



## Inclination sensor INY160DH-F199-IE2-V19

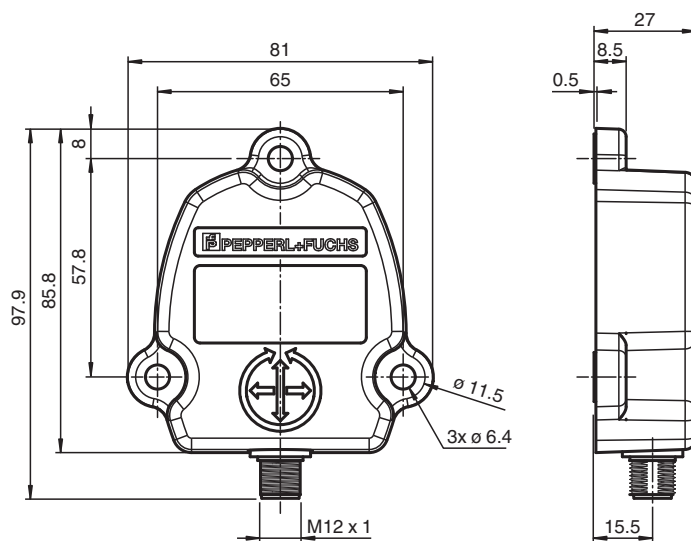
- Sturdy housing
- High accuracy of  $\leq \pm 0,15^\circ$
- Analog output 4 mA ... 20 mA
- 2-axis with  $\pm 80^\circ$  measuring range



### Function

This inclination sensor has a analog output 4 mA ... 20 mA. With its sturdy housing and its high accuracy, it is ideally suited for applications in the fields of solar, wind or mobile equipment.

### Dimensions



### Technical Data

#### General specifications

|                                |                            |
|--------------------------------|----------------------------|
| Type                           | Inclination sensor, 2-axis |
| Time delay before availability | 125 ms                     |
| Measurement range              | $\pm 80^\circ$             |

## Technical Data

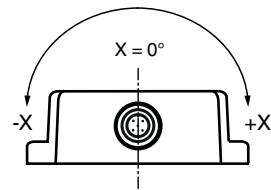
|                                                 |                |                                                                                                                               |
|-------------------------------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------------|
| Absolute accuracy                               |                | $\leq \pm 0.15^\circ$ for measuring range $\leq \pm 60^\circ$<br>$\leq \pm 0.4^\circ$ for measuring range $\geq \pm 60^\circ$ |
| Response delay                                  |                | $\leq 100$ ms                                                                                                                 |
| Resolution                                      |                | $\leq 0.01^\circ$                                                                                                             |
| Temperature influence                           |                | $\leq 0.004^\circ/\text{K}$                                                                                                   |
| <b>Functional safety related parameters</b>     |                |                                                                                                                               |
| MTTF <sub>d</sub>                               |                | 700 a at 40 °C                                                                                                                |
| Mission Time (T <sub>M</sub> )                  |                | 20 a                                                                                                                          |
| Diagnostic Coverage (DC)                        |                | 0 %                                                                                                                           |
| <b>Electrical specifications</b>                |                |                                                                                                                               |
| Operating voltage                               | U <sub>B</sub> | 10 ... 30 V DC                                                                                                                |
| No-load supply current                          | I <sub>0</sub> | $\leq 65$ mA at 10 V DC<br>$\leq 60$ mA at 24 V DC                                                                            |
| <b>Analog output</b>                            |                |                                                                                                                               |
| Output type                                     |                | current output 4 ... 20 mA<br>(one output for each axis)                                                                      |
| Load resistor                                   |                | 270 Ω at 10 V DC                                                                                                              |
| <b>Compliance with standards and directives</b> |                |                                                                                                                               |
| Standard conformity                             |                |                                                                                                                               |
| Noise immunity                                  |                | EN 61000-6-2                                                                                                                  |
| Emitted interference                            |                | EN 61000-6-4                                                                                                                  |
| Shock and impact resistance                     |                | DIN EN 60068-2-27, 100 g, 6 ms                                                                                                |
| Vibration resistance                            |                | DIN EN 60068-2-6, 20 g, 10 ... 2000 Hz                                                                                        |
| <b>Ambient conditions</b>                       |                |                                                                                                                               |
| Ambient temperature                             |                | -40 ... 85 °C (-40 ... 185 °F)                                                                                                |
| Storage temperature                             |                | -40 ... 85 °C (-40 ... 185 °F)                                                                                                |
| <b>Mechanical specifications</b>                |                |                                                                                                                               |
| Connection type                                 |                | 8-pin, M12 x 1 connector , A-coded                                                                                            |
| Housing material                                |                | aluminum, corrosion-resistant                                                                                                 |
| Degree of protection                            |                | IP68 / IP69                                                                                                                   |
| Mass                                            |                | approx. 200 g                                                                                                                 |

## Accessories

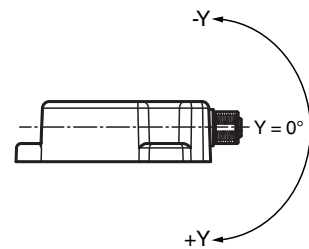
|                                                                                     |                               |                                                         |
|-------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------|
|  | <b>V19-G-2M-PUR-ABG</b>       | Female cordset, M12, 8-pin, shielded, PUR cable         |
|  | <b>V19-G-2M-PUR-ABG-V19-G</b> | Connecting cable, M12 to M12, PUR cable 8-pin, shielded |
|  | <b>V19-G-0,5M-PVC-SUBD9</b>   | Adapter cable M12 x 1 to sub-D, including DC coupling   |

Mounting

X-Orientation



Y-Orientation



Electrical connection

| Signal               | 8-pin, M12 x 1 connector |
|----------------------|--------------------------|
| +U <sub>b</sub>      | 1                        |
| RxD                  | 2                        |
| TxD                  | 3                        |
| GND                  | 4                        |
| Analog output X axis | 5                        |
| Set 1                | 6                        |
| Analog output Y axis | 7                        |
| Set 2                | 8                        |
| Pinout               |                          |

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