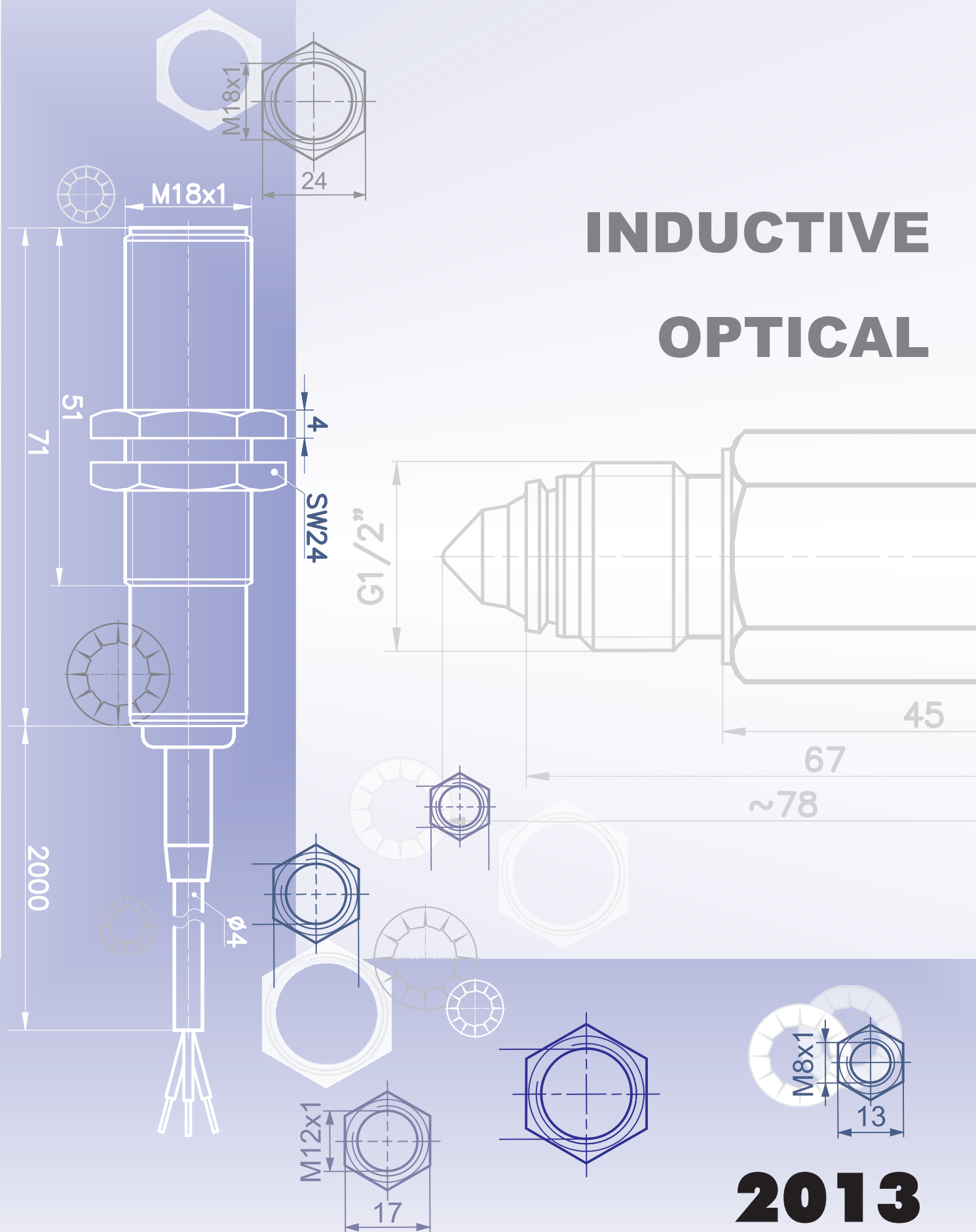


INDUCTIVE OPTICAL



PRODUCT CATALOGUE

PROXIMITY SWITCHES - INDUCTIVE AND OPTICAL

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INFORMATION ABOUT THE COMPANY

COMPANY

The company PLOSKON AT is an innovative enterprise with operations worldwide. The abbreviation AT means Parts for Automation. The centre of company's activities is in development, production and sales of the high-quality sensor technique for industrial use.

PLOSKON AT has been dealing with inductive proximity switches for more than 20 years. Today, as a specialist in this field we are able to offer you wide production programme.

The company domicile is situated in Prešov, Slovak Republic.



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The company PLOSKON AT has been established in the year 1990. Its activities and development are directed according to the simple idea of harmonizing of production processes and boosting productivity while preserving the lowest possible production costs at the same time. Our production effectivity is based on economically paying production management methods.

All our products and our developments are customer orientated. We also get benefit from the practical experience acquired from the direct contact with the customers ourselves. The knowledge acquired in this manner is then used e.g. in development of new products.

Of course, we put a lot of time and attention to the customer consultations, which are important just by the challenging projects and products.

After all, a short phone call is not enough when it comes to the problem resolution.

We are watching new trends in automation and respond to them quickly and flexibly. By means of our ability to concentrate on the core of our knowledge we are able to consider requirements of the market quickly and offer "tailored" solutions to almost every request.

It is obvious for us to keep the quality and reliability of our products at the highest level possible, which is guaranteed by the high-tech production process as well as by the advanced quality assurance system.

Your ideas can be put into life only with the right partner on your side. Long-term experience in development and production of inductive proximity sensors make PLOSKON AT to be a competent and reliable partner that offers you besides other things also certainty by means of customer service and customer care included. We go along with you from the first contact till successful

RESEARCH AND DEVELOPMENT

New products are created in close cooperation with their users. That is why we are mostly ahead in development of our products and are able to concentrate on actual requirements of the market as well as realize special ideas of our customers. There are plenty of eloquent examples in proof of abilities of our research and development team.

COMPANY OBJECTIVES

Company PLOSKON AT thinks of its customers as partners and is always interested in long-term cooperation. That is why we always involve our complete know-how to find the best possible solution for you. We keep continuing to act in favour of our customers, because this is the way how the best solutions, both technically and economically, originate.

YOUR SUCCESS IS OUR OBJECTIVE

Inductive proximity switches are used for the monitoring of the presence of metal objects. They function as contact less substitution for the mechanical limit switches.

An inductive proximity switch is based on the **principle** of the resonance circuit quality changes. The switch consists of the following basic units: an oscillator, a detector, a trigger circuit, a power amplifier stage and protective circuits. An incorporated LC resonant circuit of the oscillator generates an electromagnetic scattered field. The field forms around active face a spatially limited zone that is considered to be the active switching zone (see Figure 1).

If an electrically conductive object is placed

within the active switching zone, the eddy currents induced in the object extract energy from the oscillator. As a result, a reduction in the oscillation amplitude occurs and the oscillator becomes damped.

If the conductive object is removed from the active switching zone, the oscillation is restored. Two states are possible: the oscillator oscillates (no conductive object present in the active switching zone), or the oscillator does not oscillate (a conductive object present in the active switching zone). These states can be electronically evaluated.

Depending on the switch mode (normally open/normally closed), the output closes or opens, when the conductive object approaching the active switching zone.

TECHNICAL TERMS

Supply voltage U_c

Voltage range required by the switch to maintain its proper function.

Nominal voltage U_n

The supply voltage value at which all the other parameters are defined.

Supply current I_c

The current consumed by the switch from a power supply at the nominal voltage and the ambient temperature of 20 °C. It is the switch intrinsic consumption and does not include the current intensity flowing through the switch output.

Output current I_z

The current that can be taken from the output. If the switch is short-circuit proof, the output current value can double at short-circuit.

Nominal sensing distance S_n

An electrically conductive object can approach the active switching zone in the axial (direction of the axis) or in the lateral direction (perpendicular to the switch axis). The nominal sensing distance is the distance between the switch active face and the axially approaching conductive object at which the output state changes. It is defined at the nominal voltage and the ambient temperature of 20 °C by using a 1mm thick target of 11 370 grade steel with the surface equal the switch active face.

Effective sensing distance S_r

Considering the tolerance of the components used for the switch manufacture, the sensing distance values differ and are delimited by the effective sensing distance. It is measured according to the norm IEC 947-5-2 at nominal voltage and nominal ambient temperature. In our sensors the effective sensing distance usually ranges as follows: $0,8 \times S_n < S_r < 1,2 \times S_n$

Hysteresis S_a

The difference between the operate (switch on) and release (switch off) point is called hysteresis. It is defined in the axial direction, at the nominal voltage and the ambient temperature of 20 °C. Figure 2 gives the trigger curves and the hysteresis of the PSI 126 311 switch. Other switch type curves are almost identical; they differ only quantitatively.

Switching frequency f_t

This frequency indicates the maximum number of switching operations per second. Figure 3 shows method of determining the maximum switching frequency.

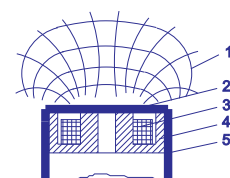
Operating temperature T_a

It is the ambient temperature range at which the reliable switch function is warranted.

Switch connection

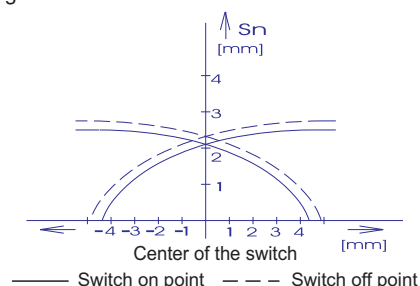
The output device is NPN or PNP transistor.

Fig. 1



- 1 - Active switching zone
- 2 - Active surface
- 3 - Switch coil
- 4 - Ferrite core
- 5 - Switch body

Fig. 2

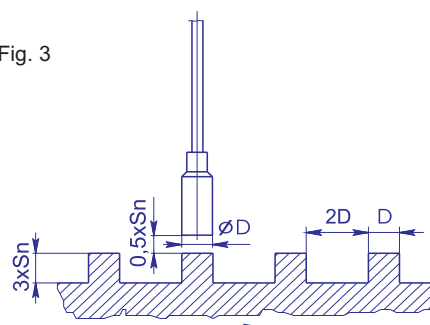


Sensing distance correction factors

ST 37-1,0 x S_n ; steel-cca 1,0x S_n ; chrome nickel-cca 0,9x S_n ; brass-cca 0,5x S_n ; aluminium-cca 0,45x S_n ; copper-cca 0,4x S_n .

Also different dimensions and thickness of the target can influence the sensing distance of the sensor.

Fig. 3

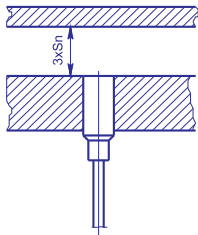
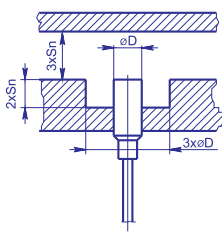


Operation
Operation of the sensors is maintenance-free. For a fault free operation it is however necessary to keep the following principles: Surfaces of the active switching zone have to be kept free, clean. It is necessary to prevent sediments and other foreign particles from touching and setting up the active surface of the sensor, especially when mounted in upright position (active surface upwards). High electromagnetic field intensity devices (e.g. radiophone) must not be used in the immediate vicinity of the sensors.

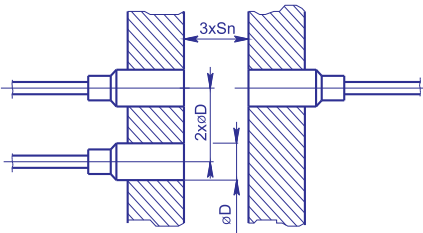
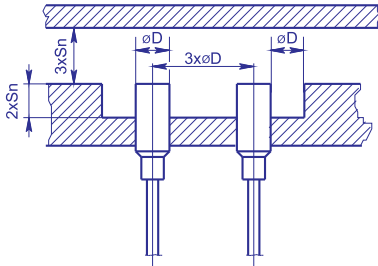
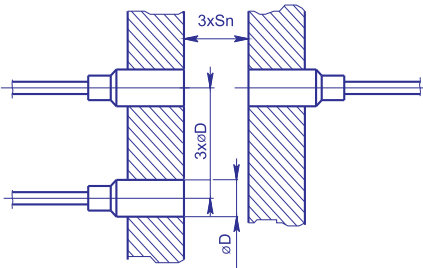
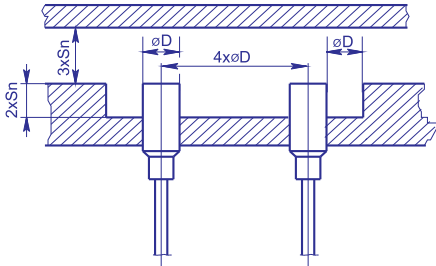
Assembly of cylindrical sensors without thread
Non-threaded cylindrical sensors are mounted with help of clamps.

Assembly of cylindrical sensors with thread
When assembled, threaded cylindrical sensors are placed into the fixation support where they are fastened by enclosed mounting nuts. If the thread in the fixation support is longer than the length of the thread of the sensor, it is recommended to drill a blind hole.

Assembly instructions for the cylindrical sensors
When mounting the cylindrical sensors into the metal it is necessary, in accordance with the standard EN 50008, to keep up to the following instructions for the flush and non-flush mounting:

FLUSH MOUNTING	NON-FLUSH MOUNTING
<div></div> <div>The flush sensor is not sensitive to the neighbouring conductive objects placed at the side of the sensor. It can be fully let into the metal.</div> <div>flush mounting</div>	<div></div> <div>The non-flush sensor is sensitive to the neighbouring conductive objects placed at the side of the sensor. It is necessary to keep to the mounting instructions in the picture when mounted into the metal.</div> <div>non-flush mounting</div>

When mounting cylindrical sensors of the same kind into the parallel connection, minimum distances among the sensors have to be observed:

<div>Flush mounting for the PSI / PAS series</div> <div></div>	<div>Non-flush mounting for the PSI / PAS series</div> <div></div>
<div>Flush mounting for the PDI series</div> <div></div>	<div>Non-flush mounting for the PDI series</div> <div></div>

UNWEAVE VOLTAGE

Sensors are protected from unweave voltage peaks. But if the higher values of unweave voltage are brought about by the customer, the power cable and the cable of the sensor must not touch each other.

TECHNICAL

INFORMATION

RESISTANCE TO ELECTROMAGNETIC INTERFERENCE

The switch operation cannot be totally eliminated from the effects of electro-magnetic interference. It can affect switch circuit:

- through air and the resonance circuit coil
- through the device structure and the switch case capacitive coupling
- through the supply connection.

To avoid the electromagnetic interference, the switch circuit is provided with a filter which also affects the switching frequency of the switch. In general, resistance to electromagnetic interference is indirectly proportional to the switching frequency.

The switches of this catalogue are available as:

- basic models
- high-speed switches (the letter F follows the basic order reference number)
- low-speed switches (the letter S follows the basic order reference number)

CONNECTION OF A SWITCH TO AN ELECTRIC CIRCUIT

Switch connection must meet the high protection standard required and resist the high operation temperatures. The proximity switches specified in this catalogue are delivered with $2 \times 0,25 \text{ mm}^2$, $3 \times 0,25 \text{ mm}^2$ or $4 \times 0,25 \text{ mm}^2$ PVC cable in length of 2 m. This type meets the IP 68 enclosure class. Upon request, the switches are provided with a longer lead-in cable (scaled by 0.5 m).

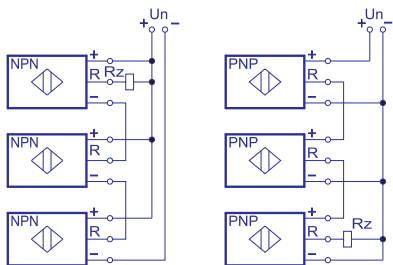
PUR cables are recommended for demanding applications.

The quick-disconnect version is provided with the connector type complying with the IP 67 enclosure class.

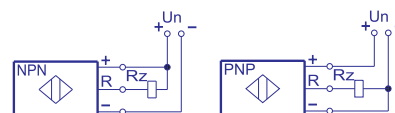
CONNECTION OF SENSORS

SERIES CONNECTION OF 3-WIRE SENSORS

Voltage drop in interconnected devices is added together. As a consequence less voltage is available. Each sensor has to be able to switch over current consumption of all subsequently connected sensors in addition to the current of the load. Switch off / switch on of one of the sensors will cause all other sensors to switch off / switch on. Switch on delays are also added together; consequently it is necessary to take account of the delay up to 100 ms.

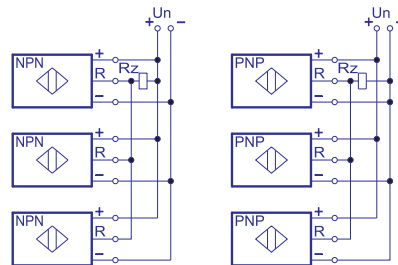


CONNECTION OF NPN and PNP OUTPUTS



PARALLEL CONNECTION OF 3-WIRE SENSORS

Current input of all non-connected sensors is added together. Sensors can be used together with the use of mechanical switches.



EXAMPLE OF SENSOR MARKING

Series _____ **PSI 126 311 F**
 Mechanical data _____
 Electrical data _____
 Switching frequency (-, S, F) _____

SERIES OF SENSORS

PAS - series with standard switching distance
PDI - series with double switching distance **CE**
PSI - series with standard switching distance **CE**

STANDARDS AND LICENCES / ELECTROMAGNETIC COMPATIBILITY/ ROHS

Sensors of the company PLOSKON AT are developed, manufactured and tested in accordance to the valid standards and regulations. They conform to the currently valid IEC regulations, EN standards and DIN VDE regulations, e.g.:



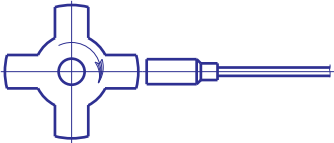
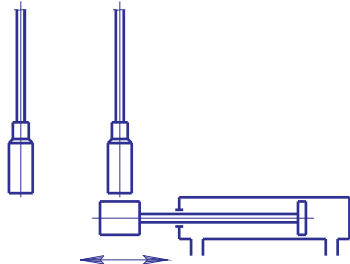
- European Standard No. **EN 609 47 - 5 - 2** of October 1, 1997 and **EMC** Directive No. 89/336/EEC (relating to the electromagnetic compatibility); sensors are also being manufactured in accordance with safety and health provisions related to the design and construction of electrical devices.
 - Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment 2002/95/EC[1] (commonly referred to as **RoHS** or the Restriction of Hazardous Substances Directive) that was adopted on January 23, 2003 by the European Union.

