



Relative Humidity Recorder/Controller

DESCRIPTION

The MRC7700 Relative Humidity Recorder is a micro-processor based circular chart profile recorder capable of measuring, displaying, recording and controlling relative humidity and/or temperature using Dry Bulb and Wet Bulb temperatures from a variety of inputs.

Record and control functions, alarm settings and other parameters are easily configured via the keys on the front cover and self-prompting displays. NEMA 3 protection and sealed door lock optional.

MRC 7700™

*Proven Recording Reliability
Designed Specifically for Relative
Humidity Applications!*

APPLICATIONS:

Record, control and security functionality designed specifically for Relative Humidity Applications

- Process Validation, Trend Analysis
- Relative Humidity

INDUSTRIES

Oven, chamber, furnaces, heat treating, food processing, harsh water environments

FEATURES/BENEFITS

- Micro-based recording controller with relative humidity profile capability
- Two displays—allowing you to see critical process values at the same time
- Easy, straightforward programming—allows you to configure your recorder with a logical step-by-step process using a simple keypad
- True time based profiling capability puts you in control of your process
- Reliability—maintenance-free recording for years to come

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Relative Humidity Recorder/Controller

SPECIFICATIONS

STANDARD FEATURES

Functionality: Digital
Display: 2 digital displays: 0.56" high, red, seven segment LED; 3 button keypad; automatic and decimal point positioning. **Decimal Positions:** None, one, two or three decimal places.
Programmable Profiles: Up to 8 user programmable profiles on profile version.
Status Indicators: 7 LED status indicators: Out 1, 2, Man, Ramp, Soak, Seg 1-6; one green LED pen 2 indicator.
Chart: 10" circular chart; 100 charts furnished with each instrument. Unless otherwise specified, charts shipped with instrument are 0-100 range. 24 hour rotation default setting.
Chart Drive: DC Stepper Motor.
Chart Rotation: User configurable from 0.1 and 999.9 hours per revolution.
Chart Range: Bottom and top of span -9999 to 9999 units.
Pen Type: One or two disposable fiber tip pen.
Pen Color: Pen 1 (red); Pen 2 (green).
Memory Backup: Battery; 5 year minimum life.
Construction/Enclosure: Structural foam enclosure with plastic cover standard.

OPERATING CHARACTERISTICS

Operating Temp: 32° to 122°F (0° to 50°C).
Storage Temp: -40° to 149°F (-40° to 65°C).
Humidity: 0% to 90% non-condensing R.H.
Vibration: 0.5 to 100Hz @ 0.2g.
Electro Static Discharge: No effect from 5000V static charge over the entire area.
RFI: Degradation due to RF fields to recording and output accuracy to 8% at spot frequencies in the range of 100-1000MHz.

ELECTRICAL

Power Consumption: 25VA max.
Line Voltage: 115V ±10%, 50-60Hz standard; Optional 115/230VAC±10%, 50-60Hz.

INPUTS

Thermocouple: J, K, T, R, S, E, B, N, C.
RTD: 100 ohm, platinum; 0.00385 ohms/ohm/°C.
Volts: 0-5 VDC; 1-5 VDC.
DC Milliamps: 4-20mA, 0-20mA.

OUTPUTS

CONTROL OUTPUTS:
Relay: SPST/SPDT; 115VAC 5.0A Resistive, 1/8HP, 250VA; 230VAC 2.5A Resistive, 1/8HP, 250VA.
SSR Driver: Open collector output; short circuit protected @ 100mA max; provides 4VDC @ 20mA or 3VDC @ 40mA.
Current: 0-20mA or 4-20mA; 0-650 ohm maximum load.
ALARM/EVENT OUTPUTS (Options):
Relay: SPST/SPDT; 115VAC 5.0A resistive, 1/8HP, 250VA. 230VAC 2.5A resistive, 1/8HP, 250VA.
SSR Driver: Open collector output; short circuit protected @ 100mA max; provides 4VDC @ 20mA or 3VDC @ 40mA.
Process Alarm: Direct (High) or Reverse (Low) -9999 to 9999 units.
Deviation Alarm: Direct (Deviation above setpoint) or Reverse (Deviation below setpoint) -3000 to 3000 units.
Deviation Band Alarm: Open or closed 1 to 3000 units.
Alarm Hysteresis: 0-300 units (width of hysteresis band).

