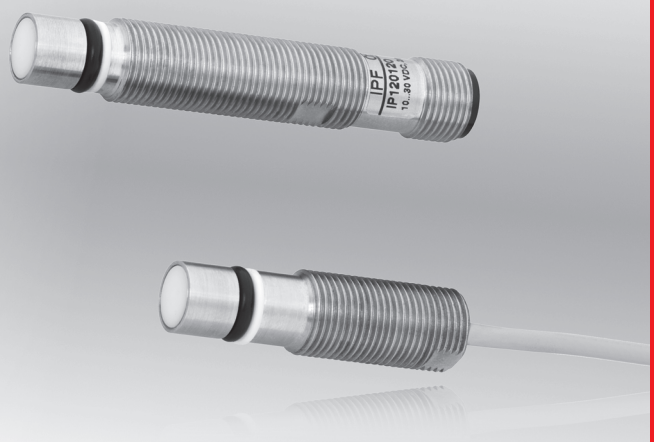
pressure-proof 2100

design	**M12x1** **M18x1**	
flush	sensing range	**1.5mm**



- ✓ **operating temperature up to +90°C**
- ✓ **housing made of stainless steel**
- ✓ **sensor surface made of ceramic**
- ✓ **integrated amplifier**
- ✓ **connection with cable and M12-connector**

high-pressure-proof up to 500bar
max. peak-pressure 800bar

description

These devices are perfectly suited for applications with high dynamic pressure loads.
The main problem with pressure-proof inductive proximity switches is the thick coverage of the active surface (generally from a ceramic material) required to obtain the pressure resistance.
The thickness of this coverage must be deducted from the normal usable sensing range of the device, with the result that just a small or even no usable sensing range remains. In the market devices are available, which come with the oscillator coil mounted on the high-pressure side.
It is inevitable that this type of proximity switches poses reliability problems when used in an environment of standard applications like hydraulic oil, high temperatures or alternating pressure loads.
The ***ipf electronic*** pressure-proof sensors have all their electronic components, including ferrite core and coil, on the pressureless side. The remaining usable sensing range is more than sufficient. The sensor has a very high mechanical resistance and an outstanding impermeability, as the sturdy robust ceramic plate is shrink fitted into the stainless steel housing. The very large sensing range allows the use of a simple, robust ceramic plate with sufficient thickness on the front face.

application examples

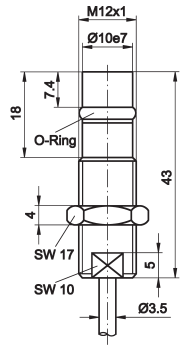
- ▶ position recognition of hydraulic cylinder pistons

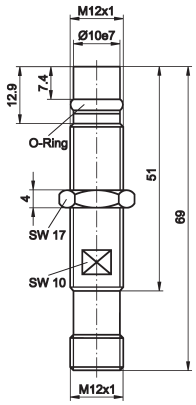
inductive sensors

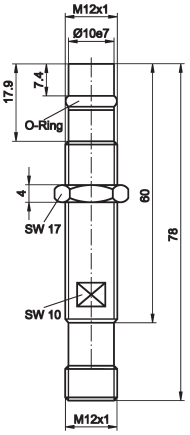
2100 pressure-proof

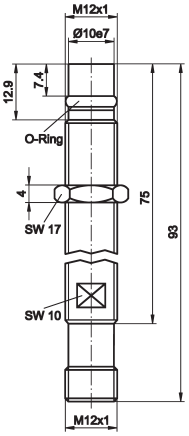
article-no.	**IP120105**	**IP120120**	**IP120121**	**IP120122**
operating range	**1.5mm**	**1.5mm**	**1.5mm**	**1.5mm**
output	**pnp, no**	**pnp, no**	**pnp, no**	**pnp, no**
version	**M12x1**	**M12x1**	**M12x1**	**M12x1**
connection	**cable**	**M12-connector**	**M12-connector**	**M12-connector**
article-no.	*	*	*	*
output	**pnp, nc**	**pnp, nc**	**pnp, nc**	**pnp, nc**
article-no.	*	*	*	*
output	**npn, no**	**npn, no**	**npn, no**	**npn, no**
article-no.	*	*	*	*
output	**npn, nc**	**npn, nc**	**npn, nc**	**npn, nc**