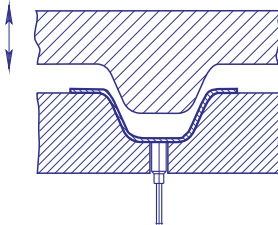
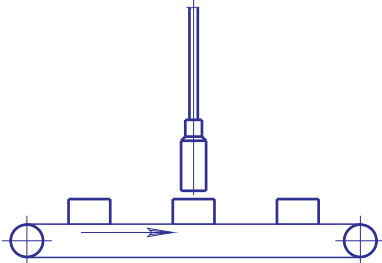
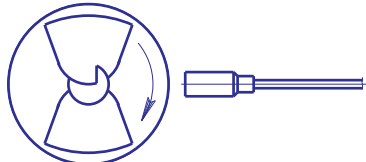


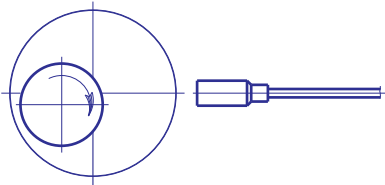
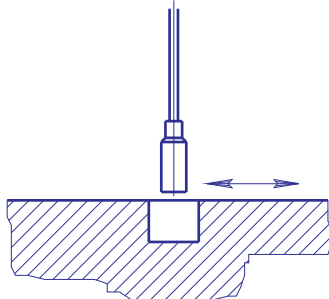
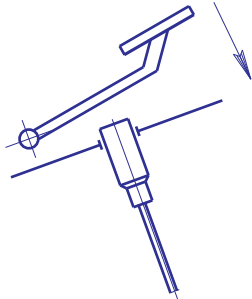
APPLICATIONS



Inductive proximity switches can be used for the sensing of the following objects and phenomena:

ROTATION CONTROL	LINEAR MOTION
	
Rotation control. The number of positions can be determined by the number of projections.	Linear motion detection, e. g. a piston position in a cylinder.

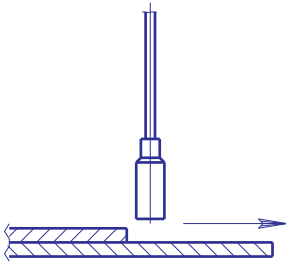
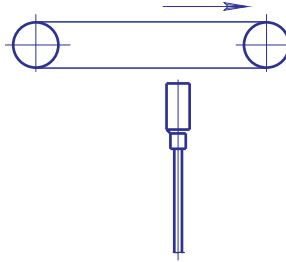
PRESS WORK PRESENCE	PRODUCTS ON A CONVEYOR	TURBINE REVOLUTIONS
		
Detection of press work presence in a device.	Products detection on a conveyor, e. g. counting, form/position detection.	Sensing of turbine revolutions.

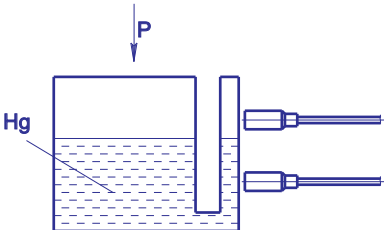
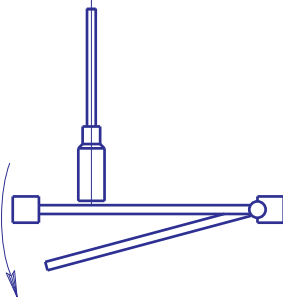
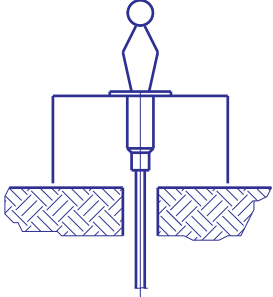
REVOLUTIONS	APPERTURE	SWITCH POSITION
		
Sensing of revolutions by an eccentrically located cylinder.	Detection of an aperture in material.	Switch position detection. E. g. a foot pedal in heavy-duty operation conditions.

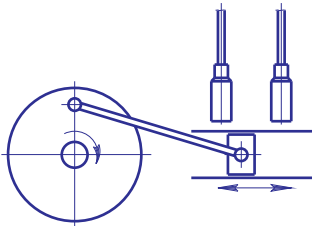
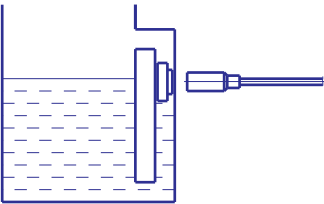
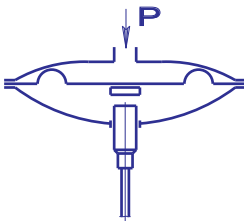
APPLICATIONS



Inductive proximity switches can be used for the sensing of the following objects and phenomena:

MATERIAL THICKNESS	CHAIN SAG
 <p>Material thickness measurement, e. g. double sheet control.</p>	 <p>Detection for a chain sag and chain wear.</p>

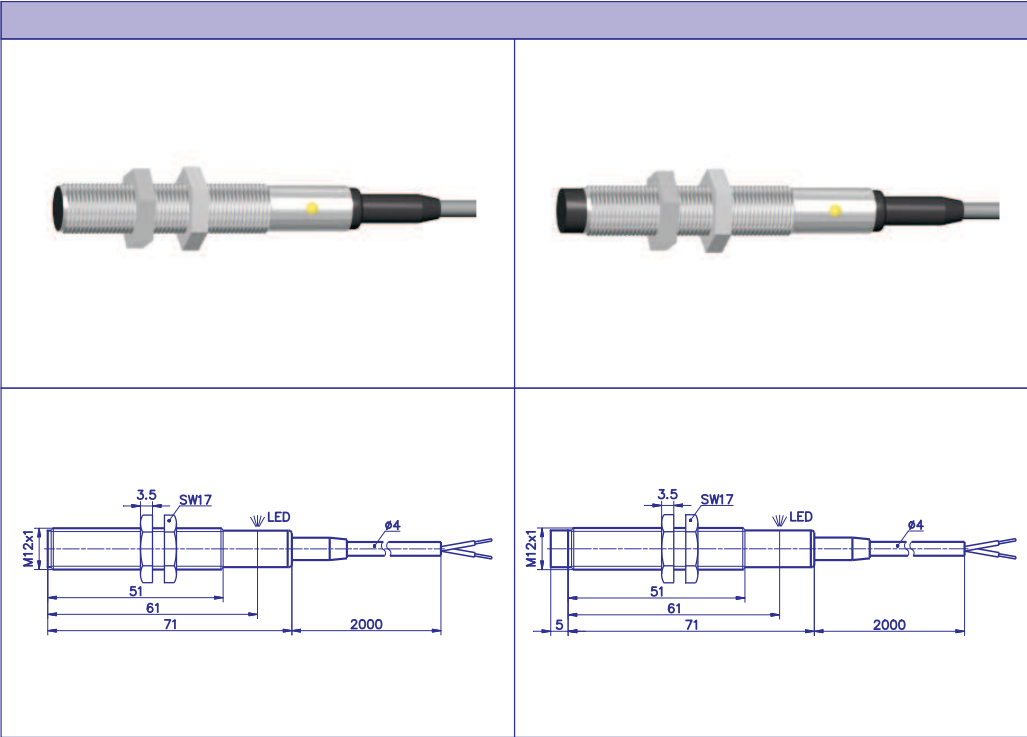
PRESSURE	DOOR POSITION	OBJECT PRESENCE
 <p>Pressure control by mercury level monitoring.</p>	 <p>Door position detection, e. g. rooms, lockers, safe-deposit boxes protection.</p>	 <p>Sensing of object presence, e. g. protection of exhibits.</p>

ROTARY MOTION	LIQUID LEVEL	PRESSURE
 <p>Detection of rotary motion converted to linear motion.</p>	 <p>Liquid level control by a float.</p>	 <p>By means of a suitable gearing there is a possibility of a precise pressure monitoring.</p>

PSI Series

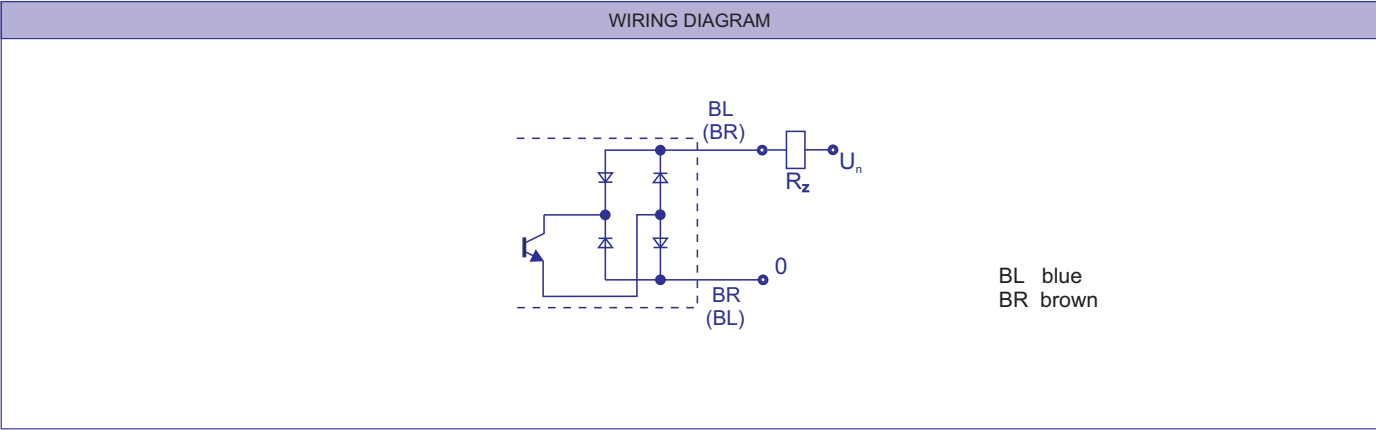
2-wire

M12



TECHNICAL PARAMETERS			
NOMINAL SENSING DISTANCE	Sn	2,5 mm	3,5 mm
EFFECTIVE SENSING DISTANCE	Sr	2 - 3 mm	3 - 4 mm
HOUSING		M12	M12
MATERIAL OF THE HOUSING		nickel plated brass	nickel plated brass
SWITCHING FREQUENCY	ft	20 Hz	20 Hz
HYSTERESIS	Sa	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn
NOMINAL VOLTAGE	Un	230 VAC	230 VAC
SUPPLY VOLTAGE	Uc	20 - 250 VAC	20 - 250 VAC
VOLTAGE DROP	U _{SAT}	11 V	11 V
MINIMUM LOAD CURRENT	Iz _{MIN}	9 mA	9 mA
MAXIMUM LOAD CURRENT	Iz _{MAX}	250 mA	250 mA
AMBIENT TEMPERATURE RANGE	T	-25°C...+70°C	-25°C...+70°C
PROTECTION STANDARD		IP 68	IP 68
CONNECTION TYPE		cablc PVC 2 x 0,25 mm ² ; 2m	cablc PVC 2 x 0,25 mm ² ; 2m
MOUNTING		flush	non-flush

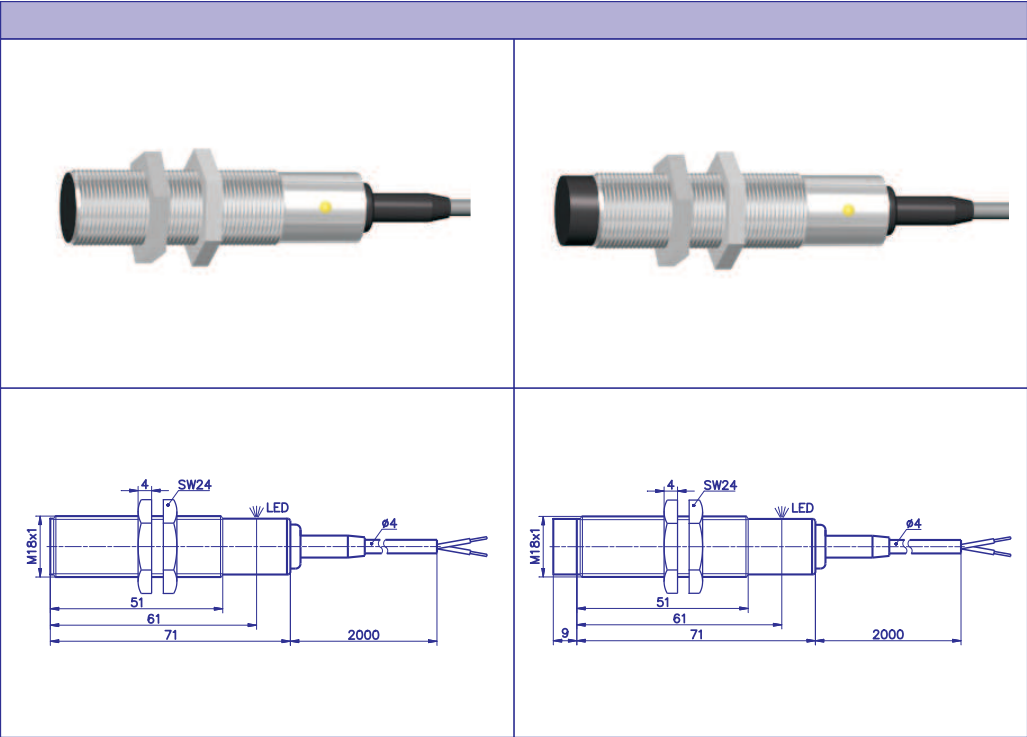
ORDER REFERENCE NUMBER		
OUTPUT	FLUSH	NON-FLUSH
n.o.	PSI 126 369	PSI 128 369
n.c.	PSI 126 360	PSI 128 360



PSI Series

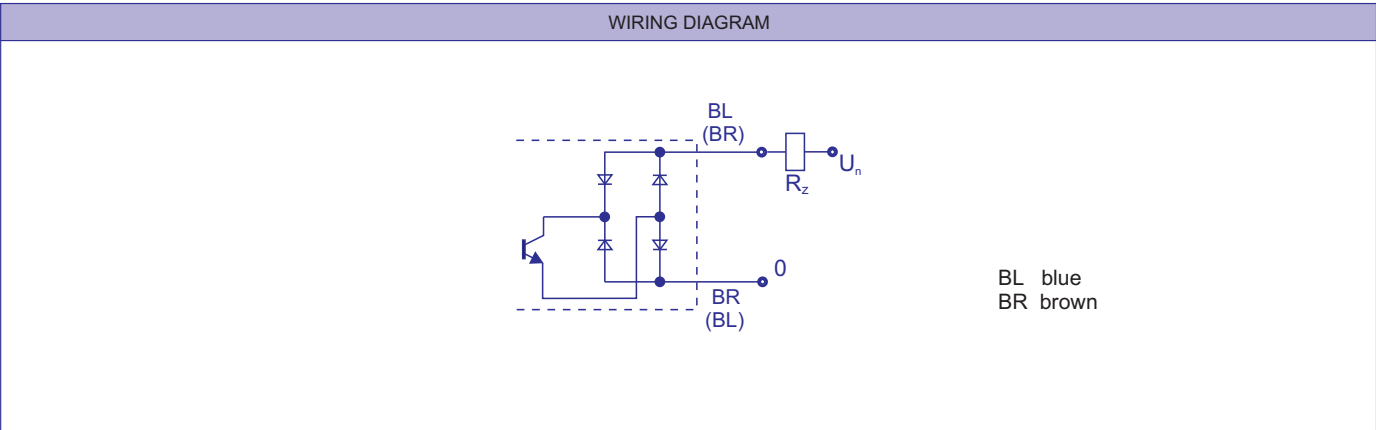
2-wire

M18



		TECHNICAL PARAMETERS	
NOMINAL SENSING DISTANCE	Sn	5 mm	8 mm
EFFECTIVE SENSING DISTANCE	Sr	4 - 6 mm	6 - 10 mm
HOUSING		M18	M18
MATERIAL OF THE HOUSING		nickel plated brass	nickel plated brass
SWITCHING FREQUENCY	ft	20 Hz	20 Hz
HYSTERESIS	Sa	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn
NOMINAL VOLTAGE	Un	230 VAC	230 VAC
SUPPLY VOLTAGE	Uc	20 - 250 VAC	20 - 250 VAC
VOLTAGE DROP	U _{SAT}	11 V	11 V
MINIMUM LOAD CURRENT	I _{ZMIN}	9 mA	9 mA
MAXIMUM LOAD CURRENT	I _{ZMAX}	250 mA	250 mA
AMBIENT TEMPERATURE RANGE	T	-25°C...+70°C	-25°C...+70°C
PROTECTION STANDARD		IP 68	IP 68
CONNECTION TYPE		cablе PVC 2 x 0,25 mm ² ; 2m	cablе PVC 2 x 0,25 mm ² ; 2m
MOUNTING		flush	non-flush

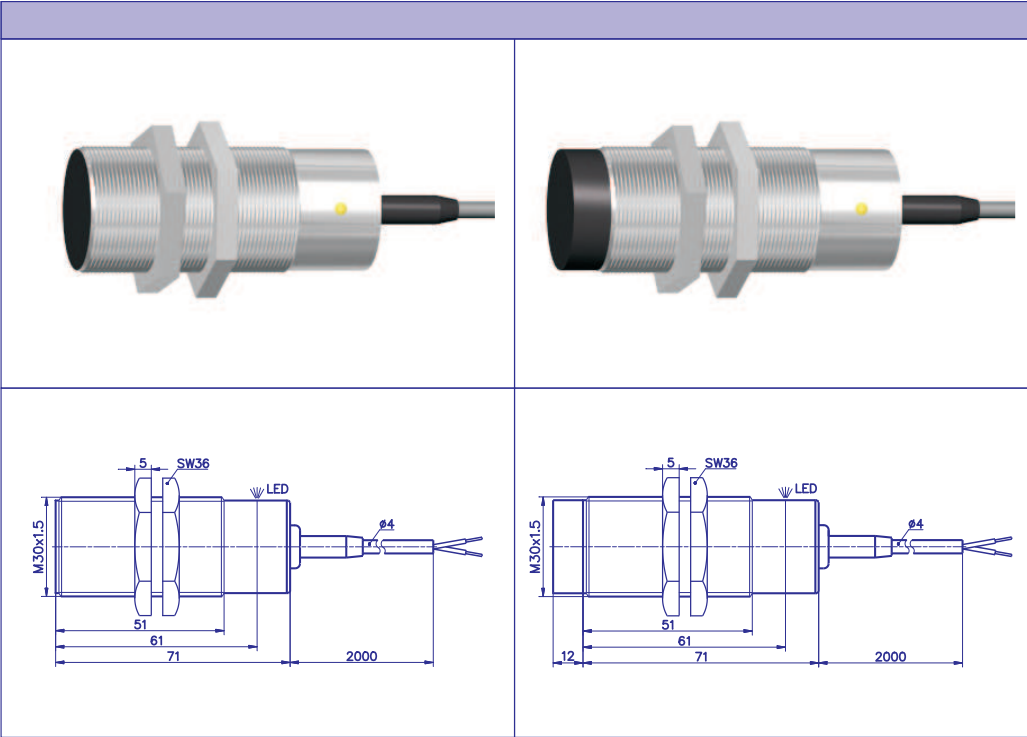
		ORDER REFERENCE NUMBER	
OUTPUT		FLUSH	NON-FLUSH
n.o.		PSI 186 369	PSI 188 369
n.c.		PSI 186 360	PSI 188 360



