

The calibratable pressure sensors **PREMASGARD® 711x** (series) with eight switchable measuring ranges (eight devices in one), housing made from impact-resistant plastic, optionally with/without display, with cable gland or M12 connector according to DIN EN 61076-2-101 and pressure connection nozzles (quick connect optional) are used to measure positive, negative or differential pressures in air. The piezoresistive measuring element is temperature-compensated and guarantees a high degree of reliability and accuracy.

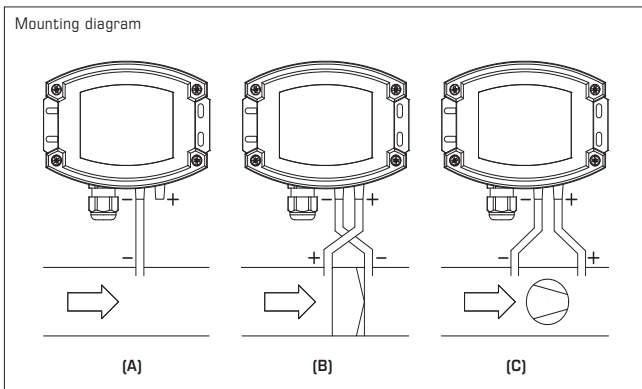
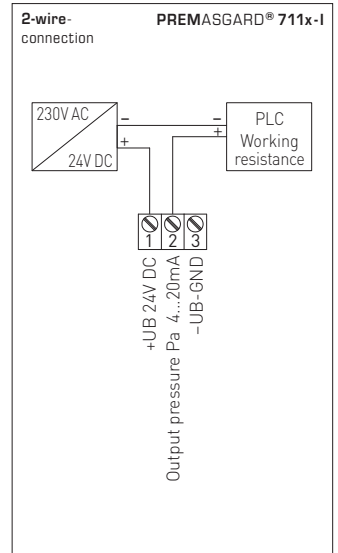
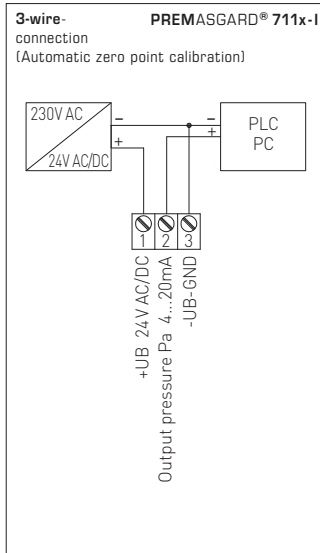
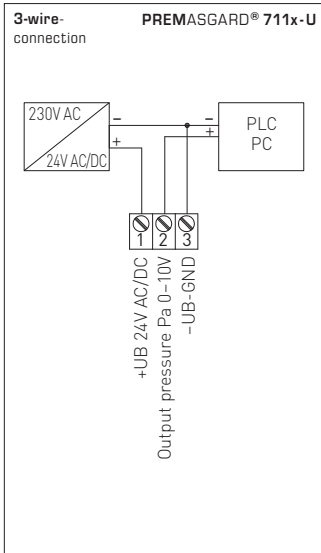
Applications of these pressure sensors are in clean room, medical and filter technology, in ventilation and air conditioning ducts, in spray booths, in large-scale catering facilities, for filter monitoring and level measurement or for triggering frequency converters. Media measured with these pressure transducers are air (non-precipitating), or other gaseous, non-aggressive, non-combustible media.

The pressure sensor has a button for manual zero point calibration (automatic zero point calibration optional/standard for 25Pa) and an offset potentiometer for final value correction. The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible. The delivery includes the connection set **ASD-06** (2m connection hose, two pressure port nipples, screws).

