

MTV-1-010-PM | 230 VAC POTENTIOMETER WITH MULTIFUNCTIONAL OUTPUT

Mounting and operating instructions



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SAFETY AND PRECAUTIONS



Read all the information, the datasheet, 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 our technical support or consult a professional.

PRODUCT DESCRIPTION

The MTV-1-010-PM potentiometer is developed to control equipment that needs a 1–10 VDC, 2–20 mA or 10–100% PWM control signal. The potentiometer requires a supply of 230 VAC and provides a stepless output signal. The minimum output values can be adjusted within 1–7 VDC / 2–14 mA / 10–70 % PWM, and the maximum output values – within 3–10 VDC / 6–20 mA / 30–100 % PWM. At off-position, the output is 0 VDC. The potentiometer is suitable for both inset mounting (IP44) and surface mounting (IP54)

ARTICLE CODES

| Article code | Supply | Output |
|--------------|----------------------------------|----------------------------------|
| MTV-1-010-PM | 230 VAC $\pm 10\%$ / 50–60 Hz | 1–10 VDC / 2–20 mA / 10–100% PWM |

INTENDED AREA OF USE

- Applications where a 1–10 VDC, 2–20 mA or 10–100% PWM control signal is required
- For indoor use only

TECHNICAL DATA

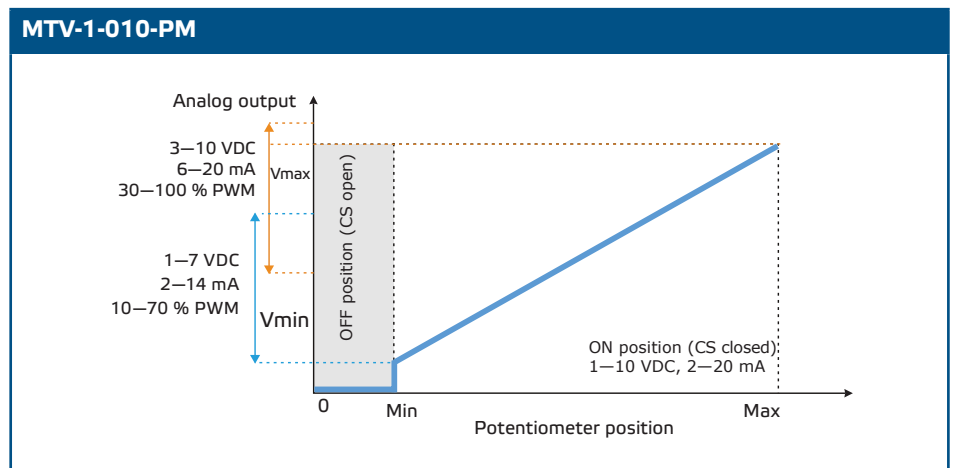
- Power supply: 230 VAC $\pm 10\%$ / 50–60 Hz
- Load:
 - ▶ 1–10 VDC mode: 2 k Ω ($R_L \geq 2$ k Ω)
 - ▶ 2–20 mA mode: $\leq 500 \Omega$ ($R_L \leq 500 \Omega$)
 - ▶ 10–100 % PWM mode: ≥ 2 k Ω ($R_L \geq 2$ k Ω)
- Selectable output: 1–10 VDC / 2–20 mA / 10–100 % PWM
- No output at OFF position
- Minimum output setting, V_{min} : 1–7 VDC / 2–14 mA / 10–70 % PWM
- Maximum output setting, V_{max} : 3–10 VDC / 6–20 mA / 30–100 % PWM
- Enclosure:
 - ▶ External: ASA, white-ivory (RAL 9010), IP54 (according to EN 60529)
 - ▶ Internal: polyamide, white-ivory (RAL 9010), IP44 (according to IEC 60335)
- Operating ambient conditions:
 - ▶ temperature: 0–40 °C
 - ▶ rel. humidity: < 100 % rH (non-condensing)
- Storage temperature: -10–55 °C

STANDARDS

- Low Voltage Directive 2014/35/EC
- EMC Directive 2014/30/EC
- WEEE Directive 2012/19/EU
- RoHs Directive 2011/65/EU



OPERATIONAL DIAGRAM



WIRING AND CONNECTIONS

| | |
|--------------------|---|
| L, N | Power supply (230 VAC \pm 10 % / 50–60 Hz) |
| Out (+ -) | Analog output (1–10 VDC / 2–20 mA / 10–100% PWM) |
| Connections | Cable cross section: max. 1,5–2,5 mm ² |

