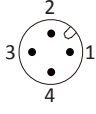


M12 LOW TEMPERATURE SERIES

ARTICLE PROPERTIES

| | | |
|---------------------------------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| SENSOR TYPE | Inductive sensor | CONNECTION TYPES (<i>see table</i>) |
| SIZE | M12x1 | <ul style="list-style-type: none"> • cable PVC, 0.25 mm², 2 m** • M12 connector, A-coded |
| RATED OPERATING DISTANCE | <i>see table</i> |  |
| NUMBER OF CONDUCTORS | 2-wire / 3-wire (<i>see table</i>) | |

** other cable lengths are available on request

MECHANICAL DATA

| | |
|---------------------------------------------------------|--------------------------------------|
| MOUNTING (mounting nuts included in delivery) | flush/non-flush (<i>see table</i>) |
| HOUSING | threaded cylindrical |
| MATERIAL HOUSING | brass nickel-plated |
| MATERIAL SENSING SURFACE | PBT |
| TIGHTENING TORQUE LOCKING | 10 Nm |
| STANDARD TEST | FE360 |
| ATTENUATION COEFFICIENT | St37 = 1, V2A = 0.7, Al = 0.3 |

ELECTRICAL DATA

| | |
|------------------------------------|-------------------------------------------------------------|
| OPERATING VOLTAGE | DC: 10 ... 30 V DC AC/DC: 20 ... 250 V AC/DC |
| RATED OPERATING CURRENT | 2-wire: ≤ 100 mA 2-wire AC: ≤ 200 mA 3-wire: ≤ 200 mA |
| SWITCHING FREQUENCY | <i>see table</i> |
| SWITCHING OUTPUT | <i>see table</i> |
| FUNCTION INDICATOR | yellow LED |
| HYSTERESIS | 3 ... 15 % |
| TEMPERATURE DRIFT | ±10 % |
| SHORT-CIRCUIT PROTECTION | yes |
| OVERLOAD RESISTANCE | yes |
| REVERSE POLARITY PROTECTION | yes |

ENVIRONMENTAL CONDITIONS

| | | | |
|----------------------------|---------------|---------------------------------------------|-------------|
| PROTECTION CLASS | IP67 | VIBRATION RESISTANCE (EN 60068-2-27) | 55 Hz, 1 mm |
| AMBIENT TEMPERATURE | -40 ... 70 °C | SHOCK RESISTANCE (EN 60068-2-6) | 30g/11 ms |

STANDARDS AND DIRECTIVES

| | |
|-----------------------------------------------|------------------------------|
| LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR | DIN EN IEC 60947-5-2:2021-04 |
|-----------------------------------------------|------------------------------|

APPROVALS



M12 LOW TEMPERATURE SERIES

DC 2-WIRE OUTPUT CABLE

| Article number | Mounting | Rated operating distance Sn | Switching output (wiring diagram) | Switching frequency | Dimensions |
|-------------------|-----------|-----------------------------|-----------------------------------|---------------------|------------|
| Fi2-M12-OD6L/TB40 | flush | 2 mm | DC NO (WD1) | 1000 Hz | see Fig. 1 |
| Fi2-M12-CD6L/TB40 | flush | 2 mm | DC NC (WD2) | 1000 Hz | see Fig. 1 |
| Ni4-M12-OD6L/TB40 | non-flush | 4 mm | DC NO (WD1) | 800 Hz | see Fig. 2 |
| Ni4-M12-CD6L/TB40 | non-flush | 4 mm | DC NC (WD2) | 800 Hz | see Fig. 2 |