TECHNICAL DATA	
Power supply:	24 V AC (±20%); 15...36 V DC for U variant 15...36 V DC for I variant, depending on working resistance, residual ripple stabilised ±0.3V
Working resistance:	R_a (Ohm) = $(U_b - 14 V) / 0.02 A$ for I variant, see working resistance diagram
Load resistance:	$R_L > 5 k\Omega$ for U variant
Power consumption:	< 2 VA / 24 V DC, < 3.5 VA / 24 V AC
Measuring ranges:	multi-range switching with 8 switchable measuring ranges (see table)
Type of pressure:	differential pressure
Pressure connection:	with connection nozzle for pressure hose Ø 6 mm, optionally with quick connect made from stainless steel for PVC fabric pressure hose Ø 6 mm (external diameter)
Medium:	clean air and non-aggressive, non-combustible gases
Media temperature:	-20...+50 °C
Accuracy:	Type 7112 (25 Pa): typically ± 1 Pa Type 7110 (100 Pa): typically ± 2 Pa Type 7111 (1000 Pa): typically ± 5 Pa Type 7115 (5000 Pa): typically ± 25 Pa compared to the calibrated reference device
Sum of linearity+hysteresis:	< ± 1 % of final value ± 2 % of final value for pressure ranges < ± 250 Pa
Temp. drift values:	± 0.1 % / °C ± 0.3 % / °C for pressure ranges < 250 Pa
Zero point offset:	< ± 0.7 % of final value ± 1.4 % of final value for pressure ranges < 250 Pa
Positive/negative pressure:	max. ± 100 hPa
Signal filtering:	switchable 1 s / 10 s (via DIP switches)
Output:	0 -10 V or 4...20 mA
Connection type:	2- or 3-wire connection
Electrical connection:	0.14-1.5 mm², via plug-in screw terminal
Cable connection:	cable gland , plastic (M16 x 1.5; with strain relief, exchangeable, max. inner diameter 10.4 mm) or M12 connector (male, 5-pin, A-code) according to DIN EN 61076-2-101
Housing:	plastic , UV-resistant, material polyamide, 30% glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), cover for display is transparent!
Housing dimensions:	126 x 90 x 50 mm (Tyr 2)
Air humidity:	< 95 % RH, non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	IP 65 (according to EN 60529) in the built-in state
Standards:	CE conformity according to EMC Directive 2014 / 30 / EU, according to EN 61326-1, according to EN 61326-2-3
Equipment:	display with illumination , three-line, cutout approx. 70 x 40 mm (W x H), to display the ACTUAL pressure as well as the automatic zero point calibration
ACCESSORIES	see table

