

Electrical characteristics of XLPE-insulated Medium Voltage Power Cables, 6 – 30 kV

Conductor resistance 20°C

cross-section mm ²	maximum value	
	Cu-conductor Ohm/km	Alu-conductor Ohm/km
25	0,727	1,20
35	0,524	0,868
50	0,387	0,641
70	0,268	0,443
95	0,193	0,320
120	0,153	0,253
150	0,124	0,206
185	0,0991	0,164
240	0,0754	0,125
300	0,0601	0,100
400	0,0470	0,0778
500	0,0366	0,0605

Conversion factors for the conductor temperatures

Temperature at °C	60	65	70	80	90
Cu-conductor	1,157	1,177	1,196	1,236	1,275
Alu-conductor	1,161	1,181	1,202	1,242	1,282

Conversion formula:

$$R_{\delta} = R_{20} \cdot \frac{234,5 + \delta}{254,5} \quad \text{for Cu-conductor}$$

$$R_{\delta} = R_{20} \cdot \frac{228 + \delta}{248} \quad \text{for Alu-conductor}$$

Conductor temperature at °C = δ
 Conductor resistance at δ °C in Ohm/km = R_{δ}
 Conductor resistance at 20 °C in Ohm/km = R_{20}