



# Inductive Sensors Ø 12

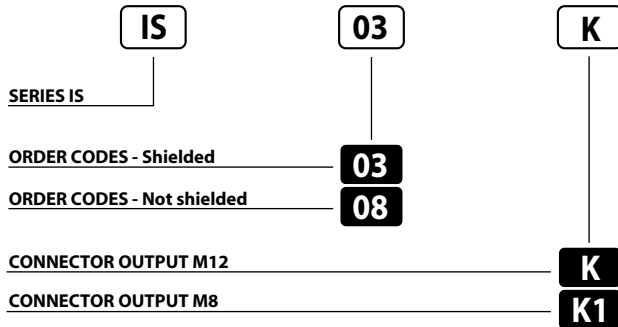
## INDUCTIVE SENSORS CONFORMING TO NAMUR RULES

- Two-wire sensors
- 5-24 VAC/VDC input
- Nickel plated brass
- Shielded versions up to 2 mm
- Not shielded versions up to 4 mm

## IS Series

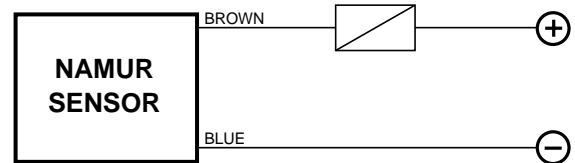


### Identification code

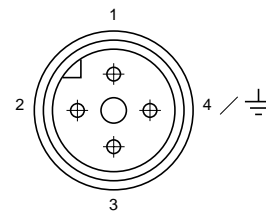


	SHIELDED	NOT SHIELDED
NOMINAL SWITCHING DISTANCE (Sn)	2 mm	4 mm
NOMINAL VOLTAGE (Load resistance 1 K)	7.7 ÷ 9 V DC	
DC SUPPLY VOLTAGE	5 ÷ 24 V DC	
RESIDUAL RIPPLE	≤ 10%	
HYSTERESIS	≤ 10%	
OUTPUT CURRENT (Metal present)	≤ 1 mA	
OUTPUT CURRENT (Metal absent)	≤ 3 mA	
SWITCHING FREQUENCY	2000 Hz	
REPEATABILITY	≤ 3%	
TEMPERATURE LIMITS	-25 ÷ +60 °C	
PROTECTION DEGREE	IP 67	
CABLE LENGTH	2 m	
CABLE SECTION	2 x 0.25 mm <sup>2</sup>	
HOUSING MATERIAL	Nickel-plated brass	
WEIGHT - Cable output -	110 g	
WEIGHT - K1 connector output -	60 g	
WEIGHT - K connector output -	60 g	

### Wiring diagrams



### Connection with connector M12 (K)



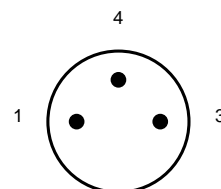
View of quadripole male connector

#### CONTACTS CONFIGURATION

Available	Contacts numbers			
	1	2	3	4
NAMUR	+		-	

**NOTE:** The K plug is compatible with the following connectors VAUDEHA, BINDER, HIRSCHMANN, LUMBERG and AMPHENOL-TUCHEL.

### Connection with connector M8 (K1)



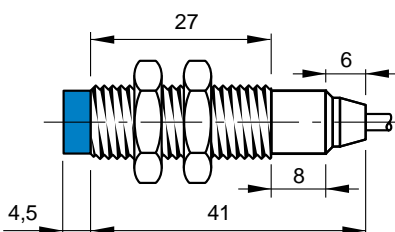
View of tripole male connector

#### CONTACTS CONFIGURATION

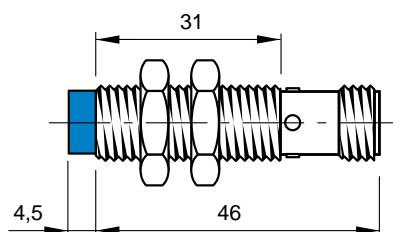
Available	Contacts numbers		
	1	3	4
NAMUR	+	-	