PREMASGARD® 711x		Pressure and differential pressure measuring transducers, <i>Deluxe</i>		
Pressure range (adjustable)	Type / W602	Output	Display ● = Q	Item No.
max. – 1000...+ 1000 Pa		Type 7111		
0... 100 Pa / – 100... + 100 Pa	PREMASGARD 7111-U	0-10V		1301-7111-0010-200
0... 300 Pa / – 300... + 300 Pa	PREMASGARD 7111-U LCD	0-10V	■	1301-7111-4010-200
0... 500 Pa / – 500... + 500 Pa	PREMASGARD 7111-I	4...20mA		1301-7112-0010-100
0... 1000 Pa / –1000... + 1000 Pa	PREMASGARD 7111-I LCD	4...20mA	■	1301-7112-4010-100
	PREMASGARD 7111-U Q	0-10V	●	2004-6131-1100-001
	PREMASGARD 7111-U Q LCD	0-10V	● ■	2004-6132-1100-001
	PREMASGARD 7111-I Q	4...20mA	●	2004-6131-2100-001
	PREMASGARD 7111-I Q LCD	4...20mA	● ■	2004-6132-2100-001
max. – 5000...+ 5000 Pa		Type 7115		
0... 1000 Pa / – 1000... + 1000 Pa	PREMASGARD 7115-U	0-10V		1301-7111-0050-200
0... 2000 Pa / – 2000... + 2000 Pa	PREMASGARD 7115-U LCD	0-10V	■	1301-7111-4050-200
0... 3000 Pa / – 3000... + 3000 Pa	PREMASGARD 7115-I	4...20mA		1301-7112-0050-100
0... 5000 Pa / – 5000... + 5000 Pa	PREMASGARD 7115-I LCD	4...20mA	■	1301-7112-4050-100
	PREMASGARD 7115-U Q	0-10V	●	2004-6131-1100-011
	PREMASGARD 7115-U Q LCD	0-10V	● ■	2004-6132-1100-021
	PREMASGARD 7115-I Q	4...20mA	●	2004-6131-2100-011
	PREMASGARD 7115-I Q LCD	4...20mA	● ■	2004-6132-2100-011
max. – 100...+ 100 Pa		Type 7110		
0... +50 Pa / –50... +50 Pa	PREMASGARD 7110-U	0-10V		1301-7111-0110-200
0...+100 Pa / –100...+100 Pa	PREMASGARD 7110-U LCD	0-10V	■	1301-7111-4110-200
	PREMASGARD 7110-I	4...20mA		1301-7112-0110-100
	PREMASGARD 7110-I LCD	4...20mA	■	1301-7112-4110-100
	PREMASGARD 7110-U Q	0-10V	●	2004-6131-1100-021
	PREMASGARD 7110-U Q LCD	0-10V	● ■	2004-6132-1100-031
	PREMASGARD 7110-I Q	4...20mA	●	2004-6131-2100-021
	PREMASGARD 7110-I Q LCD	4...20mA	● ■	2004-6132-2100-021
max. – 25...+ 25 Pa		Type 7112		
0... +25 Pa / –25... +25 Pa	PREMASGARD 7112-U	0-10V		1301-7111-0370-200
<i>equipped as standard with automatic zero point calibration (3-wire connection)</i>	PREMASGARD 7112-U LCD	0-10V	■	1301-7111-4370-200
	PREMASGARD 7112-I	4...20mA		1301-7112-0370-200
	PREMASGARD 7112-I LCD	4...20mA	■	1301-7112-4370-200
	PREMASGARD 7112-U Q	0-10V	●	2004-6131-1100-031
	PREMASGARD 7112-U Q LCD	0-10V	● ■	2004-6132-1100-011
	PREMASGARD 7112-I Q	4...20mA	●	2004-6131-3100-001
	PREMASGARD 7112-I Q LCD	4...20mA	● ■	2004-6132-3100-011
Housing variant "Q":	Cable connection with M12 connector (male, 5-pin , A-code)			
Multi-range switching:	The pressure ranges depend on the device type and can be set via DIP switches.			
Extra charge:	Other special measuring ranges up to max. 5000 Pa with optional automatic zero point calibration with optional quick connect for PVC fabric pressure hose Ø 6 mm			

ACCESSORIES		
ASD-06	Connection set (included in the scope of delivery) , consisting of 2 connection nipples (straight) made of ABS, 2 m PVC hose (soft, UV-resistant) and 4 screws	7100-0060-3000-000
ASD-07	2 connection nipples (at 90 degree angle) made of plastic, ABS	7100-0060-7000-000
DAL-01	Pressure outlet for ceiling or in-wall installation (e.g. in clean rooms)	7300-0060-3000-001
WS-03	Weather and sun protection hood , 200x180x150 mm, stainless steel V2A (1.4301)	7100-0040-6000-000



TYPES OF MONITORING:

(A) Below-atmospheric pressure:

- P1 (+) is not connected but open against atmosphere
- P2 (-) connected to inside of duct

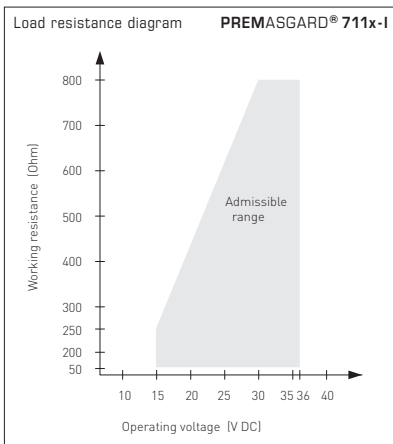
(B) Filter:

