SDP-E0US-DC

POTENTIOMETER WITH MIN & MAX SETTINGS AND DRY CONTACT

Mounting and operating instructions

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SAFETY AND PRECAUTIONS

Read all the information, the datasheet, Modbus map, mounting and operating instructions and study the wiring and connection diagram before working with the product. For personal and equipment safety, and for optimum product performance, make sure you entirely understand the contents before installing, using, or maintaining this product.

For safety and licensing (CE) reasons, unauthorised conversion and / or modifications of the product are inadmissible.

The product should not be exposed to abnormal conditions, such as extreme temperatures, direct sunlight or vibrations. Long-term exposure to chemical vapours in high concentration can affect the product performance. Make sure the work environment is as dry as possible; avoid condensation.

All installations shall comply with local health and safety regulations and local electrical standards and approved codes. This product can only be installed by an engineer or a technician who has expert knowledge of the product and safety precautions.

Avoid contacts with energised electrical parts. Always disconnect the power supply before connecting, servicing or repairing the product.

Always verify that you apply appropriate power supply to the product and use appropriate wire size and characteristics. Make sure that all the screws and nuts are well tightened and fuses (if any) are fitted well.

Recycling of equipment and packaging should be taken into consideration and these should be disposed of in accordance with local and national legislation / regulations.

In case there are any questions that are not answered, please contact your technical support or consult a professional.

PRODUCT DESCRIPTION

These potentiometers can control equipment that need a variable control signal. The supply voltage is between 5 VDC and 24 VDC. The output is adjusted continuously variable from minimum to maximum or from maximum to minimum via a rotary knob. This version has a dry contact at the leftmost position to remotely switch ON/OFF external equipment. The potentiometer is suitable for both inset (IP44) and surface mounting (IP54).

ARTICLE CODES

Code	Supply	Output	Remote ON/OFF
SDP-E0US-DC	5-24 VDC	min - max/ max - min	yes

INTENDED AREA OF USE

- A variety of applications where a variable control signal is required

TECHNICAL DATA

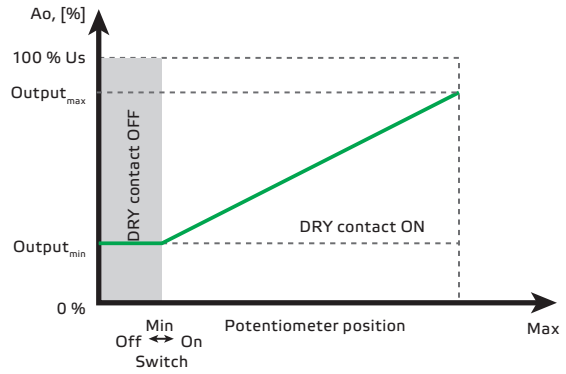
- Supply voltage: 5-24 VDC
- Selectable analogue / modulating output:
  - 0—100% Us mode: min. load 50 kΩ (Rl ≥ 50 kΩ)
  - 0—20 mA mode: max. load 500 Ω (RL ≤ 500 Ω)
  - PWM mode PWM frequency: 1 kHz, min. load 50 kΩ (RL ≥ 50 kΩ)
- Enclosure:
  - ASA, white-ivory (RAL9010), IP54 (according to EN 60529)
- Dry contact for remote ON / OFF switching of external equipment with 1 A max switching current
- Operating ambient conditions:
  - temperature: 0—50 ºC
  - rel. humidity: < 95 % rH (non-condensing)
- Storage temperature: -10—55 ºC

STANDARDS

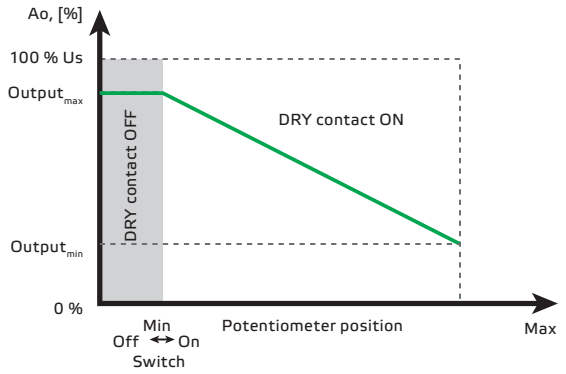
- Low Voltage Directive 2014/35/EU CE
  - EN 60529:1991 Degrees of protection provided by enclosures (IP Code) Amendment AC:1993 to EN 60529
  - EN 60730-1:2011 Automatic electrical controls for household and similar use - Part 1: General requirements.
- EMC directive 2014/30/EU
  - EN 60730-1:2011 Automatic electrical controls for household andsimilar use - Part 1: General requirements
  - EN 61000-6-1:2007 Electromagnetic compatibility (EMC) - Part 6-1: Generic standards - Immunity for residential, commercial and light industrial environments
  - EN 61000-6-3:2007 Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments. Amendments A1:2011 and AC:2012 to EN 61000-6-3
- RoHs Directive 2011/65/EU

