



VULCANIC S.A.S.
48, rue Louis Ampère – Zone Industrielle des Chanoux
F – 93330 NEUILLY SUR MARNE
Tel.: +33 (0)1 49 44 49 20 – Fax : +33 (0)1 49 44 49 41
Email: catalogue-vulcanic@vulcanic.com
Web: www.vulcanic.com



ROOM HEATERS

type 6110

**equipped with a protection by enclosure,
for use in potentially explosive zones**

(Protection mode “Ex tD”)



Completely read the instructions manual before use.

This document is an integral part of the product it is referring to.
Complete compliance with its contents is mandatory to maintaining the guarantee of the product and it's safety in potentially explosive atmospheres.

In accordance with the European directives, the seller must deliver this instructions manual to the final user with a translated version (native language of the country where the equipment is to be installed). VULCANIC must be contacted if some documents quoted in the present manual are not available or if the information delivered in it does not appear to be clear. If necessary a VULCANIC site technician shall be requested for commissioning.

The contents of these pages were selected with great care. Nevertheless, if ever there have been errors or omissions in this description, thank you for letting VULCANIC know about it.
The contents of this manual are subject to change without prior notice. The manuals updates can all be accessed quickly and reliably through a simple request.

1. AREA OF APPLICATION

The 6110 room heater is an electrical room heater that has undergone extensive testing and several quality checks to ensure a complete satisfaction.

Appropriate specification, according to your process, and compliance with the instructions in this manual will ensure an optimum working life for your equipment.

Before setting up the installation, check both the model and power supply suit your application. The wiring of this equipment must be executed with the in forces rules by qualified staff.

This manual gives the assembly and adjustment instructions to be applied for optimum operation of your instrument. You must read and obey these instructions when installing your equipment. It also lists the special conditions for a safe use of the 6110 room heaters in potentially explosive atmospheres.

The 6110 room heaters are destined to heat potentially explosive ambient gas using natural convection and with a maximum 95% relative humidity.

Any modification of the room heaters without the proper authorization from VULCANIC is strictly forbidden. VULCANIC cannot be held liable in case of non-respect of this instruction.

This equipment can be used in potentially explosive atmospheres according to:

- the **2014/34/EU** directive and the EC-type examination certificate **LCIE 11 ATEX 3059X**
- and the **IECEx** scheme with the certificate of conformity **IECEx LCI 11.0047X**.

It has been designed and manufactured in compliance with the essential requirements of health and safety specified in the standards IEC/EN 60079-0, IEC/EN 60079-14 and IEC/EN 60079-31.

It bears the marking:

II 2 D Ex t IIIC T₅ 130°C or 195°C Db IP6X

It is thus usable on the surface, in risk zones 21 and 22, in a IIA or IIB or IIC dust subdivision.

The equipment's ambient temperature of use is different according to the model:

from -20 °C to +40 °C or from -20 °C to +60 °C

Its detailed technical characteristics and operating limits appear in the contractual documentation whose number is restated on the rating plate, on the acknowledgement of receipt of order and on the delivery note (reference, type, specification or drawing).

2. DESCRIPTION

The room heater is composed of:

- one to three **heating cartridge(s)**, each installed in a finned pocket;
- a perforated **protective grille**, installed with the help of two end flanges mounted with fixing feet;
- a **protection by enclosure terminal box** certified with the EC-type examination certificate LCIE 03 ATEX 0030U, protected with the rate of minimum IP65, equipped with its Earth terminals (for equipotential connection);
- one or several **flameproof cable gland(s)**. When they are screwed in a 3/4" NPT thread, they are delivered with several seals (allowing the passage of an electrical cable of an external diameter from 8 mm to 18 mm);
- a possible thermal limiting device, which may or may not be connected in series with the heating elements. Its measurement sensor is placed in a thermowell.

3. SPECIAL CASE FOR SUB-ASSEMBLIES

A room heater sub-assembly is composed of the finned heating part, its terminal box and a possible attachment device (apart from the support feet and the protective grille).

This alternative assembly is used when the finned part is placed in a duct channelling the air to be heated using natural or forced convection. The terminal box is then situated in a different environment from the one of the duct and must not exceed 40 °C or 60 °C (according to the model).

In the special case of forced convection heating, the delivered power has been calculated in order to satisfy the maximum temperature stress defined in the standard IEC/EN 60079-0, in the most unfavourable normal or exceptional case.

4. GENERAL PRECAUTIONS FOR USE

- It is absolutely forbidden to open the lid when the terminal box is placed in a hazardous area and supplied with power.

- It is essential that the packing of the cable entries seals is compatible with the cables used. Check the real clamping diameter in the contractual documentation. Standard packings are designed for cables with cylindrical external sheath. If necessary, source the suitable packing.

- It is not recommended to unmount the cable entries that have been installed in the manufacturer's factories, due to the risk of damaging the existing threads. Nevertheless, if this operation is necessary, the mounting and the unmounting must be performed in accordance with the current standard IEC/EN 60079-14.

- When the cable entries are borne by the final user, it is mandatory that they are certified with the flameproof type of protection Ex d and compatible with the holes drilled in the terminal box where they are supposed to be installed on (in accordance with the diameter and the pitch of the contractual drawing).

- Unused holes must be locked with Ex d certified plugs.

- The power and instrumentation cables shall be sheathed with thermoplastic, thermosetting or elastomeric material; they shall be circular and compact; they have to measure at least three meters.



