DPS-M-2

Differential pressure / Air flow transmitter

The DPS-M-2 series are high resolution differential pressure transmitters with Modbus RTU communication, which are equipped with a fully digital pressure transducer designed for a wide range of applications. All connections are made via the internal RJ45 connector. Air flow velocity readout is available by connecting an external Pitot tube connection set. All parameters are accessible via Modbus RTU (3S Modbus software or Sensistant).

Key features

- Built-in digital high resolution differential pressure sensor
- RJ45 connector on the PCB
- Air flow velocity can be measured via Modbus RTU (by using an external PSET-PTX-200 Pitot tube connection set)
- Variety of operating ranges
- Selectable response time: 0,1—10 s
- Implemented K-factor
- Differential pressure, air volume(1) or air velocity(2) readout via Modbus RTU
- 4-digit 7-segment LED display for indicating differential pressure or air volume flow
- Selectable minimum and maximum operating ranges
- Modbus registers reset function (to factory pre-set values)
- Four LEDs with light guides for transmitter status indication
- Modbus RTU communication
- Sensor calibration procedure via tact switch
- Aluminium pressure connection nozzles

Technical specifications

Power supply		24 VDC (Power over Modbus)
Maximum power consumption		1,44 W
Average power consumption in normal operation		1,08 W
Imax		60 mA
Output		Modbus RTU (RS 485)
Minimum differential pressure range span		50 Pa
Minimum volume flow range span		10 m³/h
Minimum air velocity range span		1 m/s
Operating modes		Differential pressure
		Air volume(1)
		Air velocity(2)
Accuracy		± 2 % of the operating range
Protection standard		IP65 (according to EN 60529)
Ambient conditions	Temperature	-5—65 °C
	Rel. humidity	< 95 % rH (non-condensing)

Area of use

- Differential pressure, Air flow volume (1) or air flow velocity (2) measurement in HVAC applications
- Differential pressure / air flow monitoring in clean rooms
- Clean air and non-aggressive, non-combustible gases

Article codes

	Operating ranges	Power supply	Connections
DPS-M-1K0-2	0—1.000 Pa	24 VDC	RJ45 connector on the PCB
DPS-M-2K0-2	0—2.000 Pa		
DPS-M-4K0-2	0—4.000 Pa		
DPS-M-10K-2	0—10.000 Pa		

Standards

- Low Voltage Directive 2014/35/EC
- EMC Directive 2014/30/EC: EN 61000-6-2: 2005/AC:2005, EN 61000-6-3:2007/A1:2011/AC:2012, EN 61326-2-3:2013
- WEEE Directive 2012/19/EC
- RoHs Directive 2011/65/EC

Modbus registers

The Sensistant Modbus configurator allows you to easily monitor and/or configure Modbus parameters. Designed to be used in combination with PDM or DPOM modules.

The parameters of the unit can be monitored / configured through the 3SModbus software platform. You can download it from the following link:
https://www.sentera.eu/Downloads/Index/ENG

You can find register maps in the mounting instructions. Download them from:
https://www.sentera.eu/Product/Index/

*(1) Only when K-factor of fan / drive is known. If K-factor is unknown, air volume flow can be calculated via multiplying the duct cross-sectional area (A) by the air flow velocity (V) using the formula: Q = A * V*

(2) By using an external PSET-PTX-200 Pitot tube connection set

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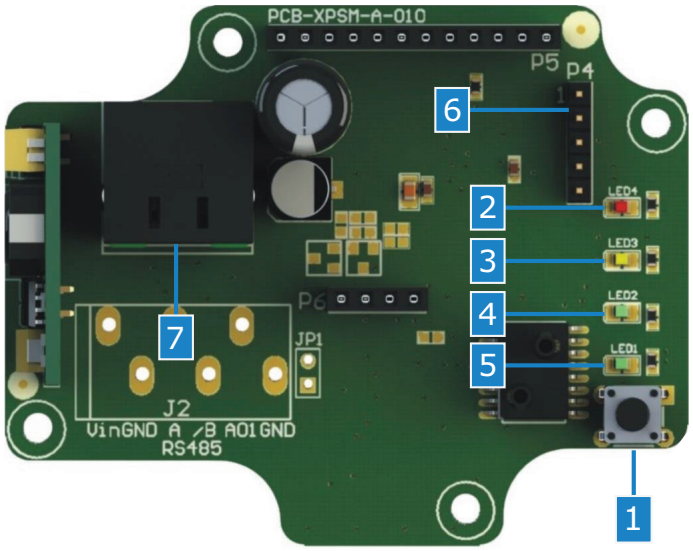
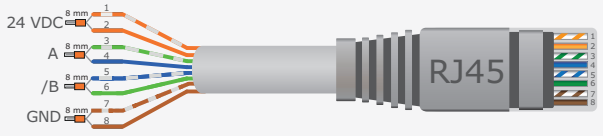
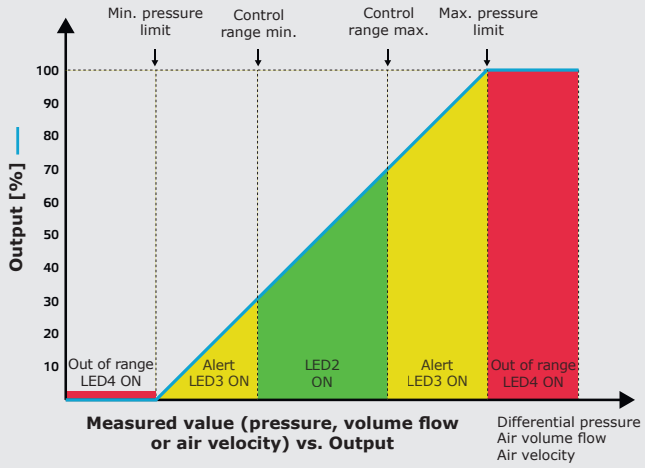


