



Cross currents

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FOR PRIVATE CIRCULATION ONLY

econix DIN Rail Mounted CNC Interface Modules : Customised and Reliable

econix has specifically developed dedicated **DIN Rail Mounted Interface Modules (IFMs)** compatible with various Computerized Numerical Controls (**CNCs**). In the sophisticated design of modern machine tools, various types of CNC controllers are widely used to ensure better productivity and accuracy. **econix** IFM for CNC controllers are **application-specific designs**. They provide quick and reliable interface for all input and output signals of CNC to hardwares and operator panels, **saving** assembly and wiring time, panel space and **preventing wrong wiring**.

econix IFMs include interface for **24 points input** and **8 or 16 points output** having **1NO+1NC** or **2NO+2NC** potential



free contacts. They are available with direct PCB-soldered, or Socket / Base-mounted OEN, Omron or any other reputed relays for CNC outputs. Options are also available for fuse at each Relay Pole **with fuse blown indication**.



ATEX Directives : elmex Terminals approved for Hazardous Areas

As per **ATEX directive 94/9/EC**, all equipment including terminal blocks have to be **specifically designed and approved for use in potentially explosive atmospheres** (such as found in certain Petroleum & Chemical Industries). **elmex** terminal blocks have been approved by **Det Norske Veritas, (DNV, Norway)**, for use in potentially explosive environments and are classified for surface installation, Group-II, Category 2, zones 1 and 2. They are also verified as per requirements of **European standards EN 50014, EN 50019, EN 50021** for increased safety "e" and type of protection "n". Incidentally, **elmex quality system (ISO 9001:2000)** was also evaluated and **approved by DNV as per European Standard EN 13980:2001**.

The ATEX approval adds yet another feather in the **elmex's** cap, especially with regard to **robustness and complete safety** of **elmex** terminal blocks. They surpass the safety criteria for clearance and creepage distances, maximum temperature rise limits, and electrical strength. These are critical performance parameters absolutely necessary in complying with ATEX standards.

SEE YOU AT

Y AUTOMATION 2004

elmex-econix will be at **Stall A-4, Hall No.6** at **AUTOMATION 2004**, one of the biggest hi-tech international exhibitions, **opening on October 14** at the NSE Complex, Goregaon, Mumbai. The exhibition will continue **till October 17**. We look forward to meeting you there!



Earthing on DIN Rails : TRADITIONAL EARTH-BUS ELIMINATED!



Absence of proper and durable earthing in electrical and electronics control - installations can have serious consequences not only due to electrical shock hazards, but also through interference in certain electronic controls.

The traditional earth-bus with its tapings has to be **pre-designed** and **cannot be extended** once installed in service. This is a major limitation of traditional earth bus in modern designs, which are characterized by modular construction and expansion flexibility. The traditional earth bus and tapping also look **poor in aesthetics associated with modern construction**.

elmex has therefore developed a range of **universal DIN**

rail-mounted earthing terminals for use in electrical control panels, power supply switchboards and electronic controls and automation. They provide a solid and durable earthing solution for all apparatus in electrical and electronic controls.

elmex earthing terminals, with fully insulated housing of **Polyamide 66**, are mounted on DIN rails, alongside other terminals, by means of **metallic foot-clamp** which is secured to the mounting rails. This mounting provides a **solid low resistance earth-contact**, besides preventing inadvertent removal of earthing terminal from rail. The DIN rail has two functions. It operates as mechanical support for all terminals as well as electrical "earth-bus" for the earthing of apparatus through earthing terminals. Earthing wires from individual apparatus are connected to **elmex** earthing terminals.

The **elmex** range of earthing terminals consists of **ET series terminals upto 35 sq mm** similar to "K" Series Terminals (ET 6,10,16,35) and **EBT series terminals up to 6 sq mm** similar to "U" Series Terminals (EBT 2,5,4,6). In addition, the terminal **EBT 4 TWIN** offers one-input/two output connections and **MBET 4** offers earthing facility on **TS 15 rail**, matching **elmex** range of micro terminals. The foot clamps have protective plating to ensure low contact resistance and excellent atmospheric protection for base metals.

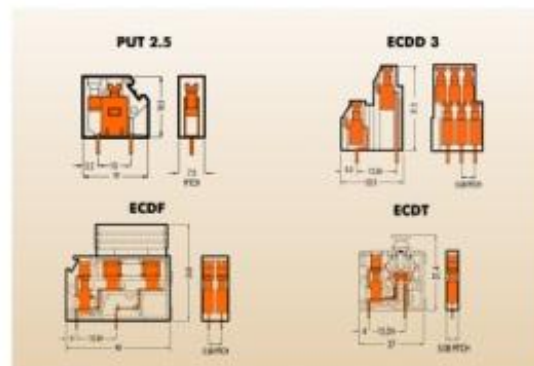
elmex also offers yet **another earthing solution** in the form of **Distribution Blocks** (refer April 2004 issue of Cross Currents, or e-mail request of issue to marketing@elmex.net).

PCB Connectors

The **elmex-econix** range of **PCB connectors** with **Polyamide 66** housing, offer specific advantages to designers and end-users. They are **compact** (5.08 mm pitch), have **sturdy pins** (1.3/1.45 mm dia) and are **readily cascable** before soldering to PCB due to mutually **slide fit** design. They are rated **upto 500 V, 15 A, 2.5 sq mm** conductive size.

