

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

MTIII Modbus Data- Temp Avg + BS&W + MASS1000
(DEPRECATED = old, do not use)

Coils

start		Bits	Data	read			Coil name			
Reg			Type	Code						
				1						
0	sys-flag	0	int1	*			Excess BS&W Status			READ ONLY DEPRECAT ED
1	sys-flag	1	int1	*			Divert Status			READ ONLY DEPRECAT ED
2	save-flag	0	int1				comm Enable	1 = enabled		READ ONLY
3	save-flag	1	int1				UNUSED: reserved for future use			
4	save-flag	2	int1				UNUSED: reserved for future use			
5	save-flag	3	int1				UNUSED: reserved for future use			
6	save-flag	4	int1				UNUSED: reserved for future use			
7	save-flag	5	int1				UNUSED: reserved for future use			
8	save-flag	6	int1				UNUSED: reserved for future use			
9	save-flag	7	int1				UNUSED: reserved for future use			
10	eeflag	0	int1				Zero Channel 1	1 = reset counts on ch 1		READ/WRIT E
11	eeflag	1	int1				Zero Channel 2	1 = reset counts on ch 2		READ/WRIT E

Discrete Inputs

start		bits	data	read		Name		
reg			type	code				
				2				
0	sys-flag	0	int1			Excess BS&W Status		READ ONLY
1	sys-flag	1	int1			Divert Status		READ ONLY

2	sys-flag	2	int1		Merchantable Status				READ ONLY	
3	sys-flag	3	int1		pulse 1 ISR status		1 = pulse received, waiting to process		READ ONLY	internal use only)
4	sys-flag	4	int1		pulse 2 ISR status		1 = pulse received, waiting to process		READ ONLY	internal use only)
5	sys-flag	5	int1		mass-1000 channel 1 ISR status		1 = batch received, waiting to process		READ ONLY	internal use only)
6	sys-flag	6	int1		mass-1000 channel 2 ISR status		1 = batch received, waiting to process		READ ONLY	internal use only)
7	sys-flag	7	int1		pulse 1 ISR enabled				READ ONLY	internal use only)
8	sys-flag	8	int1		pulse 2 ISR enabled				READ ONLY	internal use only)
9	sys-flag	9	int1		display reinit		1 = time to re-initialize the LCD		READ ONLY	internal use only)

Holding Registers

					Single	Multi				
start	Mem	# Regs	Data	read	Write	Write	Register name			
Reg	Addr		Type	Code 3	Code 6	Code 16				
0	0x130	1	int16	*			Current Temp 1	Degrees F	See Note 1	READ ONLY DEPRECATED
1	0x132	1	int16	*			Current Avg 1	Degrees F	See Note 1	READ ONLY DEPRECATED
2	0x134	2 (2&3)	int32	*			Sample Count 1		See Note 3	READ ONLY DEPRECATED
4	0x138	1	int16	*			Current Temp 2	Degrees F	See Note 1	READ ONLY DEPRECATED

5	0x13A	1	int16	*			Current Avg 2	Degrees F	See Note 1	READ ONLY	DEPRECATED
6	0x13C	2 (6&7)	int32	*			Sample Count 2		See Note 3	READ ONLY	DEPRECATED
8	0x140	1	int16	*			Current BSW	0 to 500	See Note 2	READ ONLY	DEPRECATED
9	0x142	1	int16	*	*	*	BSW_Set Point	0 to 500	See Note 2	Write 0 to 500	
10	0x144	1	int16	*	*	*	Time To Divert	0 to 120	Seconds	Write 0 to 120	
11	0x146	1	int16	*	*	*	Time From Divert	0 to 120	Seconds	Write 0 to 120	
12	0x148	1	int16	*			MASS-1000 Rate Ch1		Input Rate pulses		DEPRECATED
13	0x14A	1	int16	*			MASS-1000 Rate Ch2		Input Rate pulses		DEPRECATED
14	0x14C	1	int16	*	*	*	MASS-1000 Ratio Ch1		See table 1	Write 0 to 4	
15	0x14E	1	int16	*	*	*	MASS-1000 Ratio Ch1		See table 1	Write 0 to 4	
16	0x150	2 (16&17)	int32	*			MASS TOTALIZER 1		See Note 3		DEPRECATED
18	0x154	2 (18&19)	int32	*			MASS TOTALIZER 2		See Note 3		DEPRECATED
20	0x158	1	int16	*			MASS RATE BPH 1				DEPRECATED
21	0x15A	1	int16	*			MASS RATE BPH 2				DEPRECATED
22	0x15C	2 (22 & 23)	int32	*			Temperature Accumulator 1		Diagnostics only See Note 3		DEPRECATED
24	0x160	2 (24 & 25)	int32	*			Temperature Accumulator 2		Diagnostics only See Note 3		DEPRECATED

Note 1:	Example
Value is in 0.1 Degrees F	718
Divide value by 10 to get Degrees F	71.8

