



# Cross currents

JULY, 2004

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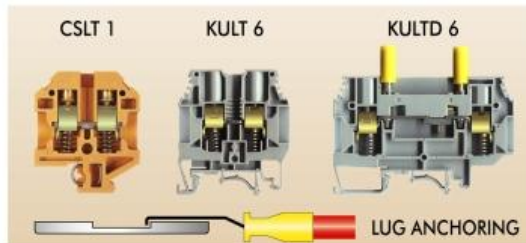
## elmex SPRING-LOADED TERMINAL BLOCKS

**elmex Spring-loaded Terminal Blocks** are specially designed to provide a reliable solution for a vibration proof termination.

These Blocks were first introduced to meet the requirements of CEGB (U.K.) category 1 type of equipment and hence they are **preferred in power projects**. They continue to find application in **power distribution centres, motor control centres, relay control panels** and other control panels in thermal power stations and hydro stations. They are also used in **heavy machine shops, forging and die-casting shops, cement and steel plants, textile industry** and so on, as an additional measure against loosening of conductors in terminal blocks due to high vibrations. The spring below the contact clamp exerts the required pressure on contact clamp to hold the conductor in place even if the screw is in open position.

**All the elmex terminal blocks are inherently vibration resistant** due to the special designs of the clamping unit, current bars and clamping screws. They all pass the vibration test for 1 mm amplitude vibrations as per VDE 0611. However with the spring loading feature, the terminal blocks can withstand still higher vibrations without any loosening of conductors.

**elmex** Spring-loaded Terminal Blocks are available in



**Melamine** insulation and **Polyamide (Nylon) 66** insulation, with rated insulation voltage of **800 V**, rated cross sections up to **10 sq mm**, and rated currents up to **50A**. They are feed through type and disconnecting type with enhanced features.

### Special Features:

- Can use **hook bladed lugs**, which are anchored in the slots on current bars, so that conductors are additionally safe against accidental pull. **Types CSLT1, KULT1, 4, and KULTD4 and 6.**
- Disconnecting types** with sliding links for CT secondary applications, and Knife-edge links for circuit disconnection. **Types KSTD6 WS, KULTD6, KULTD 4.**
- Can short to adjacent terminal using internal removable links for **SCADA** applications. **Type KSTD6 WS**

## elmex EYE BANK

Affiliated to the **Eye Bank Association of India**, Hyderabad, **elmex** Eye Bank was established in 1996, as a part of activities of the **Medical Care Centre Trust at Kashiben Children's Hospital, Vadodara**. The **elmex** Eye Bank functions jointly with **Shri Bhaichand M. Mehta Corneal Transplant Centre**, to restore eyesight with the donated eyes to people suffering from corneal blindness.

The **elmex** Eye Bank has spearheaded the eye donation movement in Vadodara with a number of activities that might motivate people to pledge their eyes for donation after death. The eye donations have increased six fold during last eight years.

The **elmex** Eye Bank has emerged as a model eye bank in Gujarat and has been selected by **ORBIS INTERNATIONAL** and the Eye Bank Association of India, for intensive training programme in Eye

Banking and Corneal Transplanting. The Eye Bank has recently intensified efforts through **Hospital Cornea Retrieval Programme (HCRP)** to enhance availability of quality corneas for sight restoration.

For more details on eye donations, restoration of eyesights, procedures and so on please contact:

**MEDICAL CARE CENTRE TRUST (ELMEX EYE BANK) VADODARA**  
Phone : (0265) 2464130, 2460779  
Email : kgphospital@yahoo.com  
Website : <http://www.vadodara.com/co/mcct.htm>

**EYE BANK ASSOCIATION OF INDIA, HYDERABAD**  
Phone : (040) 23544504, 23545454  
Email : ebai@tatanova.com  
Website : <http://www.ebai.org>

**ORBIS INTERNATIONAL**

## PRODUCT TESTING AT *elmex*



**Testing & Evaluation** is the backbone of product development and continuous quality improvement. *elmex*'s major strength derives from the top priority it has always given to establishing **testing facilities on the shop floor and in the laboratory.**

Two kinds of testing are done here - one is where product testing is conducted as part of the manufacturing process to ensure quality, and the second is at R&D where new products undergo **extensive in-house testing** before they are cleared for regular manufacture.

