



## Screw connectors / Through connector kits

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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 SC240N for 1 kV.

Connection to the conductors is achieved by tightening the screws in the through connector or terminal to a pre-determined torque, where the screw head breaks. 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.

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

## Marking

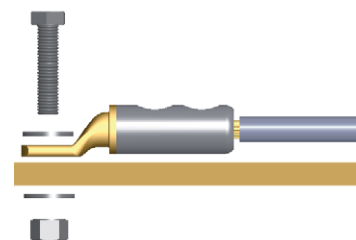
Elpress marking of screw connections shows logo, product name, conductor area (for stranded and solid conductors) and assembly order of the screws.

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

## 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.

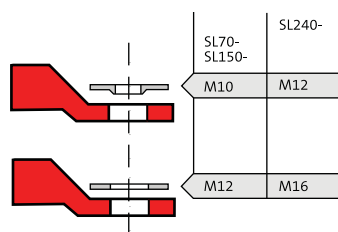


Screw	Tightening torque (Nm)
M5	5
M6	9
M8	21
M10	41
M12	70
M14	110
M16	170
M20	340



## 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.



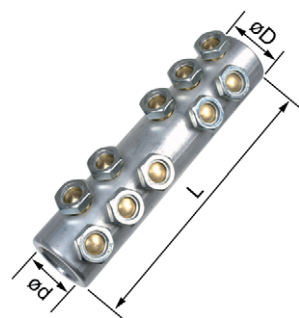
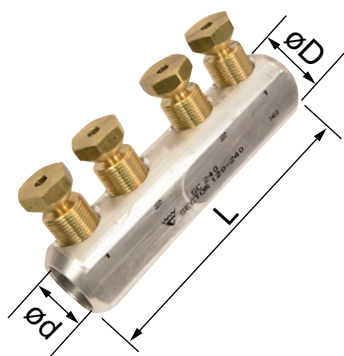
Stranded and solid conductors area, mm²	Type	Screw connector, Cat.no.	Screw terminal, M12, M10	Screw terminal, M16, M12
10	round	SC50R50S	SL70R70S-10-12	
16	round sector	SC50R50S SC50R50S	SL70R70S-10-12	
25	round sector	SC50R50S SC50R50S	SL70R70S-10-12 SL70R70S-10-12	
35	round sector	SC50R50S, SC95N SC50R50S, SC95N	SL70R70S-10-12 SL70R70S-10-12	
50	round sector	SC50R50S, SC95N, SC95R95S SC50R50S, SC95N, SC95R95S	SL70R70S-10-12 SL70R70S-10-12	
70	round sector	SC95R95S, SC95N, SC150N SC95R95S, SC95N, SC150N	SL70R70S-10-12 SL70R70S-10-12	
95	round sector	SC95N, SC95R95S, SC150N, SC150R95S SC95N, SC95R95S, SC150N, SC150R95S	SL150R95S-10-12 SL150R95S-10-12	
120	round sector	SC150N, SC150R95S, SC240N SC150N, SC240N, SC240R185S	SL150R95S-10-12	SL240R185S-12-16
150	round sector	SC150N, SC150R95S, SC240N SC150N, SC240N, SC240R185S	SL150R95S-10-12	SL240R185S-12-16
185	round sector	SC240N, SC240R185S SC240N, SC240R185S		SL240R185S-12-16 SL240R185S-12-16
240	round sector	SC240N, SC240R185S SC240N, SC400R240S		SL240R185S-12-16 SL400R240S*
300	round	SC400R240S		SL400R240S*
400	round	SC400R240S		SL400R240S*
500	round	SC630R		SL630R*
630	round	SC630R		SL630R*

