



English version



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Technology of components used in heating.

Chapter 2

Adjustment or reset access devices in control boxes



Adjustment or reset access devices in control boxes

Enclosures with devices requiring access from outside

It is often necessary, when the devices include a system of adjustment or a reset, to be able to have access to it, without having to unscrew the lid of the box.

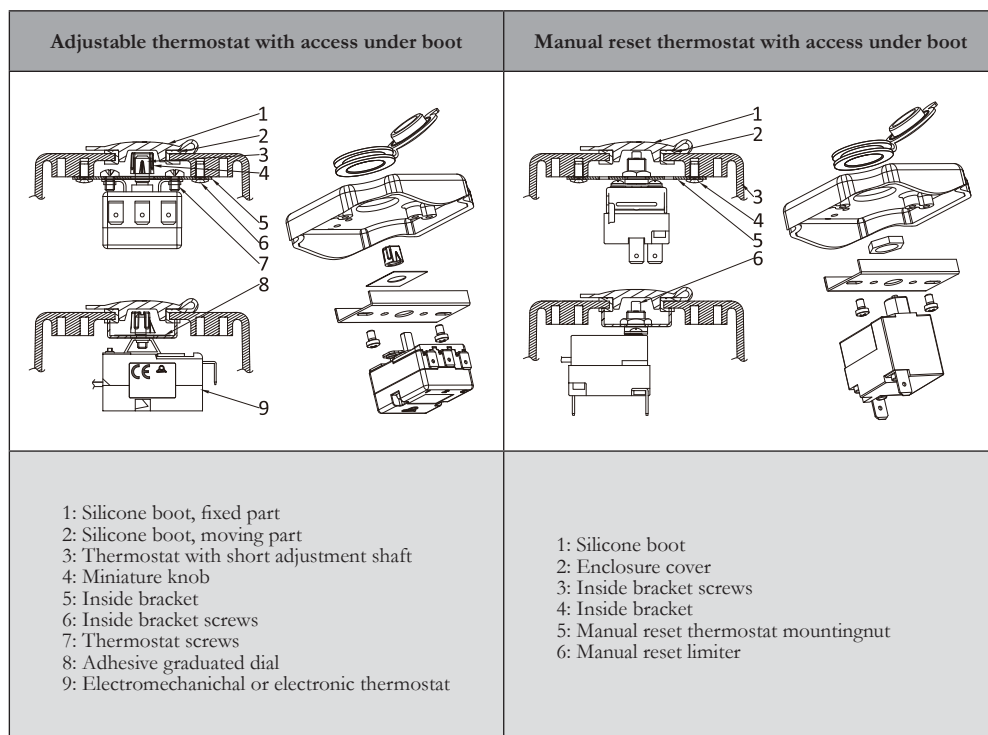
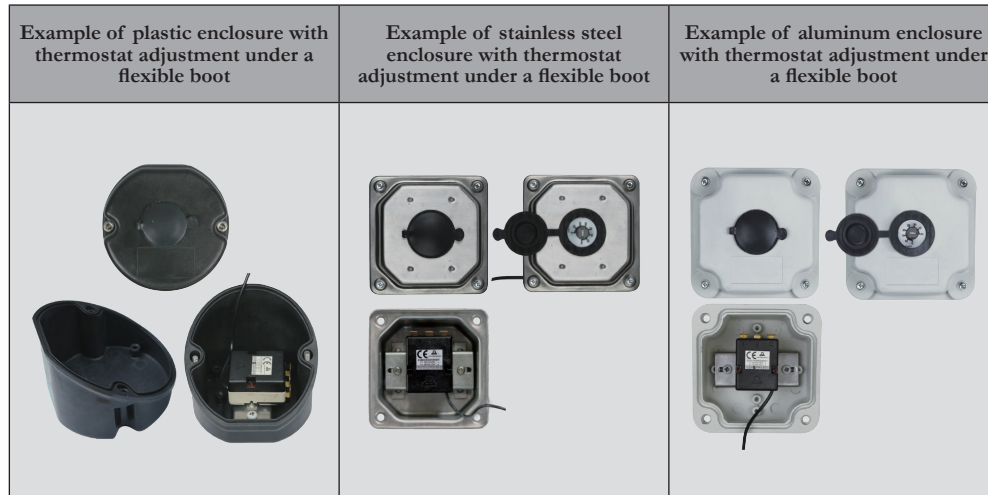
One solution is to use enclosures with an easily opening porthole or window, while protecting the user against electrical contact. This solution is possible for large enclosures.

