

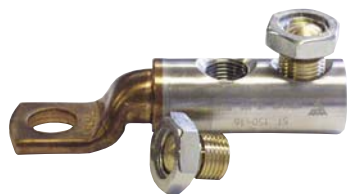
## Screw connectors

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## Screw connectors for low and medium voltage

Elpress screw terminals and connectors are used at low and medium voltages and for

- stranded and solid Al and Cu conductors
- round cross sections 10 mm<sup>2</sup> up to 630 mm<sup>2</sup>
- sector cross sections 16 mm<sup>2</sup> up to 240 mm<sup>2</sup>
- up to 36 kV
- supplied in sealed plastic bag with detailed instructions for use



Screw terminal.



Screw through connector.

Connection to the conductors is achieved by tightening the screws in the through connector or terminal to a pre-determined torque. Through connectors and terminals are made of aluminium. The terminal palm is made of copper and the accompanying screws Elpress uses are made of brass to reduce friction and facilitate installation.

Tools for assembly can be a spanner/wrench or a battery-operated impact wrench which has a high torque force, > 100 Nm. To facilitate installation there is holding tool, ISL2201, to hold the screw connector in its right position during tightening of the screws. The screw connectors have a partition wall to enable jointing of oil-filled conductors to plastic-insulated XLPE conductors. The screw connectors meet the requirements of IEC 61238-1.

### Handles multiple cross section areas

The installation of a screw connector can be done easily without heavy special tools and can withstand several area stages in the same connector, for instance 10-50 mm<sup>2</sup>. The user gets a reduced range of products and a flexible solution.

### Washer solution

To reduce the number of variants of the terminals, washers are delivered with the terminals. A washer is always required for connection of the terminal palm to a bus bar with a screw.



Bolts are tightened using a wrench. It is also possible to use a battery operated wrench.

### SC50R50S

On connector SC50R50S the screws are pre-mounted in the connector and covers all areas from 10-50 mm<sup>2</sup>. SC50R50S is also suitable as screen connector for 10-35 mm<sup>2</sup> Cu/Al.



On connector SC50R50S the screws are pre-mounted in the connector.

### Marking

Elpress marking of screw connections shows logo, product name, conductor area (for stranded and solid conductors) and assembly order of the screws.

The terminal palm is marked with bolt size (M-thread) for bolt connections.

Cat. no. SL70R70S-10-12

SL = Screw terminal

70R = max 70 mm<sup>2</sup> round conductors

70S = max 70 mm<sup>2</sup> sector conductors

10-12 = screw size 10 and 12 (M-thread)

Cat. no. SC150R95S

SC = screw through connector

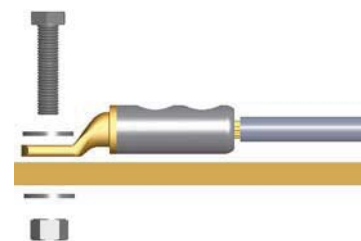
150R = max 150 mm<sup>2</sup> round conductor

95S = max 95 mm<sup>2</sup> sector conductor

### Screws connection to bus bars

The following apply to bright galvanized nuts and screws in strength class 8.8 used for connecting terminals to Cu and Al bus bars:

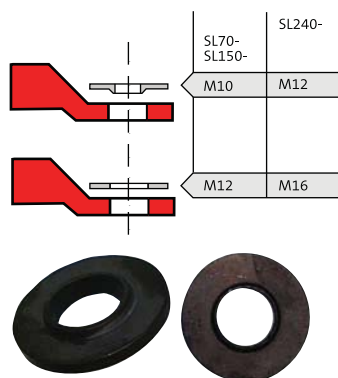
- Always use a torque wrench to ensure that they are tightened to the right torque. Ensure it is regularly calibrated in accordance with the supplier's instructions.
- Use the recommended torque in accordance with the screw manufacturer's instructions.
- Always use a hard flat washer to reduce friction between the installation surface and hole edge pressure, min hardness HB200.
- A spring washer in accordance with DIN 6796 may be used together with a flat washer to further increase strength in advanced applications.
- Assemble as shown in image.



| Screw | Tightening torque (Nm) |
|-------|------------------------|
| M5    | 5                      |
| M6    | 9                      |
| M8    | 21                     |
| M10   | 41                     |
| M12   | 70                     |
| M14   | 110                    |
| M16   | 170                    |
| M20   | 340                    |

## Screw connectors and terminals

By means the enclosed special washers for Elpress screw terminals, two bolt dimensions may be used in one palm hole size, see picture and table below. The required stocking of different terminals for different bolts is hereby heavily reduced.



