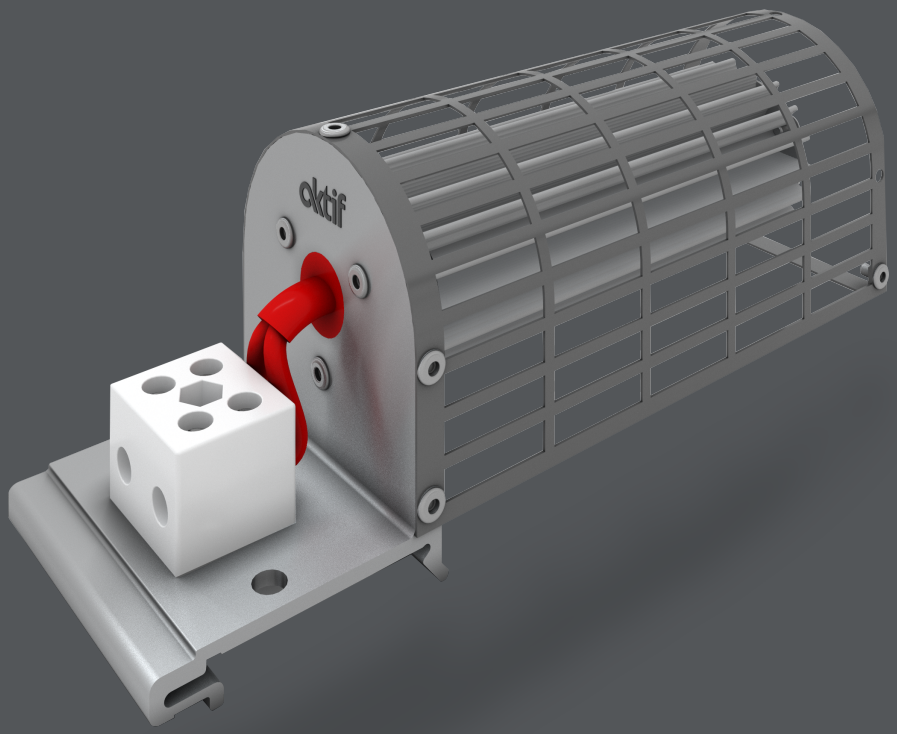
# Anti-Condensation Panel Heaters




## PR Series

PR 50 .. PR 300

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# Anti-Condensation Panel Heaters

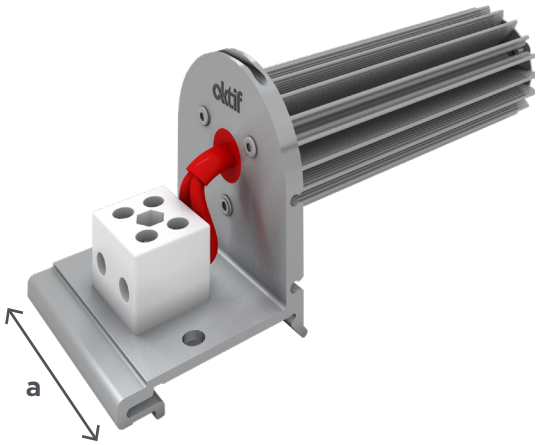
## PR Series

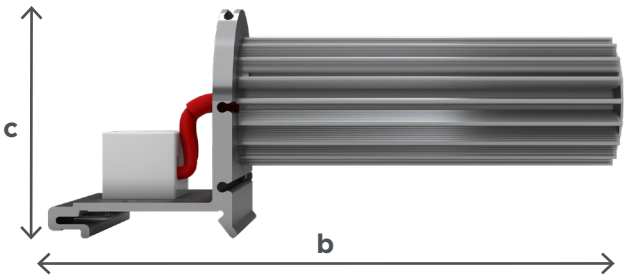
Climatic properties such as the air temperature and humidity in the environment where the electrical cubicles are installed are very important for the continuity of the system and the safety of the personnel.

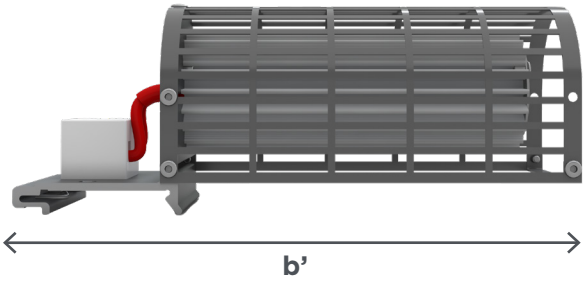
The amount of water in the air is called moisture. As the air gets warmer, the amount of water vapor it can keep in it increases. Sudden decreases in air temperature cause some of the moisture in it to become water, which is called a dew point.

Condensed water disperses into small droplets on the surfaces inside the electrical panel, and this creates great risks for the switchgear materials in the electrical panels. These water droplets on the surface of the panel, insulators, breakers and other electrical equipment, causing the leakage path length to decrease to dangerous values, which may cause partial discharge and insulation errors. The way to eliminate these risks is to use a panel heater.

