# DATA SHEET INDUCTIVE SENSOR V1.2

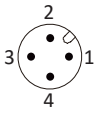
## G18 SERIES

### ARTICLE PROPERTIES

| | |
|---|---|
| **SENSOR TYPE** | Inductive sensor |
| **SIZE** | M18x1 |
| **RATED OPERATING DISTANCE** | See table |
| **NUMBER OF CONDUCTORS** | 2-wire / 3-wire (*see table*) |

**CONNECTION TYPES** (*see table*)

- Cable — PVC, 0.34 mm², 2 m**
- M12 connector, A-coded




** Other cable lengths are available on request

### MECHANICAL DATA

| | |
|---|---|
| **MOUNTING** (mounting nuts included in delivery) | Flush / non-flush (*see table*) |
| **HOUSING** | Threaded cylindrical |
| **MATERIAL HOUSING** | 2-wire: Brass nickel-plated<br>3-wire: Stainless steel<br>(NI16-G18 series: Brass nickel-plated) |
| **MATERIAL SENSING SURFACE** | PBT |
| **TIGHTENING TORQUE LOCKING** | 20 N·m, 50 N·m |
| **STANDARD TEST** | FE360 |
| **ATTENUATION COEFFICIENT** | St37 = 1, V2A = 0.7, Al = 0.3 |

### ELECTRICAL DATA

| | |
|---|---|
| **OPERATING VOLTAGE** | DC: 10 ... 30 V DC<br>AC/DC: 20-250 V AC/DC |
| **RATED OPERATING CURRENT** | 2-wire DC: ≤ 100 mA<br>2-wire AC: ≤ 200 mA<br>3-wire: ≤ 200 mA |
| **SWITCHING FREQUENCY** | See table |
| **SWITCHING OUTPUT** | See table |
| **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** | IP68 |
| **AMBIENT TEMPERATURE** | -30 ... +85 °C |
| **VIBRATION RESISTANCE (EN 60068-2-6)** | 10 ... 55 Hz, 1 mm |
| **SHOCK RESISTANCE (EN 60068-2-27)** | 30 g, 11 ms |

### STANDARDS AND DIRECTIVES

| | |
|---|---|
| **EMC DIRECTIVE 2014/30/EU** | EN IEC 60947-5-2 |
| **ROHS DIRECTIVE 2011/65/EU** | EN IEC 63000 |

### APPROVALS

CE

# G18 SERIES

## DC 2-WIRE OUTPUT CABLE

| Article number | Mounting | Rated operating distance Sn | Switching output (wiring diagram) | Switching frequency | Dimensions |
|---|---|---|---|---|---|
| Fi8-G18-OD6L | flush | 8 mm | DC NO (WD1) | 500 Hz | *see Fig. 1* |
| Fi8-G18-CD6L | flush | 8 mm | DC NC (WD2) | 500 Hz | *see Fig. 1* |
| Ni12-G18-OD6L | non-flush | 12 mm | DC NO (WD1) | 350 Hz | *see Fig. 3* |
| Ni12-G18-CD6L | non-flush | 12 mm | DC NC (WD2) | 350 Hz | *see Fig. 3* |
| Ni16-G18-OD6L | non-flush | 16 mm | DC NO (WD1) | 250 Hz | *see Fig. 3* |
| Ni16-G18-CD6L | non-flush | 16 mm | DC NC (WD2) | 250 Hz | *see Fig. 3* |