PSI Series

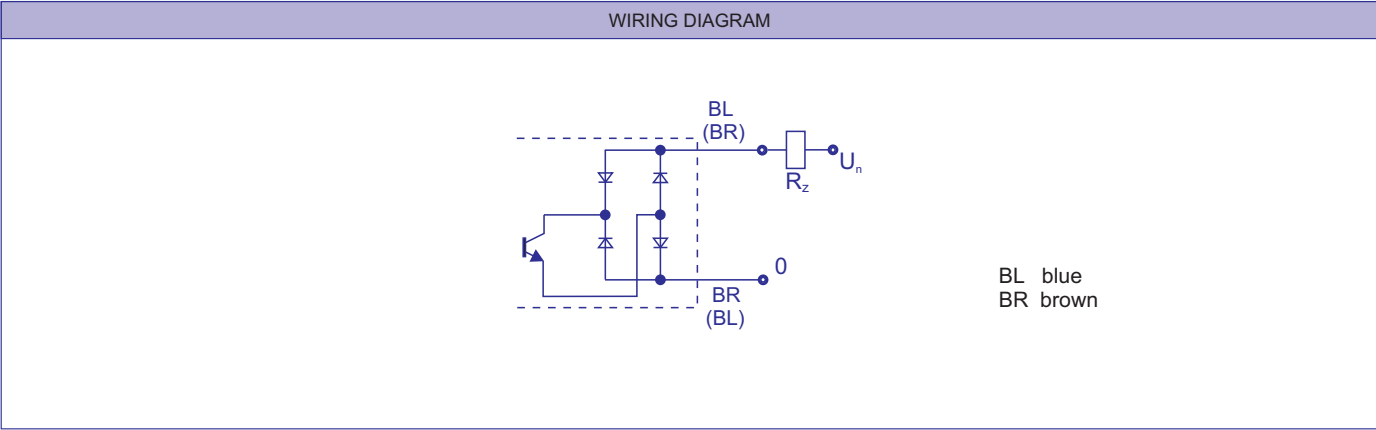
2-wire

M30



TECHNICAL PARAMETERS			
NOMINAL SENSING DISTANCE	Sn	10 mm	15 mm
EFFECTIVE SENSING DISTANCE	Sr	8 - 12 mm	12 - 18 mm
HOUSING		M30	M30
MATERIAL OF THE HOUSING		nickled plated brass	nickled plated brass
SWITCHING FREQUENCY	ft	20 Hz	20 Hz
HYSTERESIS	Sa	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn
NOMINAL VOLTAGE	Un	230 VAC	230 VAC
SUPPLY VOLTAGE	Uc	20 - 250 VAC	20 - 250 VAC
VOLTAGE DROP	U _{SAT}	11 V	11 V
MINIMUM LOAD CURRENT	I _{ZMIN}	9 mA	9 mA
MAXIMUM LOAD CURRENT	I _{ZMAX}	250 mA	250 mA
AMBIENT TEMPERATURE RANGE	T	-25°C...+70°C	-25°C...+70°C
PROTECTION STANDARD		IP 68	IP 68
CONNECTION TYPE		cablе PVC 2 x 0,25 mm ² ; 2m	cablе PVC 2 x 0,25 mm ² ; 2m
MOUNTING		flush	non-flush

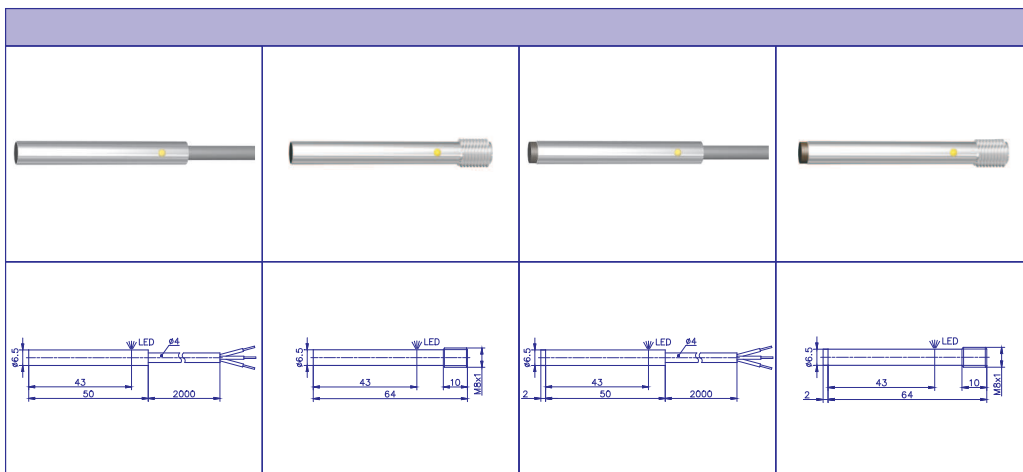
ORDER REFERENCE NUMBER		
OUTPUT	FLUSH	NON-FLUSH
n.o.	PSI 306 369	PSI 308 369
n.c.	PSI 306 360	PSI 308 360



PDI Series

3-wire

ø 6,5



TECHNICAL PARAMETERS					
NOMINAL SENSING DISTANCE	Sn	2 mm	2 mm	3 mm	3 mm
EFFECTIVE SENSING DISTANCE	Sr	1,6 - 2,4 mm	1,6 - 2,4 mm	2,4 - 3,6 mm	2,4 - 3,6 mm
HOUSING		ø 6,5	ø 6,5	ø 6,5	ø 6,5
MATERIAL OF THE HOUSING		nickel plated brass	nickel plated brass	nickel plated brass	nickel plated brass
MOUNTING		flush	flush	non-flush	non-flush
HYSTERESIS	Sa	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn
NOMINAL VOLTAGE	Un	24 VDC	24 VDC	24 VDC	24 VDC
SUPPLY VOLTAGE	Uc	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
SUPPLY CURRENT	Ic	< 10 mA	< 10 mA	< 10 mA	< 10 mA
OUTPUT CURRENT	Iz	< 200 mA	< 200 mA	< 200 mA	< 200 mA
AMBIENT TEMPERATURE RANGE	T	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C
PROTECTION STANDARD		IP 68	IP 67	IP 68	IP 67
CONNECTION TYPE		cable PVC 3 x 0,25 mm ² ; 2m	connector M8	cable PVC 3 x 0,25 mm ² ; 2m	connector M8

		ORDER REFERENCE NUMBER				
OUTPUT	SWITCHING FREQUENCY	ft	CABLE VERSION	CONNECTOR VERSION	CABLE VERSION	CONNECTOR VERSION
NPN n.o.	normal		PDI 061 311	PDI 061 411	PDI 063 311	PDI 063 411
	slow	S	PDI 061 311 S	PDI 061 411 S	PDI 063 311 S	PDI 063 411 S
NPN n.c.	normal		PDI 061 312	PDI 061 412	PDI 063 312	PDI 063 412
	slow	S	PDI 061 312 S	PDI 061 412 S	PDI 063 312 S	PDI 063 412 S
PNP n.o.	normal		PDI 061 313	PDI 061 413	PDI 063 313	PDI 063 413
	slow	S	PDI 061 313 S	PDI 061 413 S	PDI 063 313 S	PDI 063 413 S
PNP n.c.	normal		PDI 061 314	PDI 061 414	PDI 063 314	PDI 063 414
	slow	S	PDI 061 314 S	PDI 061 414 S	PDI 063 314 S	PDI 063 414 S

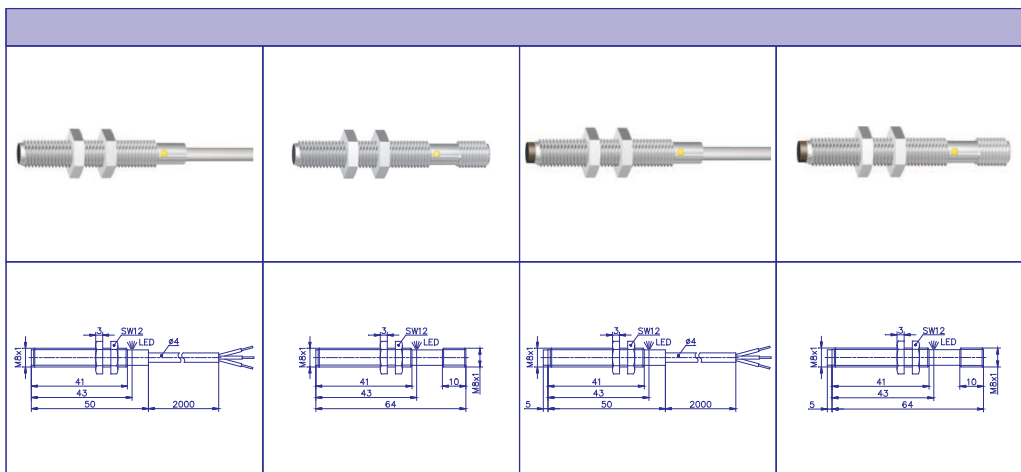
	SWITCHING FREQUENCY			
normal	500 Hz	500 Hz	200 Hz	200 Hz
slow S	50 Hz	50 Hz	50 Hz	50 Hz

WIRING DIAGRAM				
BR - brown S - black BL - blue	NPN n.o.	NPN n.c.	PNP n.o.	PNP n.c.

PDI Series

3-wire

M8



		TECHNICAL PARAMETERS			
NOMINAL SENSING DISTANCE	Sn	2 mm	2 mm	3 mm	3 mm
EFFECTIVE SENSING DISTANCE	Sr	1,6 - 2,4 mm	1,6 - 2,4 mm	2,4 - 3,6 mm	2,4 - 3,6 mm
HOUSING		M8	M8	M8	M8
MATERIAL OF THE HOUSING		nickel plated brass	nickel plated brass	nickel plated brass	nickel plated brass
MOUNTING		flush	flush	non-flush	non-flush
HYSTERESIS	Sa	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn
NOMINAL VOLTAGE	Un	24 VDC	24 VDC	24 VDC	24 VDC
SUPPLY VOLTAGE	Uc	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
SUPPLY CURRENT	Ic	< 10 mA	< 10 mA	< 10 mA	< 10 mA
OUTPUT CURRENT	Iz	< 200 mA	< 200 mA	< 200 mA	< 200 mA
AMBIENT TEMPERATURE RANGE	T	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C
PROTECTION STANDARD		IP 68	IP 67	IP 68	IP 67
CONNECTION TYPE		cable PVC 3 x 0,25 mm ² ; 2m	connector M8	cable PVC 3 x 0,25 mm ² ; 2m	connector M8

		ORDER REFERENCE NUMBER			
OUTPUT	SWITCHING FREQUENCY ft	CABLE VERSION	CONNECTOR VERSION	CABLE VERSION	CONNECTOR VERSION
NPN n.o.	normal	PDI 085 311	PDI 085 411	PDI 087 311	PDI 087 411
	slow S	PDI 085 311 S	PDI 085 411 S	PDI 087 311 S	PDI 087 411 S
NPN n.c.	normal	PDI 085 312	PDI 085 412	PDI 087 312	PDI 087 412
	slow S	PDI 085 312 S	PDI 085 412 S	PDI 087 312 S	PDI 087 412 S
PNP n.o.	normal	PDI 085 313	PDI 085 413	PDI 087 313	PDI 087 413
	slow S	PDI 085 313 S	PDI 085 413 S	PDI 087 313 S	PDI 087 413 S
PNP n.c.	normal	PDI 085 314	PDI 085 414	PDI 087 314	PDI 087 414
	slow S	PDI 085 314 S	PDI 085 414 S	PDI 087 314 S	PDI 087 414 S

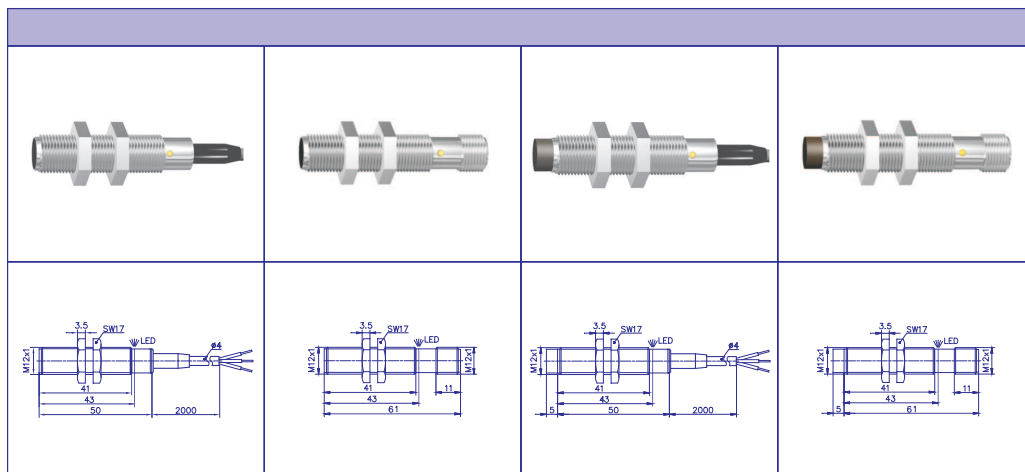
		SWITCHING FREQUENCY			
normal		500 Hz	500 Hz	200 Hz	200 Hz
slow	S	50 Hz	50 Hz	50 Hz	50 Hz

WIRING DIAGRAM				
<p>BR - brown S - black BL - blue</p> <p>NPN n.o.</p>	<p>NPN n.c.</p>	<p>PNP n.o.</p>	<p>PNP n.c.</p>	

PDI Series

3-wire

M12



TECHNICAL PARAMETERS					
NOMINAL SENSING DISTANCE	Sn	5 mm	5 mm	8 mm	8 mm
EFFECTIVE SENSING DISTANCE	Sr	4 - 6 mm	4 - 6 mm	6 - 10 mm	6 - 10 mm
HOUSING		M12	M12	M12	M12
MATERIAL OF THE HOUSING		nickel plated brass	nickel plated brass	nickel plated brass	nickel plated brass
MOUNTING		flush	flush	non-flush	non-flush
HYSTERESIS	Sa	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn
NOMINAL VOLTAGE	Un	24 VDC	24 VDC	24 VDC	24 VDC
SUPPLY VOLTAGE	Uc	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
SUPPLY CURRENT	Ic	< 10 mA	< 10 mA	< 10 mA	< 10 mA
OUTPUT CURRENT	Iz	< 200 mA	< 200 mA	< 200 mA	< 200 mA
AMBIENT TEMPERATURE RANGE	T	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C
PROTECTION STANDARD		IP 68	IP 67	IP 68	IP 67
CONNECTION TYPE		cable PVC 3 x 0,25 mm ² ; 2m	connector M12	cable PVC 3 x 0,25 mm ² ; 2m	connector M12

		ORDER REFERENCE NUMBER				
OUTPUT	SWITCHING FREQUENCY	ft	CABLE VERSION	CONNECTOR VERSION	CABLE VERSION	CONNECTOR VERSION
NPN n.o.	normal		PDI 126 311	PDI 126 411	PDI 128 311	PDI 128 411
	slow	S	PDI 126 311 S	PDI 126 411 S	PDI 128 311 S	PDI 128 411 S
NPN n.c.	normal		PDI 126 312	PDI 126 412	PDI 128 312	PDI 128 412
	slow	S	PDI 126 312 S	PDI 126 412 S	PDI 128 312 S	PDI 128 412 S
PNP n.o.	normal		PDI 126 313	PDI 126 413	PDI 128 313	PDI 128 413
	slow	S	PDI 126 313 S	PDI 126 413 S	PDI 128 313 S	PDI 128 413 S
PNP n.c.	normal		PDI 126 314	PDI 126 414	PDI 128 314	PDI 128 414
	slow	S	PDI 126 314 S	PDI 126 414 S	PDI 128 314 S	PDI 128 414 S

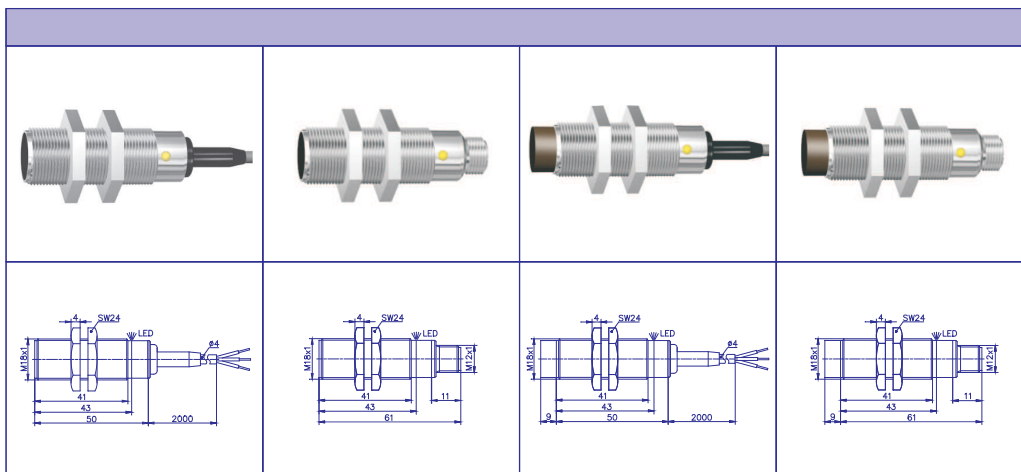
	SWITCHING FREQUENCY			
normal	500 Hz	500 Hz	200 Hz	200 Hz
slow S	50 Hz	50 Hz	50 Hz	50 Hz

WIRING DIAGRAM				
BR - brown S - black BL - blue	NPN n.o.	NPN n.c.	PNP n.o.	PNP n.c.

PDI Series

3-wire

M18



		TECHNICAL PARAMETERS			
NOMINAL SENSING DISTANCE	Sn	10 mm	10 mm	16 mm	16 mm
EFFECTIVE SENSING DISTANCE	Sr	8 - 12 mm	8 - 12 mm	12 - 20 mm	12 - 20 mm
HOUSING		M18	M18	M18	M18
MATERIAL OF THE HOUSING		nickel plated brass	nickel plated brass	nickel plated brass	nickel plated brass
MOUNTING		flush	flush	non-flush	non-flush
HYSTERESIS	Sa	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn
NOMINAL VOLTAGE	Un	24 VDC	24 VDC	24 VDC	24 VDC
SUPPLY VOLTAGE	Uc	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
SUPPLY CURRENT	Ic	< 10 mA	< 10 mA	< 10 mA	< 10 mA
OUTPUT CURRENT	Iz	< 200 mA	< 200 mA	< 200 mA	< 200 mA
AMBIENT TEMPERATURE RANGE	T	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C
PROTECTION STANDARD		IP 68	IP 67	IP 68	IP 67
CONNECTION TYPE		cable PVC 3 x 0,25 mm ² ; 2m	connector M12	cable PVC 3 x 0,25 mm ² ; 2m	connector M12

		ORDER REFERENCE NUMBER			
OUTPUT	SWITCHING FREQUENCY ft	CABLE VERSION	CONNECTOR VERSION	CABLE VERSION	CONNECTOR VERSION
NPN n.o.	normal	PDI 186 311	PDI 186 411	PDI 188 311	PDI 188 411
	slow S	PDI 186 311 S	PDI 186 411 S	PDI 188 311 S	PDI 188 411 S
NPN n.c.	normal	PDI 186 312	PDI 186 412	PDI 188 312	PDI 188 412
	slow S	PDI 186 312 S	PDI 186 412 S	PDI 188 312 S	PDI 188 412 S
PNP n.o.	normal	PDI 186 313	PDI 186 413	PDI 188 313	PDI 188 413
	slow S	PDI 186 313 S	PDI 186 413 S	PDI 188 313 S	PDI 188 413 S
PNP n.c.	normal	PDI 186 314	PDI 186 414	PDI 188 314	PDI 188 414
	slow S	PDI 186 314 S	PDI 186 414 S	PDI 188 314 S	PDI 188 414 S

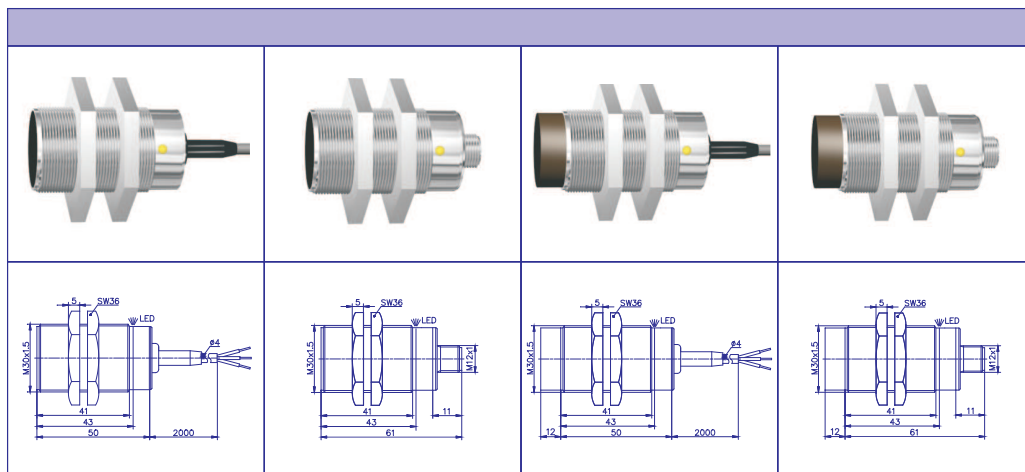
		SWITCHING FREQUENCY			
normal		200 Hz	200 Hz	100 Hz	100 Hz
slow	S	20 Hz	20 Hz	20 Hz	20 Hz

WIRING DIAGRAM				
BR - brown S - black BL - blue	NPN n.o.	NPN n.c.	PNP n.o.	PNP n.c.

