

# SmokeESC PS-3000 User Manual

## 1 Introduction

PS-3000 is a differential digital pressure sensor designed for use in the SmokeESC system. When combined with the FSC-3000, the PS-3000 allows for controlling the fan's rotational speed to maintain the desired pressure differential in the protected space. The pressure difference value is read and sent to the FSC-3000 up to 100 times per second. The pressure sensor used in the device does not require periodic calibration.

### 1.1 Technical parameters

PARAMETER	VALUE
Supply Voltage	24 V DC $\pm$ 15%
Current consumption	typ. 30 mA, $I_{MAX} < 60$ mA
Communication	Innovation Vent BUS
Operating temperature	From -25°C to +50°C
Storage temperature	From -25°C to +70°C
Humidity	<90% RH, no condensation
Environmental class	2
Pressure difference measurement range	From -500.0 Pa to 500.0 Pa
Case protection class	IP54
Dimensions	105 × 200 × 83 mm
Weight	400 g
Altitude above sea level	<2000 m AMSL

### 1.2 General description

PS-3000 is measuring pressure difference. For it to be working properly it is necessary to connect with regulator FSC-3000 to which measurement and fault information is sent by Innovation Vent BUS. Sensor has built-in input for connecting a signal of start. A PS-3000 status information is presented on LED diodes on sensor's board and are present on display on a FSC-3000 or inside PC application connected to a FSC-3000 device. Sensor has to be mounted inside controlled space.

## 2 Installation and start-up

Before connecting the unit, make sure it has no visible damage and the installation has been performed in accordance with the recommendation of this manual.

### 2.1 Installation recommendation

Figure presents dimensions of the PS-3000. Sensor has to be mounted with pneumatic spigots facing down. For mounting to the wall it is required to use two screws/bolts with diameter of 4 mm and length of at least 45 mm which are specific to a surface on which device is mount on.

#### Caution!

After mounting the device to the wall, the mounting holes should be plugged with the supplied caps. Failure to perform this action will result in the loss of the IP protection rating for the PS-3000 device.

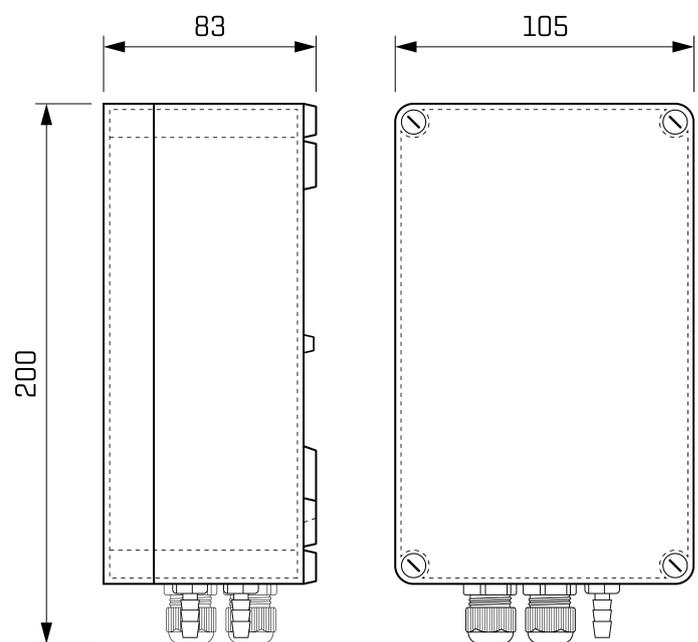


Fig. 1: Device dimensions

#### Notes on safety

- Neglecting to observe warnings and recommendations can result in electric shock, serious bodily injury, or fire.
- All connections and changes should be made with the power disconnected on all poles.
- Ensure proper operating conditions in accordance with the technical requirements of the device. Check the supply voltage, current output of the power source, and environmental conditions.
- Incorrectly connected device may become damaged.
- Only qualified individuals (after familiarizing themselves with this user manual) are allowed to connect the device and perform wiring.
- The responsibility for proper installation lies with the installer. Ensure that all guidelines and standards applicable in the given country are met.

