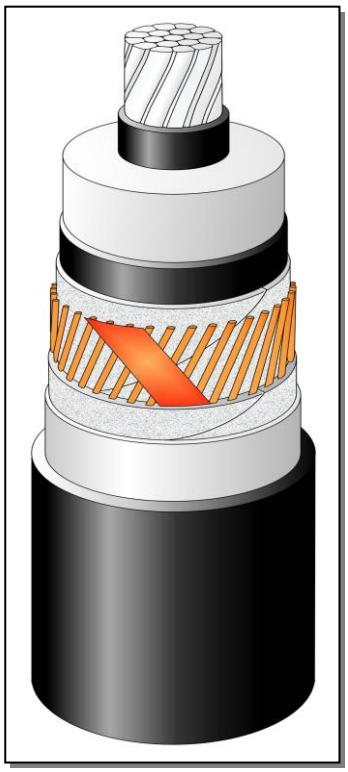
TECHNICAL SPECIFICATION
XRUHAKXS-WTC 1x300RMC/95 64/110(123)kV acc. to IEC 60840; ZN-TF-530

CONSTRUCTION (x)

- Round, stranded watertight aluminum conductor. Class 2
- Extruded semi-conducting conductor screen
- Insulation XLPE – dry cured
- Extruded semi-conducting insulation screen
- Semi-conducting swelling tape
- Metallic screen:
  copper wire screen and
  copper equalizing tapes
- Semi-conducting swelling tape
- Longitudinal aluminum foil
- Sheath – black HDPE ST7 type



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 5s)

Laying is possible without any special measures at natural cable temperatures and ambient temperature not lower than -20ºC, with Tele-Fonika supervising

MARKING

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

DESCRIPTION	UNIT	DETAILS	
CONSTRUCTION DATA	**$U_o/U/U_m$**	**64/110(123)kV**	
Conductor ❑ material ❑ number of wires	 No	 Aluminum 34	
Nominal cross sectional area	mm^2	300	
Conductor diameter and tolerance	mm	20.0 $^{-0,2+0,3}$	
Min./Nom. thickness semi-conducting XLPE on conductor	mm	0.6 / 1.0	
Nominal insulation thickness XLPE	mm	15.5	
Insulation thickness: minimum at a point	mm	13.95	
Diameter over insulation – nominal	mm	53.0 $^{-0,6+0,4}$	
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 ❑ Copper wires ❑ Copper equalizing tapes	mm^2 No x mm No x mm x mm	95 60 x 1.44 2 x 10 x 0.18	
Mean diameter over metallic screen	mm	58.5	
Thickness of semi-conducting swelling tape	No x mm	2 x ~ 0.35	
Thickness of aluminum foil	mm	0.2	
Diameter over aluminum foil	mm	60.3	
Nominal outer sheath thickness / min	mm	3.1 / 2.53	
Approximate overall diameter completed cable (D_e)	mm	66.6	
Weight of complete cable (approx.)	kg/km	4600	
DELIVERY DATA			
Diameter of wooden drum ❑ type	m	2.8 28OP	3.2 32OS
Length per drum	m	600	1000
Weight of heaviest reel, including cable	kg	4100	6500

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

ELECTRICAL DATA at 50Hz			
Maximum D.C. conductor resistance at 20°C Maximum A.C. conductor resistance at 90°C	Ω/km Ω/km	0.1000 0.1290	
Maximum D.C. metallic screen resistance at 20°C	Ω/km	0.188	0.133
Maximum D.C. aluminum foil resistance at 20°C	Ω/km	0.680	
Operating inductance ❑ trefoil formation ❑ flat formation (*)	 mH/km mH/km	 0.432 0.617	
Induction reactance ❑ trefoil formation ❑ flat formation (*)	 Ω/km Ω/km	 0.136 0.194	
Capacitance	μF/km	0.135 (+ 8 %)	
Capacitance reactance	kΩ/km	23.39	
Impedance ❑ trefoil formation ❑ flat formation (*)	 Ω/km Ω/km	 0.187 0.233	
Zero sequence reactance	Ω/km	0.084	
Max. electric stress at conductor screen / (at insulation)	kV/mm	6.55 / 2.45	
Dielectric losses (tgδ = 0.001) – per phase	W/m	0.175	
Partial discharge test – at 1.5Uo	pC	≤ 5	
Charging current – per phase	A/km	3.27	
Charging power	kVA/km	175	
Earth fault current – per phase	A/km	8.21	
MECHANICAL DATA			
Recommended min. bending radius for laying	m	1.66	
Recommended permissible bending radius at final installation	m	1.33	
Maximum permissible pulling force:	kN	9	
SHORT CIRCUIT CURRENTS			
Maximum permissible thermal short-circuit (IEC 60949) *Current for 1,0s* Phase conductor 90 → 250°C Metallic screen 80 → 350°C	 kA kA	 28.8 19.5	
AMPACITY (**) – Bonding of the metallic screens		**single-point / both-ends**	
In earth ❑ flat formation (*) ❑ trefoil formation In air (shaded) ❑ flat formation ❑ trefoil formation	 A A A A	 502 / 449 475 / 459 628 / 571 560 / 547	
TESTS			
AC – test voltage – (2.5Uo, 30min) Impulse voltage Partial discharge test	kV kV kV	160 550 96	