DC 2-WIRE OUTPUT M12 CONNECTOR

| Article number | Mounting | Rated operating distance Sn | Switching output (wiring diagram) | Switching frequency | Dimensions |
|-----------------------|-----------|-----------------------------|-----------------------------------|---------------------|------------|
| Fi2-M12-OD6L-Q12/TB40 | flush | 2 mm | DC NO (WD1) | 1000 Hz | see Fig. 5 |
| Fi2-M12-CD6L-Q12/TB40 | flush | 2 mm | DC NC (WD2) | 1000 Hz | see Fig. 5 |
| Ni4-M12-OD6L-Q12/TB40 | non-flush | 4 mm | DC NO (WD1) | 800 Hz | see Fig. 6 |
| Ni4-M12-CD6L-Q12/TB40 | non-flush | 4 mm | DC NC (WD2) | 800 Hz | see Fig. 6 |

AC/DC 2-WIRE OUTPUT CABLE

| Article number | Mounting | Rated operating distance Sn | Switching output (wiring diagram) | Switching frequency | Dimensions |
|--------------------|-----------|-----------------------------|-----------------------------------|---------------------|------------|
| Fi2-M12-OA41L/TB40 | flush | 2 mm | AC/DC NO (WD5) | 40 Hz | see Fig. 3 |
| Fi2-M12-CA41L/TB40 | flush | 2 mm | AC/DC NC (WD6) | 40 Hz | see Fig. 3 |
| Ni4-M12-OA41L/TB40 | non-flush | 4 mm | AC/DC NO (WD5) | 40 Hz | see Fig. 4 |
| Ni4-M12-CA41L/TB40 | non-flush | 4 mm | AC/DC NC (WD6) | 40 Hz | see Fig. 4 |

AC/DC 2-WIRE OUTPUT M12 CONNECTOR

| Article number | Mounting | Rated operating distance Sn | Switching output (wiring diagram) | Switching frequency | Dimensions |
|------------------------|-----------|-----------------------------|-----------------------------------|---------------------|------------|
| Fi2-M12-OA41L-Q12/TB40 | flush | 2 mm | AC/DC NO (WD5) | 40 Hz | see Fig. 5 |
| Fi2-M12-CA41L-Q12/TB40 | flush | 2 mm | AC/DC NC (WD6) | 40 Hz | see Fig. 5 |
| Ni4-M12-OA41L-Q12/TB40 | non-flush | 4 mm | AC/DC NO (WD5) | 40 Hz | see Fig. 6 |
| Ni4-M12-CA41L-Q12/TB40 | non-flush | 4 mm | AC/DC NC (WD6) | 40 Hz | see Fig. 6 |

M12 LOW TEMPERATURE SERIES

DC 3-WIRE OUTPUT CABLE

| Article number | Mounting | Rated operating distance Sn | Switching output (wiring diagram) | Switching frequency | Dimensions |
|-------------------|-----------|-----------------------------|-----------------------------------|---------------------|------------|
| Fi2-M12-OP6L/TB40 | flush | 2 mm | PNP NO (WD7) | 1000 Hz | see Fig. 1 |
| Fi2-M12-ON6L/TB40 | flush | 2 mm | NPN NO (WD8) | 1000 Hz | see Fig. 1 |
| Fi2-M12-CP6L/TB40 | flush | 2 mm | PNP NC (WD9) | 1000 Hz | see Fig. 1 |
| Fi2-M12-CN6L/TB40 | flush | 2 mm | NPN NC (WD10) | 1000 Hz | see Fig. 1 |
| Ni4-M12-OP6L/TB40 | non-flush | 4 mm | PNP NO (WD7) | 800 Hz | see Fig. 2 |
| Ni4-M12-ON6L/TB40 | non-flush | 4 mm | NPN NO (WD8) | 800 Hz | see Fig. 2 |
| Ni4-M12-CP6L/TB40 | non-flush | 4 mm | PNP NC (WD9) | 800 Hz | see Fig. 2 |
| Ni4-M12-CN6L/TB40 | non-flush | 4 mm | NPN NC (WD10) | 800 Hz | see Fig. 2 |

