

ELEK Cable HV Software complies with IEC 60287.

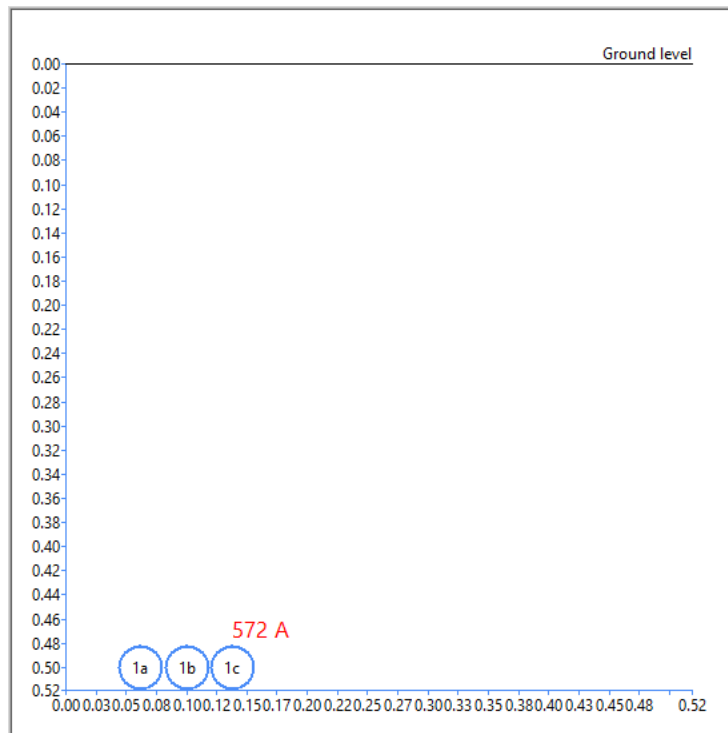


Figure1 Buried installation arrangement (m)

 CURRENT RATING OF CIRCUIT 1 (A) = 572.23
 No. of iterations = 2

Cable model no.: 1
 Cable model title: 300 mm² Cu_11 kV Single Core XLPE Insulated, Screened & PVC Sheathed
 Bonding: Solid with regular transposition
 Conductor operating temperature (deg.C.): 90

Native soil thermal resistivity (C.m/W): 1.2
 Ambient soil temperature (deg.C.): 25

Cable coordinates:
 X (m): 0.0621, Y (m): 0.5
 X (m): 0.1, Y (m): 0.5
 X (m): 0.1379, Y (m): 0.5

 TOTAL LOSSES PER CABLE (W/m): 28.12

Conductor losses

 AC resistance (Ohms/m): 7.89119E-5
 DC resistance (Ohms/m): 7.66335E-5
 Skin effect factor, ys: 0.0138498
 Proximity effect factor, yp: 0.0158816
 Skin effect coefficient, ks: 1
 Proximity effect coefficient, kp: 1

Conductor loss (W/m): 25.839595

Dielectric losses

Insulation relative permeability, epsilon: 2.5
Insulation loss factor, tan-delta: 0.004
Insulation capacitance (F/m): 5.17732E-10
Dielectric loss, Wd (W/m): 0

Concentric neutral/Sheild losses

Concentric neutral circulating current loss factor, Lamda1n: 0.0882515
Concentric neutral resistance (Ohms/m): 0.000379255
Concentric neutral reactance (Ohms/m): 5.18707E-5
Concentric neutral loss (W/m): 2.28038

CABLE THERMAL RESISTANCES

T1, between conductor and sheath (K.m/W): 0.215906
T2, between sheath and armour (K.m/W): 0
T3, outer covering (K.m/W): 0.105362
T3 scaling factor: 1
T4, external surroundings (K.m/W): 2.00777

CABLE TEMPERATURES

Conductor temperature (deg.C.): 90
Sheath/concentric neutral temperature (deg.C.): 84.42
Armour temperature (deg.C.): 84.42
Jacket/serving temperature (deg.C.): 81.46
Exterior/Duct temperature (deg.C.): 81.46

CABLE CONSTRUCTION

General

Title: 300 mm² Cu_11 kV Single Core XLPE Insulated, Screened & PVC Sheathed
Description:
Path:
Frequency: 50
Phases: Three phase
Cores: Single core
Voltage, phase-to-phase (V): 11000

Conductor

Cross-sectional area (mm²): 300 mm²
Class: Class 2 stranded conductors for single or multicore cables
Material: Copper, plain wires
Type: Copper_Round, stranded_Dried & impregnated
Resistivity (Ohm.m at 20 deg.C.): 6.01E-5
Electrical temp. coeff. of metal (per K at 20 deg.C.): 0.00393
Nominal conductor diameter (m): 0.0207

Conductor shield

Nominal thickness (m): 0.0007
Nominal diameter (m): 0.0221

Insulation

Type of insulation: XLPE_Unfilled_up to and including 18/30 (36) kV
Insulation relative permeability, epsilon: 2.5
Insulation loss factor, tan-delta: 0.004
Maximum operating temperature (deg.C.): 90
Nominal thickness (m): 0.0034
Nominal diameter (m): 0.0289

Insulation screen

Material: Semi-conductor screen
Nominal thickness (m): 0.0008
Nominal diameter (m): 0.0305

Concentric neutral/Screen

Material: Copper
Construction: Round wires
Resistivity (Ohm.m at 20 deg.C.): 1.7241E-8
Electrical temp. coeff. of metal (per K at 20 deg.C.): 0.00393
Nominal thickness (m): 0.00135
Nominal diameter (m) 0.0332
Length of lay (m): 1
No. of wires: 48

Jacket/Serving

Material: PVC up to and including 35 kV
Thermal resistivity (C.m/W): 5
Nominal thickness (m): 0.00235
Nominal diameter (m): 0.0379