

INDUCTIVE SENSORS M12 x 1



CYLINDRICAL SHORT HOUSING S SERIES

3/4 WIRES D.C.

CONFORMING TO EN 50044

VERSION-C

■ STANDARD SWITCHING DISTANCE

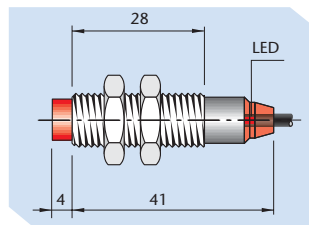
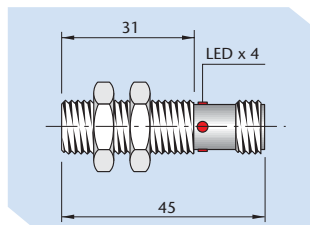
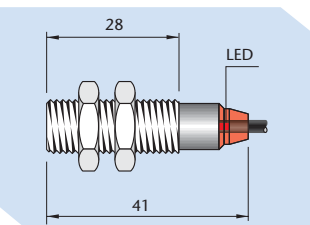
★ EXTENDED SWITCHING DISTANCE

▲ EMBEDDABLE (FLUSH MOUNTING)

● NOT EMBEDDABLE
(NON FLUSH MOUNTING)

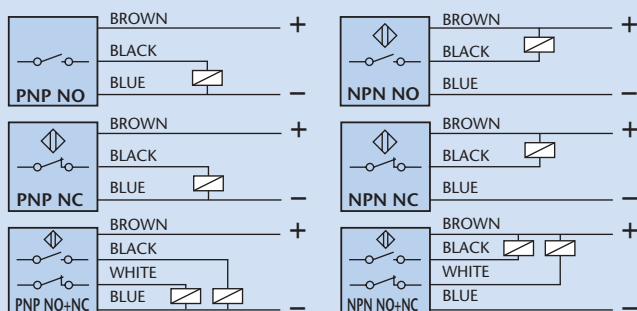
TECHNICAL CHARACTERISTICS

Dimensions mm



AMPLIFIED 3 WIRES D.C.	NPN	NO	SI12 - C2 NPN NO S	SI12 - C2 NPN NO H S	SI12 - CE4 NPN NO S
		NC	SI12 - C2 NPN NC S	SI12 - C2 NPN NC H S	SI12 - CE4 NPN NC S
	PNP	NO	SI12 - C2 PNP NO S	SI12 - C2 PNP NO H S	SI12 - CE4 PNP NO S
		NC	SI12 - C2 PNP NC S	SI12 - C2 PNP NC H S	SI12 - CE4 PNP NC S
AMPLIFIED 4 WIRES D.C. ANTIPHASE	NPN	NO+NC			
	PNP	NO+NC			
Switching distance (Sn)	mm		2	2	4
Continuous voltage (residual ripple ≤10%)	V		10 ÷ 30		
Hysteresis (%Sn)	mm		< 10%		
Switching frequency	Hz		1000		
Repeatability	% of Sn		≤ 3		
Max output current	mA		200		
Absorption at 24Vdc	mA		< 15		
Voltage drop (sensor ON)	V		< 1.8		
Short circuit protection			Incorporated		
Led			Incorporated		
Temperature limits	°C		- 25 ÷ + 70		
Degree of protection	IP		67	Depending on connector	67
Housing			Nickelled brass		
Cable PVC	2m		3 x 0.25 mm ²		3 x 0.25 mm ²
Connector plug			H		

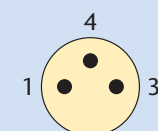
WIRING DIAGRAMS



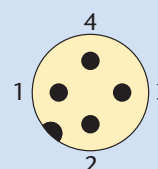
N.B.: On request is available cable for sensors with different length
3.5 - 7.5 - 5 - 10 metres.

