Visit www.tycothermal.com for more information on our ten-year extended warranty.

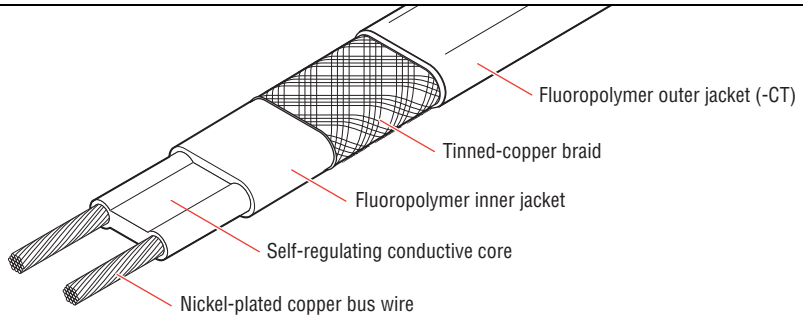
Self-regulating heating cables

Electrical process-temperature maintenance for both nonhazardous and hazardous locations.

The 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.

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

Heating cable construction



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 BAS 06.0045X
Ex e II T4 Ex tD A21 IP66 T130C

Hazardous Locations

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

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

09-IEx-0006X
BR-Ex e II T4

Zone Approvals

FM APPROVED
CLI, ZN1, AEx e II T4

SP -W
Ex e II T4

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

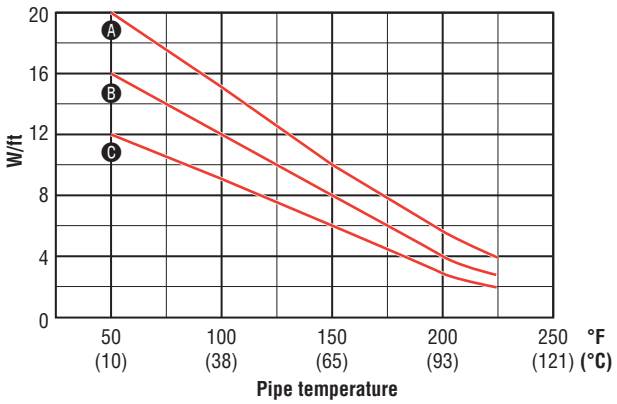
Design and Installation

For proper design and installation, use TraceCalc Pro design software or the Design section of the *Industrial Product Selection and Design Guide* (H56550). Also, refer to the *Industrial Heat-Tracing Installation and Maintenance Manual* (H57274). Literature is available via the Tyco Thermal Controls Web site, www.tycothermal.com.

Nominal Power Output Rating on Metal Pipes at 120 V/240 V

	Adjustment factors	
	Power output	Circuit length
208 V		
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

Ⓐ 20QTVR-CT
Ⓑ 15QTVR-CT
Ⓒ 10QTVR-CT



Note: To choose the correct heating cable for your application, use the Design section of the *Industrial Product Selection and Design Guide* (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

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 Tyco Thermal Controls, 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 DigiTrace control and monitoring systems meet the ground-fault protection requirement.

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)

Connection Kits	Tyco Thermal Controls 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.

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