The following tests are conducted on standard products during manufacturing:

- ✓ **Curing Test**
- ✓ **Flammability Test**
- ✓ **Insulation Resistance & HV Test**
- ✓ **Torque Test and Pull-out Test**

- ✓ **Voltage Drop (mV) Tests**
- ✓ **Plating Thickness Test**
- ✓ **Solderability Test**

The tests conducted at the R&D level are much more rigorous than type tests. Our Test Laboratory set-up conforms to Testing and Calibration Standards and all tests are conducted by technically qualified and experienced staff.

Type tests are conducted as per **IEC, VDE, UL** and **Canadian standards (CSA)**. These include:

- ✓ **Temperature Rise Test**
- ✓ **Pull Out Test**
- ✓ **Mechanical Strength Test (Clamping Units)**
- ✓ **Flexion Test**
- ✓ **Vibration Test**
- ✓ **Voltage Drop Test**
- ✓ **Mechanical Endurance Test (for custom-made switches as Reliability Test)**
- ✓ **Dielectric Test (power frequency)**
- ✓ **Verification of thermal characteristics**
- ✓ **Thermal Aging Test**

We also get tests conducted at Nationally Accredited Laboratories. The main ones include:

- ✓ **Impulse Voltage Withstand Test**
- ✓ **Short-time Current Withstand Test**
- ✓ **Salt Mist Spray Test**
- ✓ **Environmental Tests**

Our passion for testing and evaluation has made *elmex* products one of the most reliable ones in India, and has earned us an equally good reputation abroad.

## APPROVALS

	UL Recognition for USA		CE Mark Conforming to IEC Specification
	c-UL Recognition for Canada		Conforming to IEC 60947-7-1 & 60947-7-2
	D mark Certification for Denmark		CE Mark for explosion-proof Approval as per ATEX directive
	S Mark Certification for Sweden		Quality System ISO 9001-2000
	FI mark Certification for Finland		
	N Mark Certification for Norway		

## INTERFACE MODULES WITH SOLID STATE RELAYS :

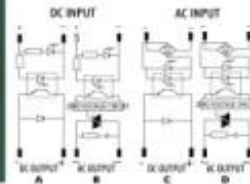
### For opto-Isolation in Control and Automation

Very high switching speeds are essential for control and automation applications, when loads are interfaced to **PLC, DCS, CNC** or any other **dedicated computer systems**. Here, even the best of the traditional electro-mechanical relays cannot be used. **econix's DIN Rail mounted Interface System** using **Solid State Relays**, is a modern system designed specifically for such needs. The System's plus points are:

- **Potential separation** between control and field loads upto 2500 V AC, by opto-isolation.
- **Zero voltage** on random turn on
- Compatible with **TTL/CMOS** Logic
- **LED indication** for input and output status
- **Reverse Polarity** Protection

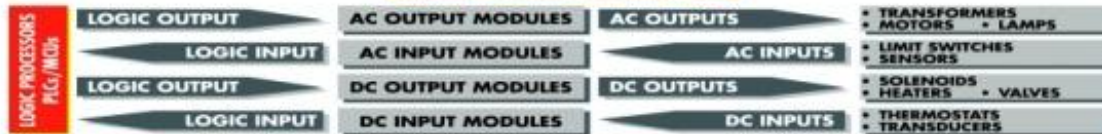


SCHEMATIC DIAGRAMS



- Input **3 to 32 V DC** (or **240 V AC**); Output **60 V DC** (or **180-480 V AC**) in I/O combinations of DC-DC, DC-AC, AC-AC and AC-DC
- Available in channels **1, 2, 4, 6, 8 & 16 Nos.** with 1 NO / 1 NC rating of **3 Amps**
- For field loads, **econix's PCB connectors** are installed on the interface module, for wire sizes up to 2.5 sq mm
- **Typical System Schematic** for these modules indicates the versatility of **econix** Interface Modules with SSR

