

MV Power Cable

Application

Cable used to distribute three phase AC. electrical power supplies at nominal system voltages of 33kV to traction substations on DC. electrified lines.



Standards

NR/PS/ELP/00008
(formerly RT/E/PS/00008) BS6622,
BS6234, BS7454, IEC 60502-2, IEC60840

Conductor

185mm²: Class 1 circular solid aluminium to BS EN 60228:2005 (previously BS6360)
300mm²: Class 2 compact circular stranded plain copper to BS EN 60228:2005 (previously BS6360)

Conductor Screen

Extruded semi-conducting XLPE (Cross-Linked Polyethylene), solidly bonded

Insulation

XLPE (Cross-Linked Polyethylene)

Insulation Screen

Extruded semi-conducting XLPE (Cross-Linked Polyethylene), solidly bonded, strippable

Separator

Water swellable semi-conducting tape

Screen

Copper wire screen, helically wound with equalising copper tape

Separator

Water swellable tape

Sheath

MDPE (Medium Density Polyethylene)
Type TS2 (Graphite Coated)

Colour

Black

Voltage Rating

19000/33000V

Temperature Rating

+90°C

Minimum Bending Radius

15 x overall diameter
(12 x overall diameter adjacent to joints or terminations provided that bending is carefully controlled by use of former.)

Dimensions

Rail Catalogue Number	No. of Cores x Nominal Cross Sectional Area # x mm ²	Nominal Thickness of Conductor Screen mm	Nominal Thickness of Insulation mm	Nominal Thickness of Insulation Screen mm	Nominal Overall Diameter mm	Nominal Weight kg
006/122514	1 x 185	0.9	8.0	0.6	45.0	2200
006/122511	1 x 300	0.9	8.0	0.6	50.0	4500

Conductors

Class 1 solid conductors for single core and multi-core cables

1	4
Nominal Cross Sectional Area mm ²	Maximum Resistance of Conductor at 20°C
	Aluminium Conductors, Circular ohms/Km
185.00	0.1640

Table in accordance with BS EN 60228:2005 (previously BS6360)

Class 2 stranded conductors for single core and multi-core cables

1	4	5	8
Nominal Cross Sectional Area mm ²	Minimum Number of Wires in the Conductor		Maximum Resistance of Conductor at 20°C
	Circular Compacted		Annealed Copper Conductor
	Cu	Al	Plain Wires ohms/Km
300.00	34	30	0.0601

Table in accordance with BS EN 60228:2005 (previously BS6360)

Electrical Characteristics

Nominal Cross Sectional Area mm ²	Continuous Current Rating in Ground Amps		Continuous Current Rating in Air Amps		Capacitance μF/km	Inductance mH/km		Short Circuit Rating for 1 Sec kilo Amps	
	Trefoil	Flat	Trefoil	Flat		Trefoil	Flat	Conductor	Screen
185	385	390	435	470	0.205	0.40	0.56	17.1	11.0
300	640	630	730	780	0.243	0.37	0.53	43.2	11.0

Permitted current rating of cables is calculated according to IEC 287, considering the following data:

Ground Laying Depth	0.7m
Specific Resistance of Ground	1 st km/W
Ground Temperature	15°C
Ambient Temperature in Free Air	25°C
Maximum Conductor Temperature	90°C
Conductor Temperature of Short Circuit Current	250°C
Screen Temperature of Short Circuit Current	350°C