PREMASGARD® 714x - Modbus

Pressure sensor and measuring transducer for differential pressure and volume flow, incl. connection set, calibratable, with Modbus connection

S+S REGELTECHNIK

Maintenance-free, microprocessor-controlled **PREM**ASGARD® **714x - Modbus** (series) with Modbus connection, in an impact-resistant plastic housing with quick-locking screws, connection nozzles for pressure hose (Ø 6 mm), with cable gland or M12 connector according to DIN EN 61076-2-101, optionally with/without display, for measuring the differential pressure (max. ± 7000 Pa) in air. International system of units **SI** (default) can be switched to **Imperial** (via Modbus). Incl. mounting flange and connection set **ASD-06** (2 m connecting hose, two pressure port nipples, screws).

The pressure sensor is applied to measure positive, negative or differential pressure in clean air and gaseous media. It is used in the clean room, medical and filter technology, ventilation and air conditioning ducts, spray booths, large-scale catering facilities, for filter monitoring and level measurement or for triggering frequency converters. A **pressure sensor** with piezoresistive measuring element guarantees exact measurement results. The following measured values can be accessed via the Modbus: Differential pressure, volume flow.

Innovative Modbus sensor with galvanically separated RS485 Modbus interface, selectable bus termination resistance, DIP switch for setting the bus parameters and bus address in current-free state, internal LEDs for telegram status display, two separate push-in terminals and large three-line display (illuminated; with customised programming in the 7-segment and dot-matrix range). The sensor is factory-calibrated; an environmental precision adjustment by an expert is possible.

PREMASGARD® **714x - Modbus**



Device version with **M12 connector** (optional)



TECHNICAL DATA

Power supply:	24 V AC (± 20 %) and 15...36 V DC
Power consumption:	< 4.8 W / 24 V DC typical; < 6.8 VA / 24 V AC typical
System of units:	**SI** (default) or **Imperial** (switchable via Modbus)
Data points:	Differential pressure [Pa] [inWC], Volume flow [m³/h] [CFM]
Pressure type:	Differential pressure
Pressure connection:	with **connection nozzles** for pressure hose Ø 6 mm (optional on request with **quick** connect for PVC fabric pressure hose Ø 6 mm)
Measuring range, pressure:	**–500**... **+500 Pa** or **–7000**...**+7000 Pa** depending on the device type, see table
Pressure accuracy:	**Type 7148** (500 Pa): typical ± 13 Pa **Type 7147** (7000 Pa): typical ± 105 Pa compared to a calibrated reference device
Above- / below-pressure:	max. ± 50 kPa
Zero point offset:	± 10 % measuring range
Hysteresis:	0.3 % of final value
Linearity:	< ± 1 % of final value
Temp. drift values:	± 0.1 % per °C
Long-term stability:	± 1 % per year
Bus protocol:	Modbus (RTU mode), address range 0...**247** adjustable
Baud rate:	9600, 19200, 38400 Baud
Signal filtering:	0 s / 1 s / 10 s
Medium:	clean air and non-aggressive, non-combustible gases
Media contacting parts:	Brass, Ni, Duroplast, Si, epoxy, RTV, BSG, UV silicone gel
Media temperature:	–20...+50 °C (temperature-compensated 0...+50°C)
Ambient temperature:	–30...+70 °C
Permissible humidity:	0...95 % RH (non-precipitating air)
Housing:	plastic, UV-resistant, polyamide material, 30 % glass-globe reinforced, with quick-locking screws (slotted / Phillips head combination), colour traffic white (similar to RAL 9016), housing cover for display is transparent!
Housing dimensions:	126 x 90 x 50 mm (Tyr 2)
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)
Electrical connection:	0.2 - 1.5 mm², via push-in terminals
Protection class:	III (according to EN 60 730)
Safety class:	**IP 65** (according to EN 60 529) in the built-in state
Standards:	CE-conformity, electromagnetic compatibility according to EN 61 326, EMC directive 2014 / 30 / EU
Optional:	three-line **display with illumination,** programmable, cut-out approx. 70 x 40 mm (W x H), to display the actual pressure or volume flow or an individually programmable display value
ACCESSORIES	see table
ASD-06	**Connection set** (nipple straight) (included in the scope of delivery)

