

Pressure, differential pressure and volume flow measuring transducers,
including connection set, compact form, adjustable, calibratable,
with multi-range switching and active output

The calibrateable compact pressure sensors of the **PREMASGARD® 111x / 112x / 112x-SD** series are equipped with eight switchable measuring ranges and with or without optional display (eight devices in one) and are used for measuring above-atmospheric, below-atmospheric, or differential pressures and Volume flow in air. The piezo-resistive measuring element is temperature-compensated and guarantees a high degree of reliability and accuracy. These pressure transmitters have a pushbutton for manual zero point calibration and an adjustable offset. 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 monitoring filters, for 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 differential pressure sensor is supplied including connection set **ASD-06** (2 m connection hose, two pressure connection nipples, screws). You can find further device types under **PREMASGARD® 211x / 212x / 212x-SD** (3-conductor connection) with switchable output (0-10 V / 4...20 mA).

TECHNICAL DATA

Power supply:	24 V AC ($\pm 20\%$); 15...36 V DC for U variant 15...36 V DC for I variant, depending on working resistance, residual ripple stabilised ± 0.3 V
Working resistance:	$R_a \text{ (ohm)} = (U_b - 14 \text{ V}) / 0.02 \text{ A}$ for I variant
Load resistance:	$R_L > 5 \text{ kOhm}$ for U variant
Power consumption:	$< 1 \text{ W}$ at 24 V DC; $< 2 \text{ VA}$ at 24 V AC
Measuring function:	Differential pressure, volume flow (square root output signal)
Measuring ranges:	multi-range switching with 8 switchable measuring ranges (see table)
Output:	0-10 V or 4...20 mA
Electrical connection:	2- or 3-wire connection
Media temperature:	$-20...+50^\circ\text{C}$
Pressure connection:	with connection nozzles for pressure hose $\varnothing 6 \text{ mm}$
Type of pressure:	differential pressure
Medium:	clean air and other non-aggressive, non-combustible gases
Accuracy:	Type 1111 / 1121 / 1121-SD (1000 Pa): typically $\pm 10 \text{ Pa}$ Type 1115 / 1125 / 1125-SD (5000 Pa): typically $\pm 50 \text{ Pa}$ Type 1116 / 1126 (10000 Pa): typically $\pm 50 \text{ Pa}$ compared to the calibrated reference device
Zero point offset:	$\pm 10\%$ of final value
Above- / below-atmospheric pressure:	max. 5 x measuring range
Long-term stability:	$\pm 1\%$ per year
Signal filtering:	switchable 1 s / 10 s
Hysteresis:	0.3% of final value
Media contacting parts:	ms, Ni, Nylon, PU, Si, PVC with plasticisers
Temperature drift values:	$\pm 0.1\%$ of final value/ $^\circ\text{C}$
Current consumption:	$< 20 \text{ mA}$
Linearity:	$< \pm 1\%$ of final value
Housing:	plastic, UV-resistant, material polyamide, 30% glass-globe reinforced, colour traffic white (similar to RAL 9016), housing cover for display is transparent! Type 111x / 112x: with quick-locking screws (slotted/Phillips head combination) Type 112x-SD: with snap-on lid
Housing dimensions:	72 x 64 x 37.8 mm (Tyr 1 / Tyr 01 without display) 72 x 64 x 43.3 mm (Tyr 1 / Tyr 01 with display)
Cable connection:	cable gland , plastic (M 16 x 1.5; with strain relief, exchangeable, inner diameter 10.4 mm) or M12 connector according to DIN EN 61076-2-101 (optional on request)
Electrical connection:	0.14 - 1.5 mm ² , via terminal screws
Humidity:	$< 95\%$ RH, non-precipitating air
Protection class:	III (according to EN 60730)
Protection type:	Type 111x / 112x: IP 67 (according to EN 60529)* Housing tested, TÜV SÜD, Report No. 713139052 (Tyr 1) Type 112x-SD: IP 54 (according to EN 60529)* Housing tested, TÜV SÜD, Report No. 713160960A (Tyr 01) * Housing in the built-in state
Standards:	CE conformity, electromagnetic compatibility according to EN 61326, EMC directive 2014 / 30 / EU
Features:	two-line display with illumination , cutout approx. 36 x 15 mm (W x H), to display ACTUAL pressure
ACCESSORIES	see table