For small enclosures, special devices have been developed.

Access under flexible boot

The most common solution is a flexible silicone boot that is easy to open and close. These boots, whose mobile part is captive, simply install in a hole of 20mm. They can therefore be mounted on all enclosures. These boots, when closed, comply with an IP66 ingress protection degree, but are not adapted to the conditions of the IP69K.



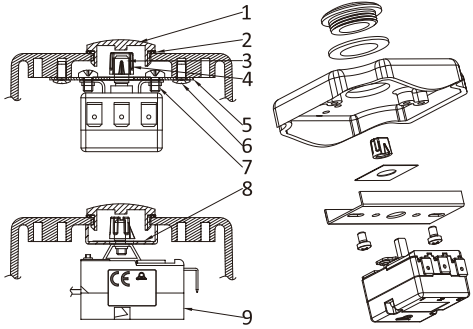
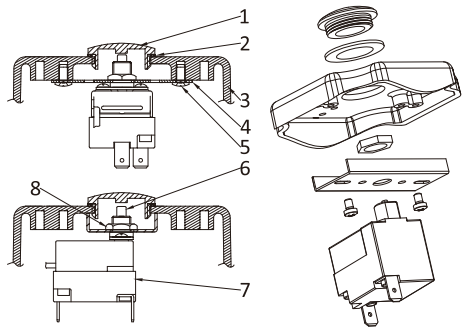
The mounting of internal components such as adjustable or manual reset thermostats, potentiometers etc., can be done either with a back plate screwed inside on the cover (Most aluminum and stainless steel enclosures, and a large part of the plastic ones have bosses for this purpose), or by direct mounting on the bottom of the enclosure.



Adjustment or reset access devices in control boxes

Access underscrewed cap



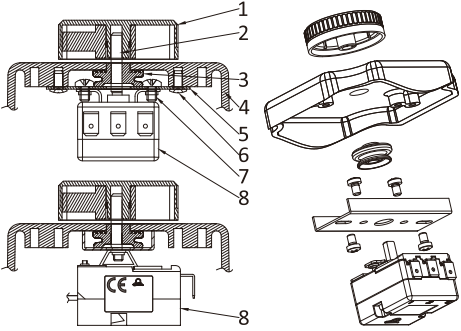
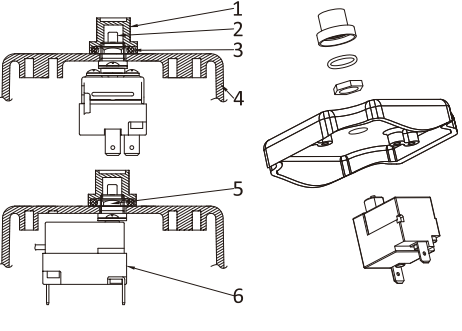
Although less common, it is also possible, on the enclosures whose wall thickness allows it (It must be at least 3mm, which eliminates the stamped metal cases), to make a threaded hole and to install a M20 cable gland cap equipped with a gasket. This solution may be required by the standards, when adjustment or reset can only be done using a tool. With this solution, IP66 and IP69K ingress protection degrees are kept.

Example of plastic enclosure with access under screwed cap	Examples of Aluminum enclosure with access under screwed cap
	
<p data-bbox="300 965 794 1016">Adjustable thermostat with internal dial, access under screwed cap</p> 	<p data-bbox="799 965 1289 1016">Manual reset limiter, access under screwed cap</p> 
<p data-bbox="336 1451 719 1644"> 1: Screwed cable gland cap 2: Gasket 3: Thermostat with short adjustment shaft 4: Miniature knob 5: Internal bracket 6: Internal bracket screws 7: Thermostat mounting screw 8: Adhesive graduated dial 9: Electromechanical or electronic thermostat </p>	<p data-bbox="836 1460 1059 1637"> 1: Screwed cable gland cap 2: Gasket 3: Enclosure cover 4: Internal bracket screws 5: Internal bracket 6: Manual reset button 7: Manual reset limiter 8: Limiter mounting nut </p>

