

8 Important Considerations When Utilizing Cooling Units



Summer is coming.
Are you ready for the heat?

When the ambient temperature is greater than the target temperature inside your enclosure, you must add active cooling.

This guide details tips for effectively deploy cooling units in your industrial applications.



Considerations for Cooling



1. The refrigeration capacity should exceed the dissipation loss from the installed components by approximately 10%.
2. The enclosure should be sealed to prevent the inflow of ambient air.
3. Use the door contact switch to impede operation with open doors and consequent excessive accumulation of condensation.
4. Use cooling units with maximum clearance between air inflow and air outflow to prevent poor circulation.
5. Make sure that the air inflow and air outflow in the external circuit is not hindered, preventing proper heat exchanging at the condenser.
6. When using top-mounted cooling units, make sure that components with their own fans do not expel the air directly into the cooling units cool air outflow.
7. Make sure unit is level.
8. Setting the temperature to the lowest setting is not the optimal solution due to the condensation issues. The value Pfannenbergl has preset on the cooling unit is a sound compromise between cooling the inside of the enclosure and the accumulation of condensation.

Source: Pfannenbergl Thermal Management Solutions

Can I use cooling units in NEMA 4 or NEMA 12 environments?

Yes. Closed-loop cooling systems like a Pfannenbergl cooling unit or heat exchanger can maintain the NEMA Type rating of your cabinet.

Closed-Loop Cooling



In harsh environments involving high temperatures, wash-down requirements, heavy particulate matter or the presence of chemicals capable of damaging components (NEMA 4 or 12 environments), ambient air must be kept out of the enclosure.

Closed-loop cooling consists of two separate circulation systems:

- One system seals out the ambient air while cooling and re-circulating clean, cool air throughout the enclosure.
- The second system uses ambient air or water to remove and discharge the heat.

Cooling units and heat exchangers are common closed-loop cooling systems employed with electronics and process controls in industrial applications

Which cooling technology should I use for my application?

	Filterfan	Cooling Unit	Heat Exchanger
Cooling can be accomplished by the outside air	X		
Cooling cannot be accomplished by the air outside the cabinet		X	X
Air outside the cabinet contains oils or conductive dust		X	X
The cabinet must maintain a NEMA 12 rating	X	X	X
The cabinet must maintain a NEMA 4 rating		X	X



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