PREMASGARD® 111x
Pressure connectors
on the top side
with quick-locking screws
(IP 67)



PREMASGARD® 112x
Pressure connectors
on the bottom side
with quick-locking screws
(IP 67)



PREMASGARD® 112x-SD
Pressure connectors
on the bottom side
with snap-on lid
(IP 54)





S+S REGELTECHNIK

1 variant
with 2-wire
connection

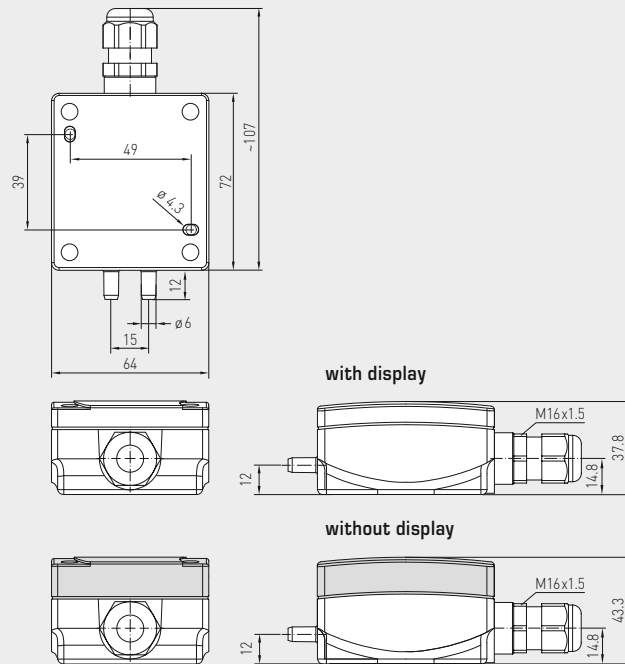
PREMASGARD® 111x/112x/112x-SD

Pressure, differential pressure and volume flow measuring transducers,
including connection set, compact form, adjustable, calibratable,
with multi-range switching and active output



Dimensional drawing

PREMASGARD® 111x



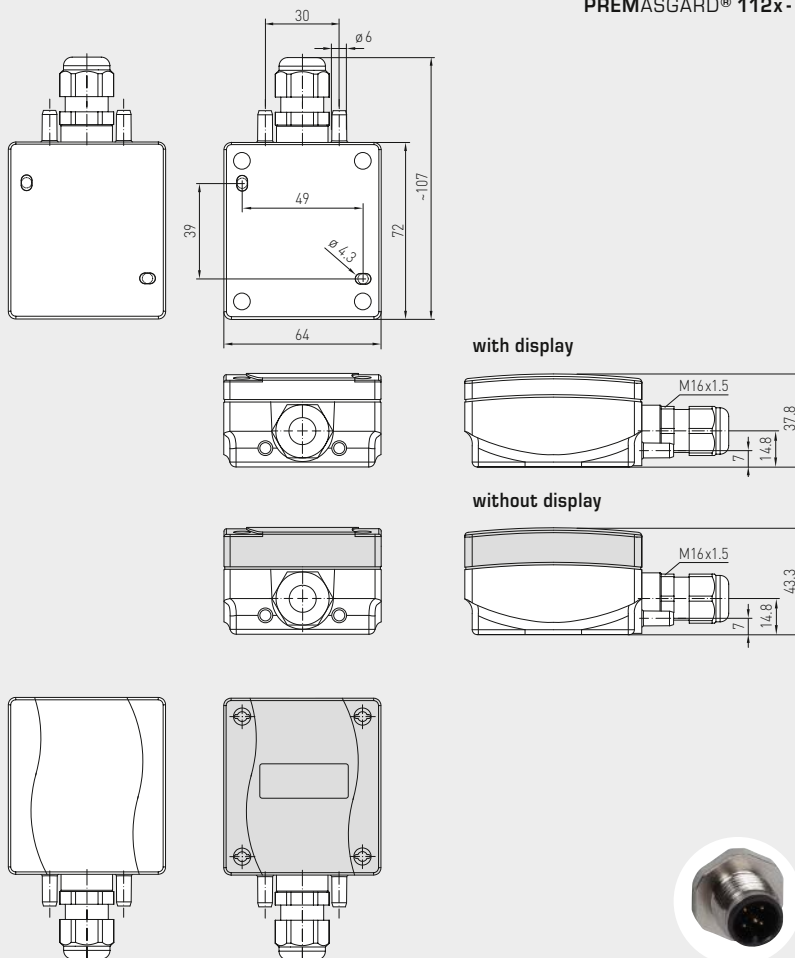
PREMASGARD® 111x

Pressure connectors
on the top side, with display,
with quick-locking screws
(IP 67)