Note 2:	
Value is in 0.01 % BS&W	150
Divide value by 100 to get	1.50

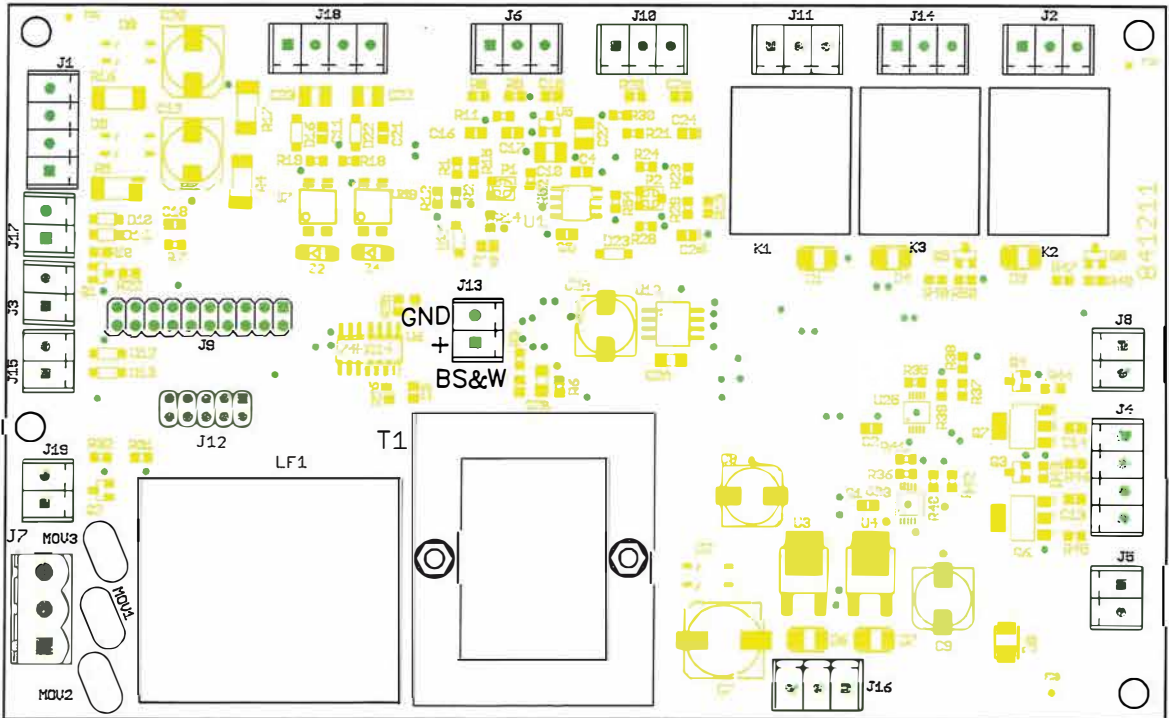
Table 1		
Ratio	0	1 P PER 10 B
	1	1 P PER 5 B
	2	1 P PER 1 B
	3	10 P PER 1 B
	4	100 P PER 1 B

Input Registers

start	Mem	# Regs	Data	read			Register name			
Reg	Addr		Type	Code 4						
0	0x16A	1	int16	*			Current Temp 1	Degrees F	See Note 1	READ ONLY
1	0x16C	1	int16	*			Current Avg 1	Degrees F	See Note 1	READ ONLY
2	0x16E	2 (2&3)	int32	*			Sample Count 1		See Note 3	READ ONLY
4	0x172	1	int16	*			Current Temp 2	Degrees F	See Note 1	READ ONLY
5	0x174	1	int16	*			Current Avg 2	Degrees F	See Note 1	READ ONLY
6	0x176	2 (6&7)	int32	*			Sample Count 2		See Note 3	READ ONLY
8	0x17A	1	int16	*			Current BSW	0 to 500	See Note 2	READ ONLY
9	0x182	1	int16	*			MASS-1000 Rate Ch1		Input Rate pulses	READ ONLY
10	0x184	1	int16	*			MASS-1000 Rate Ch2		Input Rate pulses	READ ONLY
11	0x18A	2 (11&12)	int32	*			MASS TOTALIZER 1		See Note 3	READ ONLY
13	0x18E	2 (13&14)	int32	*			MASS TOTALIZER 2		See Note 3	READ ONLY
15	0x192	1	int16	*			MASS RATE BPH 1			READ ONLY
16	0x194	1	int16	*			MASS RATE BPH 2			READ ONLY
17	0x196	2 (17 & 18)	int32	*			Temperature Accumulator 1		Diagnostics only See Note 3	READ ONLY
19	0x19A	2 (19 & 20)	int32	*			Temperature Accumulator 2		Diagnostics only See Note 3	READ ONLY

Note 3: 32 bit values Take higher register * 65535 Add lower register	Example: Register 2 = 1500, Register 3 = 2 $((2 * 65535) + 1500) = 132,570$
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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