



# 【overhead cables】



## DESCRIPTION

Overhead lines are power transmission lines erected above the ground, with conductors fixed to towers using insulators. Their core function is power transmission and distribution. They mainly consist of conductors, lightning protection wires, towers, insulators, and hardware, commonly using steel-cored aluminum stranded wire, which offers advantages such as good conductivity, high strength, low cost, and ease of maintenance. However, they are susceptible to weather conditions (wind, lightning, ice), occupy corridor space, and pose a risk of electromagnetic interference. They are widely used in high-voltage and ultra-high-voltage power transmission and medium- and low-voltage power distribution scenarios.

## PARAMETER

Conductor Type	ACSR (Aluminum Conductor Steel Reinforced)
Insulation Type	Suspended ceramic/glass composite insulators
Rated Voltage	10 – 500 kV
Frequency	50 Hz
Conductor Cross-section	16 – 800 mm <sup>2</sup> (standard)
Unit Resistance (20°C)	0.08 – 0.87 /km
Unit Reactance	0.4 – 0.5 /km
Operating Temp (Continuous)	70°C (normal), 120°C (short-time overload)
Span Length	50 – 500 m (typical)
Safety Factor	2.5 – 5.0 (mechanical strength)