



since 1963

Converging  
Innovations  Expanding  
Solutions



Solutions for  
Solar Photovoltaic

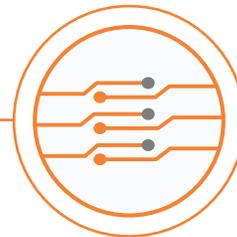


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Converging  
Innovations  Expanding  
Solutions



**Solutions For  
Solar Photovoltaic**



**Solutions For  
Connectivity**



**Solutions for  
Railways**



**Solutions For  
Control & Instrumentation**



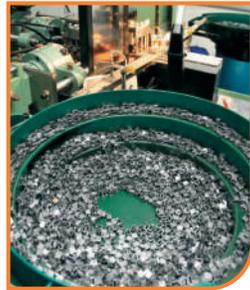
**Solutions For  
Metering & Protection**



**Solutions For  
Oil & Gas Industry**



since 1963

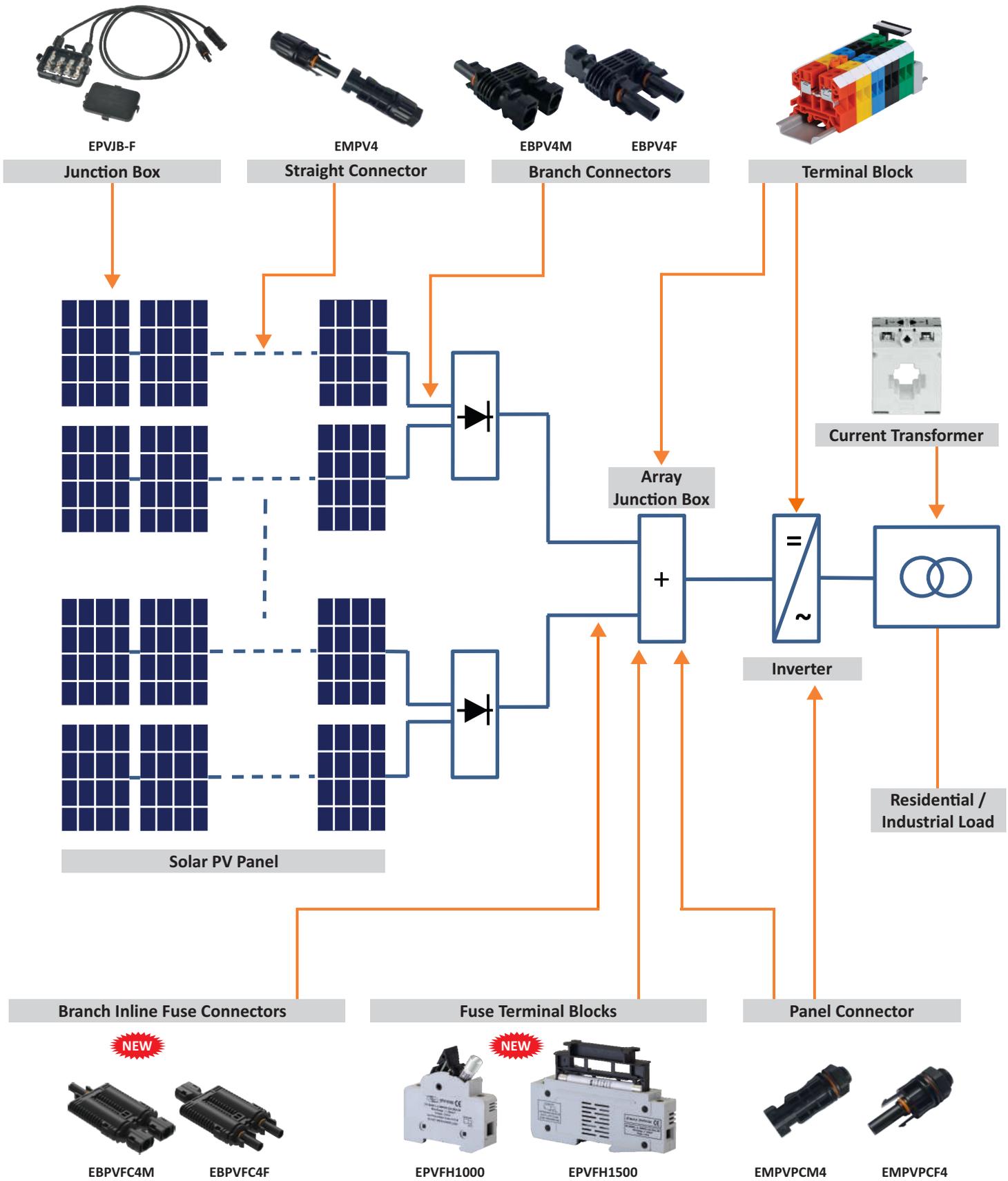


'elmex' was established in 1963 & is a pioneer & leader in the field of Wire Termination Technology in India. 'elmex' is having manufacturing facilities in Vadodara, Gujarat, certified as per **ISO 9001:2015** & **ISO 14001:2015**. It has extended its domain knowledge in Termination Technology to develop product range suitable for Photovoltaic applications with indigenous design & development.

As an application 'elmex' provides wide range of PV products such as PV Junction Boxes (2-Rail, 3-Rail & 4-Rail), Straight Connectors, Panel Connectors, Branch Connectors, Over Moulded Wire Harnesses, Inline Fuse Connectors, Branch In-Line Fuse Connectors, DC Fuse Terminal Blocks (for Combiner Box / DC Distribution Box) which are used for Termination & to transfer DC energy from PV module to final output. Solar PV products are designed, manufactured & tested in-house. 'elmex' PV product range conforms to International standards like, **EN 50521 / IEC 62852** for Connectors & **EN 50548 / IEC 62790** for Junction Boxes & **IEC 60269** for Fuse Terminals.

'elmex' has installed more than 3 million connectors & served 200+ sites across India. With more than 150 distributors nationwide & field engineers present in all major cities across India, 'elmex' provides a 24 x 7 support to its customer base.







### **Solutions For EPC / Rooftop / Project Developers**

- PV Straight Connectors (1000V / 1500V)
- PV Branch Connectors (1000V / 1500V)
- PV Straight Inline Fuse Connectors (1000V)
