

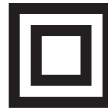
IEC 62208

Enclosures for low-voltage switchgear and controlgear assemblies.
General requirements

General information

The IEC 62208 standard applies to empty enclosures, prior to the incorporation of switchgear and controlgear components by the user, as supplied by the enclosure manufacturer.

It specifies general definitions, classifications, characteristics and test requirements of enclosures to be used as part of switchgear and controlgear assemblies (e.g. in accordance with the IEC 61439-series).



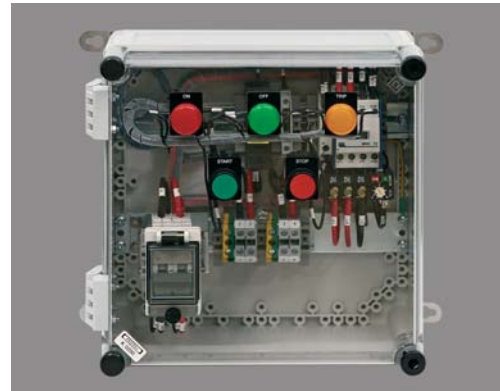
Protection against electric shock

In order to protect individuals in the event of faults against electric shock and the accompanying risks, enclosures are classified with protection class I (electrical earth) and protection class II (protection by total or reinforced insulation) according to IEC 61439, section 8.4.4. HENSEL empty enclosures are manufactured from insulating material and provide protection against electric shock according to protection class II.

IP-Codes for protecting electrical equipment against dust and water

Electrical equipment must be protected from external influences and conditions for safety reasons. The two-digit IP-Codes indicate to what extent the enclosure provides protection against hazardous parts and ingress of dust (1st digit) or water (2nd digit). For example IP 65: Electrical equipment inside the enclosure is protected against dust and harmful water and humidity.

Therefore the IP-Codes indicate the suitability of enclosures for different environmental conditions.



Effects on the degree of protection (IP-Code) when devices are built in the lid

If any switches, displays, push buttons or other equipment are built into the lid of an enclosure, the manufacturer must consider the effects on the degree of protection at that specific point.

The installation of electrical equipment into the lid, door or wall of an enclosure can reduce the degree of protection of the enclosure in that specific installation area depending on the degree of protection of the equipment and depending on additional measures for sealing the point of entry.

Example: The installation of an IP 44 socket into the lid of an IP 65 enclosure reduces the degree of protection in that specific area to IP 44. The enclosure itself still provides IP 65, but the manufacturer has to draw attention to the fact, that the socket only provides IP 44 for the area where it is installed.

Operating and ambient conditions

Empty enclosures according to IEC 62208 are applicable in ambient temperatures from -25 °C to +40 °C (outdoor installation) or from -5 °C to +40 °C (indoor installation).

Temperature rise in enclosures and power dissipation

In relationship with the outside temperatures the temperature rise inside of enclosures, caused by the flowing current and the power loss P_D of the installed electrical equipment, has to be considered.

Most devices are designed for maximum ambient temperatures of +40 °C to +55 °C. Accordingly there may only be a narrow range for the temperature rise inside of the enclosure if the ambient temperature is close to the maximum operating temperature of the installed equipment.

The enclosure with its power dissipation capability P_{de} has to be able to dissipate the power loss P_D of the installed electrical equipment inside of the enclosure without exceeding the limits of operating and ambient temperatures.

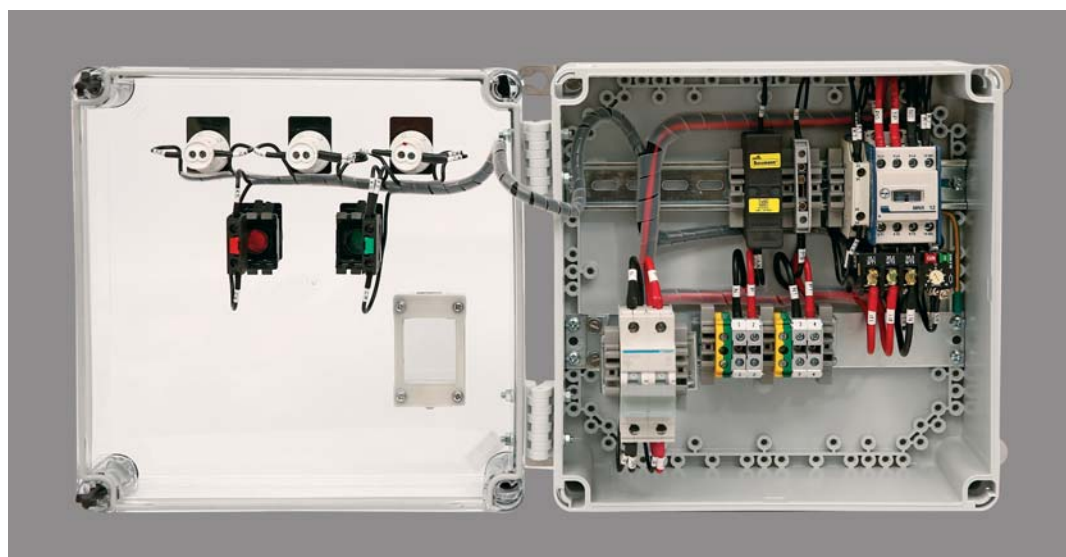
This ensures that the inside of an enclosure is not heated inadmissibly at a defined installed power loss and guarantees the operative readiness and reliable performance of the built-in electrical equipment.

