Basic Analog/Digital Controllers & Indicators

General-Purpose Limit, Valve Motor Drive, Temperature & Process Controllers

Basic & High-End Profilers

Multi-loop Bus Controllers

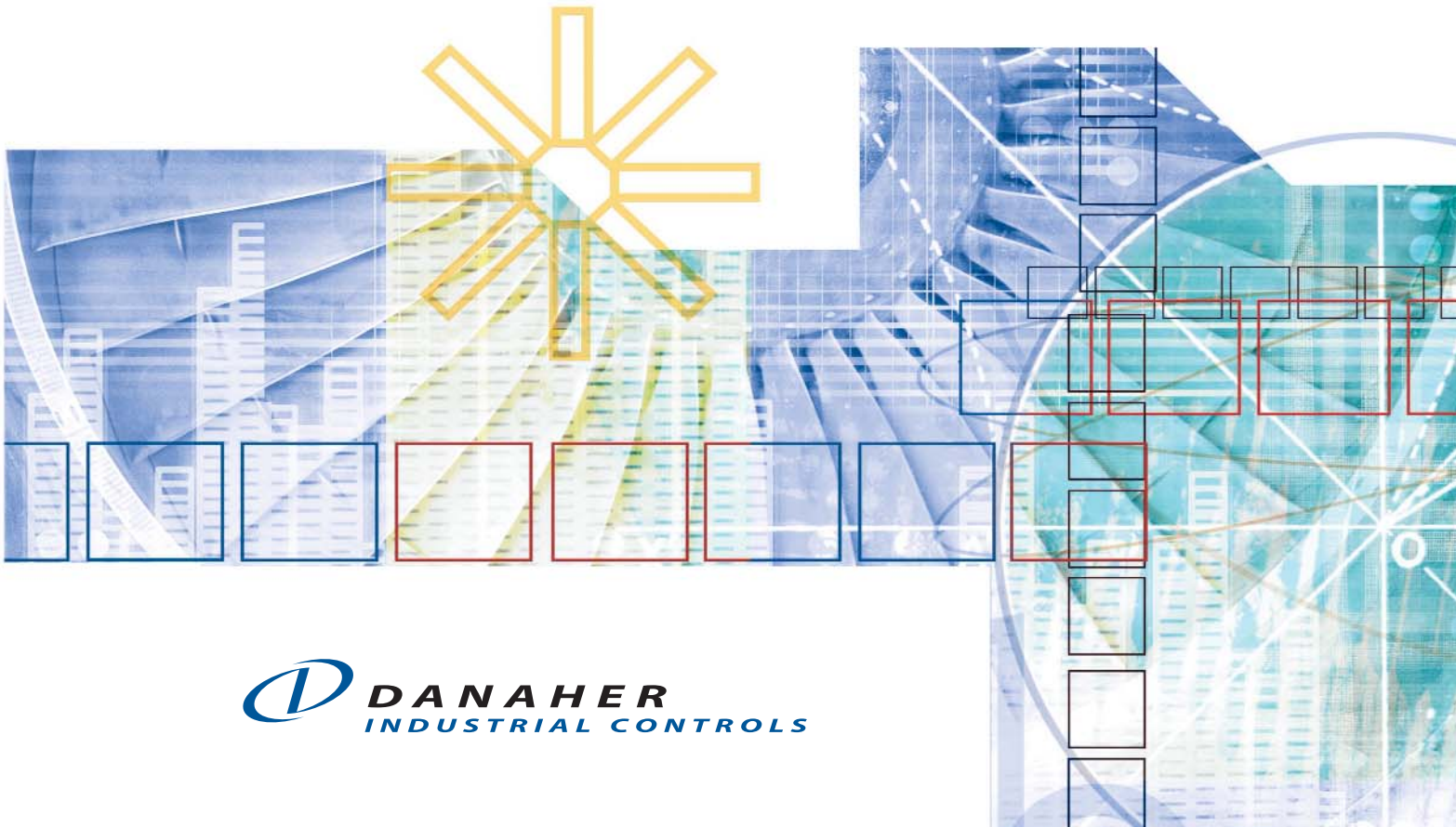
Basic to High-End Circle Chart Recorders

Controllers & Recorders

Single Loop/Multi-loop Temperature, Process Controllers & Circle Chart Recorders

Controllers and recorders you can count on, time after time.

