



MIC 6000

Eight Ramp/Soak Profiles

1/4 DIN Profile Controller

DESCRIPTION

The MIC 6000 is a 1/4 DIN, microprocessor based, single loop, profiling, process controller. It can function either as a basic process controller, utilizing manual setpoint changes or it can also execute any one of eight setpoint profiles; each profile can have six ramp and six soak segments.

Access to configuration parameters and setpoint may be restricted by using the instrument's security-access mode.

The MIC 6000 can provide single or dual control outputs and up to three event outputs. The unit can include two 4-20mA current outputs which can be used for control or optional process value retransmission.

APPLICATIONS:

Programmable profile device stores and implements temperature control sequences including ramp/soak profiles.

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

- 4-digit, 0.56" high, LED display
- 1/4 DIN panel mount
- Input options for thermocouple, RTD, DC linear mA/V/mV
- Sensor fault detection
- Up to 5 outputs; relay, 4-20mA, SSR driver
- Process, deviation, deviation band alarms
- Eight Ramp/Soak profiles
- Optional RS-485 serial communications
- Program security

SPECIFICATIONS*

STANDARD FEATURES

Up to 5 outputs via relay, 4-20 mA current or SSR driver
 Alarm or Event output
 Available inputs for T/C, RTD, Voltage or Current
 Sensor fault detection
 Optional remote Run/Hold, Position Proportioning or RS-485 Communications

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 Run/Hold: Dry contact-closure
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 0.56 inches. Individual LED indicators for Setpoint, Out 1, Out 2, Manual, Alarm, Degrees F, Degrees C, or Engineering Units, and minus sign for negative values, Segment 1 – 6, ramp and soak

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)
Profile Time Base:
 Selectable for ramp time and soak time as:
 HHH.T (hrs. & tenths)
 HH.MM (hrs. & min.)
 MM.SS (min. & sec.)
 Selectable for ramp rate (EO option only) as:
 XXX.X (units per hour)
 XXX.X (units per minute)

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-significant-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

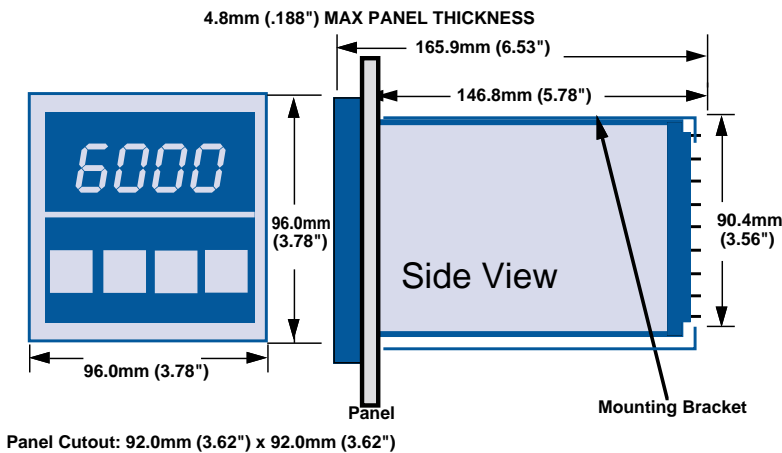
RATINGS/AGENCY APPROVALS

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

MODELS

| Code 1: Model # | Code 2: Input | Code 3: Output Group 1 Control Group 1 and/or Event | Code 4: Output Group 2 Control Output 2 or Event | Code 5: Output Group 3 Alarm or Event | Code 6: Remote | Code 7: Voltage | Code 8: Option Suffix |
|----------------------------|----------------------------------------------------|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 1/4 DIN Profile Controller | 1 T/C or mV 2 Volts/mA 3 RTD 4 All Inputs | 1 Relay 2 SSR Driver 3 4-20mA and Relay 4 4-20mA and SSR Driver | 0 None 1 Relay 2 SSR Driver 3 4-20mA 4 4-20mA and Relay 5 4-20mA and SSR Driver | 0 None 1 Relay 2 SSR Driver | 0 None 1 Position Proportioning* 2 Remote Run/Hold 3 RS-485 Standard Com.** 4 RS-485 Standard Com.*** 5 RS-485 Total Access Com.** 6 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 EO Extended Feature Software XP 24VDC Transmitter Power Supply XA 24VDC Power Supply†† AI 40 Profiles† |

DIMENSIONS - 1/4 DIN



- * Limited to Model 6X11X1X or 6X22X1X.
- ** Output Group 2 cannot be 3, 4, or 5.
- *** Output Group 3 cannot be 1 or 2.
- † If com is required, only Total Access Com. is available.
- †† ALARM not available when XA suffix is ordered.

Note: RS-485 Total Access Com. includes Option EO. Option E