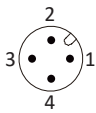


M12E LONG SERIES

ARTICLE PROPERTIES

<b>SENSOR TYPE</b>	Inductive sensor	<b>CONNECTION TYPES</b> (see table)
<b>SIZE</b>	M12x1	<ul style="list-style-type: none"> <li>Cable PVC, 0.25 mm<sup>2</sup>, 2 m**</li> <li>M12 connector, A-coded</li> </ul>
<b>RATED OPERATING DISTANCE</b>	See table	
<b>NUMBER OF CONDUCTORS</b>	2-wire / 3-wire / 4-wire (see table)	

\*\* Other cable lengths are available on request

MECHANICAL DATA

<b>MOUNTING</b> (mounting nuts included in delivery)	Flush / non-flush (see table)
<b>HOUSING</b>	Threaded cylindrical
<b>MATERIAL HOUSING</b>	Brass nickel-plated
<b>MATERIAL SENSING SURFACE</b>	PBT
<b>TIGHTENING TORQUE LOCKING</b>	10 N·m
<b>STANDARD TEST</b>	FE360
<b>ATTENUATION COEFFICIENT</b>	St37 = 1, V2A = 0.7, Al = 0.3

ELECTRICAL DATA

<b>OPERATING VOLTAGE</b>	DC: 10 ... 30 V DC AC: 20 ... 250 V AC AC/DC: 20 ... 250 V AC/DC
<b>RATED OPERATING CURRENT</b>	2-wire DC: ≤ 100 mA 2-wire AC: ≤ 200 mA 3-wire: ≤ 200 mA 4-wire: ≤ 200 mA
<b>SWITCHING FREQUENCY</b>	See table
<b>SWITCHING OUTPUT</b>	See table
<b>FUNCTION INDICATOR</b>	Yellow LED
<b>HYSTERESIS</b>	3 ... 15 %
<b>TEMPERATURE DRIFT</b>	±10 %
<b>SHORT-CIRCUIT PROTECTION</b>	Yes
<b>OVERLOAD RESISTANCE</b>	Yes
<b>REVERSE POLARITY PROTECTION</b>	Yes

ENVIRONMENTAL CONDITIONS

<b>PROTECTION CLASS</b>	IP67	<b>VIBRATION RESISTANCE</b> (EN 60068-2-6)	10 ... 55 Hz, 1 mm
<b>AMBIENT TEMPERATURE</b>	-25 ... +70 °C	<b>SHOCK RESISTANCE</b> (EN 60068-2-27)	30 g, 11 ms

STANDARDS AND DIRECTIVES

<b>EMC DIRECTIVE 2014/30/EU</b>	EN IEC 60947-5-2
<b>ROHS DIRECTIVE 2011/65/EU</b>	EN IEC 63000

APPROVALS



## M12E LONG SERIES

## DC 2-WIRE OUTPUT CABLE

Article number	Mounting	Rated operating distance Sn	Switching output (wiring diagram)	Switching frequency	Dimensions
Fi2-M12E-OD6L	flush	2 mm	DC NO (WD1)	1000 Hz	see Fig. 1
Fi2-M12E-CD6L	flush	2 mm	DC NC (WD2)	1000 Hz	see Fig. 1
Ni4-M12E-OD6L	non-flush	4 mm	DC NO (WD1)	800 Hz	see Fig. 2
Ni4-M12E-CD6L	non-flush	4 mm	DC NC (WD2)	800 Hz	see Fig. 2
Ni5-M12E-OD6L	non-flush	5 mm	DC NO (WD1)	800 Hz	see Fig. 2
Ni5-M12E-CD6L	non-flush	5 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-M12E-OD6L-Q12	flush	2 mm	DC NO (WD1)	1000 Hz	see Fig. 7
Fi2-M12E-CD6L-Q12	flush	2 mm	DC NC (WD2)	1000 Hz	see Fig. 7
Ni4-M12E-OD6L-Q12	non-flush	4 mm	DC NO (WD1)	800 Hz	see Fig. 8
Ni4-M12E-CD6L-Q12	non-flush	4 mm	DC NC (WD2)	800 Hz	see Fig. 8
Ni5-M12E-OD6L-Q12	non-flush	5 mm	DC NO (WD1)	800 Hz	see Fig. 8
Ni5-M12E-CD6L-Q12	non-flush	5 mm	DC NC (WD2)	800 Hz	see Fig. 8