PARTLOW™ brand



DANAHER INDUSTRIAL CONTROLS

About Partlow

Partlow industrial-duty controllers and circle chart recorders provide quality control, safety validation and process trending. Partlow offers an expansive line of versatile and affordable temperature and process controllers with diverse state-of-the-art capabilities for the American marketplace. Renowned Partlow brand products are part of a reliable family of Danaher process automation controls – available around the globe and locally supported.

Applications/Industries:

Ovens, Furnaces, Boilers
Plastics Molding and Forming
Packaging
Semiconductor
Food Processing
Environmental Chambers
Driers, Heat Treating
Glass Tempering

A Full Line

Danaher Industrial Controls Group (DICG) Partlow brand controllers and recorders come in a variety of types.

Front-to-Panel, Single-Loop Indicators & Controllers

Types:

- Analog/Digital Controllers & Indicators
- General-Purpose, Limit, Valve Motor Drive, Temperature & Process Controllers
- High End Profilers

Behind-the-Panel Multi-loop Bus Controller

Types:

- DIN Rail Mount Bus Compatible Controller

Digital, Circular Chart Recorders

Types:

- Basic (Digital Recording)
- General-Purpose (Record/Profile)
- Application-Specific (Flow, Humidity, 12" Large Chart)
- High-End (Profiling, Totalizing)

Reader Tip:
For complete specifications, visit our Website at www.partlow.com or see our catalog or Quick Reference Guide.

Types: *Basic Analog/Digital*

Guide: Basic devices are the choice for economy operation.

Single Loop, Basic Digital Indicators

Applications/Industries:

Industrial and Lab Ovens/Furnaces
Plastics and Thermoforming
Packaging Applications
Form/Fill/Seal

NEW

+ Series 1610+ and 1810+ Digital Indicators

Basic indicators at an unmatched value with simple operation. Our affordable, new generation Partlow brand digital indicators are compact, set up fast and have an intuitive, high-contrast no-nonsense operator interface.

Type: *Front to panel (FTP), digital*

Size: *1/8 DIN (1810+) and new 1/16 DIN (1610+)*

Display: *Single 4-digit LED*

Inputs: *1; universal (thermocouple, RTD, DC linear V, DC linear mA/mV); user-selectable*

Outputs: *1-5 (1-4 on 1610+); relay, SSR driver, DC linear V, DC linear mA, Triac*

Output Function: *Limit, alarm, retransmission*

Communications: *RS-485 serial (West ASCII or Modbus®)*

Agency Approvals: *UR, cUR, CE, NEMA 4*

MIC 1880 Digital Indicator

Type: *Front to panel (FTP), analog input*

Size: *1/8 DIN*

Display: *Single 5-digit*

Inputs: *DC linear mA/mV, thermocouple, RTD*

Outputs: *2; relay, SSR driver, DC linear*

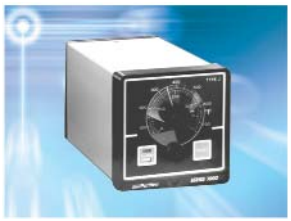
Output Function: *Recorder output, alarm*

Communications: *RS-485 serial (West ASCII)*

Agency Approvals: *UR, cUR, CE, NEMA 4*

Analog Controllers

Versatile easy-to-use, dial setpoint analog controllers are designed for rugged, reliable, low cost control of process variables in harsh industrial environments, even those plagued by environmental electronic noise. They are equipped with a wide range of setpoints, outputs, control modes, alarms and display features.



Series 1000 Basic Analog Controller

Type: *Front to panel (FTP), analog*

Size: *1/4 DIN*

Display: *Knob dial (no LED)*

Inputs: *1; RTD, thermocouple*

Outputs: *1; relay, SSR driver*

Output Function: *Control, high/low limit*

Control: *ON/OFF, limit*

Communications: *None*

Agency Approvals: *UR, CSA, CE, optional FM*

Types: *Limit, Temperature & Process, Valve Motor Drive*

Guide: General-purpose controllers are fit for general industrial use. Our new generation Plus Series controllers feature plug-and-play output cards that cost effectively adapt the controller to a wide range of applications. Also, PC-based jumper-less configuration speeds and simplifies installation.

