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ROOM HEATERS

type 6010

**equipped with a flameproof terminal box,
for use in potentially explosive zones**

type of protection Ex d



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 its 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 6010 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 6010 room heaters in potentially explosive atmospheres.

The 6010 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 EU-type examination certificate **LCIE 03 ATEX 6282 X**
 - and the **IECEX** scheme with the certificate of conformity **IECEX LCI 10.0012X**.

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 60079-1.

The 6010 room heaters bear the following marking:

 **II 2 G Ex db IIC T* Gb**

It is thus usable on the surface, in risk zones 1 and 2, in a IIA or IIB or IIC gas subdivision.

T* can be from T1 to T6.

The equipment's ambient temperature of use is **from -60 °C up to +60 °C** or limited by the components installed inside or limited by the application specifications. Check the contractual documentation or the equipment's nameplate.

The temperature class of the equipment is determined according to the requirements of the auto-ignition temperature of the flammable gas present in the atmosphere. The manufacture of the room heater is performed considering the specifications of the hazardous area it will be installed in.

Its detailed technical characteristics and operating limits are listed in the contractual documentation whose number is written 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 made of:

- one to three **heating cartridge(s)**, each installed in a finned pocket;
- a perforated **protective cage** installed with the help of two end flanges mounted with feet;
- a **flameproof terminal box** certified with the EU-type examination certificate LCIE 03 ATEX 0030 U and with the certificate of conformity IECEx LCIE 21.0022U equipped with its Earth terminals;
- 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;
- a possible anti-condensation heater installed inside the terminal box to be used if outside conditions are cold and only when the heater is not energised.

3. GENERAL PRECAUTIONS FOR USE

It is forbidden to open the lid when the room heater is energised in a hazardous area.

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.

The user shall make sure to let a free space of 200 mm around the heater's external surfaces.

4. SPECIFIC CONDITIONS OF USE

Functioning horizontally is obligatory for the heater.

The end user must take all precautions so that the room heater is never covered in order to ensure a free convection in the bundle of heating elements.

The wiring diagrams given in the manufacturer's instructions manual or in the drawings must be perfectly applied.

The end user is expected to take all useful measures in order to prevent any additional thermal transfers to the terminal box.

The process and power conditions indicated on the equipment nameplate need to be respected.

The flameproof joints are not intended to be repaired. If needed, contact the manufacturer.

The special fasteners used to fasten the cover must be M6x20 CHC screws (ISO 4762) of property class 12.9 minimum (minimum yield stress 1100 MPa).

If any, the instructions of the manufacturer for the proper selection of the cables and cable glands shall be respected.

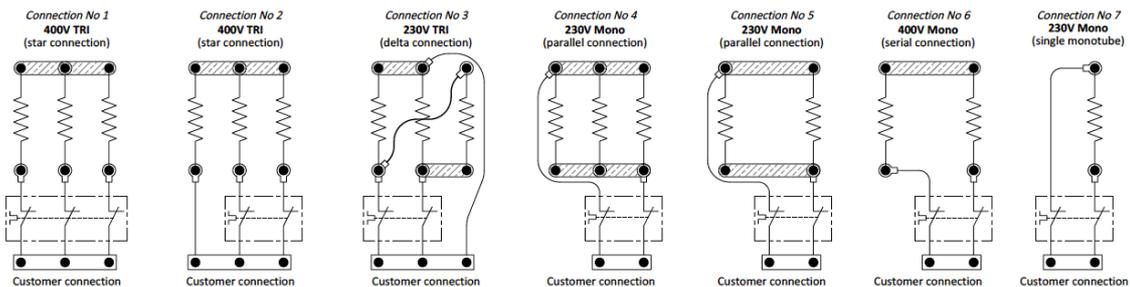
5. ELECTRICAL CONNECTION

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



Warning: the fitting of the lid into the body is specific to this equipment because the adjustment is made in our facility. Do not change 2 covers from 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 (example).



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

On a product with the reference 6010.XX, the conductors (cable 3 G 2.5) that are connected to the terminal block strip shall be with a cross-section of 2.5 mm². Same instruction applies to the anti-condensation heater.

On special request for other products, alternative instructions shall be followed. Refer to the general arrangement drawing.

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.

Put the lid back completely on the body in order to comply with the flameproof joint length.

Screw the 4 lid screws until they are blocked (hand pressure).

6. COMMISSIONING PROCEDURE

When the equipment is installed with a control 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 the lid back to its position.

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).

7. MAINTENANCE

Given the fact that 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 Vulcanic approval.

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



8. 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.