Dimensional drawing

PREMASGARD® 112x
PREMASGARD® 112x-SD



PREMASGARD® 112x

Pressure connectors
on the bottom side, with display,
with quick-locking screws
(IP 67)



PREMASGARD® 112x-SD

Pressure connectors
on the bottom side, with display,
with snap-on lid
(IP 54)



with snap-on lid

with quick-locking
screws

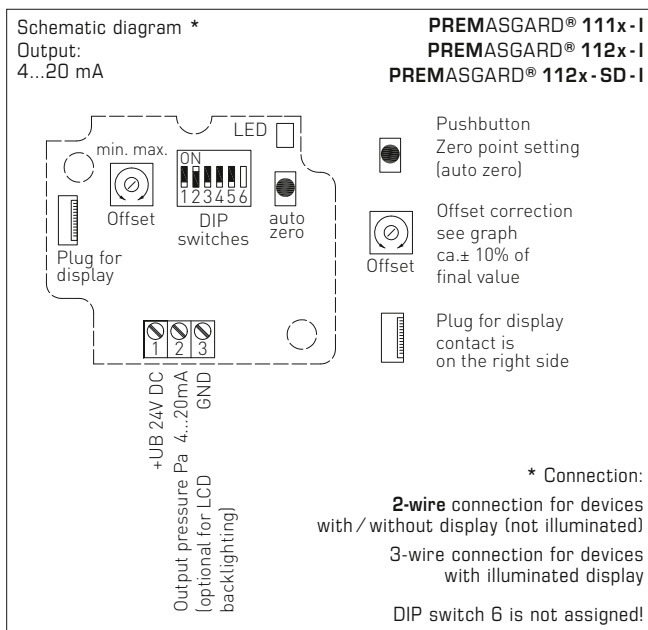
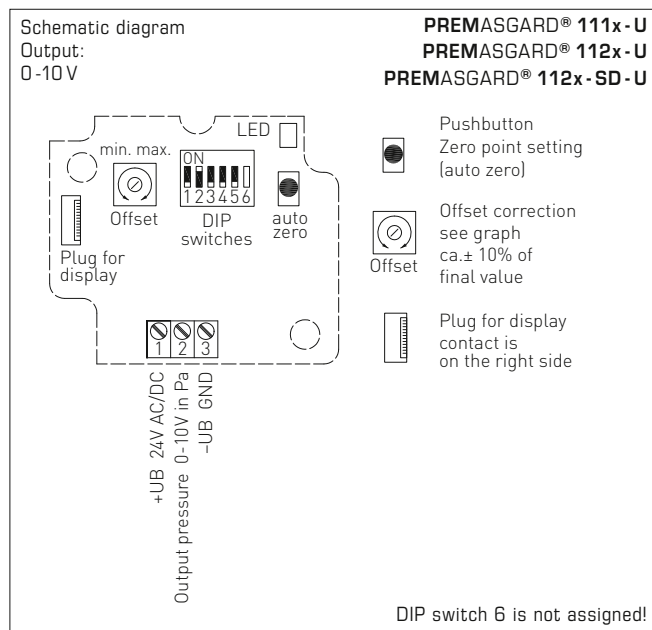
M12 connector
(optional on request)

Pressure, differential pressure and volume flow measuring transducers,
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1 variant
with 2-wire
connection



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* Connection:

2-wire connection for devices
with/without display (not illuminated)

3-wire connection for devices
with illuminated display

DIP switch 6 is not assigned!

