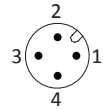


W80 PLASTIC RECTANGULAR SERIES

ARTICLE PROPERTIES

| | | | |
|---------------------------------|---|--|---|
| SENSOR TYPE | Inductive sensor | CONNECTION TYPES (<i>see table</i>) | |
| SIZE | 80 x 80 x 40 mm | <ul style="list-style-type: none"> terminals | for cables with wire cross-section up to 2.5 mm ² , cable gland M20x1.5 |
| RATED OPERATING DISTANCE | <i>see table</i> | | |
| NUMBER OF CONDUCTORS | 2-wire / 3-wire / 4-wire (<i>see table</i>) | <ul style="list-style-type: none"> M12 connector, A-coded |  |

MECHANICAL DATA

| | |
|----------------------------------|--------------------------------------|
| MOUNTING | flush/non-flush (<i>see table</i>) |
| HOUSING | rectangular |
| MATERIAL HOUSING | PBT |
| MATERIAL SENSING SURFACE | PBT |
| TIGHTENING TORQUE LOCKING | 1.8 Nm |
| STANDARD TEST | FE360 |
| ATTENUATION COEFFICIENT | St37 = 1, V2A = 0.7, Al = 0.3 |

ELECTRICAL DATA

| | |
|------------------------------------|---|
| OPERATING VOLTAGE | DC (6L): 10 ... 30 V DC DC (9L): 10 ... 60 V DC AC/DC: 20 ... 250 V AC/DC |
| RATED OPERATING CURRENT | 2-wire DC: ≤ 100 mA 3-wire: ≤ 200 mA 4-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 | -25 ... 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



W80 PLASTIC RECTANGULAR SERIES

DC 2-WIRE OUTPUT TERMINALS

| Article number | Mounting | Rated operating distance Sn | Switching output (wiring diagram) | Switching frequency | Dimensions |
|-----------------|-----------|-----------------------------|-----------------------------------|---------------------|------------|
| Fi40-W80-OD6L-Q | flush | 40 mm | DC NO (WD1) | 50 Hz | see Fig. 1 |
| Fi40-W80-CD6L-Q | flush | 40 mm | DC NC (WD2) | 50 Hz | see Fig. 1 |
| Ni50-W80-OD6L-Q | non-flush | 50 mm | DC NO (WD1) | 30 Hz | see Fig. 1 |
| Ni50-W80-CD6L-Q | non-flush | 50 mm | DC NC (WD2) | 30 Hz | see Fig. 1 |
| Fi50-W80-OD6L-Q | flush | 50 mm | DC NO (WD1) | 50 Hz | see Fig. 1 |
| Fi50-W80-CD6L-Q | flush | 50 mm | DC NC (WD2) | 50 Hz | see Fig. 1 |
| Ni70-W80-OD6L-Q | non-flush | 70 mm | DC NO (WD1) | 30 Hz | see Fig. 1 |
| Ni70-W80-CD6L-Q | non-flush | 70 mm | DC NC (WD2) | 30 Hz | see Fig. 1 |

DC 2-WIRE OUTPUT TERMINALS

| Article number | Mounting | Rated operating distance Sn | Switching output (wiring diagram) | Switching frequency | Dimensions |
|-----------------|-----------|-----------------------------|-----------------------------------|---------------------|------------|
| Fi40-W80-OD9L-Q | flush | 40 mm | DC NO (WD1) | 50 Hz | see Fig. 1 |
| Fi40-W80-CD9L-Q | flush | 40 mm | DC NC (WD2) | 50 Hz | see Fig. 1 |
| Ni50-W80-OD9L-Q | non-flush | 50 mm | DC NO (WD1) | 30 Hz | see Fig. 1 |
| Ni50-W80-CD9L-Q | non-flush | 50 mm | DC NC (WD2) | 30 Hz | see Fig. 1 |
| Fi50-W80-OD9L-Q | flush | 50 mm | DC NO (WD1) | 50 Hz | see Fig. 1 |
| Fi50-W80-CD9L-Q | flush | 50 mm | DC NC (WD2) | 50 Hz | see Fig. 1 |
| Ni70-W80-OD9L-Q | non-flush | 70 mm | DC NO (WD1) | 30 Hz | see Fig. 1 |
| Ni70-W80-CD9L-Q | non-flush | 70 mm | DC NC (WD2) | 30 Hz | see Fig. 1 |