OPERATIONAL DIAGRAMS

Trimmers: Min < Max



Trimmers: Min > Max



NOTE

Appropriate load should be connected to the analogue / modulating output. If the load should be changed, configure the output type first.

WIRING AND CONNECTIONS

Us	Supply voltage 5-24 VDC
GND	Supply voltage, ground
DC	Dry contact for remote ON/OFF
Ao	Output signal (min - max)
GND	Output, ground
Connections	Spring contact terminal block, stranded wires 1,0—1,5 mm² or wires with cable shoe 0,75—1,0 mm², length 7 mm

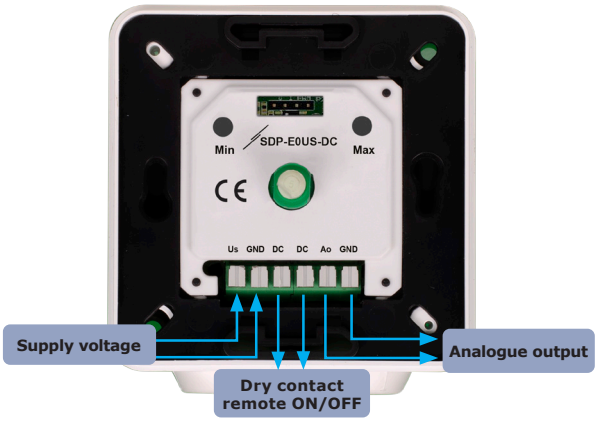
MOUNTING INSTRUCTIONS IN STEPS

Before you start mounting your potentiometer read carefully "**Safety and Precautions**". Then proceed with the following mounting steps:

Flush mounting

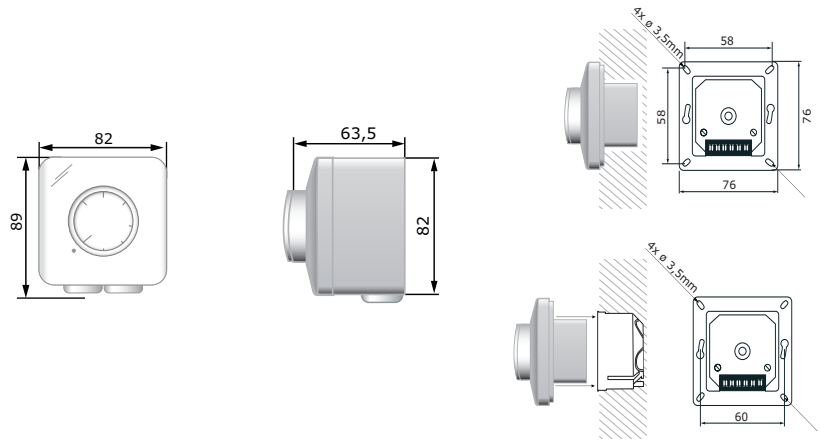
1. Remove the knob by pulling it out.
2. Unscrew the washer to remove the cover of the external enclosure.
3. Do the wiring according to the wiring diagram (see **Fig. 1** *Wiring and connections*).

Fig. 1 Wiring and connections



4. Mount the internal enclosure into the wall according to the mounting dimensions shown in **Fig. 2** *Mounting dimensions - flush mounting*

