



## ***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

# MRC 7700™

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

**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.



# MRC 7700™

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

**Recorder/Controller/Profiler**

## SPECIFICATIONS (Continued)

### COMMUNICATIONS INTERFACES

**Communications Port:** RS-422/485 serial, half duplex.  
**Protocol:** Partlow ASCII  
**Bit Rate:** User-configurable 300, 600, 1200, 2400, 4800 or 9600/sec.  
**Address:** User-configurable for each pen 0–99.

### RATINGS/AGENCY APPROVALS

**Safety:** L 1092 File E67237; CSA Spec C22.2 File LR39885, CE EN61010-1 1993/1995  
**Immunity:** CE EN50082-1:1992  
**Emissions:** CE EN55011:1991  
**Limit Device:** N/A  
**Other:** ISO 9002 registered.

### PROTECTION

NEMA 3 enclosure optional; CE compliance optional.

### PHYSICAL DIMENSIONS

**Width:** 15.13" (384mm).  
**Depth:** 3.63" (92mm).  
**Height:** 13.19" (335mm).  
**Weight:** 20 lbs (9.1kg).  
**Mounting/Mounting Position:** Panel or wall.

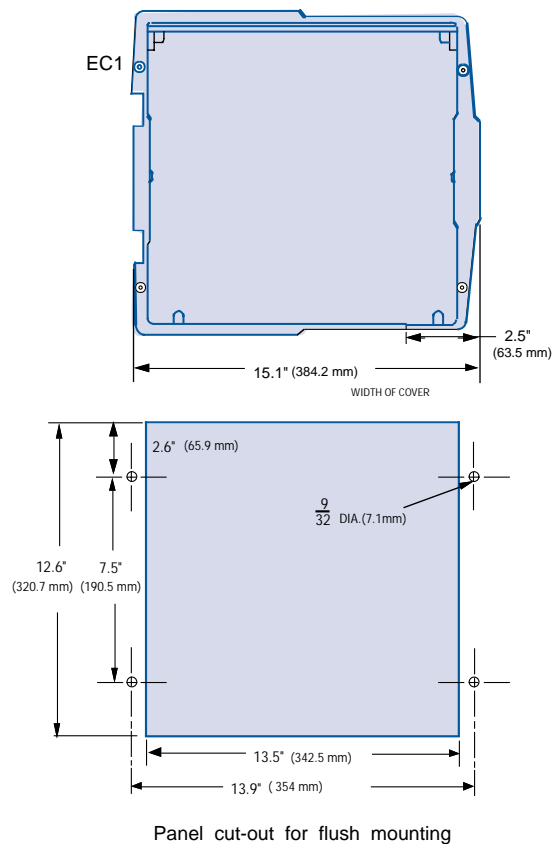
### OPTIONS/ACCESSORIES

RS-485 communication option.  
 24V DC transmitter power supply option.  
 115 or 230VAC input option.  
 Door lock and sealed conduit/connector option.  
 CE compliance optional.

### WARRANTY

3 years.

## DIMENSIONS



Made in USA.

\* Specifications subject to change without notice in accordance with our DBS policy of continuous improvement. All product and brand names are trademarks of their respective companies. All rights reserved.

Partlow™ brand and MRC 7700™ are trademarks of Danaher Industrial Controls Group. All rights reserved.

**PARTELOW™ brand**

**MRC 7700™**

**Recorder/Controller/Profiler**

*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
<b>77</b>	<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	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 <b>CSA APPROVED</b> 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).