DC 3-WIRE OUTPUT M12 CONNECTOR

| Article number | Mounting | Rated operating distance Sn | Switching output (wiring diagram) | Switching frequency | Dimensions |
|-----------------------|-----------|-----------------------------|-----------------------------------|---------------------|------------|
| Fi2-M12-OP6L-Q12/TB40 | flush | 2 mm | PNP NO (WD7) | 1000 Hz | see Fig. 5 |
| Fi2-M12-ON6L-Q12/TB40 | flush | 2 mm | NPN NO (WD8) | 1000 Hz | see Fig. 5 |
| Fi2-M12-CP6L-Q12/TB40 | flush | 2 mm | PNP NC (WD9) | 1000 Hz | see Fig. 5 |
| Fi2-M12-CN6L-Q12/TB40 | flush | 2 mm | NPN NC (WD10) | 1000 Hz | see Fig. 5 |
| Ni4-M12-OP6L-Q12/TB40 | non-flush | 4 mm | PNP NO (WD7) | 800 Hz | see Fig. 6 |
| Ni4-M12-ON6L-Q12/TB40 | non-flush | 4 mm | NPN NO (WD8) | 800 Hz | see Fig. 6 |
| Ni4-M12-CP6L-Q12/TB40 | non-flush | 4 mm | PNP NC (WD9) | 800 Hz | see Fig. 6 |
| Ni4-M12-CN6L-Q12/TB40 | non-flush | 4 mm | NPN NC (WD10) | 800 Hz | see Fig. 6 |

M12 LOW TEMPERATURE SERIES

DIMENSIONS

Fig. 1 Inductive sensor with cable (flush)

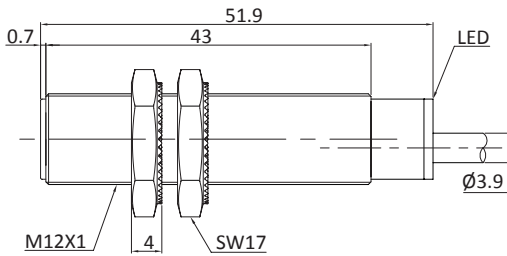


Fig. 2 Inductive sensor with cable (non-flush)

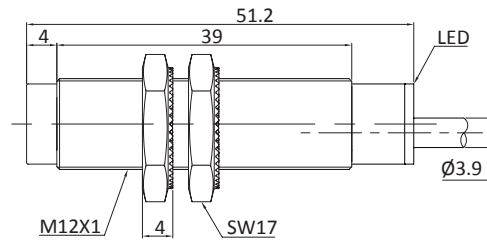


Fig. 3 Inductive sensor with cable (flush)

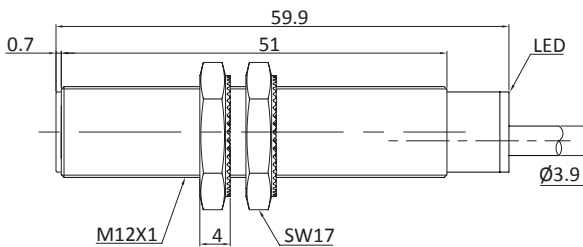


Fig. 4 Inductive sensor with cable (non-flush)

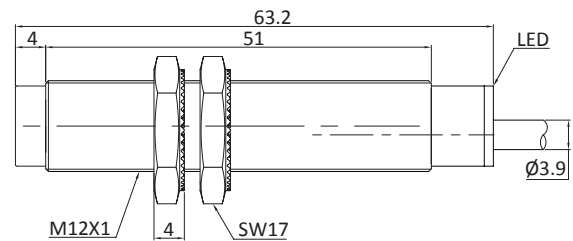


Fig. 5 Inductive sensor with M12 connector (flush)