### Dimensions (mm)

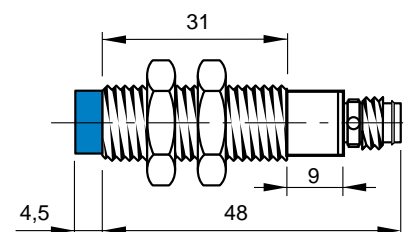
CONFIGURATION WITH CABLE



CONFIGURATION WITH CONNECTOR K



CONFIGURATION WITH CONNECTOR K1



**Note:** The front part in blue refers to not shielded models



# Amplified Inductive Sensors Ø 12

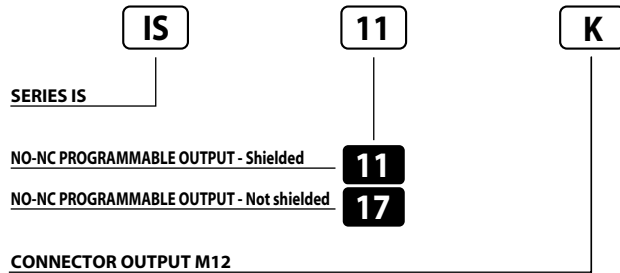
## AMPLIFIED INDUCTIVE SENSORS 10÷30 V DC 2 WIRES NO-NC PROGRAMMABLE OUTPUT

- Two-wire - 10/30 VDC
- M12 quick connect or integral cable
- Shielded models up to 2 mm
- Not shielded models up to 4 mm
- Nickel plated brass

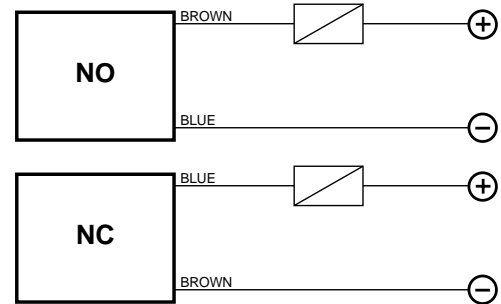
### IS Series



#### Identification code



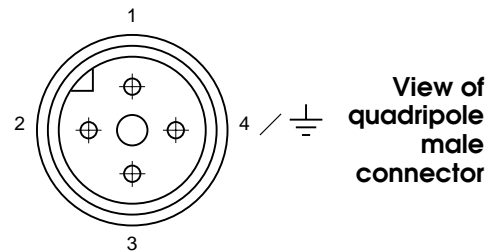
#### Wiring diagrams



**WARNING:** The load can be indifferently connected in series to the blue wire or to the brown wire to simulate NPN or PNP functioning logic.

	SHIELDED	NOT SHIELDED
NOMINAL SWITCHING DISTANCE (Sn)	<b>2 mm</b>	<b>4 mm</b>
NOMINAL VOLTAGE	10 ÷ 30 VDC (-15 / +10%)	
RESIDUAL RIPPLE	≤ 10%	
HYSTERESIS	< 10%	
MAX. OUTPUT CURRENT	100 mA	
MIN. OUTPUT CURRENT	> 1,6 mA	
RESIDUAL CURRENT	< 1,6 mA	
VOLTAGE DROP	< 6,5 V (I = 100 mA)	
OPERATION LED	Yellow	
SWITCHING FREQUENCY	1000 Hz	
START UP DELAY	≤ 50 mS	
REPEATABILITY	≤ 3%	
SHORT CIRCUIT PROTECTION	Present (self-resetting)	
ELECTRIC PROTECTIONS	Against polarity reversal - inductive loads	
TEMPERATURE LIMITS	- 25 ÷ +70 °C	
PROTECTION DEGREE	IP 67	
CABLE LENGTH	2 m	
CABLE SECTION	2 x 0.25 mm <sup>2</sup>	
HOUSING MATERIAL	Nickel-plated brass	
WEIGHT - Cable output -	110 g	
WEIGHT - K connector output -	60 g	

