PARTLOW™ brand

Data Sheet

Controllers



MIC 2000™

Versatile with High-End Features

1/4 DIN Temperature Controller

DESCRIPTION

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. Inputs include thermocouple, RTD, millivolt, volt, and milliamp.

Standard features include: isolated process input, setpoint and output limits, and .56 inch high LEDs. It will display programming of process deviation and setpoint, of percent output, and scaling with decimal point positioning.

Optional features include: up to three relay outputs, three types of alarms, remote setpoint input, electric motor modulation, RS-485 communications and process value retransmission output as well as restricted security access. Access to configuration parameters and setpoint may be restricted by using the instrument's security-access mode.

APPLICATIONS:

Ideal for temperature control applications requiring a value-priced, user-friendly, versatile and full featured temperature controller.

INDUSTRIES:

- Industrial and lab ovens/furnaces, plastics and thermal forming
- Form/Fill and seal
- Packaging applications
- And any others where low costs, smaller size and unmatched connectivity are critical requirements.

FEATURES/BENEFITS

- Single, 4-digit, 0.56” LED display
- 1/4 DIN panel mount
- Universal Input for thermocouple, RTD DC linear V, DC linear mA/mV user-selectable
- Up to 3 outputs; relay, SSR driver, 4-20mA
- Process or deviation/band alarm functions
- ON/OFF, position proportioning, PID Control
- Optional RS-485 serial communications
- Program security

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SPECIFICATIONS*

STANDARD FEATURES

Full PID capability

Single or dual outputs via relay, 4-20 mA current or SSR driver

Separate alarm output

Universal input plus remote setpoint and sensor break detection

ENVIRONMENTAL CHARACTERISTICS

Operating Temperature: 0 to 55°C, 32 to 131°F

Storage Temperature: -40 to 65°C, -40 to 149°F

Humidity: 0 to 90% RH, non condensing

Vibration: 0.5 to 100Hz at 0.5g

ELECTRICAL

Line Voltage: 115/230VAC +/- 10% 50/60 Hz

Power Consumption: 15VA maximum

Transmitter Power Supply: Provides up to 40mA @ 24 VDC.

INPUTS

Thermocouple types: J, K, T, R, S, E, B, N, and C.

RTD: 100 ohm platinum (.00385 Ohm/Ohm/C)

Volts: 0 to 5VDC, 1 to 5 VDC

Millivolts: 0 to 25mVDC, 0 to 50mVDC, 10 to 50mVDC

Milliamps: 0 to 20 or 4 to 20mADC, accommodated via the addition of a shunt resistor

Remote Setpoint: 0 to 5VDC, 1 to 5 VDC

Sensor Fault Detection: Displays Hi or Lo for thermocouple or RTD inputs (10% above or below range) and sensor break, SnSr. On/Off outputs go off, proportional outputs go to 0%. Sensor fault detection is not functional for 0 to 5VDC or 0 to 20mADC.

OUTPUTS

Relay: SPST

115VAC: 5.0 A Resistive; 1/8HP or 250VA
230VAC: 2.5 A Resistive; 1/8HP or 250VA

SSR Driver: Open collector output Short circuit protected at 100mA maximum Provides 4VDC at 20mA or 3VDC at 40mA

Current Output: 0-20 or 4-20 mADC into 650 ohms maximum

DISPLAY

Digital Display: Four 7 segment LEDs each .56 inches high. Status Indicators Individual LED indictors for Setpoint, Out 1, Out 2, Manual, Alarm, Degrees F, Degrees C, or Engineering Units, and minus sign for negative values.

