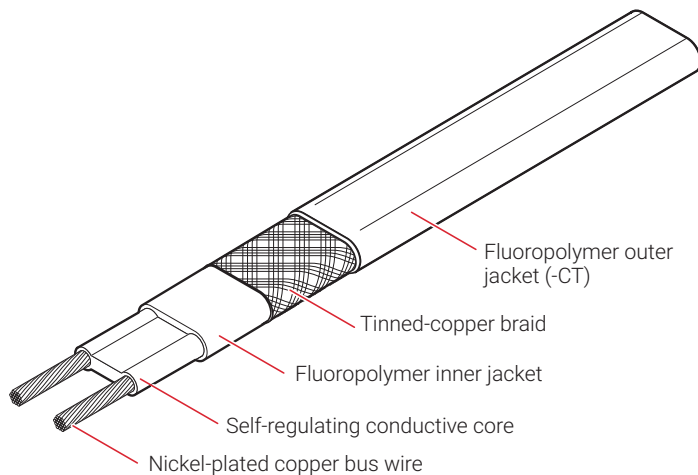


Self-regulating heating cables Electrical process temperature maintenance for both nonhazardous and hazardous locations

PRODUCT OVERVIEW



Heating cable construction

The nVent RAYCHEM QTVR family of self-regulating heating cables is designed for pipe heat tracing in industrial applications. QTVR heating cables can provide process-temperature maintenance up to 225°F (110°C) and can also be used for freeze protection in systems having high heat loss. The heating cables are configured for use in nonhazardous and hazardous locations, including areas where corrosives may be present.

QTVR cables meet the requirements of the U.S. National Electrical Code and the Canadian Electrical Code. For additional information, contact your nVent representative or call (800) 545-6258.



APPLICATION

| | |
|---------------------|--|
| Area classification | Nonhazardous and hazardous locations |
| Traced surface type | Metal and some plastics For use on plastic pipes, refer to TraceCalc Pro design software. |
| Chemical resistance | Organic and aqueous inorganic chemicals and corrosives |






SUPPLY VOLTAGE

| | |
|-------|-------------|
| QTVR1 | 100–130 Vac |
| QTVR2 | 200–277 Vac |

SPECIFICATIONS

| | |
|--|---|
| Maximum maintain or continuous exposure temperature (power on/off) | 225°F (110°C) |
| Maximum intermittent exposure temperature (power on/off) | 225°F (110°C) |
| Temperature classification | T4: 275°F (135°C) Temperature ID numbers are consistent with North America national electrical codes. |
| Minimum installation temperature | -76°F (-60°C) |
| Minimum bend radius | -76°F (-60°C) ≤ T < -4°F (-20°C): 2" (51 mm) -4°F (-20°C) ≤ T < 14°F (-10°C): 1.4" (35 mm) 14°F (-10°C) ≤ T < 32°F (0°C): 1" (25 mm) 32°F (0°C) ≤ T < 50°F (+10°C): 0.8" (20 mm) T ≥ 50°F (+10°C): 0.5" (12.7 mm) |
| Bus wire size | 16AWG 10QTVR1-CT, 10QTVR2-CT, 15QTVR2-CT 14AWG 15QTVR1-CT, 20QTVR1-CT, 20QTVR2-CT |
| Outer jacket color | Brown |

APPROVALS

| | Hazardous Locations | Zone Approvals |
|---|--|---|
| IECEX IECEx BAS 20.0013X Ex 60079-30-1 eb IIC T4 Gb or Ex 60079-30-1 eb mb IIC T4 Gb Ex 60079-30-1 tb IIIC T130°C or Ex 60079-30-1 mb tb IIIC T130°C Tmin -60°C |  Class I, Div. 2, Groups A, B, C, D Class II, Div. 2, Groups F, G Class III Tmin -40°C |  CLI, ZN1, AEx e II T4 Tmin -40°C |
| |  Class I, Div. 1 and 2, Groups A, B, C, D Class II, Div. 1 and 2, Groups E, F, G Class III - WS for Canada |  Ex 60079-30-1 IIC T4 Gb Ex 60079-30-1 IIIC T135°C Db Class I Zone 1 AEx eb IIC T4 Gb Zone 21 AEx tb IIIC T135°C Db -WS for Canada |
| |  IEx 09.0006X Ex eb IIC T4 Gb Ex eb mb IIC T4 Gb | |

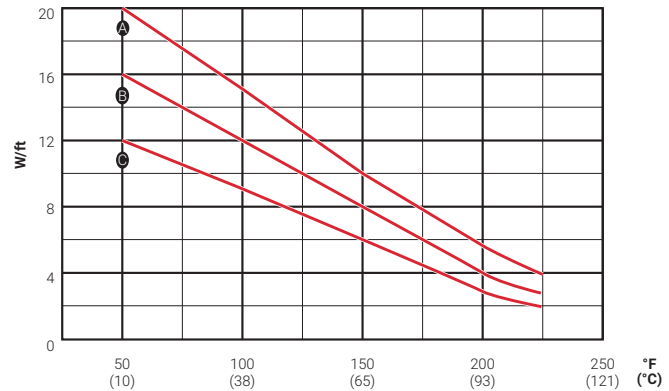
DESIGN AND INSTALLATION

For proper design and installation, use TraceCalc Pro design software or the Design section of the Industrial Heat Tracing Products & Services Catalog (H56550). Also, refer to the nVent Installation and Maintenance Manual (H57274). Literature is available via the nVent web site, nVent.com.

