

Formation of condensed water in electrical installations

How does condensed water occur in enclosures with a high degree of protection?

The internal temperature is higher than the external temperature due to the power dissipation of the built-in devices.

The warm air inside the enclosure attempts to accumulate moisture. This comes from outside through the seal as the enclosures are not gas-tight.

The internal temperature is reduced by cooling down the system e.g. by switching off the loads. The cooler air emits moisture which is collected as condensed water on the cooling inner surfaces.

In which areas does condensed water occur?

Example:

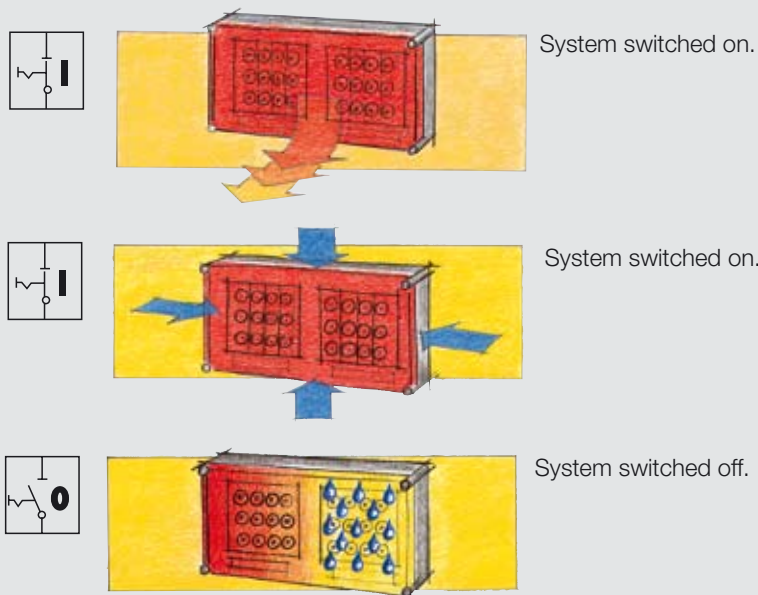
DK Cable junction boxes

Example:

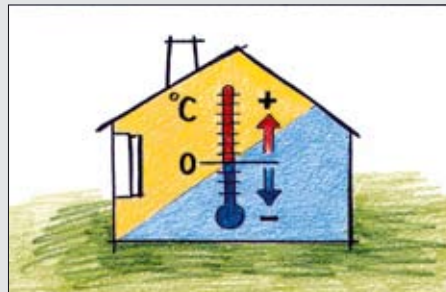
Ventilation flange

for ventilation of MI distribution boards in case of extremely high inside temperature or the risk of **water condensation**, for vertical mounting on the lateral box walls, degree of protection IP 23.

The problem of condensed water forming in electrical installations only occurs in enclosures with a degree of protection \geq IP 54 since the temperature adjustment that is carried out from inside to outside is too low due to the high density of the enclosure and its material.



Formation of condensed water for indoor installations:



In areas where high levels of air humidity and large temperature fluctuations are expected e.g. in laundry rooms, kitchens, car washes etc.

Formation of condensed water in protected outdoor installations (protected against weather influences) or unprotected outdoor installations:



Here condensed water can be formed dependent on the weather, high air humidity, direct sunlight and temperature differences compared to the wall

Measure against accumulation of condensed water in cable junction boxes:

1. Select the installation site (avoid temperature differences).
2. Open condensed water membrane (●) at the lowest point of the cable junction box (maybe drill hole \varnothing 5 mm).
3. Enable exchange of air via ventilation.