DC 2-WIRE OUTPUT M12 CONNECTOR

| Article number | Mounting | Rated operating distance Sn | Switching output (wiring diagram) | Switching frequency | Dimensions |
|-------------------|-----------|-----------------------------|-----------------------------------|---------------------|------------|
| Fi40-W80-OD6L-Q12 | flush | 40 mm | DC NO (WD1) | 50 Hz | see Fig. 2 |
| Fi40-W80-CD6L-Q12 | flush | 40 mm | DC NC (WD2) | 50 Hz | see Fig. 2 |
| Ni50-W80-OD6L-Q12 | non-flush | 50 mm | DC NO (WD1) | 30 Hz | see Fig. 2 |
| Ni50-W80-CD6L-Q12 | non-flush | 50 mm | DC NC (WD2) | 30 Hz | see Fig. 2 |
| Fi50-W80-OD6L-Q12 | flush | 50 mm | DC NO (WD1) | 50 Hz | see Fig. 2 |
| Fi50-W80-CD6L-Q12 | flush | 50 mm | DC NC (WD2) | 50 Hz | see Fig. 2 |
| Ni70-W80-OD6L-Q12 | non-flush | 70 mm | DC NO (WD1) | 30 Hz | see Fig. 2 |
| Ni70-W80-CD6L-Q12 | non-flush | 70 mm | DC NC (WD2) | 30 Hz | see Fig. 2 |

W80 PLASTIC RECTANGULAR SERIES

DC 2-WIRE OUTPUT M12 CONNECTOR

| Article number | Mounting | Rated operating distance Sn | Switching output (wiring diagram) | Switching frequency | Dimensions |
|-------------------|-----------|-----------------------------|-----------------------------------|---------------------|------------|
| Fi40-W80-OD9L-Q12 | flush | 40 mm | DC NO (WD1) | 50 Hz | see Fig. 2 |
| Fi40-W80-CD9L-Q12 | flush | 40 mm | DC NC (WD2) | 50 Hz | see Fig. 2 |
| Ni50-W80-OD9L-Q12 | non-flush | 50 mm | DC NO (WD1) | 30 Hz | see Fig. 2 |
| Ni50-W80-CD9L-Q12 | non-flush | 50 mm | DC NC (WD2) | 30 Hz | see Fig. 2 |
| Fi50-W80-OD9L-Q12 | flush | 50 mm | DC NO (WD1) | 50 Hz | see Fig. 2 |
| Fi50-W80-CD9L-Q12 | flush | 50 mm | DC NC (WD2) | 50 Hz | see Fig. 2 |
| Ni70-W80-OD9L-Q12 | non-flush | 70 mm | DC NO (WD1) | 30 Hz | see Fig. 2 |
| Ni70-W80-CD9L-Q12 | non-flush | 70 mm | DC NC (WD2) | 30 Hz | see Fig. 2 |

