MRC 8000 SERIES
RECORDER

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PEN 1
1 Recorder Only
2 Recording Controller

PEN 2
0 None
1 Recorder Only
2 Recording Controller

***RELAY OUTPUTS**
0 None
1 One SPST
2 Two SPST
4 Four SPST

***SSR DRIVER OUTPUTS**
0 None
1 One
2 Two
4 Four

4 TO 20mA OUTPUTS
0 None
1 One
2 Two

TRANSMITTER POWER SUPPLY
0 None
1 24VDC Regulated/Isolated

PEN 1 AUXILLIARY INPUT
0 None
1 Position Proportioning
2 Remote Setpoint

PEN 2 AUXILLIARY INPUT
0 None
1 Position Proportioning
2 Remote Setpoint

DIGITAL COMMUNICATIONS
0 None
2 RS-485 Total Access

ENCLOSURE OPTION
1 Glass Window NEMA 3
2 Glass Window NEMA 4 X
3 Glass Window NEMA 3 with Door Lock
4 Plastic Window NEMA 3
5 Plastic Window NEMA 4X
6 Plastic Window NEMA 3 with Door Lock

OPTION SUFFIX
(Blank) None

VOLTAGE
1 115VAC Input
2 115/230VAC Input

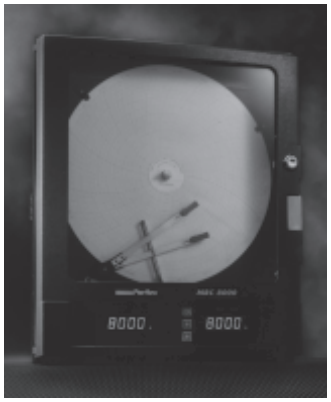
* The total quantity of SPST Relays and SSR Drivers must be less than or equal to four.

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. The 250 ohm resistor is included for each input.

LISTED
88BO
E67237

WARRANTY
This instrument is backed by the Partlow comprehensive 2 year warranty. A complete warranty statement is published in the back of the product instruction manual. If you have further questions about warranties, please contact the Partlow factory.

ORDERING INFORMATION
For pricing and additional ordering information, refer to Form 3265, Electronic Price Book.



DESCRIPTION

The MRC 8000 Recorders and Recording Controllers are microprocessor based, 12 inch, circular chart instruments capable of measuring, displaying, recording and controlling up to two process variables from a variety of inputs. Applications include temperature, pressure, level, flow, relative humidity, pH and others.

The instrument incorporates a 4 digit LED configurable display to show either the process value only, process and setpiont, deviation from setpoint only, or deviation and setpoint while in the normal operating condition. They can also display the proportional control outputs and the process values sequentially. The MRC 8000 is housed in a structural foam molded enclosure which can be panel or surface mounted. Surface mounting brackets are available, if needed. Its design allows it to fit into the smallest panel cutout of competative products, while it covers the largest cutout of others. Glass and plastic windows are available, along with a cover lock. The standard enclosure carries a NEMA 3 rating, with an optional NEMA 4X available. The MRC 8000 is available with a full compliment of options. On recorders, process alarms or high or low limit capability is available. On controllers, process deviation, and deviation band alarms are available. For transmitters, a 24VDC 40mA Transmitter power supply is available. Up to four SPST relays or SSRDs and up to two isolated 4-20mA outputs can be added. For controllers, remote setpoints are available. For PC communications, an RS-485 interface can be included.

SPECIFICATIONS

INPUTS

Input Types/Range	Type	Range	
Thermocouple	J	0 C to 760 C	0 F to 1400 F
	K	0 C to 1360 C	0 F to 2500 F
	T	-200 C to 400 C	-330 F to 750 F
	R	200 C to 1650 C	400 F to 3000 F
	S	200 C to 1650 C	400 F to 3000 F
	E	0 C to 750 C	0 F to 1400 F
	B	200 C to 1800 C	400 F to 3300 F
	N	0 C to 1300 C	0 F to 2370 F
	C	200 C to 2300 C	390 F to 4170 F
RTD	100 ohm Platinum .00385 ohms/ohm/ C	-140 C to 400 C	-220 F to 750 F