CONNECTION WITH H1 - H PLUGS

FOR THE CONNECTORS SEE PAGE 85



VIEW OF MALE CONNECTOR H1
1 = Brown / +
3 = Blue / -
4 = Black / output NPN-PNP / NO-NC



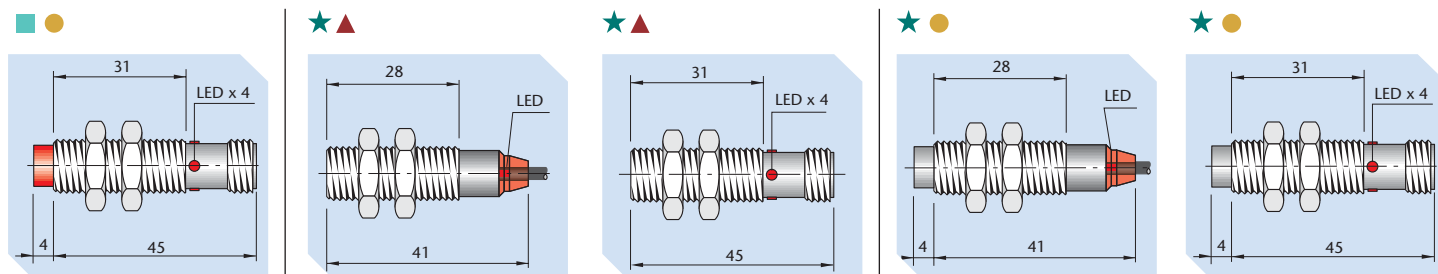
VIEW OF MALE CONNECTOR H
3 WIRES
1 = Brown / +
3 = Blue / -
4 = Black / output NPN-PNP / NO
2 = Black / output NPN-PNP / NC
4 WIRES
1 = Brown / +
3 = Blue / -
4 = Black / output NPN-PNP / NO
2 = White / output NPN-PNP / NC

INDUCTIVE SENSORS M12 x 1

CYLINDRICAL SHORT HOUSING S SERIES
3/4 WIRES D.C.
CONFORMING TO EN 50044
VERSION-C



INDUCTIVE



SI12 - CE4 NPN NO H S	SI12 - DC4 NPN NO S	SI12 - DC4 NPN NO H S	SI12 - DCE8 NPN NO S	SI12 - DCE8 NPN NO HS
SI12 - CE4 NPN NC H S	SI12 - DC4 NPN NC S	SI12 - DC4 NPN NC H S	SI12 - DCE8 NPN NC S	SI12 - DCE8 NPN NC HS
SI12 - CE4 PNP NO H S	SI12 - DC4 PNP NO S	SI12 - DC4 PNP NO H S	SI12 - DCE8 PNP NO S	SI12 - DCE8 PNP NO HS
SI12 - CE4 PNP NC H S	SI12 - DC4 PNP NC S	SI12 - DC4 PNP NC H S	SI12 - DCE8 PNP NC S	SI12 - DCE8 PNP NC HS
	SI12 - DC4 NPN NO+NC S	SI12 - DC4 NPN NO+NC H S		
	SI12 - DC4 PNP NO+NC S	SI12 - DC4 PNP NO+NC H S		
4	4	4	8	8

10 ÷ 30

< 10%

1000

1000

600

≤ 3

200

< 15

< 1.8

Incorporated

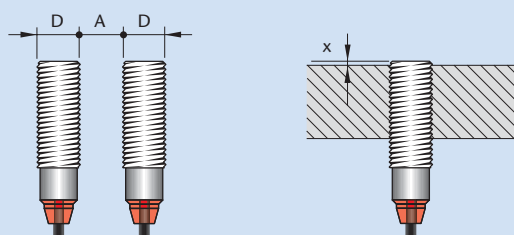
Incorporated

- 25 ÷ + 70

Depending on connector	67	Depending on connector	67	Depending on connector
Nickelled brass	Stainless steel			
	3 x 0.25 mm ² - 4 x 0.25 mm ²		3 x 0.25 mm ²	
H		H		H

INSTRUCTIONS FOR CORRECT INSTALLATION

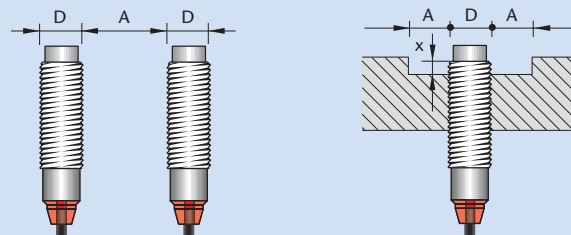
EMBEDDABLE



Side by side mounting
SI12-C2 $A \geq D/2$
SI12-DC4 $A \geq D/2$

Flush mounting
SI12-C2 $X \geq 0$
SI12-DC4 $X > 0$

NOT EMBEDDABLE



Side by side mounting
SI12-CE4 $A \geq 2D$
SI12-DCE8 $A \geq 2D$

Non flush mounting
SI12-CE4 $A \geq D$ $X \geq 0$
SI12-DCE8 $A \geq 2D$ $X \geq 4mm$

INDUCTIVE SENSORS M12 x 1



CYLINDRICAL LONG HOUSING

3/4 WIRES D.C.