AC/DC 2-WIRE OUTPUT TERMINALS

| Article number | Mounting | Rated operating distance Sn | Switching output (wiring diagram) | Switching frequency | Dimensions |
|------------------|-----------|-----------------------------|-----------------------------------|---------------------|------------|
| Fi40-W80-OA41L-Q | flush | 40 mm | AC/DC NO (WD5) | 20 Hz | see Fig. 1 |
| Fi40-W80-CA41L-Q | flush | 40 mm | AC/DC NC (WD6) | 20 Hz | see Fig. 1 |
| Ni50-W80-OA41L-Q | non-flush | 50 mm | AC/DC NO (WD5) | 20 Hz | see Fig. 1 |
| Ni50-W80-CA41L-Q | non-flush | 50 mm | AC/DC NC (WD6) | 20 Hz | see Fig. 1 |
| Fi50-W80-OA41L-Q | flush | 50 mm | AC/DC NO (WD5) | 20 Hz | see Fig. 1 |
| Fi50-W80-CA41L-Q | flush | 50 mm | AC/DC NC (WD6) | 20 Hz | see Fig. 1 |
| Ni70-W80-OA41L-Q | non-flush | 70 mm | AC/DC NO (WD5) | 20 Hz | see Fig. 1 |
| Ni70-W80-CA41L-Q | non-flush | 70 mm | AC/DC NC (WD6) | 20 Hz | see Fig. 1 |

AC/DC 2-WIRE OUTPUT M12 CONNECTOR

| Article number | Mounting | Rated operating distance Sn | Switching output (wiring diagram) | Switching frequency | Dimensions |
|--------------------|-----------|-----------------------------|-----------------------------------|---------------------|------------|
| Fi40-W80-OA41L-Q12 | flush | 40 mm | AC/DC NO (WD5) | 20 Hz | see Fig. 2 |
| Fi40-W80-CA41L-Q12 | flush | 40 mm | AC/DC NC (WD6) | 20 Hz | see Fig. 2 |
| Ni50-W80-OA41L-Q12 | non-flush | 50 mm | AC/DC NO (WD5) | 20 Hz | see Fig. 2 |
| Ni50-W80-CA41L-Q12 | non-flush | 50 mm | AC/DC NC (WD6) | 20 Hz | see Fig. 2 |
| Fi50-W80-OA41L-Q12 | flush | 50 mm | AC/DC NO (WD5) | 20 Hz | see Fig. 2 |
| Fi50-W80-CA41L-Q12 | flush | 50 mm | AC/DC NC (WD6) | 20 Hz | see Fig. 2 |
| Ni70-W80-OA41L-Q12 | non-flush | 70 mm | AC/DC NO (WD5) | 20 Hz | see Fig. 2 |
| Ni70-W80-CA41L-Q12 | non-flush | 70 mm | AC/DC NC (WD6) | 20 Hz | see Fig. 2 |

W80 PLASTIC RECTANGULAR SERIES

DC 3-WIRE OUTPUT TERMINALS

| Article number | Mounting | Rated operating distance Sn | Switching output (wiring diagram) | Switching frequency | Dimensions |
|-----------------|-----------|-----------------------------|-----------------------------------|---------------------|------------|
| Fi40-W80-OP6L-Q | flush | 40 mm | PNP NO (WD7) | 50 Hz | see Fig. 1 |
| Fi40-W80-ON6L-Q | flush | 40 mm | NPN NO (WD8) | 50 Hz | see Fig. 1 |
| Fi40-W80-CP6L-Q | flush | 40 mm | PNP NC (WD9) | 50 Hz | see Fig. 1 |
| Fi40-W80-CN6L-Q | flush | 40 mm | NPN NC (WD10) | 50 Hz | see Fig. 1 |
| Ni50-W80-OP6L-Q | non-flush | 50 mm | PNP NO (WD7) | 30 Hz | see Fig. 1 |
| Ni50-W80-ON6L-Q | non-flush | 50 mm | NPN NO (WD8) | 30 Hz | see Fig. 1 |
| Ni50-W80-CP6L-Q | non-flush | 50 mm | PNP NC (WD9) | 30 Hz | see Fig. 1 |
| Ni50-W80-CN6L-Q | non-flush | 50 mm | NPN NC (WD10) | 30 Hz | see Fig. 1 |
| Fi50-W80-OP6L-Q | flush | 50 mm | PNP NO (WD7) | 50 Hz | see Fig. 1 |
| Fi50-W80-ON6L-Q | flush | 50 mm | NPN NO (WD8) | 50 Hz | see Fig. 1 |
| Fi50-W80-CP6L-Q | flush | 50 mm | PNP NC (WD9) | 50 Hz | see Fig. 1 |
| Fi50-W80-CN6L-Q | flush | 50 mm | NPN NC (WD10) | 50 Hz | see Fig. 1 |
| Ni70-W80-OP6L-Q | non-flush | 70 mm | PNP NO (WD7) | 30 Hz | see Fig. 1 |
| Ni70-W80-ON6L-Q | non-flush | 70 mm | NPN NO (WD8) | 30 Hz | see Fig. 1 |
| Ni70-W80-CP6L-Q | non-flush | 70 mm | PNP NC (WD9) | 30 Hz | see Fig. 1 |
| Ni70-W80-CN6L-Q | non-flush | 70 mm | NPN NC (WD10) | 30 Hz | see Fig. 1 |