PERFORMANCE

GENERAL:
Input Measurement Error: Type J, K, T, E, N, C, T/C and RTD ±0.25% of reading plus 1 degree @ 25°C; Type R, S, B, C, T/C ±0.25% of span @ 25°C.
Ambient Temperature Error: 0.01% of span per degree C deviation from 25°C.
Cold Junction Compensation Error: ±0.2% @ 25°C.
Cold Junction Compensation Rejection: ±0.04% deviation from 25°C.
Common Mode Rejection: 90dB minimum; 24VAC maximum for RTD input; 115VAC maximum for other inputs.
Normal Mode Rejection: 85dB minimum @ 60Hz or greater.
Chart Accuracy: Recording: 0.5% of span. Chart Rotation: ±0.5% of rotation time.

Algorithm Accuracy: Typically better than 1%; however, actual user accuracy will be dependent upon the quality of the sensors used, the proper installation of the sensors, the input correction adjustments and the barometric pressure adjustments.
Scan Rate: 1 scan/second.
Noise Rejection: Normal mode: 85dB minimum at 60Hz or greater. Common mode: 90dB minimum at 115VAC maximum.
Sensor Fault Detection: Displays SNSR for sensor break; outputs go off; PV output to 100%; event status remains the same; fault detection is not a function for 0-5V or 0-20mA inputs.
Transmitter Power Supply: Provides up to 40mA of current at 24VDC.
Process Value Output Error Limit: 0.5% of span.
Record Error Limit: ±0.5% of chart span or better typically; ±1.0% of chart span maximum.
PROFILE PARAMETERS (optional):
Programmable Profiles: 8 user-programmable profiles.
Segments: 1-6 segments per profile.
Ramp and Soak: 1 ramp and soak per segment.
Profile Time Base: User-selectable; choose from hours and tenths (HHH.T), hours and minutes (HH.MM) or minutes and seconds (MM.SS).
Profile Interruption Action: Upon return of AC power either go to OFF mode; continue profile, go to HOLD mode or restart profile at beginning.
Profile Loop Count: 1-9999; 0 = continuous.
Profile End Control: User-selectable; hold at last setpoint; Abort (all outputs off or 0%); transfer to another profile.
Assured Soak: Deviation Hold after Ramp Down; 1-3000 units; 0 = No Auto Hold.
Pen Profiling Configuration: Pen 1 only or Pen 1 and 2.
Remote Run/Hold: User-selectable; override Run/Hold key; Allow Run/Hold key function.
Event Output(s): Up to 3 event outputs possible; each event can be set on or off for each ramp and soak.



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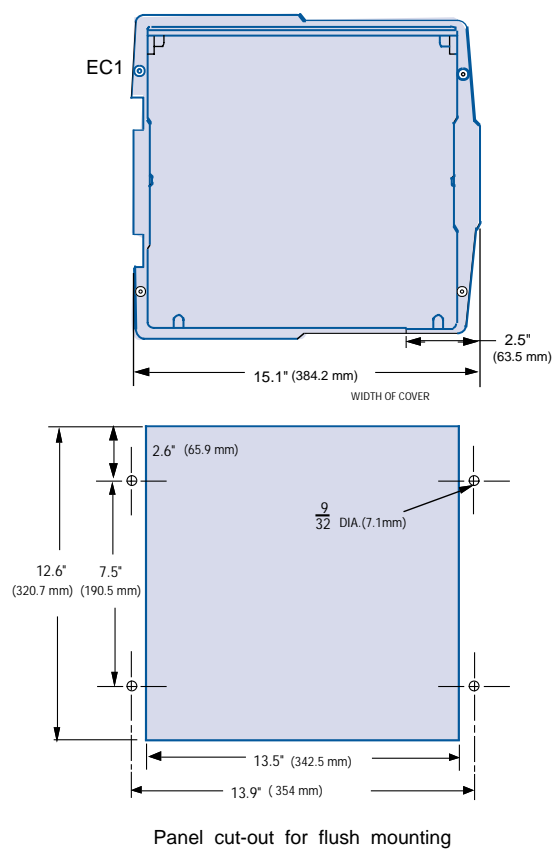
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Recorder/Controller/Profiler

