1 & 2 Pen Digital Chart Recorder

DESCRIPTION
Designed with the latest innovations in recording technology, enclosures and functionality, the MRC 5000 is slim, trim and simple. The MRC 5000 is a digital circle chart recorder capable of measuring, recording and controlling up to two process variables from a variety of inputs.

Finding a place to install this recorder is easy, with its compact panel depth and short protrusion from the front panel. The mode switch, located next to the display, provides two functions. When in the PROG/CAL/TEST position, it provides access to program parameters, calibration facilities and test functions. Hardware options are matrix selectable and are shipped with default settings. The MRC 5000 directly connects to either thermocouple, RTD, mVDC, VDC, or mADC inputs. Changes in input type are easily accomplished in the field through programming. This instrument has a universal power supply, 90–264VAC line voltage at 50–60Hz.

APPLICATONS:
Ideal for basic digital recording applications with shallow depth panel requirements.
- Process Validation
- Trend Analysis
- Regulatory Compliance
- Product Safety
  - Temperature
  - pH Level

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

FEATURES/BENEFITS
- Easy and simple in every aspect of operation: programming, testing and calibration
- Standard easy read display saves setup time, ensures proper configuration and allows for field calibration
- Completely assembled slim/trim design—no assembly required—reduces your panel depth and saves you money
- Wide range of power operation
- More standard input selections, time rotations and optional features
- Value priced basic recording
## MRC 5000™

**Slim... Trim... Simple for Basic Digital Recording At Its Best!**

### 1 & 2 Pen Digital Chart Recorder

### Specifications

#### Standard Features
- **Functionality:** Record only or high/low limit and record/control.
- **Display:** 4 digit; 0.56” high, red, seven segment LED, 3 button keypad.
- **Modes:** Program, Calibrate, Test and Run; Normal/Display or blank.
- **Status Indicators:** Four red LED alarm status indicators; one green LED pen 2 indicator.
- **Chart:** 10” circular chart; 100 charts furnished to 9999 units.
- **Chart Rotation:** 100 range. 24 hour rotation default setting.
- **Chart Drive:** DC Stepper Motor.
- **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:** Non-volatile EEPROM for configuration parameters, calibration and alarm setpoint data.
- **Construction/Enclosure:** Injection molded Noryl case; acrylic window cover.

#### 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:** 0.3 to 100Hz @ 0.2g.

#### Electrical
- **Power Consumption:** 18VA max.
- **Line Voltage:** 90-264VAC, 47-63Hz.

#### Inputs
- **Thermocouple:** J, K, T, R, S.
- **RTD:** 100 ohm, platinum; 0.00385 ohms/°C.
- **Volts:** 0-10 VDC.
- **DC Millivolts:** 0-25mV, 0 to 50mV; 10-50mV, 0-5V and 1-5V.
- **DC Milliamps:** 0-20mA; 4-20mA; internal 4.7 ohm shunt resistor, optional.
- **Impedance:**
  - >100M ohms for TC and mV inputs.
  - 100 ohm, platinum; 0.00385 ohms/°C.
- **Input Measurement Error:**
  - Type J, K, T, R, S and RTD ±0.25% of span ±1 degree. mA, mV and VDC: ±0.25% of scaled span plus 1 least significant digit.
- **Ambient Temperature Error:** 0.01% of span per degree C deviation from 25°C.
- **Cold junction Compensation Error:**
  - ±0.2°C @ 25°C.
- **Linearization Error:**
  - ±0.25°C typical; ±0.5°C worst case with exceptions.
  - RTDs: ±0.1°C typical; ±0.3°C worst case.
- **Common Mode Rejection:** >1200 V @ 50/60Hz; 260VAC max.
- **Normal mode Rejection:** 85dB minimum @ 60Hz or greater.
- **Isolation:** Inputs are a common ground signal.
- **Chart Accuracy:** Recording: 0.5% of chart span. Chart Rotation: ±0.5% of rotation time.