DC 3-WIRE OUTPUT M12 CONNECTOR

| Article number | Mounting | Rated operating distance Sn | Switching output (wiring diagram) | Switching frequency | Dimensions |
|-------------------|-----------|-----------------------------|-----------------------------------|---------------------|------------|
| Fi40-W80-OP6L-Q12 | flush | 40 mm | PNP NO (WD7) | 50 Hz | see Fig. 2 |
| Fi40-W80-ON6L-Q12 | flush | 40 mm | NPN NO (WD8) | 50 Hz | see Fig. 2 |
| Fi40-W80-CP6L-Q12 | flush | 40 mm | PNP NC (WD9) | 50 Hz | see Fig. 2 |
| Fi40-W80-CN6L-Q12 | flush | 40 mm | NPN NC (WD10) | 50 Hz | see Fig. 2 |
| Ni50-W80-OP6L-Q12 | non-flush | 50 mm | PNP NO (WD7) | 30 Hz | see Fig. 2 |
| Ni50-W80-ON6L-Q12 | non-flush | 50 mm | NPN NO (WD8) | 30 Hz | see Fig. 2 |
| Ni50-W80-CP6L-Q12 | non-flush | 50 mm | PNP NC (WD9) | 30 Hz | see Fig. 2 |
| Ni50-W80-CN6L-Q12 | non-flush | 50 mm | NPN NC (WD10) | 30 Hz | see Fig. 2 |
| Fi50-W80-OP6L-Q12 | flush | 50 mm | PNP NO (WD7) | 50 Hz | see Fig. 2 |
| Fi50-W80-ON6L-Q12 | flush | 50 mm | NPN NO (WD8) | 50 Hz | see Fig. 2 |
| Fi50-W80-CP6L-Q12 | flush | 50 mm | PNP NC (WD9) | 50 Hz | see Fig. 2 |
| Fi50-W80-CN6L-Q12 | flush | 50 mm | NPN NC (WD10) | 50 Hz | see Fig. 2 |
| Ni70-W80-OP6L-Q12 | non-flush | 70 mm | PNP NO (WD7) | 30 Hz | see Fig. 2 |
| Ni70-W80-ON6L-Q12 | non-flush | 70 mm | NPN NO (WD8) | 30 Hz | see Fig. 2 |
| Ni70-W80-CP6L-Q12 | non-flush | 70 mm | PNP NC (WD9) | 30 Hz | see Fig. 2 |
| Ni70-W80-CN6L-Q12 | non-flush | 70 mm | NPN NC (WD10) | 30 Hz | see Fig. 2 |