SPECIFICATIONS (Continued)

COMMUNICATIONS INTERFACES	PROTECTION	OPTIONS/ACCESSORIES
<p>Communications Port: RS-422/485 serial, half duplex.</p> <p>Protocol: Partlow ASCII</p> <p>Bit Rate: User-configurable 300, 600, 1200, 2400, 4800 or 9600/sec.</p> <p>Address: User-configurable for each pen 0–99.</p>	<p>NEMA 3 enclosure optional; CE compliance optional.</p>	<p>RS-485 communication option.</p> <p>24V DC transmitter power supply option.</p> <p>115 or 230VAC input option.</p> <p>Door lock and sealed conduit/connector option.</p> <p>CE compliance optional.</p>
RATINGS/AGENCY APPROVALS	PHYSICAL DIMENSIONS	WARRANTY
<p>Safety: L 1092 File E67237; CSA Spec C22.2 File LR39885, CE EN61010-1 1993/1995</p> <p>Immunity: CE EN50082-1:1992</p> <p>Emissions: CE EN55011:1991</p> <p>Limit Device: N/A</p> <p>Other: ISO 9002 registered.</p>	<p>Width: 15.13" (384mm).</p> <p>Depth: 3.63" (92mm).</p> <p>Height: 13.19" (335mm).</p> <p>Weight: 20 lbs (9.1kg).</p> <p>Mounting/Mounting Position: Panel or wall.</p>	<p>3 years.</p>

DIMENSIONS



Made in USA.

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Recorders



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Recorder/Controller/Profiler

MRC 7700'

*Proven Recording Reliability that
Became the Industry Standard!*

MODELS

Code 1: Model	Code 2: 1 Pen / 2 Pen Options	Code 3: Relay (SPST) Outputs*	Code 4: SSR Driver Outputs*	Code 5: 4-20mA Outputs	Code 6: Transmitter Power Supply	Code 7: Pen 1 Auxiliary Input	Code 8: Pen 2 Auxiliary Input	Code 9: Digital Communications	Code 10: Enclosure Options	Code 11: Operating Voltage	Code 12: Option Suffix
77	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MRC7700 Recorder/ Controller/ Profiler	1 One Pen Recorder 2 One Pen Recording Controller 3 One Pen Recording Profiler Controller 4 Two Pen Recorder 5 Two Pen Recording Controller 6 Two Pen Recording Profiler Controller	0 None 1 One SPST 2 Two SPST 4 Four SPST 6 Six SPST	0 None 1 One 2 Two 4 Four 6 Six 8 Eight	0 None 1 One Standard 2 Two Standard 3 Three Standard 4 Four Standard	0 None 1 24VDC Regulated /Isolated	0 None 1 Position Proportioning 2 Remote Setpoint 3 Remote Run/Hold***	0 None 1 Position Proportioning 2 Remote Setpoint	0 None 2 RS-485 Total Access	2 Standard Cover (Plastic Windows) 4 Door Lock** 6 Sealed Conduit Connections 7 4 & 6 Combined**	1 115VAC 2 115/230VAC CSA APPROVED 4 115VAC 5 115/230VAC	BLANK - None N3 NEMA † CE CE Compliance

* Total quantity of SPST Relays and SSR Drivers must be less than or equal to eight.

† N3 - NEMA type protection for wet environments.

** This option comes with a structural foam cover.

***Applies to Models 773XXXXXXXXXX and 776XXXXXXXXXX.

NOTE: 4-20mA inputs are accommodated using the 1-5V input and a 250 ohm Shunt Resistor, P/N 64411701 or the 10-50mA input and a 2.5 ohm Shunt Resistor, P/N 64411702
Order as Separate Line Item(s).

**Partlow MRC 7700 Relative Humidity Recorder
ThermX Southwest 800-284-3769**

www.thermx.com