



# SPS2

## Differential pressure controller

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

### Key features

- Long-term stability and accuracy
- 1 analog / digital output PWM (open collector)
- Modbus RTU (RS485) communication
- Integrated PI control, K-factor and setpoint setting
- Two switchable 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 analog 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 (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)

### Standards

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



### Modbus registers



The Sensistart 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
<b>SPS2G-2K0</b> <b>SPS2G-6K0</b>	13–26 VAC 18–34 VDC	3-wire
<b>SPS2F-2K0</b> <b>SPS2F-6K0</b>	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)

### Wiring and connections

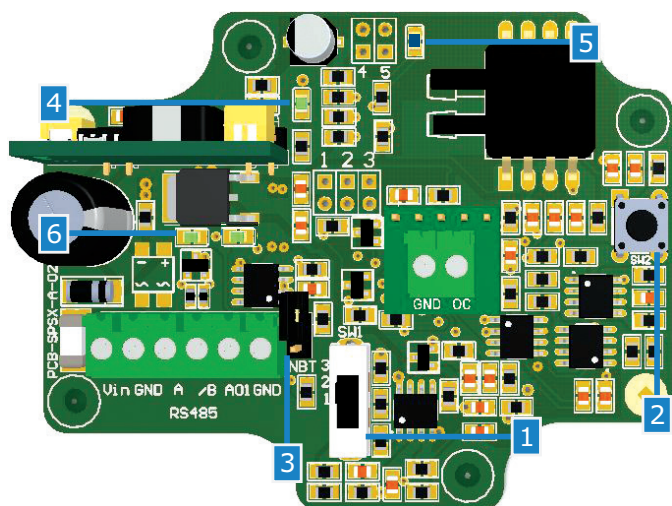
Vin	Positive DC voltage / AC ~
GND	Ground / AC ~
A	Modbus RTU (RS485) signal A
/B	Modbus RTU (RS485) signal /B
AO1	Analog / digital output PWM (open collector)
GND	Ground
OC	Dry contact for switching between setpoint 1 and 2
GND	Ground
Connections	Cable cross section: max. 0,75 / 1,5 mm <sup>2</sup> 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!



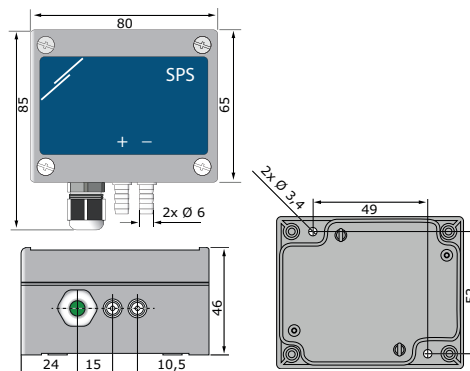
#### Settings



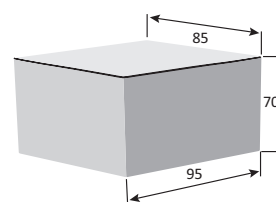
1 - Analog output mode selection switch (SW1)		3: 0–10 VDC 2: 0–20 mA 1: PWM (open collector)
2 - Tact switch (SW2) for sensor calibration and Modbus register reset		Push to start sensor calibration (LED5 blinking twice) Push to start Modbus register reset (LED5 blinking twice, then 3 times)
3 - Network 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.)

#### 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

#### Operational diagram(s)