Pressure range (selectable) – max. measuring range (default) is depending to the type of device						DIP 1	DIP 2
0...100 Pa	0...1000 Pa	0...4000 Pa	-100...+100 Pa	-1000...+1000 Pa	-4000...+4000 Pa	OFF	OFF
0...300 Pa	0...2000 Pa	0...6000 Pa	-300...+300 Pa	-2000...+2000 Pa	-6000...+6000 Pa	ON	OFF
0...500 Pa	0...3000 Pa	0...8000 Pa	-500...+500 Pa	-3000...+3000 Pa	-8000...+8000 Pa	OFF	ON
0...1000 Pa	0...5000 Pa	0...10000 Pa	-1000...+1000 Pa	-5000...+5000 Pa	-10000...+10000 Pa	ON	ON

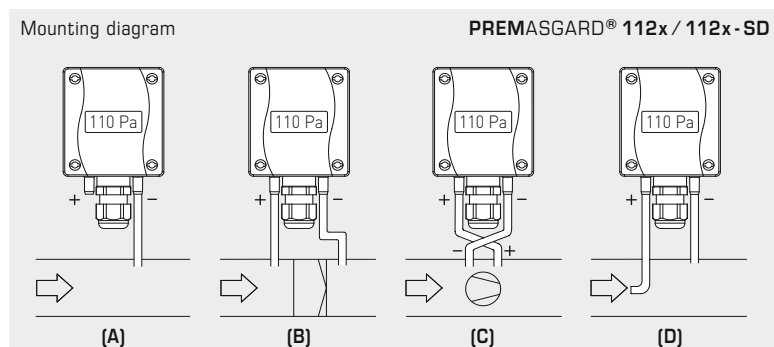
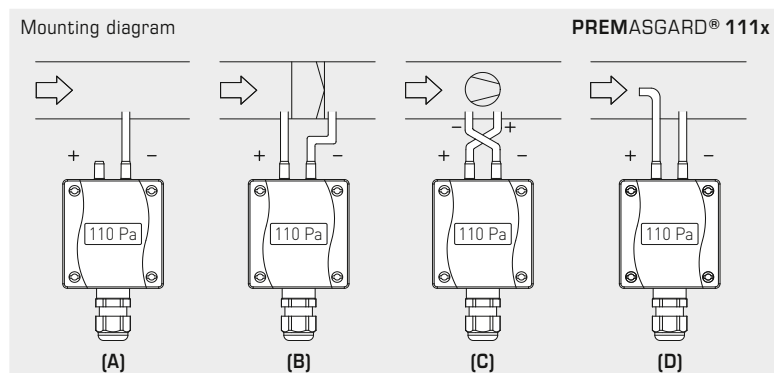
PREMASGARD® 11xx

DIP switch 6
is not assigned!

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

Output characteristic line (Mode selectable)	DIP 4
Linear (default) (for pressure detection)	OFF
Square root extracting (to determine the volume flow)	ON

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

**TYPES OF MONITORING:**

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

(A) Below-atmospheric pressure

P1 (+) is not connected,
but open to the 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

(D) Volume flow

P1 (+) dynamic pressure,
connected in flow direction
P2 (-) static pressure, connected free of
dynamic pressure components

$$V = k \cdot \sqrt{\Delta p}$$

V = Volume flow

k = K factor

Δp = Differential pressure [Pa]



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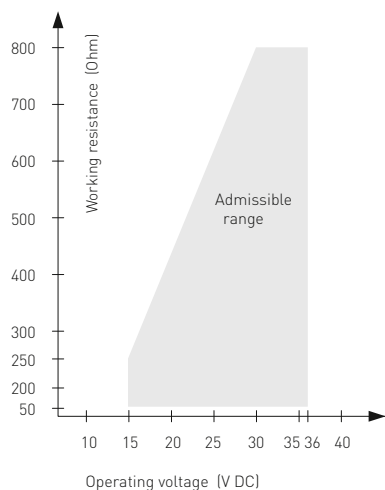
1 variant
with 2-wire
connection

PREMASGARD® 111x/112x/112x-SD

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with multi-range switching and active output



Load resistance diagram
4...20 mA
PREMASGARD® 111x
PREMASGARD® 112x
PREMASGARD® 112x-SD



PREMASGARD® 111x
Pressure connectors
on the top side,
with display



PREMASGARD® 112x
Pressure connectors
on the bottom side,
with display



WS-04

Weather and sun protection hood
(optional)



Conversion table for pressure values:

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

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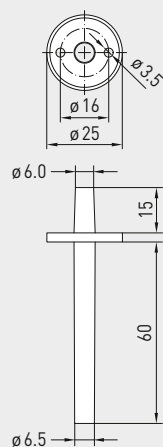
1 variant
with 2-wire
connection