## DC 2-WIRE OUTPUT M12 CONNECTOR

| Article number | Mounting | Rated operating distance Sn | Switching output (wiring diagram) | Switching frequency | Dimensions |
|---|---|---|---|---|---|
| Fi8-G18-OD6L-Q12 | flush | 8 mm | DC NO (WD1) | 650 Hz | *see Fig. 5* |
| Fi8-G18-CD6L-Q12 | flush | 8 mm | DC NC (WD2) | 650 Hz | *see Fig. 5* |
| Ni12-G18-OD6L-Q12 | non-flush | 12 mm | DC NO (WD1) | 600 Hz | *see Fig. 7* |
| Ni12-G18-CD6L-Q12 | non-flush | 12 mm | DC NC (WD2) | 600 Hz | *see Fig. 7* |
| Ni16-G18-OD6L-Q12 | non-flush | 16 mm | DC NO (WD1) | 500 Hz | *see Fig. 7* |
| Ni16-G18-CD6L-Q12 | non-flush | 16 mm | DC NC (WD2) | 500 Hz | *see Fig. 7* |

## AC/DC 2-WIRE OUTPUT CABLE

| Article number | Mounting | Rated operating distance Sn | Switching output (wiring diagram) | Switching frequency | Dimensions |
|---|---|---|---|---|---|
| Fi8-G18-OA41L | flush | 8 mm | AC/DC NO (WD5) | 20/500 Hz | *see Fig. 2* |
| Fi8-G18-CA41L | flush | 8 mm | AC/DC NC (WD6) | 20/500 Hz | *see Fig. 2* |
| Ni12-G18-OA41L | non-flush | 12 mm | AC/DC NO (WD5) | 20/350 Hz | *see Fig. 4* |
| Ni12-G18-CA41L | non-flush | 12 mm | AC/DC NC (WD6) | 20/350 Hz | *see Fig. 4* |
| Ni16-G18-OA41L | non-flush | 16 mm | AC/DC NO (WD5) | 20/250 Hz | *see Fig. 4* |
| Ni16-G18-CA41L | non-flush | 16 mm | AC/DC NC (WD6) | 20/250 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 |
|---|---|---|---|---|---|
| Fi8-G18-OA41L-Q12 | flush | 8 mm | AC/DC NO (WD5) | 20/500 Hz | *see Fig. 6* |
| Fi8-G18-CA41L-Q12 | flush | 8 mm | AC/DC NC (WD6) | 20/500 Hz | *see Fig. 6* |
| Ni12-G18-OA41L-Q12 | non-flush | 12 mm | AC/DC NO (WD5) | 20/350 Hz | *see Fig. 8* |
| Ni12-G18-CA41L-Q12 | non-flush | 12 mm | AC/DC NC (WD6) | 20/350 Hz | *see Fig. 8* |
| Ni16-G18-OA41L-Q12 | non-flush | 16 mm | AC/DC NO (WD5) | 20/250 Hz | *see Fig. 8* |
| Ni16-G18-CA41L-Q12 | non-flush | 16 mm | AC/DC NC (WD6) | 20/250 Hz | *see Fig. 8* |

# G18 SERIES

## DC 3-WIRE OUTPUT CABLE

| Article number | Mounting | Rated operating distance Sn | Switching output (wiring diagram) | Switching frequency | Dimensions |
|---|---|---|---|---|---|
| Fi8-G18-OP6L | flush | 8 mm | PNP NO (WD7) | 1000 Hz | *see Fig. 1* |
| Fi8-G18-ON6L | flush | 8 mm | NPN NO (WD8) | 1000 Hz | *see Fig. 1* |
| Fi8-G18-CP6L | flush | 8 mm | PNP NC (WD9) | 1000 Hz | *see Fig. 1* |
| Fi8-G18-CN6L | flush | 8 mm | NPN NC (WD10) | 1000 Hz | *see Fig. 1* |
| Ni12-G18-OP6L | non-flush | 12 mm | PNP NO (WD7) | 350 Hz | *see Fig. 3* |
| Ni12-G18-ON6L | non-flush | 12 mm | NPN NO (WD8) | 350 Hz | *see Fig. 3* |
| Ni12-G18-CP6L | non-flush | 12 mm | PNP NC (WD9) | 350 Hz | *see Fig. 3* |
| Ni12-G18-CN6L | non-flush | 12 mm | NPN NC (WD10) | 350 Hz | *see Fig. 3* |
| Ni16-G18-OP6L | non-flush | 16 mm | PNP NO (WD7) | 250 Hz | *see Fig. 3* |
| Ni16-G18-ON6L | non-flush | 16 mm | NPN NO (WD8) | 250 Hz | *see Fig. 3* |
| Ni16-G18-CP6L | non-flush | 16 mm | PNP NC (WD9) | 250 Hz | *see Fig. 3* |
| Ni16-G18-CN6L | non-flush | 16 mm | NPN NC (WD10) | 250 Hz | *see Fig. 3* |