- PV Branch Inline Fuse Connectors (1000V)
- Over Moulded Wire Harnesses (1000V)



### **Solutions For System Integrators / Inverters**

- PV Panel Connectors (1000V / 1500V)
- PV Fuse Terminal Blocks (1000V / 1500V)
- Terminal Blocks



### **Solutions For PV Panels / Module Manufacturers**

- PV Solar 2 - Rail Junction Box
- PV Solar 3 - Rail Junction Box
- PV Solar 4 - Rail Junction Box



'elmex' PV Solar Straight connectors **EMPV4** & **EMPV4N** with plug & socket design are constructed using flame retardant engineering thermoplastic suitable for exposure to UV rays & for application in PV power generation system. These connectors incorporate a flexible water tight sealing conforming to IP 68 and are supplied as 'male (plug)' & 'female (socket)' types to minimize the chance of wrong connections. For proper assembly of individual male & female connectors & for proper functioning of the mated pair, it is necessary that solar cables used are TUV certified as per standard 2Pfg 1169/EN 50618. 'elmex' straight connectors are certified for PV solar cables **2.5, 4.0, 6.0 mm<sup>2</sup>** size, double insulated (Insulation plus black/red sheath) & UV protection (as UV rays tend to damage the connection).



### Features

TUV Certified

Snap Fit Locking Arrangement

IP 68 Protection when mated

Low Contact Resistance

Provides UV Protection (Tested for 500 hrs as per ISO 4892-2)

Tested as per International Standards / IEC 62852

Description	Specifications
Rated Conductor Size	2.5 mm <sup>2</sup> / 4.0 mm <sup>2</sup> / 6.0 mm <sup>2</sup>
Rated Voltage	1000V / 1500V DC
Rated Current	25A (2.5 mm <sup>2</sup> ), 30A (4.0 mm <sup>2</sup> , 6.0 mm <sup>2</sup> )
Test Voltage	6KV (1000V) / 8KV (1500V)
Degree of Protection	IP 68
Contact Material	Copper with Tin Plating
Ambient Temperature	-40° C to +85° C
Max. Operating Temp.	+110° C
Safety Class	II
Contact Resistance	< 0.5mΩ
Insertion Force	≤ 50 N
Withdrawal Force	≥ 50 N
Locking System	Snap In



Note : Our Connectors are suitable for PV Solar Cables of 2.5 / 4.0 / 6.0 mm<sup>2</sup> diameter (As per 2Pfg 1169 / EN 50618).

