X-VOLT®
FR-N20XA8E-AR

Medium Voltage aluminium cable, XLPE insulation, halogen free.

ACCORDING TO: NF C 33-226

E_{ca}

APPLICATION

X-VOLT® FR-N20XA8E-AR Medium Voltage aluminium cables for the electricity transmission and distribution. Halogen free.
· Distribution networks.

CONSTRUCTION

Conductor
Aluminium, class 2, according to NF-EN 60228 and IEC 60228.

Conductor screen
Screen over the conductor, made of thermosetting semiconductor material.

Insulation
Cross-linked polyethylene (XLPE).

Insulation screen
Screen over the insulation, made of thermosetting and strippable semiconductor material.

Longitudinal sealing
Swelling powder.

Metallic screen
Longitudinal aluminium foil with polymer laminate bonded to the outer sheath.

Outer sheath
Polyolefin.
Black colour with two grey stripes.

CHARACTERISTICS

Electrical performance
Medium Voltage: 12/20 (24) kV
18/30 (36) kV *

* Voltage not contemplated in the standard.

Thermal performance
Maximum conductor temperature: 90°C.
Maximum short-circuit temperature: 250°C (max 5 s)
Minimum temperature during installation: -10°C.

Fire performance
Flame non-propagation according to selon NF EN 60332-1-2 Category C2.
Reaction to fire CPR: E_{ca} according to EN 50575.

Mechanical performance
Minimum bending radius, fixed: 15x cable diameter.
Minimum bending radius during installation: 40x cable diameter (single cable) and 20x cable diameter (twist).
Impact resistance: AG4 Extra High Severity (≤ 20J).

Environmental performance
UV Resistant according to NF EN 50483.
Water resistance: AD8 Submersion.
Termite resistant according to Annex M of NF C33-226.

Installation conditions
Open Air.
Buried.
In conduit.

STANDARDS / COMPLIANCE

According to
NF C 33-226

Standards and approvals
CE / RoHS / EDF

CPR (Construction Products Regulation)
E_{ca}

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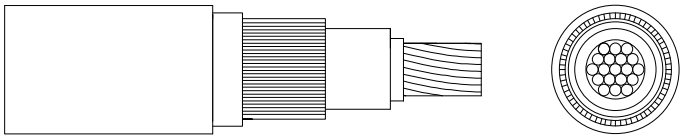
DIMENSIONS & ADMISSIBLE INTENSITIES



X-VOLT® FR-N20XA8E-AR 12/20 (24) kV

Cross-section (mm²)	Conductor Diameter (mm)	Insulation Diameter (mm)	External Diameter (mm)	Weight (Kg/Km)	All Zones (Winter) (A)	Rural and urban area (Summer) (A)	Dense urban area (Summer) (A)	Dense urban area (Heat Wave) (A)	Cables touching (Winter) (A)	Cables touching (Summer) (A)
1 x 50	8,0	20,0	27,2	715	201	166	146	120	193	177
1 x 95	11,2	22,2	29,4	895	295	242	213	173	292	267
1 x 150	13,9	23,7	30,9	1.060	377	307	270	219	377	345
1 x 240	18,0	28,0	35,2	1.445	497	404	354	286	514	469
1 x 300	20,0	30,2	37,4	1.670	550	446	391	316	579	528
1 x 400	22,9	33,3	40,5	2.005	639	517	452	367	688	626
1 x 500	26,3	36,8	44,0	2.355	709	568	497	403	-	-
1 x 630	29,8	40,2	47,6	2.865	846	685	598	483	-	-
1 x 800	34,0	45,7	53,6	3.650	950	**760**	**665**	536	-	-
1 x 1000	39,0	50,9	59,2	4.560	1.075	**860**	**748**	602	-	-
3 x 1 x 50	8,0	20,0	58,5	2.165	201	166	146	120	193	177
3 x 1 x 95	11,2	22,2	63,3	2.705	295	242	213	173	292	267
3 x 1 x 150	13,9	23,7	66,5	3.210	377	307	270	219	377	345
3 x 1 x 240	18,0	28,0	75,7	4.375	497	404	354	286	514	469
3 x 1x 300	20,0	30,2	80,5	5.050	550	446	391	316	579	528
3 x 1 x 400	22,9	33,3	87,2	6.075	639	517	452	367	688	626
3 x 1 x 500	26,3	36,8	94,7	7.135	709	568	497	403	-	-
3 x1 x 630	29,8	40,2	102,4	8.675	846	685	598	483	-	-

Admissible intensities of cables laid in the ground at 0.8 m depth and laid in galleries (cables touching) according to NF C 33-226.

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X-VOLT® FR-N20XA8E-AR 18/30 (36) kV

Cross-section (mm²)	Conductor Diameter (mm)	Insulation Diameter (mm)	External Diameter (mm)	Weight (Kg/Km)	All Zones (Winter) (A)	Rural and urban area (Summer) (A)	Dense urban area (Summer) (A)	Dense urban area (Heat Wave) (A)	Cables touching (Winter) (A)	Cables touching (Summer) (A)
1 x 95	11,2	26,0	33,3	1.080	295	242	213	173	292	267
1 x 150	13,9	27,5	34,7	1.255	377	307	270	219	377	345
1 x 185	15,5	29,1	36,4	1.405	425	340	300	240	430	395
1 x 240	18,0	31,6	38,8	1.650	497	404	354	286	514	469
1 x 300	20,0	33,6	40,7	1.845	550	446	391	316	579	528
1 x 400	22,9	36,7	43,9	2.225	639	517	452	367	688	626
1 x 500	26,3	40,4	47,9	2.625	709	568	497	403	-	-
1 x 630	29,8	43,6	51,2	3.140	846	685	598	483	-	-
3 x 1 x 95	11,2	26,0	71,5	3.270	295	242	213	173	292	267
3 x 1 x 150	13,9	27,5	74,7	3.795	377	307	270	219	377	345
3 x 1 x 185	15,5	29,1	78,1	4.255	425	340	300	240	430	395
3 x 1 x 240	18,0	31,6	83,5	5.000	497	404	354	286	514	469
3 x 1x 300	20,0	33,6	87,4	5.580	550	446	391	316	579	528
3 x 1 x 400	22,9	36,7	94,5	6.745	639	517	452	367	688	626
3 x 1 x 500	26,3	40,4	102,9	7.955	709	568	497	403	-	-
3 x1 x 630	29,8	43,6	110,2	9.510	846	685	598	483	-	-

Admissible intensities of cables laid in the ground at 0.8 m depth and laid in galleries (cables touching) according to NF C 33-226.

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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 IN THE GROUND FOR DIFFERENT DEPTHS

Depth (m)	0.6	0.8	1,0	1,2	1,4
Factor	1,03	1,00	0,98	0,96	0,95

Other correction factors (for grouping cables, for harmonic currents), that are not in this specification, can be applied.
Further information can be found in NF C 33-226.