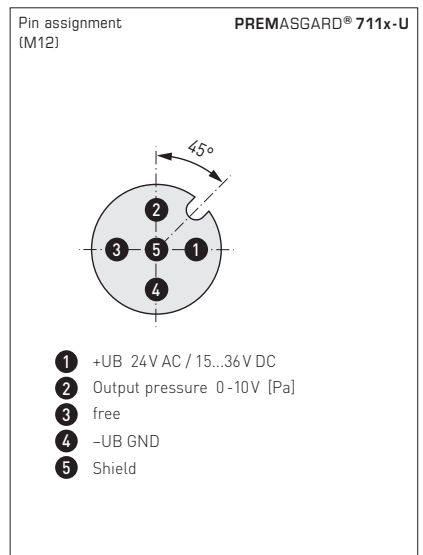
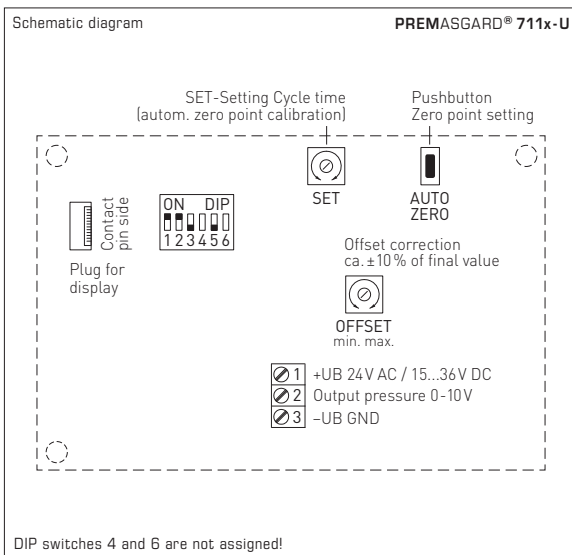
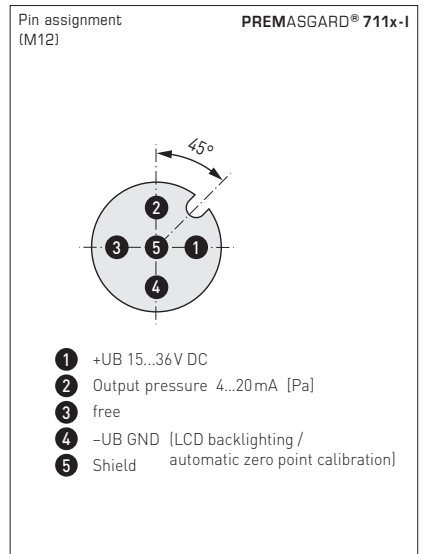
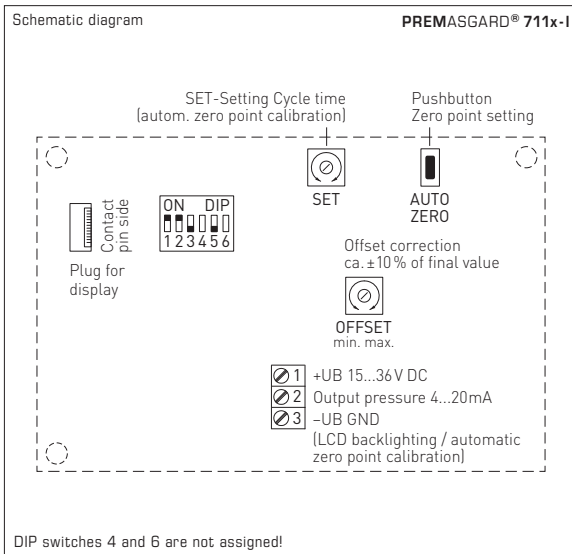
- P1 (+) connected upstream of filter
- P2 (-) connected downstream of filter

(C) Ventilator:

- P1 (+) connected downstream of ventilator
- P2 (-) connected upstream of ventilator

Pressure connections at the pressure switch are marked with P1 (+) for higher pressure and P2 (-) for lower pressure.