\*Connectors when mated, need a tool to open in accordance with NEC 2014.



'elmex' PV Solar Branch connectors **EBPV4M**, **EBPV4F**, **EBPV4M-N** & **EBPV4F-N** are applicable for parallel connection with PV straight male or female connectors depending on on-site application. Branch connectors have 3 branches, 2 for inputs either male or female & 1 for output either male or female. These connectors are constructed using flame retardant thermoplastic suitable for exposure to UV rays & for application in PV power generation system. When mated, they can be disconnected with the use of 'elmex' make open end spanner. 'elmex' branch connectors have mating compatibility not only with 'elmex' straight connectors but also with straight connectors of leading International makes having similar construction.

**EBPV4F**



**EBPV4M**



**with NEC Interlock\***

**EBPV4F-N**



**EBPV4M-N**



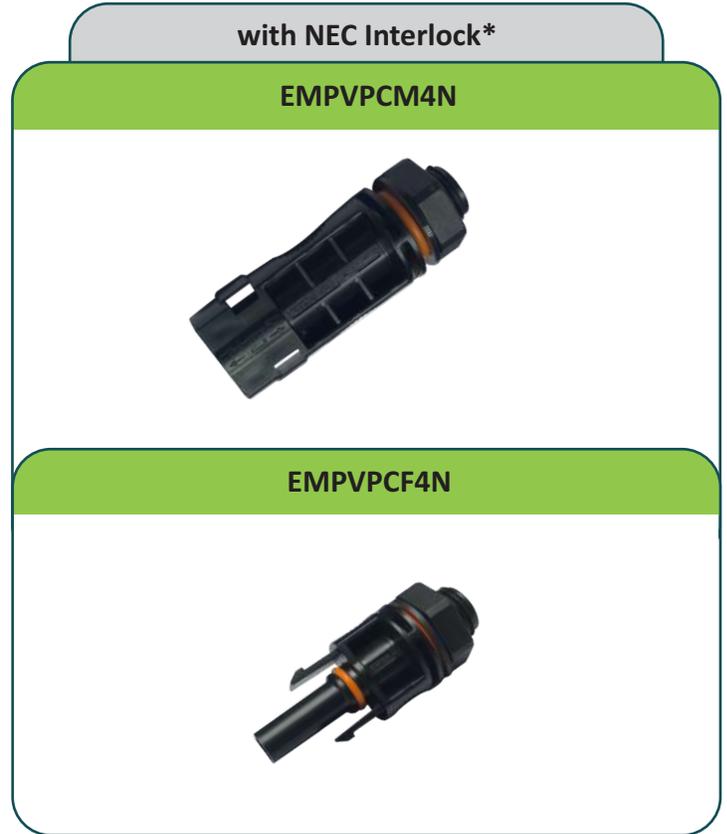
Description	Specifications
Rated Voltage	1000V / 1500V DC
Rated Current	25A (2.5 mm <sup>2</sup> ), 30A (4.0 mm <sup>2</sup> , 6.0 mm <sup>2</sup> )
Test Voltage	6KV (1000V) / 8KV (1500V)
Degree of Protection	IP 67
Contact Material	Copper / Copper Alloy with Nickel and Tin Plating
Ambient Temperature	-40° C to +85° C
Max. Operating Temp.	+110° C
Safety Class	II
Contact Resistance	< 0.5mΩ
Insertion Force	≤ 50 N
Withdrawal Force	≥ 50 N
Locking System	Snap In



\*Connectors when mated, need a tool to open in accordance with NEC 2014.



'elmex' PV Solar Panel connectors **EMPVPCM4**, **EMPVPCF4**, **EMPVPCM4N** & **EMPVPCF4N** are applicable for panel mounting connection. They are constructed using flame retardant engineering thermoplastic suitable for exposure to UV rays & for application in PV power generation system. 'elmex' panel connectors are designed for use in connection for photovoltaic devices like DCDB (DC Distribution Block), Inverters, String Combiner Boxes, etc. These connectors are provided with hexagonal nut for fixing & tightening it on mounting surface. A silicon rubber o-ring is provided between panel connector surface & the wall of the photovoltaic enclosure ensuring protection against ingress of water & dust. 'elmex' panel connectors have mating compatibility not only with 'elmex' straight connectors but also with straight connectors of leading international makes having similar construction.



