

SmokeESC SDC-3000 User Manual

1 Introduction

SDC-3000 is a regulator controlling angular position of up to 4 fast running damper actuators to provide required overpressure in controlled space. Additionally device is able to control up to two fire damper actuators (spring-loaded or not). Device has built-in IV Thrace algorithm that enables device to use in systems that allows using it in systems certified in accordance with EN 12101-6 and EN 12101-13 standards

1.1 Technical parameters

PARAMETER	VALUE
Supply voltage	24 V DC \pm 15%
Current consumption	typ. 70 mA, $I_{MAX} < 200$ mA
Battery type	CR2032
Communication	USB, IV BUS
Operation temperature	From -25°C to +50°C
Storage temperature	From -25°C to +70°C
Humidity	<90% RH, no condensation
Environmental class	2
Output signal	0 - 10 V DC
Case protection class	IP54
Dimensions	270 x 370 x 120 mm
Weight	1700 g
Altitude above sea level	<2000 m AMSL

1.2 General description

SDC-3000 regulator controls up to 4 fast running actuators to maintain set overpressure in controlled space. SDC-3000 can be used as regulator for stairwell and vestibules smoke protection systems. Device has built-in two pressure sensors that allows to monitor two spaces at once. SDC-3000 can be used in connection with FSC-3000 and PS-3000 with Innovation Vent BUS. Device controls and monitors state of two additional actuators with or without spring. To configure SDC-3000 use USB connection and PC application.

2 Installation and startup

Before commissioning the regulator make sure it has no visible damage and the installation has been carried on in accordance with recommendation of this manual.

2.1 Installation recommendation

Dimensions of the regulator is presented on a figure 1. Regulator is required to be mount with spigots facing down. For wall mount use two screws/bolts with diameter of 4 mm and minimal length of 45 mm which type is proper to use on the surface on which is device is mounted on.

Caution!

After mounting the device to the wall, mounting holes should be covered with plugs delivered with the device. Not performing this action deprives device of the guaranteed enclosure protection class.

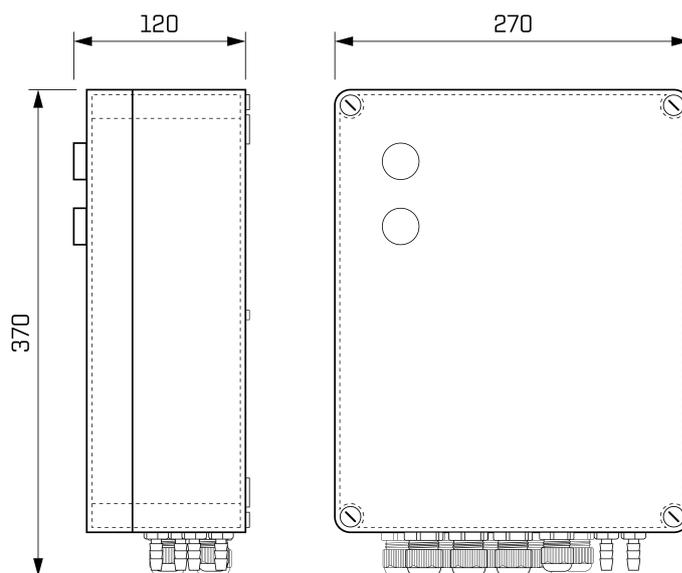


Fig. 1: Regulator dimensions

Notes of safety!

- Before the first startup, carefully read this user manual.
- 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 of 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 SDC-3000

2.2.1 Electric connections

Caution!

The connection of the unit has to be performed by an authorised persons. Any installation must be carried out with the power off. The device must be installed in the same building as electrical installation that is connected to its inputs. All cables connected to the device has to be certified in accordance with IEC 60332 standard. Device is supposed to be powered by 24 V DC source.

Caution!

After connection of a cable to the device it is needed to screw down a grommet that was used to lead in that cable.

Connection has to be made in accordance with scheme presented on figure 2 using cable in type of HTKSH FE180/PH90 1x2x1 or another with similar characteristic. Supply cable should be connected to input 1 and 3 of the device with a caution to supply polarity.

