



Converging Innovations, Expanding Solutions



**SPRING CLAMP (SCREWLESS) TERMINALS
(SOLUTIONS FOR RAILWAYS)**



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(SOLUTIONS FOR RAILWAYS)**



SERVING TO INDIAN RAILWAYS



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What is the basic difference in termination of screw clamp connection and spring clamp connection ?

In case of screw clamp connections, it is necessary to ensure proper tightening of screw with a torque screwdriver. This is possible under controlled conditions like factory wiring where personnel with skill and torque screwdrivers are readily available but the same may not be the case for field wiring applications. In screwless terminal blocks spring clamp is opened by insertion of a screwdriver. Conductor is inserted into this 'opened' clamp and connection is secured as soon as the screwdriver is withdrawn.

How does screwless termination improve wiring efficiency ?

The wiring time for making screwless connection is significantly less than that required for making screw clamp connection particularly because operation of opening the screw and tightening it after insertion of conductor is eliminated while making spring clamp connections.

How damage to conductor is prevented in spring clamp connection ?

The clamping force in spring clamp connection



adjusts automatically according to cross-section of the conductor inserted. Larger the conductor, more the force exerted on it. There are no external factors which can change this force. This is practically not so for other termination technologies and there are chances of damage to conductor if excessive tightening torque is applied. In spring clamp connection it is the flat face of the spring clamp which presses the conductor against current bar, at a force which is governed by spring clamp design itself.

How is spring-clamp connection corrosion resistant ?

This is because of two reasons. Firstly, the spring clamp material is special grade stainless steel which has excellent resistance to corrosion. Secondly, spring clamp connection is a "gas-tight" connection, which prevents entry of corrosive gases to termination contact area.

Can two conductors be inserted into single spring clamp ?

This is not a recommended practice as two wires inserted in one single clamping unit will not allow application of uniform contact pressure by the spring clamp.

'elmex' Screwless Terminal Blocks are constructed employing good engineering practices. As the name suggests, these terminal blocks do not require a screw for termination of a conductor within the clamping unit.

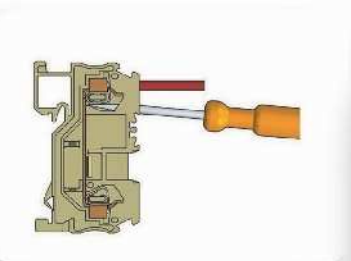
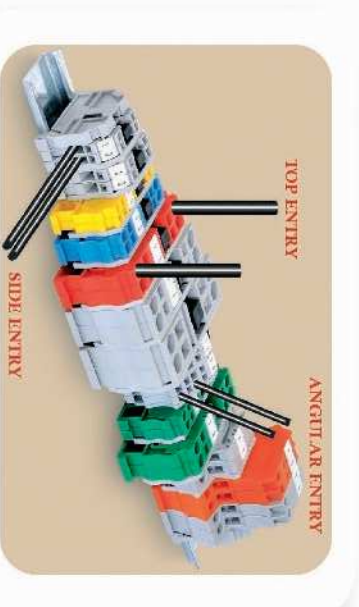
Some of the salient features with respect to construction and performance of Screwless Terminal Blocks are described as under:

1) The Spring Clamp used in 'elmex' Screwless Terminal Blocks are made using special grade Austenitic Stainless Steel material which is heat treated for stress relieving at our end. Important characteristics of this spring steel material are as under :

- High fatigue strength
- Better resistance to corrosion effects
- Higher relaxation resistance, especially at elevated temperatures
- High ductility, low yield stress and relatively high ultimate tensile strength

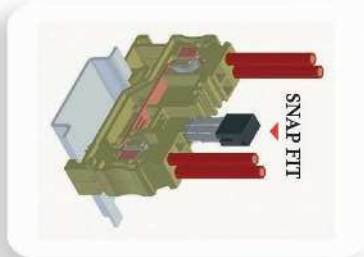


2) These terminal blocks are available with multiple options for conductor entry i.e. side entry, top entry and angular entry to choose from depending on termination requirement.



3) These terminals offer increase in wiring efficiency and speed. In screw clamp type terminal blocks, it is required to open up screws and tighten them up after conductor insertion. In screwless type terminal blocks, a conductor is inserted after opening the clamp with a screw driver which is to be withdrawn after inserting the conductor and the termination is secured with spring action force of spring clamp.

4) These terminals can be interconnected by using just two way push in type shorting links, in required numbers. Current bars in these terminal blocks have provision to accept two shorting links, which can be inserted from the top or side depending upon construction of the terminal block. Thus we can short two terminals with one shorting link, three terminals with two shorting links, and so on.



5) **Torque application for termination is not required :** Since the termination is by spring force action and without a screw or a stud and nut mechanism, there is no question of setting and applying the specified torque as it required to be done for the other types of terminal blocks.

6) **Ease of using unprepared conductors :** These terminal blocks are so designed that they do not require conductor preparation i.e. one just needs to strip the conductor for the specified stripping length and insert it into the clamp i.e. no need to prepare conductor with a ring or fork type lug by additional operation of crimping which if not done carefully can result in unreliable joint. These terminals can securely clamp conductors crimped with pin type lugs also.