Current DC	0 to 20mA, 4 to 20mA External Shunt Resistor, 2.5 ohms or 250 ohms
Voltage DC	0 to 25mV, 0 to 50mV, 10 to 50mV, 0 to 5 V, 1 to 5 V
Impedance	> 100M ohm for TC and mV inputs 100K ohms for 5V inputs 2.5 ohms or 250 ohms for mA inputs
RTD Excitation Current	330 microamps, typical
Input Scan Rate	1 scan per second
Input Correction	Offset Adjustment, -999 to 999 units
Remote Setpoint	0 to 5V, 1 to 5V
Sensor Fault Detection	Sensor break on all TCs, RTDs, 1volt, 1 to 5 volt, 4-20mA, and millivolt inputs No sensor break can be detected for zero based Volt and Milliamp ranges Display goes to “SnSr” and pen goes upscale if a sensor break is detected Display goes to “Hi” 5% above span Display goes “Lo” 5% below span
Transmitter Power Supplies	One isolated 50mA @ 24VDC supply available

OUTPUTS

On/Off Outputs	Assignable to alarm or control outputs
Relays	SPDT, contacts rated 5 amps resistive at 115 VAC, 2.5 amps resistive at 230 VAC, 1/8 HP at 230 VAC (single phase), 250 VA at 115/230VAC
Solid State Relay Driver	Open collector output, can provide 40mA at 3 VDC or 20mA at 4 VDC Short circuit current is limited to 100mA
Drivers	Assignable to process value or setpoint retransmission or control outputs
Output Span	0 to 20mA or 4-20mA, nominal
Resolution	0.02 % of 20mA; 12 bits over a 0 to 25.6mA span
Accuracy	–0.1% to 20mA span reference accuracy
Compliance	650 ohm load

ALARMS

Number	Up to two process alarms for each of two inputs
Type	Recorder: Process high or low Controllers: Process, deviation, or band
Hysteresis	Fully adjustable, 0 to 300 units, straddles alarm point
Security	Alarm setpoint changes can be prohibited
Sensor Fault Action	Alarms work normally in “Hi” and “Lo” conditions Alarm relays are deenergized in a “SnSr” sensor break condition

RECORDING PERFORMANCE

Chart Recording Accuracy	0.5% of chart span reference accuracy
Resolution	0.15% of chart span
Dead Band	0.3% of chart span
Response Time	20 seconds for full scale travel
Chart Rotation Accuracy	– 0.5% of rotation time, assuming all backlash removed

EVIRONMENTAL AND OPERATING CONDITIONS

Operating Temperature	0 C to 55 C (32 F to 131 F)
Storage Temperature	-40 C to 65 C (-4 F to 149 F)
Humidity	10 to 90% RH, non-condensing
Vibration	0.5 to 100 Hz @ 0.2g
Mounting Position	Up to 30 forward or backward tilt from vertical Up to 10 side tilt from vertical

DIGITAL COMMUNICATONS

Communications Port	RS-485 serial communications, Half-duplex
Protocol	Partlow ASCII - ANSI x 3.28, subcatagory 2.5 & A4
Bit Rate	9600, 4800, 2400, 1200, 600, 300 bits per second
Configuration	Monitor: read only, Normal: read and write
Address	User configurable - 0 to 99 for each pen

GENERAL REFERENCE DATA

Data Backup	Battery backed SRAM for all data
Battery Backup	5 years minimum life, 10 years typically
Warranty	Two years

CONSTRUCTION

Enclosure	Gasketed cover, case, and windows. Structural foam case and cover with plastic or glass window area. Door lock available
NEMA Rating	NEMA 3 standard, NEMA 4X optional
Conduit Openings	Four openings standard, 2 additional as required
Mounting	Panel or wall or optional pipe mounting
Overall Dimensions	14.12" wide X 16.77" high X 7.75" deep (358.65mm wide X 425.96mm high X 196.85mm deep)
Panel Cutout	12.7" wide X 12.7" high (322.58mm X 322.58mm)
Panel Depth	5.25" (133.35mm)
Panel Protrusion	2.5" (63.5mm)
Weight	20lbs maximum