CONFORMING TO EN 50008 - EN 50044

VERSION-C

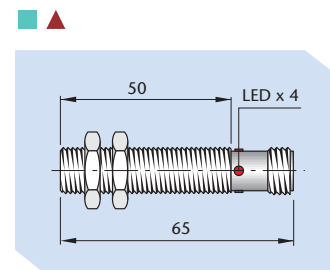
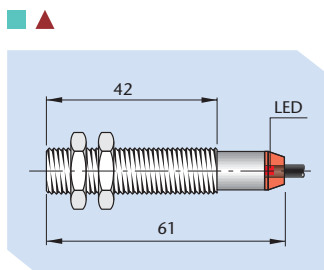
■ STANDARD SWITCHING DISTANCE

▲ EMBEDDABLE (FLUSH MOUNTING)

● NOT EMBEDDABLE
(NON FLUSH MOUNTING)

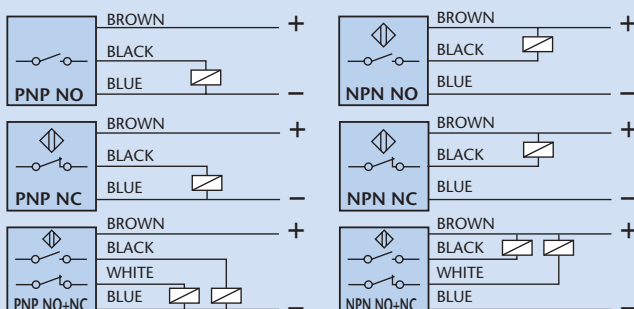
TECHNICAL CHARACTERISTICS

Dimensions mm



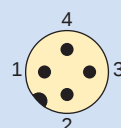
AMPLIFIED 3 WIRES D.C.	NPN	NO	SI12 - C2 NPN NO	SI12 - C2 NPN NO H
		NC	SI12 - C2 NPN NC	SI12 - C2 NPN NC H
	PNP	NO	SI12 - C2 PNP NO	SI12 - C2 PNP NO H
		NC	SI12 - C2 PNP NC	SI12 - C2 PNP NC H
AMPLIFIED 4 WIRES D.C. ANTIPIHASE	NPN	NO+NC	SI12 - C2 NPN NO + NC	SI12 - C2 NPN NO + NC H
	PNP	NO+NC	SI12 - C2 PNP NO + NC	SI12 - C2 PNP NO + NC H
Switching distance (Sn)	mm		2	2
Continuous voltage (residual ripple ≤10%)	V		10 ÷ 30	
Hysteresis (%Sn)	mm		< 10%	
Switching frequency	Hz		1000	
Repeatability	% of Sn		≤ 3	
Max output current	mA		200	
Absorption at 24Vdc	mA		< 15	
Voltage drop (sensor ON)	V		< 1.8	
Short circuit protection			Incorporated	
Led			Incorporated	
Temperature limits	°C		- 25 ÷ + 70	
Degree of protection	IP		67	Depending on connector
Housing			Nickelled brass	
Cable PVC	2m		3 x 0.25 mm ² - 4 x 0.25 mm ²	
Connector plug				H

WIRING DIAGRAMS



N.B.: On request is available cable for sensors with different length
3.5 - 7.5 - 5 - 10 metres.