7) In general, these terminal blocks are designed for mounting on standard DIN rail type TS 35 / IEC Top Hat rail TH 35. Surface mount models are also available for termination of conductor size up to 4 sq. mm. To facilitate mounting on the surface, these terminal blocks are provided with mounting facility (hole) on one side of the insulation housing. On the other side, it is provided on the end plate. The screws for fixing the stack of terminal blocks on the surface are fixed through these mounting holes.





'elmex' RANGE OF SPRING CLAMP (SCREWLESS) TERMINAL BLOCKS

FEED THROUGH TERMINAL BLOCKS : TOP ENTRY

 <p>DST 2.5 / CE / SF / 3</p> <p>IEC 60947-7-1 : 800 V/24 A/2.5 sq mm : 600 V/15 A/14-20 AWG</p>	 <p>DST 4 / CE / SF / 3</p> <p>IEC 60947-7-1 : 800 V/32 A/4 sq mm : 600 V/20 A/12-20 AWG</p>	 <p>DST 6 / CE / SF / 3</p> <p>IEC 60947-7-1 : 800 V/41 A/6 sq mm : 600 V/25 A/10-20 AWG</p>	 <p>DST 10 / CE / SF / 3</p> <p>IEC 60947-7-1 : 800 V/57 A/10 sq mm : 600 V/50 A/8-16 AWG</p>	 <p>DST 16 / CE / SF / 3</p> <p>IEC 60947-7-1 : 800 V/76 A/16 sq mm : 600 V/65 A/6-16 AWG</p>
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FEED THROUGH TERMINAL BLOCKS : SIDE ENTRY

 <p>SCT 2.5 / CE / SF / 3</p> <p>IEC 60947-7-1 : 800 V/24 A/2.5 sq mm : 600 V/15 A/14-22 AWG</p>	 <p>SCT 4 / CE / SF / 3</p> <p>IEC 60947-7-1 : 800 V/32 A/4 sq mm : 600 V/20 A/12-20 AWG</p>	 <p>SCT 6 / CE</p> <p>IEC 60947-7-1 : 800 V/41 A/6 sq mm</p>	 <p>SCT 10 / CE</p> <p>IEC 60947-7-1 : 800 V/57 A/10 sq mm</p>	 <p>DSCT 6 / CE</p> <p>IEC 60947-7-1 : 400 V/41 A/6 sq mm</p>
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MULTIPLE OUTPUT TERMINAL BLOCKS

 <p>DCT 2.5 - 1x2 / CE / SF / 3</p> <p>IEC 60947-7-1 : 800 V/24 A/2.5 sq mm : 600 V/15 A/14-22 AWG</p>	 <p>DCT 2.5 - 2x2 / CE / SF / 3</p> <p>IEC 60947-7-1 : 800 V/24 A/2.5 sq mm : 600 V/15 A/14-22 AWG</p>	 <p>DST 2.5 - 1x2 / CE</p> <p>IEC 60947-7-1 : 800 V/24 A/2.5 sq mm</p>	 <p>DST 2.5 - 2x2 / CE</p> <p>IEC 60947-7-1 : 1000 V/17.5 A/2.5 sq mm</p>	
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elmex' RANGE OF SPRING CLAMP (SCREWLESS) TERMINAL BLOCKS

MULTIPLE OUTPUT TERMINAL BLOCKS

	DSDD 2.5 <small>(DOUBLE-DECK)</small>	CE		DS3L 2.5	CE		DSSL P16	CE		DSSL P32	CE
IEC 60947-7-1 : 800 V/10 A/4 sq mm			IEC 60947-7-1 : 500 V/20 A/2.5 sq mm			IEC 60947-7-1 : 250 V/10 A/1.5 sq mm			IEC 60947-7-1 : 250 V/10 A/1.5 sq mm		

EARTH TERMINAL BLOCKS

	DSET 4	CE		DSET 6	CE		DSET 10	CE		DET 2.5 1x2	CE		DET 2.5 2x2	CE
IEC 60947-7-1 : 4 sq mm : 10-20 AWG			IEC 60947-7-1 : 6 sq mm			IEC 60947-7-1 : 10 sq mm			IEC 60947-7-1 : 2.5 sq mm			IEC 60947-7-1 : 2.5 sq mm		

FUSE TERMINAL BLOCKS

	DCF 4	CE		DCF 4D	CE		DCF 4A	CE		MCT 2.5MC	CE		SCT 2.5MC	CE
IEC 60947-7-1 : 800 V/10 A/4 sq mm : 600 V/10 A/10-20 AWG			IEC 60947-7-1 : 800 V/10 A/4 sq mm : 600 V/10 A/10-20 AWG			IEC 60947-7-1 : 800 V/10 A/4 sq mm : 600 V/10 A/10-20 AWG			IEC 60947-7-1 : 500 V/24 A/2.5 sq mm			IEC 60947-7-1 : 500 V/24 A/2.5 sq mm		

