

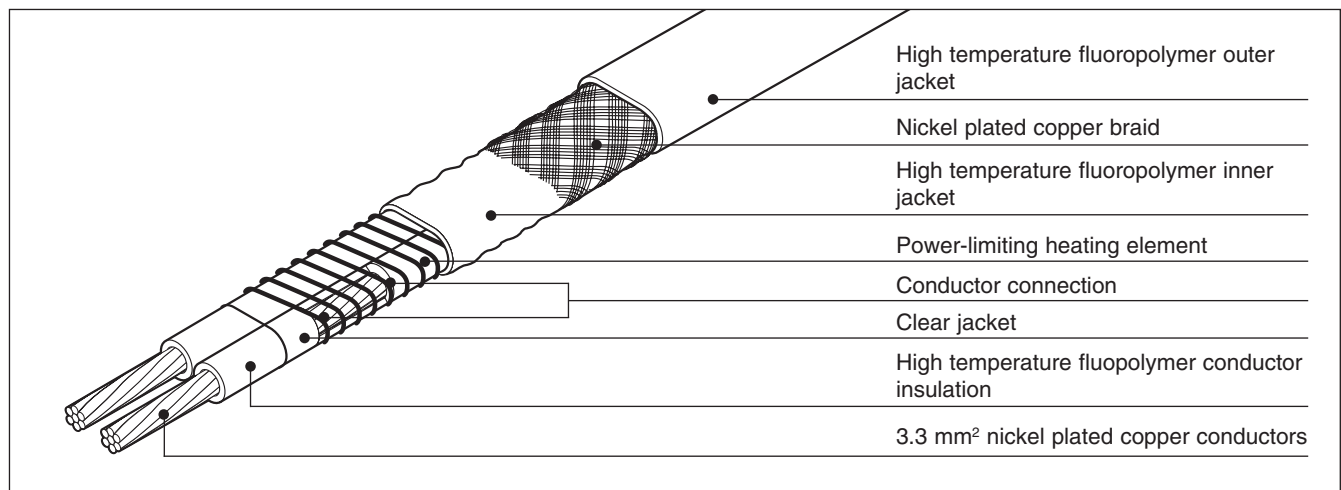
High-temperature power-limiting heating cable

VPL is a family of power limiting heating cables designed for pipe and equipment heat-tracing in industrial applications. VPL can be used for frost protection and process temperature maintenance requiring high power output and/or high temperature exposure. VPL can provide process temperature maintenance up to 230°C and can withstand routine steam

purges and temperature exposure to 260°C with power off. Power-limiting cables are parallel heaters formed by a coiled resistor alloy heating element wrapped around two parallel conductors. The distance between conductor contact points forms the heating zone length. This parallel construction allows it to be cut to length

and terminated on site. The power output of VPL heating cables decreases with increasing temperature. VPL heating cables can be overlapped. The relatively flat power temperature curve of VPL ensures a low start-up current and high output at elevated temperatures. VPL cables are approved for use in hazardous areas. Approvals are listed below.

Heating cable construction




Application

Area classification	Hazardous, Zone 1, Zone 2 (Gas), Zone 21, Zone 22 (Dust) Ordinary
Traced surface type	Carbon steel Stainless steel Painted or unpainted metal
Chemical resistance	Organics and corrosives For aggressive organics and corrosives consult your local Tyco Thermal Controls representative
Supply voltage	VPL2: 208-277 Vac VPL4: 400-480 Vac

Approvals

The VPL heating cable is approved for use in hazardous areas by Baseefa 2001 Ltd.

