

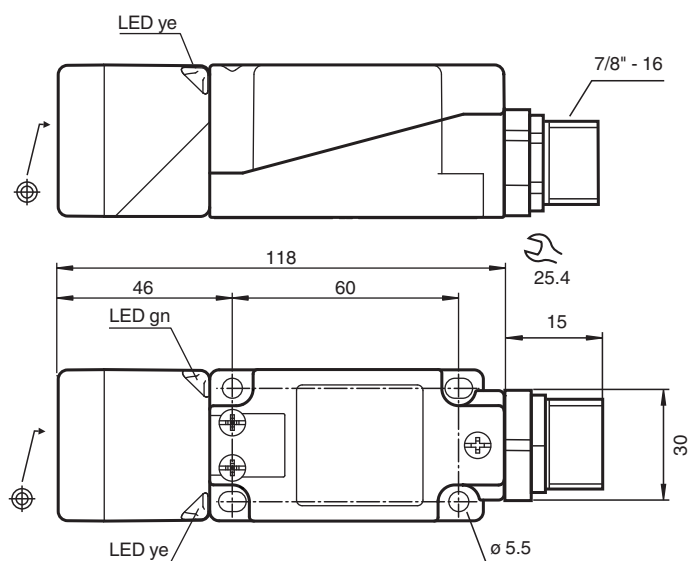


## Inductive sensor NBN40-U4-US-V93

- Sensor head bidirectional and rotatable
- Comfort series
- Metal base with ground connection



### Dimensions



### Technical Data

#### General specifications

|                            |       |                         |
|----------------------------|-------|-------------------------|
| Switching function         |       | Normally open (NO)      |
| Output type                |       | Two-wire                |
| Rated operating distance   | $s_n$ | 40 mm                   |
| Installation               |       | non-flush               |
| Output polarity            |       | AC/DC                   |
| Assured operating distance | $s_a$ | 0 ... 32.4 mm           |
| Actual operating distance  | $s_r$ | 36 ... 44 mm typ. 40 mm |
| Reduction factor $r_{AI}$  |       | 0.37                    |

Release date: 2020-03-24 Date of issue: 2020-03-30 Filename: 309699\_eng.pdf

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

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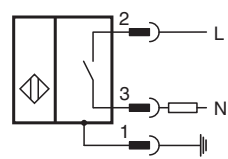
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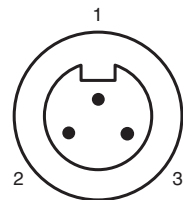
## Technical Data

|                                                 |           |                                                                                             |
|-------------------------------------------------|-----------|---------------------------------------------------------------------------------------------|
| Reduction factor $r_{Cu}$                       |           | 0.3                                                                                         |
| Reduction factor $r_{304}$                      |           | 0.73                                                                                        |
| Reduction factor $r_{Fe}$                       |           | 1                                                                                           |
| Reduction factor $r_{Brass}$                    |           | 0.4                                                                                         |
| Output type                                     |           | 2-wire                                                                                      |
| <b>Nominal ratings</b>                          |           |                                                                                             |
| Switching frequency                             | f         | AC, 0 ... 30 Hz<br>DC, 0 ... 100 Hz                                                         |
| Hysteresis                                      | H         | 1 ... 10 typ. 5 %                                                                           |
| Reverse polarity protection                     |           | reverse polarity tolerant                                                                   |
| Short-circuit protection                        |           | pulsing                                                                                     |
| Voltage drop                                    | $U_d$     | ≤ 5 V (typ. 2V) DC operation<br>≤ 8 V (typ. 2V) AC operation                                |
| Momentary current<br>(20 ms, 0.1 Hz)            |           | 0 ... 3000 mA                                                                               |
| Operating current                               | $I_L$     | 5 ... 500 mA                                                                                |
| Off-state current                               | $I_r$     | ≤ 1.5 mA                                                                                    |
| Time delay before availability                  | $t_v$     | ≤ 300 ms                                                                                    |
| Operating voltage indicator                     |           | LED, green                                                                                  |
| Switching state indicator                       |           | LED, yellow                                                                                 |
| Error indicator                                 |           | flashes when overcurrent                                                                    |
| <b>Functional safety related parameters</b>     |           |                                                                                             |
| MTTF <sub>d</sub>                               |           | 540 a                                                                                       |
| Mission Time ( $T_M$ )                          |           | 20 a                                                                                        |
| Diagnostic Coverage (DC)                        |           | 0 %                                                                                         |
| <b>Electrical specifications</b>                |           |                                                                                             |
| Rated operating voltage                         | $U_e$     | 24 ... 250 V DC / 24 ... 230 V AC                                                           |
| Operating voltage                               | $U_B$     | 20 ... 300 V DC / 20 ... 253 V AC                                                           |
| <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 |
| <b>Approvals and certificates</b>               |           |                                                                                             |
| Protection class                                |           | I                                                                                           |
| Rated insulation voltage                        | $U_i$     | 230 V                                                                                       |
| Rated impulse withstand voltage                 | $U_{imp}$ | 2.5 kV                                                                                      |
| UL approval                                     |           | cULus Listed, General Purpose                                                               |
| <b>Ambient conditions</b>                       |           |                                                                                             |
| Ambient temperature                             |           | -25 ... 85 °C (-13 ... 185 °F)                                                              |
| Storage temperature                             |           | -25 ... 85 °C (-13 ... 185 °F)                                                              |
| <b>Mechanical specifications</b>                |           |                                                                                             |
| Connection type                                 |           | Connector plug V93                                                                          |
| Housing material                                |           | PA 6.6 / metal                                                                              |
| Sensing face                                    |           | PA 6.6                                                                                      |
| Housing base                                    |           | metal / class I equipment with ground connection                                            |
| Degree of protection                            |           | IP67                                                                                        |
| Mass                                            |           | 298 g                                                                                       |

Connection



Connection Assignment



Wire colors

|   |    |         |
|---|----|---------|
| 1 | GN | (green) |
| 2 | BK | (black) |
| 3 | WH | (white) |

Accessories

|                                                                                     |                         |                                           |
|-------------------------------------------------------------------------------------|-------------------------|-------------------------------------------|
|  | <b>MHW 01</b>           | Modular mounting bracket                  |
|  | <b>V93-G-YE2M-STOOW</b> | Female cordset, 7/8" , 3-pin, STOOW cable |

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## Connection

### Note

The sensor is designed for individual operation. A series or parallel connection of sensors is not permissible.