PREMASREG® 7161

Pressure measuring transducer / swtich/control switch (± 1.5 %) for volume flow, differential pressure, filter monitoring and liquid level detection, incl. connection set

S+S REGELTECHNIK

The electronic pressure sensor and switch **PREM**ASREG® **7161** is equipped with measuring functions for volume flow, differential pressure, filter monitoring and liquid level detection based on pressure measurement in clean air. The devices are fitted with one switching output, one continuous output and one backlit display for setting the switchpoint and displaying the ACTUAL values.
The piezo-resistive measuring element guarantees a high degree of reliability and accuracy.
This pressure sensor is used 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. The medium measured is air (non-precipitating), or other gaseous non-aggressive, non-combustible media. It has a manual zero point pushbutton and an offset potentiometer for final value correction. Fine adjustment by the user is possible at any time. Parameter entry is menu-based and is easy to perform using three buttons with the help of the display. A connection set **ASD-06** (2m connection hose, two pressure nipples, screws) is included in the scope of supply.

TECHNICAL DATA

Power supply:	24 V AC / DC (± 10 %) and 15...36 V DC
Load resistance:	R_L > 5 kOhm
Power consumption:	< 1.5 VA / 24 V DC, < 2.8 VA / 24 V AC
Measuring function:	**Volume flow, differential pressure, filter monitoring, fill level** (adjustable)
Measuring ranges:	**10...100%** (adjustable)
Output signal:	0-10 V 1 changeover contact (24 V), 1 A ohmic load
Electrical connection:	3-wire connection
Media temperature:	0 ... +50 °C
Pressure connection:	4 / 6 x 11 mm (hoses Ø = 4 / 6 mm), metal pressure connection nozzles
Type of pressure:	differential pressure
Medium:	clean air and non-aggressive, non-combustible gases
Accuracy:	**± 1.5 % of final value** (pressure) (at +20 °C)
Sum of Linearity+hysteresis:	< ± 1 % of final value (pressure)
Temp. drift values:	± 0.1 % / °C
Above- / below-atmospheric pressure:	max. ± 10000 Pa
Signal filtering:	**switchable 1 s / 10 s** and small value suppression < 1 %
Signal hysteresis:	± 1 % or final value (pressure) 10 Pa / 50 Pa
Enclosure:	plastic, material polyamide, 30 % glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), enclosure cover for display is transparent!
Dimensions:	126 x 90 x 50 mm (Tyr 2)
Electrical connection:	0.14 - 1.5 mm², via plug-in screw terminal
Cable gland:	M 16 x 1.5; including strain relief
Air humidity:	< 95 % r. H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	IP 65 (according to EN 60 529)
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), for displaying the **volume flow, differential pressure, contamination degree** or **level** and for setting the **switchpoint, K factor, measuring range limits** and other settings
K factor:	**1 to 3000** (adjustable)
Units:	**m³/s, m³/min, m³/h, l/s, l/min, l/h, %, cm** (adjustable)
Max. value displayed:	999999
ACCESSORIES	
ASD-06	Connection set (nipple straight) – (included in the scope of delivery)
ASD-07	Connection nipple (at 90° angle)
WS-03	Weather and sun protection, 200 x 180 x 150 mm, stainless steel

PREMASREG® **7161**
Function types

Volume flow rate

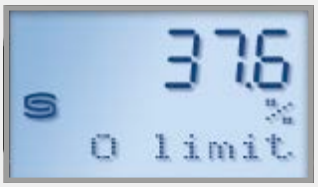
$$V = k \cdot \sqrt{\Delta p}$$

V = Volume flow in m³/h
k = K factor 1...3000
Δp = Differential pressure in Pa

Differential pressure

$$\Delta p = p_+ - p_-$$

Δp = Differential pressure in Pa
p_+ = higher pressure
p_- = lower pressure



Filter contamination

$$S = 100\% \cdot \Delta p \div p_{Filter}$$

S = Contamination degree in %
Δp = Differential pressure in Pa
p_{Filter} = differential pressure filter replacement in Pa

Level display

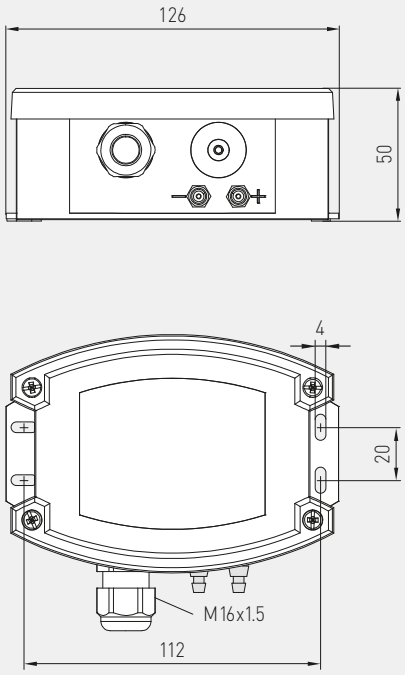
$$h = \Delta p \div (\rho \cdot g)$$

h = Fill level height in cm
Δp = Differential pressure in Pa
ρ = Density 700...1300 in kg/m³
g = 9.81 m/s²

S+S REGELTECHNIK

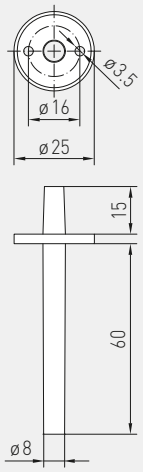
Pressure measuring transducer / swtich/control switch (± 1.5 %) for volume flow, differential pressure, filter monitoring and liquid level detection, incl. connection set

