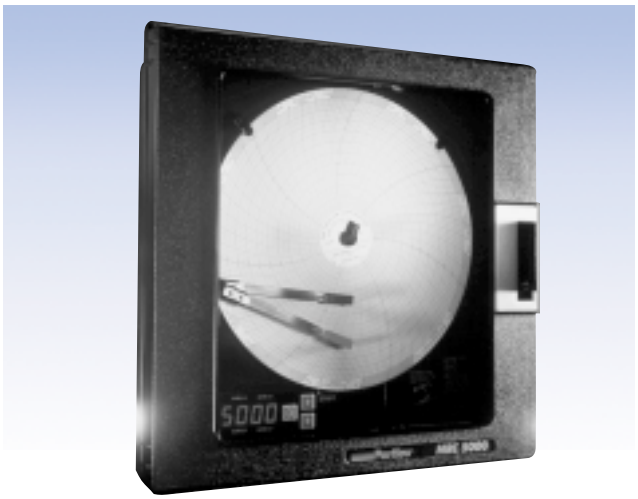
PARTLOW™ brand

Data Sheet



MRC 5000™

Slim…Trim…Simple for Basic Digital Recording At Its Best!

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.

APPLICATIONS:

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

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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 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: 8 hrs, 12 hrs, 24 hrs, 48 hrs or 7 days.

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.

OUTPUTS

Control Outputs: Relay option; SPDT, contacts rated 5A resistive at 115VAC, 2.5A resistive at 230VAC, 1/8HP at 230VAC (single phase), 250VA at 115/230V.

Alarm Outputs: Process high or low; up to two process alarms for each of two inputs.

INPUTS

Thermocouple: J, K, T, R, S.

RTD: 100 ohm, platinum; 0.00385 ohms/ohm/°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.resistor.

Impedance: >100M ohms for TC and mV inputs; 100K ohms for 5V inputs; 4.7 ohms for mA inputs.

RTD Excitation Current: 150 microamps, typical.

Input Scan Rate: 1 scan/sec for non-RTD inputs; 1 scan/1.2 sec for RTD inputs.

PERFORMANCE

GENERAL:

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.

Cold Junction Compensation Rejection: ±0.04°/°C deviation from 25°C.

Linearization Error: TCs: ±0.25°C typical; ±0.5°C worst case with exceptions. RTDs: ±0.1°C typical; ±0.3°C worst case.

Common Mode Rejection: >120dB @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.

PROCESS CONTROL
UL
LISTED
88BO

LR39885
CSA

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 E67237, CSA Spec 142 File E67237, CE EN61010-1 1993.

Immunity: CE EN50082-2:1992.

Emissions: EN50081-1:1992 and EN50081-2:1994; EN55022 Class B.

Limit Device: FM Approved File J.I.1D8a1.AF (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/Mounting Position: Panel or wall; up to 30° backward or forward tilt from vertical; up to 10° side tilt from vertical.

Retrofit Adaptor Plate: Will fit Partlow MRC7000 and ARC4100 cutouts.

OPTIONS/ACCESSORIES

Optional process or High/Low Limit alarms.

Optional configuration port.

Optional digital communications.

Optional adaptor plate for convenient retrofit into MRC7000 and 4100 cutouts.

NEMA 4X protection optional.

WARRANTY

2 years.

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MODELS

Code 1: Model	**Code 2:** Pen 1 Option	**Code 3:** Pen 2 Option	**Code 4:** Pen 1 Outputs	**Code 5:** Pen 2 Outputs	**Code 6:** Communications Option	**Code 7:** Enclosure Options	**Code 8:** Operating Voltage	**Code 9:** Suffix
5	☐	☐	☐	☐	☐	☐	☐	☐☐
MRC5000 Recorder/ Controller	**1** Recorder Only **2** Recording Controller* **3** High/Low Limit*†	**0** None **1** Recorder Only **2** Recording Controller* **3** High/Low Limit*†	**0** None **1** One Relay **2** Two Relays	**0** None **1** One Relay **2** Two Relays	**0** Recorder Only **1** Configurator Port **2** RS-485 **3** Configurator Port and RS-485	**1** Standard-NEMA 3 **2** Door Lock **3** NEMA 4X	**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 & Transmitter Power Supply **8** CE & Low Voltage & Transmitter Power Supply	**BLANK** - None **AA** Alarms and Communications Connectivity Option (Alows for later field installation of both options)