## DC 3-WIRE OUTPUT M12 CONNECTOR

| Article number | Mounting | Rated operating distance Sn | Switching output (wiring diagram) | Switching frequency | Dimensions |
|---|---|---|---|---|---|
| Fi8-G18-OP6L-Q12 | flush | 8 mm | PNP NO (WD7) | 1000 Hz | *see Fig. 5* |
| Fi8-G18-ON6L-Q12 | flush | 8 mm | NPN NO (WD8) | 1000 Hz | *see Fig. 5* |
| Fi8-G18-CP6L-Q12 | flush | 8 mm | PNP NC (WD9) | 1000 Hz | *see Fig. 5* |
| Fi8-G18-CN6L-Q12 | flush | 8 mm | NPN NC (WD10) | 1000 Hz | *see Fig. 5* |
| Ni12-G18-OP6L-Q12 | non-flush | 12 mm | PNP NO (WD7) | 350 Hz | *see Fig. 7* |
| Ni12-G18-ON6L-Q12 | non-flush | 12 mm | NPN NO (WD8) | 350 Hz | *see Fig. 7* |
| Ni12-G18-CP6L-Q12 | non-flush | 12 mm | PNP NC (WD9) | 350 Hz | *see Fig. 7* |
| Ni12-G18-CN6L-Q12 | non-flush | 12 mm | NPN NC (WD10) | 350 Hz | *see Fig. 7* |
| Ni16-G18-OP6L-Q12 | non-flush | 16 mm | PNP NO (WD7) | 250 Hz | *see Fig. 7* |
| Ni16-G18-ON6L-Q12 | non-flush | 16 mm | NPN NO (WD8) | 250 Hz | *see Fig. 7* |
| Ni16-G18-CP6L-Q12 | non-flush | 16 mm | PNP NC (WD9) | 250 Hz | *see Fig. 7* |
| Ni16-G18-CN6L-Q12 | non-flush | 16 mm | NPN NC (WD10) | 250 Hz | *see Fig. 7* |