Description	Specifications
Rated Voltage	1000V / 1500V DC
Rated Current	25A (2.5 mm <sup>2</sup> ), 30A (4.0 mm <sup>2</sup> , 6.0 mm <sup>2</sup> )
Test Voltage	6KV (1000V) / 8KV (1500V)
Contact Material	Copper with Tin Plating
Ambient Temperature	-40° C to +85° C
Max. Operating Temp.	+110° C
Safety Class	II
Contact Resistance	< 0.5mΩ
Insertion Force	≤ 50 N
Withdrawal Force	≥ 50 N
Rated Conductor Size	2.5 mm <sup>2</sup> / 4.0 mm <sup>2</sup> / 6.0 mm <sup>2</sup>
Locking System	Snap In



Note: Our Connectors are suitable for PV Solar Cables of 2.5 / 4.0 / 6.0 mm<sup>2</sup> diameter (As per 2Pfg 1169 / EN 50618).

\*Connectors when mated, need a tool to open in accordance with NEC 2014.



# 'elmex' PV Solar Straight Inline Fuse Connectors



'elmex' PV Solar Straight Inline fuse connectors **EMPV4FC**, **EMPV4FCM** & **EMPV4FCF** are applicable for Photovoltaic string protection. The variants of these connectors offer users with options of either using a male or female straight connector at one end & cable at the other end or using male/female straight connectors at both the ends for string protection with fuse. 'elmex' straight inline fuse connectors have plug & socket design suitable for **2.5, 4.0, 6.0 mm<sup>2</sup>** size cables & are constructed using flame retardant engineering thermoplastic suitable for exposure to UV rays & for application in PV power generation system. They are suitable for use with gPV (Cylindrical) fuse of  $\phi$  10 X 38 mm.



Description	Specifications
Rated Voltage	1000V DC
Rated Current	15A
Test Voltage	6KV
Degree of Protection	IP 67
Contact Material	Copper Alloy with Tin Plating
Ambient Temperature	-40° C to +85° C
Safety Class	II
Contact Resistance	< 0.5m $\Omega$
Insertion Force	$\leq$ 50 N
Withdrawal Force	$\geq$ 50 N
Rated Conductor Size	2.5 mm <sup>2</sup> / 4.0 mm <sup>2</sup> / 6.0 mm <sup>2</sup>
Locking System	Snap In

- Note: (1) Our Connectors are suitable for PV Solar Cables of 2.5 / 4.0 / 6.0 mm<sup>2</sup> diameter (As per 2Pfg 1169 / EN 50618).  
 (2) Connectors when mated, need a tool to open in accordance with NEC 2014.  
 (3) It is recommended to use gPV (cylindrical) fuse of  $\phi$  10 X 38 mm dimension.



## 'elmex' gPV Fuse Link



'elmex' gPV Fuse Link suitable for 1000V DC photovoltaic applications.

Description	Specifications
Rated Voltage	1000V DC
Rated Current	4, 10, 12, 15, 16, 20, 25, 30 A
Type	gPV (Cylindrical)
Dimension	$\phi$ 10 X 38 mm
Testing Standard	IEC 60269-6



'elmex' PV Solar Branch Inline fuse connectors **EBPVFC4M** & **EBPVFC4F** are applicable for parallel connection for Photovoltaic string protection depending on on-site application. Branch inline fuse connectors have 3 branches, 2 for inputs either male or female & 1 for output either male or female. These connectors have plug & socket design & are constructed using flame retardant engineering thermoplastic suitable for exposure to UV rays & for application in PV power generation system. 'elmex' PV branch inline fuse connectors are suitable for use with gPV (Cylindrical) fuse of  $\phi 10 \times 38$  mm.



Description	Specifications
Rated Voltage	1000V DC
Rated Current	15A
Test Voltage	6KV
Degree of Protection	IP 67
Contact Material	Copper with Tin Plating
Ambient Temperature	-40° C to +85° C
Safety Class	II
Contact Resistance	< 0.5m $\Omega$
Insertion Force	$\leq 50$ N
Withdrawal Force	$\geq 50$ N
Locking System	Snap In

Note: (1) It is recommended to use gPV (cylindrical) fuse of  $\phi 10 \times 38$  mm dimension.  
 (2) Connectors when mated, need a tool to open in accordance with NEC 2014.