*on request







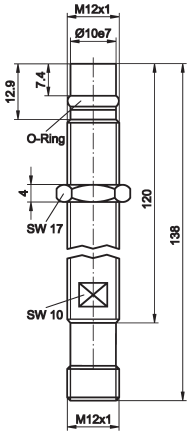


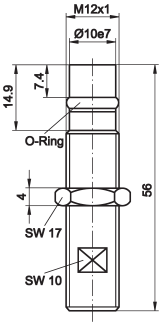
TECHNICAL DATA

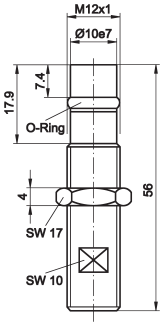
sensing range (Sn)	1.5mm	1.5mm	1.5mm	1.5mm
mounting	flush	flush	flush	flush
pressure resistance (operation)	500bar	500bar	500bar	500bar
pressure resistance (peak)	800bar	800bar	800bar	800bar
output signal	see above	see above	see above	see above
operating voltage	10 ... 30V DC	10 ... 30V DC	10 ... 30V DC	10 ... 30V DC
current consumption (w/o load)	≤ 10mA	≤ 10mA	≤ 10mA	≤ 10mA
output current (max. load)	200mA	200mA	200mA	200mA
voltage drop (max. load)	2.0V DC	2.0V DC	2.0V DC	2.0V DC
norm trimming plate	10x10x1mm	10x10x1mm	10x10x1mm	10x10x1mm
hysteresis	< 8%	< 8%	< 8%	< 8%
repeat accuracy	0.1mm	0.1mm	0.1mm	0.1mm
correct. factor (steel/alum./brass)	1.0/0.2/0.34	1.0/0.2/0.34	1.0/0.2/0.34	1.0/0.2/0.34
correct. factor (stainl. steel/copper)	0.75/0.12	0.75/0.12	0.75/0.12	0.75/0.12
sampling frequency	600Hz	600Hz	600Hz	600Hz
status display	-	-	-	-
short-circuit protection	+	+	+	+
reverse polarity protection	+	+	+	+
design	M12x1	M12x1	M12x1	M12x1
length (thread/complete)	25mm/43mm	38mm/69mm	42mm/78mm	62mm/93mm
housing material	stainless steel	stainless steel	stainless steel	stainless steel
front cap material	ceramic ZrO2	ceramic ZrO2	ceramic ZrO2	ceramic ZrO2
operating temperature	-25 ... +90°C	-25 ... +90°C	-25 ... +90°C	-25 ... +90°C
system of protection (EN60529)	IP68	IP68	IP68	IP68
connection	2m PUR-cable 3-wire	M12-connector, 4-pin 3 assigned	M12-connector, 4-pin 3 assigned	M12-connector, 4-pin 3 assigned
connection accessories	-	e.g. **VK200025** 2m, PUR, straight	e.g. **VK200025** 2m, PUR, straight	e.g. **VK200025** 2m, PUR, straight

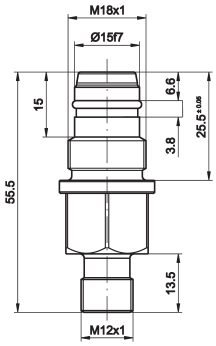
article-no.	**IP120123**	**IP120124**	**IP120125**	**IP180120**
operating range	**1.5mm**	**1.5mm**	**1.5mm**	**1.5mm**
output	**pnp, no**	**pnp, no**	**pnp, no**	**pnp, no**
version	**M12x1**	**M12x1**	**M12x1**	**M18x1**
connection	**M12-connector**	**M12-connector**	**M12-connector**	**M12-connector**
article-no.	*	*	*	*
output	**pnp, nc**	**pnp, nc**	**pnp, nc**	**pnp, nc**
article-no.	*	*	*	*
output	**npn, no**	**npn, no**	**npn, no**	**npn, no**
article-no.	*	*	*	*
output	**npn, nc**	**npn, nc**	**npn, nc**	**npn, nc**

