

Pressure and differential pressure measuring transducers, adjustable, calibrateable, with multi-range switching and active output, compact form, series Thor I

Quality product for HVAC sector, accuracy $\pm 3\%$

PREMASGARD® 1000 series calibrateable compact pressure sensors are equipped with eight switchable measuring ranges and with display (4 devices in one) and are used for measuring above-atmospheric, below-atmospheric, or differential pressures in air. The piezo-resistive measuring element is temperature and pressure 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. A PREMASGARD® 1000 series pressure sensor has 4 selectable measuring ranges and therefore, minimizes the diversity of types and stockkeeping while covering a greater range of applications. The differential pressure sensor is supplied including connection set ASD-06 (2 m connection hose, two pressure connection nipples, screws).

TECHNICAL DATA:

Power supply:..... 24V AC/DC for output 0-10V;
15-36V DC for output 4...20mA (depending on working resistance)

Measuring ranges:..... **multi-range switching with 8 switchable measuring ranges**
see table

Output signal:..... 0-10V or 4...20mA

Electrical connection:..... 2- or 3-wire connection

Media temperature:..... 0...+50 °C

Pressure connection:..... 4/6 x 11 mm (hoses $\varnothing = 4/6$ mm),
metal pressure connection nozzles

Type of pressure:..... differential pressure

Medium:..... clean air and other non-aggressive, non-combustible gases

Accuracy:..... **$\pm 3\%$ of final value** (at 20 °C)

Zero point offset:..... max. +2.5% of final value (for voltage output)

Above- / below-atmospheric pressure:..... max. 5x measuring range

Long-term stability:..... $\pm 1\%$ per year;
ranges 25, 50, 100 Pa: 1 Pa

Signal filtering:..... 1 s

Hysteresis:..... 0.3% of final value

Media contacting parts:..... brass, Ni, Nylon, PU, Si

Temperature drift values:..... $\pm 2.5\%$ of final value per 10K

Current consumption:..... < 20 mA

Linearity:..... $\pm 2.5\%$ of final value

Enclosure:..... plastic, material polyamide, 30% glass-globe-reinforced,
with quick-locking screws, colour pure white (similar RAL9010)

Dimensions:..... 72 x 64 x 39.4 mm (Thor I)

Electrical connection:..... 0.14 - 1.5 mm², via terminal screws

Cable gland:..... M16, including strain relief

Humidity:..... < 95% r.H., non-precipitating air

Protection class:..... III (according to EN 60730)

Protection type:..... IP65 (according to EN 60529)

Standards:..... CE conformity, electromagnetic compatibility
according to EN 61326 + A1 + A2,
EMC directive 2004/108/EC

Features:..... illuminated 4-digit display (optional)

ACCESSORIES:..... including connection set **ASD-06** (nipple straight)
(included in the scope of delivery)
connection nipple **ASD-07** (at 90 degree angle)
pressure outlet DAL-1 for ceiling or
in-wall installation (e.g. in clean rooms)

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

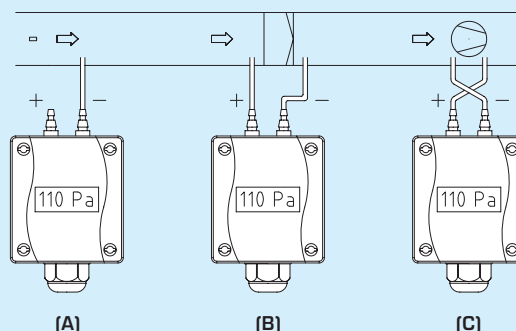
Pressure connections at the pressure switch are marked with P1 (+) for higher pressure and P2 (-) for lower pressure.

