HPS-M--LP

Differential pressure transmitter, PoM

The HPS-M--LP series are differential pressure transmitters (-125—125 Pa), which are equipped with a fully digital pressure transducer designed for a wide range of applications. Air velocity readout is available by connecting an external Pitot tube connection set. They are Power over Modbus supplied and parameters are accessible via Modbus RTU (3SModbus software or Sensistant).

Key features

- Built-in digital high resolution differential pressure sensor
- RJ45 connector on the PCB
- Air 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, volume flow[1] or air velocity[2] readout via Modbus RTU
- Selectable minimum and maximum operating ranges
- Modbus registers reset function (to factory pre-set values)
- Four LED indicators for the status of the transmitter and the measured values
- Modbus RTU communication
- Sensor calibration procedure via tact switch
- Aluminium pressure connection nozzles

Article codes

Codes	Power supply	Connection	Maximum power consumption	Nominal power consumption	Imax	Operating range
HPS-M--LP	24 VDC, Power over Modbus	RJ45 connector on the PCB	1 W	0,75 W	40 mA	-125—125 Pa

Technical specifications

Power supply		24 VDC (Power over Modbus)
Output		Modbus RTU (RS485)
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
		Volume flow[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 velocity[1] or volume flow [2] measurement in HVAC applications
- Overpressurizing applications: clean rooms to avoid particle contamination or staircases for fire safety
- Underpressurizing applications: restaurant kitchens and biohazard laboratories
- Volume flow application: ensuring the minimum legal ventilation rate (m³/h) for buildings

Standards

CE

- EMC Directive 2014/30/EC:
  - EN 61326-1:2013 Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements
  - EN 61326-2-3:2013 Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 2-3: Particular requirements. Test configuration, operational conditions and performance criteria for transducers with integrated or remote signal conditioning
- WEEE Directive 2012/19/EC
- RoHs Directive 2011/65/EC

Modbus registers

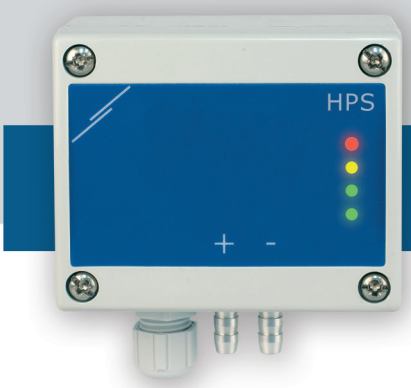
The Sensistant Modbus configurator allows you to easily monitor and/or configure Modbus parameters.

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/en/3SMCenter

For more information about the Modbus registers, please refer to the product Modbus Register Map.

