

# HV Connection System

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## Introduction

For more than 60 years, Tyco Electronics SIMEL has been continuously expanding and manufacturing connectors for Grid Stations in France and throughout the world.

The various ranges of:

- Bronze, Aluminium & Bimetallic connectors up to 220 kV
- Connectors according to NEMA-CC1 Standard up to 330 kV
- Connectors for Aluminium cables or tubes up to 550 kV
- Connectors up to 800 kV
- UNIVERSAL connectors

are shown in the following pages as a small overview.

These pages are only a capability of available connectors.

Therefore we recommend the customer to contact us with his requirements and we should be in position to find the right solution for his application.

It is necessary to know the conditions of the substation project like:

- Operating Voltage
- Conductor type (Material, Diameter)
- Nominal Current
- Short-circuit current
- Applicable Standards
- Connection type (bolted, crimped, welded)
- Working conditions

Tyco Electronics SIMEL has expertise level into the substation fields and can provide technical support to customers engineering teams in order to establish the best selection of products fit for each application.

To find a product for your application, please contact your representative Sales Engineer.

The products are subject to strict controls during the manufacturing, according to our quality control manual, in order to meet the requirements of the ISO 9001: 2000 & ISO 14001: 2004.

All our connectors comply with criteria of standards such as IEC, VDE, NEMA, ANSI, etc...

The tests requested by the main worldwide standards like

- Heating test
- Electrical Resistance test
- Mechanical Cantilever test
- Short-Circuit current test
- RIV/Corona test

have already been performed on our connectors.

SIMEL laboratory is COFRAC accredited as an independent lab following ISO CEI 1725 and can perform usual required type tests such as temperature rise, resistance & mechanical...



# Connectors for Copper or Aluminium conductors & Copper or Aluminium terminals

## 220 kV - Bronze, Aluminium & Bimetal Range

### Bolted Applications:

- Bronze connectors for Copper conductors to Copper conductors or copper terminals
- Aluminium connectors for Aluminium conductors to Aluminium conductors or Aluminium terminals
- Bimetal connectors for Aluminium or Copper conductors to Aluminium or Copper conductors or terminals

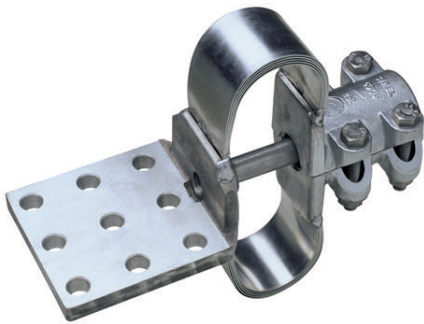
Principle is provided by assembling a bimetallic sheet in between Aluminium and bronze part.

### Standard capacities:

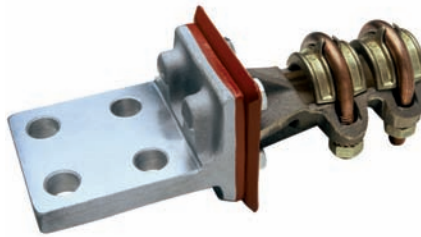
- Al or Cu tube diameter: 20 to 120 mm
- Cu cable cross section: 50 to 600 mm<sup>2</sup>
- Al cable cross section: 75 to 1144 mm<sup>2</sup>
- Al or Cu stud diameter: M12 to 60 mm
- Al or Cu palm: 50, 60, 80, 100, 125, 100x200 mm or whatever required

### Connectors are available such as:

- conductor fittings
- rigid, sliding & expansion busbar connectors & supports
- terminal connectors on stud or palms
- earthing & grounding applications
- possibility of providing 330 kV copper alloy range
- ...