Applications/Industries:

Industrial and Lab Ovens/Furnaces
Plastics and Thermoforming
Packaging Applications
Form/Fill/Seal

Limit Controllers

Programmable safety cutout devices with optional alarms are useful in a wide variety of applications. They provide latched relay output configurable for high/low limit setpoints. Fail-safe shutoff must be manually reset before process can continue.

NEW

+ Series 1401+, 1801+ and 1161+ Limit Controllers

Type: *Front to panel (FTP), digital*

Size: *1/4 (1401+), 1/16 (1161+) and 1/8 (1801+) DIN*

Display: *Dual, 4-digit LED*

Inputs: *1; universal (thermocouple, RTD, DC linear V, DC linear mA/mV); user-selectable*

Outputs: *1-3; relay, SSR driver, DC linear V, DC linear mA, Triac*

Output Function: *Limit, alarm (process, deviation/band)*

Control: *High/low limit*

Communications: *Optional RS-485 serial (Modbus®)*

Agency Approvals: *UR, cUR, CE, FM, NEMA 4*

MIC 1162 Limit Controller

Type: *Front to panel (FTP), digital*

Size: *1/16 DIN*

Display: *Dual 4-digit LED*

Inputs: *1; universal (thermocouple, RTD, DC linear V, DC linear mA/mV); user-selectable*

Outputs: *3; relay, SSR Driver, Triac, DC Linear*

Output Function: *Limit, alarm, retransmission*

Control: *High/low limit, high and low limit*

Communications: *RS-485 serial (West ASCII or Modbus®)*

Agency Approvals: *CE, NEMA 4, UR, cUR*

Temperature & Process Controllers

NEW

+Series Temperature/ Process Controllers 1160+, 1400+ and 1800+

The + Series platform continues to expand with the addition of the 1/4 and 1/8 DIN models. Together with the 1/16 DIN model, the new platform incorporates numerous product specification, communication, display interface and configuration software improvements. They surpass competitive offerings in ease of use, delivery and value per dollar investment, including such useful features as new remote setpoint.

Type: *Front to panel (FTP), digital*

Size: *1/4 (1400+), 1/16 (1160+) and 1/8 (1800+) DIN*

Display: *Dual, 4-digit LED*

Inputs: *1; universal (thermocouple, RTD, DC linear V, DC linear mA/mV)*

Outputs: *1-3; relay, SSR driver, DC linear V, DC linear mA, Triac*

Output Function: *Control, alarm (process, deviation/band), heater break sensor, NEW remote setpoint*

Control: *ON/OFF, PID, pre-tune, self-tune, manual tune*

Communications: *RS-485 serial (West ASCII or Modbus®)*

Agency Approvals: *UR, cUR, CE, NEMA 4*

MIC 3200 Controller

The MIC 3200 is straightforward, easy to use, and designed to offer users a smaller controller without sacrificing functionality. Comes equipped with specially developed hands-free PID (easy tune) for excellent general control.

Type: *Front to Panel (FTP), digital*

Size: *1/32 DIN*

Display: *Single, 4-digit 0.39"LED*

Inputs: *1; universal (thermocouple, DC linear mA/mV); user-selectable*

Outputs: *1-2; relay, SSR driver*

Output Function: *Control, alarm (process, deviation/band)*

Control: *ON/OFF, direct/reverse acting PID*

Communications: *Optional RS-485 serial (Modbus®/RTU)*

Agency Approvals: *UR, cUR, CE, NEMA 4*

MIC 2000 Controller

The MIC 2000 is a single loop, 1/4 DIN controller capable of controlling a variety of processes ranging from simple on/off to dual 4-20mA output with full PID. Optional features include: up to three relay outputs, three types of alarms, remote setpoint input, electric motor modulation, RS-485 communications and process value transmission output as well as restricted security access.