* Does not include a relay. Order relays in output options.
** Low Voltage is 20-50 VAC or 22-65 VDC
† High/Low limit device is Factory Mutual approved.

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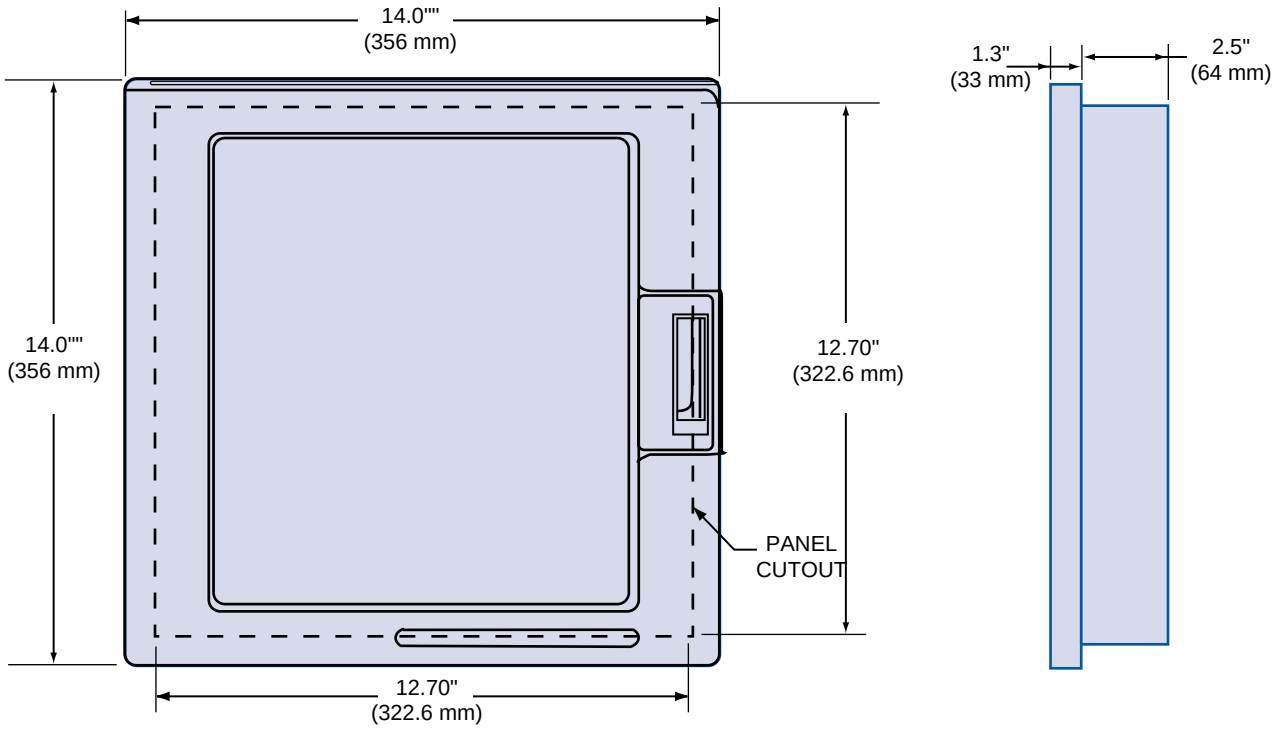
DIMENSIONS



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 MRC 5000 Data Sheet (5/05)