



# cross currents

APRIL, 2009

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## **elmex Power / Bus Bar Termination Solutions** from 35 up to 240 sq mm **For High Power Control Centre**

**elmex** offers a wide range of Power Bus Bar Terminals; both in Polyamide 6.6 and Melamine housings suitable for conductor size ranging from 35 sq mm to 240 sq mm. While the terminals made using Melamine housing cover the range from conductor size 35 sq mm to 120 sq mm, the terminals in Polyamide 6.6 cover the range from 35 to 240 sq mm.

**elmex** Melamine Terminals series type CBT and Polyamide 6.6 series type DPBB with its variants upto 120 sq mm are popular in the industry since many years. The range of DPBB series terminals is now further expanded by addition of two more types i.e. DPBB 185 (353 A) and DPBB 240 (415 A).

This issue presents a complete range of **elmex** Power Bus Bar Terminals with ratings and their important features/applications.

### **elmex Bus Bar Terminals in Polyamide 6.6 Housings:**

**elmex** Power Bus Bar types DPBB 50(150A), DPBB 70(192 A) DPBB 120 (269 A), DPBB 185(353 A) and DPBB 240 (415 A) are designed for termination of conductor crimped with ring/fork type lugs. As a variant to this type, DPBC version is available, which allows one termination of unprepared conductor in the form of screw-clamp connection and the other connection is by bolting to current bar the prepared conductor having ring/fork type lug. Version DPCC is also available for both the terminations in form of screw-clamp connection (Bolt to screw-clamp conversion is possible at site also). While terminals in DPBB versions are available for termination of conductor size upto 240 sq mm, the DPBC and DPCC versions

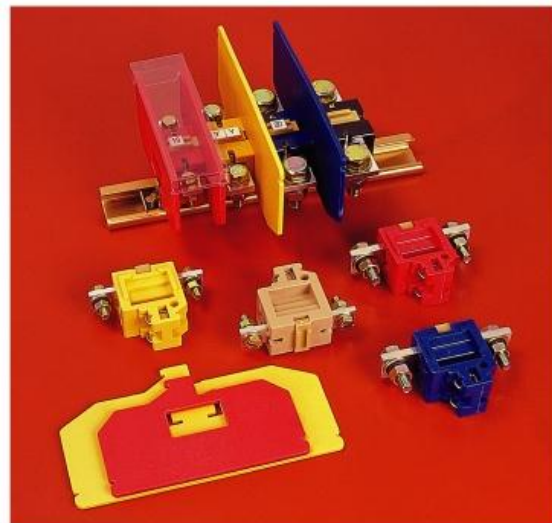
are available for termination of conductor sizes upto 120 sq mm.

**elmex** also offers Power Bus Bar Terminals type SPT with shrouds/hinged covers over the cable termination points. In these terminals, cables are connected, after lifting the hinged covers, with ring/fork type lugs. The hinged covers are to be closed once termination is completed. These terminals type SPT 35 and SPT 70 which are currently available for 35 sq mm and 70 sq mm connection capacity respectively, are finger-safe by design and do not require additional protective cover or side barrier plate.

