

USX | ELECTRONIC FAN SPEED CONTROLLER

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 treat the product as if it is live. 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

The USX series are electronic fan speed controllers intended to regulate the speed of single-phase voltage controllable motors. They have a potentiometer for output voltage adjustment and an internal trimmer for infrequent minimum output voltage setting. There are three product versions featuring different maximum output current.

ARTICLE CODES

Code	Rated maximum current, [A]
USX-7-15-DT	1,5
USX-7-30-DT	3,0
USX-7-60-DT	6,0

INTENDED AREA OF USE

- Fan speed control in ventilation systems or air-conditioning systems in residential environments
- Direct AC fan / motor control of whole house fans, fireplace blowers, humidifiers, range hoods, etc.

TECHNICAL DATA

- Power supply, U_s : 120 VAC \pm 10 % / 60 Hz
- Regulated output: U_{min} — U_s
- Minimum output voltage: 20—70 % of U_s
- Enclosure:
 - plastic R-ABS, UL94-V0
 - grey colour (RAL 7035)
- Operating ambient conditions:
 - temperature: -5—40 °C / 23—104 °F
 - rel. humidity: 5—85 % rH (non-condensing)
- Storage temperature: -20—50 °C / -4—122 °F

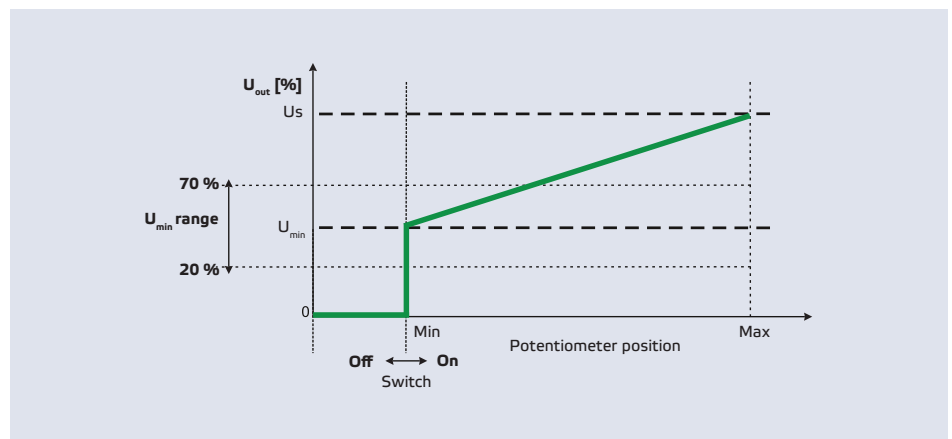
STANDARDS

- Low Voltage Directive (LVD) 2014/35/EU (or equivalent): CE
 - EN 60730-1:2011 Automatic electrical controls for household and similar use - Part 1: General requirements (or equivalent)
- EMC Directive 2014/30/EC (or equivalent):
 - EN 60730-1: 2011 Automatic electrical controls for household and similar use - Part 1: General requirements
 - EN 61000-3-2:2014 Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current \leq 16 A per phase)
 - EN 61000-6-2:2005 Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments Amendment AC:2005 to EN 61000-6-2:2005
 - 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 61000-6-3:2007
- RoHs Directive 2011/65/EC (or equivalent)
- WEEE 2012/19/EC (or equivalent)

WIRING AND CONNECTIONS

Black wire (L)	Power supply, phase 120 VAC / 60 Hz
White wire (N)	Neutral
Red wire (M)	Regulated output to motor
Cable cross section	0,75 mm ² / AWG 18

OPERATIONAL DIAGRAMS



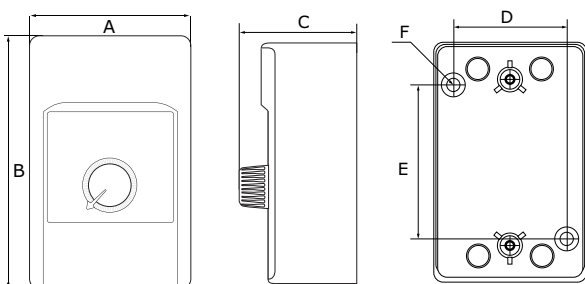
MOUNTING INSTRUCTIONS IN STEPS

Before you start mounting the USX, read carefully **“Safety and Precautions”**. Choose a flat surface for installation (a wall, panel, etc.).