*on request







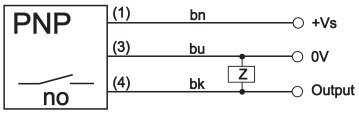


TECHNICAL DATA

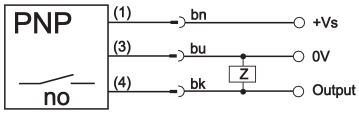
sensing range (Sn)	1.5mm	1.5mm	1.5mm	1.5mm
mounting	flush	flush	flush	flush
pressure resistance (operation)	500bar	500bar	500bar	500bar
pressure resistance (peak)	800bar	800bar	800bar	800bar
output signal	see above	see above	see above	see above
operating voltage	10 ... 30V DC	10 ... 30V DC	10 ... 30V DC	10 ... 30V DC
current consumption (w/o load)	≤ 10mA	≤ 10mA	≤ 10mA	≤ 10mA
output current (max. load)	200mA	200mA	200mA	200mA
voltage drop (max. load)	2.0V DC	2.0V DC	2.0V DC	2.0V DC
norm trimming plate	10x10x1mm	10x10x1mm	10x10x1mm	15x15x1mm
hysteresis	< 8%	< 8%	< 8%	< 10%
repeat accuracy	0.1mm	0.1mm	0.1mm	0.1mm
correct. factor (steel/alum./brass)	1.0/0.2/0.34	1.0/0.2/0.34	1.0/0.2/0.34	1.0/-/0.1
correct. factor (stainl. steel/copper)	0.75/0.12	0.75/0.12	0.75/0.12	0.95/-
sampling frequency	600Hz	600Hz	600Hz	800Hz
status display	-	-	-	-
short-circuit protection	+	+	+	+
reverse polarity protection	+	+	+	+
design	M12x1	M12x1	M12x1	M18x1
length (thread/complete)	107mm/138mm	41mm/56mm	38mm/56mm	7mm/55.5mm
housing material	stainless steel	stainless steel	stainless steel	stainless steel
front cap material	ceramic ZrO2	ceramic ZrO2	ceramic ZrO2	ceramic ZrO2
operating temperature	-25 ... +90°C	-25 ... +90°C	-25 ... +90°C	-25 ... +80°C
system of protection (EN60529)	IP68	IP68	IP68	IP68
connection	M12-connector, 4-pin 3 assigned	M12-connector, 4-pin 3 assigned	M12-connector, 4-pin 3 assigned	M12-connector, 4-pin 3 assigned
connection accessories	e.g. **VK200025** 2m, PUR, straight	e.g. **VK200025** 2m, PUR, straight	e.g. **VK200025** 2m, PUR, straight	e.g. **VK200025** 2m, PUR, straight

connection

cable device

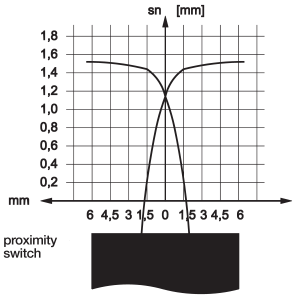


connector device

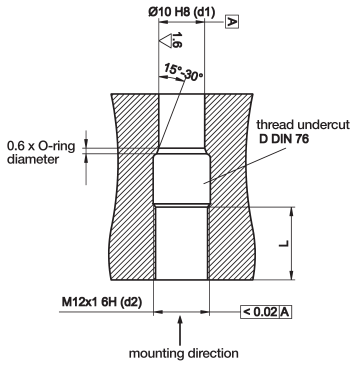


Aderfarben: bn = braun (1), bu = blau (3), bk = schwarz (4)

connection IP12

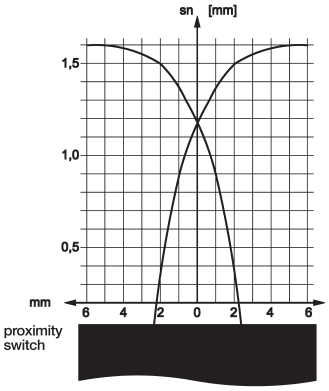


mounting IP12

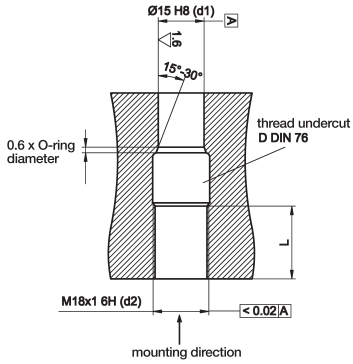


d1: diameter of the mounting hole for the sensor head
d2: nominal thread diameter
L: recommended screw-in depth L ≥ 0.8 x d2

connection IP18



mounting IP18



d1: diameter of the mounting hole for the sensor head
d2: nominal thread diameter
L: recommended screw-in depth L ≥ 0.8 x d2

This data sheet contains the standard versions only. Kindly request the availability of other output- and connection functions.

We will be pleased to supply the matching cable socket for your devices with connector. Please refer to the list in catalog chapter "accessories" under ipf-*SENSORFLEX*®" or search our website for "VK".

Warning: Never use these devices in applications where the safety of a person depends on their functionality.