### **elmex Bus Bar Terminals in Melamine Housings:**

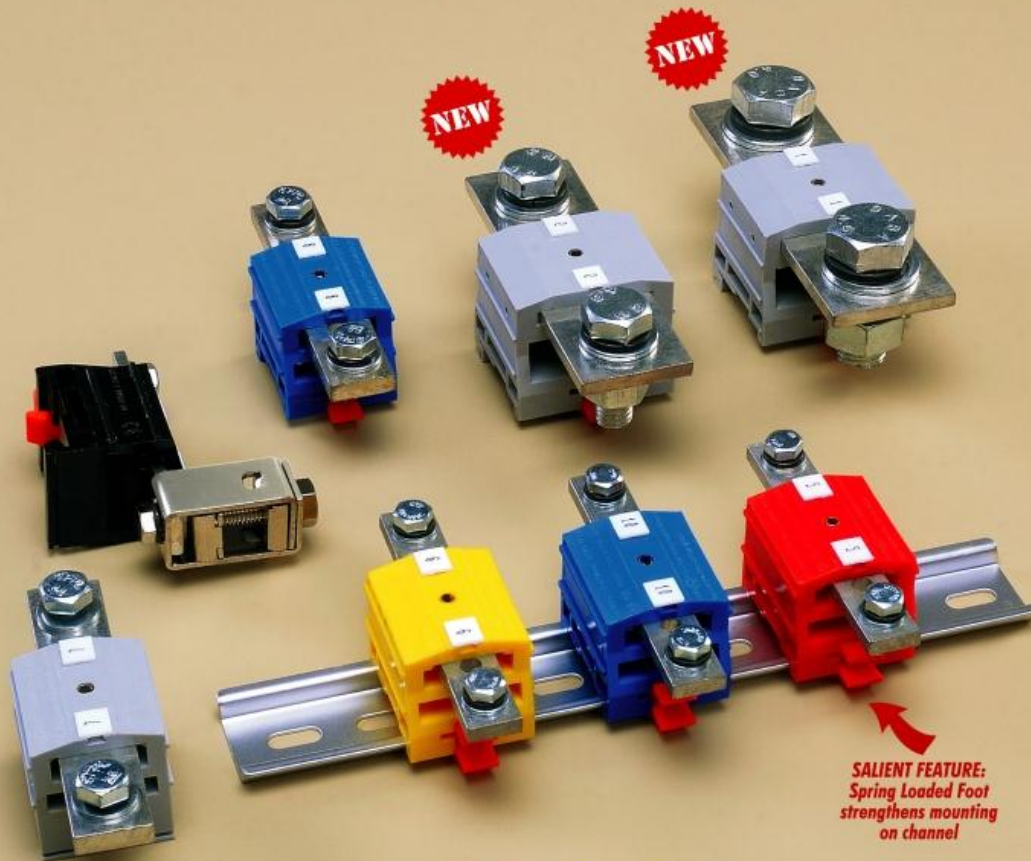
Certain applications demand use of Bus Bar Terminals using Melamine housings. For such applications **elmex** offers a wide range of terminals.

**elmex** terminals type CBT 110, 170, 250 and 300 are similar in construction with DPBB series of terminals described above for termination of cables crimped with ring/fork type lugs. These terminals are rated for currents of 110, 170, 250 and 300 A respectively. In terminal types CBT 110T upto CBT 300T, the current bar is provided with taps and the fixing bolt has slotted head which also allows the use of a screwdriver in addition to a spanner for securing the connection. This is useful where space is a constraint. Further, as the cable is terminated through the tapped hole along with the use of a nut, the connection provides increased resistance to vibrations in normal applications.



## elmex Bus Bar Termination Solutions :

Safe, Proven, Advanced options...



### **BUS BAR TERMINALS :**

- ✓ Suitable upto 240 sq mm conductor
- ✓ New Finger Safe and Shrouded Design also available
- ✓ Polyamide 6,6 version with safe mounting lock on DIN Rail
- ✓ Wide Range : SPT 35/70, DPBB 50/70/120/185/240, CBT 110/170/250/300



## SAFE PRACTICES : CONDUCTOR CLAMPING FOR POWER/BUS BAR TERMINALS

For increased creepage distance and safety against accidental contact, partition plates/barrier plates can be assembled along with the terminal block. Protective transparent covers can be assembled at the slots provided on the barrier plates. These provisions make the assemblies fully safe, while simultaneously offering open design of terminals for connecting ring/fork lugged cables.

Further as these power bus bar terminals are designed for termination of prepared conductors, it is necessary for trouble free performance of termination that due care is taken while crimping the ring/fork type lugs. Please refer to crimping workmanship criteria and safe practices for conductor clamping as shown below.

### UNSAFE WORKING

1. Inserting wires without stripping the insulation to required length.
2. Cutting off strands from stranded / flexible wires for making connections.
3. Strands projecting and obstructing nut fitting.
4. Using Aluminium wires instead of Copper wires.
5. All strands not inserted in lug.

### TECHNICALITY

Along with conductor, the insulation also gets clamped/crimped, reducing contact area and causing overheating.

At the clamping face of conductor, number of strands are reduced, hence joint cannot carry rated current, causing overheating.

The strands are cut off usually by ignorance, neglect or by using aluminium stranded conductor of same current rating, which cannot be accommodated in terminal block without cutting off strands.

The projected strands do not allow proper tightening of the nut leading to loose termination and consequent over heating.

