

MD100 series PCB Mount LCD Module

Hour meter, Service Alarms, Tachometer, Volt Meter

Standard and custom LCD display messages, wide AC/DC input voltages



The MD module has four pins for direct printed circuit board mounting for use in equipment panels and dashes. This product has CE and ETL approvals and is suitable for a wide range of applications.

Hour Meter

- Non resettable equipment run hours
- Total timer shows 0.1 hour displayed resolution up to 99,999.9 hours, then 1 hour resolution up to 999,999 hours.
- Hour glass symbol flashes On/off to indicate counting time.
- Recorded resolution 1 second

Timers

- 2 Independent timers, resettable (Timer 1, Timer 2)
- Timers show 0.1 hour displayed resolution up to 99,999.9 hours, then 1 hour resolution up to 999,999 hours.
- One optional alarm per timer

Service Alerts

- Up to three (3) Service alerts, automatic or resettable
- One time breakin interval option for each alarm (1 to 9999 hours)
- Normal interval: 1 to 999,999 hours
- Warning threshold (1-99 hours)
- Standard and Custom Alerts available on the LCD display

Counter

- Event counter, or power up/power down cycle counter
- Up or down counting from 1 to 999,999 counts
- Optional count down preload, or count up to maximum value
- Resettable
- Max input rate: 500 Hz
- Alarm on LCD display available when count threshold is reached
- Output available when count threshold is reached

Tachometer

- Minimum RPM: 10
- Maximum RPM: 30,000
- Resolution: 1 RPM
- Firing patterns: 1 pulse=1 RPM, 1 pulse=2 RPM, 2 pulses=1 RPM
**other firing patters available
- Configurable noise rejection
- Maximum RPM recall and clear option

Volt Meter

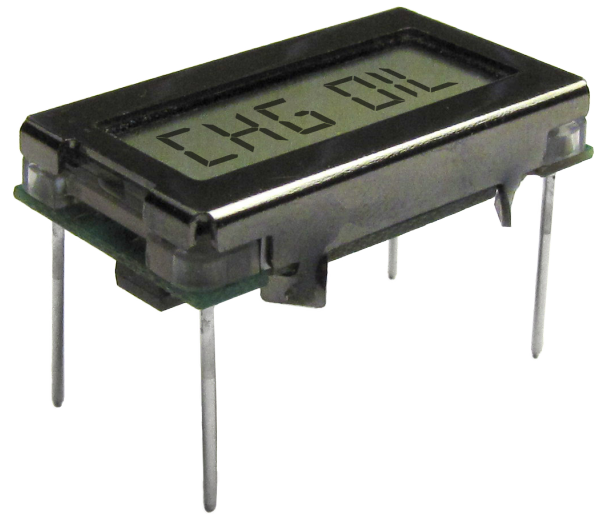
- Monitor and display equipment voltage
- Over/under voltage alarms available

Input Alarms

- Up to three (3) prioritized alarms based on external digital inputs
- Standard and Custom Alerts available on the LCD display

LCD Display

- LCD: digit height 5.2mm, high UV rated for outdoor use, wide temperature range (-40C to 70C)
- LCD viewing area: 26.8mm x 10.8mm
- Viewing direction: 12 o'clock
- One or two frame messages in LCD segments
- Icons: BATT, SVC, TMR, TMR2, CTR, CTR2, RPM
(Note: other custom LCD or Icon options available)



Electrical Ratings

Model	Input DC	Input AC	Max DC run current	Typ. DC run current	Max AC run current
MD100	5-12vdc	5-15vac	2.5mA	1.3mA	4.4mA
MD110	12-48vdc	15-75vac	2.5mA	1.4mA	4.1mA
MD120	48-150vdc	75-287vac	2.2mA	1.2mA	2.2mA

- EEPROM memory retention: 30 years without power
- Quartz crystal accuracy

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Model	Input
MD100	5-12vdc/5-15vac
MD110	12-48vdc/15-75vac
MD120	48-150vdc/75-287vac

Model number example: MD100-140-8111 (module, 5-12vdc/5-15vac, 4PCB pins, Standard LCD, hour meter only).

Environmental Specifications

- Operating temperature: -40°C to 70°C
- Humidity: SAE J1378 95% RH
- Weight 0.3 oz.
- Warranty: Two years for OEMs

Electrical Tests

- Immunity and Emissions:
IEC 61326-1, IEC 61000-4-3
- ESD:
IEC 61000-4-2

Environmental Tests

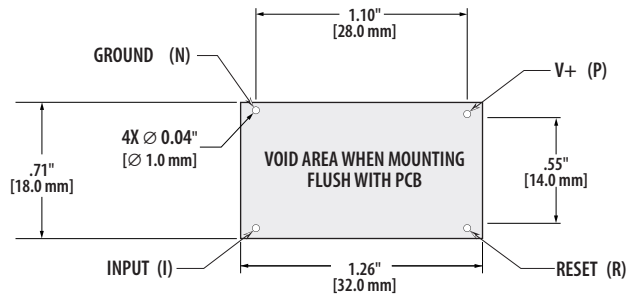
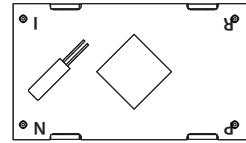
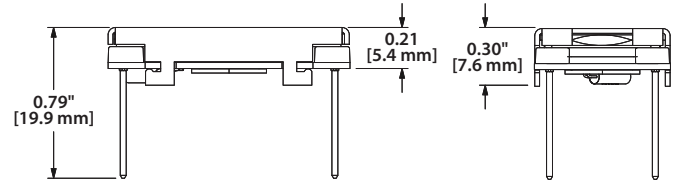
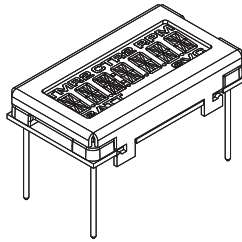
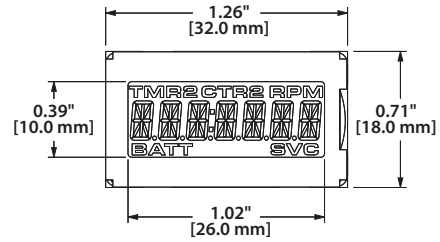
- Ultraviolet Test:
UV Filter: 340nm, UV Sensor: Daylight
Irradiance: 0.35W/m²
Total time: 2220 light hrs (2800 KJ/m² absorbed)
- Temperature Cycle Test:
Range: -40°C to +70°C
Ramp/Soak: 1 hr / 2 hr
Total cycle / time: 500 Hours

OEM Options

- Automatic on/off Service Alerts
- Reset clear Service Alerts
- Custom LCD, messages, and Icons
- I/O Communications to host equipmen

Agency Approvals

- CE, ETL certified



Recommended PCB Footprint