Type: *Front to panel (FTP), digital*

Size: *1/4 DIN*

Display: *Single, 4-digit, 0.56" LED*

Input: *1; universal (thermocouple, RTD, DC linear V, DC linear mA/mV); user-selectable*

Outputs: *1-3; relay, SSR, DC linear*

Output Function: *Control, alarms (process, deviation/band)*

Control: *ON/OFF, position proportioning, PID*

Communications: *Optional RS-485 serial (Partlow ASCII)*

Agency Approvals: *UR, cUR, CSA*

MIC 8200 Controller

Sophisticated controller handles processes ranging from simple on-off control to full PID with auto-tune, and provides constant visual indication of process and setpoint. Optional features include remote setpoint input (dual), electric motor modulation, process value transmission, and security access.

Type: *Front to panel (FTP), digital*

Size: *1/4 DIN*

Display: *Dual, 4-digit, 0.36" LED*

Inputs: *1; universal (thermocouple, RTD, DC linear V, DC linear mA/mV); user-selectable*

Outputs: *1-3; relay, SSR, current*

Output Function: *ON/OFF, alarms (process, deviation/band), control*

Control: *ON/OFF, PID, position proportioning*

Communications: *Optional RS-485 serial (Partlow ASCII)*

Agency Approvals: *UR, cUR, CSA*

Valve Motor Drive (VMD) Controllers

Affordable valve motor drive controllers are another form of temperature controller specifically designed to control valve motor drives used in many manufacturing applications, such as gas burner control on a production line. Our VMD tuning algorithm gives accurate control and fast output reaction without the need for slide wire feedback or excessive knowledge of three-term action (PID) tuning algorithms. Auto-tune reduces valve activity to an absolute minimum, reducing wear.

MIC 1407, 1167, 1807 General Purpose VMD Controllers

Type: *Front to panel (FTP), digital*

Size: *1/4 DIN (1407), 1/8 DIN (1807), or 1/16 DIN (1167)*

Display: *Dual, 4-digit LED*

Inputs: *1; universal (thermocouple, RTD, DC linear V, DC linear mA/mV); user-selectable*

Outputs: *1-3; relay, SSR driver, DC linear, Triac*

Output Function: *Control, alarms (process, deviation/band); retransmission, control*

Control: *PID*

Communications: *RS-485 serial (Modbus®/RTU)*

Agency Approvals: *UR, cUR, CE, NEMA 4*

Types: *Basic, High-End*

Guide: Profile (or ramp/soak) controllers offer high accuracy and come in basic and high-end models that differ in the number of segments and programmable profiles (model dependent). They allow operators to program a number of setpoints (ramp) and the time to sit at each setpoint (soak) with the ability to enter a number of segments to allow complex temperature profiles for enhanced control. Four to eight programs of 16 free-format segments (model dependent). Profile modes such as guaranteed soak, delayed start, profile recovery and cycling provide advanced control.

Applications/Industries:

Industrial and Lab Ovens/Furnaces

Plastics and Thermoforming

Packaging Applications

Form/Fill/Seal

Basic Profilers

MIC 1166 Basic Profiler

Type: *Front to panel (FTP), digital*

Size: *1/16 DIN*

Display: *Dual, 4-digit LED*

Inputs: *1; universal (thermocouple, RTD, DC linear V, DC linear mA/mV); user-selectable*

Outputs: *1-3; relay, SSR driver, DC linear, Triac*

Output Function: *Alarms, control, retransmit, event*

Control: *PID, ON/OFF, profile (ramp/soak)*

Communications: *Optional RS-485 serial (Modbus®/RTU)*

Agency Approvals: *UR, cUR, CE, NEMA 4*

High-End Profilers

MIC 1460 and 1462 High-End Profiler

Type: *Front to panel (FTP), digital*

Size: *1/4 DIN*

Display: *Dual, 4-digit LED (Enhanced HMI: MIC 1462)*

Inputs: *1; universal (thermocouple, RTD, DC linear V, DC linear mA/mV); user-selectable*

Outputs: *1-3; relay, SSR driver, DC linear, Triac*

Output Function: *Control, alarms (process, deviation/band); retransmission option*