#### Connection with connector M12 (K)



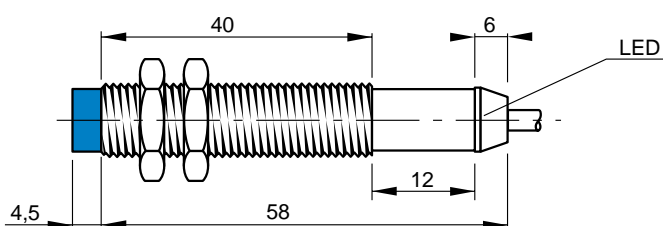
#### CONTACTS CONFIGURATION

Available	Contacts numbers			
	1	2	3	4
NO	+		-	
NC	-		+	

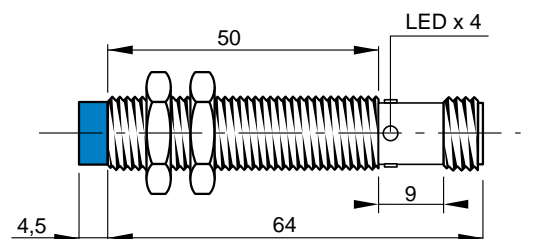
**NOTE:** The K plug is compatible with the following connectors VAUDEHA, BINDER, HIRSCHMANN, LUMBERG, AMPHENOL-TUCHEL.

#### Dimensions (mm)

CONFIGURATION WITH CABLE



CONFIGURATION WITH CONNECTOR K



**Note:** The front part in blue refers to not shielded models



# Amplified Inductive Sensors Ø 12

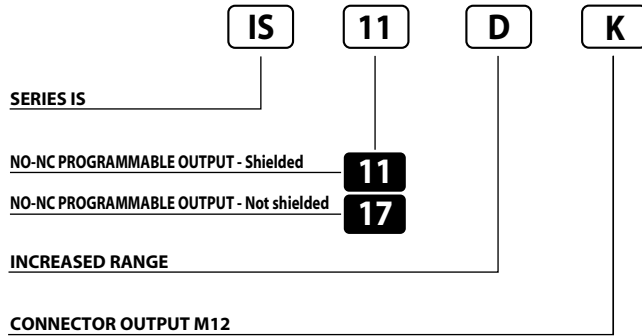
AMPLIFIED INDUCTIVE SENSORS INCREASED RANGE 10-30 V DC 2 WIRES NO-NC PROGRAMMABLE OUTPUT

- Two-wire, amplified
- Increased range, shielded, not shielded
- 10 to 30 VDC
- Range, 4 mm to 8 mm
- NO or NC select
- M12 quick connect or integral cable
- Nickel plated brass

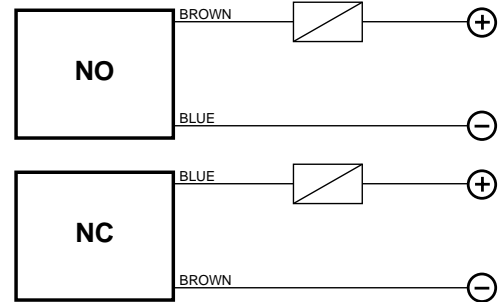
IS Series



## Identification code



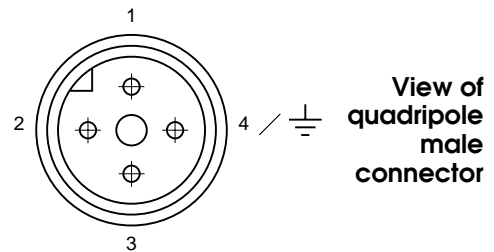
## Wiring diagrams



**WARNING:** The load can be indifferently connected in series to the blue wire or to the brown wire to simulate NPN or PNP functioning logic.

	SHIELDED	NOT SHIELDED
NOMINAL SWITCHING DISTANCE (Sn)	4 mm	8 mm
NOMINAL VOLTAGE	10 ÷ 30 VDC (-15 / +10%)	
RESIDUAL RIPPLE	≤ 10%	
HYSTERESIS	< 10%	
MAX. OUTPUT CURRENT	100 mA	
MIN. OUTPUT CURRENT	> 1,6 mA	
RESIDUAL CURRENT	< 1,6 mA	
VOLTAGE DROP	< 6,5 V (I = 100 mA)	
OPERATION LED	Yellow	
SWITCHING FREQUENCY	500 Hz	
START UP DELAY	≤ 50 mS	
REPEATABILITY	≤ 3%	
SHORT CIRCUIT PROTECTION	Present (self-resetting)	
ELECTRIC PROTECTIONS	Against polarity reversal - inductive loads	
TEMPERATURE LIMITS	- 25 ÷ +70 °C	
PROTECTION DEGREE	IP 67	
CABLE LENGTH	2 m	
CABLE SECTION	2 x 0.25 mm <sup>2</sup>	
HOUSING MATERIAL	Nickel-plated brass	
WEIGHT - Cable output -	110 g	
WEIGHT - K connector output -	60 g	

