MD100 series PCB Mount LCD Module
Hour meter, Service Alarms, Tachometer, Volt Meter
Standard and custom LCD display messages, wide AC/DC input voltages

GDi
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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
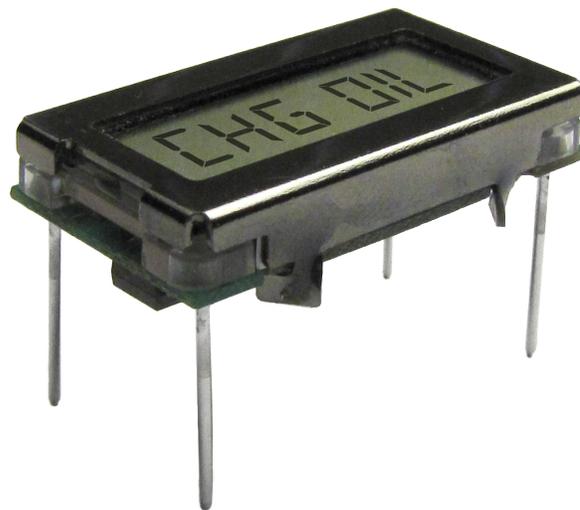- Maximum RPM recall and clear option

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

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/m^2
  Total time: 2220 light hrs (2800 KJ/m^2 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