Control: *PID, ON/OFF, profile*

Communications: *RS-485 serial (West ASCII or Modbus®)*

Agency Approvals: *UR, cUR, CE, NEMA 4*

MIC 6000 High-End Profiler

Type: *Front to panel (FTP), digital*

Size: *1/4 DIN*

Display: *Single, 4-digit, 0.56" high LED*

Inputs: *1; universal (thermocouple, RTD, DC linear V, DC linear mA/mV); user-selectable*

Outputs: *1-3; relay, SSR driver, current*

Output Function: *Control, alarm (process, deviation/band), event*

Control: *PID, ON-OFF, profile (ramp/soak)*

Communications: *RS-485 serial (Partlow ASCII)*

Agency Approvals: *UR, cUR, CSA*

Types: *Bus Compatible, Behind The Panel (BTP), Digital*

Guide: Multi-loop, behind the panel controllers provide a compact and affordable modular system that can operate either within a stand-alone system or in a PLC environment. As a replacement for temperature control in the PLC, they provide fast, sophisticated PID control. As a replacement for multiple front to panel (FTP) DIN controllers, they provide a single point of software access to all control loops or a local HMI. The cost of installation is reduced by eliminating much wiring, panel cutouts, and saving panel space.

Applications/Industries:

Packaging

Plastics Forming

Converting

Semiconductor

NEW

MLC 9000 + Multi-Loop Bus Controller

The new generation MLC 9000+ is a modular, multi-loop temperature PID control system that operates either within a stand-alone system or in a PLC environment. Its compact DIN-rail mount construction fits behind the panel (BTP), and comprises a bus controller module (BCM) and up to eight loop controller modules (LCMs) or "slave" modules per rack. Each BCM handles up to eight LCMs, and supports all popular communications protocols. A unit controlling 32 loops fits in a mere 8.1 inches.

Loop Control Module (LCM)

Type: *Behind the Panel (BTP)*

Modes: *Available in 1-loop, 3-loop, or 4-loop models*

Display: *None*

Inputs: *1; universal (thermocouple, RTD, DC linear mA, DC linear mV)*

Outputs: *1-6 (model dependent); relay, SSR driver, DC linear (varies by LCM)*

Output Function: *Control, alarm, heater break alarm*

Power: *From BCM*

Control: *PID, self-tune, ON/OFF*

Agency Approvals: *UR, cUR, CE*

Bus Control Module (BCM)

Type: *Behind the panel (BTP)*

Display: *None (behind the panel)*

Communication: *Modbus®, DeviceNet™, Profibus, CANOpen, EtherNet/IP™, Modbus®/TCP*

Power: *18-30VDC*

PC Configurable: *(standard) with easy-to-use Windows® based software*

Agency Approvals: *UR, cUR, CE*

Circular Chart Recorders

Types: Basic to High-End Recording, Analog, Flow, Profiling, Totalizing

Guide: Partlow brand digital (microprocessor based) and analog circular chart recorders provide reliable operation in rugged industrial environments from light industrial to extreme industrial wet applications to industry specific flow and relative humidity applications. They differ from controllers only in that they provide a paper hardcopy or record of temperature, relative humidity, pressure, level, flow, voltage, and other sensor inputs and process changes over time in applications where validation and quality control traceability is required.

Circular chart recorders range in sophistication from a basic one-pen one-process recording instrument to a multiple input, multiple-equation profiling recorder. They are easily programmable via a front-panel keypad or via serial PC communication.

Applications/Industries:

- *Process Validation*
- *Regulatory Compliance*
- *Trend Analysis*
- *Plastics Forming*
- *Industrial Ovens*
- *Environmental Chambers*
- *Food Processing*
- *Pharmaceutical, Chemical Processing*
- *Pulp and Paper Processing*

Basic Chart Recorders

MRC 5000 Basic Digital Recorder

Slim, best-value recorder can record and control up to two process variables. It is ideal for basic digital recording applications with shallow depth panel requirements. Applications include temperature, pH, level and high/low limit control. Well suited to critical chamber applications. Door lock and NEMA 4X protection optional.

