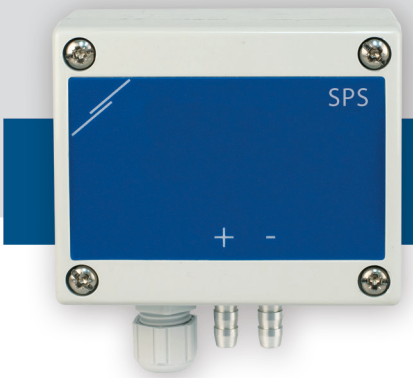


SPS
Differential pressure transmitter

The SPS series are very compact multi-range differential pressure transmitters. They provide an analogue / modulating output and eight selectable measuring windows. The transmitters have an implemented state-of-the-art monolithic silicon pressure sensor and are equipped with Modbus RTU communication. These make the units suitable for a wide range of applications. The SPS piezoresistive transmitters are calibrated and temperature & pressure compensated. They feature a high degree of reliability and accuracy.

Key features

- Long-term stability and accuracy
- 1 analogue or PWM (open collector) output
- 8 selectable operating ranges
- Modbus RTU (RS485) communication
- Differential pressure or air volume mode* / readout via Modbus
- Modbus register reset function (factory preset values)
- Implemented K-factor (for air volume measurement)
- Sensor calibration procedure
- Selectable response time
- Aluminium pressure connection nozzles

** Only when K-factor of the fan is known (consult the datasheets)*

Technical specifications

Outputs		1 analogue output (0—10 VDC / 0—20 mA) / 1 modulating output PWM (open collector)
Maximum power consumption	SPS-F	0,96 W
	SPS-G	1,2 W
Nominal or average power consumption in normal operation	SPS-F	0,72 W
	SPS-G	0,9 W
Imax	SPS-F	40 mA
	SPS-G	50 mA
Consumption	No load:	18—34 VDC supply: 10—20 mA 15—24 VAC supply: 10—15 mA
Operating pressure ranges	SPS-X-2K0	0—100 Pa / 0—250 Pa 0—500 Pa / 0—750 Pa 0—1.000 Pa / 0—2.000 Pa -50—50 Pa / -100—100 Pa
	SPS-X-6K0	0—1.000 Pa / 0—1.500 Pa 0—2.000 Pa / 0—2.500 Pa 0—3.000 Pa / 0—4.000 Pa 0—5.000 Pa / 0—6.000 Pa
Operating modes		Differential pressure Air volume*
Response time		0,5 / 1 / 2 / 5 s
Accuracy (analog voltage output)		±3 %
Long-term stability		±1 % per year
Protection standard		IP65 (according to EN 60529)
Ambient conditions	Temperature	10—60 °C
	Rel. humidity	< 95 % rH (non-condensing)

** Only when K-factor of the fan is known (consult the datasheets)*

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.

Article codes

	Supply	Connections
SPS-G-2K0	13—26 VAC 18—34 VDC	3-wire
SPS-F-2K0	18—34 VDC	4-wire
SPS-G-6K0	13—26 VAC 18—34 VDC	3-wire
SPS-F-6K0	18—34 VDC	4-wire

Area of use

- Fan / pressure control, VAV (Variable Air Volume) and CAV* (Constant Air Volume) modes
- Valve and damper control (actuators)
- Pressure / airflow monitoring in clean rooms
- Clean air and non-aggressive, non-combustible gases

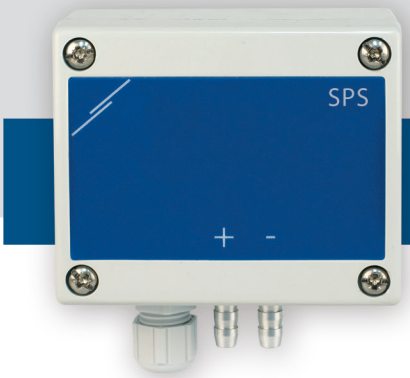
** Only when K-factor of the fan is known (consult the datasheets)*

Wiring and connections

Vin	Positive DC voltage / AC ~
GND	Ground / AC ~
A	Modbus RTU (RS485) signal A
/B	Modbus RTU (RS485) signal /B
AO1	Analogue / modulating output PWM (open collector)
GND	Ground
Connections	Cable cross section: max. 0,75 mm² Cable gland clamping range: 3—6 mm

Caution: *If a G-type article is using the same AC power supply source (transformer) as F-type article, a SHORT CIRCUIT may result when the power supply and analog signal terminals are connected to the same common ground! In this case always connect different article types to separate AC transformers or use the same article version.*

If an AC power supply is used with any of the units in a Modbus network, the GND terminal should NOT BE CONNECTED to other units on the network or via the CNVT- USB- RS485 converter. This may cause permanent damage to the communication semiconductors and/or the computer!

