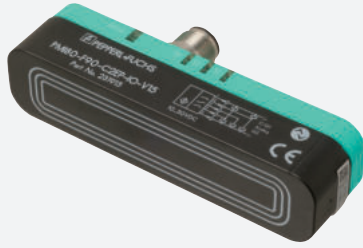


# Inductive positioning system

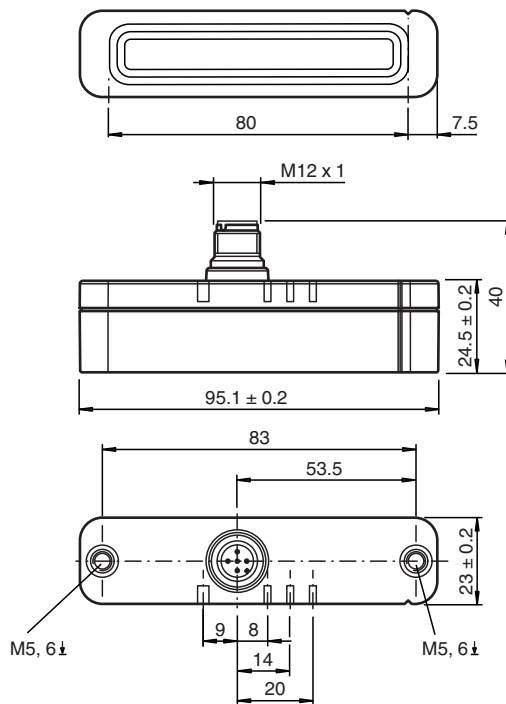
## PMI80-F90-3EP-IO-V15



- Parameterization and diagnosis via IO-Link
- Measuring range 0 ... 80 mm
- Parameterisable measuring range
- 3 Push-pull outputs
- Switch points programmable via IO-Link



### Dimensions



### Technical Data

#### General specifications

|                            |                                    |
|----------------------------|------------------------------------|
| Switching element function | 3 switch outputs, programmable     |
| Object distance            | 0.5 ... 3 mm , recommended: 1.5 mm |
| Measurement range          | 0 ... 80 mm                        |
| Linearity range            | 1 ... 79 mm                        |

#### Nominal ratings

|                             |       |                                                                              |
|-----------------------------|-------|------------------------------------------------------------------------------|
| Operating voltage           | $U_B$ | 12 ... 30 V DC                                                               |
| Reverse polarity protection |       | reverse polarity protected                                                   |
| Linearity error             |       | within measuring range: $\pm 0.8$ mm<br>within linearity range: $\pm 0.4$ mm |

Release date: 2022-05-17 Date of issue: 2022-05-17 Filename: 231921\_eng.pdf

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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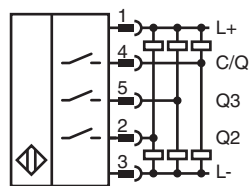
**PEPPERL+FUCHS**

## Technical Data

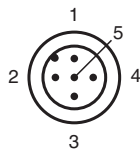
|                                                 |                |                                                                                                                                    |
|-------------------------------------------------|----------------|------------------------------------------------------------------------------------------------------------------------------------|
| Repeat accuracy                                 | R              | ± 0.1 mm                                                                                                                           |
| Resolution                                      |                | 50 µm                                                                                                                              |
| Temperature drift                               |                | ± 0.5 mm (-25 °C ... 70 °C)                                                                                                        |
| No-load supply current                          | I <sub>0</sub> | ≤ 40 mA                                                                                                                            |
| Operating voltage indicator                     |                | LED green                                                                                                                          |
| <b>Functional safety related parameters</b>     |                |                                                                                                                                    |
| MTTF <sub>d</sub>                               |                | 311 a                                                                                                                              |
| Mission Time (T <sub>M</sub> )                  |                | 20 a                                                                                                                               |
| Diagnostic Coverage (DC)                        |                | 0 %                                                                                                                                |
| <b>Indicators/operating means</b>               |                |                                                                                                                                    |
| LED S1                                          |                | switching state Switching output 1                                                                                                 |
| LED S2                                          |                | switching state Switching output 2                                                                                                 |
| LED S3                                          |                | switching state, Switching output 3                                                                                                |
| LED STATUS                                      |                | Status display LED, green/red (Power on, communication/error, missing damping element)                                             |
| <b>Interface</b>                                |                |                                                                                                                                    |
| Interface type                                  |                | IO-Link (via C/Q = Pin 4)                                                                                                          |
| IO-Link revision                                |                | 1.1                                                                                                                                |
| Device profile                                  |                | Smart Sensor                                                                                                                       |
| Device ID                                       |                | 0x200302 (2097922)                                                                                                                 |
| Transfer rate                                   |                | COM2 (38.4 kBaud)                                                                                                                  |
| Value range                                     |                | 0000h ... 6400h                                                                                                                    |
| Min. cycle time                                 |                | 2.3 ms                                                                                                                             |
| Process data width                              |                | Process data input: 16 Bit<br>Process data output: none                                                                            |
| SIO mode support                                |                | yes                                                                                                                                |
| Compatible master port type                     |                | A                                                                                                                                  |
| <b>Switching output</b>                         |                |                                                                                                                                    |
| Output type                                     |                | 3 push-pull outputs (can be parameterized), short-circuit-proof, reverse polarity protection , overvoltage protected               |
| Operating current                               | I <sub>L</sub> | ≤ 100 mA / Output                                                                                                                  |
| Switching window                                |                | ± 1 mm                                                                                                                             |
| Switching hysteresis                            |                | 0.2 mm                                                                                                                             |
| Voltage drop                                    |                | ≤ 3 V                                                                                                                              |
| Short-circuit protection                        |                | pulsing                                                                                                                            |
| <b>Compliance with standards and directives</b> |                |                                                                                                                                    |
| Standard conformity                             |                |                                                                                                                                    |
| Standards                                       |                | EN 60947-5-2:2007<br>EN 60947-5-2/A1:2012<br>IEC 60947-5-2:2007<br>IEC 60947-5-2 AMD 1:2012<br>IEC 61131-9:2013<br>EN 61131-9:2013 |
| <b>Approvals and certificates</b>               |                |                                                                                                                                    |
| UL approval                                     |                | cULus Listed, Class 2 Power Source, Type 1 enclosure                                                                               |
| Marine approval                                 |                | DNVGL TAA00001V2                                                                                                                   |
| <b>Ambient conditions</b>                       |                |                                                                                                                                    |
| Ambient temperature                             |                | -25 ... 85 °C (-13 ... 185 °F)                                                                                                     |
| <b>Mechanical specifications</b>                |                |                                                                                                                                    |
| Connection type                                 |                | 5-pin, M12 x 1 connector                                                                                                           |
| Degree of protection                            |                | IP67 / IP69K                                                                                                                       |
| Material                                        |                |                                                                                                                                    |
| Housing                                         |                | PBT, stainless steel 1.4571 , brass, nickel-plated                                                                                 |
| Target                                          |                | mild steel, e. g. 1.0037, SR235JR (formerly St37-2)                                                                                |
| Mass                                            |                | 83 g                                                                                                                               |

