

X-VOLT[®] AL RHZ1-OL

Medium Voltage aluminium cable, XLPE insulation, halogen free, in triplex formation.

ACCORDING TO: BS 7870-4.10 / IEC 60502-2



APPLICATION

X-VOLT[®] RHZ1-OL is a Medium Voltage aluminium cables for transmission and distribution of electricity. Halogen free.

- Distribution networks.

CONSTRUCTION

Conductor

Aluminium class 2 according to EN 60228 and IEC 60228.

Conductor screen

Screen over the conductor, made of thermosetting semiconductor material.

Insulation

Cross-linked polyethylene type DIX3 according to BS 7870-4.10 and type XLPE according to IEC 60502-2, natural colour.

Cross linked in catenary line with nitrogen atmosphere through a triple layer extrusion process.

Insulation screen

Screen over the insulation, made of thermosetting non-strippable semiconductor material.

Metallic screen

Screen of copper wires and copper tape, applied over the outer semiconducting layer, with a minimum cross-section of 16 mm².

Water blocking

Hygroscopic tape applied over the metallic screen.

Outer sheath

Polyolefin type DMP5 according to BS 74870-4.10 and type ST7 according to IEC 60502-2.

Red colour.

Assembly of single-core cables

Three stranded single-core cables in triplex formation.

CHARACTERISTICS



Electrical performance

Medium voltage: 6,35/11 (12) kV.
19,33 (36) kV.



Thermal performance

Maximum conductor temperature: 90°C.
Maximum short-circuit temperature: 250°C (max 5 s).
Minimum service temperature: -15°C.



Fire performance

Halogen free according to EN 60754-1 / IEC 60754-1.
Low corrosive gases emission according to EN 60754-2 / IEC 60754-2.



Mechanical performance

Minimum bending radius: 15x cable diameter.
Abrasion resistant.
Tear resistant.



Installation conditions

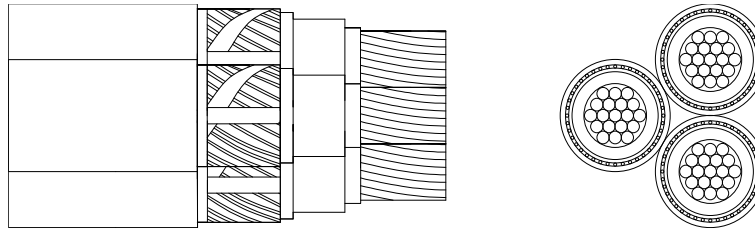
Open Air.
Buried.
In conduit.

STANDARDS / COMPLIANCE



According to
BS 7870-4.10 / IEC 60502-2

DIMENSIONS & ADMISSIBLE INTENSITIES



X-VOLT[®] RHZ1-OL 6,35/11 (12) kV

Cross-section (mm ²)	Screen (mm ²)	Conductor Diameter (mm)	Insulation Diameter (mm)	Sheath Diameter (mm)	External Diameter (mm)	Weight (Kg/Km)	R _{20°C} (Ω/km)	X (Ω/km)	C (μF/km)	Open air (A) ¹	Buried (A) ²
3 x 1 x 70	H35	10,1	17,7	24,3	52,2	2.545	0,443	0,114	0,322	230	186
3 x 1 x 95	H16	11,1	18,7	25,0	53,8	2.250	0,320	0,110	0,344	280	221
3 x 1 x 95	H35	11,1	18,7	25,3	54,4	2.815	0,320	0,111	0,344	280	221
3 x 1 x 120	H35	12,9	20,5	27,0	58,1	3.130	0,253	0,106	0,384	324	252
3 x 1 x 150	H35	14,0	21,6	28,4	61,0	3.430	0,206	0,104	0,410	368	281
3 x 1 x 185	H16	15,5	23,1	29,6	63,7	3.270	0,164	0,100	0,444	424	317
3 x 1 x 185	H35	15,5	23,1	29,9	64,3	3.830	0,164	0,100	0,444	424	317
3 x 1 x 240	H16	17,9	25,5	32,2	69,3	3.915	0,125	0,0958	0,498	502	367
3 x 1 x 240	H35	17,9	25,5	32,5	69,8	4.475	0,125	0,0958	0,498	502	367
3 x 1 x 300	H16	20,2	27,8	34,7	74,7	4.575	0,100	0,0936	0,550	577	414
3 x 1 x 300	H35	20,2	27,8	35,0	75,2	5.135	0,100	0,0940	0,550	577	414
3 x 1 x 400	H35	22,8	30,6	38,0	81,7	6.060	0,0778	0,0913	0,613	673	470

X-VOLT[®] RHZ1-OL 19/33 (36) kV

Cross-section (mm ²)	Screen (mm ²)	Conductor Diameter (mm)	Insulation Diameter (mm)	Sheath Diameter (mm)	External Diameter (mm)	Weight (Kg/Km)	R _{20°C} (Ω/km)	X (Ω/km)	C (μF/km)	Open air (A) ¹	Buried (A) ²
3 x 1 x 95	H16	11,1	27,1	34,0	73,2	3.375	0,320	0,130	0,179	280	221
3 x 1 x 120	H16	12,9	28,9	35,8	76,9	3.755	0,253	0,124	0,197	324	252
3 x 1 x 185	H35	15,5	31,5	38,9	83,6	5.125	0,164	0,117	0,223	424	317

¹ Three single-core cables in open air at 30°C ambient temperature according to IEC 60502-2.

² Three single-core cables direct buried at 0,8 m depth with soil thermal resistivity of 1,5 K-m/W and 20°C of ground temperature.

Reactance (X) is calculated at 50 Hz and for three single-core cables (in triangle or trefoil formation).

Capacitance values (C) are calculated in base to dimensional items of the cables that are in this specification.

In all cases are supposed a three-phase circuit

SHORT-CIRCUIT CURRENT-CARRYING CAPACITIES

Time (s)	0,1	0,2	0,3	0,5	1	1,5	2	2,5	3
A/mm²	299	211	173	134	94	77	67	60	55

CORRECTION FACTORS FOR AIR TEMPERATURE

Air T. (°C)	20	25	30	35	40	45	50	55	60
Factor	1,08	1,04	1	0,96	0,91	0,87	0,82	0,76	0,71

CORRECTION FACTORS FOR GROUND TEMPERATURE

Ground T. (°C)	10	15	20	25	30	35	40	45	50
Factor	1,07	1,04	1	0,96	0,93	0,89	0,85	0,80	0,76

CORRECTION FACTORS FOR SOIL THERMAL RESISTIVITY (calculated for 240 mm² cable)

Direct buried cables						
0,5 K·m/W	0,8 K·m/W	1 K·m/W	1,5 K·m/W	2 K·m/W	2,5 K·m/W	3 K·m/W
1,36	1,29	1,18	1	0,88	0,80	0,73

Other correction factors (for grouping cables, for harmonic currents), that are not in this specification, can be applied. Further information can be found in IEC 60502-2.