Type: *Front to panel (FTP), digital*

Size: *10" diameter chart*

Display: *Single, 4-digit; 0.56" LED display*

Pens: *1 or 2 (red/green)*

Inputs: *1-2; universal (thermocouple, RTD, DC Linear V, DC Linear mA/mV); user-selectable*

Outputs: *1-4; relay*

Output Function: *Process control, high/low limit, alarm*

Control: *ON/OFF, limit*

Communications: *RS-485 serial (Modbus®/RTU)*

Agency Approvals: *CE, CSA, UL, NEMA 3 (4X optional)*

General-Purpose Recorders

MRC 7000 Recorder/ Controller/ Profiler

Proven recording reliability and affordable profile/control capability that became the industry standard. This versatile recorder controls up to two process variables, displays two process values, and offers true time-based profile capability. It offers isolated inputs and eight programmable profiles, including ramp, soak, and remote run/hold. Extra assurance comes from a security mode that protects against unauthorized changes, optional door lock, and NEMA 3 protection.

Type: *Front to panel (FTP), digital*

Size: *10" diameter chart*

Display: *1 or 2, 4-digit, 0.56" LED*

Pens: *1 or 2 (red/green)*

Inputs: *1-2; universal (thermocouple, RTD, DC linear V, DC linear mA/mV); user-selectable remote setpoint*

Outputs: *1-8 relay or SSR driver, 1-4 DC linear (dependent on output type)*

Output Function: *Limit, alarms (process, deviation/band, hysteresis), control and event*

Control: *PID, limit, profile*

Communications: *RS-485 serial (Partlow ASCII)*

Agency Approvals: *UR, cUR, optional CE, optional NEMA 3*

Circular Chart Recorders

PARTLOW™ brand

MRC 7700 Recorder/ Controller/Profiler for Relative Humidity

For relative humidity applications, no other performance-priced profile recorder is more respected for reliability. Displays true time-based profiling of relative humidity and temperature using dry- and wet-bulb temperature inputs. Extra assurance comes from optional NEMA 3 protection.

Type: *Front to panel (FTP); digital*

Size: *10" diameter chart*

Display: *1 or 2, 4-digit 0.56" LED*

Pens: *1 or 2 (red/green)*

Inputs: *1-2; universal (thermocouple, RTD, DC linear V, DC linear mA); user selectable*

Outputs: *1-8 relay or SSR, 1-4 DC linear (dependent on output type)*

Output Function: *Alarm (process, deviation/ band, hysteresis) event, control, retransmission*

Control: *PID, ON/OFF, profile*

Communications: *RS-485 serial (Partlow ASCII)*

Agency Approvals: *UR, cUR, optional CE, optional NEMA 3*

MRC 7800 Recorder for Flow

Trusted recording and performance priced reliability. Designed specifically to record flow with broad alarm and indication functionality. Special features include flow totalization, square root extraction, and ability to convert head to flow for Parshall flumes and weirs. Outputs for high/low flow, or to activate at preset totalization values for batching applications. Dual display shows two process values at the same time. Optional NEMA 3 protection, door lock and totalizing flow.

Type: *Front to panel (FTP), digital*

Size: *10" diameter chart*

Display: *Single, 4-digit (standard); dual 4-digit (optional); 0.56" LED*

Pens: *1 or 2 (red/green)*

Inputs: *1-2; DC Linear V, DC linear mV/mA*

Outputs: *4-8; relay, SSR driver, DC linear (dependent on output type)*

Output Function: *Alarms (process, deviation/band, hysteresis)*

Control: *N/A*

Communications: *RS-485 serial (Partlow ASCII)*

Agency Approvals: *UR, cUR, optional CE, optional NEMA 3*

MRC 8000 Recorder/ Controller with Large 12" Chart

Rugged, reliable, economical record/control capability refined for larger recording application needs. Isolated inputs and a large 12" chart provide the highest resolution and record accuracy in a recorder of this type capable of measuring, recording and displaying temperature, pressure, level, flow and other process variables. Dual displays show two values at the same time. Optional remote setpoint, position proportioning, door lock and NEMA 4 protection available.

