



### DESCRIPTION

The Mertech electronic EM-24 is a 24 channel, mimic / annunciator panel designed to be used in energy, distribution and automation systems.

Optically isolated digital inputs are equipped with noise suppressing filters and are capable of operating smoothly in high electrical noise environments. The detection delay of inputs are adjustable between 2 and 500ms.

The door mounted electronic module features 3 relay outputs rated at 5Amp. Relays provide Horn, Bell and Internal Failure functions. An additional buzzer is provided inside the unit for audible alarms.

The unit features ultra-bright, bicolor (red-green) led indicators. Alarms may be assigned to different priority levels in order to reduce confusion.

Using front panel pushbuttons, alarms may be acknowledged and reset, the unit tested.

The configuration of the module is performed with DIP Switches placed on the back panel. Additional programming may be performed from the front panel or through programming software.

The isolated RS-485 MODBUS RTU communication port is free from ground potential differences and allows safe transfer of measured parameters to automation and monitoring systems.

The supply input is isolated from other terminals. The auxiliary supply is 230V AC.



### ALARM LEDS

**FAST FLASH:** at the first detection of the fault or if fault is detected at LED steady on condition.

**SLOW FLASH:** activated when the ACK (alarm acknowledge) pushbutton is pressed and if the fault signal is still active.

**STEADY ON:** activated if the fault signal disappears at SLOW FLASH condition. Alarm led will fast flash fast if fault signal reoccurs.

**LED OFF:** the alarm led turns off when RESET pushbutton is pressed and fault signal is not present.

### AUDIBLE WARNINGS

When a fault signal is detected, the internal buzzer turns on with a period of 1 second. If ACK pushbutton is pressed, the buzzer turns off. If ACK is not pressed within 1 minute, then it switches to slow sound mode (beeps once every 10 seconds.)

### RELAY OUTPUTS

**HORN RELAY:** If any "red" alarm led turns on, then the horn relay will also turn on. The relay turns off when ACK pushbutton is pressed. The HORN RELAY can be made active/passive by holding pressed the HORN button for 3 seconds.

**BELL RELAY:** If any "green" alarm led turns on, then the bell relay will turn on. The relay turns off when ACK pushbutton is pressed.

**WATCHDOG RELAY:** At startup the relay turns on. If the board fails, then the watchdog relay turns off.

### OTHER LEDS

**HORN/BELL LED:** If the HORN relay turns on, the "red" led turns on. If the HORN relay is not on and if the BELL relay is on, then the "green" led turns on. If both relays are off then the led is off. HORN led will flash if HORN RELAY is passive.

**SAFE/FAIL LED:** If an internal fault condition is detected at self-test, then this led will turn on "red", else it turns on "green".

### PUSHBUTTON FUNCTIONS

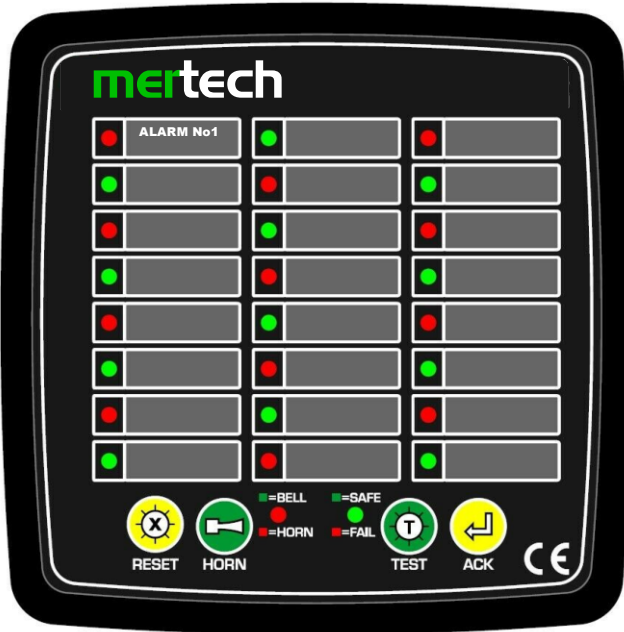
**ACK:** When ACK is pressed, fast flashing leds switch to slow flash (or steady on) mode, the internal buzzer turns off, horn and bell relays turn off.