## Connection with connector M12 (K)



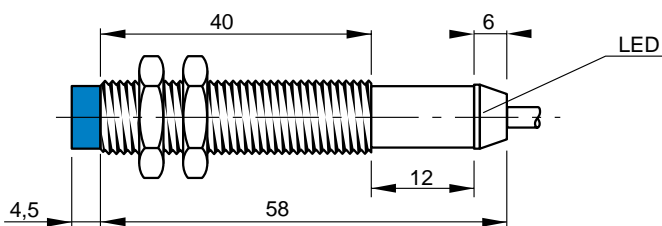
## CONTACTS CONFIGURATION

Available	Contacts numbers			
	1	2	3	4
NO	+		-	
NC	-		+	

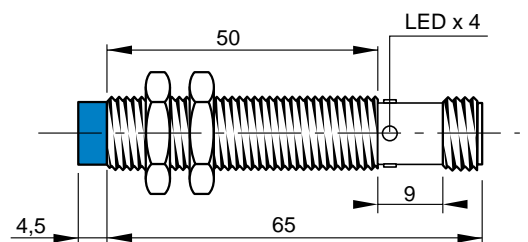
**NOTE:** The K plug is compatible with the following connectors VAUDEHA, BINDER, HIRSCHMANN, LUMBERG, AMPHENOL-TUCHEL.

## Dimensions (mm)

CONFIGURATION WITH CABLE



CONFIGURATION WITH CONNECTOR K



**Note:** The front part in blue refers to not shielded models



# Amplified Inductive Sensors Ø 12

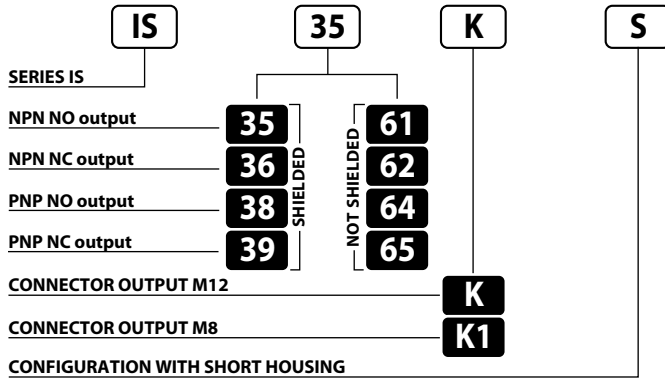
AMPLIFIED INDUCTIVE SENSORS 10÷30 V DC 3 WIRES NPN OR PNP OUTPUT

- Three-wire, amplified, sensors
- Short housing models
- M8 and M12 quick connect models
- Operation LED

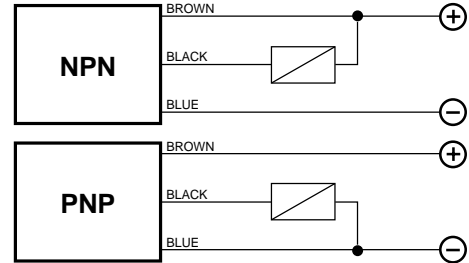
IS Series



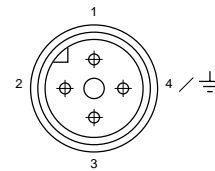
## Identification code



## Wiring diagrams



## Connection with connector M12 (K)



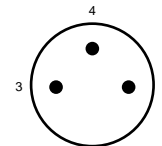
View of quadripole male connector.