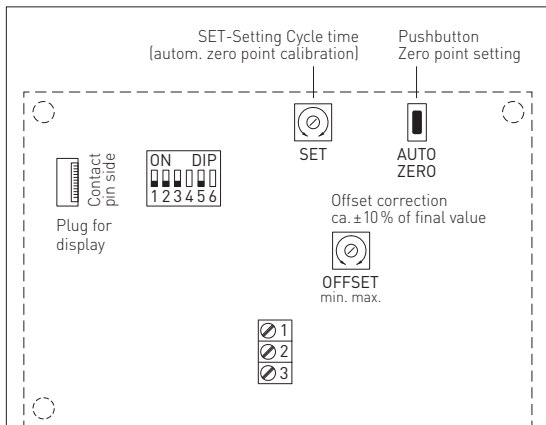




Conversion table for pressure values:

Unit =	bar	mbar	Pa	kPa	mH ₂ O
1 Pa	0.00001 bar	0.01 mbar	1 Pa	0.001 kPa	0.000101971 mH ₂ O
1 kPa	0.01 bar	10 mbar	1000 Pa	1 kPa	0.101971 mH ₂ O
1 bar	1 bar	1000 mbar	100000 Pa	100 kPa	10.1971 mH ₂ O
1 mbar	0.001 bar	1 mbar	100 Pa	0.1 kPa	0.0101971 mH ₂ O
1 mH ₂ O	0.0980665 bar	98.0665 mbar	9806.65 Pa	9.80665 kPa	1 mH ₂ O

Automatic offset setting:



Manual offset adjustment:

The offset potentiometer functions additionally and independently for automatically setting the zero point.
 With the OFFSET potentiometer, a deviation outside of the zero point can be aligned.
 The range for adjustment is ca. ±10% of the pressure range.

Automatic zero point calibration (optional):

A **zero point calibration** is carried out cyclically via an internal valve.
 The cycle time can be set between 15 minutes and 24 hours using the „SET“ potentiometer.
 During the automatic calibration, the output value remains at its last pressure value.

Three display readouts showing the calibration process:

- Standard:** Actual pressure (in Pa) Calibration interval (arrows). Display shows "183 Pa" and "xxxxx".
- Zero point calibration active:** remaining calibration time (in seconds). Display shows "4" and "AUTO 0".
- Adjustment of zero point calibration:** Cycle time (15 min to 24 hours) adjustable by potentiometer. Display shows "183 Pa" and "6.2h".

Display readout:

The 1st line in the display shows the **actual pressure**.
 In the 2nd line, the **unit pascal (Pa)** is shown.

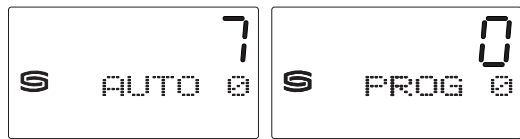
Display readout showing "3570 Pa".

1. For zero point setting, the device must be in operation for at least 60 minutes.
2. Connect pressure inputs P (+) and P (-) with a hose. (Pressure difference between the inputs = 0 Pa).
3. For zero point setting, press pushbutton uninterrupted for 10 seconds.

By pressing the pushbutton, a countdown of ca. 10 seconds is started. The yellow LED is blinking and the countdown is shown on the display (optional).

Zero point calibration takes place after the countdown period. This is indicated by continuous LED light and at the display (optional) by switching from "AUTO 0" to "PROG 0".

Note: By releasing the pushbutton during the countdown (counter > 0), zero point setting is immediately cancelled!