W80 PLASTIC RECTANGULAR SERIES

DC 4-WIRE OUTPUT TERMINALS

| Article number | Mounting | Rated operating distance Sn | Switching output (wiring diagram) | Switching frequency | Dimensions |
|-----------------|-----------|-----------------------------|-----------------------------------|---------------------|------------|
| Fi40-W80-BP6L-Q | flush | 40 mm | PNP NO+NC (WD11) | 50 Hz | see Fig. 1 |
| Fi40-W80-BN6L-Q | flush | 40 mm | NPN NO+NC (WD12) | 50 Hz | see Fig. 1 |
| Fi50-W80-BP6L-Q | flush | 50 mm | PNP NO+NC (WD11) | 50 Hz | see Fig. 1 |
| Fi50-W80-BN6L-Q | flush | 50 mm | NPN NO+NC (WD12) | 50 Hz | see Fig. 1 |
| Ni50-W80-BP6L-Q | non-flush | 50 mm | PNP NO+NC (WD11) | 30 Hz | see Fig. 1 |
| Ni50-W80-BN6L-Q | non-flush | 50 mm | NPN NO+NC (WD12) | 30 Hz | see Fig. 1 |
| Ni70-W80-BP6L-Q | non-flush | 70 mm | PNP NO+NC (WD11) | 30 Hz | see Fig. 1 |
| Ni70-W80-BN6L-Q | non-flush | 70 mm | NPN NO+NC (WD12) | 30 Hz | see Fig. 1 |

DC 4-WIRE OUTPUT M12 CONNECTOR

| Article number | Mounting | Rated operating distance Sn | Switching output (wiring diagram) | Switching frequency | Dimensions |
|-------------------|-----------|-----------------------------|-----------------------------------|---------------------|------------|
| Fi40-W80-BP6L-Q12 | flush | 40 mm | PNP NO+NC (WD11) | 50 Hz | see Fig. 2 |
| Fi40-W80-BN6L-Q12 | flush | 40 mm | NPN NO+NC (WD12) | 50 Hz | see Fig. 2 |
| Fi50-W80-BP6L-Q12 | flush | 50 mm | PNP NO+NC (WD11) | 50 Hz | see Fig. 2 |
| Fi50-W80-BN6L-Q12 | flush | 50 mm | NPN NO+NC (WD12) | 50 Hz | see Fig. 2 |
| Ni50-W80-BP6L-Q12 | non-flush | 50 mm | PNP NO+NC (WD11) | 30 Hz | see Fig. 2 |
| Ni50-W80-BN6L-Q12 | non-flush | 50 mm | NPN NO+NC (WD12) | 30 Hz | see Fig. 2 |
| Ni70-W80-BP6L-Q12 | non-flush | 70 mm | PNP NO+NC (WD11) | 30 Hz | see Fig. 2 |
| Ni70-W80-BN6L-Q12 | non-flush | 70 mm | NPN NO+NC (WD12) | 30 Hz | see Fig. 2 |

AC/DC 4-WIRE OUTPUT TERMINALS

| Article number | Mounting | Rated operating distance Sn | Switching output (wiring diagram) | Switching frequency | Dimensions |
|------------------|-----------|-----------------------------|-----------------------------------|---------------------|------------|
| Fi40-W80-VA41L-Q | flush | 40 mm | AC/DC NO+NC (WD13) | 20 Hz | see Fig. 1 |
| Ni50-W80-VA41L-Q | non-flush | 50 mm | AC/DC NO+NC (WD13) | 20 Hz | see Fig. 1 |
| Fi50-W80-VA41L-Q | flush | 50 mm | AC/DC NO+NC (WD13) | 20 Hz | see Fig. 1 |
| Ni70-W80-VA41L-Q | non-flush | 70 mm | AC/DC NO+NC (WD13) | 20 Hz | see Fig. 1 |