**Note:** The K plug is compatible with the following connectors VAUDEHA, BINDER, HIRSCHMANN, LUMBERG, AMPHENOL-TUCHEL.

## CONTACTS CONFIGURATION

Available	Contacts numbers			
	1	2	3	4
(NO or NC)	+		-	NO/NC

## Connection with connector M8 (K1)



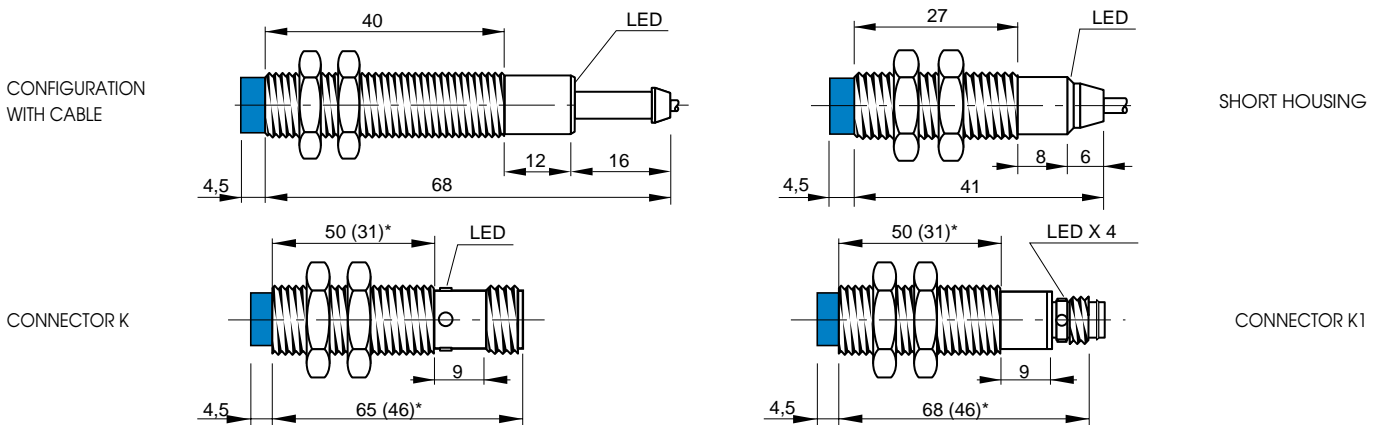
View of tripole male connector.

## CONTACTS CONFIGURATION

Available	Contacts numbers		
	1	3	4
(NO or NC)	+	-	NO/NC

	SHIELDED	NOT SHIELDED
NOMINAL SWITCHING DISTANCE (Sn)	2 mm	4 mm
NOMINAL VOLTAGE	10 ÷ 30 VDC (-15 / +10%)	
RESIDUAL RIPPLE	≤ 10%	
HYSTERESIS	< 10%	
MAX. OUTPUT CURRENT	200 mA	
RESIDUAL CURRENT	< 10 mA	
VOLTAGE DROP	< 1.8 V (I = 100 mA)	
OPERATION LED	Yellow	
SWITCHING FREQUENCY	1000 Hz	
START UP DELAY	≤ 50 mS	
REPEATABILITY	≤ 3%	
SHORT CIRCUIT PROTECTION	Present (self-resetting)	
ELECTRIC PROTECTIONS	Against polarity reversal - inductive loads	
TEMPERATURE LIMITS	- 25 ÷ +60 °C	
PROTECTION DEGREE	IP 67	
CABLE LENGTH	2 m	
CABLE SECTION	3 x 0,25 mm <sup>2</sup>	
HOUSING MATERIAL	Nickel-plated brass	
WEIGHT - Cable output -	110 g	
WEIGHT - K1 connector output -	60 g	
WEIGHT - K connector output -	60 g	

## Dimensions (mm)



(\*) The dimensions into brackets refer to short housing models  
**Note:** the front part in blue refers to not shielded models.



# Amplified Inductive Sensors Ø 12

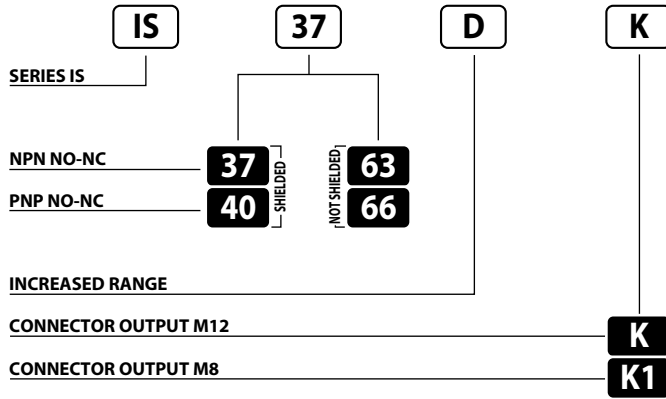
AMPLIFIED INDUCTIVE SENSORS INCREASED RANGE 10÷30 VDC 4 WIRES NPN OR PNP OUTPUT

- Four wire
- Increased range, shielded, not shielded
- Range, 4mm to 8mm
- Short housing cable models
- 200mA NPN or PNP
- Operation LED