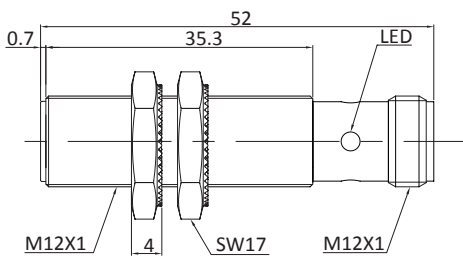
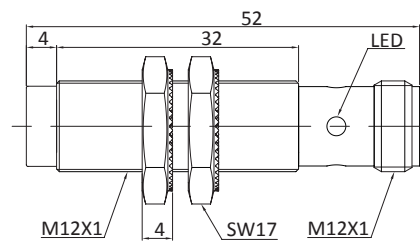


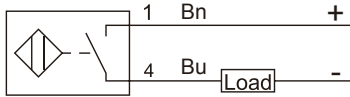
Fig. 6 Inductive sensor with M12 connector (non-flush)



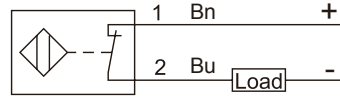
M12 LOW TEMPERATURE SERIES

WIRING DIAGRAMS (Note: 1 / 2 / 3 / 4 connector and terminals pin number Bn / Bu / Wh / Bk cable color)

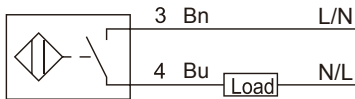
WD1 DC 2-wire NO



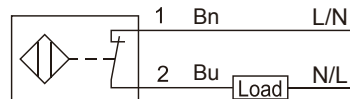
WD2 DC 2-wire NC



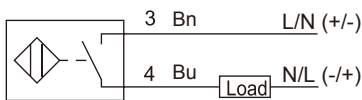
WD3 AC 2-wire NO



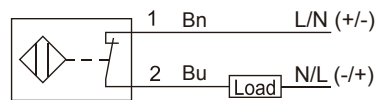
WD4 AC 2-wire NC



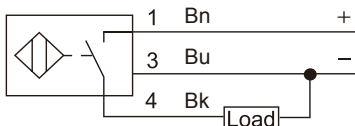
WD5 AC / DC 2-wire NO



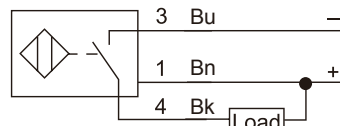
WD6 AC / DC 2-wire NC



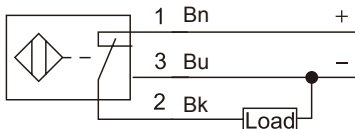
WD7 DC 3-wire PNP NO



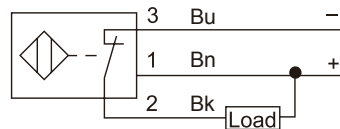
WD8 DC 3-wire NPN NO



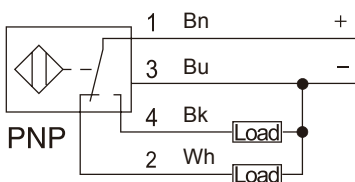
WD9 DC 3-wire PNP NC



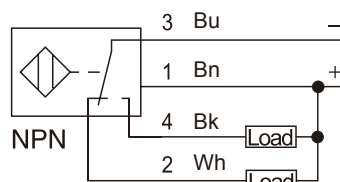
WD10 DC 3-wire NPN NC



WD11 DC 4-wire PNP NO + NC



WD12 DC 4-wire NPN NO + NC

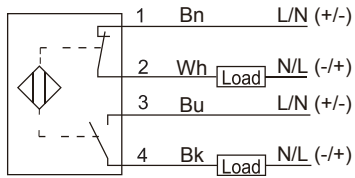


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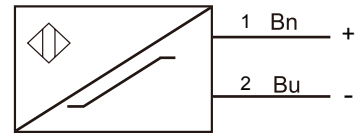
M12 LOW TEMPERATURE SERIES

WIRING DIAGRAMS (Note: 1 / 2 / 3 / 4 connector and terminals pin number Bn / Bu / Wh / Bk cable color)

WD13 AC/DC 4-wire NO+NC



WD14 NAMUR 2-wire NC



WD15 DC 4-wire 0-10V+0-20mA