PDI Series

3-wire

M30



TECHNICAL PARAMETERS					
NOMINAL SENSING DISTANCE	Sn	20 mm	20 mm	30 mm	30 mm
EFFECTIVE SENSING DISTANCE	Sr	16 - 24 mm	16 - 24 mm	24 - 36 mm	24 - 36 mm
HOUSING		M30	M30	M30	M30
MATERIAL OF THE HOUSING		nickel plated brass	nickel plated brass	nickel plated brass	nickel plated brass
MOUNTING		flush	flush	non-flush	non-flush
HYSTERESIS	Sa	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn
NOMINAL VOLTAGE	Un	24 VDC	24 VDC	24 VDC	24 VDC
SUPPLY VOLTAGE	Uc	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
SUPPLY CURRENT	Ic	< 10 mA	< 10 mA	< 10 mA	< 10 mA
OUTPUT CURRENT	Iz	< 200 mA	< 200 mA	< 200 mA	< 200 mA
AMBIENT TEMPERATURE RANGE	T	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C
PROTECTION STANDARD		IP 68	IP 67	IP 68	IP 67
CONNECTION TYPE		cable PVC 3 x 0,25 mm ² ; 2m	connector M12	cable PVC 3 x 0,25 mm ² ; 2m	connector M12

		ORDER REFERENCE NUMBER				
OUTPUT	SWITCHING FREQUENCY	ft	CABLE VERSION	CONNECTOR VERSION	CABLE VERSION	CONNECTOR VERSION
NPN n.o.	normal		PDI 306 311	PDI 306 411	PDI 308 311	PDI 308 411
	slow	S	PDI 306 311 S	PDI 306 411 S	PDI 308 311 S	PDI 308 411 S
NPN n.c.	normal		PDI 306 312	PDI 306 412	PDI 308 312	PDI 308 412
	slow	S	PDI 306 312 S	PDI 306 412 S	PDI 308 312 S	PDI 308 412 S
PNP n.o.	normal		PDI 306 313	PDI 306 413	PDI 308 313	PDI 308 413
	slow	S	PDI 306 313 S	PDI 306 413 S	PDI 308 313 S	PDI 308 413 S
PNP n.c.	normal		PDI 306 314	PDI 306 414	PDI 308 314	PDI 308 414
	slow	S	PDI 306 314 S	PDI 306 414 S	PDI 308 314 S	PDI 308 414 S

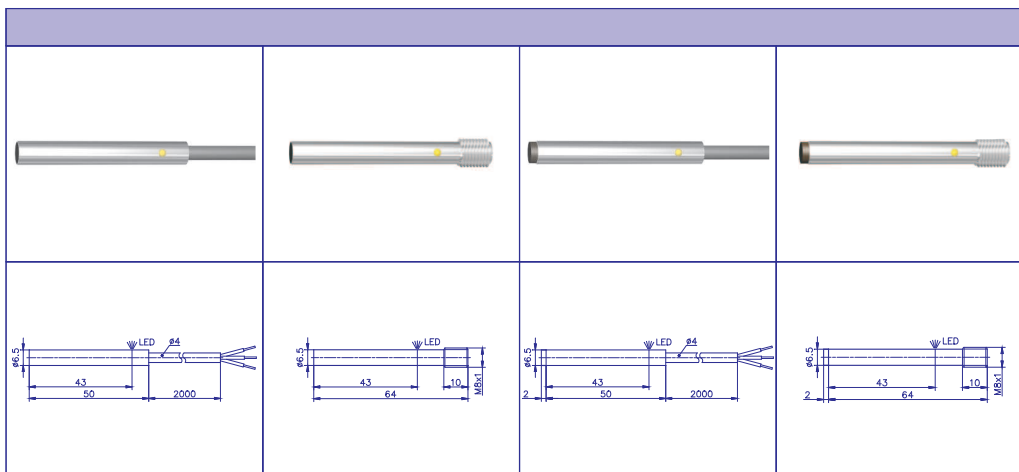
	SWITCHING FREQUENCY			
normal	100 Hz	100 Hz	50 Hz	50 Hz
slow S	20 Hz	20 Hz	20 Hz	20 Hz

WIRING DIAGRAM				
BR - brown S - black BL - blue	NPN n.o.	NPN n.c.	PNP n.o.	PNP n.c.

PSI Series

3-wire

ø 6,5



		TECHNICAL PARAMETERS			
NOMINAL SENSING DISTANCE	Sn	1 mm	1 mm	1,5 mm	1,5 mm
EFFECTIVE SENSING DISTANCE	Sr	0,8 - 1,2 mm	0,8 - 1,2 mm	1,2 - 1,8 mm	1,2 - 1,8 mm
HOUSING		ø 6,5	ø 6,5	ø 6,5	ø 6,5
MATERIAL OF THE HOUSING		nickel plated brass	nickel plated brass	nickel plated brass	nickel plated brass
MOUNTING		flush	flush	non-flush	non-flush
HYSTERESIS	Sa	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn
NOMINAL VOLTAGE	Un	24 VDC	24 VDC	24 VDC	24 VDC
SUPPLY VOLTAGE	Uc	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
SUPPLY CURRENT	Ic	< 10 mA	< 10 mA	< 10 mA	< 10 mA
OUTPUT CURRENT	Iz	< 200 mA	< 200 mA	< 200 mA	< 200 mA
AMBIENT TEMPERATURE RANGE	T	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C
PROTECTION STANDARD		IP 68	IP 67	IP 68	IP 67
CONNECTION TYPE		cable PVC 3 x 0,25 mm ² ; 2m	connector M8	cable PVC 3 x 0,25 mm ² ; 2m	connector M8

		ORDER REFERENCE NUMBER			
OUTPUT	SWITCHING FREQUENCY ft	CABLE VERSION	CONNECTOR VERSION	CABLE VERSION	CONNECTOR VERSION
NPN n.o.	normal	PSI 061 311	PSI 061 411	PSI 063 311	PSI 063 411
	slow S	PSI 061 311 S	PSI 061 411 S	PSI 063 311 S	PSI 063 411 S
	fast F	PSI 061 311 F	PSI 061 411 F	PSI 063 311 F	PSI 063 411 F
NPN n.c.	normal	PSI 061 312	PSI 061 412	PSI 063 312	PSI 063 412
	slow S	PSI 061 312 S	PSI 061 412 S	PSI 063 312 S	PSI 063 412 S
	fast F	PSI 061 312 F	PSI 061 412 F	PSI 063 312 F	PSI 063 412 F
PNP n.o.	normal	PSI 061 313	PSI 061 413	PSI 063 313	PSI 063 413
	slow S	PSI 061 313 S	PSI 061 413 S	PSI 063 313 S	PSI 063 413 S
	fast F	PSI 061 313 F	PSI 061 413 F	PSI 063 313 F	PSI 063 413 F
PNP n.c.	normal	PSI 061 314	PSI 061 414	PSI 063 314	PSI 063 414
	slow S	PSI 061 314 S	PSI 061 414 S	PSI 063 314 S	PSI 063 414 S
	fast F	PSI 061 314 F	PSI 061 414 F	PSI 063 314 F	PSI 063 414 F

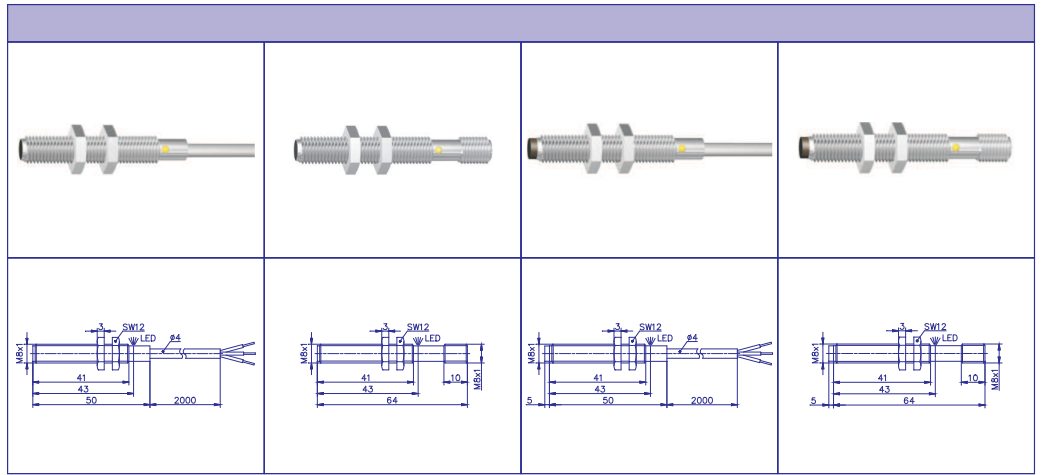
		SWITCHING FREQUENCY			
normal		500 Hz	500 Hz	200 Hz	200 Hz
slow S		50 Hz	50 Hz	50 Hz	50 Hz
fast F		5 kHz	5 kHz	1 kHz	1 kHz

		WIRING DIAGRAM			
		NPN n.o.	NPN n.c.	PNP n.o.	PNP n.c.
BR - brown S - black BL - blue					

PSI Series

3-wire

M8



		TECHNICAL PARAMETERS			
NOMINAL SENSING DISTANCE	Sn	1 mm	1 mm	1,5 mm	1,5 mm
EFFECTIVE SENSING DISTANCE	Sr	0,8 - 1,2 mm	0,8 - 1,2 mm	1,2 - 1,8 mm	1,2 - 1,8 mm
HOUSING		M8	M8	M8	M8
MATERIAL OF THE HOUSING		nickel plated brass	nickel plated brass	nickel plated brass	nickel plated brass
MOUNTING		flush	flush	non-flush	non-flush
HYSTERESIS	Sa	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn
NOMINAL VOLTAGE	Un	24 VDC	24 VDC	24 VDC	24 VDC
SUPPLY VOLTAGE	Uc	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
SUPPLY CURRENT	Ic	< 10 mA	< 10 mA	< 10 mA	< 10 mA
OUTPUT CURRENT	Iz	< 200 mA	< 200 mA	< 200 mA	< 200 mA
AMBIENT TEMPERATURE RANGE	T	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C
PROTECTION STANDARD		IP 68	IP 67	IP 68	IP 67
CONNECTION TYPE		cable PVC 3 x 0,25 mm ² ; 2m	connector M8	cable PVC 3 x 0,25 mm ² ; 2m	connector M8

		ORDER REFERENCE NUMBER			
OUTPUT	SWITCHING FREQUENCY ft	CABLE VERSION	CONNECTOR VERSION	CABLE VERSION	CONNECTOR VERSION
NPN n.o.	normal	PSI 085 311	PSI 085 411	PSI 087 311	PSI 087 411
	slow S	PSI 085 311 S	PSI 085 411 S	PSI 087 311 S	PSI 087 411 S
	fast F	PSI 085 311 F	PSI 085 411 F	PSI 087 311 F	PSI 087 411 F
NPN n.c.	normal	PSI 085 312	PSI 085 412	PSI 087 312	PSI 087 412
	slow S	PSI 085 312 S	PSI 085 412 S	PSI 087 312 S	PSI 087 412 S
	fast F	PSI 085 312 F	PSI 085 412 F	PSI 087 312 F	PSI 087 412 F
PNP n.o.	normal	PSI 085 313	PSI 085 413	PSI 087 313	PSI 087 413
	slow S	PSI 085 313 S	PSI 085 413 S	PSI 087 313 S	PSI 087 413 S
	fast F	PSI 085 313 F	PSI 085 413 F	PSI 087 313 F	PSI 087 413 F
PNP n.c.	normal	PSI 085 314	PSI 085 414	PSI 087 314	PSI 087 414
	slow S	PSI 085 314 S	PSI 085 414 S	PSI 087 314 S	PSI 087 414 S
	fast F	PSI 085 314 F	PSI 085 414 F	PSI 087 314 F	PSI 087 414 F

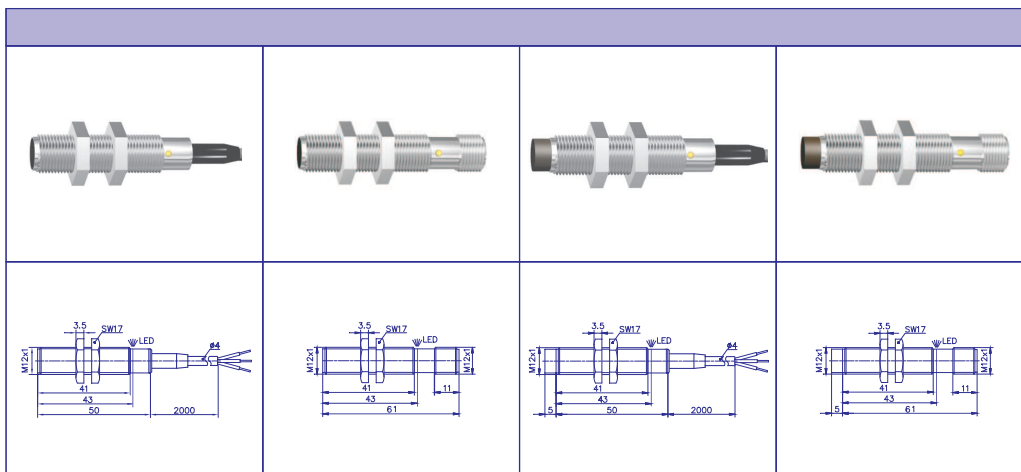
		SWITCHING FREQUENCY			
normal		500 Hz	500 Hz	200 Hz	200 Hz
slow S		50 Hz	50 Hz	50 Hz	50 Hz
fast F		5 kHz	5 kHz	1 kHz	1 kHz

WIRING DIAGRAM				
BR - brown S - black BL - blue	NPN n.o.	NPN n.c.	PNP n.o.	PNP n.c.

PSI Series

3-wire

M12



		TECHNICAL PARAMETERS			
NOMINAL SENSING DISTANCE	Sn	2,5 mm	2,5 mm	3,5 mm	3,5 mm
EFFECTIVE SENSING DISTANCE	Sr	2 - 3 mm	2 - 3 mm	3 - 4 mm	3 - 4 mm
HOUSING		M12	M12	M12	M12
MATERIAL OF THE HOUSING		nickel plated brass	nickel plated brass	nickel plated brass	nickel plated brass
MOUNTING		flush	flush	non-flush	non-flush
HYSTERESIS	Sa	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn
NOMINAL VOLTAGE	Un	24 VDC	24 VDC	24 VDC	24 VDC
SUPPLY VOLTAGE	Uc	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
SUPPLY CURRENT	Ic	< 10 mA	< 10 mA	< 10 mA	< 10 mA
OUTPUT CURRENT	Iz	< 200 mA	< 200 mA	< 200 mA	< 200 mA
AMBIENT TEMPERATURE RANGE	T	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C
PROTECTION STANDARD		IP 68	IP 67	IP 68	IP 67
CONNECTION TYPE		cable PVC 3 x 0,25 mm ² ; 2m	connector M12	cable PVC 3 x 0,25 mm ² ; 2m	connector M12

		ORDER REFERENCE NUMBER			
OUTPUT	SWITCHING FREQUENCY ft	CABLE VERSION	CONNECTOR VERSION	CABLE VERSION	CONNECTOR VERSION
NPN n.o.	normal	PSI 126 311	PSI 126 411	PSI 128 311	PSI 128 411
	slow S	PSI 126 311 S	PSI 126 411 S	PSI 128 311 S	PSI 128 411 S
	fast F	PSI 126 311 F	PSI 126 411 F	PSI 128 311 F	PSI 128 411 F
NPN n.c.	normal	PSI 126 312	PSI 126 412	PSI 128 312	PSI 128 412
	slow S	PSI 126 312 S	PSI 126 412 S	PSI 128 312 S	PSI 128 412 S
	fast F	PSI 126 312 F	PSI 126 412 F	PSI 128 312 F	PSI 128 412 F
PNP n.o.	normal	PSI 126 313	PSI 126 413	PSI 128 313	PSI 128 413
	slow S	PSI 126 313 S	PSI 126 413 S	PSI 128 313 S	PSI 128 413 S
	fast F	PSI 126 313 F	PSI 126 413 F	PSI 128 313 F	PSI 128 413 F
PNP n.c.	normal	PSI 126 314	PSI 126 414	PSI 128 314	PSI 128 414
	slow S	PSI 126 314 S	PSI 126 414 S	PSI 128 314 S	PSI 128 414 S
	fast F	PSI 126 314 F	PSI 126 414 F	PSI 128 314 F	PSI 128 414 F

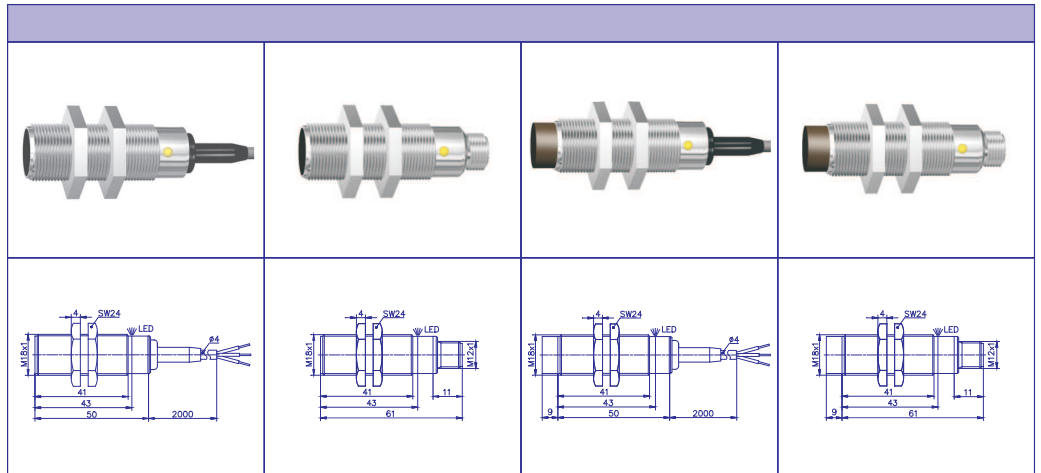
		SWITCHING FREQUENCY			
normal		500 Hz	500 Hz	200 Hz	200 Hz
slow S		50 Hz	50 Hz	50 Hz	50 Hz
fast F		5 kHz	5 kHz	1 kHz	1 kHz

WIRING DIAGRAM				
BR - brown S - black BL - blue	NPN n.o.	NPN n.c.	PNP n.o.	PNP n.c.

