

PYROTENAX MI TEMPERATURE CHARACTERISTICS

COPPER SHEATH CABLES

nVent PYROTENAX unjacketed MI cables are nonflammable; when exposed to fire conditions, they will not burn, contribute fuel, or emit flammable or toxic gases.

The temperature limit of the cable for continuous operation is determined only by the progressive oxidation temperature of the copper sheath, 250°C (482°F) in normal atmosphere.

For higher temperature applications, the cable may be exposed to continuous temperatures above 250°C (482°F); however, a reduced sheath life should be anticipated, as shown in Table 1.

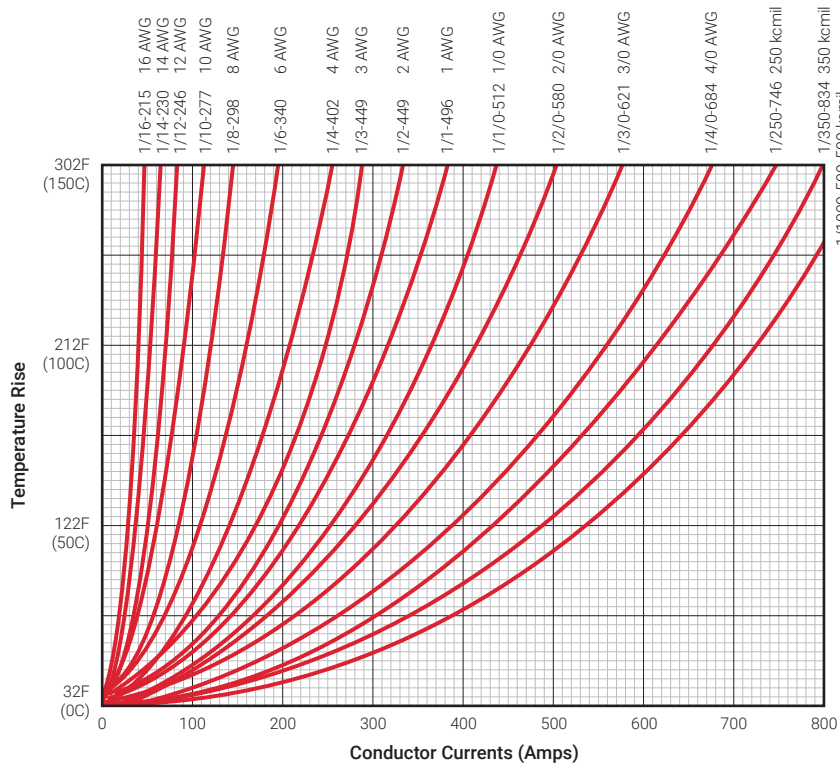
TABLE 1 DECREASE IN COPPER SHEATH THICKNESS AS A FUNCTION OF TIME AT VARIOUS TEMPERATURES

Decrease in sheath thickness, mils*	Years at 250°C (482°F)	Years at 400°C (752°F)	Hours at 800°C (1472°F)
1	2.57	0.0583	0.259
2	10.3	0.233	1.04
5	64.3	1.46	6.48
10	257	5.83	25.9

