

**Composite Insulator Termination  
TES 170/50  
System voltage: 170kV**

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Date: 07th/Aug/2017

## PRODUCT DESCRIPTION

### BASIC TERMINATION COMPONENTS

- Composite type insulator with glass fiber reinforced epoxy resin tube and silicon rubber sheds
- Shed color: light grey
- Top and bottom flanges glued and sealed to the composite insulator
- Corona shield fixed on the top plate with 4pcs screws
- Pre-moulded and 100% factory-tested EPR stress cone
- Solid tinned rod top connector
- Al base plate
- End bell with "O" ring fixed on the base plate avoids the insulation oil going down inside the cable, and earthing lug provided for bonding leads
- Support insulators
- Plumbing /Mechanical connection+ HST for electrical connection, sealing and mechanical protection with armor tape
- Silicon oil with excellent electric strength.

### ADDITIONAL OPTIONS

- Optical fibre outlet
- PD sensor
- Arcing horns
- Aerial lugs

### RECOMMENDATIONS FOR AERIAL LUGS

Aerial lugs are not included in the accessory kit. Depending on the conductor material of the cable, the advised aerial lugs are specified below.

Aluminum lug  
Copper (bronze) lug  
Transition lug (copper to aluminum)

In all cases contact grease must be used between the top connector of the outdoor termination and the aerial lug.

### APPLICABLE STANDARDS:

- IEC 60840
- IEEE 48

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**TECHNICAL SPECIFICATION**

**APPLICATION RANGE**

|  |  |
|--|--|
| Maximum system voltage                       | 170kV                                    |
| Cable conductor cross section range          |  |
| Copper round stranded or Milliken            | 240mm <sup>2</sup> - 2500mm <sup>2</sup> |
| Aluminum round stranded                      | 240mm <sup>2</sup> - 2500mm <sup>2</sup> |
| Aluminum round solid                         | 240mm <sup>2</sup> - 2500mm <sup>2</sup> |
| Maximum cable insulation diameter (Prepared) | 112mm                                    |

**ELECTRICAL DATA**

|   |               |
|---|---------------|
| IEEE = 10 sec AC Wet withstand voltage                  | 315kV         |
| IEEE = 1 min AC Dry withstand                           | 365kV         |
| Impulse withstand voltage (10+/10- impulses) (IEC60840) | 750kV         |
| Maximum partial discharge level (IEC60840)              | <5pC at 131kV |

*Stress cone electrical routine test in factory*

|                           |                 |
|---------------------------|-----------------|
| AC voltage withstand test | 220kV for 30min |
| Partial discharge test    | <5pC at 152kV   |

*Current capacity*

|                           |                        |
|---------------------------|------------------------|
| Nominal operating current | Limited by cable spec. |
| Short circuit current     | Limited by cable spec. |

*Support insulator withstand voltages*

|                                    |      |
|------------------------------------|------|
| AC voltage                         | 10kV |
| DC voltage                         | 20kV |
| impulse voltage (10+/10- impulses) | 40kV |

**MISCELLANEOUS**

|   |        |
|---|--------|
| Minimum guaranteed flashover distance               | 1340mm |
| Minimum guaranteed creepage distance                | 5100mm |
| Maximum allowed inclination in vertical             | 30°    |
| Approximate weight                                  | 280kg  |
| Total height  | 1860mm |
| Maximum allowed (horizontal) force on top connector | 2500 N |

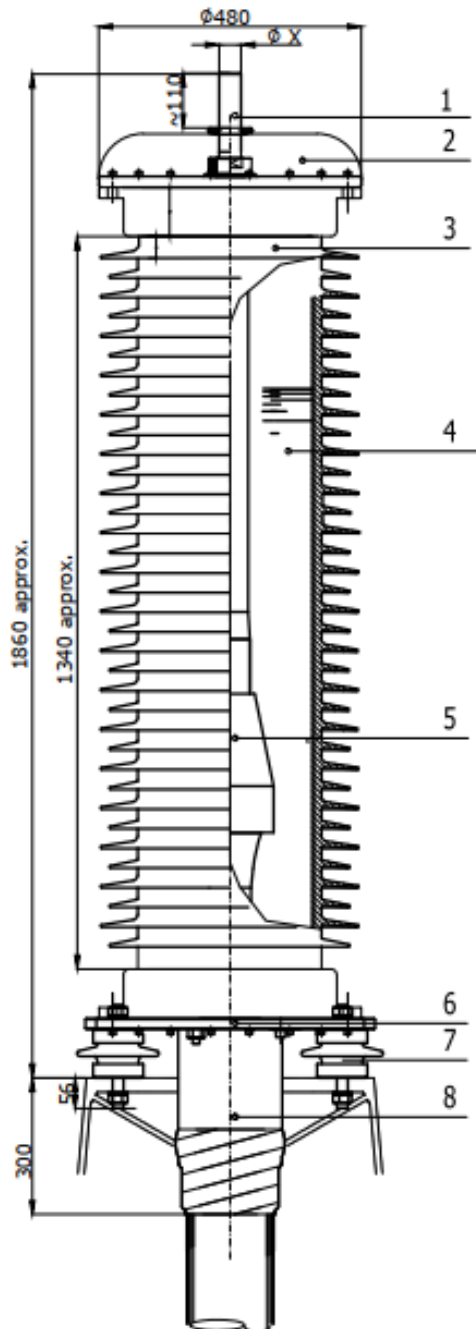
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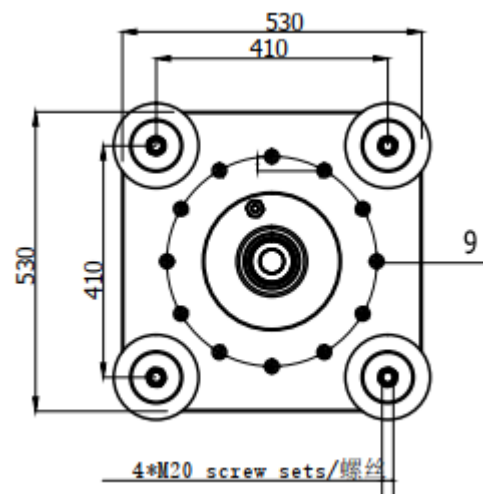
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**TYPICAL DRAWING**



**PARTS LIST / 部件清单**

- 1 - TOP CONNECTOR ( Tinned copper ) /压接杆 ( 镀锡铜)
- 2 - CORONA SHIELD ( Al alloy ) /铝屏蔽罩
- 3 - INSULATOR ( Composite insulator ) /复合套管
- 4 - INSULATING COMPOUND ( Silicone compound ) /绝缘硅油
- 5 - PREMOULDED STRESS CONE ( EPR ) /EPR应力锥
- 6 - BASE PLATE ( Al alloy ) /铝底板
- 7 - STAND-OFF INSULATORS ( Glazed porcelain ) /支撑绝缘子
- 8 - SEGREGATION TUBE / END BELL ( Al alloy ) /铝尾管
- 9 - EARTHING LUG FOR M12 ( Tinned copper ) /接地点



Pressure method:

- \* Stranded copper conductor: Circular Dies
- \* Milliken copper conductor: Punching
- \* Al conductor : Welding