PSI Series

3-wire

M18



		TECHNICAL PARAMETERS			
NOMINAL SENSING DISTANCE	Sn	5 mm	5 mm	8 mm	8 mm
EFFECTIVE SENSING DISTANCE	Sr	4 - 6 mm	4 - 6 mm	6 - 10 mm	6 - 10 mm
HOUSING		M18	M18	M18	M18
MATERIAL OF THE HOUSING		nickel plated brass	nickel plated brass	nickel plated brass	nickel plated brass
MOUNTING		flush	flush	non-flush	non-flush
HYSTERESIS	Sa	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn
NOMINAL VOLTAGE	Un	24 VDC	24 VDC	24 VDC	24 VDC
SUPPLY VOLTAGE	Uc	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
SUPPLY CURRENT	Ic	< 10 mA	< 10 mA	< 10 mA	< 10 mA
OUTPUT CURRENT	Iz	< 200 mA	< 200 mA	< 200 mA	< 200 mA
AMBIENT TEMPERATURE RANGE	T	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C
PROTECTION STANDARD		IP 68	IP 67	IP 68	IP 67
CONNECTION TYPE		cable PVC 3 x 0,25 mm ² ; 2m	connector M12	cable PVC 3 x 0,25 mm ² ; 2m	connector M12

		ORDER REFERENCE NUMBER			
OUTPUT	SWITCHING FREQUENCY ft	CABLE VERSION	CONNECTOR VERSION	CABLE VERSION	CONNECTOR VERSION
NPN n.o.	normal	PSI 186 311	PSI 186 411	PSI 188 311	PSI 188 411
	slow S	PSI 186 311 S	PSI 186 411 S	PSI 188 311 S	PSI 188 411 S
	fast F	PSI 186 311 F	PSI 186 411 F	PSI 188 311 F	PSI 188 411 F
NPN n.c.	normal	PSI 186 312	PSI 186 412	PSI 188 312	PSI 188 412
	slow S	PSI 186 312 S	PSI 186 412 S	PSI 188 312 S	PSI 188 412 S
	fast F	PSI 186 312 F	PSI 186 412 F	PSI 188 312 F	PSI 188 412 F
PNP n.o.	normal	PSI 186 313	PSI 186 413	PSI 188 313	PSI 188 413
	slow S	PSI 186 313 S	PSI 186 413 S	PSI 188 313 S	PSI 188 413 S
	fast F	PSI 186 313 F	PSI 186 413 F	PSI 188 313 F	PSI 188 413 F
PNP n.c.	normal	PSI 186 314	PSI 186 414	PSI 188 314	PSI 188 414
	slow S	PSI 186 314 S	PSI 186 414 S	PSI 188 314 S	PSI 188 414 S
	fast F	PSI 186 314 F	PSI 186 414 F	PSI 188 314 F	PSI 188 414 F

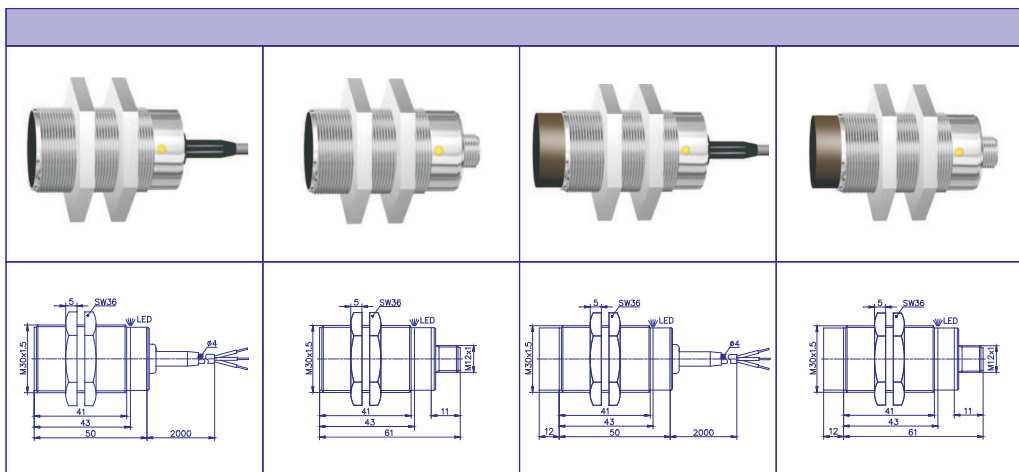
		SWITCHING FREQUENCY			
normal		200 Hz	200 Hz	100 Hz	100 Hz
slow S		50 Hz	50 Hz	20 Hz	20 Hz
fast F		1 kHz	1 kHz	500 Hz	500 Hz

WIRING DIAGRAM				
BR - brown S - black BL - blue	NPN n.o.	NPN n.c.	PNP n.o.	PNP n.c.

PSI Series

3-wire

M30



		TECHNICAL PARAMETERS			
NOMINAL SENSING DISTANCE	Sn	10 mm	10 mm	15 mm	15 mm
EFFECTIVE SENSING DISTANCE	Sr	8 - 12 mm	8 - 12 mm	12 - 18 mm	12 - 18 mm
HOUSING		M30	M30	M30	M30
MATERIAL OF THE HOUSING		nickel plated brass	nickel plated brass	nickel plated brass	nickel plated brass
MOUNTING		flush	flush	non-flush	non-flush
HYSTERESIS	Sa	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn
NOMINAL VOLTAGE	Un	24 VDC	24 VDC	24 VDC	24 VDC
SUPPLY VOLTAGE	Uc	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
SUPPLY CURRENT	Ic	< 10 mA	< 10 mA	< 10 mA	< 10 mA
OUTPUT CURRENT	Iz	< 200 mA	< 200 mA	< 200 mA	< 200 mA
AMBIENT TEMPERATURE RANGE	T	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C
PROTECTION STANDARD		IP 68	IP 67	IP 68	IP 67
CONNECTION TYPE		cable PVC 3 x 0,25 mm ² ; 2m	connector M12	cable PVC 3 x 0,25 mm ² ; 2m	connector M12

		ORDER REFERENCE NUMBER			
OUTPUT	SWITCHING FREQUENCY ft	CABLE VERSION	CONNECTOR VERSION	CABLE VERSION	CONNECTOR VERSION
NPN n.o.	normal	PSI 306 311	PSI 306 411	PSI 308 311	PSI 308 411
	slow S	PSI 306 311 S	PSI 306 411 S	PSI 308 311 S	PSI 308 411 S
	fast F	PSI 306 311 F	PSI 306 411 F	PSI 308 311 F	PSI 308 411 F
NPN n.c.	normal	PSI 306 312	PSI 306 412	PSI 308 312	PSI 308 412
	slow S	PSI 306 312 S	PSI 306 412 S	PSI 308 312 S	PSI 308 412 S
	fast F	PSI 306 312 F	PSI 306 412 F	PSI 308 312 F	PSI 308 412 F
PNP n.o.	normal	PSI 306 313	PSI 306 413	PSI 308 313	PSI 308 413
	slow S	PSI 306 313 S	PSI 306 413 S	PSI 308 313 S	PSI 308 413 S
	fast F	PSI 306 313 F	PSI 306 413 F	PSI 308 313 F	PSI 308 413 F
PNP n.c.	normal	PSI 306 314	PSI 306 414	PSI 308 314	PSI 308 414
	slow S	PSI 306 314 S	PSI 306 414 S	PSI 308 314 S	PSI 308 414 S
	fast F	PSI 306 314 F	PSI 306 414 F	PSI 308 314 F	PSI 308 414 F

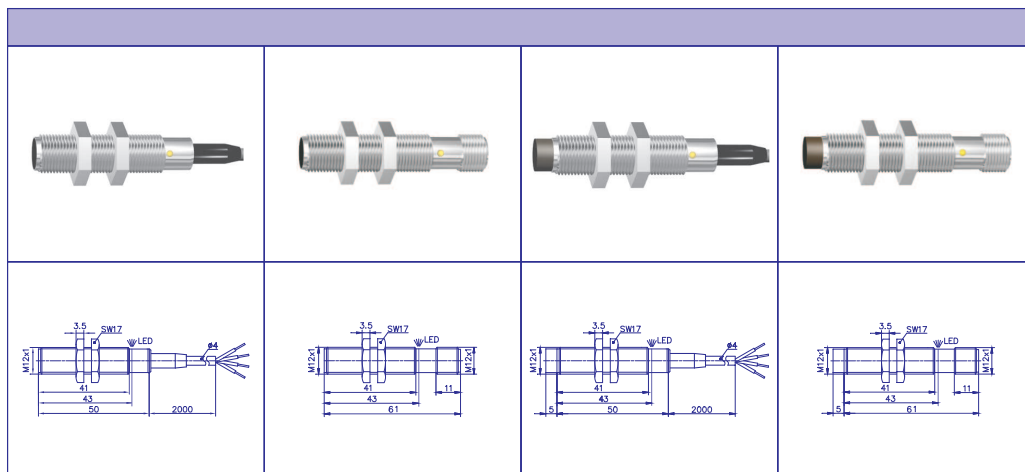
		SWITCHING FREQUENCY			
normal		200 Hz	200 Hz	100 Hz	100 Hz
slow S		50 Hz	50 Hz	20 Hz	20 Hz
fast F		800 Hz	800 Hz	400 Hz	400 Hz

WIRING DIAGRAM				
BR - brown S - black BL - blue	NPN n.o.	NPN n.c.	PNP n.o.	PNP n.c.

PDI Series

4-wire

M12



		TECHNICAL PARAMETERS			
NOMINAL SENSING DISTANCE	Sn	5 mm	5 mm	8 mm	8 mm
EFFECTIVE SENSING DISTANCE	Sr	4 - 6 mm	4 - 6 mm	6 - 10 mm	6 - 10 mm
HOUSING		M12	M12	M12	M12
MATERIAL OF THE HOUSING		nickel plated brass	nickel plated brass	nickel plated brass	nickel plated brass
MOUNTING		flush	flush	non-flush	non-flush
HYSTERESIS	Sa	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn
NOMINAL VOLTAGE	Un	24 VDC	24 VDC	24 VDC	24 VDC
SUPPLY VOLTAGE	Uc	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
SUPPLY CURRENT	Ic	< 10 mA	< 10 mA	< 10 mA	< 10 mA
OUTPUT CURRENT	Iz	< 200 mA	< 200 mA	< 200 mA	< 200 mA
AMBIENT TEMPERATURE RANGE	T	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C
PROTECTION STANDARD		IP 68	IP 67	IP 68	IP 67
CONNECTION TYPE		cable PVC 4 x 0,25 mm ² ; 2m	connector M12	cable PVC 4 x 0,25 mm ² ; 2m	connector M12

		ORDER REFERENCE NUMBER				
OUTPUT	SWITCHING FREQUENCY	ft	CABLE VERSION	CONNECTOR VERSION	CABLE VERSION	CONNECTOR VERSION
NPN n.o. & n.c.	normal		PDI 126 315	PDI 126 415	PDI 128 315	PDI 128 415
	slow	S	PDI 126 315 S	PDI 126 415 S	PDI 128 315 S	PDI 128 415 S
PNP n.o. & n.c.	normal		PDI 126 316	PDI 126 416	PDI 128 316	PDI 128 416
	slow	S	PDI 126 316 S	PDI 126 416 S	PDI 128 316 S	PDI 128 416 S

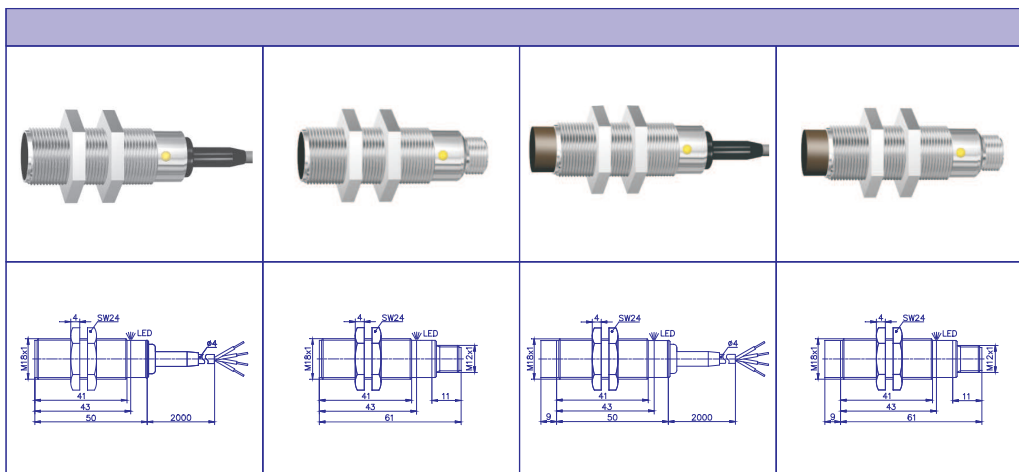
		SWITCHING FREQUENCY			
normal		500 Hz	500 Hz	200 Hz	200 Hz
slow	S	50 Hz	50 Hz	50 Hz	50 Hz

		WIRING DIAGRAM	
BR - brown S - black W - white BL - blue		NPN n.o. (no) & n.c. (nc) 	PNP n.o. (no) & n.c. (nc)

PDI Series

4-wire

M18



		TECHNICAL PARAMETERS			
NOMINAL SENSING DISTANCE	Sn	10 mm	10 mm	16 mm	16 mm
EFFECTIVE SENSING DISTANCE	Sr	8 - 12 mm	8 - 12 mm	12 - 20 mm	12 - 20 mm
HOUSING		M18	M18	M18	M18
MATERIAL OF THE HOUSING		nickel plated brass	nickel plated brass	nickel plated brass	nickel plated brass
MOUNTING		flush	flush	non-flush	non-flush
HYSTERESIS	Sa	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn
NOMINAL VOLTAGE	Un	24 VDC	24 VDC	24 VDC	24 VDC
SUPPLY VOLTAGE	Uc	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
SUPPLY CURRENT	Ic	< 10 mA	< 10 mA	< 10 mA	< 10 mA
OUTPUT CURRENT	Iz	< 200 mA	< 200 mA	< 200 mA	< 200 mA
AMBIENT TEMPERATURE RANGE	T	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C
PROTECTION STANDARD		IP 68	IP 67	IP 68	IP 67
CONNECTION TYPE		cable PVC 4 x 0,25 mm ² ; 2m	connector M12	cable PVC 4 x 0,25 mm ² ; 2m	connector M12

		ORDER REFERENCE NUMBER			
OUTPUT	SWITCHING FREQUENCY ft	CABLE VERSION	CONNECTOR VERSION	CABLE VERSION	CONNECTOR VERSION
NPN n.o. & n.c.	normal	PDI 186 315	PDI 186 415	PDI 188 315	PDI 188 415
	slow S	PDI 186 315 S	PDI 186 415 S	PDI 188 315 S	PDI 188 415 S
PNP n.o. & n.c.	normal	PDI 186 316	PDI 186 416	PDI 188 316	PDI 188 416
	slow S	PDI 186 316 S	PDI 186 416 S	PDI 188 316 S	PDI 188 416 S

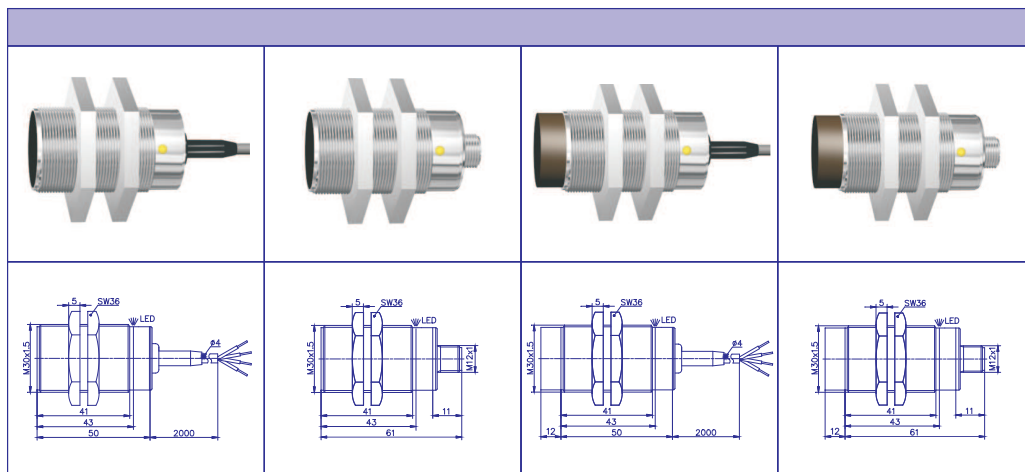
		SWITCHING FREQUENCY			
normal		200 Hz	200 Hz	100 Hz	100 Hz
slow	S	20 Hz	20 Hz	20 Hz	20 Hz

		WIRING DIAGRAM	
BR - brown S - black W - white BL - blue		NPN n.o. (no) & n.c. (nc) 	PNP n.o. (no) & n.c. (nc)

PDI Series

4-wire

M30



		TECHNICAL PARAMETERS			
NOMINAL SENSING DISTANCE	Sn	20 mm	20 mm	30 mm	30 mm
EFFECTIVE SENSING DISTANCE	Sr	16 - 24 mm	16 - 24 mm	24 - 36 mm	24 - 36 mm
HOUSING		M30	M30	M30	M30
MATERIAL OF THE HOUSING		nickel plated brass	nickel plated brass	nickel plated brass	nickel plated brass
MOUNTING		flush	flush	non-flush	non-flush
HYSTERESIS	Sa	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn
NOMINAL VOLTAGE	Un	24 VDC	24 VDC	24 VDC	24 VDC
SUPPLY VOLTAGE	Uc	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
SUPPLY CURRENT	Ic	< 10 mA	< 10 mA	< 10 mA	< 10 mA
OUTPUT CURRENT	Iz	< 200 mA	< 200 mA	< 200 mA	< 200 mA
AMBIENT TEMPERATURE RANGE	T	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C
PROTECTION STANDARD		IP 68	IP 67	IP 68	IP 67
CONNECTION TYPE		cable PVC 4 x 0,25 mm ² ; 2m	connector M12	cable PVC 4 x 0,25 mm ² ; 2m	connector M12

