



Industrial heating & heat-tracing cables

VPL Power-Limiting Heating Cable

120–480 Vac coiled-resistor PTC alloy power-limiting heating cable, +260 °C

5VPL / 10VPL / 15VPL / 20VPL

120 V · 240 V · 480 V AC

Maintain +235 °C · Exp +260 °C

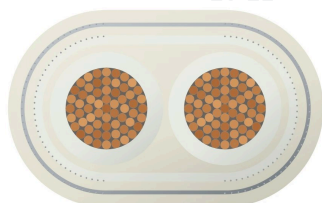


Application

High-temperature coiled-resistor PTC alloy power-limiting heat tracing cable (5VPL–20VPL, 120–480 V) to IEC/IEEE 60079-30-1 and IEEE 515 with 3.3 mm² (12 AWG) NiCu bus wires and fluoropolymer jackets for +235 °C maintain and +260 °C.

Typical uses: Refinery vacuum residue, bitumen & asphalt piping, High-pressure steam-purged process lines (up to +260 °C), Chemical & petrochemical monomer, polymer & acid headers, Sulphur recovery, molten phthalic anhydride & pitch lines, Long-circuit 400–480 V tank-farm & pipe-rack tracing, LNG / gas-processing amine regeneration & flare knockout drums

Construction



Cross-section, not to scale

1	12 AWG (3.3 mm ²) nickel-plated copper bus wires	ASTM B355 / IEC 60228
2	High-temperature fluoropolymer bus insulation	IEC 60079-30-1 / IEEE 515
3	Coiled PTC metallic resistor heating element	IEC 60079-30-1 / IEEE 515
4	Fluoropolymer inner dielectric barrier jacket	IEC 60079-30-1
5	Tinned / nickel-plated copper protective braid	IEC 60079-30-1 Clause 4.4
6	High-temperature fluoropolymer (-CT) outer jacket	IEC 60079-30-1 / IEEE 515

Technical data

Typical values

Rated supply voltage	120 Vac (-1), 208–277 Vac (-2), 480 Vac (-4)	Nominal output @ 10 °C	15, 33, 49 & 65 W/m (5, 10, 15 & 20 W/ft)
PTC alloy power taper	Metallic PTC resistor lowers W/m as T rises	Dielectric withstand	2.5 kV AC RMS for 1 min (bus to earth braid)
Max. maintain temp.	Up to +235 °C (5VPL) · +175 °C (20VPL)	Max. exposure temp.	+260 °C continuous (power off / steam purge)
Min. installation T	–60 °C (fluoropolymer inner & outer jackets)	Temperature class	T4 (+135 °C), T3 (+200 °C) & T2 (+300 °C)
Bus wire cross-section	2 × 3.3 mm ² (12 AWG) nickel-plated copper	Heating zone length	0.45 m to 1.1 m between nodal bus contacts
Min. bending radius	20 mm at –60 °C (do not bend on contact node)	Single-overlap safety	PTC alloy coil permits single valve overlap
Flame retardance	IEC 60332-1-2 & IEEE 515 vertical flame	Chemical & oil resistance	-CT fluoropolymer resists acids, bases & oils
Steam-purge endurance	Withstands 300 psig (+215 to +260 °C) steam	Moisture & UV	IP66/IP67 sealed system; UV-immune PFA sheath
Standards	IEC/IEEE 60079-30-1, IEC 62395-1 & IEEE 515		

Sizes

12 standard constructions

Tick the sizes you need and send this page to info@tebaoflex.com or WhatsApp +86 185 9591 3361.

VPL model designation	Rated Vac	Output @10°C W/m	Output @150°C W/m	Max maintain °C	Max exposure °C	T-class (IEC)	Zone pitch m	Max circuit m	Width × Thick. mm	Mass ≈ kg/km
☐ 5VPL1-CT · 120 V	120 Vac	15	10	235	260	T3 / T2	0.60	115	11.7 × 7.6	210
☐ 10VPL1-CT · 120 V	120 Vac	33	21	220	260	T3 / T2	0.50	80	11.7 × 7.6	212
☐ 15VPL1-CT · 120 V	120 Vac	49	30	200	260	T3 / T2	0.45	65	11.7 × 7.6	215
☐ 20VPL1-CT · 120 V	120 Vac	65	38	175	260	T2	0.45	55	11.7 × 7.6	218
☐ 5VPL2-CT · 240 V	240 Vac	15	10	235	260	T3 / T2	0.90	230	11.7 × 7.6	210
☐ 10VPL2-CT · 240 V	240 Vac	33	21	220	260	T3 / T2	0.75	160	11.7 × 7.6	212
☐ 15VPL2-CT · 240 V	240 Vac	49	30	200	260	T3 / T2	0.65	130	11.7 × 7.6	215
☐ 20VPL2-CT · 240 V	240 Vac	65	38	175	260	T2	0.60	110	11.7 × 7.6	218
☐ 5VPL4-CT · 480 V	480 Vac	15	10	235	260	T3 / T2	1.10	440	11.7 × 7.6	212
☐ 10VPL4-CT · 480 V	480 Vac	33	21	220	260	T3 / T2	1.00	310	11.7 × 7.6	214
☐ 15VPL4-CT · 480 V	480 Vac	49	30	200	260	T3 / T2	0.90	250	11.7 × 7.6	216
☐ 20VPL4-CT · 480 V	480 Vac	65	38	175	260	T2	0.80	215	11.7 × 7.6	220

– All VPL cables use 3.3 mm² (12 AWG) nickel-plated copper bus wires; 240 V models operate across 200–277 Vac and 480 V models operate across 380–480 Vac with voltage-adjusted output.

Linear output vs pipe temperature & breaker sizing

7 sizes

VPL model	W/m @ +10 °C	W/m @ +100 °C	W/m @ +200 °C	20 A breaker max m	32 A breaker max m	40 A breaker max m
5VPL2-CT (240 V)	15	12	8	195	230	230
10VPL2-CT (240 V)	33	25	17	95	150	160
15VPL2-CT (240 V)	49	36	24	65	105	130
20VPL2-CT (240 V)	65	46	28	50	80	100
10VPL4-CT (480 V)	33	25	17	190	300	310
15VPL4-CT (480 V)	49	36	24	130	210	250
20VPL4-CT (480 V)	65	46	28	100	160	200

- Notice how VPL retains 60–65 % of its +10 °C power output at +150 °C (unlike polymeric PTC tapes that taper steeply above +110 °C) while still limiting cold-start inrush and hot-spot temperature.

Standards and approvals

Certifications



Management systems: ISO 9001, ISO 14001, ISO 45001

Request a quotation

Send the size, length and destination. An application engineer replies within 2 business hours.

WhatsApp / phone

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Email

info@tebaoflex.com

Web

tebaoflex.com/cables/vpl-high-temperature-coiled-resistor-alloy-power-limiting-industrial-heat-tracing-cable



Typical values for this cable type, based on IEC/IEEE 60079-30-1 & IEEE 515. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.