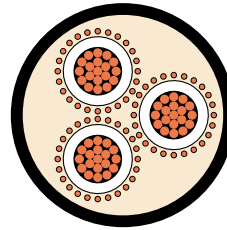


MEDIUM VOLTAGE CABLES
Copper 1.9/3.3 kV – Three core light duty screened unarmoured

Application

Electricity distribution network cable typically used as primary supply to Commercial, Industrial and urban residential networks. Suitable for low fault level or fast fault clearing cable systems.

Approvals

Approved by all major power Utilities and industrial customers in Australia.

Behaviour in flame and fire:

PVC or LSOH outer sheath exceeds the requirements of IEC 60332-1.

Temperature range

Minimum installation temperature: 0 °C
 Maximum operating temperature: +90 °C
 Minimum operating temperature: -25 °C

Minimum bending radius

Installed cables: 12D (PVC only)
 15D (HDPE)
 During installation: 18D (PVC only)
 25D (HDPE)

Resistance to

Chemical exposure: Accidental
 Mechanical impact: Light (PVC only)
 Heavy (HDPE)
 Water exposure: XLPE – Spray
 EPR – Immersion/Temporary coverage
 Solar radiation and weather exposure: Suitable for direct exposure.

Cable design

Conductor:
 Plain circular compacted copper
 Conductor screen:
 Extruded semi-conductive compound, bonded to the insulation and applied in the same operations as the insulation.
 Insulation:
 Cross Linked Polyethylene (XLPE) – standard
 Ethylene Propylene Rubber (EPR) – alternative
 Insulation screen:
 Extruded, semi-conductive compound
 Metallic screen:
 Plain annealed copper wire: nominal 3kA for 1 second.
 See table next page.
 Sheath:
 Black 5V-90 polyvinyl chloride (PVC) – standard
 Orange 5V-90 PVC inner plus black high density polyethylene (HDPE) outer – alternative
 Low smoke zero halogen (LSOH) – alternative

Installation conditions

In free air
 In duct
 In trench
 In ground with protection

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MEDIUM VOLTAGE CABLES

Physical & Electrical Characteristics

Copper 1.9/3.3 kV – Three core light duty screened unarmoured											
Product code: 3CCUX3LD											
Nominal conductor area mm ²	25	35	50	70	95	120	150	185	240	300	
Nominal conductor diameter mm	6.1	7.0	8.2	9.8	11.5	12.9	14.3	16.1	18.2	20.6	
Nominal insulation thickness mm	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Approx cable diameter mm	36.0	38.2	40.8	44.6	48.6	51.9	55.1	59.1	64.2	69.5	
Approx mass kg/100m	160	195	235	305	390	475	560	675	855	1050	
Max pulling tension on conductors kN	5.3	7.4	11	15	20	25	25	25	25	25	
Max pulling tension on stocking grip kN	4.5	5.1	5.8	7.0	8.3	9.4	11	12	14	17	
Min bending radius* during installation mm	650	690	730	800	880	930	990	1060	1160	1250	
Min bending radius* set in position mm	430	460	490	540	580	620	660	710	770	830	
Max conductor resistance, dc @ 20°C Ohm/km	0.727	0.524	0.387	0.268	0.193	0.153	0.124	0.0991	0.0754	0.0601	
Conductor resistance, ac @ 90°C & 50 Hz Ohm/km	0.927	0.668	0.494	0.342	0.247	0.196	0.160	0.128	0.0987	0.0800	
Inductance mH/km	0.380	0.364	0.348	0.321	0.307	0.295	0.287	0.278	0.270	0.262	
Inductive Reactance, @ 50Hz Ohm/km	0.119	0.114	0.109	0.101	0.0964	0.0926	0.0900	0.0874	0.0847	0.0824	
Zero seq. impedance @ 20°C & 50 Hz Ohm/km	3.46+ j0.0720	3.26+ j0.0671	3.12+ j0.0624	3.00+ j0.0542	2.93+ j0.0499	2.68+ j0.0463	2.47+ j0.0440	2.29+ j0.0415	2.13+ j0.0390	1.88+ j0.0368	
Capacitance, phase to earth µF/km	0.319	0.352	0.391	0.449	0.509	0.558	0.607	0.668	0.745	0.827	
Min insulation resistance @ 20°C MOhm.km	8,200	7,300	6,600	5,700	5,000	4,600	4,200	3,800	3,400	3,000	
Electric stress at conductor screen kV/mm	1.19	1.17	1.14	1.11	1.09	1.08	1.07	1.06	1.04	1.03	
Charging current @ rated voltage & 50 Hz A/phase/km	0.190	0.210	0.234	0.268	0.304	0.333	0.362	0.399	0.445	0.494	
Short circuit rating	Phase conductor kA, 1 sec	3.6	5.0	7.2	10.0	13.6	17.2	21.5	26.5	34.3	42.9
	Metallic screen kA, 1 sec	3.0	3.0	3.0	3.0	3.0	3.3	3.5	3.8	4.0	4.6
Continuous current rating	In ground, direct buried A	140	165	195	235	285	330	365	410	475	530
	In ground, in singleway ducts A	120	140	165	205	240	275	310	350	405	460
	In free air, unenclosed & spaced from wall A	135	160	190	235	280	335	375	430	495	575

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