## 'elmex' gPV Fuse Link



'elmex' gPV Fuse Link suitable for 1000V DC photovoltaic applications.

Description	Specifications
Rated Voltage	1000V DC
Rated Current	4, 10, 12, 15, 16, 20, 25, 30 A
Type	gPV (Cylindrical)
Dimension	$\phi 10 \times 38$ mm
Testing Standard	IEC 60269-6



'elmex' PV Solar Over Moulded Wire Harnesses solutions are suitable for photovoltaic applications, having multiple input & output with plug & socket design suitable for 2.5, 4.0, 6.0 mm<sup>2</sup> size cables. They are constructed using flame retardant engineering thermoplastic elastomer suitable for exposure to UV rays & for application in PV power generation system. The over moulded wire harnesses are customized solutions & can be configured using straight connectors or inline fuse connectors with different cable sizes of 2.5, 4.0 & 6.0 mm<sup>2</sup>.

### 'Y - Type' Male Harness



### 'Y - Type' Female Harness



### 'Y - Type' 6 in 1 out Harness



Description	Specifications
Rated Voltage	1000V DC
Rated Current	30A
Test Voltage	6KV
Contact Resistance	< 0.5mΩ
Contact Material	Copper with Tin Plating
Degree of Protection	IP 67
Pollution Degree	III
Safety Class	Class II
Rated Conductor Size	2.5 mm <sup>2</sup> / 4.0 mm <sup>2</sup> / 6.0 mm <sup>2</sup>
Locking System	Snap In Locking Type

Note: 'elmex' Wire Harness solutions are customized, based on cable size, length & type of connectors



# 'elmex' Customized Cable with Connector Assembly



Description	Specification
Rated Voltage	1000V DC / 1500V DC
PV Cable Colour	Black

Note: We provide assembly with cable length & cable size as per customer requirement.



Cable with Male Connector  
Available cable sizes 2.5 / 4.0 / 6.0 mm<sup>2</sup>



Cable with Female Connector  
Available cable sizes 2.5 / 4.0 / 6.0 mm<sup>2</sup>



1.0 Mtr Cable with Connector at both ends  
Available cable sizes 2.5 / 4.0 / 6.0 mm<sup>2</sup>



## 'elmex' PV Solar Product Accessories

### Connector Sealing Caps



EPVSCPF

(for female connector)



EPVSCPM

(for male connector)

'elmex' Sealing Caps are recommended for connectors during unmated conditions, as when kept unplugged & open at site, these connectors tend to collect dust & moisture which affects their performance when mated.

### Spanner Tools



EPVOS-S

Exclusively for 'elmex' connectors



EPVOS-U

To disconnect 'elmex' and other make connectors

'elmex' Spanner Tools are recommended for tightening & loosening the cap of the connectors & unlocking the connectors during on-site operations.

### Crimping Tool



ESCCT

'elmex' Crimping Tool is recommended for crimping connector's pin with 2.5 / 4.0 / 6.0 mm<sup>2</sup> Solar Cable



## 'elmex' PV Solar 2-Rail Junction Boxes



'elmex' PV Solar 2 - Rail Junction Boxes **EPVJB3** & **EPVJB6** are suitable for Solar Street Light Low Wattage (less than 50W) Panels. They are designed with sliding snap fit locking arrangement, available with 2 - in & 1 - out cable connections.



Description	Specifications EPVJB3	Specifications EPVJB6
Rated Voltage	1000V DC	1000V DC
Rated Current	3A	6A
Contact Material	Copper Alloy with Nickel and Tin Plating	Copper Alloy with Nickel and Tin Plating
Ambient Temperature	-40° C to +85° C	-40° C to +85° C
Safety Class	II	II
Application	3W to 20W	30W to 50W
Locking System	Sliding Snap Fit	Sliding Snap Fit