CONNECTION WITH H - K PLUGS FOR THE CONNECTORS SEE PAGE 85



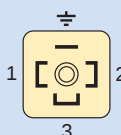
VIEW OF MALE CONNECTOR H

3 WIRES

1 = Brown / +
3 = Blue / -
4 = Black / output NPN-PNP / NO
2 = Black / output NPN-PNP / NC

4 WIRES

1 = Brown / +
3 = Blue / -
4 = Black / output NPN-PNP / NO
2 = White / output NPN-PNP / NC



VIEW OF MALE CONNECTOR K

3 WIRES

1 = Blue / -
2 = Brown / +
4/≡ = Black / output NPN-PNP / NO-NC

4 WIRES

1 = Blue / -
2 = Brown / +
4/≡ = Black / output NPN-PNP / NO
3 = White / output NPN-PNP / NC

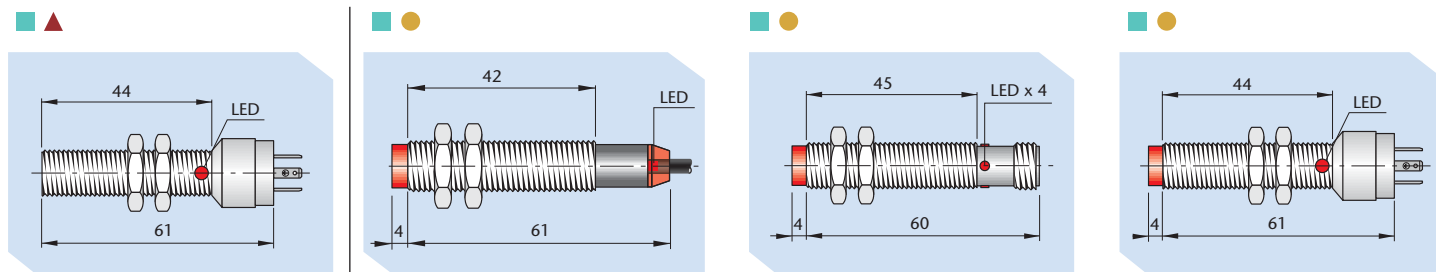
On the 3 wires version with plug K the connector K is supplied with 3 poles.
On the 4 wires version with plug H the connector types 14 - 15 must be ordered with 4 wires.

INDUCTIVE SENSORS M12 x 1

CYLINDRICAL LONG HOUSING
3/4 WIRES D.C.
CONFORMING TO EN 50008 - EN 50044
VERSION-C



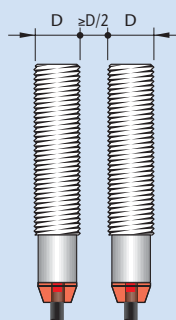
INDUCTIVE



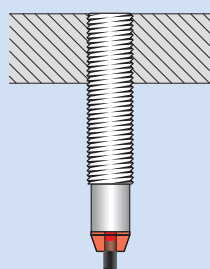
SI12 - C2 NPN NO K	SI12 - CE4 NPN NO	SI12 - CE4 NPN NO H	SI12 - CE4 NPN NO K
SI12 - C2 NPN NC K	SI12 - CE4 NPN NC	SI12 - CE4 NPN NC H	SI12 - CE4 NPN NC K
SI12 - C2 PNP NO K	SI12 - CE4 PNP NO	SI12 - CE4 PNP NO H	SI12 - CE4 PNP NO K
SI12 - C2 PNP NC K	SI12 - CE4 PNP NC	SI12 - CE4 PNP NC H	SI12 - CE4 PNP NC K
SI12 - C2 NPN NO + NC K	SI12 - CE4 NPN NO + NC	SI12 - CE4 NPN NO + NC H	SI12 - CE4 NPN NO + NC K
SI12 - C2 PNP NO + NC K	SI12 - CE4 PNP NO + NC	SI12 - CE4 PNP NO + NC H	SI12 - CE4 PNP NO + NC K
2	4	4	4
10 ÷ 30			
< 10%			
1000			
≤ 3			
200			
< 15			
< 1.8			
Incorporated			
Incorporated			
- 25 ÷ + 70			
65	67	Depending on connector	65
Nickelled brass			
3 x 0.25 mm ² - 4 x 0.25 mm ²			
K (type 11)		H	K (type 11)