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

[2] By using an external PSET-PTX-200 Pitot tube connection set



SENTERA CONTROLS

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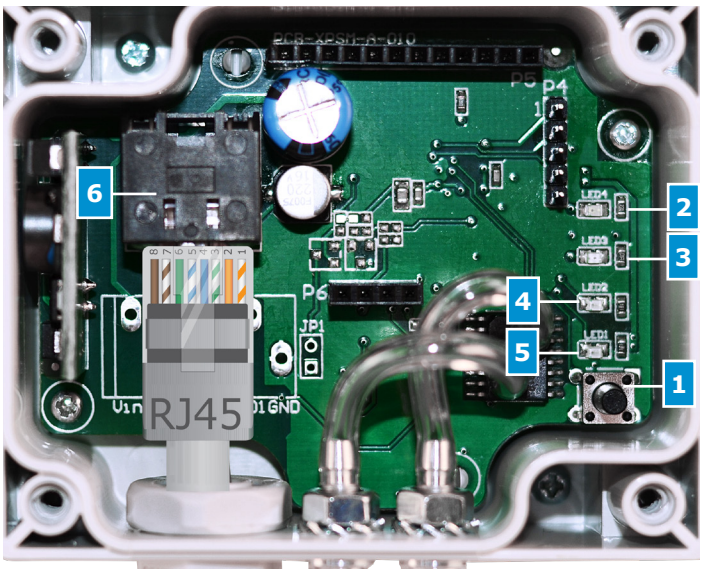
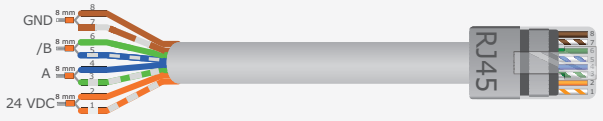
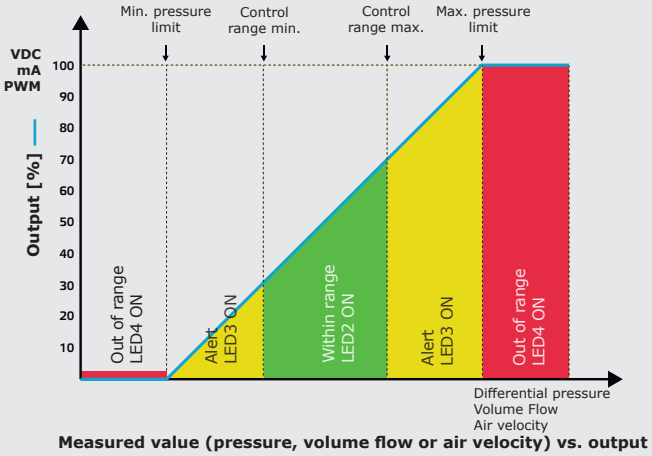


Wiring and connections

24 VDC	Supply voltage 24 VDC
GND	Ground
A	Modbus RTU communication, signal A
/B	Modbus RTU communication, signal /B



Operational diagram(s)

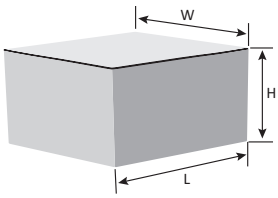


Measured value (pressure, volume flow or air velocity) vs. output

Settings

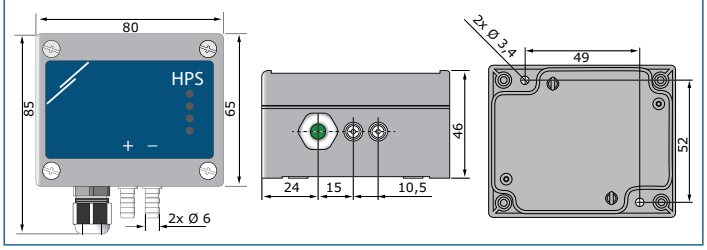
1 - Sensor calibration and Modbus register reset tact switch (SW1)		Push to start the Modbus RTU register factory reset or sensor calibration
2 - Red LED4	Continuous	Measured differential pressure, volume flow or air velocity is out of range
	Blinking	Sensor element failure
3 - Yellow LED3	On	Measured differential pressure, volume flow or air velocity is in the alert range
4 - Green LED2	On	Measured differential pressure, volume flow or air velocity is within range
5 - Green LED1	On	Power OK; active Modbus RTU communication
6 - RJ45 Socket		Modbus RTU communication and 24 VDC power supply Blinking green LED on the left indicates that data is transmitted; Blinking green LED on the right indicates that data is received

Packaging



Article	Packaging	Length [mm]	Width [mm]	Height [mm]	Net weight	Gross weight
HPS-M--LP	Unit (1 pc.)	95	85	70	0,12 kg	0,13 kg
	Carton (10 pcs.)	495	185	87	1,20 kg	1,30 kg
	Box (60 pcs.)	590	380	280	7,2 kg	7,8 kg

Fixing and dimensions



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Application 1: Measuring differential pressure [Pa] or air flow volume [m³/h] using PSET-PVC	**Application 2:** Measuring supplied air volume [m³/h] or airflow velocity [m/s] using PSET-PT