Fig. 2 Mounting dimensions - flush mounting



NOTE

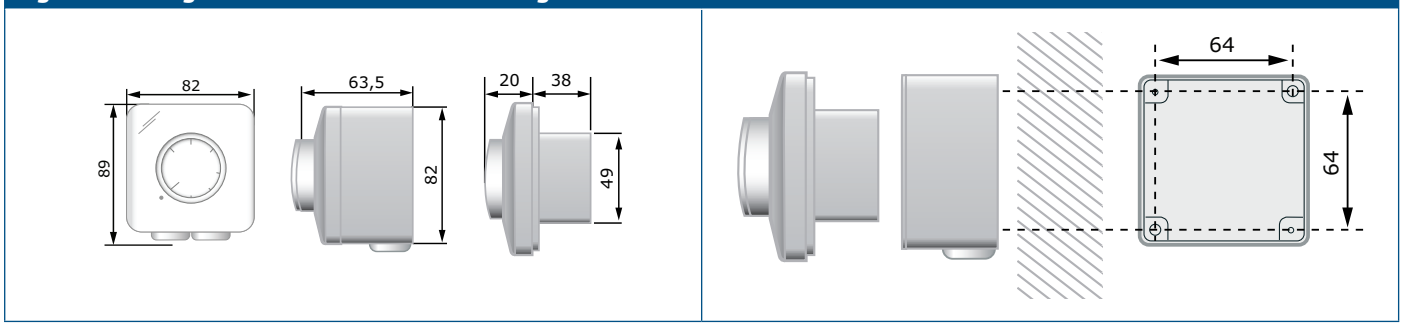
Mount the unit so that the terminal block and connections are at the lower side.

5. Mount back the cover and secure it with the washer.
6. Put back the knob and turn it to off position
7. Turn on the power supply.

For surface mounting

1. Remove the knob by pulling it out.
2. Unscrew the washer to remove the cover of the external enclosure.
3. Mount the external enclosure onto the surface by means of screws and dowels adhering to the mounting dimensions shown in **Fig. 3** *Mounting dimensions - surface mounting*.

Fig. 3 Mounting dimensions - surface mounting



4. Insert the cables trough the grommets.
5. Do the wiring according to the wiring diagram (see **Fig. 1** Wiring and connections)
6. Insert the internal enclosure into the external one and fix it using the screws. Mount back the cover and secure it with the nut.
7. Put back the knob and turn it to off position
8. Turn on the power supply.

NOTE

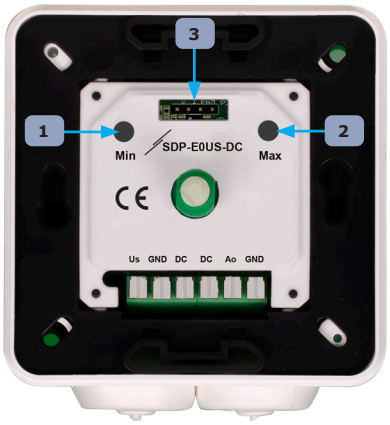
Mount the unit so that the terminal block and connections are at the lower side.

NOTE

A 5 mm hole can be drilled at the bottom of the external enclosure to drain the condensed water.

SETTINGS

Settings



1 – Min adjustment trimmer	There is always 20% minimum control range between the values determined by the trimmers.		0 - 80% Us
2 – Max adjustment trimmer			20 - 100% Us
3 – Header for analogue/ modulating output type selection	voltage	current	PWM
	1 2 3 4	1 2 3 4	1 2 3 4

OPERATING INSTRUCTIONS

The potentiometer is intended to manually control EC fan speed, AC fan speed controllers, damper actuators or other devices that require an analogue input signal. Turn the knob to adjust the output signal.

By default, the output signal goes from minimum to maximum by turning the rotary knob clockwise. When minimum value is set higher then maximum value, the output signal goes from maximum to minimum by turning the rotary knob. There is always 20% minimum control range between the values determined by the trimmers. The Min trimmer value is taken as a basis. If both trimmers are set to their minimum the actual control of the output will be between 0% and 20%. If both trimmers are set to their maximum the actual control of the output will be between 80% and 100%.

VERIFICATION OF INSTALLATION INSTRUCTIONS

ATTENTION

Use only tools and equipment with non-conducting handles when working on electrical devices.

- In case of faulty operation, please check if:
  - the right voltage is applied;

- all connections are correct;
- the regulated device is functioning.

TRANSPORT AND STORAGE

Avoid shocks and extreme conditions; stock in original packing.

WARRANTY AND RESTRICTIONS

Two years from the delivery date against defects in manufacturing. Any modifications or alterations to the product after the date of publication relieve the manufacturer of any responsibilities. The manufacturer bears no responsibility for any misprints or mistakes in this data.

MAINTENANCE

In normal conditions this product is maintenance-free. If soiled, clean with a dry or damp cloth. In case of heavy pollution, clean with a non-aggressive product. In these circumstances the unit should be disconnected from the supply. Pay attention that no fluids enter the unit. Only reconnect it to the supply when it is completely dry.