

## Micro-Temp III

### **Models:**

MTIII 250-2 Channel Averager  
MTIII 250B-2 Channel Averager & BS&W Monitor  
MTIII 250M-2 Channel Averager & 2 Mass 1000's  
MTIII 250MB-2 Channel Averager & 2 Mass 1000's & BS&W Monitor

### **Specification:**

|                       |  |
|-----------------------|--|
| DC Input              | 24VDC  |
| DC Output             | 12VDC and 24VDC                                |
| Nominal AC Voltage    | 120Vac@60 Hz                                   |
| Pulse Input           | AC Pulse, DC Pulse*, Frequency, or dry contact |
| Power                 | 8.0W   |
| Transient Protection  | 2500V  |
| Operating Temperature | -40°F to 140°F                                 |
| Humidity              | -0-97% non-condensing                          |
| Mounting Hole         | 0.31" 4x                                       |
| Case Material         | Molded fiberglass reinforced polyester Type 4x |
| Nema                  | Type 4x  |
| Weight                | 6.25 lbs.                                      |

\*DC PULSE MUST BE 60VDC OR GREATER

### **Display:**

Normal run displays automatically scans through

- Display temperature channels 1 & 2 (Probe Fault if probe not connected)
- Display average temperature channels 1 & 2 (Probe Fault if probe not connected)
- Display sample count channels 1 & 2 (Probe Fault if probe not connected)
- Display current BS&W on top line, BS&W set (if BS&W enabled)
- Channels 1 & 2 sample rate per hour
- Channels 1 & 2 Totalizers (if Mass-1000 enabled)
- Totalizer rolls over at 999,999,999 (Number of rollovers displayed on bottom right of screen)

Press encoder to reset sample counts select YES to reset or NO to skip

- First display is for channel 1
- Press encoder for second display
- Second display is for channel 2
- Press encoder to return to run

## (Display Continued)

Press and hold encoder for setup. Press encoder for next setting.

Adjust offset temperature for channel 1

Adjust offset temperature for channel 2

Adjust BS&W set point

Adjust time-to-divert

Adjust time-from-divert

Adjust Mass-1000 input rate channel 1 (1 to 200, 8400, or 10000)

Adjust Mass-1000 ratio channel 1 (1P per 1B, 10P per 1B, 100P per 1B, 1P per 5B)

Adjust Mass-1000 input rate channel 2 (1 to 200, 8400, or 10000)

Adjust Mass-1000 ratio channel 2 (1P per 1B, 10P per 1B, 100P per 1B, 1P per 5B)

Adjust MODBUS address (1 to 247)

Exit setup (Repeat setup, Exit no save, Exit and save)

### Temperature Probe 1 or 2 Channels

Operating Range

1-250° F

Sample Count

0-4, 294, 967, 295 counts

Analog Output

4-20ma= 0-250° F (Only channel 1 if BS&W enabled)

(Internally Powered)

### BS&W

(If Enabled)

Input

0-5V for 0-5.00% BS&W

Time to Divert

0-120 Seconds

Time from Divert

0-120 Seconds

Relay Output

SPDT energize on divert

Analog Output

4-20ma= 0-5.0% BS&W (On channel 2 if BS&W enabled)

(Internally Powered)

### MAS-1000

Divide Range

(1 to 200, 8400, or 10000)

Output

Pulse to Proof Meter

### Modbus Communication

Settings: 9600 baud, 8 bit data, 1 stop bit on RS485

All settings can be retrieved

**Temp Avg + BS&W**

**Holding Registers**

|       |      |         |       |        | Single | Multi   |                     |           |                   |                |
|-------|------|---------|-------|--------|--------|---------|---------------------|-----------|-------------------|----------------|
| start | Mem  | # Regs  | Data  | read   | Write  | Write   | Register name       |           |                   |                |
| Reg   | Addr |         | Type  | Code 3 | Code 6 | Code 16 |                     |           |                   |                |
| 0     | 20   | 1       | int16 | *      |        |         | Current Temp 1      | Degrees F | See Note 1        | READ ONLY      |
| 1     | 22   | 1       | int16 | *      |        |         | Current Avg 1       | Degrees F | See Note 1        | READ ONLY      |
| 2     | 24   | 2 (2&3) | int32 | *      |        |         | Sample Count 1      |           |                   | READ ONLY      |
| 4     | 28   | 1       | int16 | *      |        |         | Current Temp 2      | Degrees F | See Note 1        | READ ONLY      |
| 5     | 2A   | 1       | int16 | *      |        |         | Current Avg 2       | Degrees F | See Note 1        | READ ONLY      |
| 6     | 2C   | 2 (6&7) | int32 | *      |        |         | Sample Count 2      |           |                   | READ ONLY      |
| 8     | 30   | 1       | int16 | *      |        |         | Current BSW         | 0 to 50   | See Note 2        | READ ONLY      |
| 9     | 32   | 1       | int16 | *      | *      | *       | BSW Set Point       | 0 to 50   | See Note 2        | Write 0 to 50  |
| 10    | 34   | 1       | int16 | *      | *      | *       | Time To Divert      | 0 to 120  | Seconds           | Write 0 to 120 |
| 11    | 36   | 1       | int16 | *      | *      | *       | Time From Divert    | 0 to 120  | Seconds           | Write 0 to 120 |
| 12    | 38   | 1       | int16 | *      |        |         | MASS-1000 Rate Ch1  |           | Input Rate pulses |                |
| 13    | 3A   | 1       | int16 | *      |        |         | MASS-1000 Rate Ch2  |           | Input Rate pulses |                |
| 14    | 3C   | 1       | int16 | *      |        |         | MASS-1000 Ratio Ch1 |           | See table 1       |                |
| 15    | 3E   | 1       | int16 | *      |        |         | MASS-1000 Ratio Ch1 |           | See table 1       |                |