## AC 2-WIRE OUTPUT CABLE

Article number	Mounting	Rated operating distance Sn	Switching output (wiring diagram)	Switching frequency	Dimensions
Fi2-M12E-OSA3L	flush	2 mm	AC NO (WD3)	40 Hz	see Fig. 3
Fi2-M12E-CSA3L	flush	2 mm	AC NC (WD4)	40 Hz	see Fig. 3
Ni4-M12E-OSA3L	non-flush	4 mm	AC NO (WD3)	40 Hz	see Fig. 4
Ni4-M12E-CSA3L	non-flush	4 mm	AC NC (WD4)	40 Hz	see Fig. 4
Ni5-M12E-OSA3L	non-flush	5 mm	AC NO (WD3)	40 Hz	see Fig. 4
Ni5-M12E-CSA3L	non-flush	5 mm	AC NC (WD4)	40 Hz	see Fig. 4

## AC 2-WIRE OUTPUT M12 CONNECTOR

Article number	Mounting	Rated operating distance Sn	Switching output (wiring diagram)	Switching frequency	Dimensions
Fi2-M12E-OSA3L-Q12	flush	2 mm	AC NO (WD3)	40 Hz	see Fig. 7
Fi2-M12E-CSA3L-Q12	flush	2 mm	AC NC (WD4)	40 Hz	see Fig. 7
Ni4-M12E-OSA3L-Q12	non-flush	4 mm	AC NO (WD3)	40 Hz	see Fig. 8
Ni4-M12E-CSA3L-Q12	non-flush	4 mm	AC NC (WD4)	40 Hz	see Fig. 8
Ni5-M12E-OSA3L-Q12	non-flush	5 mm	AC NO (WD3)	40 Hz	see Fig. 8
Ni5-M12E-CSA3L-Q12	non-flush	5 mm	AC NC (WD4)	40 Hz	see Fig. 8

M12E LONG SERIES

**AC/DC 2-WIRE OUTPUT CABLE**

Article number	Mounting	Rated operating distance Sn	Switching output (wiring diagram)	Switching frequency	Dimensions
Fi2-M12E-OA41L	flush	2 mm	AC/DC NO (WD5)	40 Hz	see Fig. 3
Fi2-M12E-CA41L	flush	2 mm	AC/DC NC (WD6)	40 Hz	see Fig. 3
Ni4-M12E-OA41L	non-flush	4 mm	AC/DC NO (WD5)	40 Hz	see Fig. 4
Ni4-M12E-CA41L	non-flush	4 mm	AC/DC NC (WD6)	40 Hz	see Fig. 4
Ni5-M12E-OA41L	non-flush	5 mm	AC/DC NO (WD5)	40 Hz	see Fig. 4
Ni5-M12E-CA41L	non-flush	5 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-M12E-OA41L-Q12	flush	2 mm	AC/DC NO (WD5)	40 Hz	see Fig. 7
Fi2-M12E-CA41L-Q12	flush	2 mm	AC/DC NC (WD6)	40 Hz	see Fig. 7
Ni4-M12E-OA41L-Q12	non-flush	4 mm	AC/DC NO (WD5)	40 Hz	see Fig. 8
Ni4-M12E-CA41L-Q12	non-flush	4 mm	AC/DC NC (WD6)	40 Hz	see Fig. 8
Ni5-M12E-OA41L-Q12	non-flush	5 mm	AC/DC NO (WD5)	40 Hz	see Fig. 8
Ni5-M12E-CA41L-Q12	non-flush	5 mm	AC/DC NC (WD6)	40 Hz	see Fig. 8

**DC 3-WIRE OUTPUT CABLE**

Article number	Mounting	Rated operating distance Sn	Switching output (wiring diagram)	Switching frequency	Dimensions
Fi2-M12E-OP6L	flush	2 mm	PNP NO (WD7)	1000 Hz	see Fig. 5
Fi2-M12E-ON6L	flush	2 mm	NPN NO (WD8)	1000 Hz	see Fig. 5
Fi2-M12E-CP6L	flush	2 mm	PNP NC (WD9)	1000 Hz	see Fig. 5
Fi2-M12E-CN6L	flush	2 mm	NPN NC (WD10)	1000 Hz	see Fig. 5
Ni4-M12E-OP6L	non-flush	4 mm	PNP NO (WD7)	800 Hz	see Fig. 6
Ni4-M12E-ON6L	non-flush	4 mm	NPN NO (WD8)	800 Hz	see Fig. 6
Ni4-M12E-CP6L	non-flush	4 mm	PNP NC (WD9)	800 Hz	see Fig. 6
Ni4-M12E-CN6L	non-flush	4 mm	NPN NC (WD10)	800 Hz	see Fig. 6
Ni5-M12E-OP6L	non-flush	5 mm	PNP NO (WD7)	800 Hz	see Fig. 6
Ni5-M12E-ON6L	non-flush	5 mm	NPN NO (WD8)	800 Hz	see Fig. 6
Ni5-M12E-CP6L	non-flush	5 mm	PNP NC (WD9)	800 Hz	see Fig. 6
Ni5-M12E-CN6L	non-flush	5 mm	NPN NC (WD10)	800 Hz	see Fig. 6

