



cross currents

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'elmex' Solutions for Solar and Pluggable Connections

With an ever increasing demand for power and continuing depletion of resources used to generate electricity through conventional means, it is clear that non-conventional and renewable sources of energy will play a significant role in meeting energy demands of the future. Solar energy is one such measure which has vast potential to be tapped through the application of photovoltaic (PV) technology. The term photovoltaic technology relates to a system that converts solar energy into usable power, generating electricity from sunlight.

Depending on applications, a typical photovoltaic system basically comprises of photovoltaic arrays that convert solar energy into electrical energy, inverter that converts DC voltage into AC and other associated components such as circuit breakers, DC isolators, junction box, isolation transformers, surge protecting devices, terminal blocks and connectors.

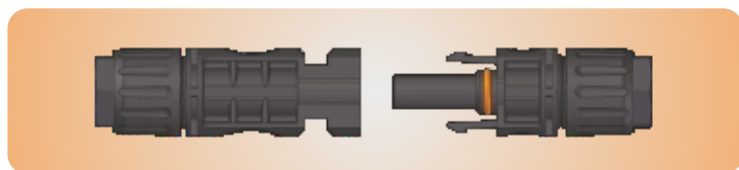
To cater to this segment of industry, 'elmex' has developed PV connector for solar applications and 'elmex' offers a range of terminal blocks for 1000 V DC solar applications. Technical details of these products are presented below.

'elmex' Photovoltaic Solar Connector EMPV4

'elmex' EMPV4 connector is a single contact connector commonly used for connecting photovoltaic panels. While small solar panels, commonly used for battery charging, may not require special connectors, larger terrestrial arrays for power generation involve higher currents and voltages and place special demands on both cables and connectors for safe operation. The EMPV4 connectors incorporate a flexible watertight seal and are supplied as 'male (plug)' and 'female (socket)' types to minimize the chance of wrong connections. For proper seal, they require usage with the correct diameter cable, normally double-insulated (insulation plus black sheath) and U.V. protection (as UV rays tend to damage the connection). Connection is by use of a special crimping tool, although they may be soldered.

The male and female insulators are constructed using flame retardant engineering thermoplastic suitable for photovoltaic application and exposure to UV rays.

EMPV 4 connectors are tested as per latest European standard "EN 50521:2008+A1:2012-Connectors for photovoltaic systems-Safety requirements and tests" including ingress protection test for Class IP 67



Salient Features

- ✓ Robust design
- ✓ Completely finger safe
- ✓ Longer operation life
- ✓ Tested as per international standards
- ✓ Plug and socket design
- ✓ Low contact resistance
- ✓ Connection by crimping or soldering
- ✓ Special locking arrangement
- ✓ Vibration resistant

Technical Specifications

Parameter	Specification
Rated Voltage	1000 V DC
Rated Current	25A (2.5 mm ²), 30A (4 mm ² , 6mm ²)
Tested Voltage	6KV (50Hz)
Protection Degree	IP 67
Contact Material	Copper With Tin Plating
Operating Temperature	-40 to 85°C
Safety Class	II
Contact Resistance	≤5 mΩ
Insertion Force	≤50 N
Withdraw Force	≥50 N
Suitable Cable	2.5 mm ² / 4 mm ² / 6 mm ²
Locking System	Snap In

'elmex' Terminal Blocks for Photovoltaic Applications

'elmex' offers a wide range of terminal blocks from 2.5 to 95 sq. mm, tested and approved for 1000 V DC suitable for use in photovoltaic systems. Electrical ratings of these terminal blocks are given below. These terminal blocks have conductor termination by screw-clamp technology or by screwless or spring clamp technology.

Technical Specifications			
Terminal Blocks with Screw-Clamp Terminals	Specifications	Terminal Blocks with Screw-Clamp Terminals	Specifications
KUT 2.5N	1000 V DC/24 A/2.5 sq mm/0.5 Nm	KUT 25	1000 V DC/101 A/25 sq mm/2.3 Nm
KUT 4N	1000 V DC/32 A/4 sq mm/0.6 Nm	KUT 35	1000 V DC/125 A/35 sq mm/3 Nm
KUT 6N	1000 V DC/41 A/6 sq mm/0.8 Nm	KUT 50	1000 V DC/150 A/50 sq mm/8 Nm
KUT 10N	1000 V DC/63 A/10 sq mm/1.2 Nm	KUT 95	1000 V DC/232 A/95 sq mm/20 Nm
Terminal Blocks with Screwless Terminals	Specifications	Terminal Blocks with Screwless Terminals	Specifications
DST 2.5	1000 V DC/24 A/2.5 sq mm	SCT 4	1000 V DC/32 A/4 sq mm
DST 2.5 1 X 2	1000 V DC/24 A/2.5 sq mm	MCT 2.5	1000 V DC/24 A/2.5 sq mm
DST 4	1000 V DC/32 A/4 sq mm	MCT 2.5P4	1000 V DC/24 A/2.5 sq mm
DST 6	1000 V DC/41 A/6 sq mm	MCT 4	1000 V DC/32 A/4 sq mm
DST 10	1000 V DC/57 A/10 sq mm	DCT 2.5 1 X 2	1000 V DC/24 A/2.5 sq mm
DST 16	1000 V DC/76 A/16 sq mm	DCT 2.5 2 X 2	1000 V DC/24 A/2.5 sq mm
SCT 2.5	1000 V DC/24 A/2.5 sq mm		