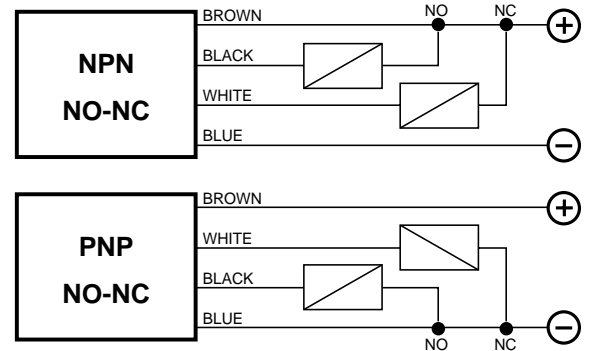
IS Series



## Identification code

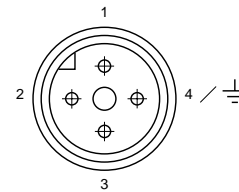


## Wiring diagrams



	SHIELDED	NOT SHIELDED
NOMINAL SWITCHING DISTANCE (Sn)	4 mm	8 mm
NOMINAL VOLTAGE	10 ÷ 30 VDC (-15 / +10%)	
RESIDUAL RIPPLE	≤ 10%	
HYSTERESIS	< 10%	
MAX. OUTPUT CURRENT	200 mA	
RESIDUAL CURRENT	< 10 mA	
VOLTAGE DROP	< 1.2 V (I = 100 mA)	
OPERATION LED	Yellow	
SWITCHING FREQUENCY	500 Hz	
START UP DELAY	≤ 75 mS	
REPEATABILITY	≤ 3%	
SHORT CIRCUIT PROTECTION	Present (self-resetting)	
ELECTRIC PROTECTIONS	Against polarity reversal - inductive loads	
TEMPERATURE LIMITS	- 25 ÷ +70 °C	
PROTECTION DEGREE	IP 67	
CABLE LENGTH	2 m	
CABLE SECTION	3 x 0,25 mm <sup>2</sup>	
HOUSING MATERIAL	Nickel-plated brass	
WEIGHT - Cable output -	110 g	
WEIGHT - K connector output -	60 g	

## Connection with connector M12 (K)



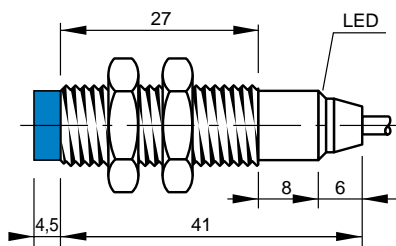
View of quadripole male connector.

## CONTACTS CONFIGURATION

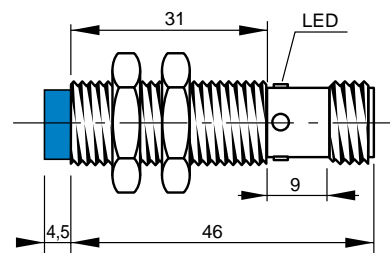
Available (NO or NC)	Contacts numbers			
	1	2	3	4
	+	NC	-	NO

## Dimensions (mm)

CONFIGURATION WITH CABLE



CONNECTOR K



Note: the front part in blue refers to not shielded models



# Amplified Inductive Sensors Ø 12

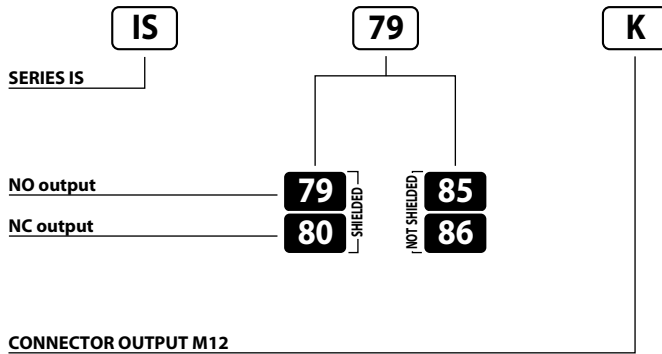
## AMPLIFIED INDUCTIVE SENSORS 24÷230 VAC 2 WIRES NO OR NC OUTPUT

- Two wires, 24-230 VAC
- Cable or M12 quick-connect
- Mini output current 20mA
- Maxpeak (20ms) 1.5A
- 300mA max output

