

# TMP100

Temperature Module

Maretron's TMP100 measures the temperature for up to 6 temperature probes and reports the information over an NMEA 2000® network. The TMP100 supports up to 4 thermistor probes and 2 high temperature thermocouple probes. Optional thermistor probes (-20°C to 80°C or -4°F to 176°F) cover a wide range of applications including cabin air temperature, engine room air temperture, refrigerator/freezer temperature, under bolt temperature (inverters, charges, pumps, motors, etc.), tank temperatures (live well bait, hot water, etc.), and air duct temperatures. The optional thermocouple probes (0°C to 900°C or 32° to 1652°F) are used to measure Exhaust Gas Temperature (EGT) as part of a comprehensive fuel management system.



### Products

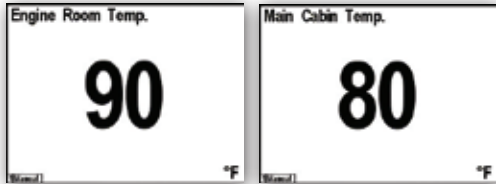
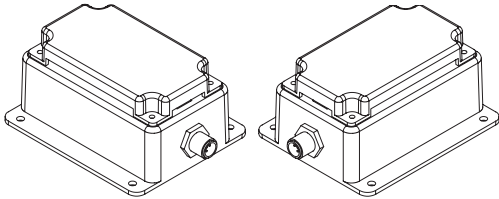
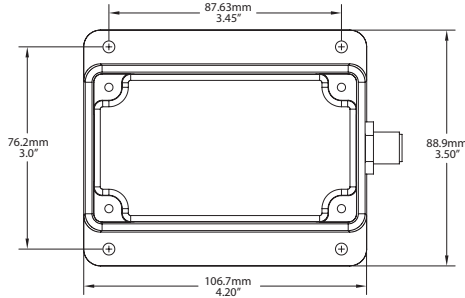
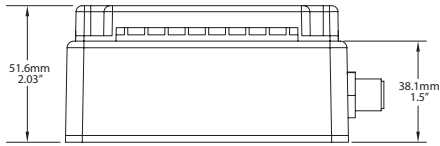
| PART NUMBER | DESCRIPTION                                               |
|-------------|-----------------------------------------------------------|
| TMP100-01   | Temperature Module                                        |
| TR3K        | TMP100 Ring/Under Bolt Temperature Probe                  |
| TP-AAP-1    | TMP100 Ambient Air Temperature Probe                      |
| TP-IP-1     | TMP100 Immersion (Tanks, Plenums, etc.) Temperature Probe |
| TP-EGT-1    | TMP100 Exhaust Gas Temperature (EGT) Probe                |



The following accessories are available for the TMP100:



- Six External Temperature Probes are Measured and Broadcast Over NMEA 2000 Network
- Four Channels for Thermistor Probes and 2 Channels for High Temperature Thermocouple Probes
- Wide Variety of Applications Supported with Optional Temperature Probes
  - Cabin Temperature
  - Engine Room Temperature
  - Under Bolt Temperature (Inverters, Chargers, Pumps, etc.)
  - Refrigerator/Freezor Temperature
  - Tank Temperatures (Live Well Bait, Hot Water, etc.)
  - Air Duct Temperature
  - Exhaust Gas Temperature
- Optional Temperature Probes
  - Ambient Air Temperature Probe (-20°C to 80°C or -4°F to 176°F)
  - Ring Terminal Probe (-20°C to 80°C or -4°F to 176°F)
  - Immersion Probe for Tanks or Plenums (-20°C to 80°C or -4°F to 176°F)
  - Exhuast Gas Temperature Probe (0°C to 900°C or 32° to 1652°F)



