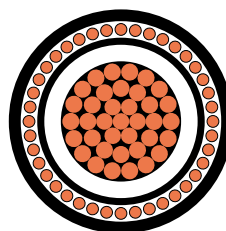


MEDIUM VOLTAGE CABLES

Copper 1.9/3.3 kV – Single core heavy duty screened unarmoured



Application

Electricity distribution network cable typically used as primary supply to Commercial, Industrial and urban residential networks. Suitable for high fault level systems rated up to 10kA/1sec. Higher fault current rated constructions are available on request.

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 10kA for 1 second.
 See table next page.
 Sheath options:
 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

All sizes and values without tolerances are reference values. Specifications are for product as supplied by Prysmian Group; any modification or alteration afterwards of product may give different result. The information contained within this document must not be copied, reprinted or reproduced in any form, either wholly or in part, without the written consent of Prysmian Group. The information is believed to be correct at the time of issue. Prysmian Group reserves the right to amend this specification without prior notice. This specification is not contractually valid unless specifically authorised by Prysmian Group.



MEDIUM VOLTAGE CABLES

Physical & electrical characteristics

Copper 1.9/3.3 kV – Single core heavy duty screened unarmoured														
Product code: 1CCUX3HD														
Nominal conductor area mm ²	25	35	50	70	95	120	150	185	240	300	400	500	630	
Nominal conductor diameter mm	6.1	7.0	8.2	9.8	11.5	12.9	14.3	16.1	18.2	20.6	23.5	26.6	30.3	
Nominal insulation thickness mm	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.4	
Approx cable diameter mm	18.6	20.9	22.0	24.3	26.0	26.7	28.1	30.1	32.3	34.8	38.5	42.2	46.5	
Approx mass kg/100m	70	90	115	155	185	205	235	270	325	385	475	580	720	
Max pulling tension on conductor kN	1.8	2.5	3.5	4.9	6.7	8.4	11	13	17	21	25	25	25	
Max pulling tension on stocking grip kN	1.2	1.5	1.7	2.1	2.4	2.5	2.8	3.2	3.6	4.2	5.2	6.2	7.6	
Min bending radius* during installation mm	340	380	400	440	470	480	510	540	580	630	690	760	840	
Min bending radius* set in position mm	220	250	260	290	310	320	340	360	390	420	460	510	560	
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	0.0470	0.0366	0.0283	
Conductor resistance, ac @ 90°C & 50 Hz Ohm/km	0.927	0.668	0.494	0.342	0.247	0.196	0.159	0.128	0.0982	0.0793	0.0634	0.0511	0.0417	
Inductance, trefoil touching mH/km	0.448	0.442	0.421	0.395	0.375	0.354	0.343	0.333	0.321	0.311	0.303	0.297	0.291	
Inductive reactance, trefoil touching @ 50Hz Ohm/km	0.141	0.139	0.132	0.124	0.118	0.111	0.108	0.105	0.101	0.0978	0.0953	0.0932	0.0914	
Zero seq. impedance @ 20°C & 50 Hz Ohm/km	1.51+ j0.0717	1.09+ j0.0696	0.783+ j0.0647	0.560+ j0.0575	0.485+ j0.0530	0.435+ j0.0481	0.406+ j0.0456	0.381+ j0.0430	0.358+ j0.0404	0.343+ j0.0381	0.330+ j0.0365	0.320+ j0.0351	0.312+ j0.0342	
Capacitance, phase to earth µF/km	0.318	0.350	0.390	0.448	0.507	0.556	0.605	0.666	0.742	0.824	0.943	0.962	0.994	
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	2,700	2,600	2,500	
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	1.02	0.929	0.850	
Charging current @ rated voltage & 50 Hz A/phase/km	0.190	0.209	0.233	0.267	0.303	0.332	0.361	0.398	0.443	0.492	0.563	0.574	0.594	
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	57.2	71.5	90.1
	Metallic screen kA, 1 sec	3.5	5.0	7.1	10	10	10	10	10	10	10	10	10	10
Continuous current rating	In ground, direct buried A	145	175	205	250	295	335	370	415	475	530	595	660	735
	In ground, in singleway ducts A	145	170	195	230	270	300	325	360	405	440	490	540	595
	In free air, unenclosed & spaced from wall A	145	175	210	265	320	365	415	470	555	630	725	830	945

The cables described are designed to be used for the supply of electrical energy in fixed applications up to the rated voltages at a nominal power frequency between 49Hz and 61Hz. All values are for XLPE cables only. *Increased radius required for HDPE and nylon incorporating designs.