Type: *Front to panel (FTP); digital*

Size: *12" diameter chart*

Display: *1 or 2, 4-digit 0.56" LED*

Pens: *1 or 2 (red/green)*

Inputs: *1-2; universal (thermocouple, RTD, DC linear V, DC linear mA/mV) user-selectable; remote setpoint optional*

Outputs: *1-4 relay or SSR driver, 1-2 DC linear (dependent on output type)*

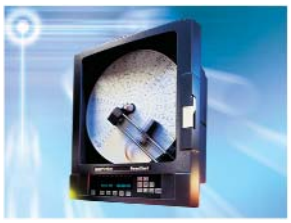
Output Function: *Alarms (process, deviation/ band, hysteresis), control*

Control: *PID, ON/OFF*

Communications: *RS-485 serial (Partlow ASCII)*

Agency Approvals: *UR, cUR, optional CE, NEMA 3, optional NEMA 4X*

High-End Chart Recorders



MRC 9000 VersaChart™ (Full Version) Alpha/Numeric Recorder/ Controller/ Profiler

A versatile, powerful and performance-priced recorder/ controller/profiler that is ideal for demanding applications. This high-performance device provides custom ramp/soak capability, true time-based profiling, and exceptional value per data point. Using advanced printing technology, the VersaChart produces a 4-color chart with alpha/numeric characters and real-time "chart messaging" capability. It is the only circle chart recorder delivering 16 profiles with eight segments each. Door lock security, NEMA 4 protection, remote setpoint and 12" chart (for improved resolution) options available.

Type: *Front to panel (FTP); digital*

Size: *10", 11" or 12" diameter charts*

Display: *Single, 40-character 5mm vacuum fluorescent*

Pens: *1-4 (4 colors)*

Inputs: *1-8; universal (RTD, DC linear V, DC linear mA/mV)*

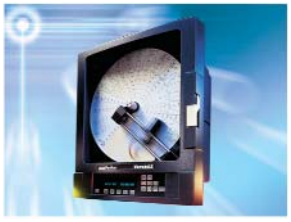
Outputs: *1-8 relay or SSR driver, DC linear; up to 4 relays/SSRDs plus up to 4 mA outputs*

Output Functions: *Alarms (process, deviation/ band, hysteresis), control, retransmission*

Control: *PID, ON/OFF, relative humidity, math/totalizing, logical equations*

Communications: *RS-232/485 serial (Modbus®/RTU)*

Agency Approvals: *UR, cUR, CE, NEMA 3, optional NEMA 4*



MRC 9400 VersaEZ™ (Simplified) 4-Pen Recorder

All your recording needs made E-Z! A simplified VersaChart at a performance price that won't break your budget. This device comes pre-configured for fast, easy, plug and play installation. Change only those parameters necessary and programming is completed in minutes. Optional 10", 11" and 12" charts improve resolution. Totalizer, NEMA 4 protection and door lock security options available.

Type: *Front to panel (FTP); digital*

Size: *10", 11" or 12" diameter charts*

Display: *Single, 5mm 40-character vacuum fluorescent*

Pens: *1-4*

Inputs: *4 universal (RTD, DC linear V, DC linear mA/mV)*

Outputs: *1-8 relays; up to 4 mA outputs*

Output Functions: *Alarms (process, deviation/ band, hysteresis), retransmission*