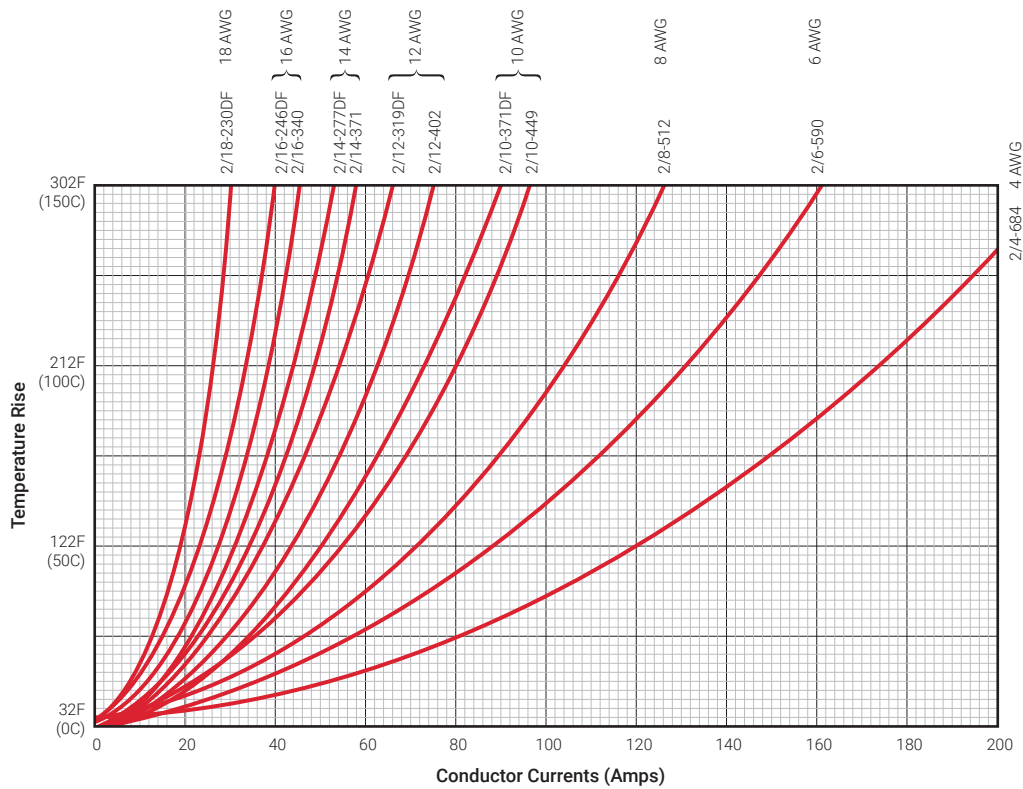
*1 mil = 0.001 inch

SHEATH TEMPERATURE RISE

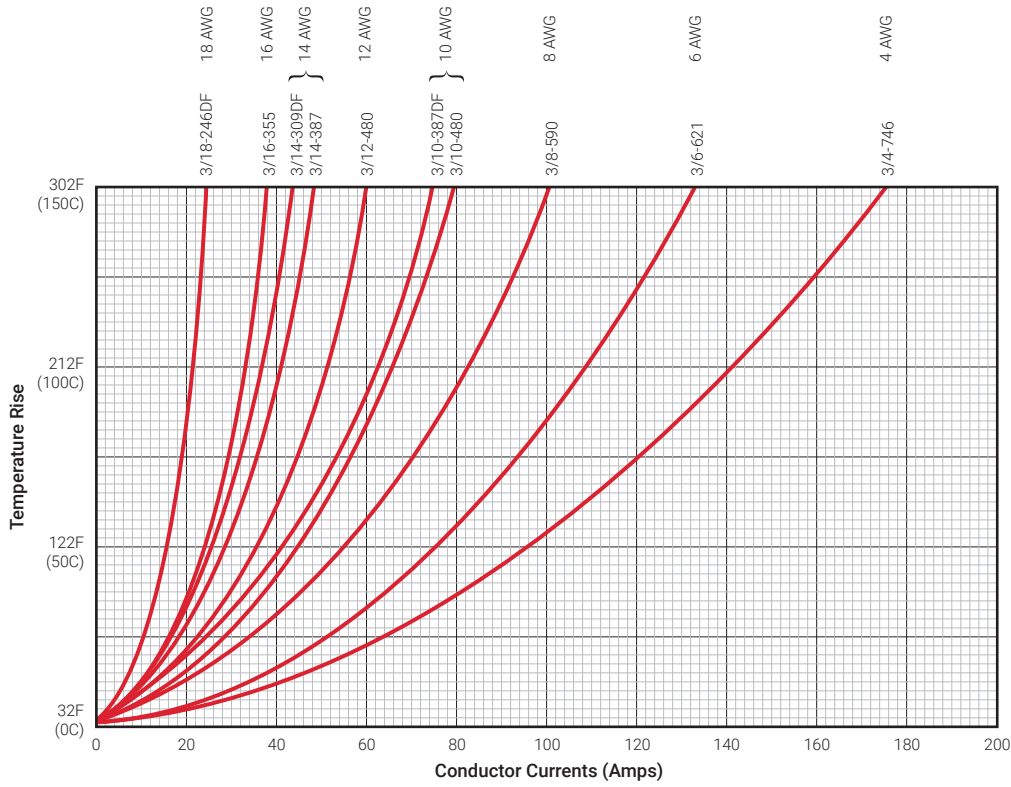
The following graphs show the expected sheath temperature rise on MI cables under free air conditions when installed according to the appropriate product installation instructions. Note that the curves are based on the cable being in free air at 25°C (77°F) and sheath temperatures will be lower if the cables are embedded in a medium which has a quenching or cooling effect. Conversely, if the cables are surrounded by a medium which acts as a heat insulator, the sheath temperatures will be higher for a given current.