MICRO TERMINAL BLOCKS

DISCONNECT TERMINAL BLOCKS

	DSDT 2.5	€ €		DSDT 2.5WOSL	€ €		DSDT 2.5 2x2	€ €		DSDPT 2.5	€ €		DSCDT 6	€ €
IEC 60947-7-1 : 800 V/24 A/2.5 sq mm : 600 V/15 A/14-20 AWG			IEC 60947-7-1 : 1000 V/17.5 A/2.5 sq mm			IEC 60947-7-1 : 1000 V/17.5 A/2.5 sq mm			IEC 60947-7-1 : 400 V/10 A/2.5 sq mm			IEC 60947-7-1 : 400 V/41 A/6 sq mm		

PANEL MOUNTED TERMINAL BLOCKS

	MCT 1.5	€ €		MCT 2.5	€ €   		MCT 2.5P4	€ €   		MCT 4	€ €  		MCT 4P4	€ €
IEC 60947-7-1 : 500 V/17.5 A/1.5 sq mm			IEC 60947-7-1 : 500 V/17.5 A/1.5 sq mm FRONT VIEW SIDE VIEW			IEC 60947-7-1 : 500 V/24 A/2.5 sq mm FRONT VIEW SIDE VIEW RU RU : 300 V/15 A/14-22 AWG			IEC 60947-7-1 : 500 V/32 A/4 sq mm FRONT VIEW SIDE VIEW  : 300 V/20 A/12-20 AWG			IEC 60947-7-1 : 500 V/32 A/4 sq mm FRONT VIEW SIDE VIEW  : 300 V/20 A/12-20 AWG		

PLUG AND SOCKET TERMINALS

	DMCT 2.5P4	€ €		DPSC 5.08	IEC 60947-7-1 : Male : 250 V/16 A/2.5 sq mm Female : 250 V/16 A/2.5 sq mm		DPSC 7.5	IEC 60947-7-1 : Male : 400 V/16 A/2.5 sq mm Female : 400 V/16 A/2.5 sq mm
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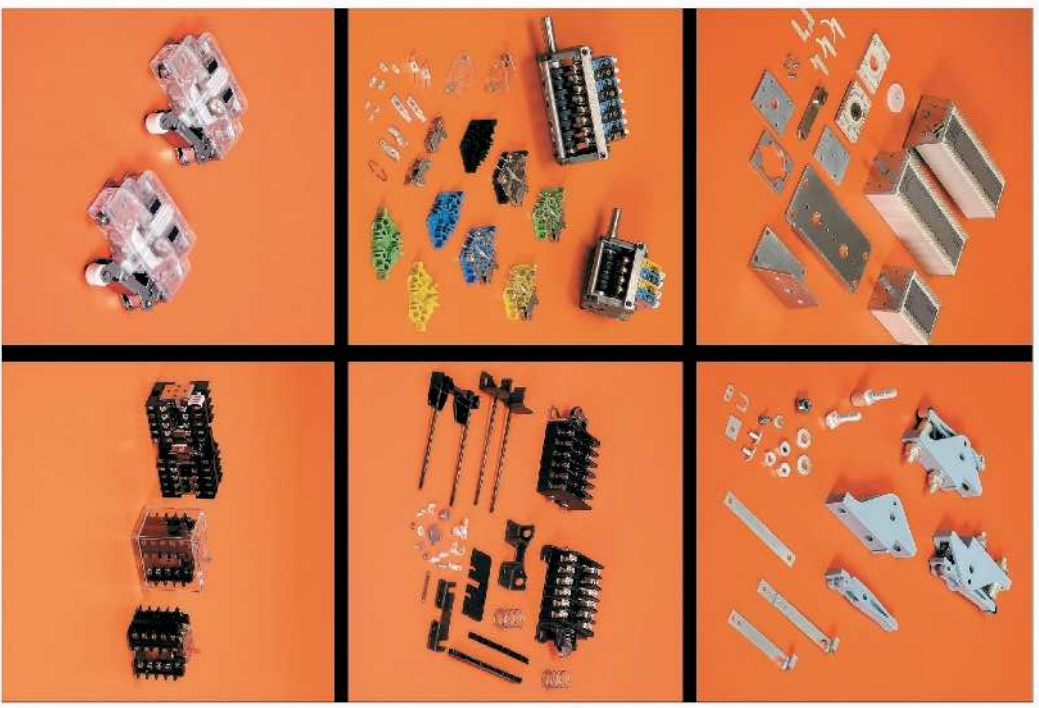
SCREWLESS SIDE CLAMPS

	SCUSL			DCKN			DCKN MLH	
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'elmex' Bus Bar Termination Solutions



'elmex' Electromechanical Products





'elmex' VALUED CUSTOMERS





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A circular icon containing a green leaf and a blue solar panel with a sunburst, symbolizing solar energy.

**Solutions For
Solar Photovoltaic**

A circular icon containing a blue and orange background with white lines representing electrical control and instrumentation.

**Solutions For
Control & Instrumentation**

A circular icon containing a yellow and black logo of an oil rig or wellhead.

**Solutions For
Oil & Gas Industry**

A circular icon containing a blue and orange background with a white circle and a lightning bolt, symbolizing metering and protection.

**Solutions For
Metering & Protection**





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