DSM250 Screen Shots

### Specifications

| Parameter                           | Value                          | Comment                          |
|-------------------------------------|--------------------------------|----------------------------------|
| Measurement Range – Thermistor      | -20°C to 80°C (-4°F to 176°F)  | With supplied thermistor probe   |
| Measurement Accuracy – Thermistor   | ± 2°C (± 3.6°F)                | With supplied thermistor probe   |
| Measurement Range – Thermocouple    | +0°C to 700°C (32°F to 1292°F) | With supplied thermocouple probe |
| Measurement Accuracy – Thermocouple | ± 2°C (± 3.6°F)                | With supplied thermocouple probe |

### Certifications

| Standard                                                        | Comment                       |
|-----------------------------------------------------------------|-------------------------------|
| NMEA 2000® Standard                                             | Level A                       |
| Maritime Navigation and Radio Communication Equipment & Systems | IEC 61162-3                   |
| Maritime Navigation and Radio Communication Equipment & Systems | IEC 60945                     |
| FCC and CE mark                                                 | Electromagnetic Compatibility |

| Description                | PGN #                                          | PGN Name                                                                                                                                                                                                                                                                      | Default Rate                    |
|----------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Periodic Data PGNs         | 130310<br>130311<br>130312                     | Temperature Sources:<br>Sea Temperature<br>Outside Temperature<br>Inside Temperature<br>Engine Room Temperature<br>Main Cabin Temperature<br>Live Well Temperature<br>Bait Well Temperature<br>Refrigeration Temperature<br>Heating System Temperature<br>Freezer Temperature | 0.5 times/second                |
| Response to Requested PGNs | 126464<br>126996<br>126998                     | PGN List (Transmit and Receive)<br>Product Information<br>Configuration Information                                                                                                                                                                                           | N/A<br>N/A<br>N/A               |
| Protocol PGNs              | 059392<br>059904<br>060928<br>065240<br>126208 | ISO Acknowledge<br>ISO Request<br>ISO Address Claim<br>ISO Address Command<br>NMEA                                                                                                                                                                                            | N/A<br>N/A<br>N/A<br>N/A<br>N/A |
| Maretron Proprietary PGNs  | 128720                                         | Configuration<br>Exhaust Gas Temperature                                                                                                                                                                                                                                      | N/A<br>0.5 times/second         |

### Electrical

| Parameter                     | Value         | Comment                         |
|-------------------------------|---------------|---------------------------------|
| Operating Voltage             | 9 to 32 Volts | DC Voltage                      |
| Power Consumption             | 100 mA        | NMEA 2000® Interface            |
| Load Equivalence Number (LEN) | 2             | NMEA 2000® Spec. (1LEN = 50 mA) |
| Reverse Battery Protection    | Yes           | Indefinitely                    |
| Load Dump Protection          | Yes           | Energy Rated per SAE J1113      |

### Mechanical

| Parameter | Value                                             | Comment                        |
|-----------|---------------------------------------------------|--------------------------------|
| Size      | 3.50" x 4.20" x 2.03" (88.9mm x 106.7mm x 51.6mm) | Including Flanges for Mounting |
| Weight    | 13 oz. (368.5 g)                                  |                                |

### Environmental

| Parameter                | Value                                                                  |
|--------------------------|------------------------------------------------------------------------|
| IEC 60945 Classification | Exposed                                                                |
| Degree of Protection     | IP64                                                                   |
| Operating Temperature    | -25°C to 55°C                                                          |
| Storage Temperature      | -40°C to 70°C                                                          |
| Relative Humidity        | 93%RH @40° per IEC60945-8.2                                            |
| Vibration                | 2-13.2Hz @ ±1mm, 13.2-100Hz @ 7m/s² per IEC 60945-8.7                  |
| Solar Radiation          | Ultraviolet B, A, Visible, and Infrared per IEC 60945-8.10             |
| Corrosion (Salt Mist)    | 4 times 7days @ 40°C, 95%RH after 2 hour Salt Spray Per IEC 60945-8.12 |
| Electromagnetic Emission | Conducted and Radiated Emission per IEC 60945-9                        |
| Electromagnetic Immunity | Conducted, Radiated, Supply, and ESD per IEC 60945-10                  |
| Safety Precautions       | Dangerous Voltage, Electromagnetic Radio Frequency per IEC 60945-12    |