AC/DC 4-WIRE OUTPUT M12 CONNECTOR

| Article number | Mounting | Rated operating distance Sn | Switching output (wiring diagram) | Switching frequency | Dimensions |
|--------------------|-----------|-----------------------------|-----------------------------------|---------------------|------------|
| Fi40-W80-VA41L-Q12 | flush | 40 mm | AC/DC NO+NC (WD13) | 20 Hz | see Fig. 2 |
| Ni50-W80-VA41L-Q12 | non-flush | 50 mm | AC/DC NO+NC (WD13) | 20 Hz | see Fig. 2 |
| Fi50-W80-VA41L-Q12 | flush | 50 mm | AC/DC NO+NC (WD13) | 20 Hz | see Fig. 2 |
| Ni70-W80-VA41L-Q12 | non-flush | 70 mm | AC/DC NO+NC (WD13) | 20 Hz | see Fig. 2 |

W80 PLASTIC RECTANGULAR SERIES

DIMENSIONS

Fig. 1 Inductive sensor with terminals (flush/non-flush)

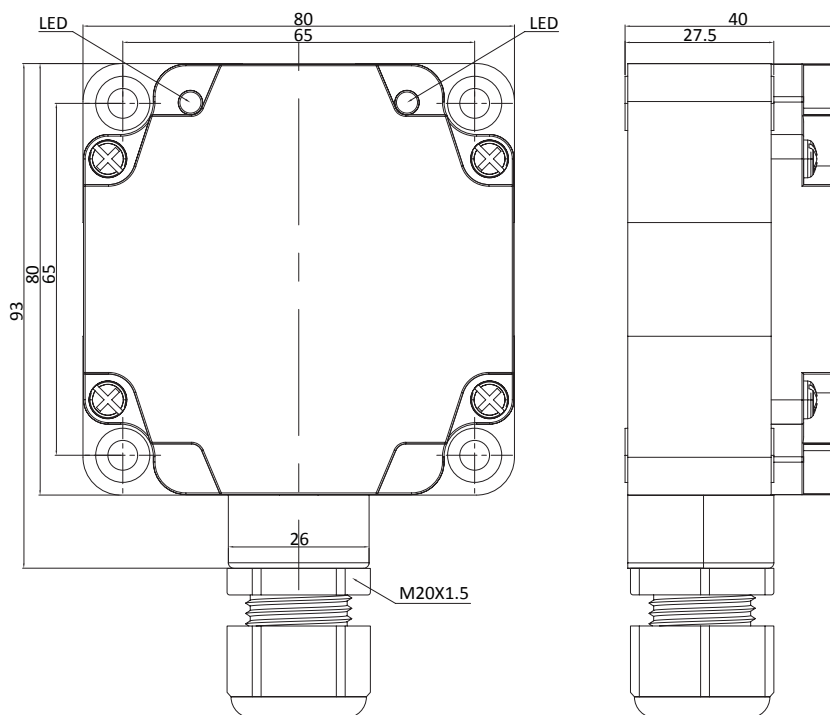
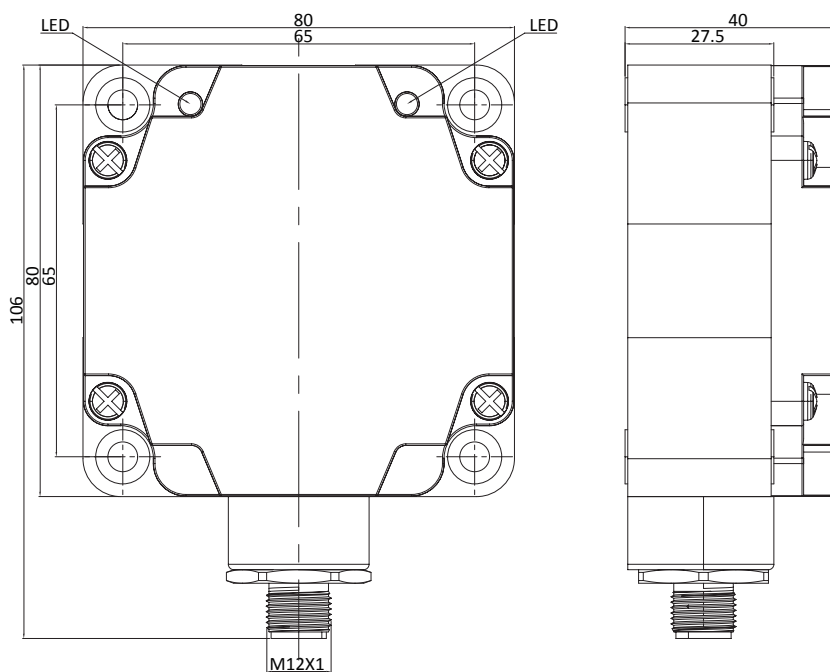