## DIMENSIONS

**Fig. 1** Inductive sensor with cable (flush)

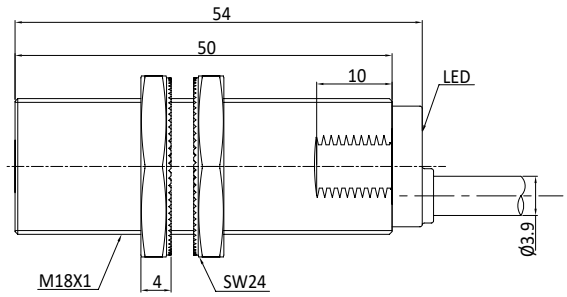



**Fig. 2** Inductive sensor with cable (flush)

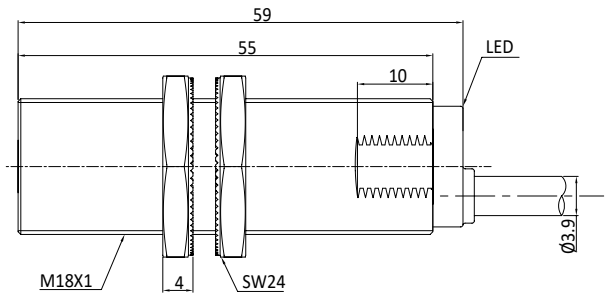



**Fig. 3** Inductive sensor with cable (non-flush)

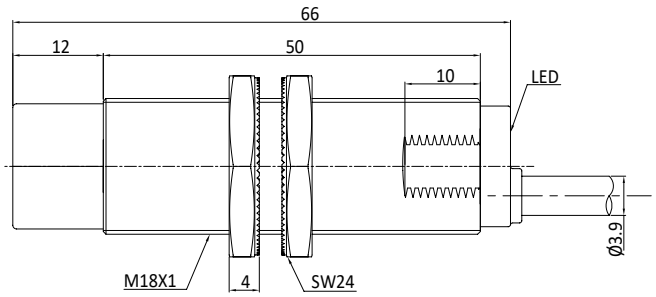



**Fig. 4** Inductive sensor with cable (non-flush)

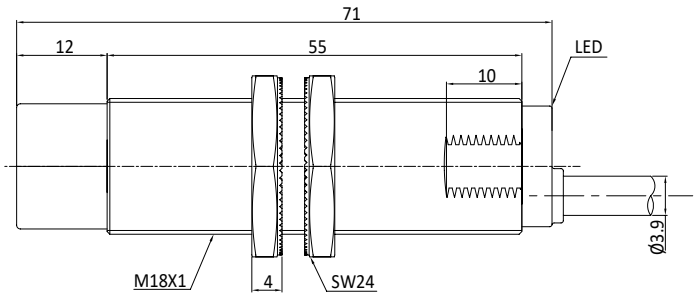



**Fig. 5** Inductive sensor with M12 connector (flush)

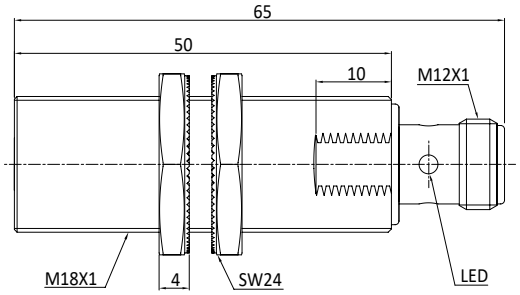
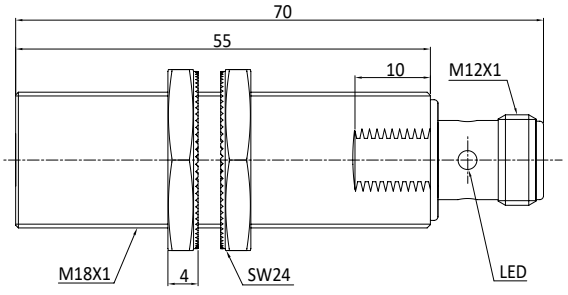



**Fig. 6** Inductive sensor with M12 connector (flush)



## DIMENSIONS

**Fig. 7** Inductive sensor with M12 connector (non-flush)

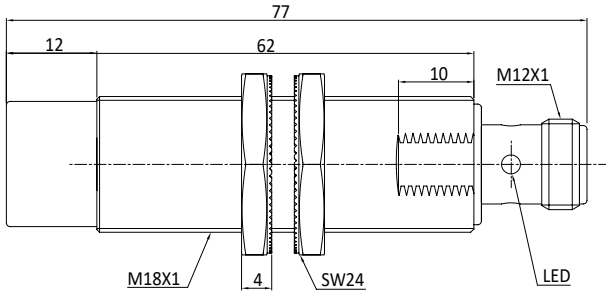
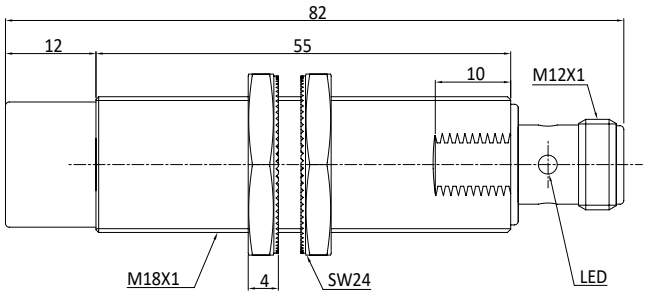
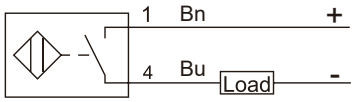