\* Palm hole as requested



## 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 61 238-1

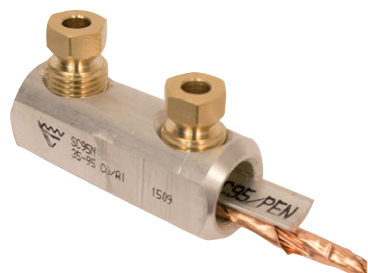


Cat. no.	kV	Area mm <sup>2</sup> , round	Area mm <sup>2</sup> , sector	Area mm <sup>2</sup> , screen	mm L	øD	ød
SC50R50S	1-36	10-50	16-50	6-35	62	20	10,7
SC95N	1	35-95	35-95	50-95	69	27/23*	16
SC150N	1	70-150	70-150	120-146	80	33,5/26*	20
SC240N	1	120-240	120-240		144	38/33*	25
SC95R95S	1-36	50-95	50-95	50-95	114	27	16
SC150R95S	1-36	95-150	95	70-95	114	27	16
SC240R185S	1-36	185-240	120-185		134	33,5	20
SC400R240S	1-36	300-400	240		175	41,5	25,7
SC630R	1-36	500-630			210	49	33

Suitable for conductors as in table on previous page.

\* measurement between plane sides

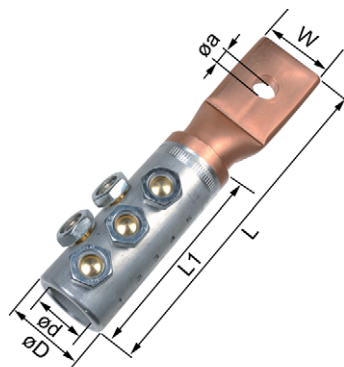
To connect copper screens a filler piece is required and should be placed between the screw and the screen. For selecting the right piece see table. 2 filler bits per connection is required.



Screen area mm <sup>2</sup>	For screw connector	Name
16-57	SC50R50S	PEN-filler piece not necessary
16-57	SC95R95S/SC95N	SC95/PEN
70-95	SC95R95S/SC95N	PEN-filler piece not necessary
21-95	SC150N	SC150/PEN
120-146	SC150N	PEN-filler piece not necessary
29-146	SC240N	SC240/PEN

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

- Screw material: brass, for lowest friction
- voltages up to 36 kV
- meets the requirements of IEC 61 238-1
- the terminals are of bimetallic type to provide best possible connections to bus bars, apparatus terminals, etc.



Cat. no.	Area mm <sup>2</sup> , round	Area mm <sup>2</sup> , sector	mm L	W	L1	øD	ød	a
SL70R70S-10-12	10-70	25-70	104	25,5	59	21,5	11	11-13
SL150R95S-10-12	95-150	95	124	30,5	75,5	21,5	11	11-13
SL240R185S-12-16	185-240	120-185	134	31,5	78,5	33,5	20	13-17
SL400R240S-16	300-400	240	182	41,5	103	41,5	25,8	17
SL400R240S-20	300-400	240	182	41,5	103	41,5	25,8	21
SL400R240S-00	300-400	240	187	41,5	103	41,5	25,8	*
SL630R-1	500-630		240,5	55	129	49	33	*

Suitable for conductors as in table on previous page.

\*Palm hole as requested



## Screw terminals kit 1.2 kV

### High quality and great flexibility

- brass screw for optimal contact transfer
- only 4 sizes – covers the area 10-240 mm<sup>2</sup>
- corrosion resistant alloy, internal contact grease and sealed partition wall
- used for the following cable types; Al and Cu, round, sector-shaped, solid (Cl. 1) and stranded (Cl. 2) - IEC61238 approved
- the 4 kits contain a heat shrink tube of high quality with great flexibility. Shrinkability up to 6:1. The heat shrink tube is coated internally with adhesive. Approved for running underground.

### Save money

- shorter assembly time – up to 6 times faster than traditional solutions
- everything included in the kit
- less inventory, special tools not needed

### Save time

- easy to order, only one article number
- saves time and resources when selecting and ordering – user-friendly and manageable catalog
- optimized software with customized insulation



### Complete screw terminal kit 1.2 kV, 10 - 240 mm<sup>2</sup>

Cat. no.	Area mm <sup>2</sup> , Cu & Al	Contents
KSC50N-1-4-HS	10-50	4 x screw terminals model SC50R50S + 4 x inner tubes, + 1 x outer sheath + abrasive cloth + user instructions
KSC95N-1-4-HS	50-95	4 x screw terminals model SC95N + 4 x inner tubes, + 1 x outer sheath + abrasive cloth + user instructions
KSC150N-1-4-HS	70-150	4 x screw terminals model SC150N + 4 x inner tubes, + 1 x outer sheath + abrasive cloth + user instructions
KSC240N-1-4-HS	120-240	4 x screw terminals model SC240N + 4 x inner tubes, + 1 x outer sheath + abrasive cloth + user instructions



Holding tool ISL2201.