Follow these steps:

1. Remove the potentiometer knob and unscrew the nut to open the cover of the enclosure.
2. Knock out any of the pre-stamped cable entries on the rear of the enclosure to insert the wires.
3. Mount the unit onto the wall or panel using suitable fasteners. Mind the correct mounting position and unit mounting dimensions. (See **Fig. 1** and **Fig. 2**)

Fig. 1 Mounting dimensions



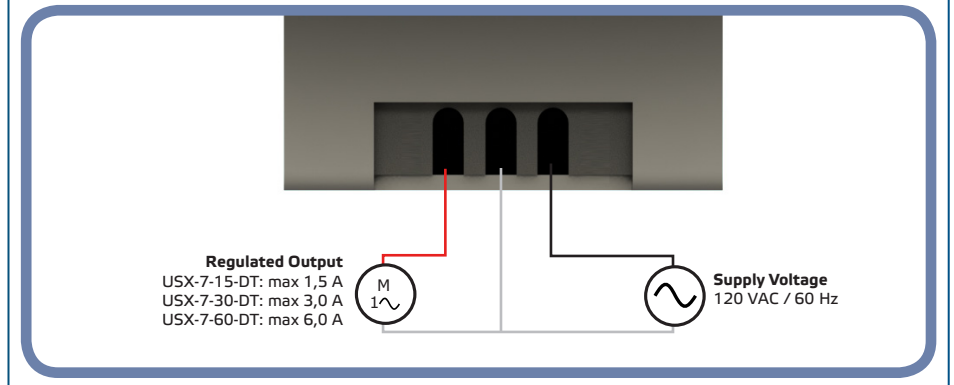
A	B	C	D	E	F
70 mm / 2,76 "	115 mm / 4,52 "	58 mm / 2,28 "	51 mm / 2,01 "	80 mm / 3,15 "	2 x Ø 4,8 mm / 0,19 "

Fig. 2 Mounting position

Correct	Incorrect

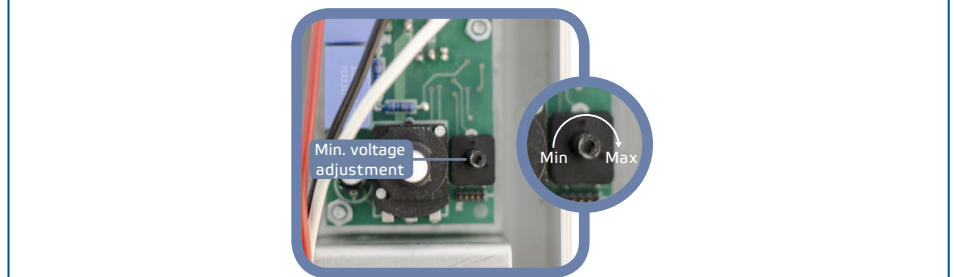
- Do the wiring according to the wiring diagram (see **Fig. 3**) adhering to the information in section “**Wiring and connections**”.

Fig. 3 Wiring diagram



- Adjust the minimum output voltage by either using a screwdriver or removing the aluminium cover and turning the trimmer to the left or right. See **Fig. 4**.

Fig. 4 Min. output voltage trimmer



ATTENTION

Make sure you use cables with an appropriate diameter.

ATTENTION

Make sure the connections are correct before you power the unit.

- Put back the cover and secure using the nut. Reinstall the potentiometer knob.
- Switch on the power supply.

VERIFICATION OF INSTALLATION INSTRUCTIONS

ATTENTION

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

- Switch on the power supply.
- In case of faulty operation, please check if:
 - ▶ the correct output voltage has been set via the rotary knob;
 - ▶ the trimmer has been set in the desired position;
 - ▶ 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.