**Notes on safety**

- The device may be installed in a location accessible only to adults.
- Any attempts to make unauthorized changes to the device or self-repairs result in warranty voidance.

**2.2 Connection of a SDC-3000**

**2.2.1 Electrical connections**

**Caution!**

The connection of the device must be carried out by authorized personnel. Any installations should be performed with the power turned off on all power supply poles. The device must be installed in the same building where the wiring connected to its connectors is done. All wires connected to the device must comply with the IEC 60332 standard

**Caution!**

Leading cable through a grommet make sure to keep connection sealed.

Connection of a supply has to be made in accordance with scheme on figure 2 using a cable type of a HTKSH FE180/PH90 1x2x1 or any with similar characteristic. Connect power supply cable to inputs 1 and 2 of a sensor with caution to supply polarity.

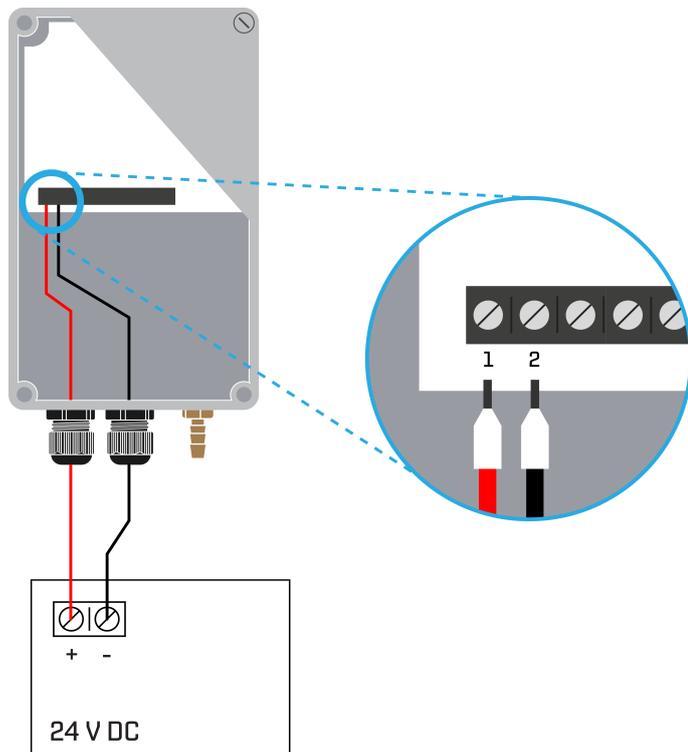


Fig. 2: Power supply connection

**2.2.2 Connection of a input**

Sensor is equipped with one input that works with potential-free output. Connection has to be made using cables with cross-section no larger than 1,5 mm<sup>2</sup> and connect to inputs 3-4. Input recognizes one of three states: short, open and resistance of a value of a 10 kΩ. Input is ready to receive start signal. If not using this input connect a resistance of a 10 kΩ.