Otherwise, it is mandatory to plan the mounting of cable entries locked with the help of a setting compound, in accordance with the requirements described the current standard IEC/EN 60079-14.

- Before closing the terminal box, check that the gas lamination surfaces (thread pitch or spigot surface between the body and the lid) do not show any mechanical damage or foreign particles. Clean those surfaces if necessary.

- The terminal box can be closed with the help of a corrosion inhibiting grease of a type that does not harden because of ageing, does not contain an evaporating solvent and does not cause corrosion of the joint surfaces. Its flash point must be higher than the maximum temperature reached by the terminal box.

- Do not energize the system before making sure the lid is properly closed and the locking device reinstalled.

5. SPECIAL CONDITIONS FOR A SAFE USE

The room heater can only be used in the horizontal position (attachment feet on the ground or on wall brackets).

The room heater must never be covered in order to let the free circulation of the gas by natural convection.

The layer of dust covering the connection box, the grille and the heating elements shall not exceed 5 mm. In a global way, the room heater is not to be covered in order to let the free circulation of the gas by natural convection.

The conditions of the electric connections indicated in this manual's chapter 6 will have to be applied correctly.

The ambient temperature absolutely has to be in between -20 °C and 40 °C or 60 °C (according to the model).

After powering off the device, wait 15 minutes before opening the terminal box.

6. ELECTRICAL CONNECTION

This connection must be performed when the power supply is switched off.

Note: The power supply tension to be used must be the one indicated on the rating plate. It must not be 10% greater than the nominal value. In the dual voltage wiring case, it needs to be checked that the constructed coupling is corresponding to the main voltage. It is hazardous to construct the coupling corresponding to the minimum voltage when the room heater has not been installed in a removable manner.

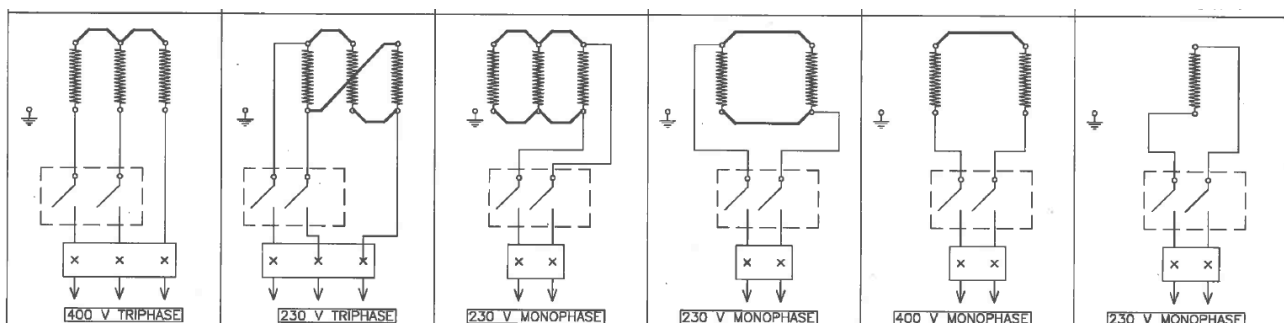
Removing the cover:

- Remove the 4 fixing screws.
- Remove the cover.



Warning: the fitting of the lid into the body is specific to this equipment because the adjustment is made in our facility. Do not swap around the covers of 2 room heaters.

After introducing the cable through the cable gland, connect the two or three phases to the terminals according to one of the following diagrams.



These couplings are generally made in the VULCANIC factories. Modifying them is strictly forbidden.

The external Earth terminal must be connected to the installation Earth.

Check that all the connections are correctly tightened.

Tighten the cable gland bushing to seal the cable sheath.

If necessary, adjust the controlling thermostat as indicated in paragraph 7.

Put the lid back on its place, engaging it completely (in order to comply with the flameproof joint length).

Fully screw the lid and tighten the 4 attaching screws.

7. COMMISSIONING PROCEDURE

When the equipment is installed with a controlling thermostat, check the button is actually switching on and off the heating. This operation must be performed with the power supply switched off or in a non-hazardous area.

Only switch on the equipment after having put back the lid.

Note: The information written on the vernier of the thermostat is not the perfect match of the temperature at which the room will be controlled. This one depends on the installation conditions. If necessary, the user shall make successive adjustments until the requested temperature is reached (still with the power supply down or in a non-hazardous atmosphere).

8. MAINTENANCE

Given the fact our room heaters are very simple and highly reliable, they only require minimal maintenance actions.

- After 50 hours of working operation, check that the connections are still well tightened (for removal and mounting, see § 6 above).
- Check that the grill and the finned part are not clogged with dust (remove dust if necessary).
- In the event of replacing heating elements, contact Vulcanic.



Any repair related to the Ex protection method must be subject to an evaluation by an approved body, which will decide on the procedures to be applied. It can only be done after having obtained the agreement of Vulcanic.

In a more specific way, the flamepaths cannot be repaired and the manufacturer Vulcanic must be contacted.

9. WARRANTY

Our warranty is compliant with the inter-trade agreements of the Electric Construction Association and with our general sales conditions. We are guarantors of the compliance of the equipment and of the surface treatments, as defined in our documents.

Damage caused by:

- the non-compliance with the operating limits,
- the wear caused by the lack of maintenance, shocks, clumsiness or the inexperience of the user,
- the corrosion or clogging phenomena,
- the non-compliance with the present instructions manual, the state of the art and legislation, will not engage our responsibility.