S+S REGELTECHNIK

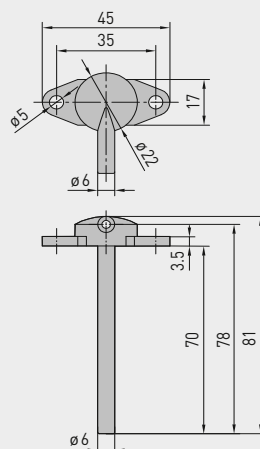
Dimensional drawing

ASD-06



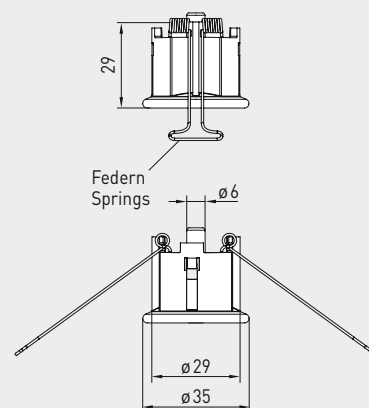
Dimensional drawing

ASD-07



Dimensional drawing

DAL-01

ASD-06
Connection setASD-07
Connection nippleDAL-01
Pressure outlet

ACCESSORIES

Item No.

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-04	Weather and sun protection hood , 130 x 180 x 135 mm, stainless steel V2A (1.4301)	7100-0040-7000-000

For further information, see last chapter Accessories!

PREMASGARD® 112x-SD

Pressure, differential pressure and volume flow measuring transducers, *Standard* (Pressure connectors on the bottom side)

Pressure range (Ranges adjustable)	Type / WG01	Connection 2- or 3-wire	Output	Display	Item No (with snap-on lid)
max. - 1000...+ 1000 Pa	PREMASGARD® 1121-SD				IP 54
0... 100 Pa / - 100...+ 100 Pa	PREMASGARD 1121-SD-I	2	4...20 mA		1301-1182-0010-000
0... 300 Pa / - 300...+ 300 Pa	PREMASGARD 1121-SD-I LCD	2/3	4...20 mA	■	1301-1182-2010-000
0... 500 Pa / - 500...+ 500 Pa	—	3	0-10 V		see PREMASGARD® 212x-SD
0... 1000 Pa / - 1000...+ 1000 Pa	—	—	—	—	—
max. - 5000...+ 5000 Pa	PREMASGARD® 1125-SD				IP 54
0... 1000 Pa / - 1000...+ 1000 Pa	PREMASGARD 1125-SD-I	2	4...20 mA		1301-1182-0050-000
0... 2000 Pa / - 2000...+ 2000 Pa	PREMASGARD 1125-SD-I LCD	2/3	4...20 mA	■	1301-1182-2050-000
0... 3000 Pa / - 3000...+ 3000 Pa	—	3	0-10 V		see PREMASGARD® 212x-SD
0... 5000 Pa / - 5000...+ 5000 Pa	—	—	—	—	—
Multi-range switching:	The pressure ranges depend on the device type and can be set via DIP switches.				
Optional:	Cable connection with M12 connector according to DIN EN 61076-2-101 (on request)				



S+S REGELTECHNIK

1 variant
with 2-wire
connection

PREMASGARD® 111x/112x/112x-SD

Pressure, differential pressure and volume flow measuring transducers,
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PREMASGARD® 111x

Pressure connectors **on the top side**,
with/without display,
with quick-locking screws
(IP 67)



PREMASGARD® 112x

Pressure connectors **on the bottom side**,
with/without display,
with quick-locking screws
(IP 67)



PREMASGARD® 112x-SD

Pressure connectors **on the bottom side**,
with/without display,
with snap-on lid
(IP 54)



