MRC 9000™ VersaChart™
Versatile Recorder, Powerful Controller!

Recording Controller/Profiler

DESCRIPTION

The VersaChart is perfect for demanding applications requiring a high performance recorder/controller with custom ramp/soak capability. The Versachart provides powerful true time based profile capability and exceptional value per data. Using advanced printing technology, the Versachart produces a circle chart in four colors with alpha/ numeric chart characters for clear, accurate and readable charts that can be archived.

It is the only circle chart recorder to deliver up to 16 Profiles with up to 8 segments per profile. The profiling feature provides closed loop PID process control with the added capability of configurable setpoints as a function of time. Additionally, the profile feature includes actuators, parameters and a function block feature permitting logic equations. The entire recorder (recorder, controller and profile feature) is easy to setup with its innovative PC configuration port and available PC configuration software with security and single point data access features. A recovery feature is also part of the profile option which enables users to choose a course of action in the advent of power loss, preventing unnecessary process cycling. Finally, a guaranteed soak feature assures that the actual process variable during soak is within a pre-selected tolerance for the soak time to increase product quality and prevent waste/loss.

APPLICATIONS:

- Demanding Process Validation
- Trend Analysis
- Regulatory Compliance
- Product Safety

Applications:
- Temperature, Pressure and Relative Humidity

INDUSTRIES

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

FEATURES/BENEFITS

- Micro-based recorder/controller with profile capability
- Four Pens and Four Colors
- Flexible chart sizes–Choose from 10–12″ diameter
- Two displays–allowing you to see critical process values at the same time
- Easy, straightforward PC programming–allows you to configure your recorder with a logical step-by-step process using a simple keypad
- True time based profiling capability (including Four Process PID Loops, Recovery Action, Guaranteed Soak)—and up to 16 profiles— puts you in control of your process
- Reliability—maintenance free recording for years to come
- Excellent features/reasonable price

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SPECIFICATIONS

STANDARD FEATURES

Modes: Digital; record, controller or profile functionality.

Display: Two line, 40 character vacuum fluorescent display with 0.21˝ (5mm) high characters; 15 keys for programming and unit operation; display modes; automatic or manual sequencing; 3 display formats.

Programmable Profiles: Up to 8 user programmable profiles.

Status Indicators: 8 user-configurable red LED status indicators; real time clock for time and date stamping on chart output.

Chart: 10–12˝ circular chart; 100 charts furnished with each instrument.

Chart Drive: DC stepper motor.

Chart Rotation: User-configurable from 6 to 9999 hours per revolution.

Chart Range: Bottom and top of span –999999 to 999999 units.

Pen Type: Four disposable fiber tip pens.

Pen Color: Pen 1 (red); Pen 2 (green); Pen 3 (blue); Pen 4 (black).

Memory Backup: EEPROM and battery backed SRAM; 5 year minimum life.

Construction/Enclosure: Gasketed, cover, case and windows. Structural foam case and cover; optional door lock or glass window option.

OPERATING CHARACTERISTICS

Operating Temp: 32° to 122°F (0° to 50°C).

Storage Temp: –40° to 149°F (–40° to 65°C).

Ambient Temp.: 0.04% of span per degree C deviation from 25°C.

Humidity: 0% to 90% non–condensing R.H.

Vibration: 0.5 to 100Hz @ 0.2g.

Electro Static Discharge: N/A

ELECTRICAL

Power Consumption: 60VA max.

Line Voltage: 90–264VAC 50/60Hz..

INPUTS

Thermocouple: J, K, T, R, S, E, B, N, G, D, C, Ni/Ni-Moly and Platinel II.

RTD: 100 ohm, platinum 100 or nickel 100,1–2 wire; 0.00385 ohms or 0.00392/ohm/°C; –94° to 300°F (–70° to 150°C).

RDT Excitation Current: 1mA.

DC Voltage: 0 to 25mV, 0 to 100mV, 0 to 1V, 0 to 10V.

DC Current: 0–20mA or 4–20mA.

OUTPUTS

CONTROL OUTPUTS:

Relay: SPST; 5.0A resistive @ 115VAC; 2.5A resistive, 1/8HP @ 230VAC.

SSR Driver: Open collector output; short circuit protected @ 100mA max; provides 4VDC @ 20mA or 3VDC @ 40mA.

Current: 0–20mA or 4–20mA; 650 ohm maximum load.

ALARM/EVENT OUTPUTS (Options):

Number: Up to four alarms for each of four process variables. Type: Process high/low and rate/rising and falling.

Relay: SPST/SPDT; 5.0A resistive @ 115VAC; 2.5A resistive @ 230VAC.

SSR Driver: Open collector output; short circuit protected @ 100mA max; provides 4VDC @ 20mA or 3VDC @ 40mA.

Process Alarm: Direct (High) or Reverse (Low) –999999 to 999999 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: Fully adjustable.

PERFORMANCE

GENERAL:

Input Measurement Error: ±0.25% of measurement span reference accuracy.

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 ±0.4°C 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.

Isolation: 500VDC/350VAC.

Chart Accuracy: Recording: 0.3% of span. Chart Rotation: ±0.2 minutes for a 24 hour rotation, assuming all backlash removed, 6–9999 hours per revolution.