DIP switches for pressure range setting, output attenuation and zero compensation:

Pressure range (selectable) – max. measuring range (default) is depending to the type of device								DIP 1	DIP 2
0...25 Pa	0...50 Pa	0...100 Pa	0...1000 Pa	-25...+25 Pa	-50...+50 Pa	-100...+100 Pa	-1000...+1000 Pa	OFF	OFF
-	-	0...300 Pa	0...2000 Pa	-	-	-300...+300 Pa	-2000...+2000 Pa	ON	OFF
-	-	0...500 Pa	0...3000 Pa	-	-	-500...+500 Pa	-3000...+3000 Pa	OFF	ON
0...25 Pa	0...100 Pa	0...1000 Pa	0...5000 Pa	-25...+25 Pa	-100...+100 Pa	-1000...+1000 Pa	-5000...+5000 Pa	ON	ON

Measuring range mode (Mode selectable)	DIP 3
Unidirectional (0...+MR) (default)	OFF
Bidirectional (-MR...+MR)	ON

Measurement signal filtering (Time interval selectable)	DIP 5
10 s (default)	OFF
1 s	ON

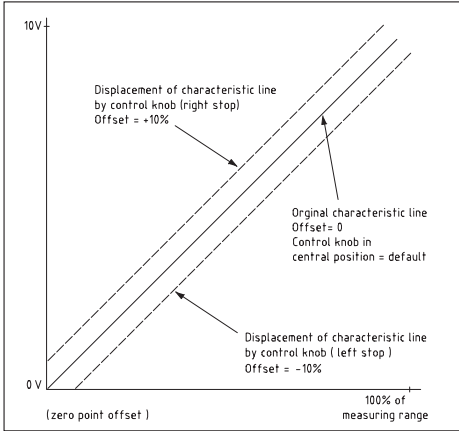
PREMASGARD® 711x

(Range: 0...+xxPa)

After successful zero point calibration, the output voltage is 0 V at 0 Pa pressure difference (with the offset knob in central position)!

Output voltage 0...10 V

for pressure difference from 0 Pa to final value



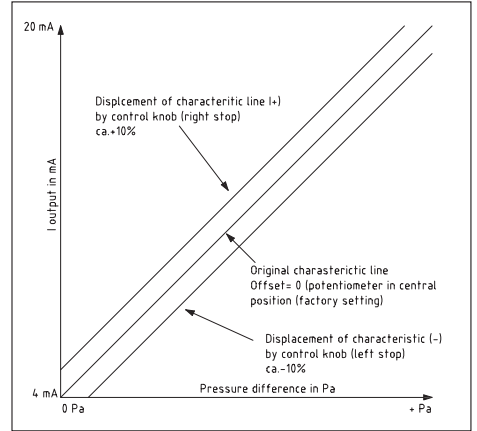
PREMASGARD® 711x

(Range: 0...+xxPa)

After successful zero point calibration, the output current is 4 mA at 0 Pa pressure difference (with the offset knob in central position)!

Output current 4...20 mA

for pressure difference from 0 Pa to final value



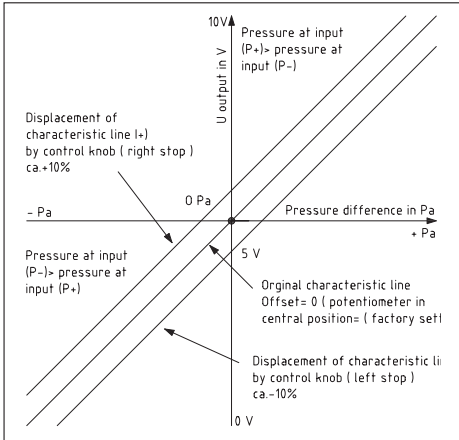
PREMASGARD® 711x

(Range: -xx ...+xxPa)

After successful zero point calibration, the output current is 5 V at 0 Pa pressure difference (with the offset knob in central position)!