Release date: 2022-05-17 Date of issue: 2022-05-17 Filename: 231921\_eng.pdf

Connection



Connection Assignment

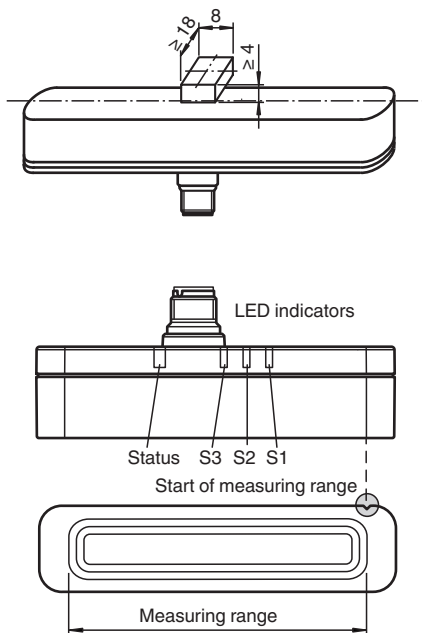


Wire colors in accordance with EN 60947-5-2

|   |    |         |
|---|----|---------|
| 1 | BN | (brown) |
| 2 | WH | (white) |
| 3 | BU | (blue)  |
| 4 | BK | (black) |
| 5 | GY | (gray)  |

Application

dimensions for the target object:



Accessories

|  |                 |                                                                    |
|--|-----------------|--------------------------------------------------------------------|
|  | <b>BT-F90-W</b> | Damping element for sensors of type F90, F112, and F166; side hole |
|--|-----------------|--------------------------------------------------------------------|

Release date: 2022-05-17 Date of issue: 2022-05-17 Filename: 231921\_eng.pdf

## Accessories

|                                                                                     |                             |                                                                                                              |
|-------------------------------------------------------------------------------------|-----------------------------|--------------------------------------------------------------------------------------------------------------|
|    | <b>MH-F90</b>               | Mounting bracket for mounting of F90 sensors                                                                 |
|    | <b>V15-G-2M-PVC</b>         | Female cordset single-ended M12 straight A-coded, 5-pin, PVC cable grey                                      |
|    | <b>V15-W-2M-PVC</b>         | Female cordset single-ended M12 angled A-coded, 5-pin, PVC cable grey                                        |
|    | <b>ICE2-8IOL-G65L-V1D</b>   | EtherNet/IP IO-Link master with 8 inputs/outputs                                                             |
|    | <b>ICE3-8IOL-G65L-V1D</b>   | PROFINET IO IO-Link master with 8 inputs/outputs                                                             |
|    | <b>ICE1-8IOL-G30L-V1D</b>   | Ethernet IO-Link module with 8 inputs/outputs                                                                |
|    | <b>ICE1-8IOL-G60L-V1D</b>   | Ethernet IO-Link module with 8 inputs/outputs                                                                |
|    | <b>ICE2-8IOL-K45P-RJ45</b>  | EtherNet/IP IO-Link master with 8 inputs/outputs, DIN rail, push-in connectors                               |
|    | <b>ICE2-8IOL-K45S-RJ45</b>  | EtherNet/IP IO-Link master with 8 inputs/outputs, DIN rail, screw terminal                                   |
|  | <b>ICE3-8IOL-K45P-RJ45</b>  | PROFINET IO IO-Link master with 8 inputs/outputs, DIN rail, push-in terminals                                |
|  | <b>ICE3-8IOL-K45S-RJ45</b>  | PROFINET IO IO-Link master with 8 inputs/outputs, DIN rail, screw terminal                                   |
|  | <b>IO-Link-Master02-USB</b> | IO-Link master, supply via USB port or separate power supply, LED indicators, M12 plug for sensor connection |

## Operation

### Attention!

If the sensor is supplied via an IO-Link-Master, ensure that the sum of the no-load supply current and operating currents of all sensor outputs does not exceed the maximum current the IO-Link-Master can supply.