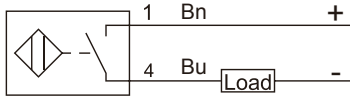
Fig. 2 Inductive sensor with M12 connector (flush/non-flush)



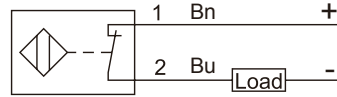
W80 PLASTIC RECTANGULAR SERIES

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

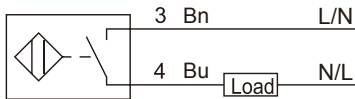
WD1 DC 2-wire NO



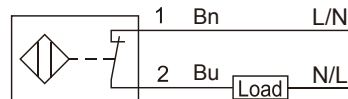
WD2 DC 2-wire NC



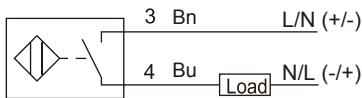
WD3 AC 2-wire NO



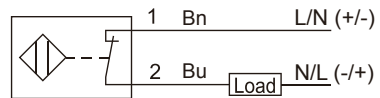
WD4 AC 2-wire NC



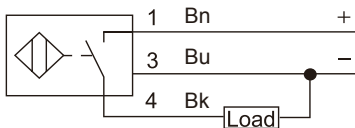
WD5 AC / DC 2-wire NO



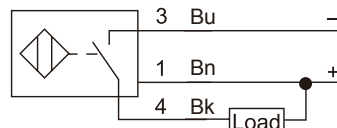
WD6 AC / DC 2-wire NC



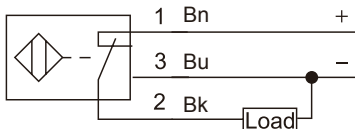
WD7 DC 3-wire PNP NO



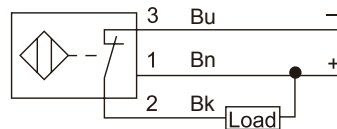
WD8 DC 3-wire NPN NO



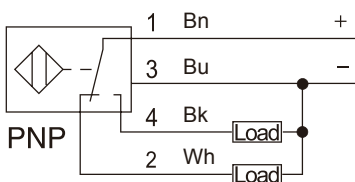
WD9 DC 3-wire PNP NC



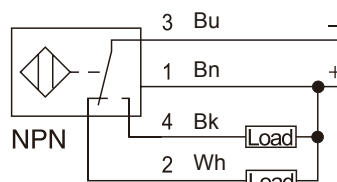
WD10 DC 3-wire NPN NC



WD11 DC 4-wire PNP NO + NC



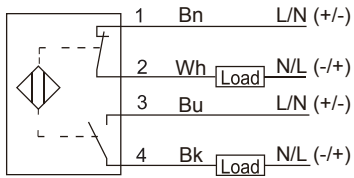
WD12 DC 4-wire NPN NO + NC



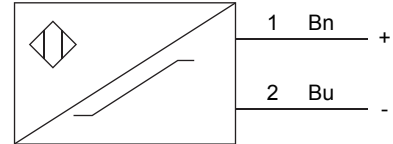
W80 PLASTIC RECTANGULAR SERIES

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