The power dissipation P_D of the electrical equipment is given in the technical data of the respective manufacturers. The power dissipation capability P_{de} of Hensel empty enclosures are given in the technical data of this catalogue.

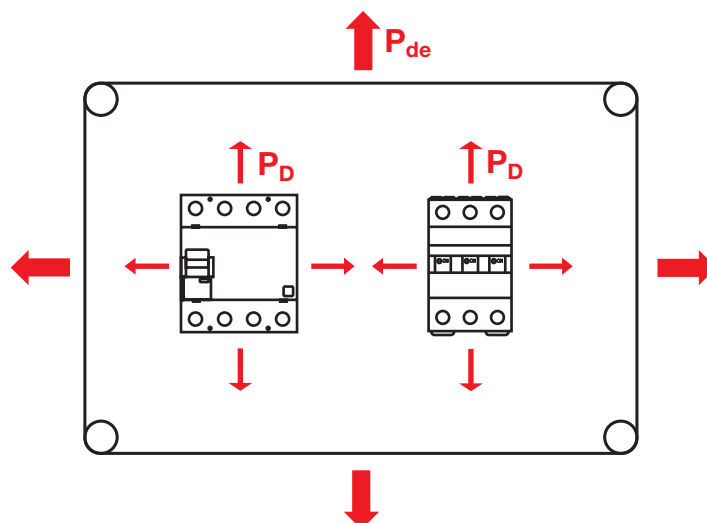
A possible application for the power dissipation capability is the verification of temperature rise in accordance with IEC 61439-1, section 10.10.

The IEC 62208 requires the specification of the power dissipation capability P_{de} of the enclosures

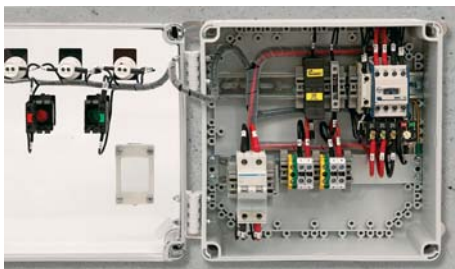
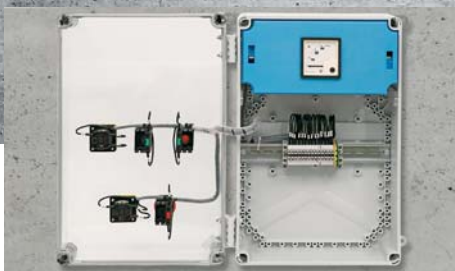
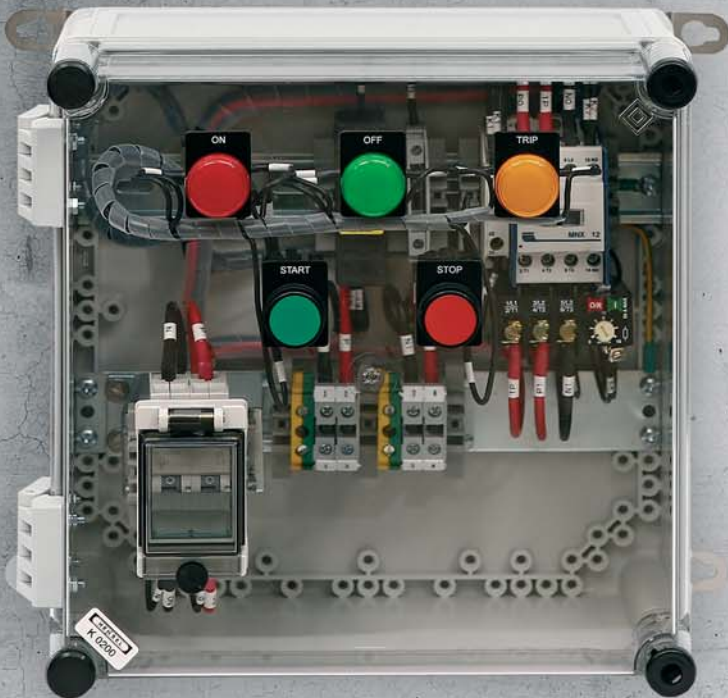
The temperature inside of enclosures rises by the flowing current and the power loss of the installed electrical equipment.



The enclosure with its power dissipation capability P_{de} has to be able to dissipate the power loss P_D of the installed electrical equipment inside of the enclosure without exceeding the limits of operating and ambient temperatures.



P_{de} = power dissipation capability
 P_D = power dissipation



Empty enclosures in accordance with IEC 62208

For customized solutions and individual applications
Compliance with the safety requirements of the applicable product standard (e.g. IEC 61439-series) is the responsibility of the assembly manufacturer and not of the enclosure manufacturer.

- For example for low-voltage switchgear and controlgear assemblies in accordance with IEC 61439-series
- For the installation of devices that must be operated externally, such as plug devices, push buttons and switches
- Installation of electrical equipment via DIN rails or mounting plates
- Cable entry via metric knockouts respectively by drilling individually using ESM grommets or AKM cable glands, see index cable entry systems
- Fasteners for tool operation as standard
- Screws made of stainless steel V2A
- Hinges for lids available for operating installation devices within a large area
- Material: PS polystyrene or PC polycarbonate
- Burning behaviour: Glow wire test in accordance with IEC 60695-2-11: 750 °C / 960 °C, flame-retardant, self-extinguishing
- Empty enclosures are equipment with protection class II,  in accordance with IEC 61439-1, section 8.4.4
- Degree of protection: IP 55, IP 65 with cable glands
- Colour: grey, RAL 7035