		ORDER REFERENCE NUMBER			
OUTPUT	SWITCHING FREQUENCY ft	CABLE VERSION	CONNECTOR VERSION	CABLE VERSION	CONNECTOR VERSION
NPN n.o. & n.c.	normal	PDI 306 315	PDI 306 415	PDI 308 315	PDI 308 415
	slow S	PDI 306 315 S	PDI 306 415 S	PDI 308 315 S	PDI 308 415 S
PNP n.o. & n.c.	normal	PDI 306 316	PDI 306 416	PDI 308 316	PDI 308 416
	slow S	PDI 306 316 S	PDI 306 416 S	PDI 308 316 S	PDI 308 416 S

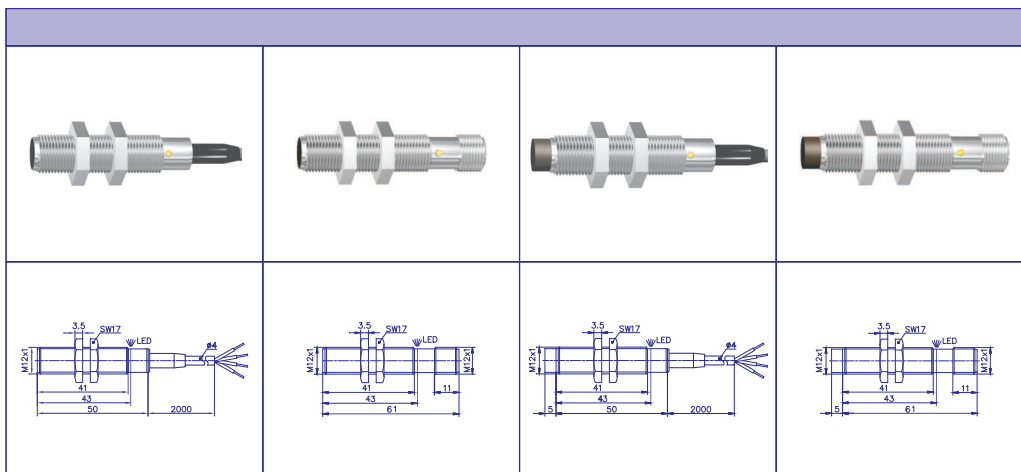
		SWITCHING FREQUENCY			
normal		100 Hz	100 Hz	50 Hz	50 Hz
slow	S	20 Hz	20 Hz	20 Hz	20 Hz

		WIRING DIAGRAM	
BR - brown S - black W - white BL - blue		NPN n.o. (no) & n.c. (nc) 	PNP n.o. (no) & n.c. (nc)

PSI Series

4-wire

M12



		TECHNICAL PARAMETERS			
NOMINAL SENSING DISTANCE	Sn	2,5 mm	2,5 mm	3,5 mm	3,5 mm
EFFECTIVE SENSING DISTANCE	Sr	2 - 3 mm	2 - 3 mm	3 - 4 mm	3 - 4 mm
HOUSING		M12	M12	M12	M12
MATERIAL OF THE HOUSING		nickel plated brass	nickel plated brass	nickel plated brass	nickel plated brass
MOUNTING		flush	flush	non-flush	non-flush
HYSTERESIS	Sa	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn
NOMINAL VOLTAGE	Un	24 VDC	24 VDC	24 VDC	24 VDC
SUPPLY VOLTAGE	Uc	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
SUPPLY CURRENT	Ic	< 10 mA	< 10 mA	< 10 mA	< 10 mA
OUTPUT CURRENT	Iz	< 200 mA	< 200 mA	< 200 mA	< 200 mA
AMBIENT TEMPERATURE RANGE	T	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C
PROTECTION STANDARD		IP 68	IP 67	IP 68	IP 67
CONNECTION TYPE		cable PVC 4 x 0,25 mm ² ; 2m	connector M12	cable PVC 4 x 0,25 mm ² ; 2m	connector M12

			ORDER REFERENCE NUMBER				
OUTPUT	SWITCHING FREQUENCY		ft	CABLE VERSION	CONNECTOR VERSION	CABLE VERSION	CONNECTOR VERSION
NPN	normal			PSI 126 315	PSI 126 415	PSI 128 315	PSI 128 415
n.o. & n.c.	slow		S	PSI 126 315 S	PSI 126 415 S	PSI 128 315 S	PSI 128 415 S
	fast		F	PSI 126 315 F	PSI 126 415 F	PSI 128 315 F	PSI 128 415 F
PNP	normal			PSI 126 316	PSI 126 416	PSI 128 316	PSI 128 416
n.o. & n.c.	slow		S	PSI 126 316 S	PSI 126 416 S	PSI 128 316 S	PSI 128 416 S
	fast		F	PSI 126 316 F	PSI 126 416 F	PSI 128 316 F	PSI 128 416 F

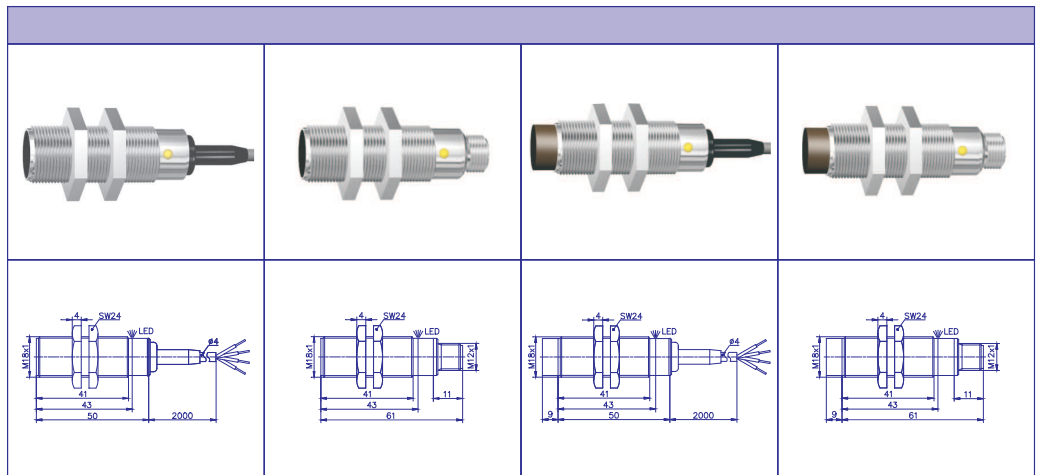
		SWITCHING FREQUENCY			
normal		500 Hz	500 Hz	200 Hz	200 Hz
slow	S	50 Hz	50 Hz	50 Hz	50 Hz
fast	F	5 kHz	5 kHz	1 kHz	1 kHz

		WIRING DIAGRAM	
BR - brown S - black W - white BL - blue		NPN n.o. (no) & n.c. (nc) 	PNP n.o. (no) & n.c. (nc)

PSI Series

4-wire

M18



		TECHNICAL PARAMETERS			
NOMINAL SENSING DISTANCE	Sn	5 mm	5 mm	8 mm	8 mm
EFFECTIVE SENSING DISTANCE	Sr	4 - 6 mm	4 - 6 mm	6 - 10 mm	6 - 10 mm
HOUSING		M18	M18	M18	M18
MATERIAL OF THE HOUSING		nickel plated brass	nickel plated brass	nickel plated brass	nickel plated brass
MOUNTING		flush	flush	non-flush	non-flush
HYSTERESIS	Sa	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn
NOMINAL VOLTAGE	Un	24 VDC	24 VDC	24 VDC	24 VDC
SUPPLY VOLTAGE	Uc	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
SUPPLY CURRENT	Ic	< 10 mA	< 10 mA	< 10 mA	< 10 mA
OUTPUT CURRENT	Iz	< 200 mA	< 200 mA	< 200 mA	< 200 mA
AMBIENT TEMPERATURE RANGE	T	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C
PROTECTION STANDARD		IP 68	IP 67	IP 68	IP 67
CONNECTION TYPE		cable PVC 4 x 0,25 mm ² ; 2m	connector M12	cable PVC 4 x 0,25 mm ² ; 2m	connector M12

			ORDER REFERENCE NUMBER			
OUTPUT	SWITCHING FREQUENCY ft		CABLE VERSION	CONNECTOR VERSION	CABLE VERSION	CONNECTOR VERSION
NPN	normal		PSI 186 315	PSI 186 415	PSI 188 315	PSI 188 415
n.o. & n.c.	slow	S	PSI 186 315 S	PSI 186 415 S	PSI 188 315 S	PSI 188 415 S
	fast	F	PSI 186 315 F	PSI 186 415 F	PSI 188 315 F	PSI 188 415 F
PNP	normal		PSI 186 316	PSI 186 416	PSI 188 316	PSI 188 416
n.o. & n.c.	slow	S	PSI 186 316 S	PSI 186 416 S	PSI 188 316 S	PSI 188 416 S
	fast	F	PSI 186 316 F	PSI 186 416 F	PSI 188 316 F	PSI 188 416 F

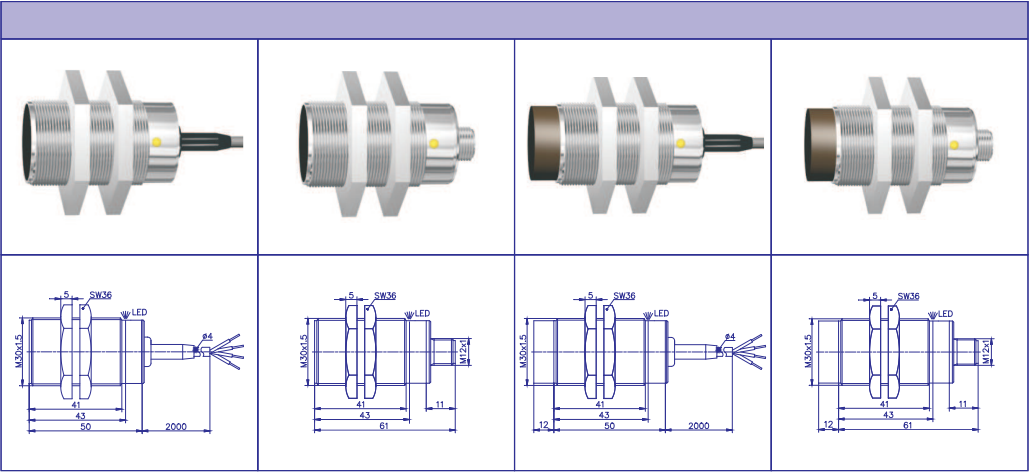
		SWITCHING FREQUENCY			
normal		200 Hz	200 Hz	100 Hz	100 Hz
slow	S	50 Hz	50 Hz	20 Hz	20 Hz
fast	F	1 kHz	1 kHz	500 Hz	500 Hz

		WIRING DIAGRAM	
BR - brown S - black W - white BL - blue		NPN n.o. (no) & n.c. (nc) 	PNP n.o. (no) & n.c. (nc)

PSI Series

4-wire

M30



		TECHNICAL PARAMETERS			
NOMINAL SENSING DISTANCE	Sn	10 mm	10 mm	15 mm	15 mm
EFFECTIVE SENSING DISTANCE	Sr	8 - 12 mm	8 - 12 mm	12 - 18 mm	12 - 18 mm
HOUSING		M30	M30	M30	M30
MATERIAL OF THE HOUSING		nickel plated brass	nickel plated brass	nickel plated brass	nickel plated brass
MOUNTING		flush	flush	non-flush	non-flush
HYSTERESIS	Sa	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn
NOMINAL VOLTAGE	Un	24 VDC	24 VDC	24 VDC	24 VDC
SUPPLY VOLTAGE	Uc	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC	10 - 30 VDC
SUPPLY CURRENT	Ic	< 10 mA	< 10 mA	< 10 mA	< 10 mA
OUTPUT CURRENT	Iz	< 200 mA	< 200 mA	< 200 mA	< 200 mA
AMBIENT TEMPERATURE RANGE	T	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C
PROTECTION STANDARD		IP 68	IP 67	IP 68	IP 67
CONNECTION TYPE		cablе PVC 4 x 0,25 mm ² ; 2m	connector M12	cablе PVC 4 x 0,25 mm ² ; 2m	connector M12

		ORDER REFERENCE NUMBER			
OUTPUT	SWITCHING FREQUENCY ft	CABLE VERSION	CONNECTOR VERSION	CABLE VERSION	CONNECTOR VERSION
NPN n.o. & n.c.	normal	PSI 306 315	PSI 306 415	PSI 308 315	PSI 308 415
	slow S	PSI 306 315 S	PSI 306 415 S	PSI 308 315 S	PSI 308 415 S
	fast F	PSI 306 315 F	PSI 306 415 F	PSI 308 315 F	PSI 308 415 F
PNP n.o. & n.c.	normal	PSI 306 316	PSI 306 416	PSI 308 316	PSI 308 416
	slow S	PSI 306 316 S	PSI 306 416 S	PSI 308 316 S	PSI 308 416 S
	fast F	PSI 306 316 F	PSI 306 416 F	PSI 308 316 F	PSI 308 416 F

		SWITCHING FREQUENCY			
normal		200 Hz	200 Hz	100 Hz	100 Hz
slow	S	50 Hz	50 Hz	20 Hz	20 Hz
fast	F	800 Hz	800 Hz	400 Hz	400 Hz

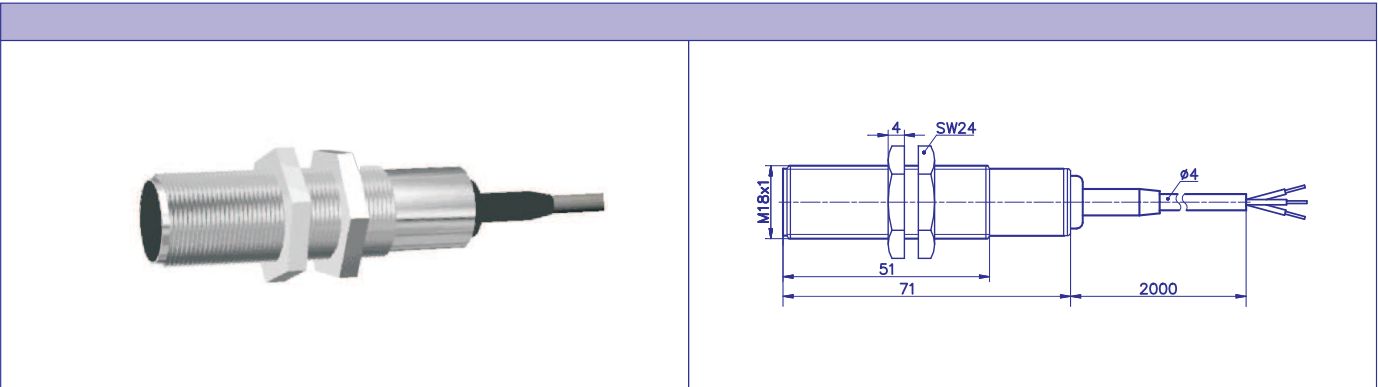
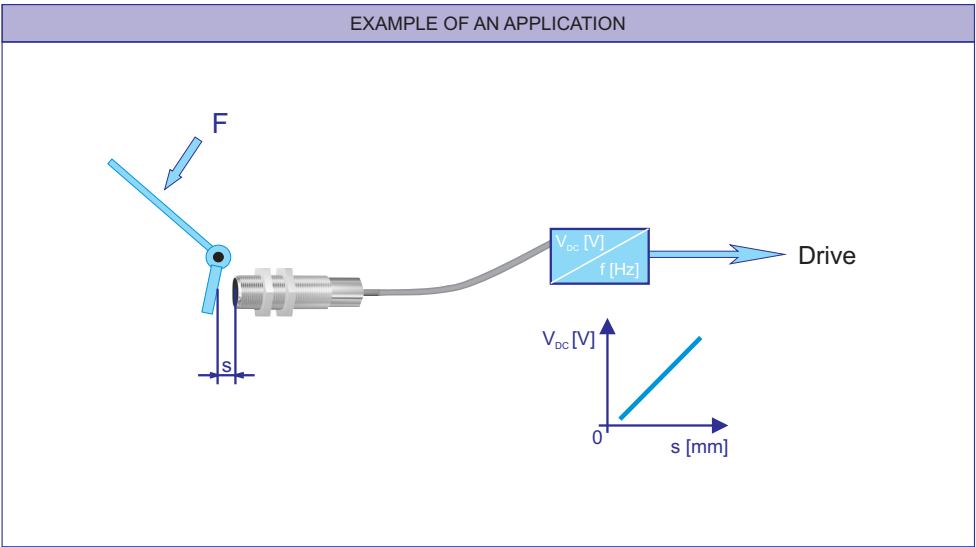
		WIRING DIAGRAM	
<div>BR - brown</div> <div>S - black</div> <div>W - white</div> <div>BL - blue</div>		<div>NPN n.o. (no) & n.c. (nc)</div>	<div>PNP n.o. (no) & n.c. (nc)</div>

INDUCTIVE

PROPORTIONAL SENSOR

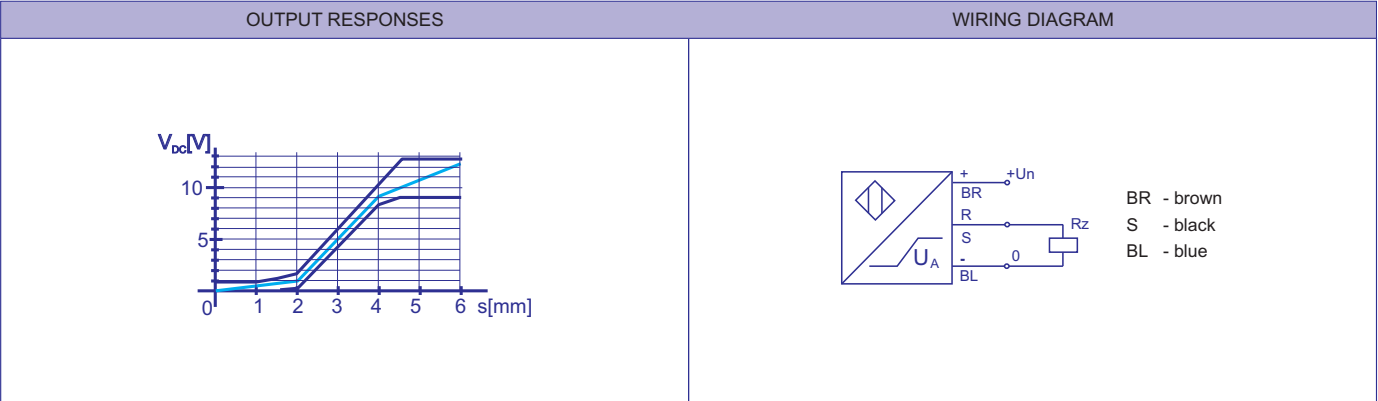
analog output

CE RoHS compliant



TECHNICAL PARAMETERS		
AXIAL WORKING AREA	Sd	2 - 4 mm
STEEPNESS		4 V/mm
TEMPERATURE DRIFT		3 $\mu\text{m}/^\circ\text{K}$
MATERIAL OF THE HOUSING		nickel plated brass
NOMINAL VOLTAGE	Un	24 VDC
SUPPLY VOLTAGE	Uc	18 - 30 VDC
SUPPLY CURRENT	Ic	< 5 mA
OUTPUT VOLTAGE	Uz	1-9 VDC
LOAD RESISTANCE	Rz	$\geq 500 \text{ W}$
AMBIENT TEMPERATURE RANGE	T	0°C...+70°C
PROTECTION STANDARD		IP 68
CONNECTION TYPE		cable PVC 3 x 0,25 mm ² ; 2m