## M12E LONG SERIES

## DC 3-WIRE OUTPUT M12 CONNECTOR

Article number	Mounting	Rated operating distance Sn	Switching output (wiring diagram)	Switching frequency	Dimensions
Fi2-M12E-OP6L-Q12	flush	2 mm	PNP NO (WD7)	1000 Hz	see Fig. 9
Fi2-M12E-ON6L-Q12	flush	2 mm	NPN NO (WD8)	1000 Hz	see Fig. 9
Fi2-M12E-CP6L-Q12	flush	2 mm	PNP NC (WD9)	1000 Hz	see Fig. 9
Fi2-M12E-CN6L-Q12	flush	2 mm	NPN NC (WD10)	1000 Hz	see Fig. 9
Ni4-M12E-OP6L-Q12	non-flush	4 mm	PNP NO (WD7)	800 Hz	see Fig. 10
Ni4-M12E-ON6L-Q12	non-flush	4 mm	NPN NO (WD8)	800 Hz	see Fig. 10
Ni4-M12E-CP6L-Q12	non-flush	4 mm	PNP NC (WD9)	800 Hz	see Fig. 10
Ni4-M12E-CN6L-Q12	non-flush	4 mm	NPN NC (WD10)	800 Hz	see Fig. 10
Ni5-M12E-OP6L-Q12	non-flush	5 mm	PNP NO (WD7)	800 Hz	see Fig. 10
Ni5-M12E-ON6L-Q12	non-flush	5 mm	NPN NO (WD8)	800 Hz	see Fig. 10
Ni5-M12E-CP6L-Q12	non-flush	5 mm	PNP NC (WD9)	800 Hz	see Fig. 10
Ni5-M12E-CN6L-Q12	non-flush	5 mm	NPN NC (WD10)	800 Hz	see Fig. 10

## DC 4-WIRE OUTPUT CABLE

Article number	Mounting	Rated operating distance Sn	Switching output (wiring diagram)	Switching frequency	Dimensions
Fi2-M12E-BP6L	flush	2 mm	PNP NO+NC (WD11)	1000 Hz	see Fig. 5
Fi2-M12E-BN6L	flush	2 mm	NPN NO+NC (WD12)	1000 Hz	see Fig. 5
Ni4-M12E-BP6L	non-flush	4 mm	PNP NO+NC (WD11)	800 Hz	see Fig. 6
Ni4-M12E-BN6L	non-flush	4 mm	NPN NO+NC (WD12)	800 Hz	see Fig. 6
Ni5-M12E-BP6L	non-flush	5 mm	PNP NO+NC (WD11)	800 Hz	see Fig. 6
Ni5-M12E-BN6L	non-flush	5 mm	NPN NO+NC (WD12)	800 Hz	see Fig. 6

## DC 4-WIRE OUTPUT M12 CONNECTOR

Article number	Mounting	Rated operating distance Sn	Switching output (wiring diagram)	Switching frequency	Dimensions
Fi2-M12E-BP6L-Q12	flush	2 mm	PNP NO+NC (WD11)	1000 Hz	see Fig. 9
Fi2-M12E-BN6L-Q12	flush	2 mm	NPN NO+NC (WD12)	1000 Hz	see Fig. 9
Ni4-M12E-BP6L-Q12	non-flush	4 mm	PNP NO+NC (WD11)	800 Hz	see Fig. 10
Ni4-M12E-BN6L-Q12	non-flush	4 mm	NPN NO+NC (WD12)	800 Hz	see Fig. 10
Ni5-M12E-BP6L-Q12	non-flush	5 mm	PNP NO+NC (WD11)	800 Hz	see Fig. 10
Ni5-M12E-BN6L-Q12	non-flush	5 mm	NPN NO+NC (WD12)	800 Hz	see Fig. 10

M12E LONG SERIES

DIMENSIONS

Fig. 1 Inductive sensor with cable (flush)