For same cross-section Aluminium wires have lower current rating. Bare Aluminium builds up non conducting film in normal atmosphere. Both these factors cause overheating.

As all the strands are not inserted and crimped within the lug, the reduced joint contact carrying the rated current, results in over heating.

### SAFE PRACTICES

Always strip the conductor to required length so that only the conductor and its full contact area is clamped/crimped.

Connect up all the strands of stranded & flexible wires, to the terminal block.

Depending on the lug selected, insulation stripping length should be such that strands are just visible at the other end of the lug.

- a) Use only Copper wires as per rated connection capacity of terminal block.
- b) If Aluminium wires are to be used consult manufacturer. The terminal for copper wire has to be de-rated and Aluminium wires need to be prepared first to prevent oxide film.

Ensure to insert and crimp all the strands of flexible/stranded conductor.

### CRIMPING WORKMANSHIP



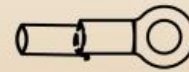
**CORRECT CRIMPING**



**FAULTY CRIMPING**  
All strands not inserted in lug



**FAULTY CRIMPING**  
Strands projecting and obstructing nut fitting



**FAULTY CRIMPING**  
Insulation inserted in lug



### RANGE OF *elmex* Power Bus Bar TERMINALS

Type	Ratings	Termination/Clamping	Mounting Channel (DIN/IEC)
DPBB 50	1000 V/150 A/50 sq mm	Nut bolt	35 mm
DPBC 50	1000 V/150 A/50 sq mm	Nut bolt & screw-clamp	35 mm
DPCC 50	1000 V/150 A/50 sq mm	Screw-Clamp	35 mm
DPBB 70	1000 V/192 A/70 sq mm	Nut bolt	35 mm
DPBC 70	1000 V/192 A/70 sq mm	Nut bolt & screw-clamp	35 mm
DPCC 70	1000 V/192 A/70 sq mm	Screw-Clamp	35 mm
DPBB 120	1000 V/269 A/120 sq mm	Nut bolt	35 mm
DPBC 120	1000 V/269 A/120 sq mm	Nut bolt & screw-clamp	35 mm
DPCC 120	1000 V/269 A/120 sq mm	Screw-Clamp	35 mm
DPBB 185	1000 V/353 A/185 sq mm	Nut bolt	35 mm, 15 mm deep
DPBB 240	1000 V/415 A/240 sq mm	Nut bolt	35 mm, 15 mm deep
SPT 35	1000 V/140 A/35 sq mm	Nut bolt	35 mm
SPT 70	1000 V/192 A/70 sq mm	Nut bolt	35 mm
CBT 110	1000 V/110 A/35-50 sq mm	Nut bolt	32 mm
CBT 170	1000 V/170 A/50-70 sq mm	Nut bolt	32 mm
CBT 250	1000 V/250 A/70-95 sq mm	Nut bolt	32 mm
CBT 300	1000 V/300 A/70-120 sq mm	Nut bolt	32 mm
CBT 110T	1000 V/110 A/35-50 sq mm	Nut bolt in tapped hole	32 mm
CBT 170T	1000 V/170 A/50-70 sq mm	Nut bolt in tapped hole	32 mm
CBT 250T	1000 V/250 A/70-95 sq mm	Nut bolt in tapped hole	32 mm
CBT 300T	1000 V/300 A/70-120 sq mm	Nut bolt in tapped hole	32 mm

### *elmex* & *econix* Participation at Exhibitions

*elmex* and *econix* participated in two exhibitions recently. At Middle East Electricity Exhibition & Conference, Dubai, U.A.E., held between February 8 to 10, 2009, a number of new and innovative products were displayed. At Vibrant VCCI 2009, a periodic regional event, we focussed at the younger generation of upcoming student engineers from the university and local industries, showing and discussing with them a wide range of our products. We received an overwhelming response at both these shows.



VISIT US AT **Saudi Elenex**

Stand No. 2A 110, Riyadh, Saudi Arabia  
May 24 to 27, 2009

We welcome your suggestions and queries regarding our products and feedback about CROSS CURRENTS. Write to us at [ask@elmex.net](mailto:ask@elmex.net)



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TECHNICAL SPECIFICATIONS MAY CHANGE IN LINE WITH TECHNICAL ADVANCES AND INDUSTRY STANDARDS.