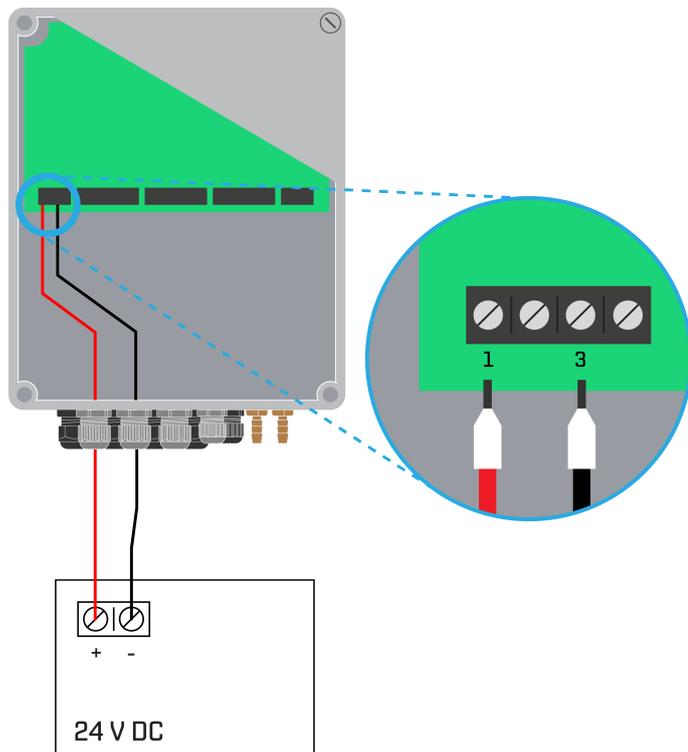


Fig. 2: Power supply connection

2.2.2 Connect of fast running actuators

Regulator drives from 1 to 4 dampers with fast running actuators that are controllable with 0-10V voltage. It is possible to use 2-10V return signal from damper to monitor position of a damper. To connect a damper it is required to use inputs 27-35. Exemplary connection with usage of a electrical box is presented on figure 3. Distance between SDC-3000 and damper has to be less than 15 meters.

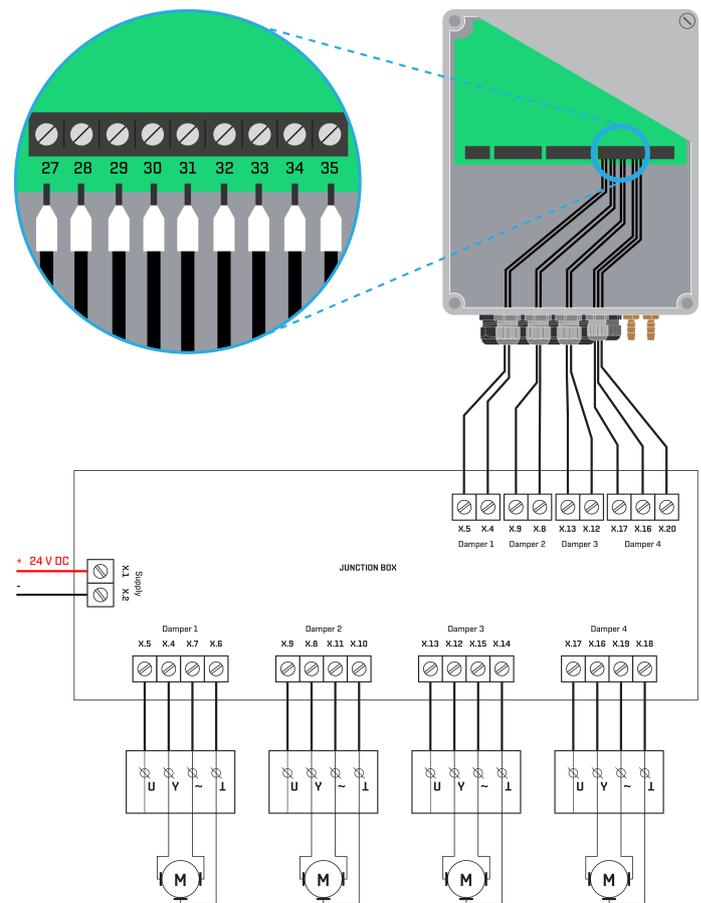


Fig. 3: Connection of 0-10V dampers

2.2.3 Connection of dampers (with or without return spring)

The regulator is equipped with two relay outputs for controlling dampers/flaps actuators with spring or without. A maximum 30 V DC load can be connect with maximum current of 1 A. Maximum cross-section of a supply cable is 1.5 mm². Actuator supply has to be connected to inputs 5-6. Optional return signal from limit switch should be connected to inputs 17-22. Limit switches need to be connected with 10 kΩ as terminating resistance. Exemplary connection is pictured on figure 4. Distance between SDC-3000 and actuator should be less or equal than 15 m.