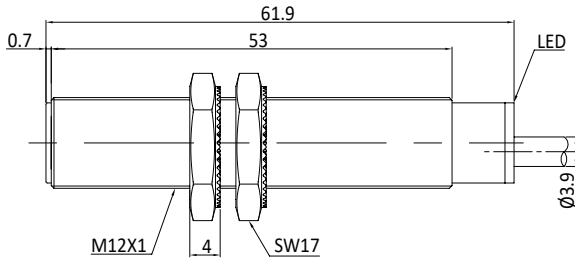


Fig. 2 Inductive sensor with cable (non-flush)

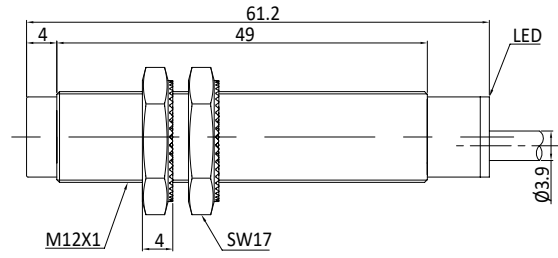


Fig. 3 Inductive sensor with cable (flush)

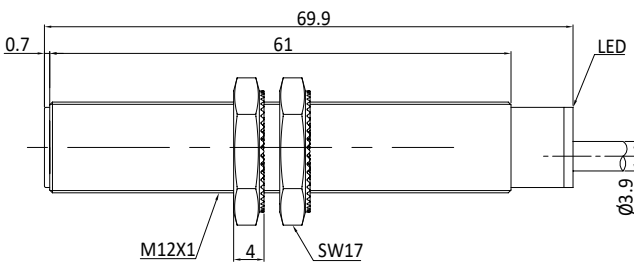


Fig. 4 Inductive sensor with cable (non-flush)

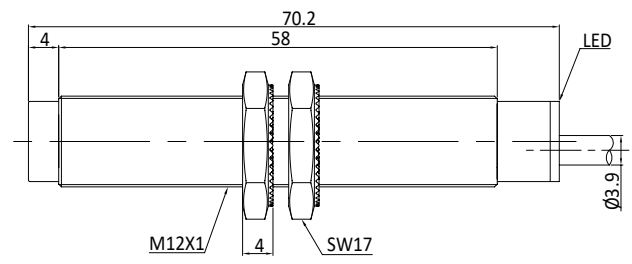


Fig. 5 Inductive sensor with cable (flush)

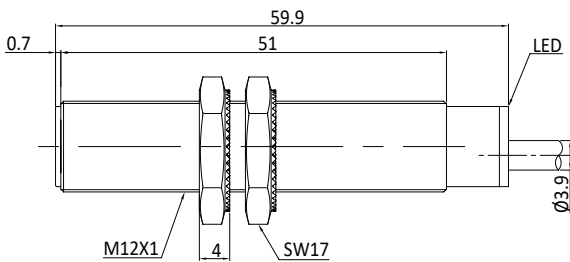


Fig. 6 Inductive sensor with cable (non-flush)

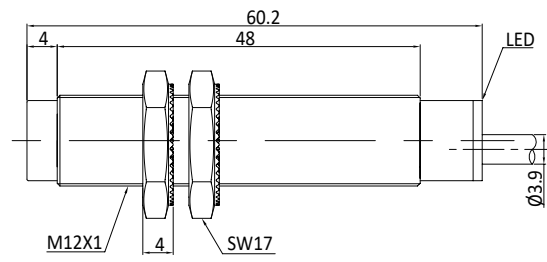


Fig. 7 Inductive sensor with M12 connector (flush)

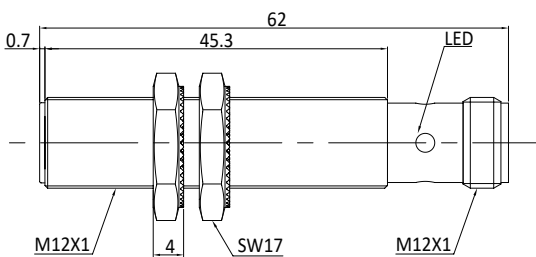
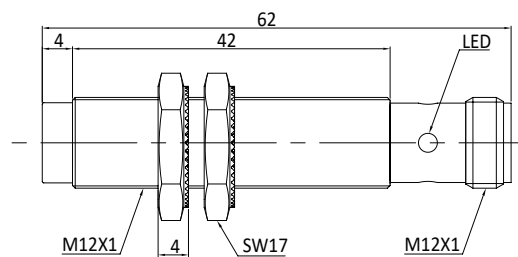