## 'elmex' PV Solar 2-Rail Junction Box with Diode

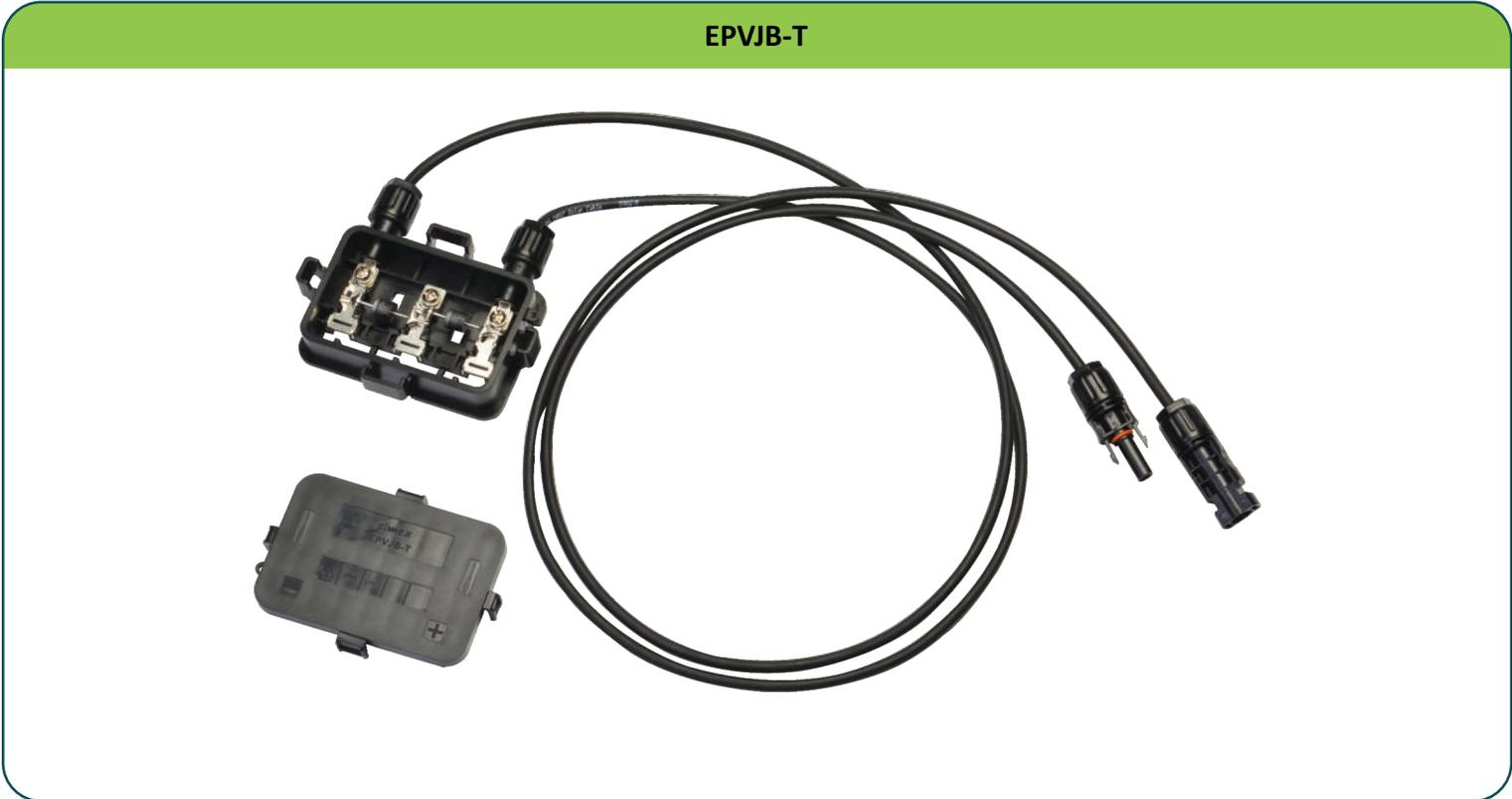
'elmex' PV Solar 2 - Rail Junction Box **EPVJB-2R** is suitable for Solar Street Light Low Wattage (less than 150W) Panels. It is designed with snap fit locking arrangement, available with 2 - in 1 - out cable connection & with 6A / 10A diode.