PREMASGARD® 111x		Pressure, differential pressure and volume flow measuring transducers, <i>Premium</i> (Pressure connectors on the top side)			
Pressure range (Ranges adjustable)	Type / WG01	Connection 2- or 3-wire	Output	Display	Item No (with quick-locking screws)
max. - 1000...+ 1000 Pa	PREMASGARD® 1111				IP 67
0... 100 Pa / - 100...+ 100 Pa	PREMASGARD 1111-I	2	4...20 mA		1301-1112-0010-000
0... 300 Pa / - 300...+ 300 Pa	PREMASGARD 1111-I LCD	2/3	4...20 mA	■	1301-1112-2010-000
0... 500 Pa / - 500...+ 500 Pa	—	3	0-10 V		see PREMASGARD® 211x
0... 1000 Pa / - 1000...+ 1000 Pa	—	3	0-10 V		see PREMASGARD® 211x
max. - 5000...+ 5000 Pa	PREMASGARD® 1115				IP 67
0...1000 Pa / - 1000...+ 1000 Pa	PREMASGARD 1115-I	2	4...20 mA		1301-1112-0050-000
0...2000 Pa / - 2000...+ 2000 Pa	PREMASGARD 1115-I LCD	2/3	4...20 mA	■	1301-1112-2050-000
0...3000 Pa / - 3000...+ 3000 Pa	—	3	0-10 V		see PREMASGARD® 211x
0...5000 Pa / - 5000...+ 5000 Pa	—	3	0-10 V		see PREMASGARD® 211x
max. - 10000...+ 10000 Pa	PREMASGARD® 1116				IP 67
0... 4000 Pa / - 4000...+ 4000 Pa	PREMASGARD 1116-I	2	4...20 mA		1301-1112-0060-000
0... 6000 Pa / - 6000...+ 6000 Pa	PREMASGARD 1116-I LCD	2/3	4...20 mA	■	1301-1112-2060-000
0... 8000 Pa / - 8000...+ 8000 Pa	PREMASGARD 1116-U	3	0-10 V		1301-1111-0060-000
0...10000 Pa / - 10000...+ 10000 Pa	PREMASGARD 1116-U LCD	3	0-10 V	■	1301-1111-2060-000
Multi-range switching:	The pressure ranges depend on the device type and can be set via DIP switches.				
Optional:	Cable connection with M12 connector according to DIN EN 61076-2-101 (on request)				

PREMASGARD® 112x		Pressure, differential pressure and volume flow measuring transducers, <i>Premium</i> (Pressure connectors on the bottom side)			
Pressure range (Ranges adjustable)	Type / WG01	Connection 2- or 3-wire	Output	Display	Item No (with quick-locking screws)
max. - 1000...+ 1000 Pa	PREMASGARD® 1121				IP 67
0... 100 Pa / - 100...+ 100 Pa	PREMASGARD 1121-I	2	4...20 mA		1301-1172-0010-000
0... 300 Pa / - 300...+ 300 Pa	PREMASGARD 1121-I LCD	2/3	4...20 mA	■	1301-1172-2010-000
0... 500 Pa / - 500...+ 500 Pa	—	3	0-10 V		see PREMASGARD® 212x
0... 1000 Pa / - 1000...+ 1000 Pa	—	3	0-10 V		see PREMASGARD® 212x
max. - 5000...+ 5000 Pa	PREMASGARD® 1125				IP 67
0...1000 Pa / - 1000...+ 1000 Pa	PREMASGARD 1125-I	2	4...20 mA		1301-1172-0050-000
0...2000 Pa / - 2000...+ 2000 Pa	PREMASGARD 1125-I LCD	2/3	4...20 mA	■	1301-1172-2050-000
0...3000 Pa / - 3000...+ 3000 Pa	—	3	0-10 V		see PREMASGARD® 212x
0...5000 Pa / - 5000...+ 5000 Pa	—	3	0-10 V		see PREMASGARD® 212x
max. - 10000...+ 10000 Pa	PREMASGARD® 1126				IP 67
0... 4000 Pa / - 4000...+ 4000 Pa	PREMASGARD 1126-I	2	4...20 mA		1301-1172-0060-000
0... 6000 Pa / - 6000...+ 6000 Pa	PREMASGARD 1126-I LCD	2/3	4...20 mA	■	1301-1172-2060-000
0... 8000 Pa / - 8000...+ 8000 Pa	PREMASGARD 1126-U	3	0-10 V		1301-1171-0060-000
0...10000 Pa / - 10000...+ 10000 Pa	PREMASGARD 1126-U LCD	3	0-10 V	■	1301-1171-2060-000
Multi-range switching:	The pressure ranges depend on the device type and can be set via DIP switches.				
Optional:	Cable connection with M12 connector according to DIN EN 61076-2-101 (on request)				