INSTRUCTIONS FOR CORRECT INSTALLATION

EMBEDDABLE

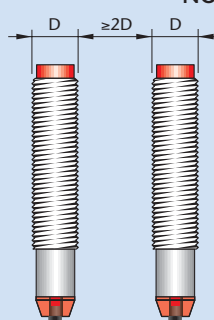


Side by side mounting

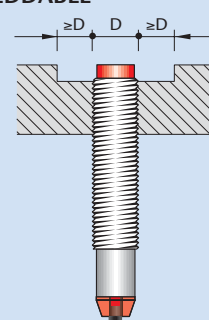


Flush mounting

NOT EMBEDDABLE



Side by side mounting



Non flush mounting

INDUCTIVE SENSORS M12 x 1

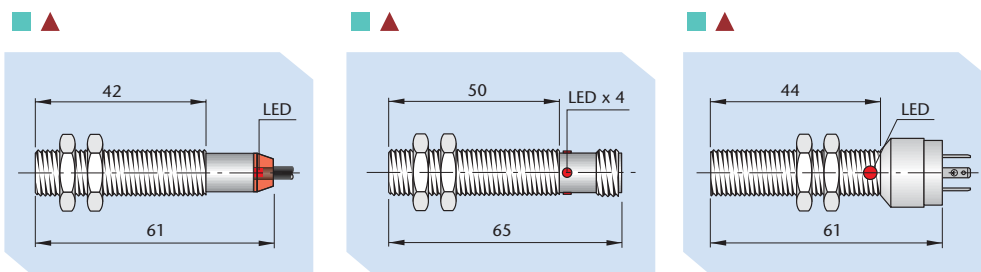


CYLINDRICAL LONG HOUSING
2 WIRES D.C.
CONFORMING TO EN 50040 - EN 50044
VERSION-B

- STANDARD SWITCHING DISTANCE
- ▲ EMBEDDABLE (FLUSH MOUNTING)
- NOT EMBEDDABLE (NON FLUSH MOUNTING)

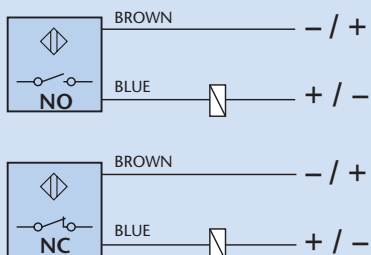
TECHNICAL CHARACTERISTICS

Dimensions mm



AMPLIFIED 2 WIRES D.C.	NO	SI12 - B2 NO	SI12 - B2 NO H	SI12 - B2 NO K
	NC	SI12 - B2 NC	SI12 - B2 NC H	SI12 - B2 NC K
Switching distance (Sn)	mm	2	2	2
Continuous voltage (residual ripple ≤10%)	V	10 ÷ 55		
Hysteresis (%Sn)	mm	< 10%		
Switching frequency	Hz	1000		
Repeatability	% of Sn	≤ 3		
Max output current	mA	100		
Min. output current	mA	1.5		
Absorption at 24Vdc	mA	< 0.6		
Voltage drop (sensor ON)	V	< 6.5		
Short circuit protection		Incorporated		
Led		Incorporated		
Temperature limits	°C	- 25 ÷ + 70		
Degree of protection	IP	67	Depending on connector	65
Housing		Nickelled brass		
Cable PVC	2m	2 x 0.25 mm ²		
Connector plug			H	K (type 11)

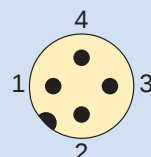
WIRING DIAGRAMS (2 WIRES NON POLARIZED)



N.B.: On request is available cable for sensors with different length
3.5 - 7.5 - 5 - 10 metres.

CONNECTION WITH H - K PLUGS

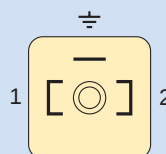
FOR THE CONNECTORS SEE PAGE. 85



VIEW OF MALE CONNECTOR H:

3 / 4 = Function NO (black - blue)*
1 / 2 = Function NC (white - brown)*
(Non polarized)

* The wire colour are referred to the connector with cable only.



VIEW OF MALE CONNECTOR K:

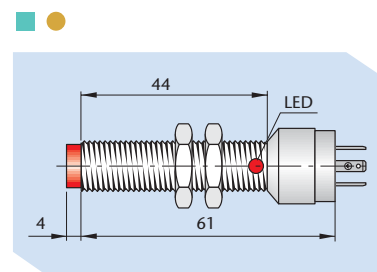
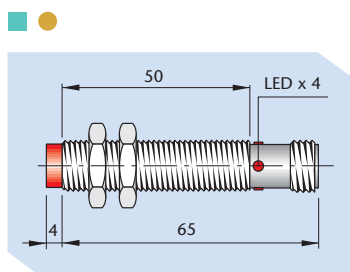
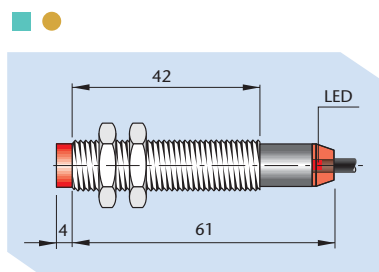
1 / 2 = Function NO
1 / 2 = Function NC
(Non polarized)