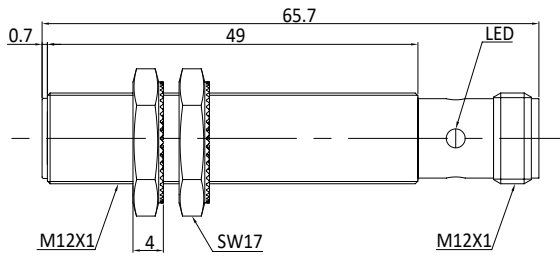
Fig. 8 Inductive sensor with M12 connector (non-flush)



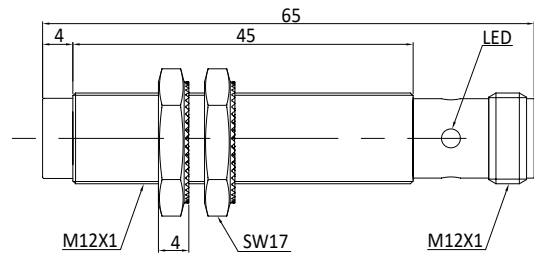
M12E LONG SERIES

DIMENSIONS

**Fig. 9** Inductive sensor with M12 connector (flush)



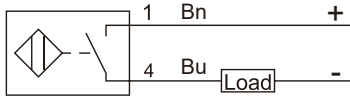
**Fig. 10** Inductive sensor with M12 connector (non-flush)



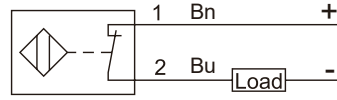
M12E LONG SERIES

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

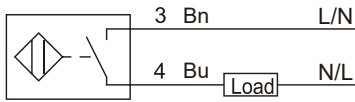
WD1 DC 2-wire NO



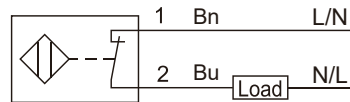
WD2 DC 2-wire NC



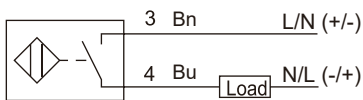
WD3 AC 2-wire NO



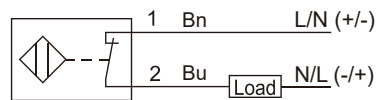
WD4 AC 2-wire NC



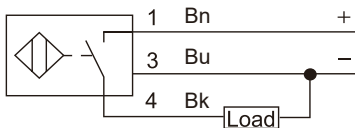
WD5 AC / DC 2-wire NO



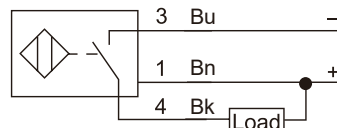
WD6 AC / DC 2-wire NC



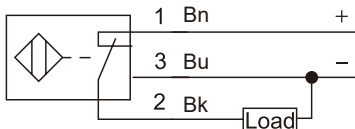
WD7 DC 3-wire PNP NO



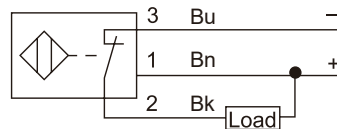
WD8 DC 3-wire NPN NO



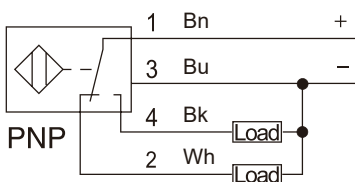
WD9 DC 3-wire PNP NC



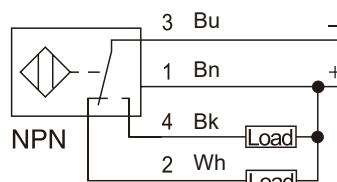
WD10 DC 3-wire NPN NC



WD11 DC 4-wire PNP NO + NC



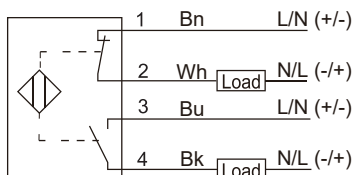
WD12 DC 4-wire NPN NO + NC



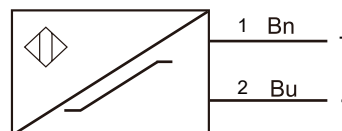
M12E LONG SERIES

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

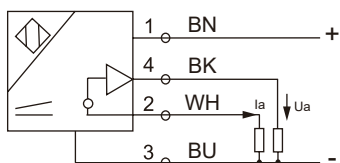
**WD13 AC/DC 4-wire NO+NC**



**WD14 NAMUR 2-wire NC**



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



## M12E LONG SERIES

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