The range covers :

- ◆ **PUT 2.5, PUT S2** : with 7.5 & 5.08 mm pitch respectively.
- ◆ **ECM & ECD - 2 & 3** : 2/3 way single deck
- ◆ **ECDD 2 & 3** : 2/3 way double deck
- ◆ **ECDF** : with fuse
- ◆ **ECDT** : disconnection type





SOME OF THE CRITICAL/SPECIAL APPLICATION/
CUSTOM MADE PRODUCTS DEVELOPED BY **elmex**

Salt Mist Test : What You Would Like To Know

In response to our readers' request, beginning with this issue we will regularly include a technical article for general awareness. We thank all of you for your responses. The first article in this series is on the SALT MIST TEST.

The Salt Mist Test is defined and described in Part XI of the Indian Standards **IS-9000** on **Environmental Testing Procedures**. Its detailed description covers Test Chamber Design, Pre-conditioning, Test Procedures, Salt Solutions for Tests, Actual Testing, Recovery and Performance Assessment.

The Test Chamber details are basically meant for Test Laboratories. Pre-conditioning involves cleaning of specimens just before the test. The standard defines **three Test procedures : No. 1 for components and Nos. 2 & 3 for equipment**. Procedure No. 2 is applicable where there is severe salt contamination, while No. 3 is applicable where salt laden atmosphere is occasional.

For terminal blocks, procedure No.1 is applicable. The salt solution for this procedure is normally **5% sodium chloride solution**. Components are exposed to salt mist spray in test chamber for **48 or 96 hours** (elmex has tested for 96 hours). After the Test, salt deposits are cleaned gently, leaving the specimen for 2 to 4 hours in normal atmosphere ("recovery" procedure). The criteria for passing the Test successfully is visual examination. However, **elmex** carries out **voltage drop test** and **insulation resistance test** both before and after Salt Mist Test on terminal blocks.

elmex Plug & Socket Terminals : Still going Strong...



The **elmex Plug & Socket Terminal** was first developed a few decades ago for machine control application, to permit easy connection and disconnection of a machine and its control panel. These terminals are still popular all over India for various applications requiring this feature.

The Plug & Socket Terminal **PSC 1/5** rated **600 V, 25A per contact** is DIN rail mounted (**TS-32**) with **melamine** housing. This 5-way terminal permits connection of **5 control wires (0.5 upto 2.5 sq mm)** to each of its two parts – the fixed part, or the **Socket**, mounted on DIN-rail and the detachable part, or the **Plug**. They are thus an ideal choice in **semi-draw-out type motor control centers**.

Certain specific **design aspects** of the terminals have kept them in popular demand over the last three decades. They include:

- **Quick and easy withdrawal** facility by means of a screw driver operated knob, which also locks the Plug and Socket together in service position,
- **Leaf springs** fitted with screw connection for in-coming and out-going conductors, which eliminate pinching of conductor thus **assuring maintenance free long life of connections**,
- An **additional non-relaxing spring**, not carrying any electrical load, which ensures permanent **high contact pressure** and **low contact resistance**, and
- **Cost-effectiveness**.

Procedures 2 & 3 have salt solutions containing various chlorides, bromides, sulphates, etc. which **raises severity of the test**. After exposing the equipment to the Salt Mist spray for **2 hours** in the Test chamber, it is subjected to **damp heat for 22 hours (procedure-3) and 7 days (procedure-2)**. Finally the equipment is checked if it has passed the test successfully as per the **criteria laid down by the relevant equipment standard**.



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

 Feed-through Terminals : Upto 185 sq mm conductor size	 Lighting Pole Terminals : Upto 35 sq mm (100 Amps) 400 V. For long distance street lighting & similar applications
 Power Terminals : Upto 350 Amps for cables, lugs, bus bars & solid conductors	 PCB Connectors : 0.5-2.5 sq mm, 2/3way, Single, Double Deck, Fuse & Disconnecting type
 Distribution Blocks : For radial distribution upto 16 outputs and upto 50 sq mm incoming & 10 sq mm outgoing	 Special Application Terminals : Wire Wrap, Termi point etc.
 Earth Terminals : Upto 35 sq mm for earthing	 Component Housing : Double Deck Terminals with Diodes, LEDs, Resistors, Varistors etc.
 Micro Terminals : On TS 15 rails for extremely compact arrangements	 Twin Terminals : For 2 separate loading points on outgoing side
 Double Deck Terminals : Feed-through type, Fuse Feed Through/Disconnect type	 Plug and Socket type Terminals : Suited for Draw-out type Control Panels
 Triple Deck Terminals : Especially designed for Automation and Controls, Sensor Circuits	 Passive Interface Modules : D-Sub upto 50 pins and IDC upto 64 pins
 Disconnecting Type Terminals : Knife-edge Lever or Sliding Link Disconnecter for isolation purposes & in CT secondary applications (site-testing)	 Relay Boards : Upto 4 c/o contacts and high contact ratings, also available with protective fuse and indicator
 Fuse Disconnection Terminal : With a fuse in disconnect lever	 Special Application Modules : With Diodes, Signal Distributions, Resistors with/without LED, Solid State Relays, Custom-made Interface Modules
 Switch Mode Power Supplies (SMPS) DIN Rail/Panel Mounted : 90-270 V AC/5, 12, 24, 48 V DC upto 10A rated current	
Custom-made Special Application Switches	

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



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