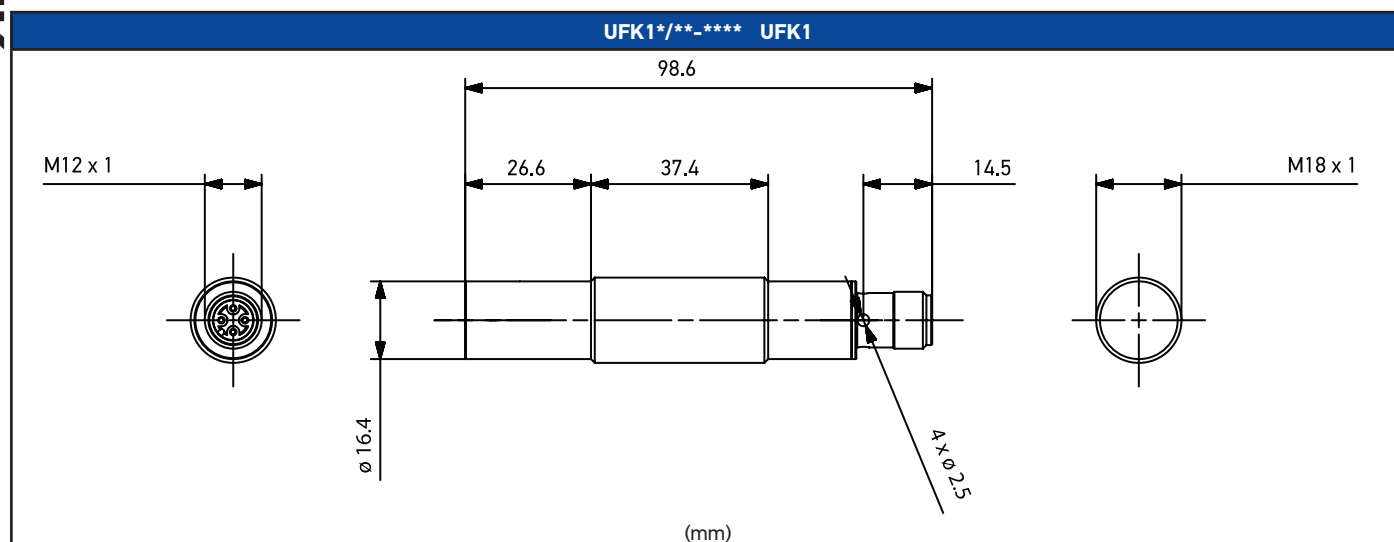


UFK1\*/H7-1EIO



UFK1\*/HW-1EIO





## ACCESSORIES

| Cables            |                                           |                |
|-------------------|-------------------------------------------|----------------|
| Model             | Description                               | Article code   |
| CD12F/0B-050A4    | Connect.M12-F,4 poles-5m,PP/EPDM,Axial    | CD12F/0B-050A4 |
| CD12F/0B-050C4    | Connect.M12-F,4 poles-5m,PP/EPDM,90°      | CD12F/0B-050C4 |
| CD12F/0B-100A4    | Connect.M12-F,4 poles-10m,PP/EPDM,Axial   | CD12F/0B-100A4 |
| CD12F/0B-100C4    | Connect.M12-F,4 poles-10m,PP/EPDM,90°     | CD12F/0B-100C4 |
| CD12F/0B-200C4    | Connect.M12-F,4 poles-20m,PP/EPDM,90°     | CD12F/0B-200C4 |
| CD12F/LB-050C4    | Connect.M12-F,4 poles-5m-LED,PP/EPDM,90°  | CD12F/LB-050C4 |
| CD12F/LB-100C4    | Connect.M12-F,4 poles-10m-LED,PP/EPDM,90° | CD12F/LB-100C4 |
| Mounting brackets |                                           |                |
| Model             | Description                               | Article code   |
| ST 18-A7W         | Bracket M18 axial AISI316L                | ST 18-A7W      |
| ST 18-C7W         | Bracket M18 90° AISI316L                  | ST 18-C7W      |