Input state	Device state
10 kΩ	OK
Short	Active
Open	Fault

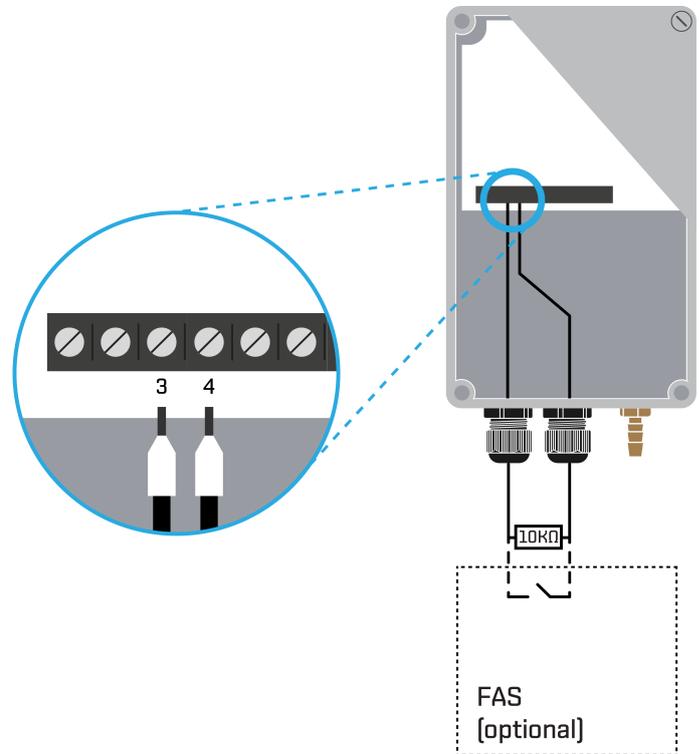


Fig. 3: Input connection

**2.2.3 Connect of a Innovation Vent Bus**

PS-3000, SDC-3000 or FSC-3000 can be connected to a Innovation Vent Bus. Total number of devices that can be connected to this bus is 25 and one the devices has to be FSC-3000 regulator. For connection use cable of type of YnTKSYewk 1x2x0.8 or different with similar characteristic. Innovation Vent Bus has to be connected in accordance with scheme on figure 4 using connectors 5-6 and 8-9 of the sensor. Shielding of a bus connection has to be grounded in one spot with EMC grommet or different connector leading to to ground of a cabinet. When connecting devices on a bus with devices such a PS-3000 or SDC-3000 make sure that shielding is continuous by connecting with additional connectors of a shield inside devices cases. Maximum

length of a bus is 350 m. Maximum length of might be lower due to usage of not proper type of a cable, lack of proper shield connection or EMC interference. Length of a communication bus may be extended by use of a REP-3000 device that extends possible bus length by 350 m. It is possible to use up to 4 REP-3000 devices in one installation.

wall use two screws/bolts with diameter of a 3.5mm and length of a 35 mm suited for mounting surface.