Description	Specifications
Rated Voltage	1000V DC
Rated Current	6A / 10A
Contact Material	Copper Alloy with Nickel and Tin Plating
Ambient Temperature	-40° C to +85° C
Safety Class	II
Application	50W to 150W
Locking System	Snap Fit
Diode Rating	6A / 10A



'elmex' PV Solar 3 - Rail Junction Box **EPVJB-T** is suitable for electrical connection from PV Crystalline module as a solution for easy & reliable interconnection from PV module to DC/AC converters. It has simple & cost effective assembly designed with snap fit locking arrangement with IP 65 protection sealing requirement for PV industry. The Junction Box is provided with two cables each of 1 meter length, with 'elmex' make straight male & female **EMPV4 / EMPV4N** connectors for simple on-site wiring.



Description	Specifications
Rated Voltage	1000V DC
Rated Current	10A
Degree of Protection	IP 65
Safety Class	II
Type of Terminal	Soldering
Number of Diodes	2
Diode Rating	10A / 15A*
Contact Material	Copper with Tin Plating
Ambient Temperature	-40C° to +85° C
Application	150W to 250W
Connector	'elmex' Straight Connectors <b>EMPV4 / EMPV4N</b>
Locking System	Snap In

\*15A Diode is Schottky Diode



'elmex' PV Solar 4 - Rail Junction Box **EPVJB-F** is suitable for electrical connection from PV Crystalline module as a solution for easy & reliable interconnection from PV module to DC / AC converters. It has simple & cost effective assembly designed with snap fit locking arrangement with IP 65 protection sealing requirement for PV industry. The Junction Box is provided with two cables each of 1 meter length, with 'elmex' make straight male & female **EMPV4 / EMPV4N** connector for simple on-site wiring. PV Junction Box employs fast switching Schottky Diodes with peak reverse voltage rating of 45 V. The diodes are soldered with PV rails using lead-free, high melting point solder alloy. PV ribbons from PV module can be connected with junction box rails by soldering process.

## EPVJB-F



Description	Specifications
Rated Voltage	1000V DC
Rated Current	12A
Degree of Protection	IP 65
Safety Class	II
Type of Terminal	Soldering
Number of Diodes	3
Diode Rating	15A / 20A / 25A
Type of Diode	Schottky Diode
Contact Material	Copper with Tin Plating
Operating Temperature	-40C° to +85° C
Application	250W to 310W
Connector	'elmex' Straight Connectors <b>EMPV4 / EMPV4N</b>
Locking System	Snap In
Cable	TUV certified solar cable of 1 meter standard length





'elmex' PV Solar Fuse Terminal Block **EPVFH1000** is suitable for photovoltaic application & applicable for string protection. It is designed for use in connection for photovoltaic devices like DCDB, Inverters, String Combiner boxes, etc. which is used for rooftop or ground mounted projects. The fuse terminal block is constructed as per standard IEC 60269-1 & are suitable for cylindrical gPV fuse size  $\phi$  10 X 38 mm. In order to dissipate heat generated in fuse terminal blocks, spacer can be used which works to provide 5mm space between two fuse terminal blocks, thus facilitating air circulation through this clearance.

### EPVFH1000



### SPACER



#### TGSL

For PV Fuse Terminal Block  
EPVFH1000

Description	Specifications
Rated Voltage	1000V DC
Rated Current	32A
Degree of Protection	IP 20
Rated Cross Section	1.0 - 25.0 mm <sup>2</sup>
Rated Torque	2 Nm
Dimensions ( W x H x P )	78 x 62 x 18 mm
Making Lable	KN 5.5
Mounting Channel	CHK / CHKS
Standard Box Packing	20 Nos.

Note: It is recommended to use gPV (cylindrical) fuse of  $\phi$  10 X 38 mm dimension.



## 'elmex' gPV Fuse Link

### EPVFL



'elmex' gPV Fuse Link suitable for 1000V DC photovoltaic applications.

Description	Specifications
Rated Voltage	1000V DC
Rated Current	4, 10, 12, 15, 16, 20, 25, 30 A
Type	gPV (Cylindrical)
Dimension	$\phi$ 10 X 38 mm
Testing Standard	IEC 60269-6



'elmex' PV Solar Fuse Terminal Block **EPVFH1500** is suitable for photovoltaic application & applicable for string protection. It is designed for use in connection for photovoltaic devices like DCDB, Inverters, String Combiner Boxes, etc. which is used for rooftop or ground mounted projects. The fuse terminal block is constructed as per standard IEC 60269-1 & are suitable for cylindrical gPV fuse size  $\phi$  10 X 85 mm.