Wiring and connections

24 VDC	Supply voltage 24 VDC (max. 60 mA)
GND	Ground
A	Modbus RTU communication, signal A
/B	Modbus RTU communication, signal /B



Operational diagram(s)

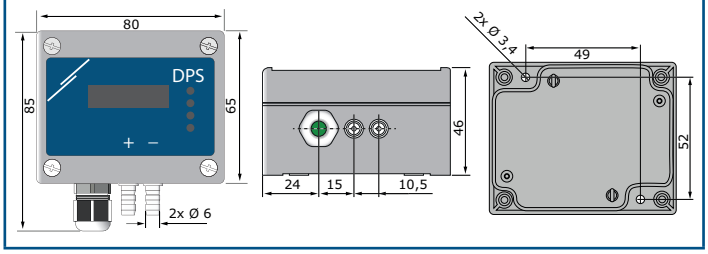


Settings

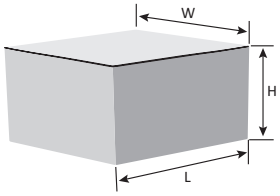
1 - Sensor calibration and Modbus register reset tact switch (SW1)		Push to start the Modbus RTU register factory reset or the sensor calibration
2 - Red LED4	Continuous	Measured differential pressure, air volume or air velocity is out of range
	Blinking	Sensor element failure
3 - Yellow LED3	On	Measured differential pressure, air volume or air velocity is in the alert range
4 - Green LED2	On	Measured differential pressure, air volume or air velocity is within range
5 - Green LED1	On	Power OK; active Modbus RTU communication
6 - Modbus holding registers reset jumper (P4)*		Put a jumper onto pins 1 and 2 for at least 20 s to reset holding registers 1—3
7 - RJ45 Socket		Plug the communication and power cable into the socket

** The reset jumper is not included in the set*

Fixing and dimensions



Packaging



Article	Packaging	Length [mm]	Width [mm]	Height [mm]	Net weight	Gross weight
DPS-M-2	Unit (1 pc.)	95	85	70	0,13 kg	0,14 kg
	Carton (10 pcs.)	495	185	87	1,30 kg	1,40 kg
	Box (60 pcs.)	590	380	280	7,80 kg	8,40 kg

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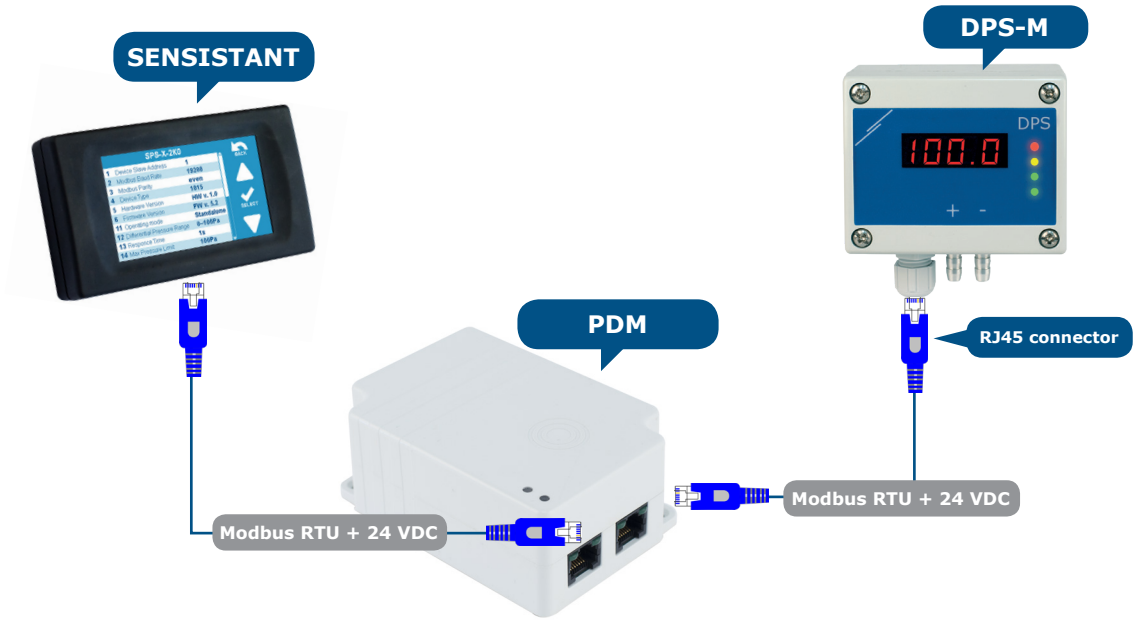
Application example 1



Application example 2