PROCESS CONTROL U®L **LISTED 88BO**

LR39885 CSA® Q

CE

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SPECIFICATIONS

PERFORMANCE (cont'd)

Algorithm Accuracy: N/A.

Scan Rate: 2 scans/second; scan rate is programmable for each input with the limitation that a total of 16 measurements can be made in one second.

Noise Rejection: Normal mode: 100dB minimum at 60Hz or greater. Common mode: 120dB minimum at 115VAC maximum.

Process Value Output Error Limit: N/A.

Record Error Limit: N/A.

Sensor Fault Detection: Sensor break on all temperature controls, RTUs, 1 to 5 volt and 4–20mA inputs.

Transmitter Power Supply: Up to 4 isolated 25mA @ 24VDC supplies available.

Data Backup: EEPROM for input board and motherboard calibration data; battery backed SRAM for configuration data.

COMMUNICATIONS INTERFACES

Communications Port: RS-232/485 serial, half duplex.

Protocol: Modbus RTU.

Bit Rate: User-configurable 1200, 2400, 4800, 9600 baud.

Address: User-configurable, 1–247.

RATINGS/AGENCY APPROVALS

Safety: UL 1092 File E67237; CSA Spec 142 File 67237; CE EN60010-1 1193/1995.

Immunity: CE compliance EN50082-2.

Emissions: CE compliance EN550081-1:1992; EN55022 Class A.

Hazardous Location: ETL Listed Class 1 & II Division 2 and Class III, Division 1 & 2 Ref 56042.

Other: ISO 9002 registered.

PROTECTION

NEMA 3 standard; NEMA 4 optional.

PHYSICAL DIMENSIONS

Width: 14.12″ (359mm).
Depth: 7.75″ (197mm).
Height: 16.77″ (426mm).
Weight: 25 lbs (9.1kg).
Mounting/Mounting Position: Panel or wall.

OPTIONS/ACCESSORIES

Diverse pen options (see config.matrix for details).

Choose from up to 8 input options (see config.matrix for details).

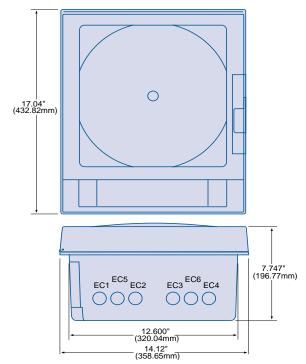Optional profiling feature—up to four loops in a single package.
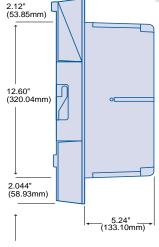
NEMA 4 protection optional.

Diverse window and door lock options.

RS-232/485 communication option.

WARRANTY

2 years.

DIMENSIONS

17.04" (432.82mm)

2.12" (53.85mm)

12.60" (320.04mm)

2.044" (58.93mm)

5.24" (133.10mm)

7.747" (196.77mm)

EC5 EC1 EC2 EC6 EC3 EC4

12.600" (320.04mm)

14.12" (358.65mm)

Made in USA.

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Partlow Brand MRC 9000 Data Sheet (5/05)

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Flow Controller

MRC 9000™ VersaChart™
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MODELS

Selected configuration: Code 1 = 9, Code 5 = 0

Code 1: Model
- 9 — MRC9000 VersaChart 4 Color Recorder/Controller/Profiler

Code 2: Type
- 1 Recorder Only
- 2 Controller
- 3 Profiler

Code 3: Pens/Colors
- 1 One Trend, One Color**
- 2 Two Trend, Two Colors**
- 3 Three Trend Pens, Three Colors**
- 4 Four Trend Pens, Four Colors
- 5 One Trend Pen, Four Colors
- 6 Two Trend Pens, Four Colors
- 7 Three Trend Pens, Four Colors

Code 4: Universal Inputs
- 1 One Input
- 2 Two Inputs
- 3 Three Inputs
- 4 Four Inputs

Code 5: Required Zero
- 0

Code 6: Relay Outputs*
- 0 None
- 2 Two
- 4 Four
- 6 Six
- 8 Eight

Code 7: SSRD Outputs
- 0 None
- 2 Two SSR Drivers
- 4 Four SSR Drivers
- 6 Six SSR Drivers
- 8 Eight SSR Drivers

Code 8: 4-20mA Outputs
- 0 None
- 1 One 4-20mA Non-Isolated
- 2 Two 4-20mA Non-Isolated
- 3 One 4-20mA Isolated
- 4 Two 4-20mA Isolated
- 5 Three 4-20mA Isolated
- 6 Four 4-20mA Isolated

Code 9: Transmitter Power Supply
- 0 None
- 1 One Supply
- 2 Two Supplies
- 3 Three Supplies
- 4 Four Supplies

Code 10: Math/Totalizer
- 0 None
- 1 Math
- 2 Totalizer
- 1 Math & Totalizer

Code 11: Digital Communications
- 0 None
- 1 RS-232 /RS-485

Code 12: Enclosure Options
- 1 Glass Window
- 2 Glass Window w/Door Lock ***
- 3 Plastic Window
- 4 Plastic Window w/Door Lock ***

Code 13: Case Type and Mounting
- 1 NEMA 3 Panel Mount
- 2 NEMA 4 Panel Mount

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

** Pens/colors are added to the instrument in the following order: red, then green, then blue, and then black.

*** Door Lock N/A with NEMA 4

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