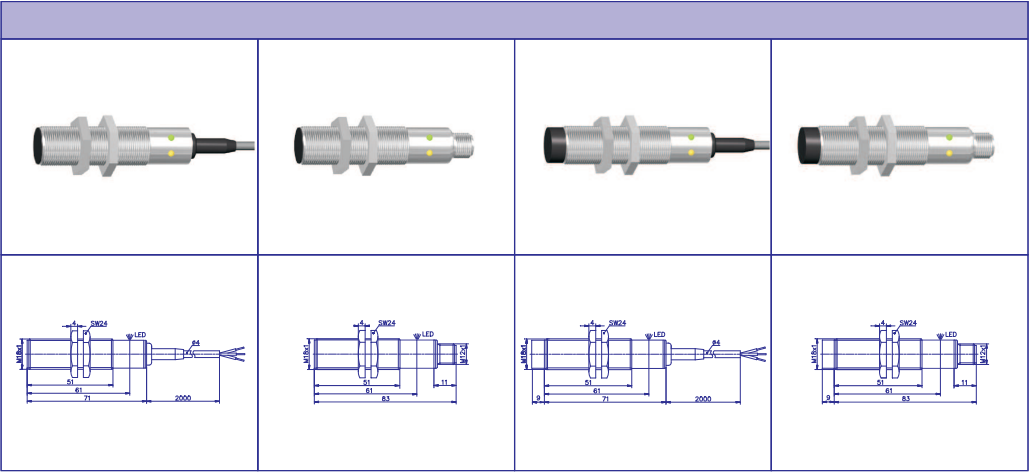
OUTPUT	ORDER REFERENCE NUMBER
ANALOG (PNP)	PSI P 186 894



INDUCTIVE SENSORS

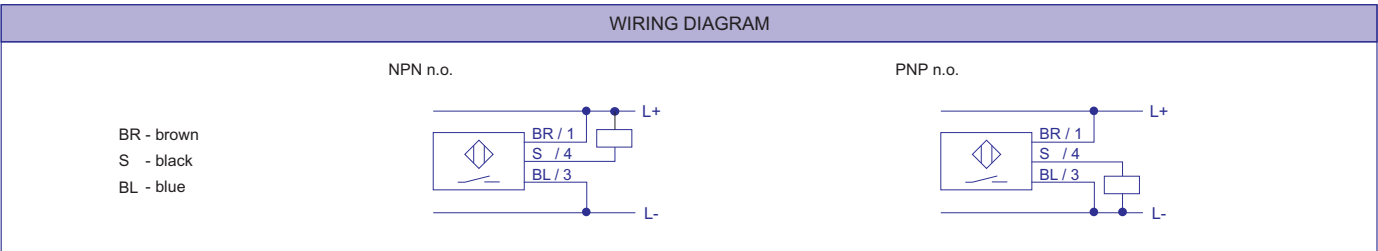
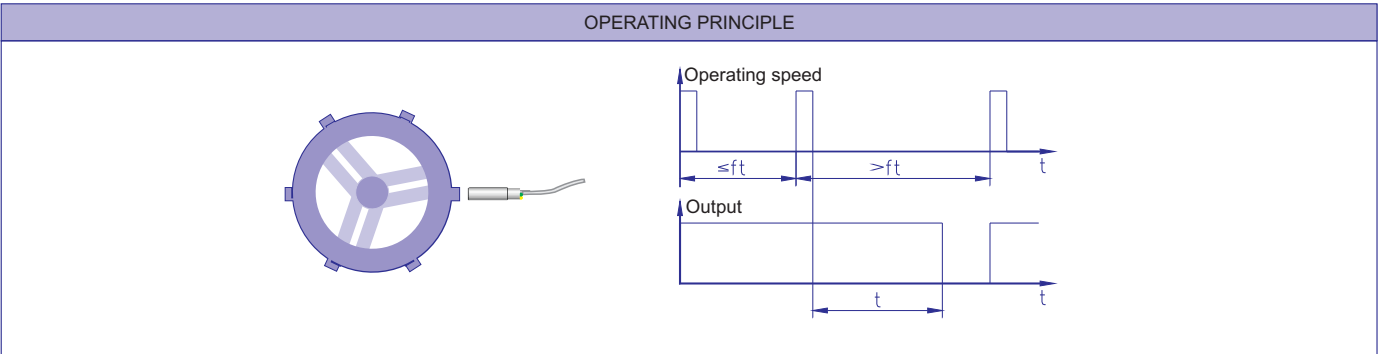
OF ROTATION

M18



		TECHNICAL PARAMETERS			
NOMINAL SENSING DISTANCE	Sn	5 mm	5 mm	8 mm	8 mm
EFFECTIVE SENSING DISTANCE	Sr	4 - 6 mm	4 - 6 mm	6 - 10 mm	6 - 10 mm
HOUSING		M18	M18	M18	M18
MATERIAL OF THE HOUSING		nickel plated brass	nickel plated brass	nickel plated brass	nickel plated brass
MOUNTING		flush	flush	non-flush	non-flush
SWITCHING FREQUENCY	ft	0,5 Hz; or upon request	0,5 Hz; or upon request	0,5 Hz; or upon request	0,5 Hz; or upon request
MAXIMUM FREQUENCY SENSED		200 Hz	200 Hz	100 Hz	100 Hz
HYSTERESIS	Sa	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn
NOMINAL VOLTAGE	Un	24 VDC	24 VDC	24 VDC	24 VDC
SUPPLY VOLTAGE	Uc	15 - 30 VDC	15 - 30 VDC	15 - 30 VDC	15 - 30 VDC
SUPPLY CURRENT	Ic	< 20 mA	< 20 mA	< 20 mA	< 20 mA
OUTPUT CURRENT	Iz	< 200 mA	< 200 mA	< 200 mA	< 200 mA
SHIELDING INDICATOR		green LED	green LED	green LED	green LED
OUTPUT INDICATOR		yellow LED	yellow LED	yellow LED	yellow LED
AMBIENT TEMPERATURE RANGE	T	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C
PROTECTION STANDARD		IP 68	IP 67	IP 68	IP 67
CONNECTION TYPE		cable PVC 3 x 0,25 mm²; 2m	connector M12	cable PVC 3 x 0,25 mm²; 2m	connector M12

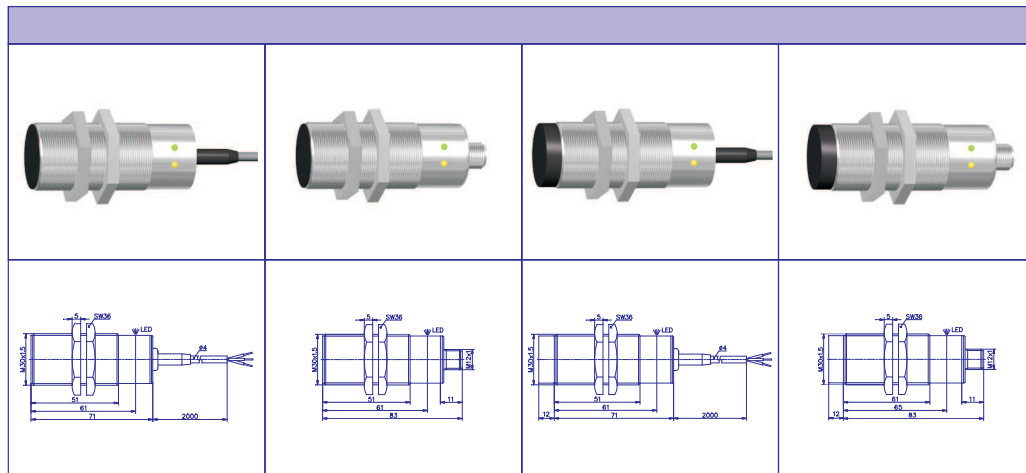
		ORDER REFERENCE NUMBER			
OUTPUT		CABLE VERSION	CONNECTOR VERSION	CABLE VERSION	CONNECTOR VERSION
NPN n.o.		PSI DI 186 391	PSI DI 186 491	PSI DI 188 391	PSI DI 188 491
PNP n.o.		PSI DI 186 393	PSI DI 186 493	PSI DI 188 393	PSI DI 188 493



INDUCTIVE SENSORS

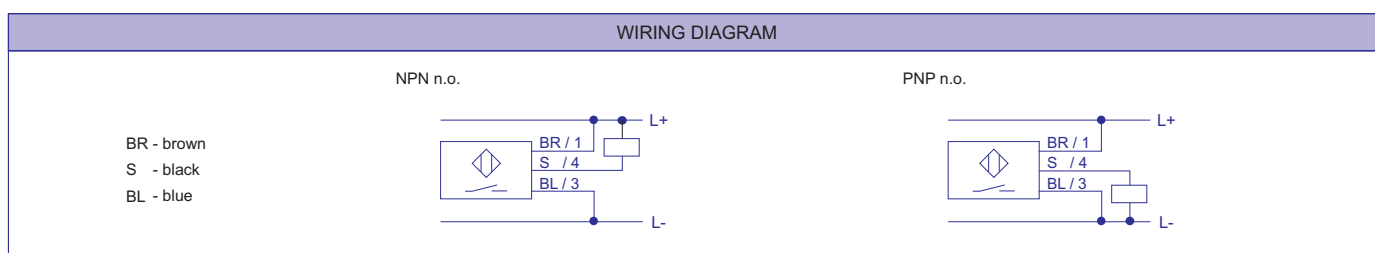
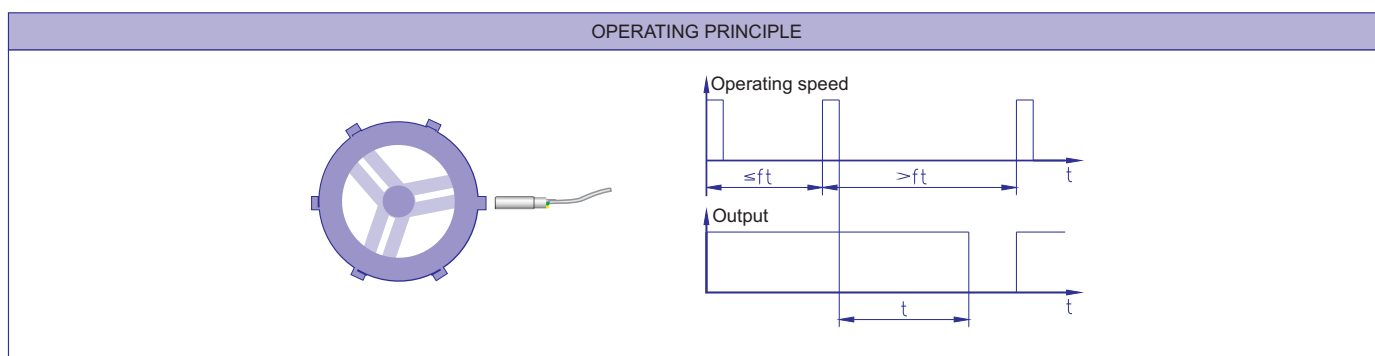
OF ROTATION

M30



		TECHNICAL PARAMETERS			
NOMINAL SENSING DISTANCE	Sn	10 mm	10 mm	15 mm	15 mm
EFFECTIVE SENSING DISTANCE	Sr	8 - 12 mm	8 - 12 mm	12 - 18 mm	12 - 18 mm
HOUSING		M30	M30	M30	M30
MATERIAL OF THE HOUSING		nickel plated brass	nickel plated brass	nickel plated brass	nickel plated brass
MOUNTING		flush	flush	non-flush	non-flush
SWITCHING FREQUENCY	ft	0,5 Hz; or upon request	0,5 Hz; or upon request	0,5 Hz; or upon request	0,5 Hz; or upon request
MAXIMUM FREQUENCY SENSED		200 Hz	200 Hz	100 Hz	100 Hz
HYSTERESIS	Sa	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn
NOMINAL VOLTAGE	Un	24 VDC	24 VDC	24 VDC	24 VDC
SUPPLY VOLTAGE	Uc	15 - 30 VDC	15 - 30 VDC	15 - 30 VDC	15 - 30 VDC
SUPPLY CURRENT	Ic	< 20 mA	< 20 mA	< 20 mA	< 20 mA
OUTPUT CURRENT	Iz	< 200 mA	< 200 mA	< 200 mA	< 200 mA
SHIELDING INDICATOR		green LED	green LED	green LED	green LED
OUTPUT INDICATOR		yellow LED	yellow LED	yellow LED	yellow LED
AMBIENT TEMPERATURE RANGE	T	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C	-25°C...+70°C
PROTECTION STANDARD		IP 68	IP 67	IP 68	IP 67
CONNECTION TYPE		cable PVC 3 x 0,25 mm ² ; 2m	connector M12	cable PVC 3 x 0,25 mm ² ; 2m	connector M12

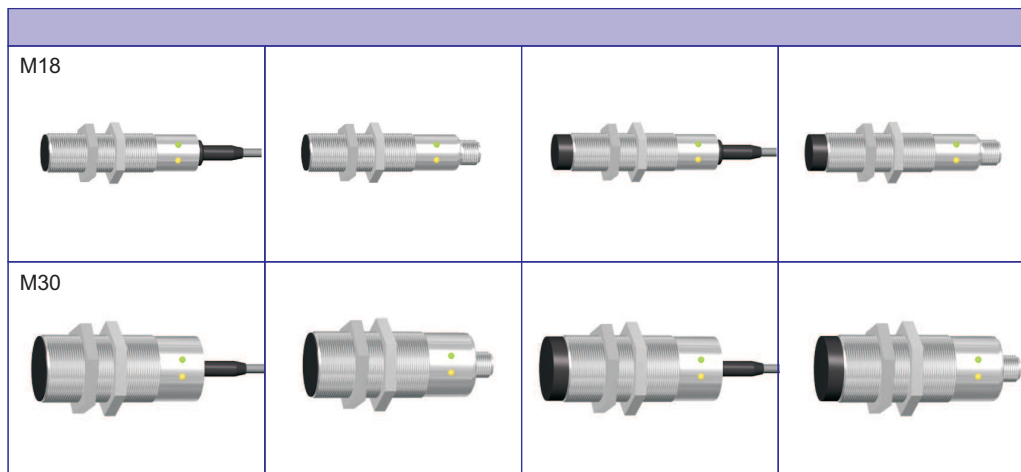
		ORDER REFERENCE NUMBER			
OUTPUT		CABLE VERSION	CONNECTOR VERSION	CABLE VERSION	CONNECTOR VERSION
NPN n.o.		PSI DI 306 391	PSI DI 306 491	PSI DI 308 391	PSI DI 308 491
PNP n.o.		PSI DI 306 393	PSI DI 306 493	PSI DI 308 393	PSI DI 308 493



INDUCTIVE SENSORS

OF ROTATION

series PSI RSx



DESCRIPTION OF OPERATION

Sensors of rotation are intended for monitoring of revolutions or speed. They are suitable especially in case of decentralized control. Inductive rotation sensors perform contactless monitoring of changes of revolutions compared with their reference value.

A **possibility to select reference revolutions** is the extraordinary feature of the PSI RSx inductive rotation sensors.

Unlike the standard way of adjustment by potentiometer, adjustment of these sensors is based on principle of real measurement of reference revolutions. Increase or decrease of revolutions is signalled in regard to limit values of revolutions that are defined as a percentual change of the measured reference revolutions.

Permitted percentual change is selected through the order number of the sensor.

	RSA	RSD	RSE
Signal to measure reference revolutions	Automatically ⁽¹⁾	Manually ⁽²⁾	
Memory of reference revolutions	Temporary ⁽³⁾	Permanent ⁽⁴⁾	
Monitoring of decrease of revolutions	Yes ⁽⁵⁾		Yes ⁽⁶⁾
Monitoring of increase of revolutions	No		Yes ⁽⁶⁾
Number of inputs	0	1	
Number of outputs	2 ⁽⁷⁾		

NOTES:

1. Automatically after stabilization of revolutions.
2. Manually by means of sensor input.
3. Value of reference revolutions will be lost after supply disconnection of the sensor.
4. Value of reference revolutions will remain preserved even after supply disconnection of the sensor.
5. Two limit values are available.
6. One limit value is available.
7. There is one output for each limit value.

APPLICATION EXAMPLES:

- Signalling of decrease or increase of revolutions.
- Delayed signalling of revolutions decrease or increase after device activation. (It will prevent false signalling during run-up of monitored device, until revolutions reach nominal value.)
- Signalling of wear (small revolutions decrease) in advance of signalling of failure (substantial revolutions decrease).
- Sensing of decrease of revolutions during the starting up of the monitored device in advance of nominal revolutions achieving.

More details available upon request.