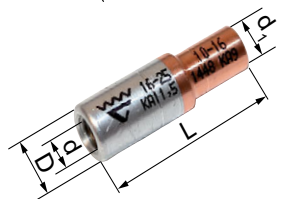
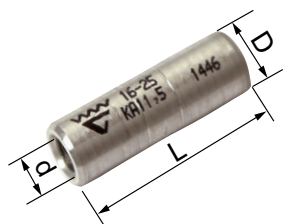
### ISL2201, holding tool

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



## crimp&heat - through connectors with heat shrink insulation



For connection of 1 kV plastic insulated 4G or 5G cable of stranded Al conductors 16-25 mm<sup>2</sup>.  
For connection of, or transition to Cu 10-16 mm<sup>2</sup>; solid, stranded and multi-wired conductor or screen.

The conductors are crimped with the accompanying through connectors, and tools that are acquired separately. The through connectors are insulated with the enclosed inner tubes, which shrink with heat.

### This is how it works:

- The conductors are crimped with through connectors AS1625, AKS1625-1016 or KSF16
- Use Elpress hand tool EW1025, or TB dies TBKA9-11,5 with any of the following tools;
  - Battery operated crimping tool PVL611
  - Hand tool T2600 and V611
  - Crimping head V600 used with battery and mains powered pump PS710 or foot pump P4000
- The inner and outer tubes in the insulation expand so they can easily be applied and then shrunk with heat
- The length of the insulation is adapted to safely cover the primary and sheath insulation of the cable
- The insulation has thick walls and is coated with a lot of adhesive, that makes the crimp waterproof and resistant to external influences
- Meets the requirements in SS-EN 50393, EBR KJ 24:89. The through connectors are tested and approved according to IEC 61 238-1.

### Through connectors

Area mm <sup>2</sup>	Cat. no.	mm d	D	L	d1	Pcs/pack
16-25 mm <sup>2</sup> Al	AS1625	6,2	11,5	35	-	48
16-25 mm <sup>2</sup> Al, 10-16 mm <sup>2</sup> Cu	AKS1625-1016	6,2	11,5	36,5	6	48
10-16 mm <sup>2</sup> Cu	KSF16	6,0	9,0	35	-	100

### Complete kits

Area mm <sup>2</sup>	Cat. no.	Description	Contains
10-25 mm <sup>2</sup> Al, 10-25 mm <sup>2</sup> Cu	KHS1025-5*	Heat shrink connector 1 kV 3-4-5 conductor	1 outer sheath, 5 inner tubes, abrasive cloth
16-25 mm <sup>2</sup> Al	KHS-AS1625-4	Heat shrink connector 1 kV 4-conductor	1 outer sheath, 4 x AS1625, abrasive cloth, 4 inner tubes
16-25 mm <sup>2</sup> Al	KHS-AS1625-5	Heat shrink connector 1 kV 5-conductor	1 outer sheath, 5 x AS1625, abrasive cloth, 5 inner tubes
16-25 mm <sup>2</sup> Al, 10-16 mm <sup>2</sup> Cu	KHS-AKS1025-4	Heat shrink connector 1 kV 4-conductor	1 outer sheath, 4 x AKS1625-1016, abrasive cloth, 4 inner tubes
16-25 mm <sup>2</sup> Al, 10-16 mm <sup>2</sup> Cu	KHS-AKS1025-5	Heat shrink connector 1 kV 5-conductor	1 outer sheath, 5 x AKS1625-1016, abrasive cloth, 5 inner tubes

\* Through connectors order separately.

### Hand tool EW1025

Ergonomic hand tool for crimping of AS1625, AKS1625-1016 and KSF16.

Cat. no.	Dimensions
EW1025	310 x 74 x 30 mm

### Dies

Through connectors AS1625, AKS1625-1016 and KSF16 is crimped with dies TBKA9-11,5 used together with any of the following tools: T2600, V600, V611 or PVL611.