PREMASGARD® 1000 Compact form (Thor I)



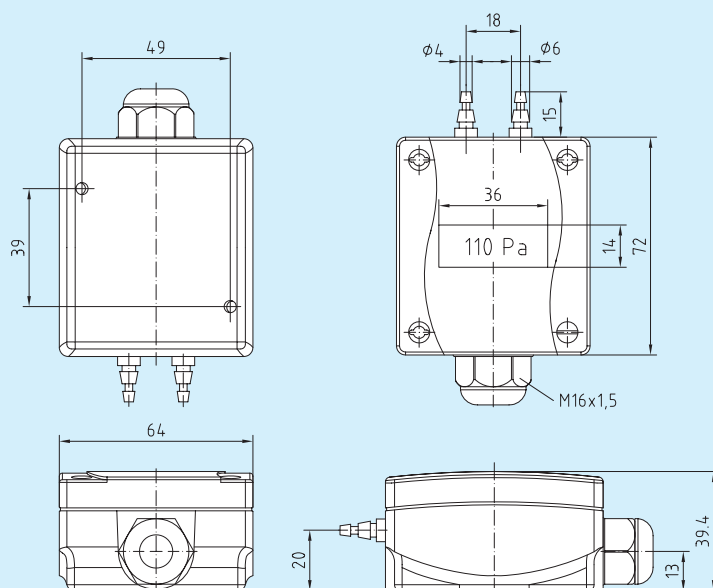
Mounting diagram

PREMASGARD® 1000 Compact form (Thor I)



Dimensional drawing

PREMASGARD® 1000
Compact form (Thor I)

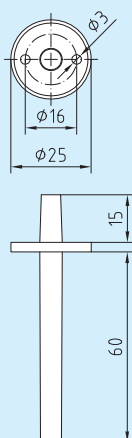


PREMASGARD® 1000
Compact form (Thor I)
with Display



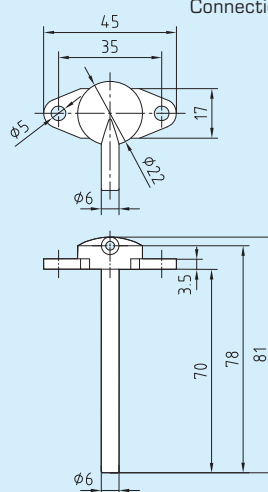
Dimensional drawing

ASD-06
Connection set



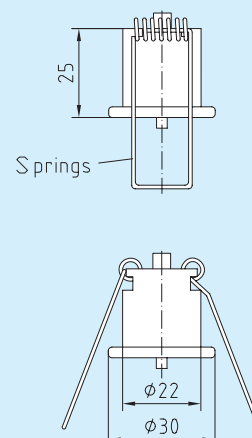
Dimensional drawing

ASD-07
Connection nipple



Dimensional drawing

DAL-1
Pressure outlet



ASD-06
Connection set



ASD-07
Connection nipple



DAL-1
Pressure outlet



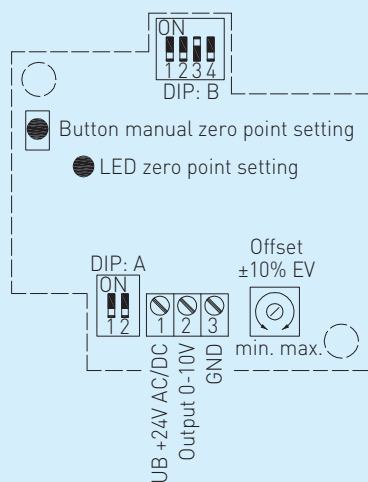
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S+S REGELTECHNIK