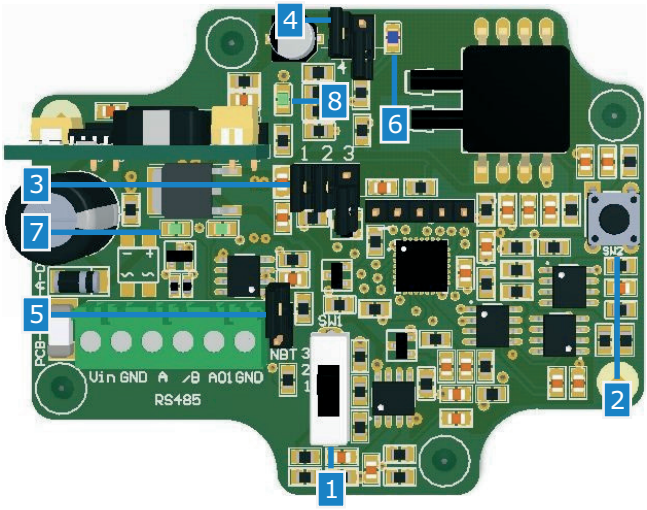


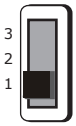
SENTERA CONTROLS

SPS

Differential pressure transmitter

Settings



1 - Analogue output mode selection switch (SW1)		1: 0—10 VDC 2: 0—20 mA 3: PWM (open collector)
2 - Sensor calibration tact switch (SW2)		Push to start sensor calibration

3 - Range selection jumpers

 on on on	 off on on	 on off on	 off off off
SPS-X-2K0			
0—100 Pa	0—250 Pa	0—500 Pa	0—750 Pa
SPS-X-6K0			
0—1.000 Pa	0—1.500 Pa	0—2.000 Pa	0—2.500 Pa
 on on off	 off on off	 on off off	 off off off
SPS-X-2K0			
0—1.000 Pa	0—2.000 Pa	-50—50 Pa	-100—100 Pa
SPS-X-6K0			
0—3.000 Pa	0—4.000 Pa	0—5.000 Pa	0—6.000 Pa

4 - Response time selection jumpers

 on on	 on off	 off on	 off off
0,5 s	1 s (default)	2 s	5 s

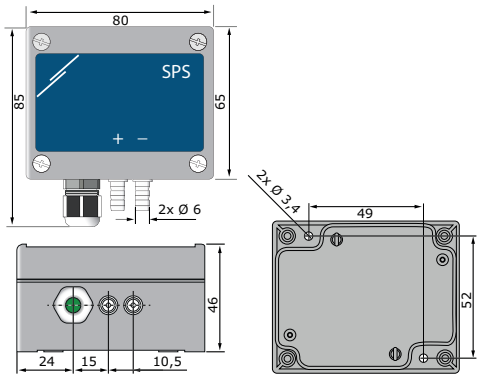
5 - Network bus resistor jumper (NBT)		SPS is the first or last unit
6 - Sensor calibration and Modbus register reset indication	Blinking blue (as defined)	Modbus register factory reset / sensor calibration Normal operation indication
7 - Modbus communication indication	Blinking green	Transmitting / receiving

( indicates closed position of the jumper.)

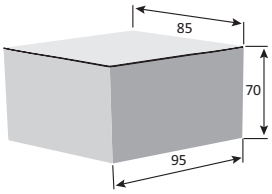
Standards

- Low Voltage Directive 2014/35/EC
- EMC Directive 2014/35/EC
- WEEE Directive 2012/19/EU
- RoHs Directive 2011/65/EU

Fixing and dimensions



Packaging



Article	Packaging	Length [mm]	Width [mm]	Height [mm]	Net weight	Gross weight
SPS	Unit (1 pc.)	95	85	70	0,12 kg	0,15 kg
	Carton (10 pcs.)	492	182	84	1,20 kg	1,63 kg
	Box (60 pcs.)	590	380	280	7,2 kg	10,39 kg

Operational diagram(s)