INDUCTIVE SENSORS M12 x 1

CYLINDRICAL LONG HOUSING
2 WIRES D.C.
CONFORMING TO EN 50040 - EN 50044
VERSION-B



INDUCTIVE



SI12 - BE4 NO

SI12 - BE4 NO K

SI12 - BE4 NO K

SI12 - BE4 NC

SI12 - BE4 NC K

SI12 - BE4 NC K

4

4

4

10 ÷ 55

< 10%

1000

≤ 3

100

1.5

< 0.6

< 6.5

Incorporated

Incorporated

- 25 ÷ + 70

67

Depending on connector

65

Nickelled brass

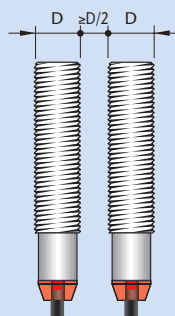
2 x 0.25 mm²

H

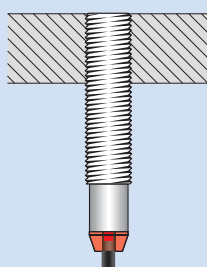
K (type 11)

INSTRUCTIONS FOR CORRECT INSTALLATION

EMBEDDABLE

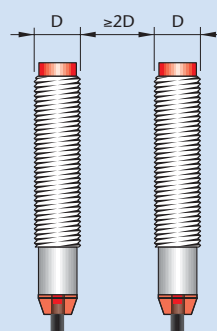


Side by side mounting

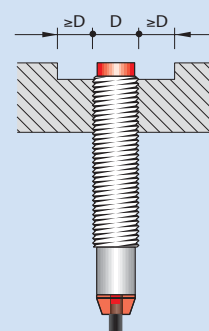


Flush mounting

NOT EMBEDDABLE



Side by side mounting



Non flush mounting

INDUCTIVE SENSORS M12 x 1

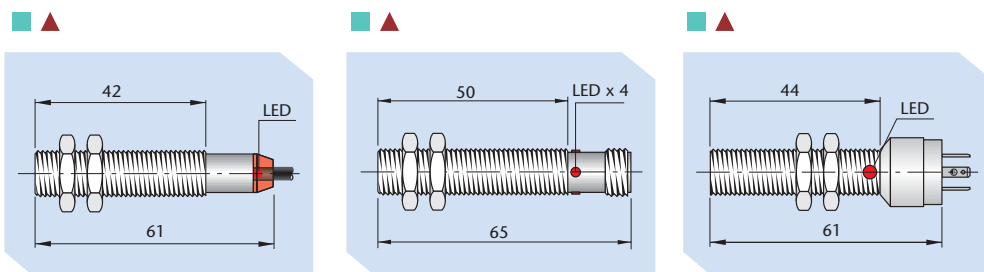


CYLINDRICAL LONG HOUSING
2 WIRES D.C.
CONFORMING TO EN 50036 - EN 50044
VERSION-A

- STANDARD SWITCHING DISTANCE
- ▲ EMBEDDABLE (FLUSH MOUNTING)
- NOT EMBEDDABLE (NON FLUSH MOUNTING)