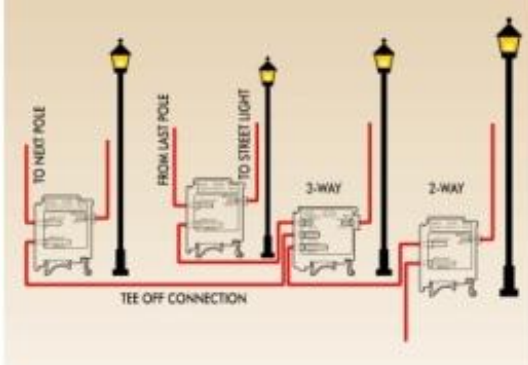
### TYPICAL SYSTEM APPLICATION



## LIGHTING POLE TERMINALS

Originally designed for power supply of street lighting application in Western Europe, the **elmex Lighting Pole Terminals (LPT)** offer an excellent engineering solution that keeps the **voltage drop, joint heating and energy loss** to a bare minimum in a long radial lighting supply distribution system. Such systems are also employed in **fertilizer, petrochemical, cement and steel plants, textile industries, heavy electrical units** and such large installations and their **townships** - all characterized by the need for lighting supply **distribution over a huge expanse** of land.

### APPLICATION - 2 & 3 WAY LIGHTING POLE TERMINALS



**elmex** Lighting Pole Terminals have a **solid copper alloy body into which are connected** in-coming and out-going cables of radial distribution line (**2-way terminals**) and a wire for the lighting fixture. For each lighting pole, two terminals are thus required, one for the phase and the other for the neutral. The LPT can be supplied for **25 sq mm** or **35 sq mm** cables. It is also available for connecting three cables (**3-way terminals**), the third being for the **Tee-off** line.

Wire sizes up to **4 sq mm/6 sq mm** can be accommodated in the LPT for connection to the lighting fixtures. Presently four types of Terminals are available: **LPT 225, LPT 325** (2 & 3 way, 25 sq mm), **LPT 235, LPT 335**, (2 & 3 way 35 sq mm).

Traditionally, street light supply distribution is carried out by twisting two or more wires together to form a joint, or by using porcelain/bakelite open type terminals as in the olden days. **Such methods are extremely cheap on face value, but prove very expensive in long run** looking at the energy loss, voltage drop and maintenance costs, as well as unreliability of lighting supply.





## OUR PRODUCT RANGE

- Insulation Housings in Melamine, Polyamide (Nylon) 6.6, FRPP
- Conductor Clamping with Screw Clamps (MS & Brass), Spring Clamps, Bolted Connection, Anti-Vibration Spring-loaded Clamps
- Mounting on Standard DIN-rails TS 35, TS 32 and TS 15

 <b>Feed-through Terminals</b> : Upto 185 sq mm conductor size	 <b>Lighting Pole Terminals</b> : Upto 35 sq mm (100 Amps) 400 V. For long distance street lighting & similar applications
 <b>Power Terminals</b> : Upto 350 Amps for cables, lugs, bus bars & solid conductors	 <b>PCB Connectors</b> : 0.5-2.5 sq mm, 2/3way, Single, Double Deck, Fuse & Disconnecting type
 <b>Distribution Blocks</b> : For radial distribution upto 16 outputs and upto 50 sq mm incoming & 10 sq mm outgoing	 <b>Special Application Terminals</b> : Wire Wrap, Termi point etc.
 <b>Earth Terminals</b> : Upto 35 sq mm for earthing	 <b>Component Housing</b> : Double Deck Terminals with Diodes, LEDs, Resistors, Varistors etc.
 <b>Micro Terminals</b> : On TS 15 rails for extremely compact arrangements	 <b>Twin Terminals</b> : For 2 separate loading points on outgoing side
 <b>Double Deck Terminals</b> : Feed-through type, Fuse Feed Through/Disconnect type	 <b>Plug and Socket type Terminals</b> : Suited for Draw-out type Control Panels
 <b>Triple Deck Terminals</b> : Especially designed for Automation and Controls, Sensor Circuits	 <b>Passive Interface Modules</b> : D-Sub upto 50 pins and IDC upto 64 pins
 <b>Disconnecting Type Terminals</b> : Knife-edge Lever or Sliding Link Disconnecter for isolation purposes & in CT secondary applications (site-testing)	 <b>Relay Boards</b> : Upto 4 c/o contacts and high contact ratings, also available with protective fuse and indicator
 <b>Fuse Disconnection Terminal</b> : With a fuse in disconnect lever	 <b>Special Application Modules</b> : With Diodes, Signal Distributions, Resistors with/without LED, Solid State Relays, Custom-made Interface Modules
 <b>Switch Mode Power Supplies (SMPS) Panel-mounted</b> : 5, 12, 24 VDC/90-270 VAC upto 10A rated current	
<b>Custom-made Special Application Switches</b>	

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.