Unprotected External access

Adjustment by a shaft or button located outside the housing is the one that offers the lowest guarantee of resistance to water and dust ingress and shock. It is acceptable only when IP54 degree of protection or less are sufficient. In the case of adjustment by a rotary shaft, it is necessary to insert a special gasket on the shaft, sandwiched between the backplate and the cover of the enclosure. Direct mounting without backplate does not allow for proper sealing, as water and dust can penetrate through the adjustment shaft and mounting screws. In the case of access to a manual reset button, it is essential that the protective cap of this manual reset is present, and is equipped with a seal. The main risk is then the loss of this seal and protective cap.

Adjustment or reset access devices in control boxes

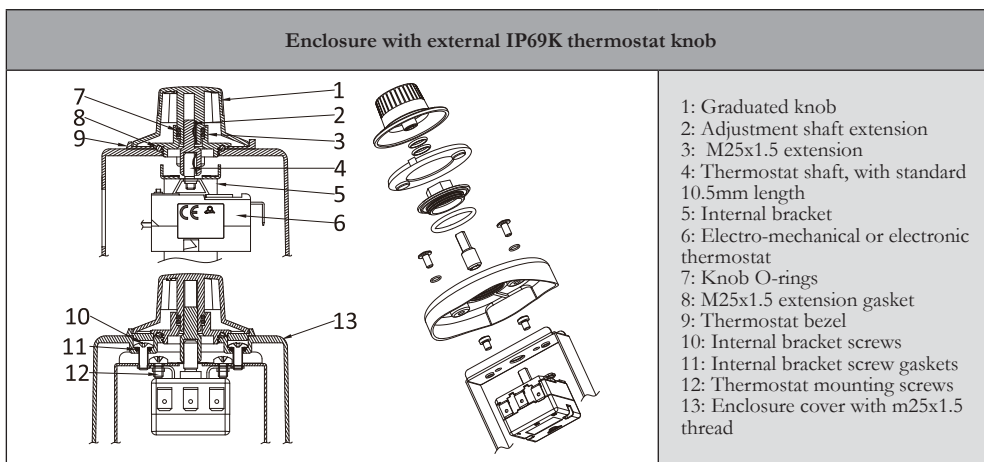
Example of plastic enclosure with access by external knob	Example of aluminum enclosure with external access to manual reset button
	
Enclosure with external thermostat knob	Enclosure with external manual reset button
	
<p>1: Graduated knob 2: Thermostat with long adjustment shaft 3: Silicone gasket with flexible lips 4: Enclosure cover 5: Internal bracket 6: Internal bracket screws 7: Thermostat mounting screws 8: Electro-mechanical or electronic thermostat</p>	<p>1: Screwed manual reset button cap 2: Manual reset button 3: Manual reset button cap O-Ring 4: Enclosure cover 5: Limiter mounting nut 6: Manual reset limiter</p>

External access with IP69K ingress protection

This adjustment by a knob located outside the housing offers a very good guarantee of resistance to water and dust ingress, but limited impact resistance.

This system is suitable for all enclosures in which an M25x1.5 tapping identical to that of screwed cable glands or screw caps can be made. **The length of the tapping must be at least 3 mm.** The bezel bearing the position marker arrow (Nr 9) can only be used on enclosures with two slots for its pins, such as the Y3C3 model. When this flange is not used, it is necessary to position a marker (paint, blind hole or other) so that the graduation of the controller can refer to it. Only one model of our range of knobs can be used: reference 66MU *****, dia. 50mm, with printed. (*****= temperature range codification of the knob)

Adjustment or reset access devices in control boxes



External access, IP69K ingress protection class, withstand high-temperature and high-pressure cleaning, and shocks resistant

This type of external control by means of a waterproof and shock-resistant knob has been developed for all industrial, commercial and food industry applications, as well as on transport vehicles, for which high-pressure hot water jet cleaning is essential.

It allows the setting of a mechanical or electronic thermostat while maintaining its sealing characteristics. The embedding of the control knob provides excellent impact resistance. It also allows access to the adjustment accessible from the front and the upper sides. However, this solution which comprises an O-ring between the central core of the handle and the housing is only feasible on a limited number of moulded boxes, and imposes a knob diameter of 50mm minimum.