Dimensional drawing **PREMASREG® 7161**

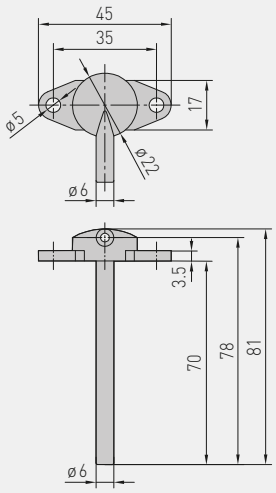


PREMASREG® 7161
with display

Dimensional drawing **ASD-06**
Connection set



Dimensional drawing **ASD-07**
Connection nipple



ASD-06
Connection set

ASD-07
Connection nipple

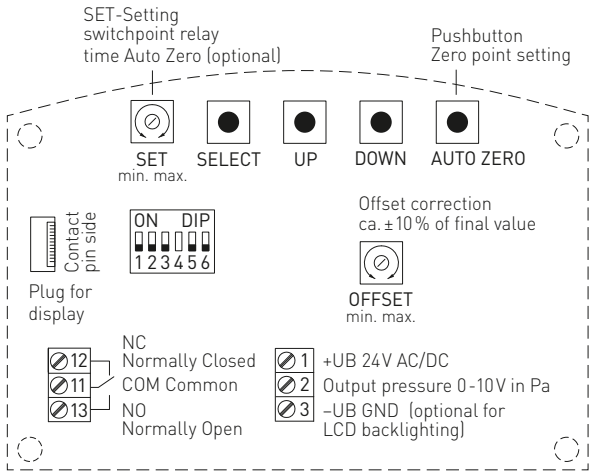
PREMASREG® 7161

Pressure measuring transducer / swtich/control switch (± 1.5 %) for volume flow, differential pressure, filter monitoring and liquid level detection, incl. connection set

S+S REGELTECHNIK

Schematic diagram
Output:
0-10 V

PREMASREG® **7161**
with display



DIP switch 4 is not assigned!

Measuring range mode (Mode selectable)	**DIP 1**
Unidirectional (0 ...+MR)	OFF
Bidirectional (–MR ...+MR)	**ON**

Small value suppression (measured values < 1% of end value (pressure) = 0)	**DIP 2**
Deactivated	OFF
Active	**ON**

Relay (Function adjustable)	**DIP 3**
Deactivated	OFF
Active (display shows switching point)	**ON**

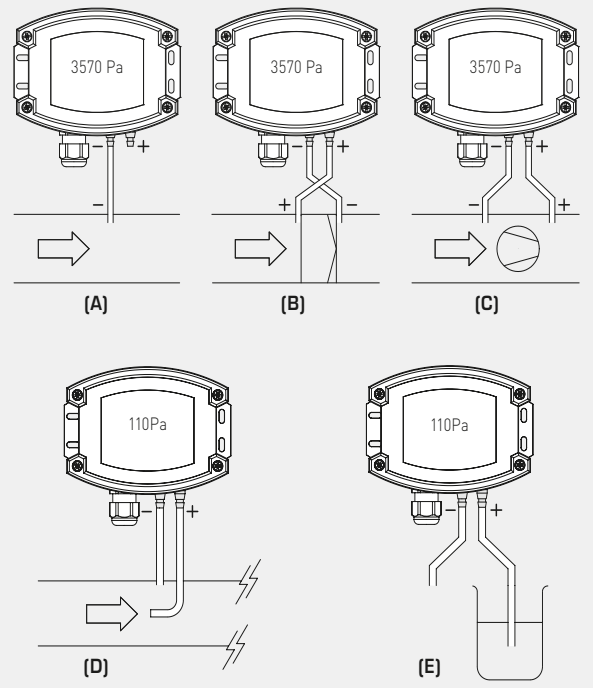
Output damping (length adjustable)	**DIP 5**
Long (10 s)	OFF
Short (1 s)	**ON**

Service mode (display adjustable)	**DIP 6**
Standard (according to configuration)	OFF
Service (differential pressure in Pa)	**ON**

PREMASREG® **7161**
DIP switch 4
is not assigned!

Mounting diagram

PREMASREG® **7161**



TYPES OF MONITORING:

(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

(E) Level:
P1 (+) Connection submerged in medium
P2 (–) Connection is open to the atmosphere

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

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WS-03
Weather and sun protection (optional)

PREMASREG® 7161
with display

PREMASREG® 7161 – Pressure measuring transducer/control switches (± 1.5 %) for volume flow, differential pressure, filter monitoring and liquid level detection, *Deluxe*

Measuring Range Pressure / Volume Flow		WG02	Output	Display	Item No.	Price
0 ...1000 Pa						
k = 3000	**94800 m³ / h**	PREMASREG 7161 DISPLAY	0-10 V 1x Changeover contact	■	1302-7161-4161-200	**234,60 €**
0 ...5000 Pa						
k = 3000	**212100 m³ / h**	PREMASREG 7161 DISPLAY	0-10 V 1x Changeover contact	■	1302-7161-4171-200	**234,60 €**

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, and 4 tapping screws	7100-0060-3000-000	**6,45 €**
ASD-07	**2 connection nipples** (at 90 degree angle) made of plastic, ABS	7100-0060-7000-000	**6,45 €**
WS-03	**Weather and sun protection**, 200 x 180 x 150 mm, stainless steel	7100-0040-6000-000	**37,74 €**
	For further information, see last chapter Accessories!		