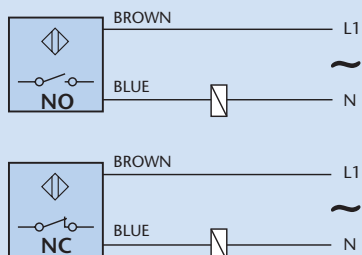
TECHNICAL CHARACTERISTICS

Dimensions mm



AMPLIFIED 2 WIRES A.C.	NO	SI12 - A2 NO	SI12 - A2 NO H	SI12 - A2 NO K
	NC	SI12 - A2 NC	SI12 - A2 NC H	SI12 - A2 NC K
Switching distance (Sn)	mm	2	2	2
Voltage 50÷ 60 Hz	V	20 ÷ 250		
Hysteresis (%Sn)	mm	< 10%		
Switching frequency	Hz	12		
Repeatability	% of Sn	≤ 3		
Max output current	mA	300		
Min. output current	mA	5		
Max. peak current for 20ms	A	1.5		
Residual current	mA	< 1		
Voltage drop	V	< 6		
Led		Incorporated		
Temperature limits	°C	- 25 ÷ + 70		
Degree of protection	IP	67	Depending on connector	65
Housing		Nickelled brass		
Cable PVC	2m	2 x 0.25 mm ²		
Connector plug			H	K (type 11)

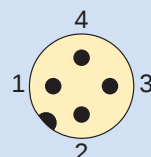
WIRING DIAGRAMS



N.B.: On request is available cable for sensors with different length
3.5 - 7.5 - 5 - 10 metres.

CONNECTION WITH H - K PLUGS

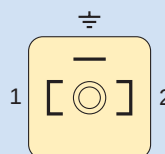
FOR THE CONNECTORS SEE PAGE 85



VIEW OF MALE CONNECTOR H

3 / 4 = Function NO (black - blue)*
1 / 2 = Function NC (white - brown)*

* The wire colour are referred to the connector with cable only.



VIEW OF MALE CONNECTOR K

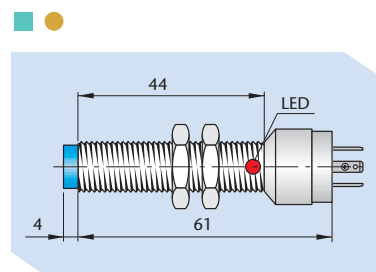
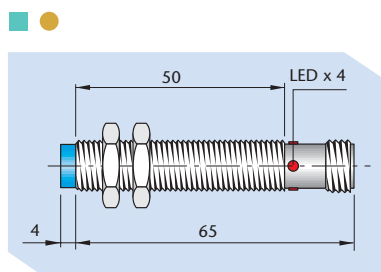
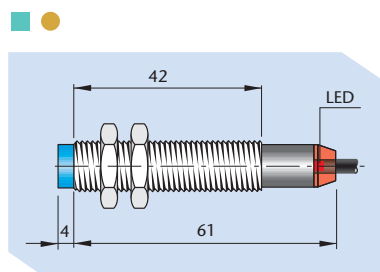
1 / 2 = Function NO
1 / 2 = Function NC

INDUCTIVE SENSORS M12 x 1

CYLINDRICAL LONG HOUSING
2 WIRES D.C.
CONFORMING TO EN 50036 - EN 50044
VERSION-A



INDUCTIVE



SI12 - AE4 NO

SI12 - AE4 NO H

SI12 - AE4 NO K

SI12 - AE4 NC

SI12 - AE4 NC H

SI12 - AE4 NC K

4

4

4

20 ÷ 250

< 10%

12

≤ 3

300

5

1.5

< 1

< 6

Incorporated

- 25 ÷ + 70

67

Depending on connector

65

Nickelled brass

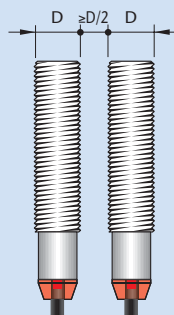
2 x 0.25 mm²

H

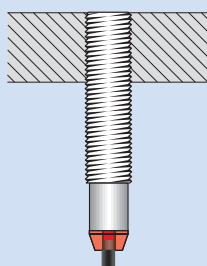
K (type 11)

INSTRUCTIONS FOR CORRECT INSTALLATION

EMBEDDABLE

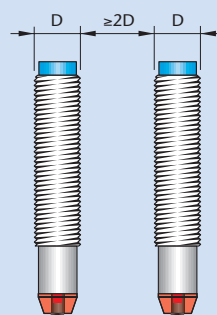


Side by side mounting

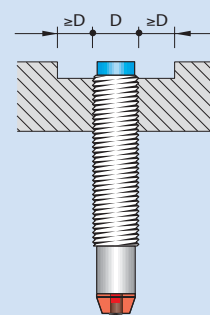


Flush mounting

NOT EMBEDDABLE



Side by side mounting



Non flush mounting