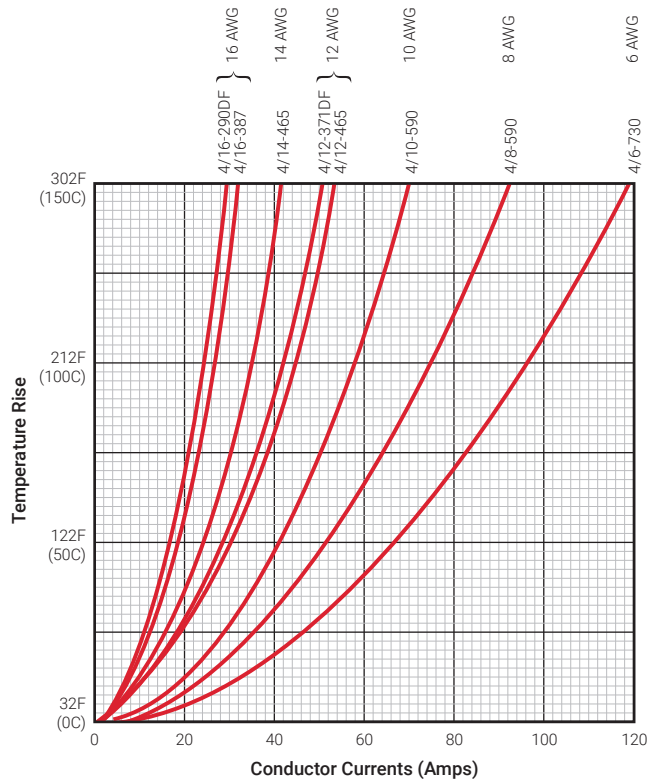
Graph 1 Sheath temperature rise for 600 V MI single conductor cables in free air conditions



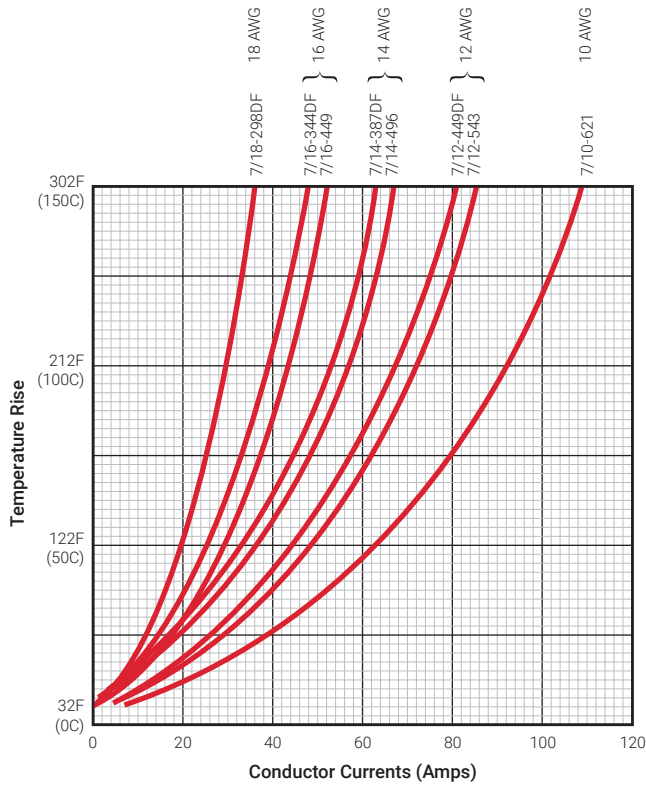
Graph 2 Sheath temperature rise for 300 V and 600 V MI two conductor cables in free air conditions



Graph 3 Sheath temperature rise for 300 V and 600 V MI three conductor cables in free air conditions



Graph 4 Sheath temperature rise for 300 V and 600 V MI four conductor cables in free air conditions



Graph 5 Sheath temperature rise for 300 V and 600 V MI seven conductor cables in free air conditions

Note: Values are based on the Neher-McGrath calculation, AIEE 1957.

Termination Temperature Limits

There are several terminations available for sealing and terminating PYROTENAX MI cables. The temperature limit for these terminations is dependent on the sealing material and sleeving used. Refer to the product data sheets for additional information.

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