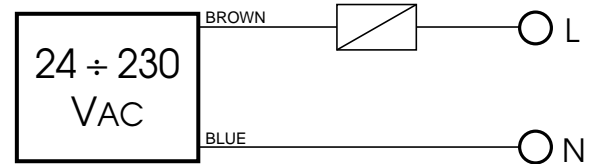
### IS Series



#### Identification code



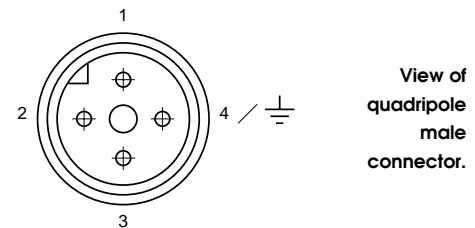
#### Wiring diagrams



**Warning:** Short circuit in the output is not possible. Wrong supply cables connections can irreparably damage the detector. Therefore sensors whose output status is short-circuited will not be substituted under warranty.

	SHIELDED	NOT SHIELDED
NOMINAL SWITCHING DISTANCE (Sn)	2 mm	4 mm
NOMINAL VOLTAGE	24 ÷ 230 VAC (-15/+10%)	
NET FREQUENCY	50 ÷ 60 Hz	
HYSTERESIS	< 10%	
MAX. OUTPUT CURRENT	300 mA	
MIN. OUTPUT CURRENT	20 mA	
MAX. CURRENT PEAK (20 ms)	1,5 A	
RESIDUAL CURRENT	< 1 mA	
VOLTAGE DROP (Sensor ON)	< 6 V (I = 100 mA)	
OPERATION LED	Yellow	
SWITCHING FREQUENCY	12 Hz	
START UP DELAY	≤ 300 ms	
REPEATABILITY	≤ 3%	
TEMPERATURE LIMITS	-25 ÷ +70 °C	
PROTECTION DEGREE	IP 67	
CABLE LENGTH	2 m	
CABLE SECTION	2 x 0.25 mm <sup>2</sup>	
HOUSING MATERIAL	Nickel-plated brass	
WEIGHT - Cable output -	110 g	
WEIGHT - K connector output -	60 g	

#### Connection with connector M12 (K)



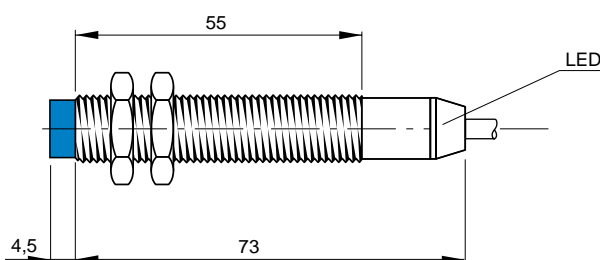
#### CONTACTS CONFIGURATION

Available	Contacts numbers			
	1	2	3	4
(NO or NC)	L		N	

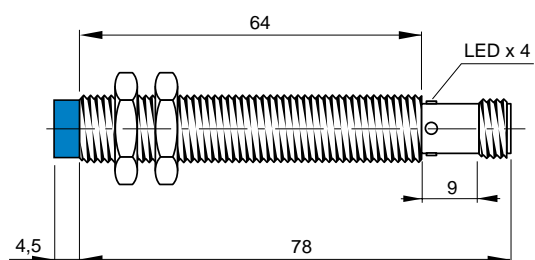
**Note:** The K plug is compatible with the following connectors VAUDEHA, BINDER, HIRSCHMANN, LUMBERG, AMPHENOL-TUCHEL.

#### Dimensions (mm)

CONFIGURATION WITH CABLE



CONFIGURATION WITH CONNECTOR K



**Note:** the front part il blue refers to not shielded models



# Amplified Inductive Sensors Ø 12

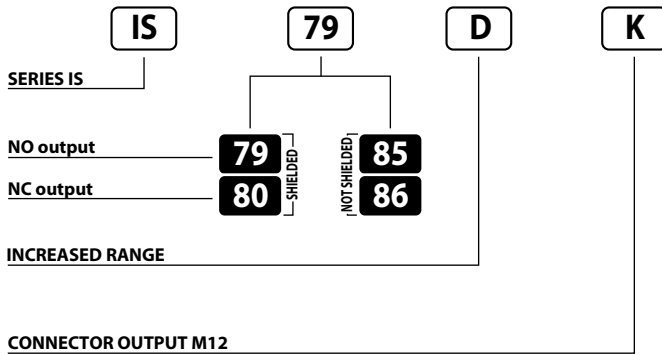
## AMPLIFIED INDUCTIVE SENSORS INCREASED RANGE 24÷230 VAC 2 WIRES NO OR NC OUTPUT