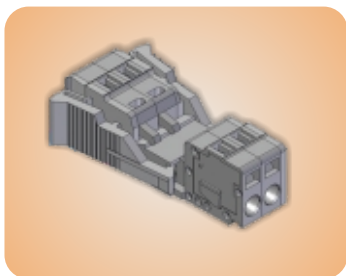
Innovative Solutions for Pluggable Connections

'elmex' Screwless Plug & Socket Terminal Block DPSC 5.08 & DPSC 7.50

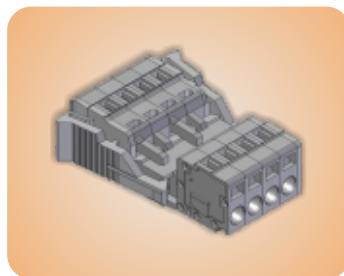
'elmex' introduces new range of plug & socket terminal block type DPSC 5.08 and DPSC 7.50. These terminal blocks offer innovative solution for wiring and interconnecting electrical circuits. 'elmex' DPSC Plug and Socket terminal blocks are constructed using Polyamide 6,6 insulation housing and have a male plug (typically pin contact) and a female receptacle (typically socket contact). These terminal blocks are available with 5.08 mm and 7.50 mm pitch with 2 way, 4 way, 6 way and 8 way variants and offer wire connection possibility ranging from 0.5 sq. mm to 2.5 sq. mm. The terminal blocks are provided with integrated snap fit locking arrangement and are available with fixing flange for surface / panel mount applications. Terminal blocks without flange are also available for 'wire to wire', 'wire to board' termination of wiring leads. The plug and socket terminal design is suitable for use in industrial controls, information technology and other applications requiring reliable interconnection that can be established with speed and efficiency.

Salient Features

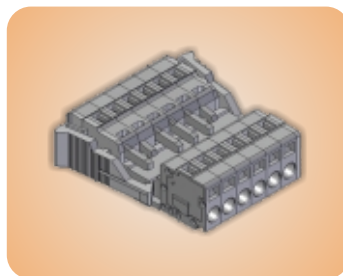
- ✓ *Low contact resistance*
- ✓ *Provides screwless termination by spring clamps made using special Austenitic grade stainless steel*
- ✓ *Long operational life*
- ✓ *Designed for panel mount feed through connection*
- ✓ *Tested as per international standard IEC 60947-7-1*
- ✓ *Available as plug – in connector for 'wire to wire', 'wire to board' termination of wiring leads*
- ✓ *Available with plug and socket design*
- ✓ *Specially designed with snap fit locking arrangement*
- ✓ *Housing provided with guiding features to prevent inadvertent wrong connection*



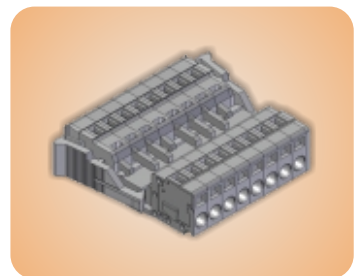
DPSC – 2 WAYS



DPSC – 4 WAYS

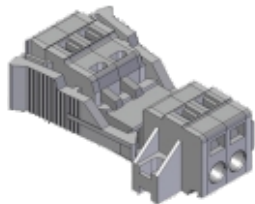
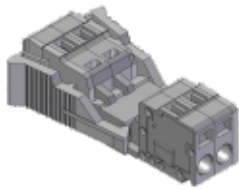
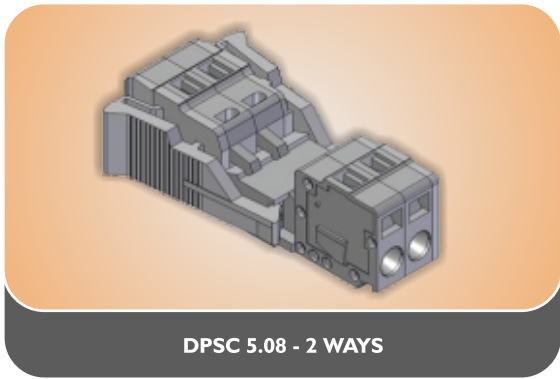