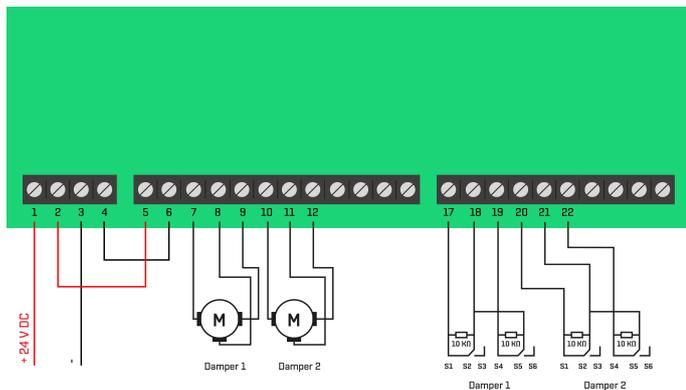


Fig. 4: Connect of dampers without spring

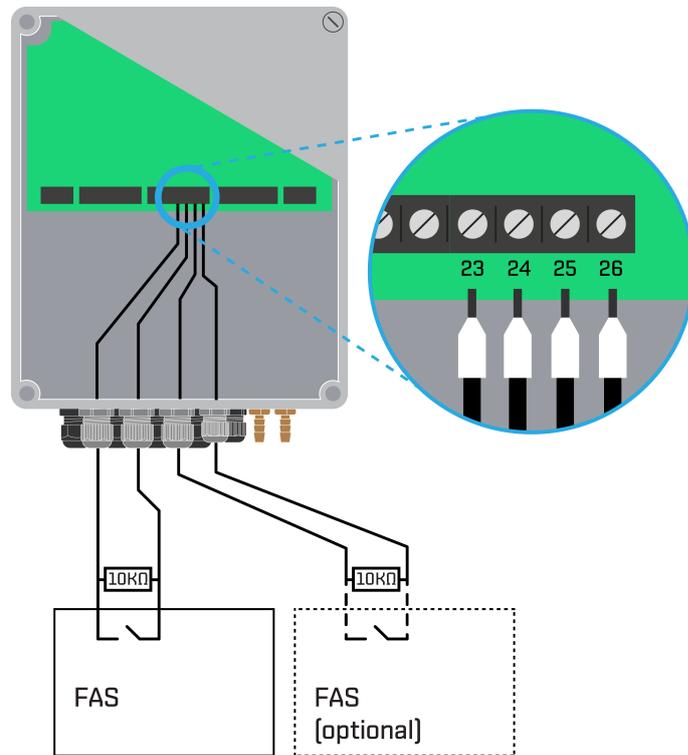


Fig. 6: Connection of start input

2.2.4 Connection of fault signaling relay

Regulator is equipped with two relay outputs (SPDT). First output is used to signal faults present in device. It uses NO connectors. Outputs can be used to digital inputs or LED diodes. Connection has to be made to inputs 13-16. Maximal load connected to relay is 30 V DC with maximum current 1 A. Cable cross-section should not exceed 1.5 mm². Example of a connection is presented on a figure 5.