#### Performance
- **General:**
  - User-configurable, 1, 2, 10, 25, 50, 100K ohms for 5V inputs; 4.7 ohms for mA inputs.
  - 0.25% of span ±0.25% of scaled span plus 1 least significant digit.
  - ±0.5°/°C deviation from 25°C.
- **RTD Excitation Current:**
  - 150 microamps, typical.
- **Input Scan Rate:** 1 scan/sec for non-RTD inputs.
- **Rack Mounting:**
  - 100K ohms for 5V inputs; 4.7 ohms for mA inputs.
- **Input Measurement Error:**
  - ±0.5% of span ±0.25% of scaled span plus 1 least significant digit.
  - ±0.5°/°C deviation from 25°C.

#### Communications Interfaces
- **Communications Port:** RS-485 serial, half duplex.
- **Protocol:** MODBUS RTU.
- **Bit Rate:** 9600/sec.
- **Parity:** Odd.
- **Address:** User-configurable, 1-247.

#### Ratings/Agency Approvals
- **Safety:** UL1092, UL916 and QUXY File 6E7237, CSA Spec 142 File E67237, CE EN61010-1 1993.
- **Immunity:** CE EN50022-2:1992.
- **Emissions:** EN50081-1:1992 and EN50081-2:1994; EN55022 Class B.
- **Limit Device:** FM Approved File J.I.1D8a.1A (Class 3545).
- **Other:** ISO 9002 registered.

#### Protection
- **NEMA 3 standard; NEMA 4X optional; optional door lock.

#### Physical Dimensions
- **Width:** 14” (356mm).
- **Depth:** 3.8” (97mm); panel depth: 2.5” (64mm); panel protrusion: 1.3” (33mm).
- **Height:** 14” (356mm).
- **Weight:** 15 lbs (6.8kg).
- **Mounting/Position:** Panel or wall: up to 30° backward or forward tilt from vertical; up to 10° side tilt from vertical.
- **Retrofit Adapter Plate:** Will fit Partlow MRC7000 and ARC4100 cutouts.

#### Options/Accessories
- **Optional process or High/Low Limit alarms.
- Optional configuration port.
- Optional digital communications.
- Optional configuration port and communications.
- Optional adaptation for convenient retrofit into MRC7000 and ARC4000 cutouts.
- NEMA 4X protection optional.

#### Warranty
- **2 years.**
1 & 2 Pen Digital Chart Recorder

MRC 5000™ Slim...

Simple for Basic

Digital Recording At Its Best!

MODELS

Code 3:
Pen 2 Option

0 None

1 Recorder Only

2 Recording Controller*

3 High/Low Limit*†

Code 4:
Pen 1 Outputs

0 None

1 One Relay

2 Two Relays

Code 5:
Pen 2 Outputs

0 None

1 One Relay

2 Two Relays

Code 6:
Communications Option

0 Recorder Only

1 Configurator Port

2 RS-485

3 Configurator Port and RS-485

Code 7:
Enclosure Options

1 Standard - NEMA 3

2 Door Lock

3 NEMA 4X

Code 8:
Operating Voltage

1 Standard - 90 to 240VAC

2 Low Voltage

3 Standard Voltage & Transmitter Power Supply

4 Low Voltage & Transmitter Power Supply

5 CE

6 CE & Low Voltage

7 CE & Standard Voltage

8 CE & Low Voltage & Transmitter Power Supply

† High/Low limit device is Factory Mutual approved.

** Low Voltage is 20-50 VAC or 22-65 VDC

Does not include a relay. Order relays in output options.

Code 9:
Suffix

BLANK - None

AA - Alarms and Communications Connectivity Option (allows for later field installation of both options)

Code 1: Model MRC5000 Recorder/Controller
1 & 2 Pen Digital Chart Recorder

DIMENSIONS

Made in USA.

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