DPSC – 6 WAYS



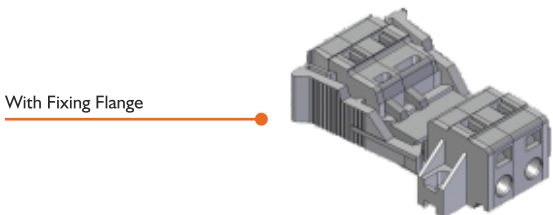
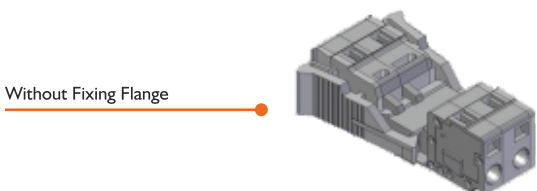
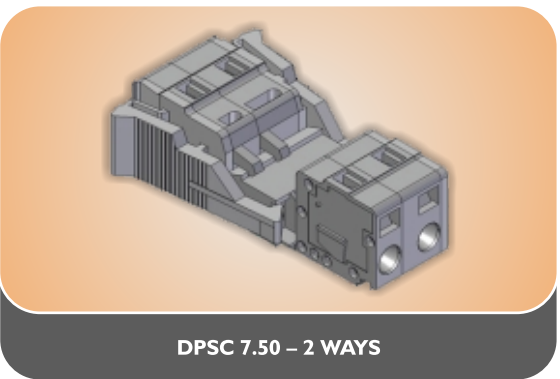
DPSC – 8 WAYS

'elmex' DPSC 5.08 Terminal Block



Technical Specifications		
DESCRIPTION	SPECIFICAIONS	
	DPSC 5.08 (PLUG)	DPSC 5.08 (SOCKET)
Terminal Pitch	5.08 mm	5.08 mm
Height X Width	17.90 mm x 14.45 mm	26.15 mm x 14.45 mm
Rated Cross Section	2.5 sq. mm	2.5 sq. mm
Connection Possibility	Flexible	0.5 sq. mm – 2.5 sq. mm
	Rigid	0.5 sq. mm – 2.5 sq. mm
Wire Stripping Length	8 – 9 mm	8 – 9 mm
Type Of Connection	Spring Clamp (screwless)	Spring Clamp (screwless)
Specification As Per Standard IEC 60947-7-1	250 V/16 A/2.5 sq. mm	250 V/16 A/2.5 sq. mm
Marking Label	Label KN 5.08	
Colour (standard)	Grey	
Other Colour	Red, Yellow, Orange, Blue, Black & Green	
Insulating Material	Polyamide 6.6	
Contact Material	Copper With Tin Plating	
DPSC 5.08 IS AVAILABLE IN 2 WAY, 4 WAY, 6 WAY & 8 WAY VARIANTS		
DPSC 5.08 IS AVAILABLE WITH AND WITHOUT FIXING FLANGE		

'elmex' DPSC 7.50 Terminal Block



Technical Specifications		
DESCRIPTION	SPECIFICAIONS	
	DPSC 7.50 (PLUG)	DPSC 7.50 (SOCKET)
Terminal Pitch	7.50 mm	7.50 mm
Height X Width	17.90 mm x 14.45 mm	26.15 mm x 14.45 mm
Rated Cross Section	2.5 sq. mm	2.5 sq. mm
Connection Possibility	Flexible	0.5 sq. mm – 2.5 sq. mm
	Rigid	0.5 sq. mm – 2.5 sq. mm
Wire Stripping Length	8 – 9 mm	8 – 9 mm
Type Of Connection	Spring clamp (screwless)	Spring clamp (screwless)
Specification As Per Standard IEC 60947-7-1	400 V/16 A/2.5 sq. mm	400 V/16 A/2.5 sq. mm
Marking Label	Label KN 7.50	
Colour (standard)	Grey	
Other Colour	Red, Yellow, Orange, Blue, Black & Green	
Insulating Material	Polyamide 6.6	
Contact Material	Copper With Tin Plating	
DPSC 7.50 IS AVAILABLE IN 2 WAY, 4 WAY, 6 WAY & 8 WAY VARIANTS		
DPSC 7.50 IS AVAILABLE WITH AND WITHOUT FIXING FLANGE		

Participation in National and International Exhibitions

'elmex' participated in ELECHEMA 2014 exhibition held at Bangalore from January 08 to January 12, 2014. Wide range of 'elmex' products i.e. Terminal Blocks, Low Voltage Current Transformers and Photovoltaic Connectors were on display. Response was overwhelming from all strata of visitors, ranging from Designers, Consultants, OEM, Panel Manufacturers etc. from India as well as abroad and engineering students also who took keen interest in our products.

ELECHEMA 2014 | Date: 8th to 12th January, 2014 | Place: Bangalore



'elmex' actively participated in the Vadodara International Half Marathon held in Vadodara on December 15, 2013, for a noble cause. Our employees with their spouse and children, in all 150 in numbers participated with enthusiasm in this extraordinary annual event.



For regular updates on technical advances on termination technology and activities at *elmex*, please follow us at



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We welcome your suggestions and queries regarding our products and feedback about **CROSS CURRENTS**. Write to us at rhv@elmex.net



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