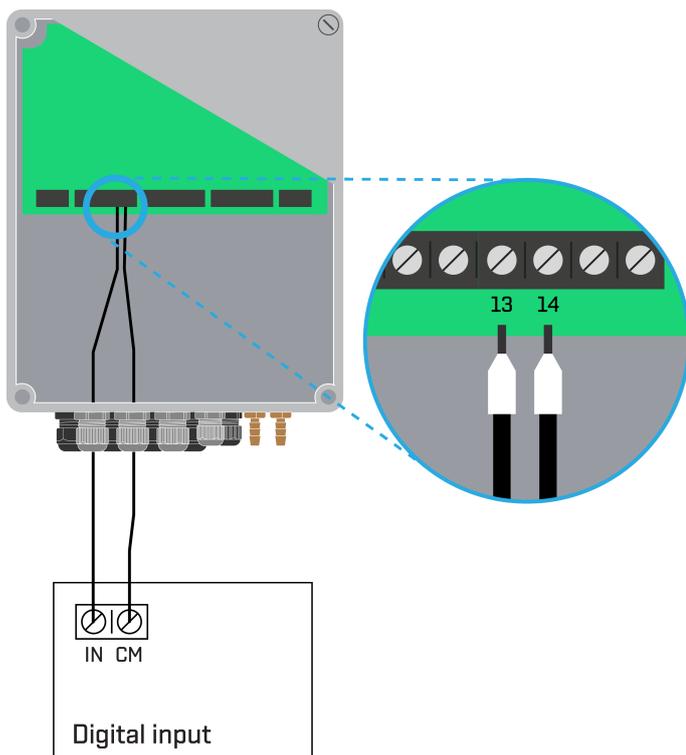


Fig. 5: Connection of digital output to input

2.2.5 Connection of Start input

Device consist of two inputs to work with potential-free outputs. Inputs are meant to receive start signal. Number of required start inputs (one or two) is configuration-dependent. To connect use cables with cross-section of maximum 1.5 mm² and connect them to inputs 23-26. Digital input recognize 3 states: short-circuit, open input and 10kΩ. Connection method is present on figure 6.

2.2.6 Connection of a Innoavtion Vent Bus

It is possible to connect PS-3000, SDC-3000 or FSC-3000 units to a communication bus. Maximum number of devices connected is 25 of which one has to be FSC-3000. For connection use cable type of a YnTKSYekw 1x2x0,8 or similar. Communication bus has to be made in accordance with 7 using 36-37 and 38-39 inputs. Shielding of a cable in the beginning of a bus should be connected in single point with EMC grommet or grounding connector in control cabinet. When connecting bus with PS-3000 or SDC-3000 make shure shielding is connected between cables with usage of EMC connector inside device case. Maximum guaranteed length of a connection is 350 m. This range can be less for ensuring a proper communication due to using wrong cable type, lack of proper shielding or due to electromagnetic intereference. One REP-3000 extends range by up to 350 meters. It is recommended to use max 4 REP-3000 devices in one bus.

