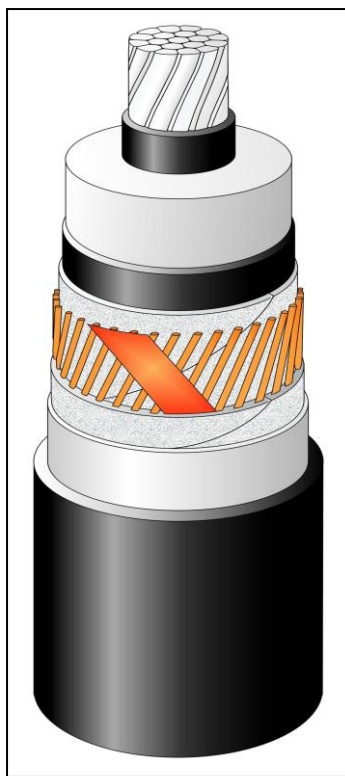


TECHNICAL SPECIFICATION
A2XS(FL)2Y 1x240RM/120 76/132 (145) kV IEC 60840

CONSTRUCTION (x)

- Round, stranded and compacted aluminum conductor. Class 2.
- Extruded semi-conducting conductor screen
- Insulation XLPE – dry cured
- Extruded semi-conducting insulation screen
- Semi-conducting swelling tapes
- Metallic screen:
copper wires screen and copper equalizing tapes
- Semi-conducting swelling tapes
- Longitudinal aluminum foil
- Outer sheath – black HDPE



The picture is informative only
– not in scale

APPLICATION

- Laying in ground (wet or dry locations)
- Laying in air
- Laying in ducts

Highest permissible conductor temperature

- Continuous operation 90°C
- Short circuit 250°C (duration max 5 s)

Laying is possible without any special measures at natural cable temperatures and ambient temperature not lower than -5°C, with Tele-Fonika supervising

MARKING

TF KABLE, product name, date of manufacture, standard, meter marking

DESCRIPTION	UNIT	DETAILS	
CONSTRUCTION DATA	U_o/U/U_m	76/132 (145) kV	
Conductor		Aluminum	
<input type="checkbox"/> Material		34	
<input type="checkbox"/> Number of wires	No		
Nominal cross sectional area	mm ²	240	
Conductor diameter and tolerance	mm	17,9 ± 0.2	
Min./Nom. thickness semi-conducting XLPE on conductor	mm	1.0 / 1.5	
Nominal insulation thickness XLPE	mm	17.0	
Insulation thickness: minimum at a point	mm	15.3	
Diameter over insulation – nominal	mm	54,9 ± 0.8	
Min./Nom. thickness semi-conducting XLPE on insulation	mm	0.6 / 1.0	
Thickness of semi-conducting swelling tape	No x mm	2 x ~ 0.35	
Metallic screen	mm ²	120	
<input type="checkbox"/> Copper wires	No x mm	74 x 1.44	
<input type="checkbox"/> Copper equalizing tapes	No x mm x mm	2 x 10 x 0.18	
Mean diameter over metallic screen	mm	60.7	
Thickness of semi-conducting swelling tape	No x mm	2 x ~ 0.35	
Thickness of aluminum foil	mm	0.15	
Nominal outer sheath thickness / min.	mm	3.2 / 2.62	
Approximate overall diameter completed cable (D _c)	mm	68.8	
Weight of complete cable (approx.)	kg/km	4900	
DELIVERY DATA			
Diameter of wooden / steel drum	m	2.5	3.2
<input type="checkbox"/> type		250P	320P
Maximum length per drum	m	460	1490
Weight of heaviest reel, including cable	kg	3340	9490

^(x) Diameters are calculated values and subject to manufacturing tolerances

ELECTRICAL DATA at 50Hz		
Maximum D.C. conductor resistance at 20°C	Ω/km	0.1250
Maximum A.C. conductor resistance at 90°C	Ω/km	0.1609
Maximum D.C. metallic screen resistance at 20°C	Ω/km	0.154
Maximum D.C. aluminum foil resistance at 20°C	Ω/km	0.881
Operating inductance		
<input type="checkbox"/> trefoil formation	mH/km	0.458
<input type="checkbox"/> flat formation (*)	mH/km	0.643
Induction reactance		
<input type="checkbox"/> trefoil formation	Ω/km	0.144
<input type="checkbox"/> flat formation (*)	Ω/km	0.202
Capacitance	μF/km	0.138 (+8%)
Capacitance reactance	kΩ/km	23.06
Impedance		
<input type="checkbox"/> trefoil formation	Ω/km	0.216
<input type="checkbox"/> flat formation (*)	Ω/km	0.258
Zero sequence reactance	Ω/km	0.091
Max. electric stress at conductor screen / (at insulation)	kV/mm	7.53 / 2.87
Dielectric losses (tg δ = 0.001) – per phase	W/m	0.251
Partial discharge test – at 1.5U ₀	pC	≤ 5
Charging current – per phase	A/km	3.30
Charging power	kVA/km	251
Earth fault current – per phase	A/km	9.89
MECHANICAL DATA		
Recommended min. bending radius for laying	m	1.72
Recommended permissible bending radius at final installation	m	1.37
Maximum permissible pulling force:	kN	7.2
SHORT CIRCUIT CURRENTS		
Maximum permissible thermal short-circuit (IEC 60949) <i>Current for 1.0 sec.</i>		
Phase conductor 90 → 250 °C	kA	23.0
Metallic screen 80 → 350 °C	kA	24.1
AMPACITY (**) – Bonding of the metallic screens		Single-point / Both-ends
in earth		
<input type="checkbox"/> flat formation (*)	A	442 / 402
<input type="checkbox"/> trefoil formation	A	416 / 403
in air		
<input type="checkbox"/> flat formation (*)	A	543 / 503
<input type="checkbox"/> trefoil formation	A	489 / 478
TESTS		
AC – Test voltage – (2.5U ₀ ; 30min)	kV	190
Partial discharge test	kV	114

Marking: TF-KABLE 5 A2XS(FL)2Y 1x240RM/120 76/132 (145) kV IEC 60840 2022

(*) Distance between cable axes laid in flat formation D_e+D_e mm

(**) Current rating guideline (Calculated with Cymcap 8.1 based on IEC Pub. 60287 and the following conditions)

- Ground temperature 20°C
- Laying depth 1.0 m
- Ground thermal resistivity 1.0 K · m/W
- Load factor 1.0
- Air temperature 35°C

Date: 2022-10-31; WG22038

Prepared by: Wiktor Golla

(^s) Diameters are calculated values and subject to manufacturing tolerances