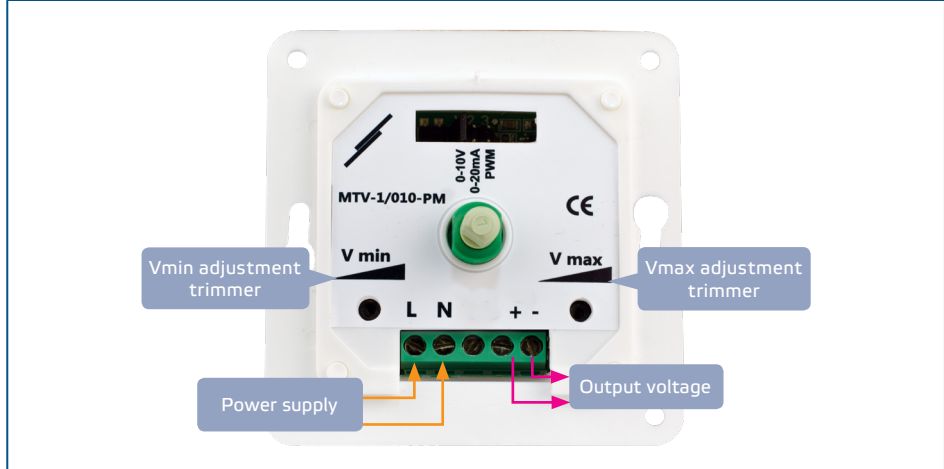
MOUNTING INSTRUCTIONS IN STEPS

Before you start mounting your potentiometer, read carefully **“Safety and Precautions”** and follow the steps:

For inset mounting

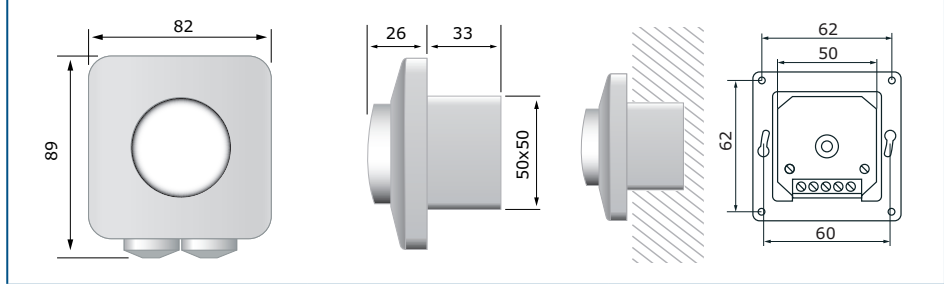
1. Remove the knob by turning it to the right until it pops out.
2. Unscrew the nut and remove the cover of the external enclosure.
3. Do the wiring according to the wiring diagram (see **Fig. 1 Wiring and connections**).

Fig. 1 Wiring and connections



4. Mount the internal enclosure into the wall adhering to the mounting dimensions shown in **Fig. 2**.

Fig. 2 Mounting dimensions - inset mounting



NOTE

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

- 5. To select the output type, use the jumper shown in **Fig. 3**.
- 6. Adjust the minimum and maximum output speed trimmers using a flat screwdriver. See **Fig. 4**.

Fig. 3 Output selection jumper

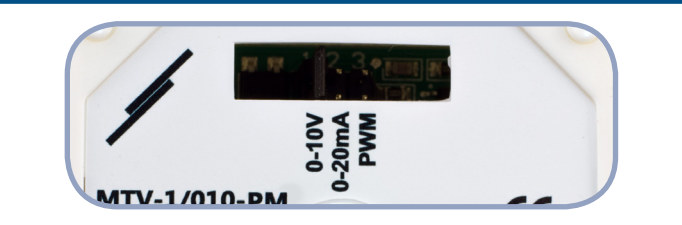


Fig. 4 Trimmers

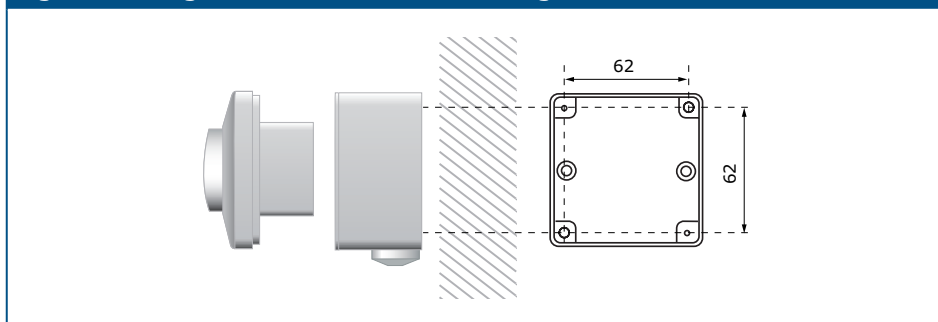


- 7. Mount back the cover and secure it with the nut.
- 8. Put back the knob and turn it to off position.
- 9. Turn on the power supply.

For inset mounting

1. Remove the knob by turning it to the right until it pops out.
2. Unscrew the nut and remove the cover of the external enclosure.
3. Mount the external enclosure onto the surface by means of screws and dowels (not included) adhering to the mounting dimensions shown in **Fig. 5 Mounting dimensions - surface mounting**.

Fig. 5 Mounting dimensions - surface mounting



4. Insert the cables through 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 and washers included in the set.



NOTE

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

7. To select the output type use the jumper shown in **Fig. 3**.
8. Adjust the minimum and maximum output speed trimmers using a flat screwdriver. See **Fig. 4**.
9. Mount back the cover and secure it with the nut.
10. Put back the knob and turn it to off position.
11. Turn on the power supply.



NOTE

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

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.