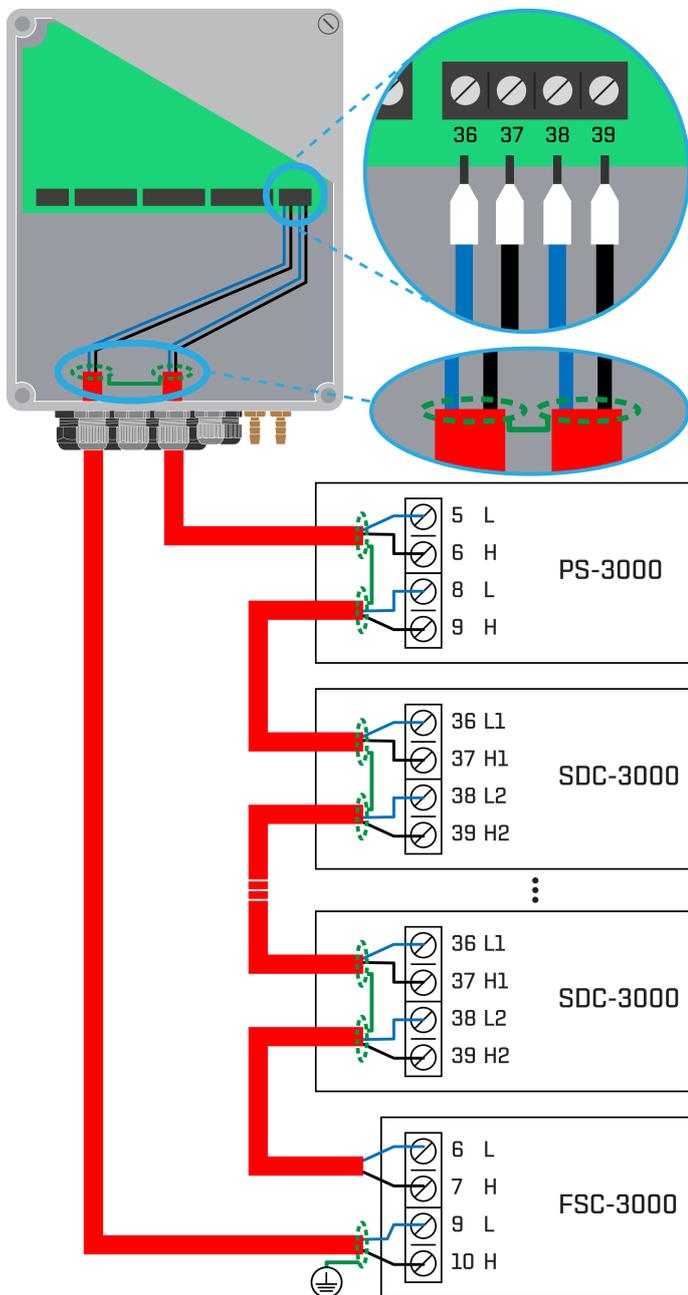


Fig. 7: Connection of a Innoavtion Vent Bus

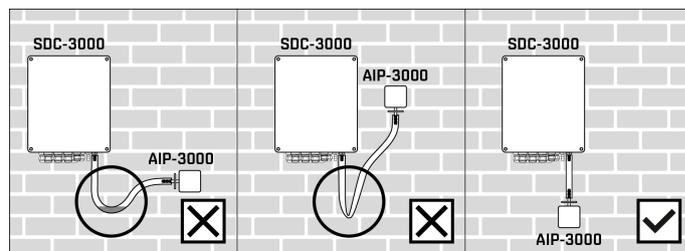


Fig. 8: Installation scheme

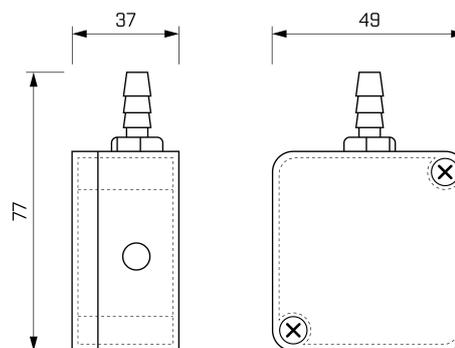


Fig. 9: AIP-3000 dimensions

2.3 Other components

2.3.1 USB

The device consist of USB Type B connector for connecting to PC. Maximum length of a cable connected to the device should not be more than 3 meters.

2.3.2 LED Diodes

LED Diode	Meaning
POWER	On - power supply present
FAULT	Blinks - fault detected
Damper 1	On - actuator 1 reay output on
Damper 2	On - actuator 2 reay output on
Status	Blinks - work
	On - OK

2.4 Battery

Caution!

Battery replacement must only be carried out by qualified and authorised personnel after reading this operation manual. Before starting work switch off the power supply to the unit. Next replace the battery. Do not use different type of battery due to possibility of explosion or fire.

2.2.7 Pneumatic hose connect

Pneumatic connection of a regulator [figure 8] requires pneumatic hose with internal diameter of at least 6 mm. Pneumatic hoses should be lead without bending that are shrinking internal diameter of a hose. Hoses that are placed on a spigot needs to be protected with clamp band to prevent slipping hose off. Pneumatic hose should be put in a way that prevents creating a shape of a siphon otherwise it may get plugged with dirt. Other end of a hose has to be connected to spigot of a AIP-3000 - pressure measurement point. Figure 9 presents dimensions of AIP-3000. For mounting to wall use two screws/bolts with diameter of 3.5 mm and a minimal length of 35 mm suited for mounting surface.

Caution!

Battery has not to be exposed to high temperature, fire or mechanical stress, ie. crushing, cutting or low air pressure. Otherwise it can cause a battery leakage of flammable gas.

The regulator contains CR2032 made by VARTA company and it should be replaced with same type of CR2023 battery made by VARTA. New battery should be transported only in an original package. Used battery should be protected against short-circuiting it's terminals. When replacing a battery make attention to the polarity marked on polarity cage.

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