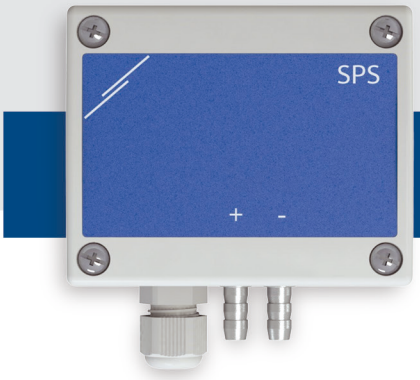


SPS

Differential pressure transmitter

The SPS series are very compact multi-range differential pressure transmitters. They provide an analogue / digital 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

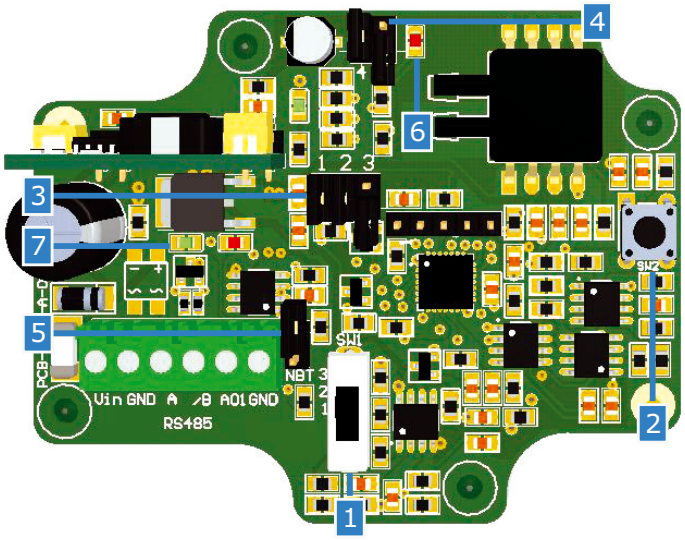
- Long-term stability and accuracy
- 1 analogue or PWM (open collector) output
- 8 selectable operating ranges
- Modbus RTU (RS485) communication
- Selection of differential pressure or air volume mode* / readout via Modbus
- Modbus register reset function (factory preset values)
- Implemented K-factor (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 digital output PWM (open collector)	
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—500 Pa / 0—1.000 Pa / -50—50 Pa /	0—250 Pa 0—750 Pa 0—2.000 Pa -100—100 Pa
	SPS-X-6K0	0—1.000 Pa / 0—2.000 Pa / 0—3.000 Pa / 0—5.000 Pa /	0—1.500 Pa 0—2.500 Pa 0—4.000 Pa 0—6.000 Pa
Operating modes		Differential pressure Air volume*	
Response time		0,5 / 1 / 2 / 5 s	
Accuracy (analogue voltage output)		±3 %	
Long-term stability		±1 % per year	
Protection standard		IP54 (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)*



Article codes

	Supply	Connections
SPS-G-2K0	15—24 VAC ± 10 % 18—34 VDC	3 – wire
SPS-F-2K0	18—34 VDC	4 – wire
SPS-G-6K0	15—24 VAC ± 10 % 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 / digital output PWM (open collector)
GND	Ground
Connections	Cable cross section: max. 0,75 mm² Cable gland clamping range: 3—6 mm

***Caution:** If an external AC/DC powered unit (G-series) is using the same safety transformer as a DC powered unit (F-series), a SHORT CIRCUIT in the source may result when connecting 3-wire applications (common ground)!*

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!

Modbus registers

The parameters of the unit can be configured through the 3SModbus software platform. You can download it from the following link: http://www.sentera.eu/english/hvac-software-downloads.html

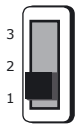
You can find register maps in the mounting instructions. Download them from: http://www.sentera.eu

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 on
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

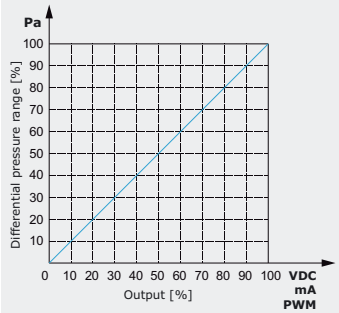
4 - Response time selection jumpers

 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 red (as defined)	Modbus register factory reset or sensor calibration
7 - Modbus communication indication	Blinking green	Transmitting
	Blinking red	Receiving

(indicates the position of the jumper.)

Operational diagram(s)



Standards

- Low Voltage Directive 2006/95/EC CE
- EMC Directive 2004/108/EC: EN 61326
- WEEE Directive 2012/19/EU
- RoHs Directive 2011/65/EU

Accessories

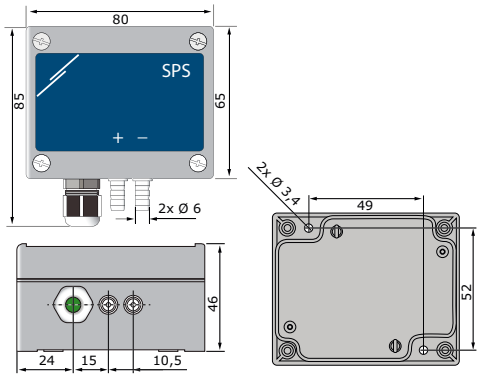
Sensors, sensor switches & sensor controllers	PSET-PVC pressure connection set
Sensors, sensor switches & sensor controllers	PSET-QF pressure connection set

Combine with

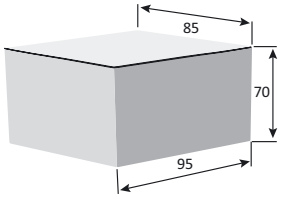
Logic controllers, switches, timers, potentiometers, converters & relay modules	• DTA series • STEC series
Electronic fan speed control	• MFC series • MCS series • EVS(S) series • MVS(S) series • DP1S (SE-S series) • DP2S (SE-S series)
Transformer controllers	• STVS series
Frequency inverters	• FI series

For more detailed information about the product series features visit:
http://www.sentera.eu/english/download-catalogue.html

Fixing and dimensions



Packaging



Article	Packaging	Length [mm]	Width [mm]	Height [mm]	Net weight	Gross weight
SPS-F-2K0	Unit (1 pc.)	95	85	70	0,12 kg	0,15 kg
SPS-G-2K0	Carton (10 pcs.)	492	182	84	1,20 kg	1,63 kg
	Box (120 pcs.)	590	380	505	14,40 kg	20,79 kg
SPS-F-6K0	Unit (1 pc.)	95	85	70	0,12 kg	0,15 kg
SPS-G-6K0	Carton (10 pcs.)	492	182	84	1,20 kg	1,63 kg
	Box (120 pcs.)	590	380	505	14,40 kg	20,79 kg