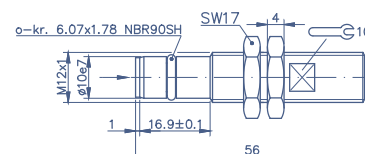
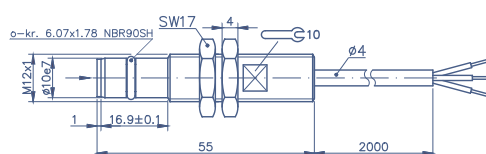
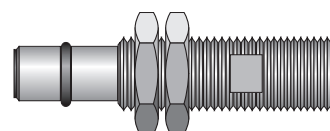
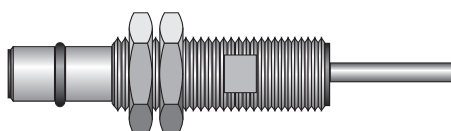
Series PPI

3-wire

M12



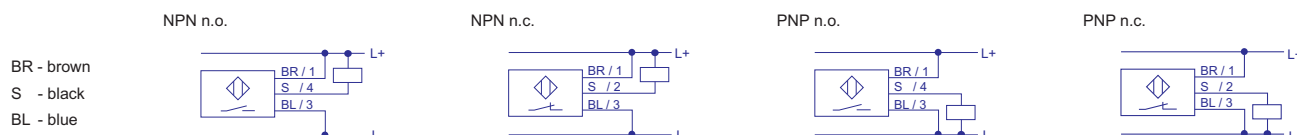
HIGH PRESSURE RESISTANT INDUCTIVE PROXIMITY SWITCHES



TECHNICAL PARAMETERS			
NOMINAL SENSING DISTANCE	Sn	1,2 mm	1,2 mm
REAL SENSING DISTANCE	Sr	0,9 - 1,5 mm	0,9 - 1,5 mm
SWITCHING FREQUENCY	ft	1 kHz	1 kHz
HOUSING		M12	M12
MATERIAL OF THE HOUSING		stainless steel	stainless steel
MOUNTING		flush	flush
HYSTERESIS	Sa	(0,01 - 0,15) x Sn	(0,01 - 0,15) x Sn
PRESSURE RESISTANCE		< 5 MPa	< 5 MPa
NOMINAL VOLTAGE	Un	24 VDC	24 VDC
SUPPLY VOLTAGE	Uc	10 - 30 VDC	10 - 30 VDC
SUPPLY CURRENT	Ic	< 10 mA	< 10 mA
OUTPUT CURRENT	Iz	200 mA	200 mA
AMBIENT TEMPERATURE RANGE	T	-25°C...+80°C	-25°C...+80°C
PROTECTION		IP 68	IP 67
CONNECTION TYPE		cabel PVC 3 x 0,25 mm ² ; 2m	connector M12
SHORTCIRCUIT AND OVERPOLING PROTECTION OF THE SENSORS IS PERMANENT			

OUTPUT		ORDER REFERENCE NUMBER	
NPN	n.o.	PPI 129 111	PPI 129 211
	n.c.	PPI 129 112	PPI 129 212
PNP	n.o.	PPI 129 113	PPI 129 213
	n.c.	PPI 129 114	PPI 129 214

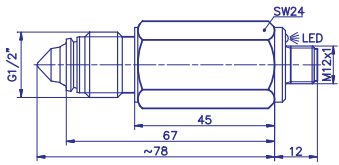
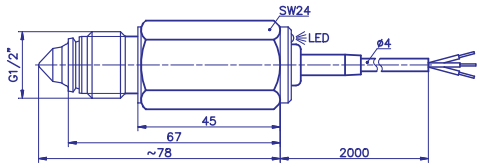
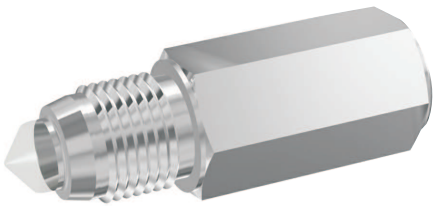
WIRING DIAGRAM



OPTICAL LIQUID

LEVEL SENSORS

standard



TECHNICAL PARAMETERS					
NOMINAL VOLTAGE	Un	24 VDC		24 VDC	
SUPPLY VOLTAGE	Uc	12 - 30 VDC		12 - 30 VDC	
SUPPLY CURRENT	Ic	< 25 mA		< 25 mA	
OUTPUT CURRENT	Iz	≤ 200 mA		≤ 200 mA	
OUTPUT INDICATOR		LED		LED	
REVERSED POLARITY PROTECTION		yes		yes	
SWITCHING DISTANCE (% OF A DIPPED SENSING TIP)		< cca 50%		< cca 50%	
SWITCHING FREQUENCY		35 Hz		35 Hz	
TEMPERATURE RANGE	T	-25°C...+100°C - process	-25°C...+80°C - ambient	-25°C...+100°C - process	-25°C...+80°C - ambient
MATERIAL OF THE HOUSING / SENSING TIP		stainless steel / crystall glass		stainless steel / crystall glass	
MAXIMUM OPERATING PRESSURE		2 MPa		2 MPa	
PROTECTION STANDARD		IP 68		IP 67	
CONNECTION TYPE		cable PVC 3 x 0,25 mm ² ; 2m		connector M12	

ORDER REFERENCE NUMBER					
OUTPUT		CABLE VERSION		CONNECTOR VERSION	
		TYPE "A"	TYPE "B"	TYPE "A"	TYPE "B"
NPN	n.o.	POS 187 311 A	POS 187 311 B	POS 187 411 A	POS 187 411 B
	n.c.	POS 187 312 A	POS 187 312 B	POS 187 412 A	POS 187 412 B
PNP	n.o.	POS 187 313 A	POS 187 313 B	POS 187 413 A	POS 187 413 B
	n.c.	POS 187 314 A	POS 187 314 B	POS 187 414 A	POS 187 414 B

OPERATING PRINCIPLE	MOUNTING NUT	TYPE "A" and TYPE "B"
<p>1 - Control unit 2 - Input 3 - Output</p>		<p>TYPE "A": Suitable for oily liquids (e.g. cooling emulsions, oil, crude oil, hydraulic oil, milk etc.).</p> <p>TYPE "B": Suitable for liquids with foam (e.g. beer, "cola" type soft-drinks) and other liquids (e.g. water).</p>

WIRING DIAGRAM			
<p>NPN n.o.</p> <p>BR - brown S - black BL - blue</p>	<p>NPN n.c.</p>	<p>PNP n.o.</p>	<p>PNP n.c.</p>

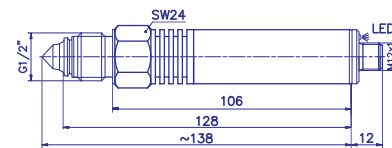
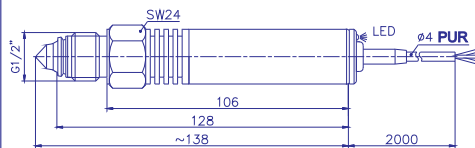
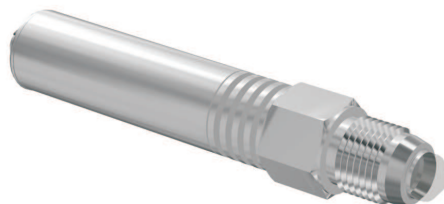
OPTICAL LIQUID

LEVEL SENSORS

for elevated temperatures



RoHS compliant



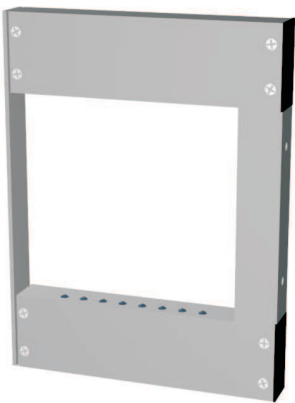
TECHNICAL PARAMETERS					
NOMINAL VOLTAGE	Un	24 VDC		24 VDC	
SUPPLY VOLTAGE	Uc	12 - 30 VDC		12 - 30 VDC	
SUPPLY CURRENT	Ic	< 25 mA		< 25 mA	
OUTPUT CURRENT	Iz	≤ 200 mA		≤ 200 mA	
OUTPUT INDICATOR		LED		LED	
REVERSED POLARITY PROTECTION		yes		yes	
SWITCHING DISTANCE (% OF A DIPPED SENSING TIP)		< cca 50%		< cca 50%	
SWITCHING FREQUENCY		35 Hz		35 Hz	
AMBIENT TEMPERATURE RANGE	T	-25°C...+140°C - process	-25°C...+80°C - ambient	-25°C...+140°C - process	-25°C...+80°C - ambient
MATERIAL OF THE HOUSING / SENSING TIP		stainless steel / crystall glass		stainless steel / crystall glass	
MAXIMUM OPERATING PRESSURE		2 MPa		2 MPa	
PROTECTION STANDARD		IP 68		IP 67	
CONNECTION TYPE		cable PUR 3 x 0,25 mm ² ; 2m		connector M12	

ORDER REFERENCE NUMBER					
OUTPUT		CABLE VERSION		CONNECTOR VERSION	
		TYPE "A"	TYPE "B"	TYPE "A"	TYPE "B"
NPN	n.o.	POS 287 311 A	POS 287 311 B	POS 287 411 A	POS 287 411 B
	n.c.	POS 287 312 A	POS 287 312 B	POS 287 412 A	POS 287 412 B
PNP	n.o.	POS 287 313 A	POS 287 313 B	POS 287 413 A	POS 287 413 B
	n.c.	POS 287 314 A	POS 287 314 B	POS 287 414 A	POS 287 414 B

OPERATING PRINCIPLE	MOUNTING NUT	TYPE "A" and TYPE "B"
<p>1 - Control unit 2 - Input 3 - Output</p>		<p>TYPE "A": Suitable for oily liquids (e.g. cooling emulsions, oil, crude oil, hydraulic oil, milk).</p> <p>TYPE "B": Suitable for liquids with foam (e.g. beer, "cola" type soft-drinks) and other liquids (e.g. water).</p>

WIRING DIAGRAM			
<p>NPN n.o.</p> <p>BR - brown S - black BL - blue</p>	<p>NPN n.c.</p>	<p>PNP n.o.</p>	<p>PNP n.c.</p>

OPTICAL SHIELD



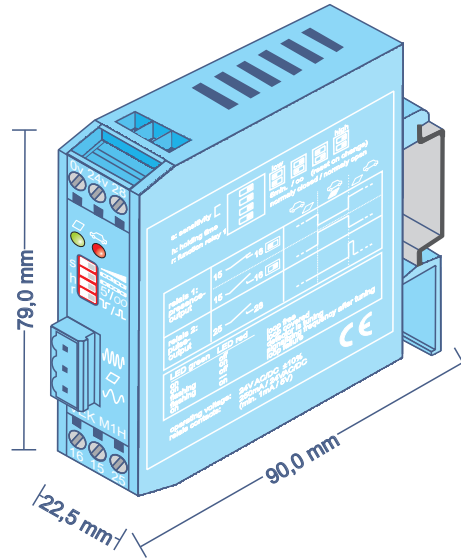
		TECHNICAL PARAMETERS
NOMINAL VOLTAGE	Un	24 VDC
SUPPLY CURRENT	Ic	50 mA
OUTPUT CURRENT	Iz	≤ 20 mA
INPUT CURRENT		≤3 mA
SHORT CIRCUIT PROTECTION		yes
AMBIENT TEMPERATURE RANGE	T	0°C...+50°C
PROTECTION STANDARD		IP 40
CONNECTION TYPE		connector

DIMENSIONS	CONNECTOR
	<p>(Female)</p> <ul style="list-style-type: none">1 - +Un2 - -Un3 - Out4 - A in/out5 - B in/out6 - C in/out7 - Rst in8 - Clk in/out9 - Set in

ORDER REFERENCE NUMBER
PCO - 810 10 13

APPLICATION	
<p>The detector operates on the basis of an optical barrier. Rays connecting the transmitter and receiver are interrupted by a passage of a detected object. On the basis of a number of screened receivers the subsequent operating system evaluates the passage of the object.</p> <p>Generally, the detector can be used for object counting, for distinguishing objects by the size or detecting of the passage of several objects in co-operation with the operating system.</p>	

VEHICLE DETECTOR



TECHNICAL PARAMETERS		
SUPPLY VOLTAGE	Un	24 V ± 10% DC/AC
SUPPLY CURRENT	Ic	< 65 mA
NUMBER OF CONNECTED LOOPS		1
LOOP INDUCTIVITY		25 - 800µH, recommended 100 - 300µH
FREQUENCY RANGE	f	25 - 130 kHz (depending upon the loop inductivity, two settings)
SENSITIVITY		0,1%, 0,04%, 0,16%, 0,64% (Δf/f)
NUMBER OF OUTPUTS		2
CONTACT TYPE OF THE RELAY No. 1		n.o. / n.c. → presence relay
CONTACT TYPE OF THE RELAY No. 2		n.o. → signal duration 200 ms after vehicle have left the loop
RELAYS CONTACT RATING		250 m A at 24VAC/DC
AMBIENT TEMPERATURE RANGE	T	-20°C...+70 °C
STANDARD DIMENSIONS OF THE LOOP [mm]		1200 x 2000
WEIGHT		cca 100g
MOUNTING		35 mm DIN rail

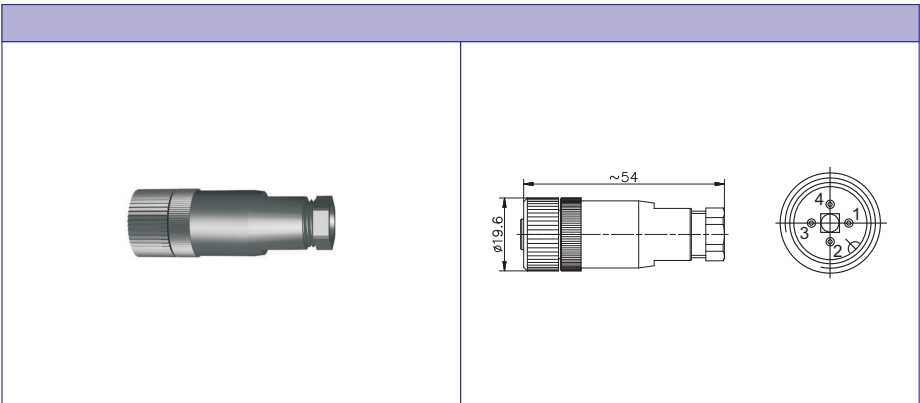
ORDER REFERENCE NUMBER
PAS 709 48 FG1

LOOP	
<p>The detector incorporates a loop to be embedded into a slot milled out in the road, maximum 50 mm under its surface.</p> <p>Standard dimensions of a loop are 1200 x 2000 mm. Length of the loop can be changed according to the width of the road. It can be embedded longitudinally or crosswise.</p> <p>When needed, the switching range and the operating frequency of the detector can be changed by the customer. (To be utilized when several loops are placed next to each other.)</p> <p>Detailed information about loop embedding and detector settings can be found in service manual.</p>	

ACCESSORIES

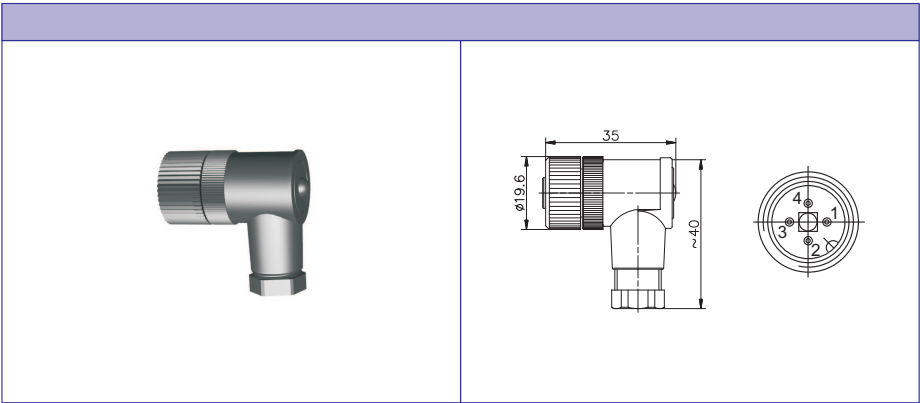
CONNECTORS

K01



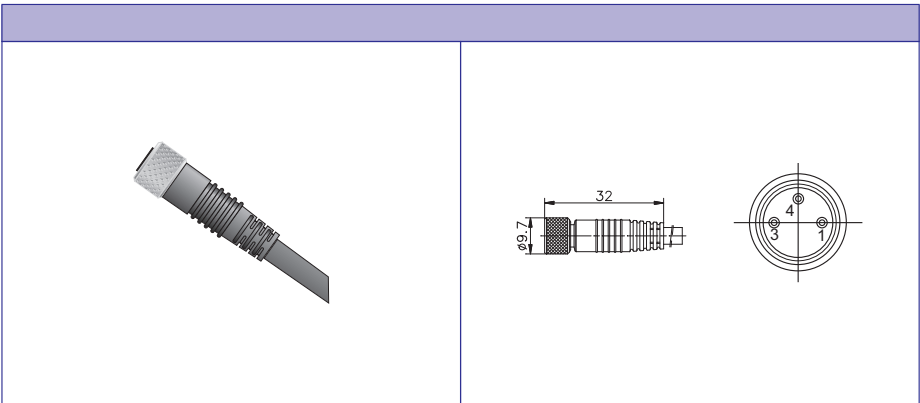
	TECHNICAL PARAMETERS
PROTECTION STANDARD	IP 67
CABLE	recommended \varnothing 4 - 6 mm
WIRE CROSS SECTION	3 x (max.) 0,75 mm ²
APPLICATION	· Switch type: PAS, PDI, PSI - size M12, M18, M30 · Switch type: POS
ORDER REFERENCE NUMBER	K 01

K02



	TECHNICAL PARAMETERS
PROTECTION STANDARD	IP 67
CABLE	recommended \varnothing 4 - 6 mm
WIRE CROSS SECTION	3 x (max.) 0,75 mm ²
APPLICATION	· Switch type: PAS, PDI, PSI - size M12, M18, M30 · Switch type: POS
ORDER REFERENCE NUMBER	K 02

K03

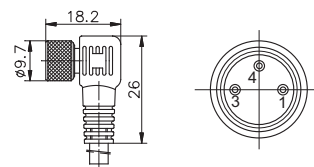


	TECHNICAL PARAMETERS
PROTECTION STANDARD	IP 67
CABLE	\varnothing 4,5 mm x 5 m
WIRE CROSS SECTION	3 x 0,25 mm ²
APPLICATION	• Switch type: PAS, PDI, PSI - size \varnothing 6,5 and M8
ORDER REFERENCE NUMBER	K 03

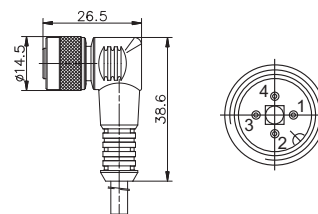
ACCESSORIES

CONNECTORS

K04

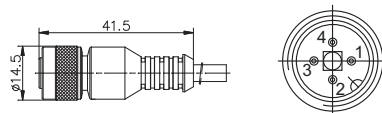


	TECHNICAL PARAMETERS
PROTECTION STANDARD	IP 67
CABLE	ø 4,5 mm x 5 m
WIRE CROSS SECTION	3 x 0,25 mm ²
APPLICATION	• Switch type: PAS, PDI, PSI - size ø 6,5 and M8
ORDER REFERENCE NUMBER	K 04



K05

	TECHNICAL PARAMETERS
PROTECTION STANDARD	IP 67
CABLE	ø 4,5 mm x 5 m
WIRE CROSS SECTION	3 x 0,25 mm ²
APPLICATION	• Switch type: PAS, PDI, PSI - size M12, M18, M30 • Switch type: POS
ORDER REFERENCE NUMBER	K 05

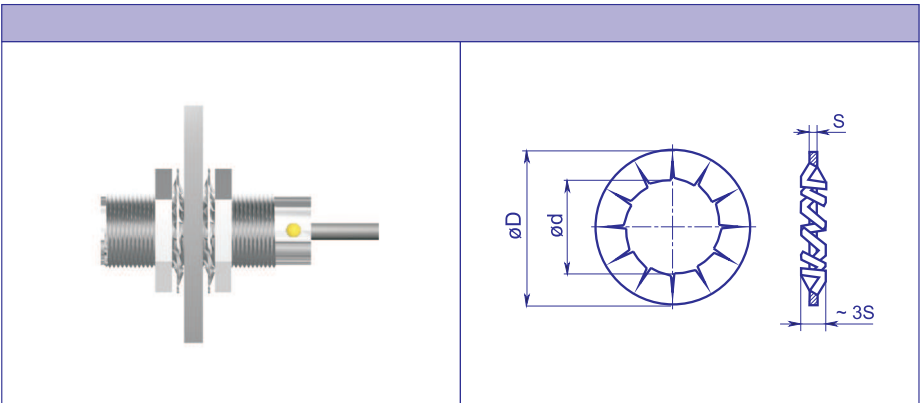


K06

	TECHNICAL PARAMETERS
PROTECTION STANDARD	IP 67
CABLE	ø 4,5 mm x 5 m
WIRE CROSS SECTION	3 x 0,25 mm ²
APPLICATION	• Switch type: PAS, PDI, PSI - size M12, M18, M30 • Switch type: POS
ORDER REFERENCE NUMBER	K 06

ACCESSORIES

SPRING WASHER



SWITCH SIZE	WASHER DIMENSIONS [mm]			ORDER REFERENCE NUMBER
	D	d	s	
M8	15,0	8,4	0,8	P 08
M12	20,5	13,0	1,8	P 12
M18	30,0	19,0	1,8	P 18
M30	48,0	31,0	1,6	P 30

The switch is subject to equipment vibrations that may result in its loosening and subsequent mechanical damaging. This can be prevented by application of spring washers. J-Form zinc-coated washer is complying with DIN 6798.