Special washers for Elpress screw terminals.

| Stranded and solid conductors area, mm <sup>2</sup> | Type                                                   | Connector Cat.no.                                       | Terminal M12, M10                  | Terminal M16, M12                    |
|-----------------------------------------------------|--------------------------------------------------------|---------------------------------------------------------|------------------------------------|--------------------------------------|
| 10                                                  | round                                                  | SC50R50S                                                | SL70R70S-10-12                     |                                      |
| 16                                                  | round<br>sector                                        | SC50R50S<br>SC50R50S                                    | SL70R70S-10-12                     |                                      |
| 25                                                  | round<br>sector                                        | SC50R50S<br>SC50R50S                                    | SL70R70S-10-12<br>SL70R70S-10-12   |                                      |
| 35                                                  | round<br>sector                                        | SC50R50S<br>SC50R50S                                    | SL70R70S-10-12<br>SL70R70S-10-12   |                                      |
| 50                                                  | round<br>round<br>sector<br>sector                     | SC50R50S<br>SC95R95S<br>SC50R50S<br>SC95R95S            | SL70R70S-10-12<br>SL70R70S-10-12   |                                      |
| 70                                                  | round<br>sector<br>sector                              | SC95R95S<br>SC95R95S<br>SC150                           | SL70R70S-10-12<br>SL70R70S-10-12   |                                      |
| 95                                                  | round<br>round<br>sector<br>sector<br>sector<br>sector | SC150R95S<br>SC95R95S<br>SC150R95S<br>SC95R95S<br>SC150 | SL150R95S-10-12<br>SL150R95S-10-12 |                                      |
| 120                                                 | round<br>sector<br>sector<br>sector                    | SC150R95S<br>SC240R185S<br>SC150<br>SC240               | SL150R95S-10-12                    | SL240R185S-12-16                     |
| 150                                                 | round<br>sector<br>sector<br>sector                    | SC150R95S<br>SC240R185S<br>SC150<br>SC240               | SL150R95S-10-12                    | SL240R185S-12-16                     |
| 185                                                 | round<br>sector<br>sector                              | SC240R185S<br>SC240R185S<br>SC240                       |                                    | SL240R185S-12-16<br>SL240R185S-12-16 |
| 240                                                 | round<br>sector<br>sector                              | SC240R185S<br>SC400R240S<br>SC240                       |                                    | SL240R185S-12-16<br>SL240R240S*      |
| 300                                                 | round                                                  | SC400R240S <sup>1)</sup>                                |                                    | SL400R240S <sup>1)</sup>             |
| 400                                                 | round                                                  | SC400R240S <sup>1)</sup>                                |                                    | SL400R240S <sup>1)</sup>             |
| 500                                                 | round                                                  | SC630R                                                  |                                    | SL630R*                              |
| 630                                                 | round                                                  | SC630R                                                  |                                    | SL630R*                              |

\* Palm hole as requested

1) for un-compressed cable. For compressed cable, contact Elpress.

## Through connectors 10 - 630 mm<sup>2</sup>

- Screw material: brass, for lowest friction
- Partition to prevent fluid passing through
- Voltage up to 36 kV
- Meets the requirements of IEC-EN 61238-1:2003

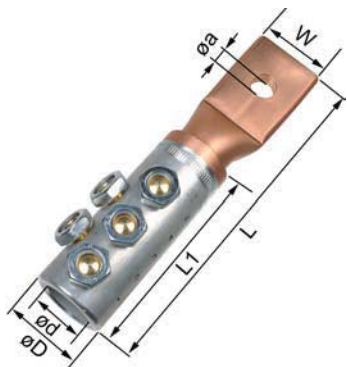


| Area    | Cat. no.   | mm L | øD       | ød   |
|---------|------------|------|----------|------|
| 10-50   | SC50R50S   | 62   | 20/17,3* | 10,7 |
| 50-95   | SC95R95S   | 114  | 27       | 16   |
| 70-150  | SC150      | 134  | 33,5     | 20   |
| 95-150  | SC150R95S  | 114  | 27       | 16   |
| 120-240 | SC240      | 144  | 38/33*   | 25   |
| 120-240 | SC240R185S | 134  | 33,5     | 20   |
| 240-400 | SC400R240S | 175  | 41,5     | 25,7 |
| 500-630 | SC630R     | 210  | 49       | 33   |

Suitable for conductors as in table on previous page. \* measurement between plane sides

## Screw terminals 10 - 630 mm<sup>2</sup>

- Screw material: brass, for lowest friction
- voltages up to 36 kV
- meets the requirements of IEC-EN 61238-1:2003
- the terminals are of bimetallic type to provide best possible connections to bus bars, apparatus terminals, etc.



| Area    | Cat. no.         | mm L  | W    | L1   | øD   | ød   | a     |
|---------|------------------|-------|------|------|------|------|-------|
| 10-70   | SL70R70S-10-12   | 103   | 25,5 | 59   | 21,5 | 11   | 11-13 |
| 95-150  | SL150R95S-10-12  | 118,5 | 30,5 | 70,5 | 27   | 16   | 11-13 |
| 120-240 | SL240R185S-12-16 | 133   | 30   | 78,5 | 33,5 | 20   | 13-17 |
| 240-400 | SL400R240S-16    | 177   | 37   | 103  | 41,5 | 25,7 | 17    |
| 240-400 | SL400R240S-20    | 177   | 37   | 103  | 41,5 | 25,7 | 21    |
| 240-400 | SL400R240S-00    | 183,5 | 37   | 103  | 41,5 | 25,7 | *     |
| 500-630 | SL630R-1         | 243   | 55   | 129  | 49   | 33   | *     |

Suitable for conductors as in table on previous page.

\*Palm hole as requested



Holding tool ISL2201.

## ISL2201, holding tool

To support the terminal or connector while fastening the shear off screws, the ISL2201 has been developed. The tool is produced from high strength material and is easily adjusted for barrel sizes up to 400 mm<sup>2</sup>.

- weight 365 g