Baseefa06ATEX0188X	IECEX BAS 06.0048X
 II 2 GD Ex e II T*	Ex e II T*
Ex tD A21 IP66	Ex tD A21 IP66
* By design	* By design

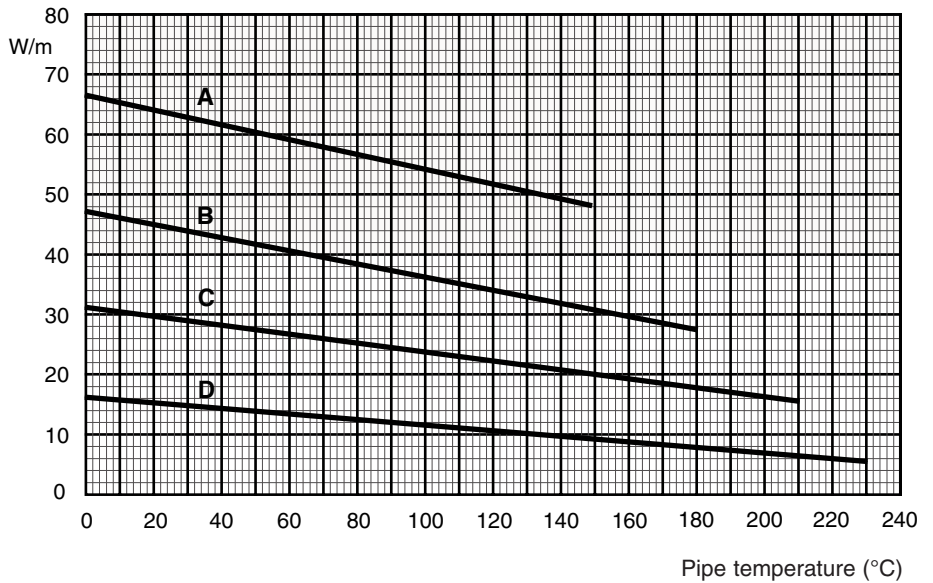
Specifications

Maximum maintain temperature (continuous power on)	Cable	208 V	230 V	254 V	277 V	400 V	480 V
	5VPL2-CT	235°C	230°C	225°C	225°C	–	–
	10VPL2-CT	220°C	210°C	200°C	195°C	–	–
	15VPL2-CT	200°C	180°C	145°C	105°C	–	–
	20VPL2-CT	150°C	150°C	–	–	–	–
	5VPL4-CT	–	–	–	–	230°C	230°C
	10VPL4-CT	–	–	–	–	215°C	205°C
	15VPL4-CT	–	–	–	–	195°C	160°C
	20VPL4-CT	–	–	–	–	150°C	150°C
Max. exposure temperature (continuous power off)	260°C						
Temperature classification	To be established using the principles of stabilized design. Use TraceCalc design software or contact Tyco Thermal Controls for assistance.						
Minimum installation temperature	–60°C						
Minimum bend radius	at –60°C: 20 mm						

Thermal output rating

Nominal power output rating on metal pipes at 230 V and 480 V (power output of VPL4 at 400 V will be lower)

- A 20VPL-CT**
- B 15VPL-CT**
- C 10VPL-CT**
- D 5VPL-CT**



To choose the correct heating cable for your application use the TraceCalc design software.

Adjustment Factors

		5VPL2-CT	10VPL2-CT	15VPL2-CT	20VPL2-CT
254V	Power output	1.20	1.19	1.19	Not allowed
	Circuit length	1.05	1.04	1.04	Not allowed
277V	Power output	1.30	1.28	1.26	Not allowed
	Circuit length	1.13	1.11	1.09	Not allowed
		5VPL4-CT	10VPL4-CT	15VPL4-CT	20VPL4-CT
400V	Power output	0.72	0.73	0.74	0.75
	Circuit length	0.86	0.87	0.89	0.90

	5VPL-CT	10VPL-CT	15VPL-CT	20VPL-CT
Nominal power output (W/m at 10°C) (nominal power output of VPL4 at 400 V and 10°C)	15 (12)	30 (24)	45 (36)	61 (49)