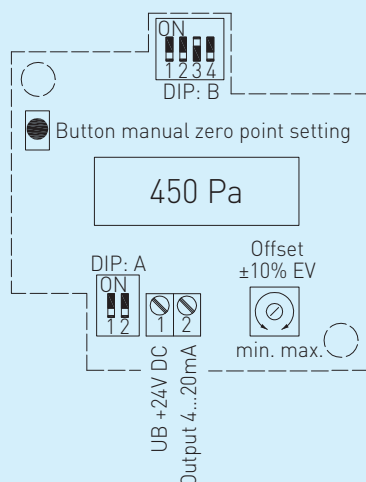
Schematic diagram

PREMASGARD® 1010
PREMASGARD® 1050
without Display



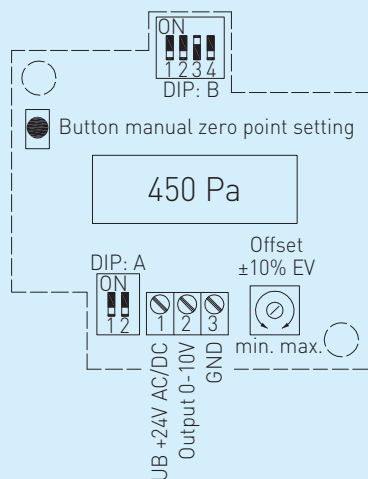
Schematic diagram

PREMASGARD® 1011
PREMASGARD® 1051
without Display



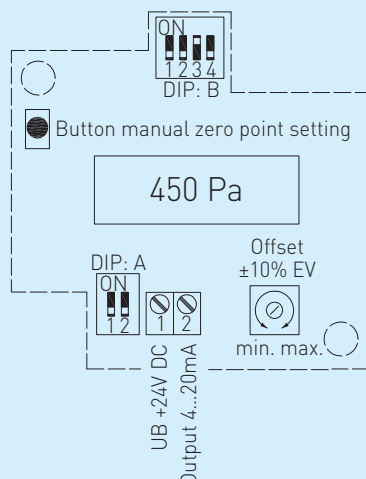
Schematic diagram

PREMASGARD® 1110
PREMASGARD® 1150
with Display



Schematic diagram

PREMASGARD® 1111
PREMASGARD® 1151
with Display



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



DIP switches Setting			Measuring Range
			0 ... 1000 Pa
DIP: B1= off	DIP: B1= on		
0 to EV Default	-EW to EV		
DIP: A	DIP: A	DIP: B2+3	
1000 Pa Default	-1000 Pa... 1000 Pa...	Mean value off	
500 Pa	-500 Pa... 500 Pa	1s	
300 Pa	-300 Pa... 300 Pa	5s	
100 Pa	-100 Pa... 100 Pa	10s	

DIP switches Setting			Measuring Range
			0 ... 5000 Pa
DIP: B1= off	DIP: B1= on		
0 to EV Default	-EW to EV		
DIP: A	DIP: A	DIP: B2+3	
5000 Pa	-5000 Pa... 5000 Pa...	Mean value off	
3000 Pa	-3000 Pa... 3000 Pa	1s	
2000 Pa	-2000 Pa... 2000 Pa	5s	
1000 Pa Default	-1000 Pa... 1000 Pa	10s	

PREMASGARD® 1000, including connection set

Max. Measuring Range	Pressure Range (8 ranges adjustable)	Type / WG1 Item No.	Features	Output
- 1000 ... + 1000 Pa	0 ... 100 Pa / - 100 ... + 100 Pa 0 ... 300 Pa / - 300 ... + 300 Pa 0 ... 500 Pa / - 500 ... + 500 Pa 0 ... 1000 Pa / - 1000 ... + 1000 Pa	PREMASGARD-1010-2010-200		0-10V
		PREMASGARD-1110-2010-200	with Display	0-10V
		PREMASGARD-1011-0010-200		4...20mA
		PREMASGARD-1111-2010-200	with Display	4...20mA
- 5000 ... + 5000 Pa	0 ... 1000 Pa / - 1000 ... + 1000 Pa 0 ... 2000 Pa / - 2000 ... + 2000 Pa 0 ... 3000 Pa / - 3000 ... + 3000 Pa 0 ... 5000 Pa / - 5000 ... + 5000 Pa	PREMASGARD-1050-0050-200		0-10V
		PREMASGARD-1150-2050-200	with Display	0-10V
		PREMASGARD-1051-0050-200		4...20mA
		PREMASGARD-1151-2050-200	with Display	4...20mA

Multi-range switching: In each case four pressure ranges depending on the type of device can be preset via **DIP switches** (DIP A and DIP B) (Factory setting: 0 ... 1000 Pa).

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
ASD-07 connection nipples (at 90 degree angle) made of plastic, ABS
DAL pressure outlet for ceiling or in-wall installation (e.g. in clean rooms)