Output voltage 0...10 V

for pressure difference - ΔP... +ΔP



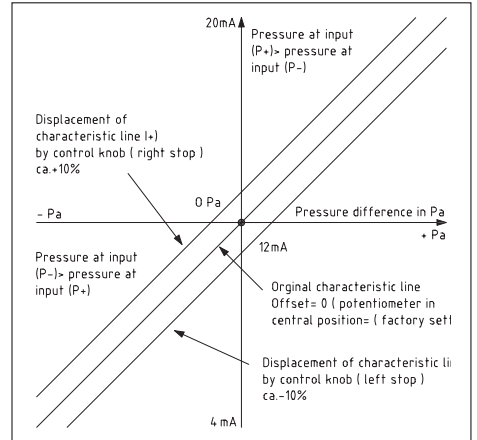
PREMASGARD® 711x

(Range: -xx ...+xxPa)

After successful zero point calibration, the output current is 12 mA at 0 Pa pressure difference (with the offset knob in central position)!

Output current 4...20 mA

for pressure difference - ΔP... +ΔP



This device can be mounted in any position. The voltage output is short-circuit proof. Applying overvoltage at the voltage output will destroy this device. Pressure ranges are indicated on the device label. Applying measuring pressures beyond that range will cause mismeasurements and increased deviations or may destroy the device.

- Attention! When leading in cables, make sure, they do not go under the board.
This might buckle or damage hose connections!
- Pressure inputs are "poled" i.e. the above-atmospheric pressure line must be connected at input P+ and the below-atmospheric pressure line must be connected at input P-.
- At an adjusting element, the output signal can be offset by $\pm 10\%$ of the final value of the measuring range.
In this way, possible ageing or drift effects can be compensated.
- If this device is operated beyond the specified range, all warranty claims are forfeited.

Our "General Terms and Conditions for Business" together with the "General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry" (ZVEI conditions) including supplementary clause "Extended Retention of Title" apply as the exclusive terms and conditions.

In addition, the following points are to be observed:

- These instructions must be read before installation and putting in operation and all notes provided therein are to be regarded!
- A suitable weather and sun protection hood must be used when installed outdoors.
- Devices must only be connected to safety extra-low voltage and under dead-voltage condition. To avoid damages and errors the device (e.g. by voltage induction) shielded cables are to be used, laying parallel with current-carrying lines is to be avoided, and EMC directives are to be observed.
- This device shall only be used for its intended purpose. Respective safety regulations issued by the VDE, the states, their control authorities, the TÜV and the local energy supply company must be observed. The purchaser has to adhere to the building and safety regulations and has to prevent perils of any kind.
- No warranties or liabilities will be assumed for defects and damages arising from improper use of this device.
- Consequential damages caused by a fault in this device are excluded from warranty or liability.
- These devices must be installed and commissioned by authorised specialists.
- The technical data and connecting conditions of the mounting and operating instructions delivered together with the device are exclusively valid. Deviations from the catalogue representation are not explicitly mentioned and are possible in terms of technical progress and continuous improvement of our products.
- In case of any modifications made by the user, all warranty claims are forfeited.
- This device must not be installed close to heat sources (e.g. radiators) or be exposed to their heat flow. Direct sun irradiation or heat irradiation by similar sources (powerful lamps, halogen spotlights) must absolutely be avoided.
- Operating this device close to other devices that do not comply with EMC directives may influence functionality.
- This device must not be used for monitoring applications, which serve the purpose of protecting persons against hazards or injury, or as an EMERGENCY STOP switch for systems or machinery, or for any other similar safety-relevant purposes.
- Dimensions of housing or housing accessories may show slight tolerances on the specifications provided in these instructions.
- Modifications of these records are not permitted.
- In case of a complaint, only complete devices returned in original packing will be accepted.

Notes on commissioning:

This device was calibrated, adjusted and tested under standardised conditions. When operating under deviating conditions, we recommend performing an initial manual adjustment on-site during commissioning and subsequently at regular intervals.

Commissioning is mandatory and may only be performed by qualified personnel!

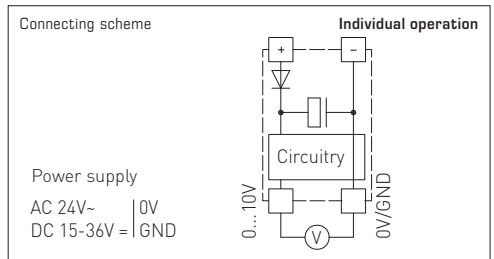
These instructions must be read before installation and commissioning and all notes provided therein are to be regarded!