Product dimensions (nominal) and weight

Thickness (mm)	7.9	7.9	7.9	7.9
Width (mm)	11.7	11.7	11.7	11.7
Nominal cold lead/ heating zone length (m)	1.2 (VPL2) 2.4 (VPL4)	0.9 (VPL2) 1.7 (VPL4)	0.6 (VPL2) 1.3 (VPL4)	0.5 (VPL2) 1.1 (VPL4)
Weight (g/m)	200	200	200	200

Maximum circuit length based on type 'C' circuit breakers according to EN 60898

VPL2 at 230V		5VPL2-CT	10VPL2-CT	15VPL2-CT	20VPL2-CT
Electrical protection sizing	Start-up temperature	Maximum heating cable length per circuit (m) at 230V AC			
16A	-20°C	195	100	70	50
	+10°C	215	110	75	55
25A	-20°C	220*	155*	105	80
	+10°C	220*	155*	115	85
32A	-20°C	220*	155*	130*	100
	+10°C	220*	155*	130*	110*
40A	-20°C	220*	155*	130*	110*
	+10°C	220*	155*	130*	110*

VPL4 at 480V and 400V		5VPL4-CT	10VPL4-CT	15VPL4-CT	20VPL4-CT
Electrical protection sizing	Start-up temperature	Maximum heating cable length per circuit (m) at 480V AC and (at 400V AC)			
16A	-20°C	390 (335)	195 (170)	130 (115)	100 (90)
	+10°C	425 (365)	210 (185)	140 (125)	105 (95)
25A	-20°C	450* (450)	310 (265)	205 (185)	155 (140)
	+10°C	450* (450)	320* (290)	220 (195)	165 (150)
32A	-20°C	450* (450)	320* (320)	260* (235)	200 (180)
	+10°C	450* (450)	320* (320)	260* (250)	210 (190)
40A	-20°C	450* (450)	320* (320)	260* (260)	225* (225)
	+10°C	450* (450)	320* (320)	260* (260)	225* (225)

* The maximum heating cable length must not exceed these values, even when voltage adjustment factors are used.

The above numbers are for circuit length estimation only. For more detailed information please use the Tyco Thermal Controls TraceCalc software or contact your local Tyco Thermal Controls representative.

Tyco Thermal Controls requires the use of a 30 mA residual current device to provide maximum safety and protection from fire. Where design results in a higher leakage current, a maximum 300 mA residual current device may be used. All safety aspects need to be proven.

Ordering details

Part description	5VPL2-CT	10VPL2-CT	15VPL2-CT	20VPL2-CT
Part No.	451828-000	892652-000	068380-000	589252-000
Part description	5VPL4-CT	10VPL4-CT	15VPL4-CT	20VPL4-CT
Part No.	P000000678	P000000679	P000000680	P000000681

Components

Tyco Thermal Controls offers a full range of components for power connections, splices and end seals. These components must be used to ensure proper functioning of the product and compliance with electrical requirements.

European Headquarters

Tyco Thermal Controls
Staatsbaan 4A
3210 Lubbeek
Belgium
Tel. (32) 16 213 511
Fax (32) 16 213 610
info@tycothermal.com

België / Belgique

Tyco Thermal Controls
Staatsbaan 4A
3210 Lubbeek
Tel. (016) 213 502
Fax (016) 213 604

Bulgaria

ERZET Engineering
Kompl. Bratja Miladinovi/bl57/vch.4A
BG-8000 Burgas
Tel./fax (56) 3 4198
Mobile (88) 639 903
Fax (UK) +44 8701368787

Česká Republika

Raychem HTS s.r.o.
Novodvorská 82
14200 Praha 4
Tel. 241 009 215
Fax 241 009 219

Danmark

Tyco Thermal Controls Nordic AB
Flöjelbergsgatan 20B
S-431 37 Mölndal
Tel. 70 11 04 00
Fax 70 11 04 01

Deutschland

Tyco Thermal Controls GmbH
Birlenbacher Strasse 19-21
57078 Siegen-Geisweid
Tel. 0800 1818205
Fax 0800 1818204