NOMINAL POWER OUTPUT RATING ON METAL PIPES AT 120 V / 240 V

| | Adjustment factors | |
|--------------|--------------------|----------------|
| | Power output | Circuit length |
| 208 V | 0.78 | 0.94 |
| 10QTVR2-CT | 0.85 | 0.94 |
| 15QTVR2-CT | 0.91 | 0.91 |
| 20QTVR2-CT | 0.9 | 0.91 |
| 277 V | | |
| 10QTVR2-CT | 1.18 | 1.06 |
| 15QTVR2-CT | 1.09 | 1.1 |
| 20QTVR2-CT | 1.07 | 1.11 |

- Ⓐ 20QTVR-CT
- Ⓑ 15QTVR-CT
- Ⓒ 10QTVR-CT



Note: To choose the correct heating cable for your application, use the Design section of the Industrial Heat Tracing Products & Services Catalog (H56550). For more detailed information, use TraceCalc Pro design software.

MAXIMUM CIRCUIT LENGTHS BASED ON CIRCUIT BREAKER SIZES

| | Ambient temperature at start-up | | Maximum circuit length (in feet) per circuit breaker | | | | | | | | | |
|------------------|---------------------------------|---------|--|------|------|------|------|-------|------|------|------|------|
| | | | 120 V | | | | | 240 V | | | | |
| | | | 15 A | 20 A | 30 A | 40 A | 50 A | 15 A | 20 A | 30 A | 40 A | 50 A |
| 10QTVR-CT | 50°F | (10°C) | 100 | 130 | 195 | 195 | † | 200 | 265 | 390 | 390 | † |
| | 0°F | (-18°C) | 80 | 105 | 160 | 195 | † | 160 | 210 | 320 | 390 | † |
| | -20°F | (-29°C) | 70 | 95 | 145 | 195 | † | 145 | 195 | 295 | 390 | † |
| | -40°F | (-40°C) | 65 | 90 | 135 | 180 | † | 135 | 180 | 275 | 365 | † |
| 15QTVR-CT | 50°F | (10°C) | 75 | 100 | 150 | 200 | 220 | 160 | 210 | 320 | 340 | † |
| | 0°F | (-18°C) | 60 | 80 | 120 | 160 | 200 | 125 | 170 | 255 | 340 | † |
| | -20°F | (-29°C) | 55 | 70 | 110 | 145 | 185 | 115 | 155 | 235 | 315 | † |
| | -40°F | (-40°C) | 50 | 65 | 100 | 135 | 170 | 110 | 145 | 220 | 290 | † |
| 20QTVR-CT | 50°F | (10°C) | 60 | 80 | 120 | 160 | 195 | 120 | 160 | 240 | 320 | 390 |
| | 0°F | (-18°C) | 45 | 60 | 95 | 125 | 160 | 95 | 125 | 190 | 255 | 320 |
| | -20°F | (-29°C) | 40 | 55 | 85 | 115 | 145 | 85 | 115 | 175 | 235 | 295 |
| | -40°F | (-40°C) | 40 | 55 | 80 | 110 | 135 | 80 | 110 | 165 | 220 | 275 |

† Not permitted

PRODUCT DIMENSIONS AND WEIGHT

| | 10QTVR1-CT, 10QTVR2-CT, 15QTVR2-CT | 15QTVR1-CT, 20QTVR1-CT, 20QTVR2-CT |
|-----------------------------|------------------------------------|------------------------------------|
| Weight | 85 lbs/1000 ft (126 g/m) | 121 lbs/1000 ft (180 g/m) |
| Width x Thickness (nominal) | 0.465 x 0.177 in (11.8 x 4.5 mm) | 0.551 x 0.201 in (14.0 x 5.1 mm) |

ORDERING DETAILS

| Description | Part number |
|-------------|-------------|
| 10QTVR1-CT | 259951-000 |
| 15QTVR1-CT | 148345-000 |
| 20QTVR1-CT | 498703-000 |

| Description | Part number |
|-------------|-------------|
| 10QTVR2-CT | 391991-000 |
| 15QTVR2-CT | 040615-000 |
| 20QTVR2-CT | 988967-000 |

CONNECTION KITS

nVent offers a full range of connection kits for power connections, splices, and end seals. These connection kits must be used to ensure proper functioning of the product and compliance with warranty, code, and approvals requirements.

GROUND-FAULT PROTECTION

To minimize the danger of fire from sustained electrical arcing if the heating cable is damaged or improperly installed, and to comply with the requirements of nVent, agency certifications, and national electrical codes, ground-fault equipment protection must be used on each heating cable branch circuit. Arcing may not be stopped by conventional circuit protection. Many nVent RAYCHEM control and monitoring systems meet the ground-fault protection requirement.

North America

Tel +1.800.545.6258
Fax +1.800.527.5703
thermal.info@nVent.com

Europe, Middle East, Africa

Tel +32.16.213.511
Fax +32.16.213.604
thermal.info@nVent.com

Asia Pacific

Tel +86.21.2412.1688
Fax +86.21.5426.3167
cn.thermal.info@nVent.com

Latin America

Tel +1.713.868.4800
Fax +1.713.868.2333
thermal.info@nVent.com



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