SUPPLY VOLTAGE:

For operating voltage reverse polarity protection, a one-way rectifier or reverse polarity protection diode is integrated in this device variant. This internal one-way rectifier also allows operating 0-10V devices on AC supply voltage.

The output signal is to be tapped by a measuring instrument. Output voltage is measured here against zero potential (0V) of the input voltage!

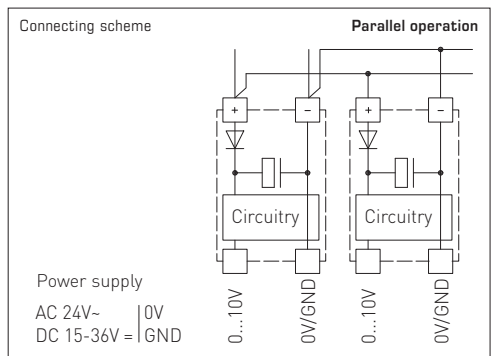
When this device is operated on **DC supply voltage**, the operating voltage input UB+ is to be used for 15...36V DC supply and UB- or GND for ground wire!



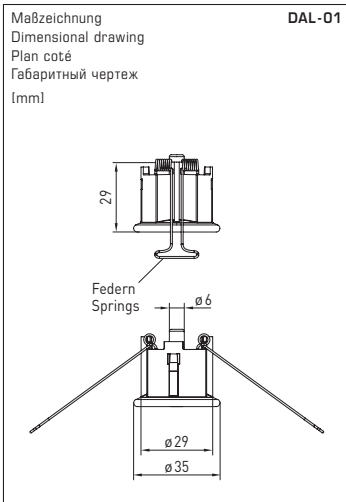
When several devices are supplied by one 24V AC voltage supply, it is to be ensured that all "positive" operating voltage input terminals (+) of the field devices are connected with each other and all "negative" operating voltage input terminals (-) (= reference potential) are connected together (in-phase connection of field devices). All outputs of field devices must be referenced to the same potential!

In case of reversed polarity at one field device, a supply voltage short-circuit would be caused by that device. The consequential short-circuit current flowing through this field device may cause damage to it.

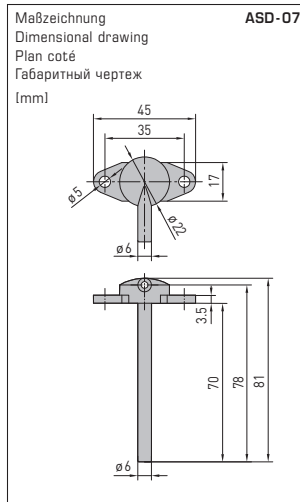
Therefore, pay attention to correct wiring!



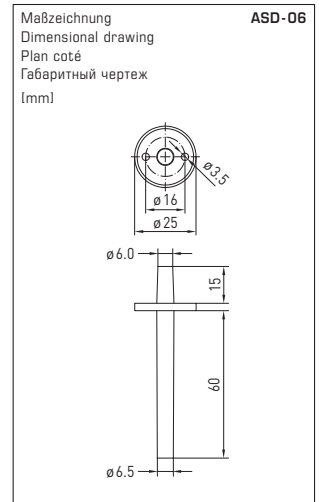
PREMASGARD® 711x



DAL-01
Druckauslass
Pressure outlet
Sortie pression
Клапан выпуска давления



ASD-07
Anschlussnippel
Connection nipple
Embouts de raccordement
Соединительный nipple



ASD-06
Anschluss-Set
Connection set
Kit de raccordement
Комплект соединительных деталей



WS-03
Wetter- und Sonnenschutz
(optional)
Weather and sun protection
(optional)
Protection contre
les intempéries et le soleil
(en option)
Приспособление для защиты
от непогоды и солнечных лучей
(опция)