Marking: TF-KABLE 5 XRUHAKXS-WTC 1x300RMC/95 64/110(123)kV IEC 60840 2020

(*) Distance between cable axes laid in flat formation De+De mm (diameter of cable)
(**) Current rating guideline (Calculated with CymCap 7.3 based on IEC Pub. 60287 and the following conditions)

Standard condition

- ❑ Ground temperature +20°C
- ❑ Ground thermal resistivity 1.0 K · m/W
- ❑ Load factor 1.0
- ❑ Air temperature +35.0°C

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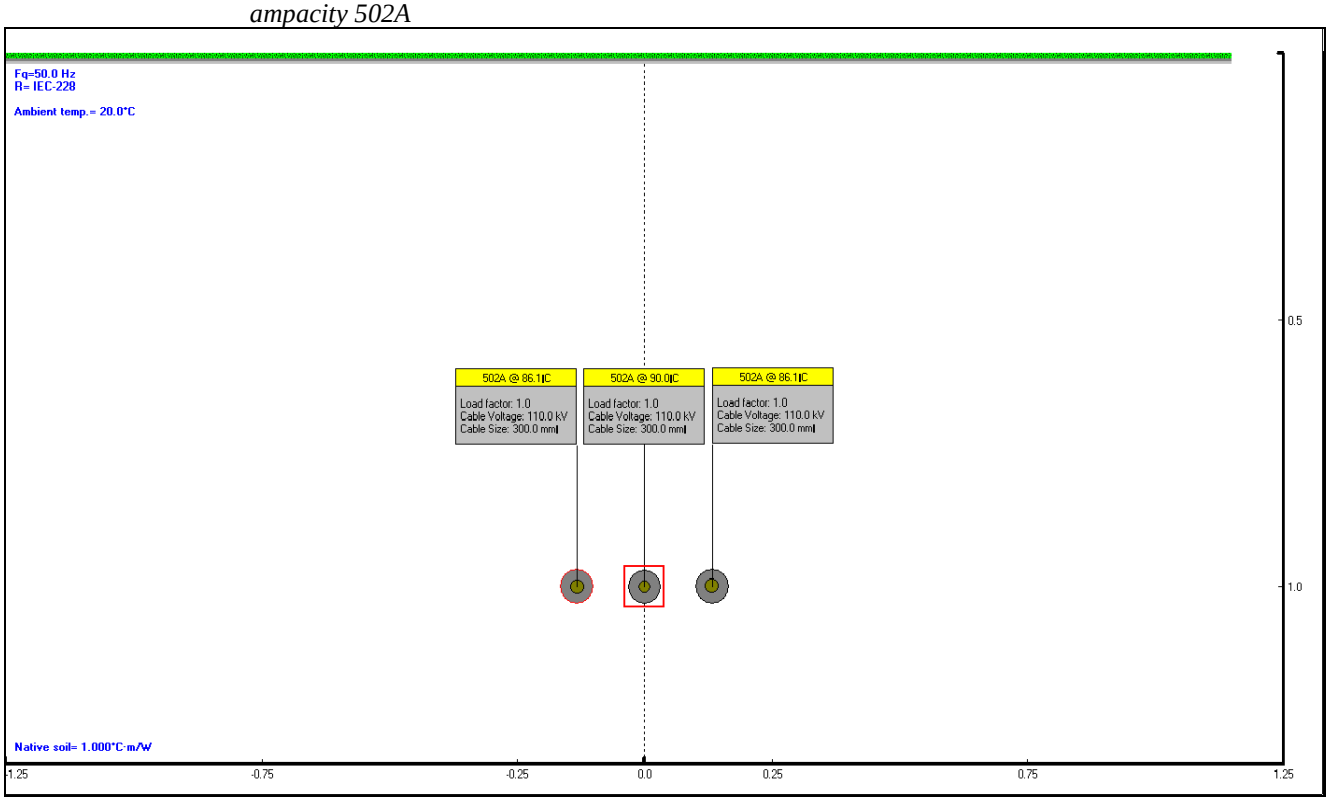
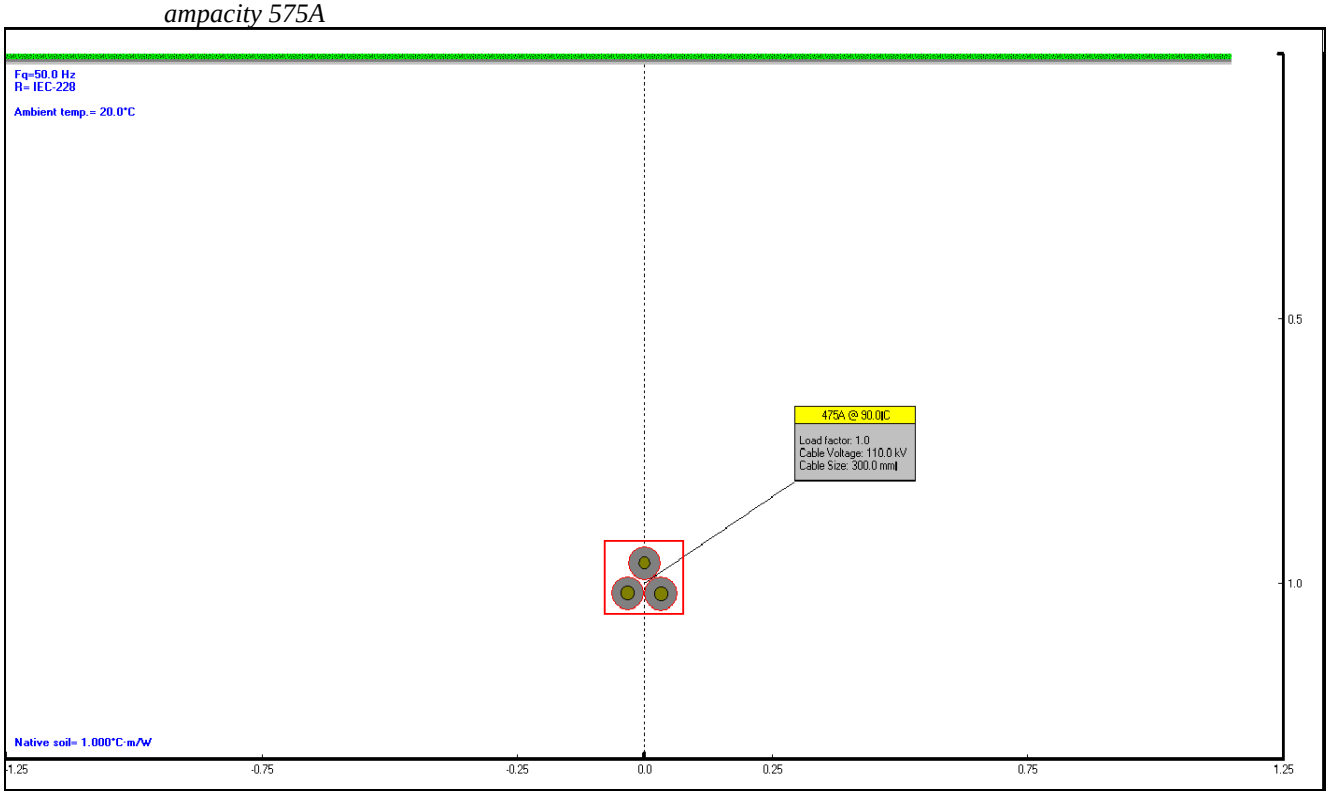
Standard working conditions

Cables in ground – single-point or cross-bonded

depth 1,0m
ampacity 502A



ampacity 575A



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