Al. straight expansion terminal pad



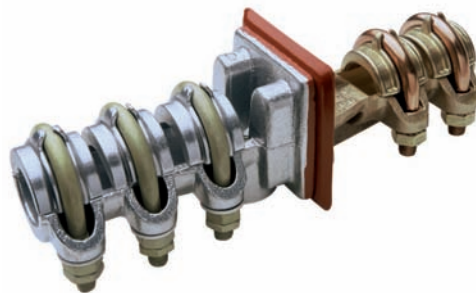
Bi-metallic straight terminal pad



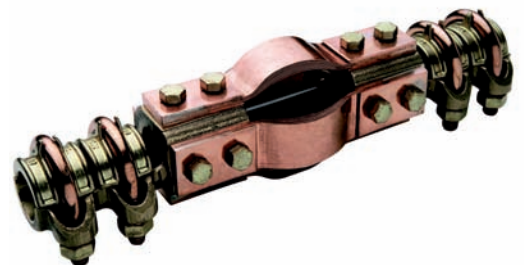
Bronze tee connector



Al. tee connector



Bi-metallic straight connector pad



Bronze straight expansion connector

# Connectors for Aluminium conductors & Aluminium or Copper terminals 330 kV – Sinemex Range

## Applications:

This range meets the requirements of NEMAC-CC1 1984 and 107 standards for a maximum operating voltage of 330 kV.

It allows a bolted connection from:

- Aluminium conductors to Aluminium conductors or Aluminium terminals
- Aluminium conductors to copper terminals wherever applicable

## Standard capacities:

Al Tube diameter:  
50 to 250 mm

Al cable cross section:  
75 to 1144 mm<sup>2</sup>

Al or Cu stud diameter:  
20 to 80 mm

Al or Cu palm:  
50, 60, 80, 100, 125, 100x200 mm  
or whatever required

Bundle spacing:  
100, 200 mm,  
or whatever required

## Connectors are available such as:

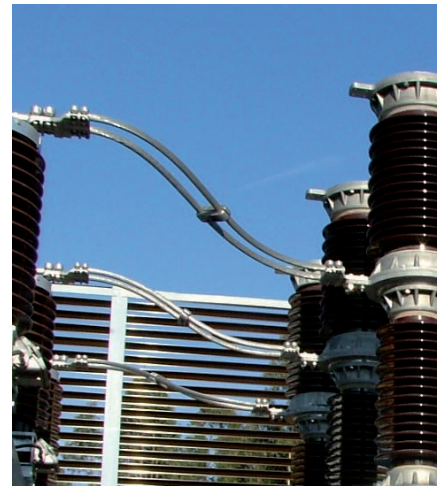
- conductor fittings
- terminal connectors on stud or palms
- earthing applications
- ...



Al. tee connector



Al. straight connector



# Connectors for Aluminium conductors & Aluminium or Copper terminals

## 550 kV – Anti-Corona Range

### Applications:

This range of connectors can be used up to 550 kV operating voltage

It allows a bolted, welded or crimped connection from:

- Aluminium conductors to Aluminium conductors or Aluminium terminals
- Aluminium conductors to copper terminals wherever applicable

### Standard capacities:

Al Tube diameter:  
100 to 250 mm

Al cable cross section:  
75 to 2000 mm<sup>2</sup>

Al or Cu stud diameter:  
20 to 60 mm

Al or Cu palm:  
50, 60, 80, 100, 125, 100x200 mm  
or whatever required

Bundle spacing:  
100, 200, 400 mm or whatever  
required

### Connectors are available such as:

- conductor fittings
- rigid, sliding & expansion busbar connectors & supports
- terminal connectors on stud or palms
- conductors spacers
- earthing applications
- ...



Al. spacer



Al. straight expansion connector



Al. straight connector



Al. Straight compression type terminal pad

# Connectors for Aluminium conductors & Aluminium or Copper terminals 800 kV - Extra High Voltage Connectors

800 kV Connectors for EHV Grids



Al. tee connector

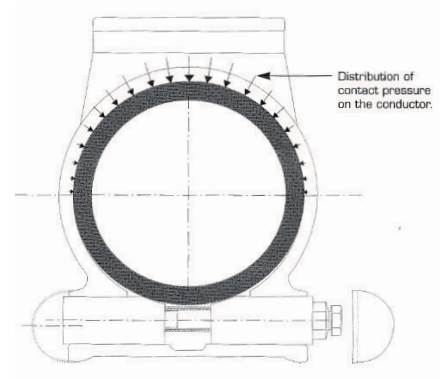


Al. Straight terminal pad

## Universal Connectors

### Advantages:

- Adjustable on site
- Easy to install
- Controlled tightening (shear head bolt)
- High electrical contact efficiency & stability



AI. UNIVERSAL terminal pad