Note 1:

Value is in 0.1 Degrees F  
Divide value by 10 to get Degrees F

Example

718  
71.8

Note 2:

Value is in 0.01 % BS&W  
Divide value by 100 to get % BS&W

150  
1.50

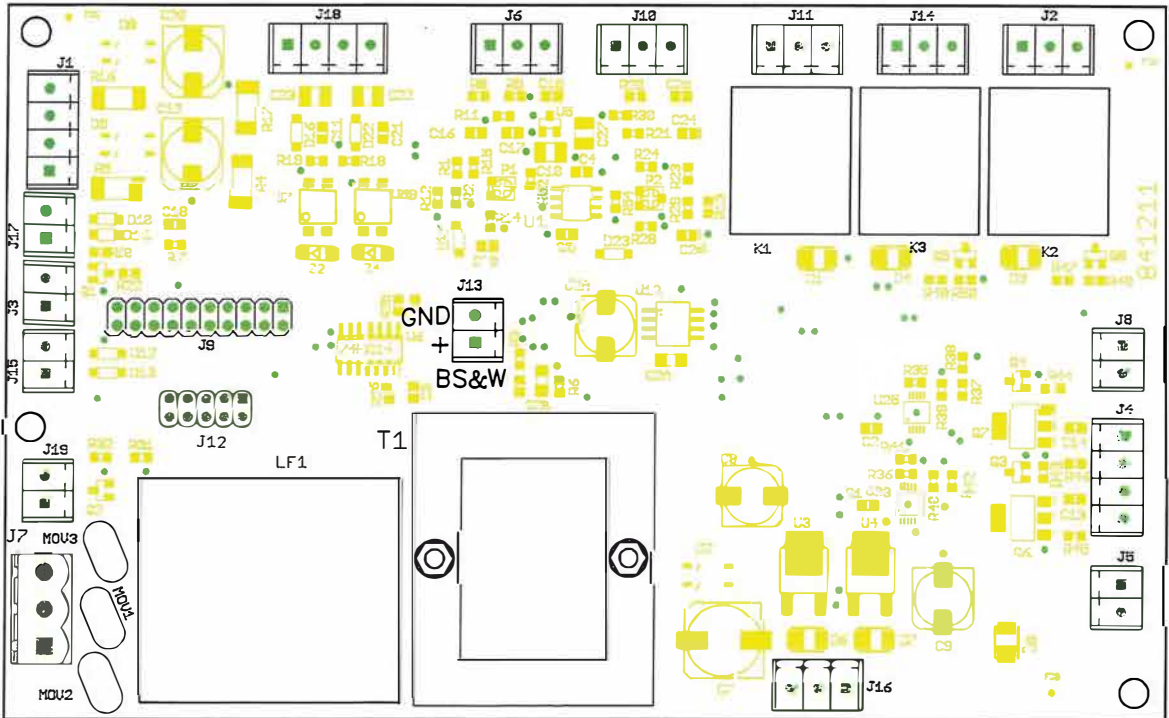
Table 1

|       |   |               |
|-------|---|---------------|
| Ratio | 0 | 1 P PER 10 B  |
|       | 1 | 1 P PER 5 B   |
|       | 2 | 1 P PER 1 B   |
|       | 3 | 10 P PER 1 B  |
|       | 4 | 100 P PER 1 B |

**Coils**

| start |      | Bits | Data | read   |  |  | Coil name          |  |  |           |
|-------|------|------|------|--------|--|--|--------------------|--|--|-----------|
| Reg   |      |      | Type | Code 1 |  |  |                    |  |  |           |
| 0     | SYS  | 0    | int1 | *      |  |  | Excess BS&W Status |  |  | READ ONLY |
| 1     | Flag | 1    | int1 | *      |  |  | Divert Status      |  |  | READ ONLY |

CH1 AC/DC PULSE IN +  
 CH2 AC/DC PULSE IN +  
 FREQ 1 IN +  
 FREQ 1 OUT +  
 FREQ 2 IN +  
 FREQ 2 OUT +  
 120VAC POWER  
 LINE  
 NEU  
 GND



DRY CONTACT PULSE IN  
 CH1  
 CH2

CH1 THERM IN GREEN RED BROWN  
 CH2 THERM IN GREEN RED BROWN

CH1 MASS OUT NO C NC  
 CH2 MASS OUT NO C NC  
 BS&W OUT NO C NC

GND  
 +12  
 +24  
 DC  
 OUT

B  
 A RS485  
 GND  
 CH2 4-20mA OUT  
 GND  
 CH1 4-20mA OUT  
 GND  
 +24 IN