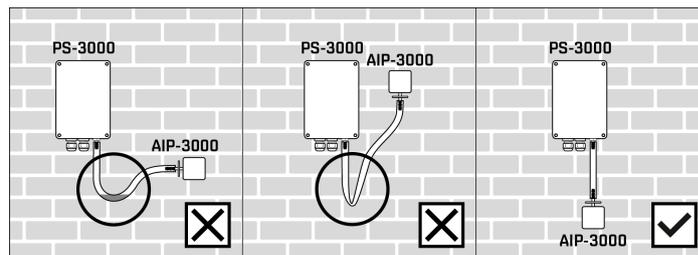


Fig. 5: Instalation scheme

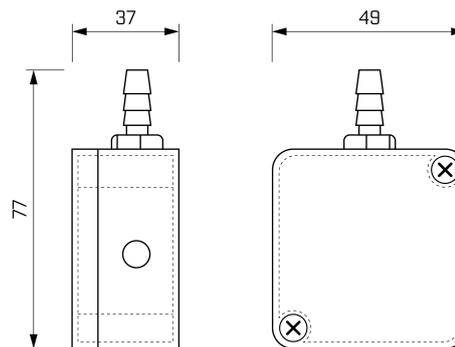


Fig. 6: Dimensions of AIP-3000

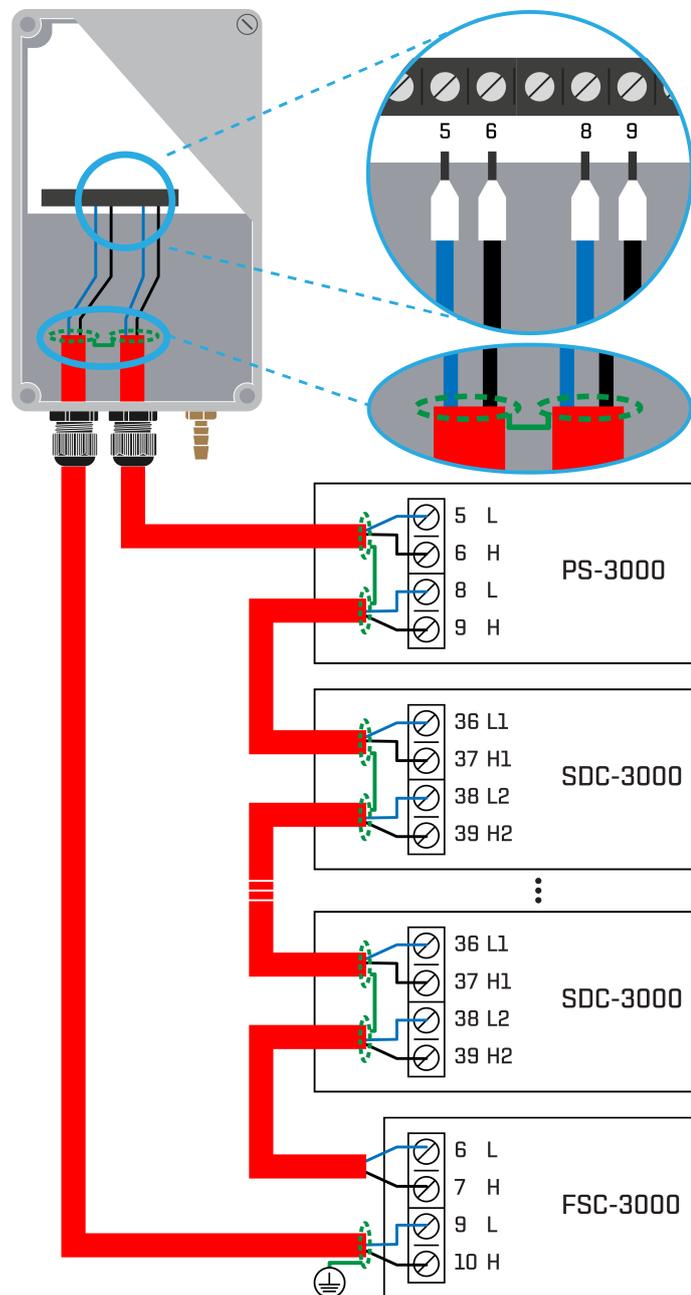


Fig. 4: Connection of a Innoavtion Vent Bus

## 2.2.4 Pneumatic hose connection

Pneumatic connection of a sensor (figure 5) has to be made with use of a pneumatic hose with internal diameter no less than 6 mm. Pneumatic hoses should be led without bending that may diminish internal diameter of a hose. Pneumatic hose put on a spigot should be protected with clamp band to prevent slipping off. Hose has to be led in a way that prevent creating siphon otherwise it may get plugged with dirt. Other end of a hose has to be connected to pressure measuring point AIP-3000. For mounting to a

## 2.3 Other components

### 2.3.1 LED diodes

LED diode	Meaning
Power	Blinks - Signal start detected On - Power is on
Fault	On - Fault is detected
In	On - In input fault detected

### 2.3.2 Setting address

For setting up PS-3000 address use address setter and jumper. Address is used in communication on Innovatin Vent BUS. Every PS-3000 sensor has to have set unique address in order to be recognized by FSC-3000 regulator. Address configuring method is presented in table. Figure 7 presents jumper position for adding 10 to device address.



Fig. 7: Jumper position

Setter value	Jumper removed	Jumper set
0	0	10
1	1	11
2	2	12
3	3	13
4	4	14
5	5	15
6	6	16
7	7	17
8	8	18
9	9	19
A	10	20
B	11	21
C	12	22
D	13	23
E	14	Value not permitted
F	15	Value not permitted

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