- Two wires, 24-230 VAC
- Increased range, shielded, not shielded
- Range, 4 mm to 8 mm
- Cable or M12 quick-connect
- Mini output current 20mA
- Maxpeak (20ms) 1.5A
- 300mA max output

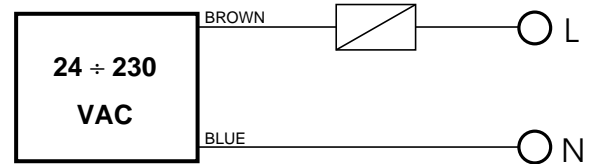
## IS Series



### Identification code



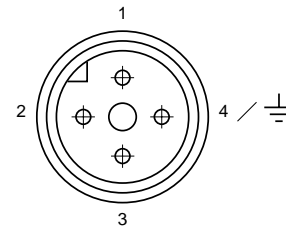
### Wiring diagrams



**Warning:** Short circuit in the output is not possible. Wrong supply cables connections can irreparably damage the detector. Therefore sensors whose output status is short-circuited will not be substituted under warranty.

	SHIELDED	NOT SHIELDED
NOMINAL SWITCHING DISTANCE (Sn)	4 mm	8 mm
NOMINAL VOLTAGE	24 ÷ 230 VAC (-15/+10%)	
NET FREQUENCY	50 ÷ 60 Hz	
HYSTERESIS	< 10%	
MAX. OUTPUT CURRENT	300 mA	
MIN. OUTPUT CURRENT	20 mA	
MAX. CURRENT PEAK (20 ms)	1,5 A	
RESIDUAL CURRENT	< 1 mA	
VOLTAGE DROP (Sensor ON)	< 6 V (I = 100 mA)	
OPERATION LED	Yellow	
SWITCHING FREQUENCY	12 Hz	
START UP DELAY	≤ 300 ms	
REPEATABILITY	≤ 3%	
TEMPERATURE LIMITS	-25 ÷ +70 °C	
PROTECTION DEGREE	IP 67	
CABLE LENGTH	2 m	
CABLE SECTION	2 x 0.25 mm <sup>2</sup>	
HOUSING MATERIAL	Nickel-plated brass	
WEIGHT - Cable output -	110 g	
WEIGHT - K connector output -	60 g	

### Connection with connector M12 (K)



View of quadripole male connector.

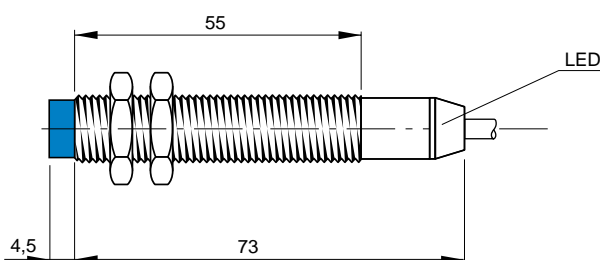
### CONTACTS CONFIGURATION

Available	Contacts numbers			
	1	2	3	4
(NO or NC)	L		N	

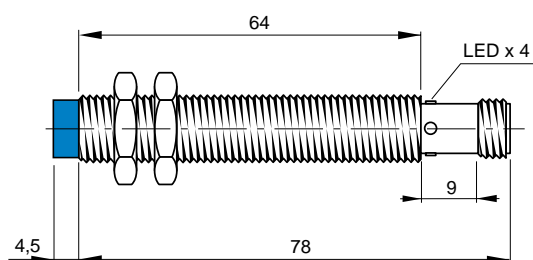
**Note:** The K plug is compatible with the following connectors VAUDEHA, BINDER, HIRSCHMANN, LUMBERG, AMPHENOL-TUCHEL.

### Dimensions (mm)

CONFIGURATION WITH CABLE



CONFIGURATION WITH CONNECTOR K



**Note:** the front part il blue refers to not shielded models