Display screen (SI or Imperial) **Modbus Tyr 2**

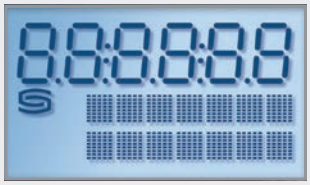


Pressure [Pa] [inWC]



Volume flow rate [m³/h] [CFM]

Programmable display screen **Modbus Tyr 2**

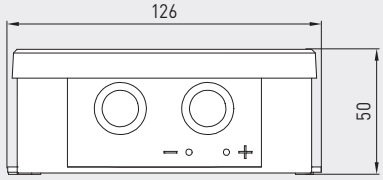


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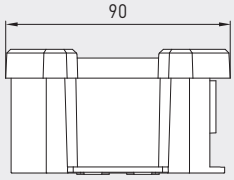
Pressure sensor and measuring transducer for differential pressure and volume flow, incl. connection set, calibratable, with Modbus connection

Dimensional drawing
[mm]

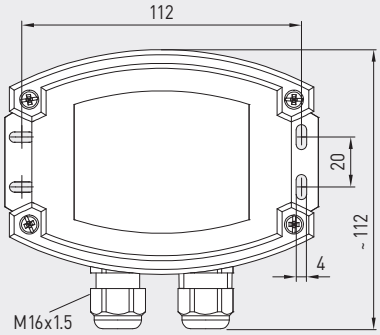
PREMASGARD® **714x-Modbus**

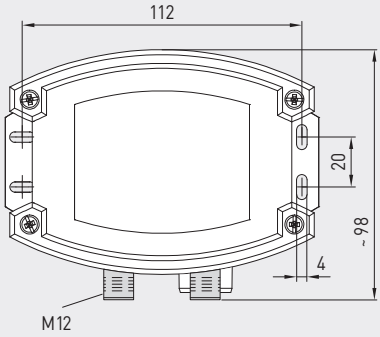


Housing with
pressure port nozzles
and **cable gland**



Housing with
pressure port nozzles
and **M12 connector**







Pressure port
for pressure hose



M12 connector
(male)

PREMASGARD® **714x-Modbus**
with display

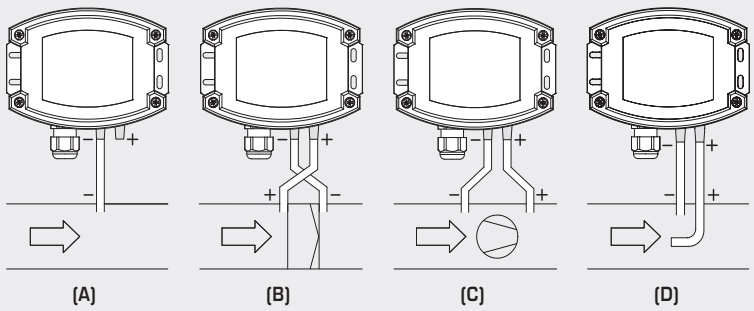


Device version
with **cable gland**
(as standard)



Mounting diagram

PREMASGARD® **714x-Modbus**



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

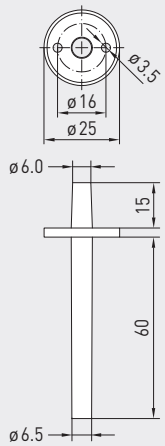
Switchable system of units

Measurements / Data points	**SI** (default)	→	**Imperial**
Differential pressure	[Pa]	→	[inWC]
Volume flow	[m³/h]	→	[CFM]

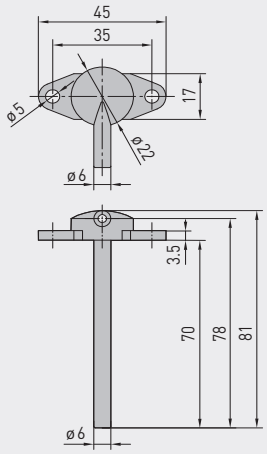
Measuring ranges	**SI** (default)	→	**Imperial**
Type 7148	–500…+500 Pa	→	–2.0…+2.0 inWC
Type 7147	–7000…+7000 Pa	→	–28…+28 inWC