**Fig. 8** Inductive sensor with M12 connector (non-flush)

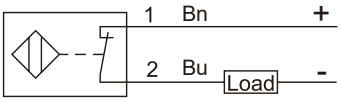


## WIRING DIAGRAMS (Note: 1 / 2 / 3 / 4 connector and terminals pin number Bn / Bu / Wh / Bk cable color)

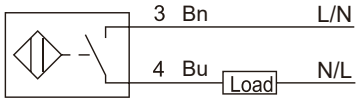
**WD1** DC 2-wire NO



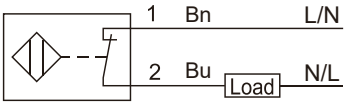

**WD2** DC 2-wire NC



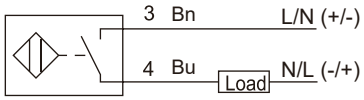

**WD3** AC 2-wire NO



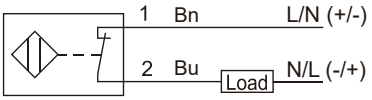

**WD4** AC 2-wire NC



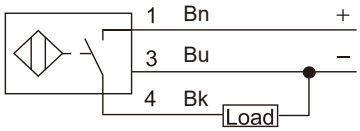

**WD5** AC / DC 2-wire NO



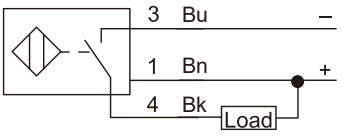

**WD6** AC / DC 2-wire NC



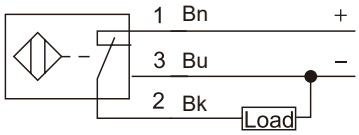

**WD7** DC 3-wire PNP NO



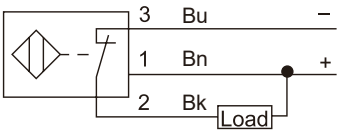

**WD8** DC 3-wire NPN NO



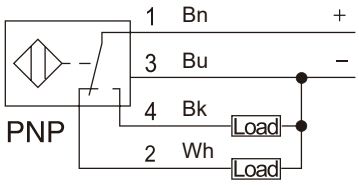

**WD9** DC 3-wire PNP NC



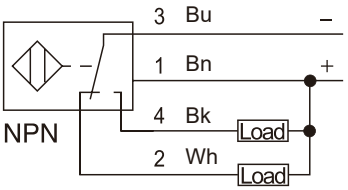

**WD10** DC 3-wire NPN NC




**WD11** DC 4-wire PNP NO + NC

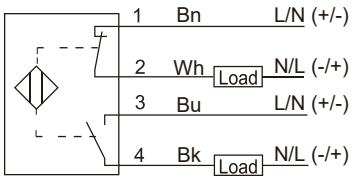



**WD12** DC 4-wire NPN NO + NC

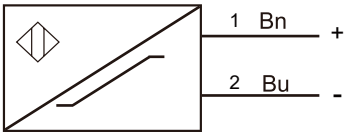


## WIRING DIAGRAMS (Note: 1 / 2 / 3 / 4 connector and terminals pin number Bn / Bu / Wh / Bk cable color)

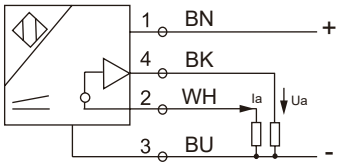
**WD13** AC/DC 4-wire NO+NC




**WD14** NAMUR 2-wire NC




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



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