España

Tyco Thermal Controls N.V.
Ctra. De la Coruña, km. 23,500
Edificio ECU I
28290 Las Rozas
Madrid
Tel. (902) 125 307
Fax (91) 640 29 90

France

Tyco Thermal Controls SA
B.P. 90738
95004 Cergy-Pontoise Cedex
Tél. 0800 906045
Fax 0800 906003

Hrvatska

ELGRI d.o.o.
S. Mihalica 2
10000 Zagreb
Tel. (1) 6050188
Fax (1) 6050187

www.tycothermal.com

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Italia

Tyco Electronics Raychem SPA
Centro Direzionale Milanofiori
Palazzo E5
20090 Assago, Milano
Tel. (02) 57 57 61
Fax (02) 57 57 62 01

Lietuva/Latvija/Eesti

Tyco Thermal Controls BV Atstovybe
Smolensko g. 6
3210 LT Vilnius
Tel. +370 5 2136633
Fax +370 5 2330084

Magyarország

Szarka Ignác
Maroshévíz u. 8
1173 Budapest
Tel. (1) 253 76 17
Fax (1) 253 76 18

Nederland

Tyco Thermal Controls b.v.
Van Heuven Goedhartlaan 121
1181 KK Amstelveen
Tel. 0800 0224978
Fax 0800 0224993

Norge

Tyco Thermal Controls Norway AS
Postboks 6076 - Etterstad
0601 Oslo
Tel. +47 66 81 79 90
Fax +47 66 80 83 92

Österreich

Tyco Thermal Controls N.V. Lubbeek
Office Wien
Brown-Boveri Strasse 6/14
2351 Wiener Neudorf
Tel. (0 22 36) 86 00 77
Fax (0 22 36) 86 00 77-5

Polska

Tyco Thermal Controls Polska Sp. z o.o.
ul. Cybernetyki 19
02-677 Warszawa
Tel. 0 800 800 114
Fax 0 800 800 115

Romania

Tyco Thermal Controls Romania
53 Primaverii Bvd.
011973 Bucuresti
Tel. 21 317 92 87
Fax 21 317 92 87

Schweiz / Suisse

Tyco Thermal Controls N.V.
Office Baar
Haldenstrasse 5
Postfach 2724
6342 Baar
Tel. (041) 766 30 80
Fax (041) 766 30 81

Suomi

Tyco Thermal Controls Nordic AB
Flöjelbergsgatan 20B
S-431 37 Mölndal
Puh. 0800 11 67 99
Telekopio 0800 11 86 74

Sverige

Tyco Thermal Controls Nordic AB
Kanalvägen 3 A
S-194 61 Upplands Väsby
Tel. 08-590 094 60
Fax 08-590 925 70

Türkiye

SAMM DIS TICARET A.S.
Sultan Orhan Mh. 1117.Sk.
Otan Ishani 16/2 41400
Gebze Kocaeli
Tel. +90 (262) 644 75 75
Fax +90 (262) 644 75 76

United Kingdom

Tyco Thermal Controls (UK) Ltd
3 Rutherford Road,
Stephenson Industrial Estate
Washington, Tyne & Wear
NE37 3HX
Tel. 0800 969013
Fax: 0800 968624

РОССИЯ и другие страны СНГ

РАЙХЕМ
Россия, 127081, Москва
пр. Дежнева 29, стр. 1
Тел. (495) 508 99 75
Факс (495) 508 99 74

Republic of Kazakhstan

Tyco Thermal Controls
4 Khakimov St.
Atyrau, 060002
Tel. +7 3122 32 56 51
Fax +7 3122 32 56 38

Serbia and Montenegro

Keying d.o.o.
Vuka Karadžića 79
23300 Kikinda
Tel. (230) 401 770
Fax (230) 401 790

Worldwide Headquarters

Tyco Thermal Controls
2415 Bay Road
Redwood City, CA 94063-3032
USA
Tel. (1)(650) 216-1526
Fax (1)(650) 474-7711
info@tycothermal.com

tyco

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