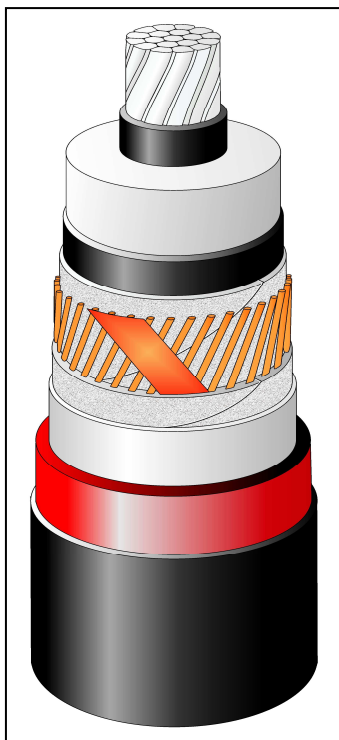


## TECHNICAL SPECIFICATION

### A2XS(FL)2Y-SC 1x300RM/105 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
- Sheath – Red HDPE
- Extruded semi-conducting coated



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
- Overload 105 °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	
<b>CONSTRUCTION DATA</b>			
Conductor		Aluminum	
<input type="checkbox"/> Material		Aluminum	
<input type="checkbox"/> Number of wires	No	34	
Nominal cross sectional area	mm <sup>2</sup>	300	
Conductor diameter and tolerance	mm	20.0 <sup>-0.2+0.3</sup>	
Min./Nom. thickness semi-conducting XLPE on conductor	mm	0.8 / 1.4	
Insulation thickness XLPE – nominal value	mm	16.0	
Insulation thickness: minimum at a point	mm	14.4	
Diameter over insulation – nominal	mm	54.8 <sup>±0.8</sup>	
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 <sup>2</sup>	105	
<input type="checkbox"/> Copper wires	No x mm	66 x 1.44	
<input type="checkbox"/> Copper equalizing tape	No x mm x mm	2 x 10 x 0.18	
Mean diameter over metallic screen	mm	60.6	
Thickness of semi-conducting swelling tape	No x mm	2 x ~ 0.35	
Thickness of aluminum foil	mm	0.2	
Nominal outer sheath thickness / min.	mm	3.2 / 2.62	
Approximate overall diameter completed cable (D <sub>e</sub> )	mm	70.1	
Weight of complete cable (approx.)	kg/km	5030	
<b>DELIVERY DATA</b>			
Diameter of wooden drum	m	2.5	3.0
<input type="checkbox"/> type		250P	30AP
Maximum length per drum	m	360	1050
Weight of heaviest reel, including cable	kg	2900	7410

<sup>(x)</sup> Diameters are calculated values and subject to manufacturing tolerances

<b>ELECTRICAL DATA at 50Hz</b>		
Maximum D.C. conductor resistance at 20 °C	Ω/km	0.1
Maximum A.C. conductor resistance at 90 °C	Ω/km	0.129
Maximum D.C. metallic screen resistance at 20 °C	Ω/km	0.172
Maximum D.C. aluminum foil resistance at 20 °C	Ω/km	0.66
Operating inductance		
<input type="checkbox"/> trefoil formation	mH/km	0.439
<input type="checkbox"/> flat formation (*)	mH/km	0.624
Induction reactance		
<input type="checkbox"/> trefoil formation	Ω/km	0.138
<input type="checkbox"/> flat formation (*)	Ω/km	0.196
Capacitance	μF/km	0.152 (+ 8 %)
Capacitance reactance	kΩ/km	20.94
Impedance		
<input type="checkbox"/> trefoil formation	Ω/km	0.189
<input type="checkbox"/> flat formation (*)	Ω/km	0.235
Zero sequence reactance	Ω/km	0.085
Max. electric stress at conductor screen / (at insulation)	kV/mm	7.6 / 3.16
Dielectric losses (tg δ = 0.001) – per phase	W/m	0.276
Partial discharge test – at 1.5U <sub>0</sub>	pC	≤ 5
Charging current – per phase	A/km	3.63
Charging power	kVA/km	276
Earth fault current – per phase	A/km	10.89
<b>MECHANICAL DATA</b>		
Recommended min. bending radius for laying	m	1.75
Recommended permissible bending radius at final installation	m	1.4
Maximum permissible pulling force:	kN	9
<b>SHORT CIRCUIT CURRENTS</b>		
Maximum permissible thermal short-circuit Current for 1.0 sec. ( IEC 60949 )		
Phase conductor 90 → 250 °C	kA	28.8
Metallic screen 80 → 350 °C	kA	21.5
<b>AMPACITY (**)</b> – Bonding of the metallic screens		<b>Single point</b>
in earth		
<input type="checkbox"/> flat formation (*)	A	500
<input type="checkbox"/> trefoil formation	A	475
in air		
<input type="checkbox"/> flat formation	A	630
<input type="checkbox"/> trefoil formation	A	560
<b>TESTS</b>		
AC Test voltage – ( 2.5U <sub>0</sub> ; 30min)	kV	190
Partial discharge test	kV	114

**Marking: TF-KABLE 5 A2XS(FL)2Y-SC 1x300RM/105 76/132kV IEC 60840 YEAR**

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

(\*\*) Current rating guideline (Calculated with CymCap 5.3 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: 2022-01-07; MK22001

Prepared by: Marcin Kocik

<sup>(s)</sup> Diameters are calculated values and subject to manufacturing tolerances