Control: *None (totalizing optional)*

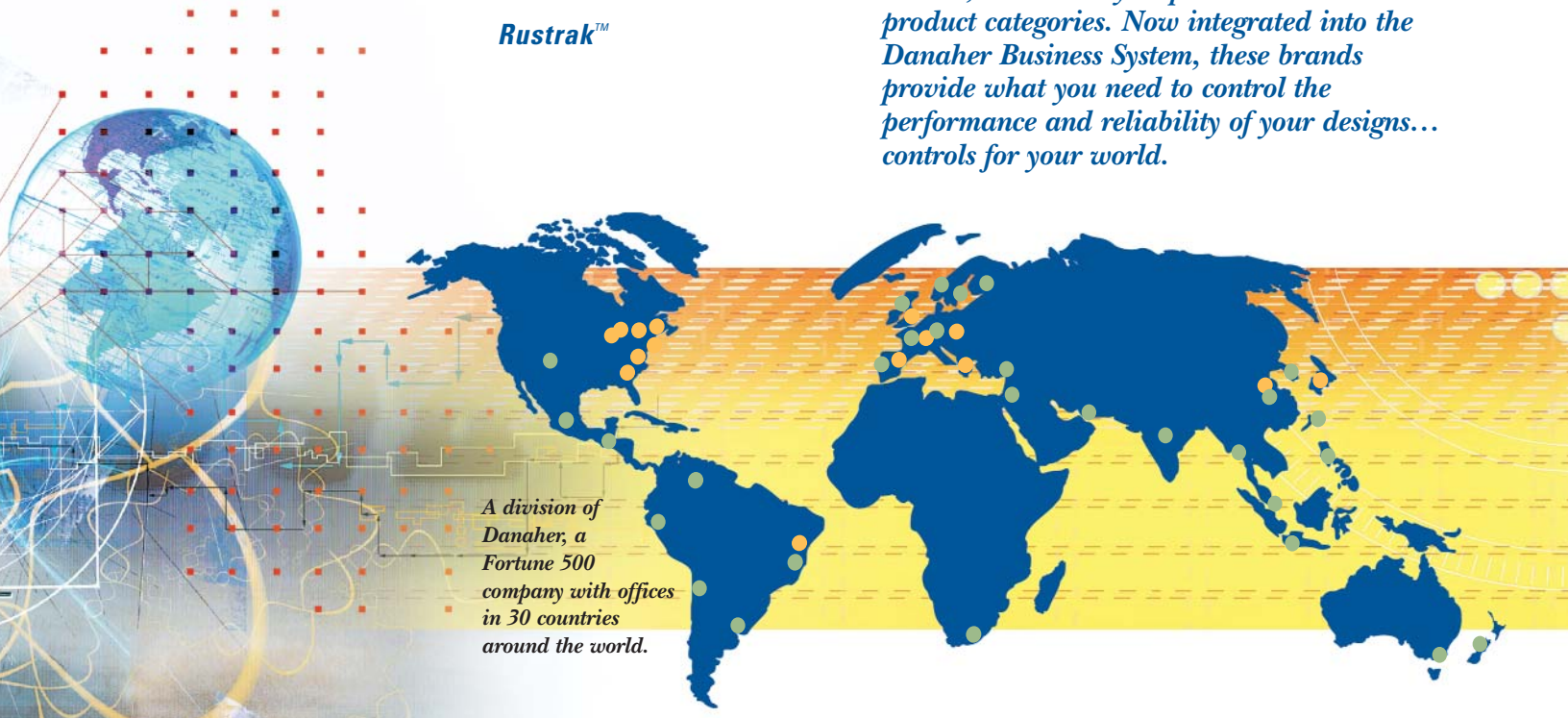
Communications: *RS-232/485 serial (Modbus®/RTU)*

Agency Approvals: *UR, cUR, CE, NEMA 3, optional NEMA 4*

Worldwide Process Automation Brands:

- ***PMA™***
- ***Partlow™***
- ***West™***
- ***LFE™***
- ***Rustrak™***

Danaher Industrial Controls Group was formed through the merger of 28 premier brands, each widely respected within their product categories. Now integrated into the Danaher Business System, these brands provide what you need to control the performance and reliability of your designs… controls for your world.



A division of Danaher, a Fortune 500 company with offices in 30 countries around the world.

More Available. *With factories around the world, global sales and applications support, and an expansive network of distributors, we stay close to our customers – shortening lead times and fostering responsiveness. A three-day lead time is standard, with same-day shipments available on many products.*

More Precise. *With 230 combined years of experience in process automation, we understand increasing demands for product performance. Our products give you precise control of your designs.*

More Durable. *Experience with more than 25,000 customers has taught us to design for durability: long life and feature rich functionality that others envy.*

More Customizable. *JIT manufacturing enables us to immediately produce any of thousands of product variations. And we're happy to work with customers to customize products to exact requirements.*

For additional information or a full-line catalog, contact your DICG representative at +1 800.390.6405 or visit our group web site at **www.DanaherIndustrialControls.com**.

DANAHER INDUSTRIAL CONTROLS

Satellite Locations:
North America: North Carolina, South Carolina, Connecticut, Massachusetts, New York, Canada, British Virgin Islands
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Latin America: Brazil
Asia: China, Japan, Korea, Singapore

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