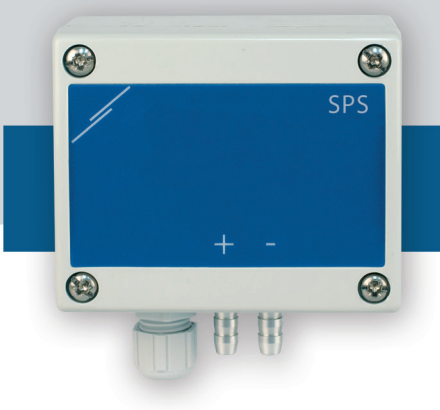


SENTERA CONTROLS

SPS2

Differential pressure controller

The SPS2 differential pressure controller directly controls EC fans, frequency inverters or other control units with two differential pressure setpoints (high/low or day/night mode option). It provides an analogue or digital output with integrated PI control and K-factor setting. You can switch between the setpoints by means of an external switch / contact or digitally. All system parameters are controllable via Modbus RTU communication.

Key features

- Long-term stability and accuracy
- 1 analogue / digital output PWM (open collector)
- Modbus RTU (RS485) communication
- Integrated PI control, K-factor and setpoint adjustment
- Switching between 2 setpoints (via external switch / contact or digital output / Modbus)
- Automatic range selection according to the selected setpoint
- Selection of differential pressure or air volume mode* / readout via Modbus
- Modbus register reset function (factory preset values)
- Sensor calibration procedure
- Autotune function
- 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)
Maximum power consumption	SPS2F-2K0 SPS2F-6K0	0,96 W
	SPS2G-2K0 SPS2G-6K0	1,2 W
Nominal or average power consumption in normal operation	SPS2F-2K0 SPS2F-6K0	0,72 W
	SPS2G-2K0 SPS2G-6K0	0,9 W
Imax	SPS2F-2K0 SPS2F-6K0	40 mA
	SPS2G-2K0 SPS2G-6K0	50 mA
Consumption	No load:	18—34 VDC supply: 10—20 mA 13—26 VAC supply: 10—15 mA
Operating range		0—2.000 Pa
Operating modes		High / Low Mode Day / Night Mode
Accuracy (analogue 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)

Article codes

	Supply	Connections
SPS2G-2K0 **SPS2G-6K0**	13—26 VAC 18—34 VDC	3-wire
SPS2F-2K0 **SPS2F-6K0**	18—34 VDC	4-wire

Area of use

- Fan / pressure control, VAV (Variable Air Volume) and CAV* (Constant Air Volume) modes
- 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)*

Standards

- Low Voltage Directive 2014/35/EC CE
- EMC Directive 2014/30/EC
- RoHs Directive 2011/65/EU

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
OC	Dry contact for switching between setpoint 1 and 2
GND	Ground
Connections	Cable cross section: max. 0,75 / 1,5 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 analogue 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!

Modbus registers

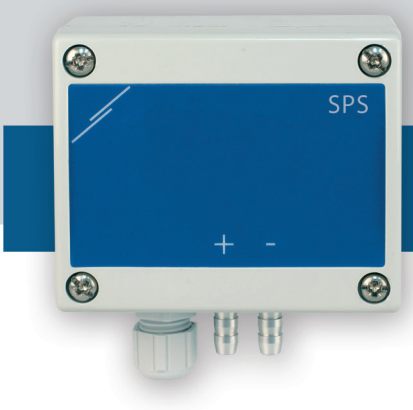
Sensistant

3SMODBUS

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 consult the Modbus register map of the product.

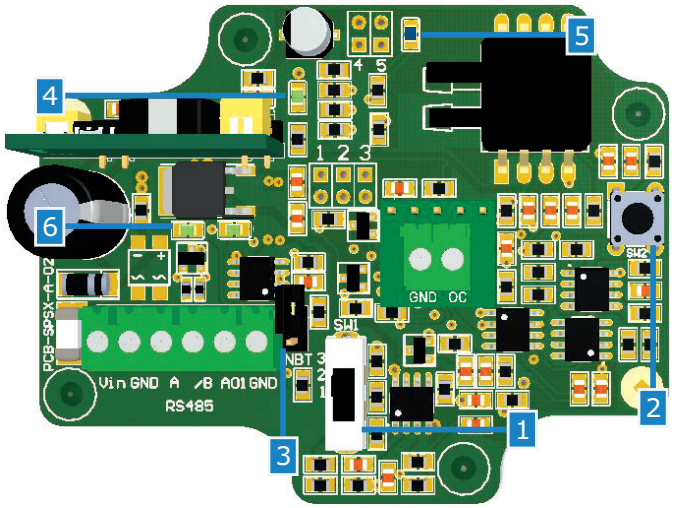


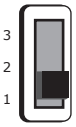
SENTERA CONTROLS

SPS2

Differential pressure controller

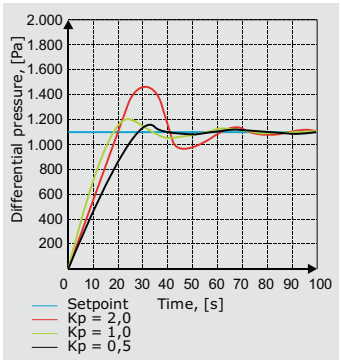
Settings



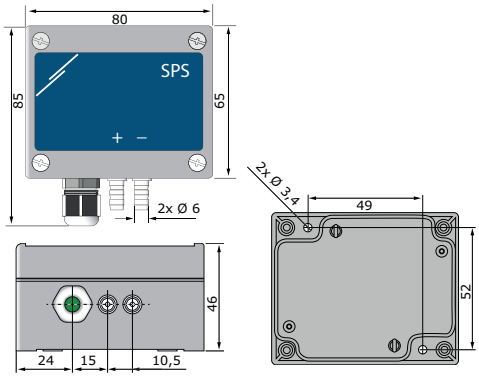
1 - Analogue output mode selection switch (SW1)		1: 0—10 VDC 2: 0—20 mA 3: PWM (open collector)
2 - Tact switch (SW2) for sensor calibration and Modbus register reset		Push to start sensor calibration (LED5 blinking twice) Push to start Modbus register reset (LED5 blinking twice, then 3 times)
3 - Network bus resistor jumper (NBT)		SPS2 is the first or last unit
4 - Power indication	Cont. green	ON
5 - Blue LED5	Continuously blinking	Normal operation
	Blinking twice (by pushing SW2)	Start sensor calibration
	Blinking twice, then 3 times (by pushing SW2)	Start Modbus register reset
6 - Modbus communication indication	Blinking green	Transmitting / receiving

( indicates closed position of the jumper.)

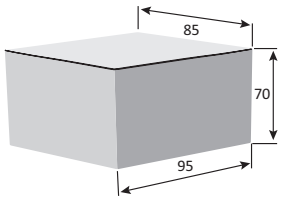
Operational diagram(s)



Fixing and dimensions



Packaging



Article	Packaging	Length [mm]	Width [mm]	Height [mm]	Net weight	Gross weight
SPS2X-2K0	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
SPS2X-6K0	Unit (1 pc.)	95	85	70	0,15 kg	0,18 kg
	Carton (10 pcs.)	492	182	84	1,50 kg	1,93 kg
	Box (60 pcs.)	590	380	280	7,2 kg	10,39 kg