



## Parallel Circuit - Constant Watt for Frost Protection

- Parallel circuit heating tape is designed to be cut from reel lengths and site terminated to suit pipework. The heating tape consists of a number of short heating zones, each connected cross a pair of continuous bus-wire conductors.
- Each complete heating zone will give its full rated design output with circuit voltage applied to the bus-wire conductors.
- Suitable for internal and external Freeze protection and temperature maintenance, hot water lines, oil and chemical lines, sprinkler system mains and supply piping (as listed in clause 1 BS EN 62395-1:2006).

## Construction

- The heating tape has a core comprising two bus-wire conductors contained within an extruded silicone rubber sheath. The sheath is notched on alternate sides at predetermined intervals to expose a short section of bus-wire conductor.
- Nichrome resistance wire is wrapped at regular spacing around the core as a continuous conductor, making contact with the bus-wires at the exposed points.
- After completion of the heater conductor wrapping, a high temperature soldered joint is made at each contact point ensuring that a number of conductor strands are securely ended to the bus-wires.
- An extruded outer sheath of silicone rubber is then placed over the core and heater element to complete the heater tape assembly.
- Where additional protection is required for corrosive conditions extruded silicone rubber sheathing can be placed over the braided cover.

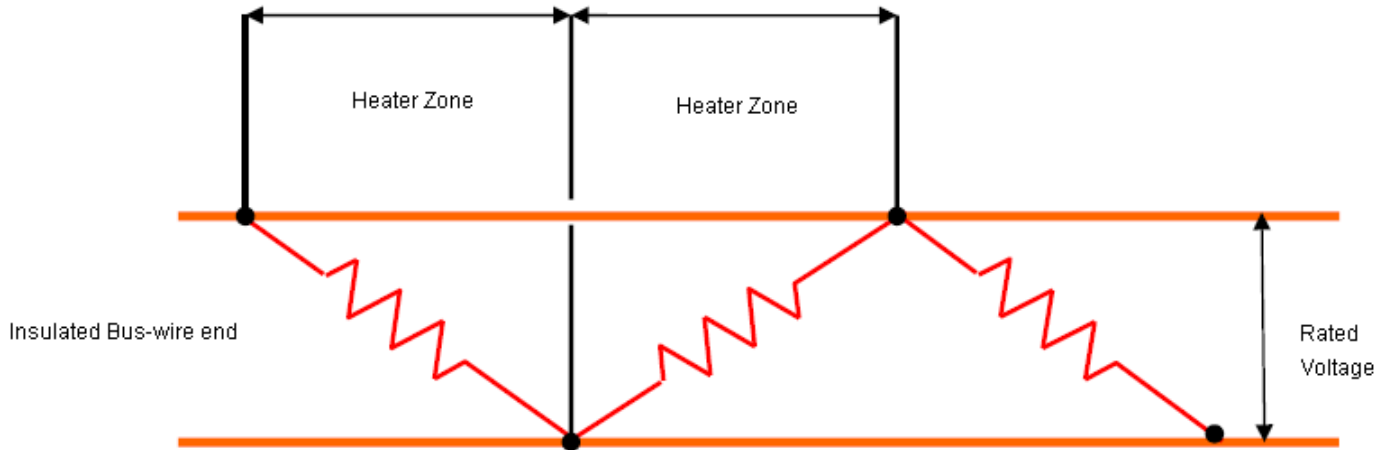
## Range

Type	Volts	Watt/m	Heater Zone Length (m)	Maximum Circuit length (m)	Maximum Recommended Pipe Temperature °C
VC 8	240	8	1.0	275	190

## Specifications:

Conductors	: Copper stranded flexible 30/0.25mm (1.5mm <sup>2</sup> ).
Core	: Silicone rubber.
Heater element	: Nickel/chrome 80/20
Solder	: High melting point 296°C.
Outer Sheath	: Silicone rubber.
Width	: 9.75mm.
Thickness	: 5.25mm.
Heater zone	: 0.5 or 1m according to design output.
Braid	: Stainless steel/Plated copper.
Temperature	: Minimum -60°C. Maximum 200°C.
Standard	: To BS EN 62395-1:2006 62395.
Minimum bend radius	: 50mm.

## Electrical



Rated voltage - 220/240

Heater Zone (according to design) - 0.5/1.0m.

A 30mA trip Residual Current Circuit Device (RCCB) or Earth Leakage Circuit Breaker (ELCB) is recommended for use with heating tapes.

## Heat Losses

To calculate heat loss per metre of pipe:-

Heat losses W/m =  $\Delta t \times k_e \times \text{Loss Factor}$  where:-  $\Delta t$  = Pipe temp. – Ambient temperature.

$k_e$  = Thermal conductivity.

## Loss Factor (From BS 6351)

Pipe NB (mm)	Thermal Insulation Thickness (mm)		
	25	38	50
13	5.16	4.13	3.58
25	6.91	5.36	4.56
38	8.74	6.63	5.54
50	10.28	7.69	6.36
75	13.90	10.15	8.24
100	17.08	12.30	9.88
150	23.82	16.82	13.30

## Thermal Conductivity ( $k_e$ ) for Mineral/Glass Fibre

$\Delta t$ °C	30	40	60	80	100	120	140	160
$k_e$	0.034	0.035	0.036	0.037	0.038	0.040	0.042	0.044

# Heating Cable Kit



To comply with BS 6351 allowance should be taken of maximum heater resistance tolerance ( $\pm 10\%$ ) and voltage variation ( $\pm 6\%$ ) =  $\frac{1.1}{(0.94)^2} = 1.25$  x heat loss.

A further design factor of 10% may be added.

## Part Number Table

Description	Part Number
Cable, Heating Kit, 20m	VCBK8-240V

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