## EPVFH1500



Description	Specifications
Rated Voltage	1500V DC
Rated Current	32A
Degree of Protection	IP 20
Rated Cross Section	4.0 - 25.0 mm <sup>2</sup>
Rated Torque	3.2 Nm
Dimensions ( W x H x P )	127 x 55 x 22 mm
Mounting Channel	CHK / CHKS
Standard Box Packing	6 Nos.

Note: It is recommended to use gPV (cylindrical) fuse of  $\phi$  10 X 85 mm dimension.



## 'elmex' gPV Fuse Link

### EPVFL1500



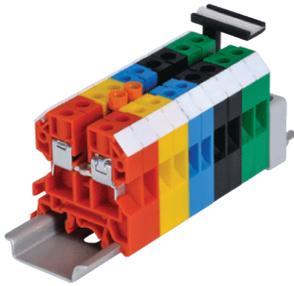
'elmex' gPV Fuse Link suitable for 1500V DC photovoltaic applications.

Description	Specifications
Rated Voltage	1500V DC
Rated Current	15A & 30A
Type	gPV (Cylindrical)
Dimension	$\phi$ 10 X 85 mm
Testing Standard	IEC 60269-6

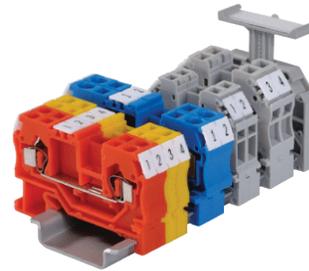


'elmex' wide range of Terminal Blocks for conductor size ranging from 2.5 to 95 mm<sup>2</sup> are tested & approved for 1000V DC / 1500V DC are suitable for use in Solar Photovoltaic Systems. Electrical ratings of these terminal blocks are given below. These terminal blocks have conductor termination by screw-clamp technology or by screwless (spring clamp technology).

## SCREW CLAMP TERMINAL BLOCKS



## SCREWLESS TERMINAL BLOCKS



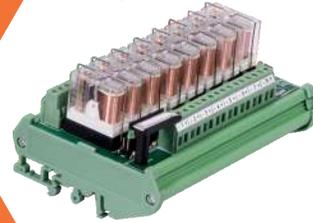
Description	Specifications
KUT 2.5N	1000V DC/24 A/2.5 mm <sup>2</sup> /0.5 Nm
KUT 4N	1000V DC/32 A/4 mm <sup>2</sup> /0.6 Nm
KUT 6N	1000V DC/41 A/6 mm <sup>2</sup> /0.8 Nm
KUT 10N	1000V DC/63 A/10 mm <sup>2</sup> /1.2 Nm
KUT 25	1000V DC/101 A/25 mm <sup>2</sup> /2.3 Nm
KUT35	1000V DC/125 A/35 mm <sup>2</sup> /3 Nm
KUT 50	1000V DC/150 A/50 mm <sup>2</sup> /8 Nm
KUT 95	1000V DC/232 A/95 mm <sup>2</sup> /20 Nm
DST 2.5	1000V DC/24 A/2.5 mm <sup>2</sup>
DST 2.5 1x2	1000V DC/24 A/2.5 mm <sup>2</sup>
DST 4	1000V DC/32 A/4 mm <sup>2</sup>
DST 6	1000V DC/41 A/6 mm <sup>2</sup>
DST 10	1000V DC/57 A/10 mm <sup>2</sup>
DST 16	1000V DC/76 A/16 mm <sup>2</sup>
SCT 2.5	1000V DC/24 A/2.5 mm <sup>2</sup>
SCT 4	1000V DC/32 A/4 mm <sup>2</sup>
MCT 2.5	1000V DC/24 A/2.5 mm <sup>2</sup>
MCT 2.5P4	1000V DC/24 A/2.5 mm <sup>2</sup>
MCT 4	1000V DC/32 A/4 mm <sup>2</sup>
DCT 2.5 1x2	1000V DC/24 A/2.5 mm <sup>2</sup>
DCT 2.5 2x2	1000V DC/24 A/2.5 mm <sup>2</sup>



**Power Terminals**



**Interface Modules**



**Relay Terminal Units**



**Current Transformers**



**Plug and Socket Connectors**



**Core Balancing Current Transformers**





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