ALARM ADJUSTMENT

Process Alarm: -9999 to 9999 units

Deviation Alarm: -3000 to 3000 units

Deviation Band Alarm: 1 to 3000 units

CONTROL ADJUSTMENTS

On/Off Hysteresis: 0 to 300 units

Proportional Band: 1 to 3000 units

Manual Reset: -1500 to 1500 units

Auto Reset: 0.0 to 100.0 repeats/minute

Rate: 0.0 to 10.0 minutes

Cycle Time: 1 to 240 seconds

Position Prop. Sensitivity: 0.0 to 50.0%

First Output Position: -1000 to 1000 units

Spread: -1000 to 1000 units
(Second Output Position)

PERFORMANCE

Measurement Error Limit:

- Type J, K, T, E, N, C thermocouples and RTD +/- 0.25% of reading plus 1 degree at 25°C
- Type R, S, B thermocouple +/- 0.25% of span at 25°C
- mVDC, mADC and VDC +/- 0.25% of span, plus 1 least-significent-digit at 25°C

Ambient Temperature Error: 0.01% of span per degree C deviation from 25°C

Scan Rate: 1 scan per second (3 scans per second available on EA option)

Display Resolution: T/C & RTD: 0.1 or 1 degree mV & VDC: 0.001, 0.01, 0.1, or 1.0

Auto Reset Windup Inhibit: Auto reset is disabled when the process is outside of the proportional band

Cold Junction Compensation: Self compensation for ambient temperature. All calibration values are stored in memory.

Noise Rejection: Normal mode, 85dB minimum @ 60Hz or greater. Common mode, 90dB minimum ±8 VDC maximum peak for RTD input, 115VAC maximum for other inputs.

PHYSICAL DIMENSIONS

Dimensions: 1/4 DIN front panel, 5.8" deep

Weight: 3 pounds maximum

COMMUNICATIONS

Type: RS-485 serial communication port

Protocol: Partlow ASCII

RATINGS/AGENCY APPROVALS

UL & cUL recognized (E67237),
CSA (LR39885)

WARRANTY

3 years

Made in USA

* Specifications are for base models with standard features only unless otherwise noted. 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 owners. All rights reserved.

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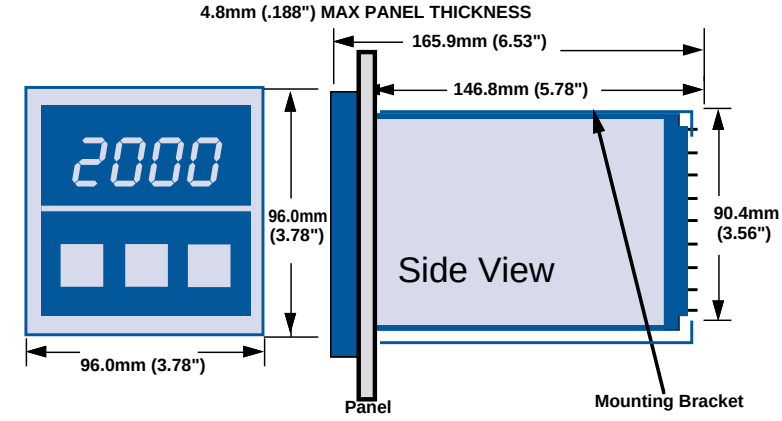
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MODELS

Code 1: Model #	Code 2: Input	Code 3: Output 1	Code 4: Output 2	Code 5: Alarm	Code 6: Remote	Code 7: Voltage	Code 8: Option Suffix
2	☐	☐	☐	☐	☐	☐	☐
I/4 DIN Temperature Controller includes: universal input, three outputs, remote setpoint	1 T/C or mV 2 Volts/mA 3 RTD 4 All Inputs	1 Relay 2 SSR Driver 3 4-20mA	0 None 1 Relay 2 SSR Driver 3 4-20mA	0 None 1 Relay 2 SSR Driver	0 None 1 Position Proportioning* 2 Remote Setpoint 3 RS-485 Standard Com.** 5 RS-485 Total Access Com.**	1 115 VAC Input & Relays 2 230 VAC Input & Relays 3 115 VAC Input & 230 VAC Relays	(Blank) None BA Remote Keypad EA Extended Feature Software† EB Extended Feature Software*** † XP 24VDC Transmitter Power Supply XA 24VDC Power Supply††

DIMENSIONS - 1/4 DIN



Panel Cutout: 92.0mm (3.62") x 92.0mm (3.62")

* Limited to Model 2X11X1X or 2X22X1X.

** Cannot be included when Output 2 selection is 3.

*** Suffix Option EB includes the EA features.

† Not available with RS-485 Standard Com.

†† ALARM not available when XA suffix is ordered.

