Ametek Rotron
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AMETEK Rotron High Temperature Capabilities

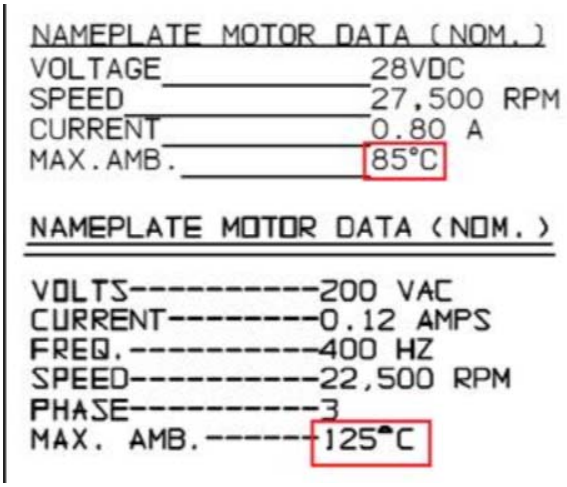
Thermal management applications often expose the fans and blowers used for cooling to extreme temperatures. When selecting a product for your application, Rotron experts consider a few key product design areas that improve product life in a high temperature setting.

Three main areas of consideration:

1. DC vs. AC motors
2. Bearings materials and grease
3. Motor winding insulation class

Rotron axial fans, like any electric motor, produce heat when they are operated. Axial fan products utilize the airstream flowing through the fan to cool the motor. Rotron refers to the temperature of the incoming air flowing through the fan as the ambient temperature. The maximum ambient rating of the fan takes into consideration the three areas of product design listed above.

Our Interface Control Drawings contains nameplate motor data which lists the maximum ambient rating of the product. Please see the two example nameplates below.


NAMEPLATE MOTOR DATA (NOM.)
VOLTAGE 28VDC
SPEED 27,500 RPM
CURRENT 0.80 A
MAX. AMB. 85°C

NAMEPLATE MOTOR DATA (NOM.)
VOLTS----------200 VAC
CURRENT--------0.12 AMPS
FREQ.----------400 HZ
SPEED----------22,500 RPM
PHASE----------3
MAX. AMB.------125°C

DC powered fans and AC fans with DC powered accessories are typically capable of a maximum ambient temperature of 85° C.

Many of Rotron's AC powered fans can achieve long life when operating up to 100-125° C.

For extreme high temperature resistance, Rotron engineers have designed AC fans that can survive the demands of 220° C ambient operating temperatures.

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Special features that make this possible are:

- High temperature and corrosion resistant surface finishes
- Class R motor winding insulation (UL designation)
- Hybrid bearings with ceramic rolling elements
- High temperature grease
- Holistic review of the mechanical design to ensure that intended mechanical fits are maintained as thermal expansion increases

These high temperature capabilities are put to the test in Rotron's on-site life test thermal chambers, where products are run continuously at the max ambient temperature rating. Over a period of multiple years, fans are regularly audited to evaluate their condition to ensure long life is achieved.