

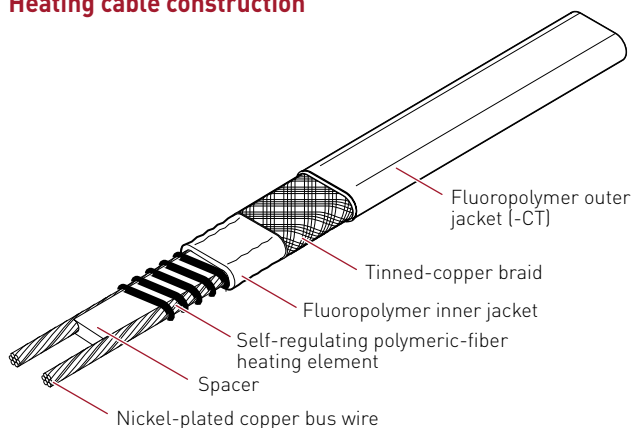
## Raychem XTV



# HIGH-TEMPERATURE SELF-REGULATING HEATING CABLES

Electrical freeze protection and process-temperature maintenance for both nonhazardous and hazardous locations

### Heating cable construction



### PRODUCT OVERVIEW

The XTV family of self-regulating heating cables provides solutions for industrial freeze protection and process-temperature maintenance applications requiring high power output. XTV heating cables can withstand temperatures up to 482°F (250°C) and provide process temperature maintenance to 250°F (121°C).

The heating cables are configured for use in nonhazardous and hazardous locations, including areas where corrosives may be present.

The power output of self-regulating heating cable depends on the heating cable temperature, and can provide up to 20 W/ft at 50°F (10°C).

Raychem XTV cables meet the requirements of the U.S. National Electrical Code and the Canadian Electrical Code. For additional information, contact your Pentair Industrial Heat Tracing Solutions representative or call (800) 545-6258.

### APPLICATION

|                     |                                                        |
|---------------------|--------------------------------------------------------|
| Area classification | Nonhazardous and hazardous locations                   |
| Traced surface type | Metal                                                  |
| Chemical resistance | Organic and aqueous inorganic chemicals and corrosives |

### SUPPLY VOLTAGE

|      |             |
|------|-------------|
| XTV1 | 100–130 Vac |
| XTV2 | 200–277 Vac |

### TEMPERATURE RATING

|                                                                         |                |
|-------------------------------------------------------------------------|----------------|
| Maximum maintain or continuous exposure temperature (power on)          | 250°F (121°C)  |
| Maximum intermittent exposure temperature, 1000 hours (power on or off) | 482°F (250°C)* |
| Minimum installation temperature                                        | –40°F (–40°C)  |

\*The 250°C rating applies to all products printed "MAX INTERMITTENT EXPOSURE 250C"

### TEMPERATURE ID NUMBER (T-RATING)

|                                                                                     |                           |                                                                         |
|-------------------------------------------------------------------------------------|---------------------------|-------------------------------------------------------------------------|
| <b>T2C:</b> 446°F (230°C)                                                           | <b>T2D:</b> 419°F (215°C) | <b>T3:</b> 392°F (200°C)                                                |
| Temperature ID numbers are consistent with North America National Electrical Codes. |                           |                                                                         |
| 20XTV1-CT-T2,<br>20XTV2-CT-T2                                                       | 15XTV1-CT-T2              | 5XTV1-CT-T3, 5XTV2-CT-T3,<br>10XTV1-CT-T3, 10XTV2-CT-T3<br>15XTV2-CT-T3 |

Based on systems approach\* T3–T6

\* Raychem XTV heating cables are approved for T3 – T6 temperature classes when stabilized or controlled designs are used according to the requirements of applicable national and international approvals standards. Use TraceCalc Pro design software or contact Pentair.

## APPROVALS

### IECEX

IECEX BAS 06.0044X  
Ex e IIC T\* Gb  
Ex tD A21 IP66 T\*\*°C

<sup>(1)</sup> Applications must be reviewed by the manufacturer.

<sup>(1), \*\*</sup> For maximum surface temperature, see heating cable, design documentation or schedule

### Hazardous Locations



Class I, Div. 2, Groups A, B, C, D  
Class II<sup>(1)</sup> Div. 2, Groups F, G  
Class III<sup>(1)</sup>



Class I, Div. 1 and 2, Groups A, B, C, D  
Class II, Div. 1 and 2, Groups E, F, G  
Class III

XTV heating cables also have many other approvals, including Baseefa, PTB, DNV, and ABS.

### Zone Approvals



CL I, ZN1, AEx e II T3 (T2)



Ex e II T3 (T2)



09-IEEx-0005X  
Ex e IIC T\* Gb

## DESIGN AND INSTALLATION

For proper design and installation, use TraceCalc Pro design software or the design section of the Industrial Heat Tracing Solutions Products & Services Catalogue (H56550). Also, refer to the Industrial Heat-Tracing Installation and Maintenance Manual (H57274). Literature is available via the Pentair web site, [www.pentairthermal.com](http://www.pentairthermal.com).