Note: RS-485 Total Access Com. includes Options EA and EB at charge.

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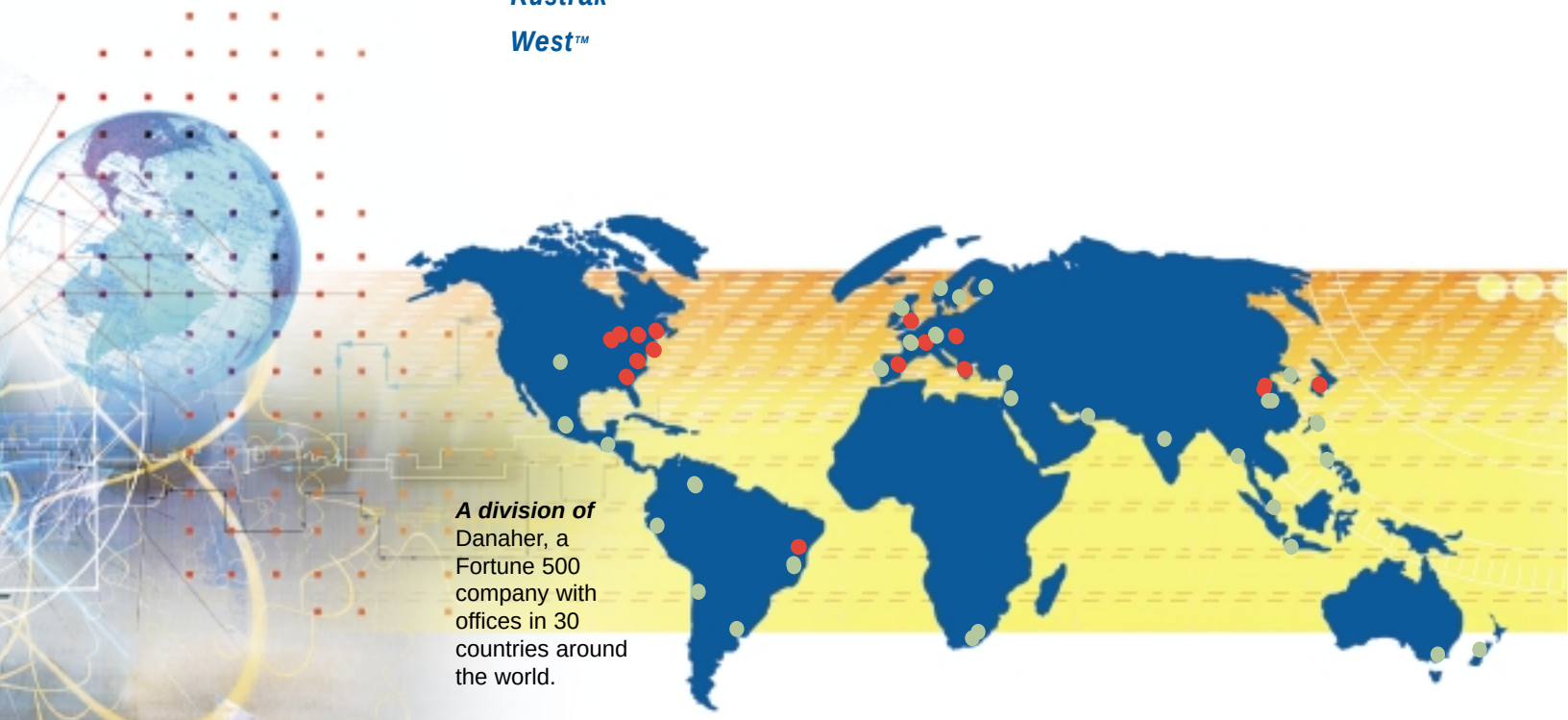
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More Selection. We have a broad selection of controllers to meet application requirements in a variety of industries. User-configurable, accurate and flexible, with low, mid, or high level performance ranges, our controller products meet your system and budgetary requirements.

More Reliable. Our experience with more than 25,000 customers has taught us to design controllers that are reliable and durable, with quality standards that meet six sigma requirements.

For additional information or a full-line catalog, contact DICG Customer Service or visit our web site.

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