The way to eliminate this risk is to use an anti-condensation panel heater.




### Standards

- IEC 60664-1
- IEC 60529

### Applications Areas

- LV and HV Electrical Panels

### Technical Specifications

- Resistance Element : Stainless steel wire wound
- Frame Profile : High cooling surface aluminum
- Insulation : 2 kV 50/60 Hz 1 min.
- Protection Degree : IP 5X
- Installation : Screw mounting
  : DIN 35 rail mounting
- Touch-Safe Cover : Optional

| Type | Power Value | Dimensions | | | | Cover Option |
|---|---|---|---|---|---|---|
| | W | a [mm] | b [mm] | b' [mm] | c [mm] | |
| PR.50 | 50 | 50 | 123 | 138 | 60 | ✓ |
| PR.75 | 75 | 50 | 148 | 160 | 60 | ✓ |
| PR.100 | 100 | 50 | 173 | 182 | 60 | ✓ |
| PR.150 | 150 | 50 | 165 | - | 60 | - |
| PR.200 | 200 | 50 | 215 | - | 60 | - |
| PR.300 | 300 | 50 | 315 | - | 60 | - |

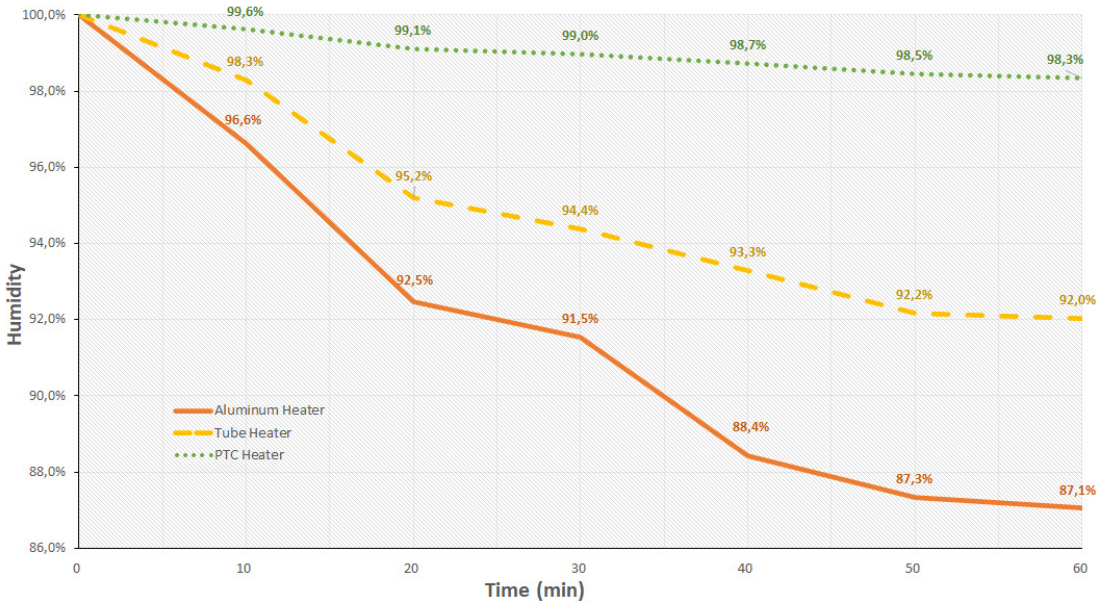
* Standard voltage is 230 Vac. 24/48/110 Vac/dc are optional.

## Advantages

- The most efficient body surface area that can be used in ambient heating is extrusion and anodizing.
- Aktif heaters' frames have 120% more surface efficiency than stainless tube heaters.
- MGO (magnesium oxide) powder, which has high electrical insulation and thermal conductivity, is used as an insulation material.

| Type | Surface Area ($cm^2$) | Cubic Volume ($cm^3$) | Surface Efficiency ($cm^2/cm^3$) |
|---|---|---|---|
| Aluminum Heater | 630 | 345 | 1.83 |
| Tube Heater | 400 | 468 | 0.85 |
| PTC Heater | 600 | 798 | 0.75 |

- Since stainless steel resistance wire, which has a low coefficient of resistance change with temperature, is used in its production, the power of the heater does not decrease during operation.
- PTC heaters cannot prevent condensation as their power significantly reduce while operating.
- Aktif heaters offer the best solution as moisture reduction performance. It is 60% more efficient than tube heaters and 670% more than PTC heaters.




- The dissipation of heat inside the cubicle is important for the Anti-Condensation Heaters in order to perform its task homogeneously. Temperature difference at different points of the cubicle is maximum 20 ºC for heaters.
- The rate of humidity reduction of Panel Heaters must be greater than the rate of sudden decrease in temperature. Aktif panel heaters are designed to meet this requirement with their structural and electrical features.

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