**RESET:** When RESET is pressed, all alarm leds, horn and bell relays turn off. If fault signal is present, then the alarm will occur again.

**TEST:** When pressed, all leds will turn on "red/green" alternatively and the buzzer sounds.

**HORN:** When pressed, HORN and BELL relays will turn on alternatively for 1 second.

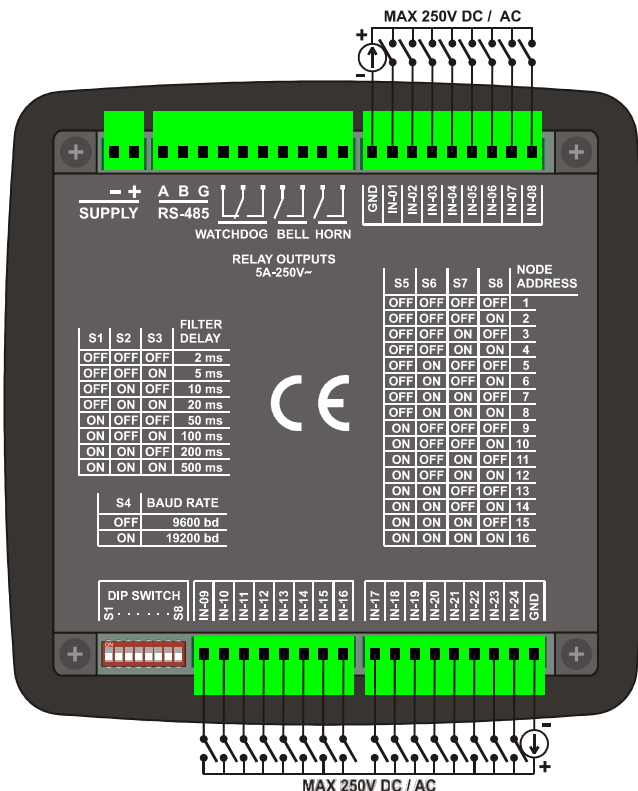
### ELECTRONIC MODULE



### TECHNICAL SPECIFICATIONS

**Supply input:** 230V AC 50Hz  
**Power Consumption:** < 4 VA  
**Fault Inputs:** 24 opto-isolated inputs, with positive inputs and common negative terminal, protected against high voltage and electrical noise.  
**Input Impedance:** 130K-ohms (opt. 40K-ohms)  
**Max Input Voltage:** 250VDC/AC (opt 140VAC/DC)  
**Input Current:** max. 1mA @ 110VDC  
**Surge Protection:** 1000V / 50us  
**Isolation:** 1000VAC, 1 minute  
**Filter Delay:** 2-5-10-20-50-100-200-500ms selectable  
**Visual Warnings:** 26 ultra-bright and bicolor leds (red-green).  
**Audible Warning:** Internal 23mm buzzer, 80dB  
**Relay Outputs:** 3 outputs, 5A @ 250V AC  
**Serial Port:**  
**Signal Type:** RS-485  
**Protocol:** Modbus RTU  
**Data Rate:** 9600-19200baud  
**Isolation:** 1000V AC, 1 minute  
**Operating Temp. Range:** -20°C...+70 °C  
**Storage Temp. Range:** -40°C...+85 °C  
**Max. Relative Humidity:** 95% non-condensing.  
**Protection Degree:** IP 65  
**Electronic Module:** Flame retardant, ROHS compliant, high temperature ABS/PC (UL94-V0)  
**Installation:** Flush mount.  
**Connectors:** DIN rail mtd terminals.  
**Cable Section:** max. 4mm<sup>2</sup>  
**Enclosure:** Steel structure, coated with an epoxy polyester powder.  
**Weight:** 15 Kgs

### BACK VIEW



### DIMENSIONS