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

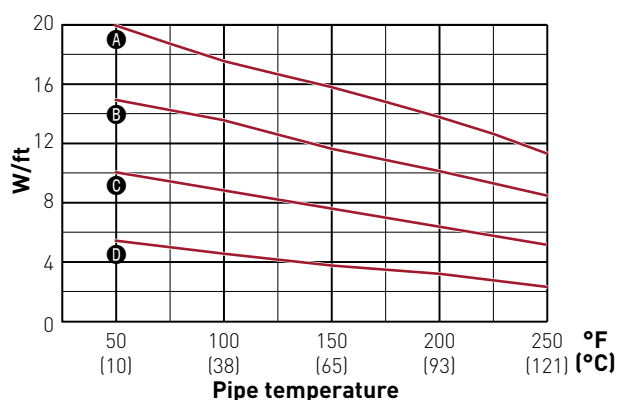
|              | Adjustment factors |                |
|--------------|--------------------|----------------|
|              | Power output       | Circuit length |
| <b>208 V</b> |                    |                |
| 5XTV2        | 0.87               | 0.99           |
| 10XTV2       | 0.88               | 0.99           |
| 15XTV2       | 0.88               | 0.98           |
| 20XTV2       | 0.86               | 1.00           |
| <b>277 V</b> |                    |                |
| 5XTV2        | 1.07               | 1.08           |
| 10XTV2       | 1.08               | 1.06           |
| 15XTV2       | 1.08               | 1.06           |
| 20XTV2       | 1.07               | 1.08           |

A 20XTV-CT

B 15XTV-CT

C 10XTV-CT

D 5XTV-CT



**Note:** To choose the correct heating cable for your application, use the Design section of the Industrial Heat Tracing Solutions Products & Services Catalogue (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 |
| 5XTV-CT                         | 50°F (10°C)   | 180                                                  | 240  | 360  | 385  | 385  | 360   | 480  | 720  | 765  | 765  |
|                                 | 0°F (-18°C)   | 160                                                  | 210  | 320  | 385  | 385  | 315   | 420  | 625  | 765  | 765  |
|                                 | -20°F (-29°C) | 150                                                  | 200  | 305  | 385  | 385  | 295   | 395  | 595  | 765  | 765  |
|                                 | -40°F (-40°C) | 145                                                  | 195  | 290  | 385  | 385  | 285   | 380  | 570  | 760  | 765  |
| 10XTV-CT                        | 50°F (10°C)   | 110                                                  | 145  | 220  | 270  | 270  | 220   | 295  | 440  | 540  | 540  |
|                                 | 0°F (-18°C)   | 95                                                   | 130  | 195  | 260  | 270  | 195   | 260  | 385  | 515  | 540  |
|                                 | -20°F (-29°C) | 95                                                   | 125  | 190  | 250  | 270  | 185   | 245  | 370  | 495  | 540  |
|                                 | -40°F (-40°C) | 90                                                   | 120  | 180  | 240  | 270  | 175   | 235  | 355  | 470  | 540  |
| 15XTV-CT                        | 50°F (10°C)   | 75                                                   | 100  | 150  | 200  | 220  | 150   | 200  | 300  | 400  | 445  |
|                                 | 0°F (-18°C)   | 65                                                   | 90   | 135  | 180  | 220  | 130   | 175  | 265  | 355  | 440  |
|                                 | -20°F (-29°C) | 65                                                   | 85   | 130  | 170  | 215  | 125   | 165  | 250  | 335  | 420  |
|                                 | -40°F (-40°C) | 60                                                   | 80   | 125  | 165  | 205  | 120   | 160  | 240  | 320  | 405  |
| 20XTV-CT                        | 50°F (10°C)   | 60                                                   | 80   | 120  | 160  | 190  | 115   | 150  | 230  | 305  | 380  |
|                                 | 0°F (-18°C)   | 50                                                   | 70   | 105  | 140  | 180  | 100   | 135  | 205  | 275  | 345  |
|                                 | -20°F (-29°C) | 50                                                   | 65   | 100  | 135  | 170  | 100   | 130  | 200  | 265  | 330  |
|                                 | -40°F (-40°C) | 50                                                   | 65   | 100  | 130  | 165  | 95    | 125  | 190  | 255  | 320  |

## PRODUCT CHARACTERISTICS

|                                |                                     |
|--------------------------------|-------------------------------------|
| Minimum bend radius            | @68°F (20°C): 0.5 in (12.7 mm)      |
| Weight (lb per 10 ft, nominal) | 1.1                                 |
| Bus wire size                  | 14 AWG                              |
| Outer jacket color             | Red                                 |
| Heating cable dimensions       | 0.46 in x 0.3 in (11.7 mm x 7.6 mm) |

## ORDERING DETAILS

| DESCRIPTION  | PART NUMBER |
|--------------|-------------|
| 5XTV1-CT-T3  | P000001668  |
| 5XTV2-CT-T3  | P000001669  |
| 10XTV1-CT-T3 | P000001671  |
| 10XTV2-CT-T3 | P000001672  |
| 15XTV1-CT-T2 | P000001674  |
| 15XTV2-CT-T3 | P000001675  |
| 20XTV1-CT-T2 | P000001676  |
| 20XTV2-CT-T2 | P000001677  |

## CONNECTION KITS

Pentair 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 Pentair, 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 Raychem control and monitoring systems meet the ground-fault protection requirement.