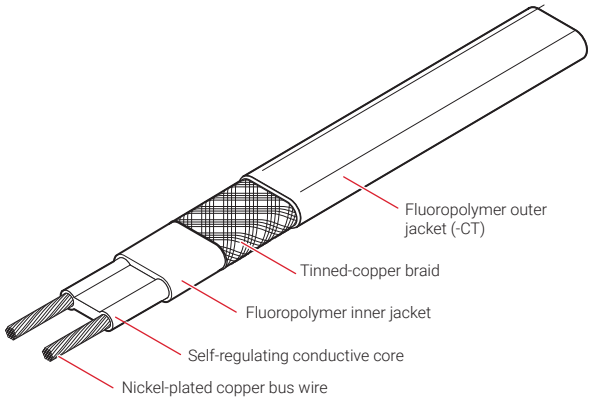
QTVR

SELF-REGULATING HEATING CABLES ELECTRICAL PROCESS-TEMPERATURE MAINTENANCE FOR BOTH NONHAZARDOUS AND HAZARDOUS LOCATIONS



Heating cable construction

10 YEAR Product warranty

PRODUCT OVERVIEW

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

TEMPERATURE RATING

Maximum maintain or continuous exposure temperature (power on)	225°F (110°C)
Minimum installation temperature	–40°F (–40°C)

TEMPERATURE ID NUMBER (T-RATING)

T4: 275°F (135°C)
Temperature ID numbers are consistent with North America national electrical codes.

APPROVALS

IECEx IECEx BAS 06.0045X
Ex e IIC T4 Gb
Ex tD A21 IP66 T130°C

Hazardous Locations

FM APPROVED — Class I, Div. 2, Groups A, B, C, D
Class II, Div. 2, Groups F, G
Class III

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

IEx — Ex e IIC T4 Gb

Zone Approvals

FM APPROVED — CLI, ZN1, AEx e II T4

SA -W — Ex e II T4

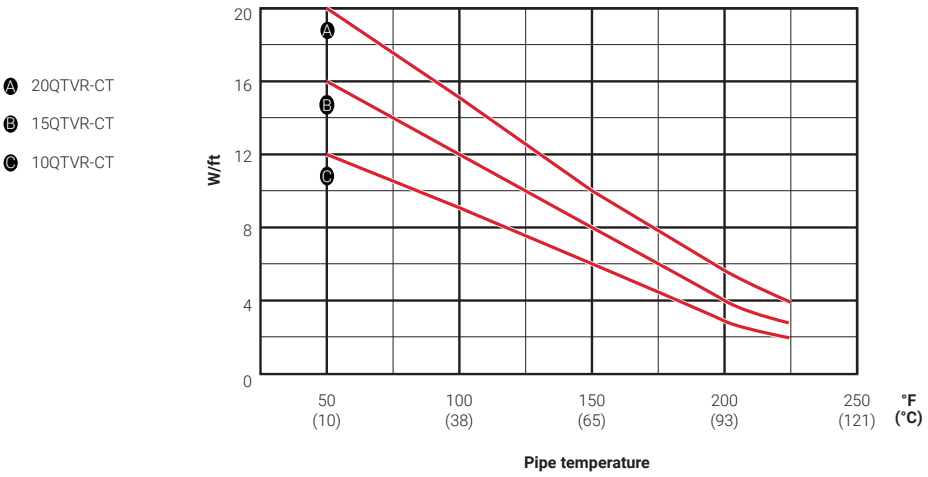
QTVR heating cables also have many other approvals, including Baseefa, PTB, DNV, and ABS.

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	0.90	0.91
277 V		
10QTVR2-CT	1.18	1.06
15QTVR2-CT	1.09	1.10
20QTVR2-CT	1.07	1.11



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 CHARACTERISTICS

	10QTVR1-CT, 10QTVR2-CT, 15QTVR2-CT	15QTVR1-CT, 20QTVR1-CT, 20QTVR2-CT
Minimum bend radius	@68°F (20°C): 0.5 in (12.7 mm)	@68°F (20°C): 0.5 in (12.7 mm)
Weight (lb per 10 ft, nominal)	0.85	1.21
Bus wire size	16 AWG	14 AWG
Outer jacket color	Brown	Brown
Heating cable dimensions	0.55 in x 0.25 in (14 mm x 6.35 mm)	0.61 in x 0.25 in (15.5 mm x 6.35 (mm)

ORDERING DETAILS

	Description	Part number
	10QTVR1-CT	259951-000
	10QTVR2-CT	391991-000
	15QTVR1-CT	148345-000
	15QTVR2-CT	040615-000
	20QTVR1-CT	498703-000
	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.

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