Pressure sensor and measuring transducer for differential pressure and volume flow, incl. connection set, calibratable, with Modbus connection

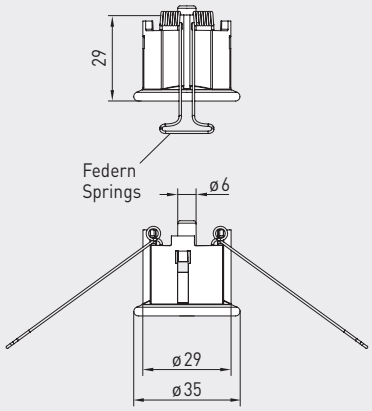
Dimensional drawing [mm] **ASD-06**



Dimensional drawing [mm] **ASD-07**



Dimensional drawing [mm] **DAL-01**



ASD-06
Connection set



ASD-07
Connection nipple



DAL-01
Pressure outlet





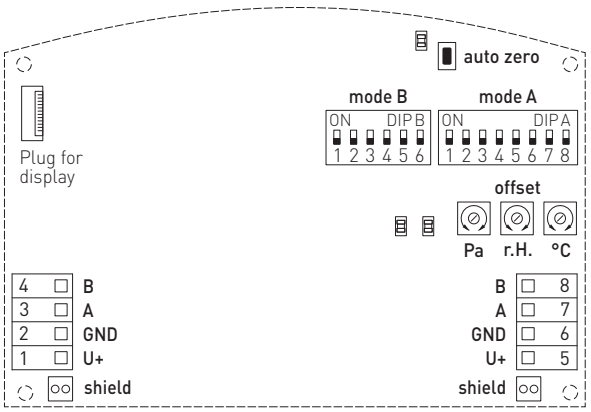
WS-03
Weather and sun protection hood (optional)

ACCESSORIES			
KA2-Modbus	**Communication adapter** (USB/RS485) for system connection	1906-1200-0000-100	**220,41 €**
LA-Modbus	**Line termination device** (with terminating resistor) as an active bus termination	1906-1300-0000-100	**82,20 €**
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	**7,87 €**
ASD-07	**2 connection nipples** (at 90 degree angle) made of plastic, ABS	7100-0060-7000-000	**7,87 €**
DAL-01	**Pressure outlet** for ceiling or in-wall installation (e.g. in clean rooms)	7300-0060-3000-001	**36,84 €**
WS-03	**Weather and sun protection hood**, 200 x 180 x 150 mm, stainless steel **V2A** (1.4301)	7100-0040-6000-000	**46,08 €**
	For further information, see chapter Accessories!		

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Pressure sensor and measuring transducer for differential pressure and volume flow, incl. connection set, calibratable, with Modbus connection

Schematic diagram — **PREM**ASGARD® **714x-Modbus**



DIP A: Bus address
DIP B: Bus parameters (Baud rate, parity...)
Telegram indicator Reception (LED green) Error (LED red)
LED (internal status)
Reset button
Offset correction
Shielding

PREMASGARD® **714x-Modbus** with display







PREMASGARD® **714x-Modbus**	Pressure sensor and measuring transducer for differential pressure and volume flow, *Deluxe*				
Measuring Range Pressure / Volume Flow	**Type / WG02**	**Output**	**Display**	**Item no.**	**Price**
± 500 Pa	**Type 7148**				
– 500 … + 500 Pa 44721 m³/h (k = 2000)	PREMASGARD 7148-Modbus	Modbus		1301-7164-0910-20V	**419,32 €**
	PREMASGARD 7148-Modbus **LCD**	Modbus	■	1301-7164-4910-20V	**466,04 €**
	with automatic zero-point calibration as standard				
± 7000 Pa	**Type 7147**				
– 7000 … + 7000 Pa 167332 m³/h (k = 2000)	PREMASGARD 7147-Modbus	Modbus		1301-7164-0950-200	**360,92 €**
	PREMASGARD 7147-Modbus **LCD**	Modbus	■	1301-7164-4950-200	**407,64 €**
	with optional automatic zero point calibration (Please specify in your order)			Extra charge	**74,74 €**
Optional:	Cable connection with **M12 connector** (male, **5-pin**, A-code)				
Note:	System of units **SI** (default) or **Imperial** (switchable via Modbus).				