MIC 1160
MICROBASED 1/ 16 DIN CONTROLLER

1160□□□□□□

ORDERING

OUTPUT 1

1	Relay
2	SSR Driver
3	4-20mA*

OUTPUT 2

0	None
1	Relay
2	SSR Driver
3	4-20mA*

OUTPUT 3#

0	None
1	Relay
2	SSR Driver
3	4-20mA**

OPTIONS

0	None
1	RS-485 Communications
4	Green Lower Display
5	RS-485 & Green Lower Display

SUFFIX

(Blank)	None
02	Line Voltage 24 V AC/DC

* For control output only.
** For retransmision only.

NOTE: OUTPUT 2, when programmed as an ALARM, IS programmed as ALARM 2 ONLY. OUTPUT 3, when programmed as an ALARM, IS programmed as ALARM 1 ONLY.

WARRANTY
This instrument is backed by the Partlow comprehensive 3 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, Page 7.

DESCRIPTION

The easy programming and operational simplicity of the entire MIC Series of Partlow controllers is featured in the MIC 1160. It's adaptive-tune feature provides for better overall "quality control" with accurate "hands-free" tuning and faster, easier setup time.

The MIC 1160 offers a choice of full PID, Heat-Cool, or Dual Alarm features to handle virtually any application. It's unique loop break alarm saves money by providing process problem indication without the need for additional hardware required by heater break detection.

The MIC 1160 reduces controller inventory cost because one controller will handle RTD, T/C, and analog inputs. It features a recorder type analog retransmission feature that provides flexibility for external process monitoring and recording.

The MIC 1160's universal power supply provides the flexibility for global power capability which eliminates the need for different boards and covers the 94-264 range. It's sealed front panel provides for reliable and accurate operation in harsh environments.

SPECIFICATIONS

Input

Thermocouple types	J, K, T, R, S, B and L
RTD	100 ohm (.00385 ohm/ohm/C)
Volts	0 to 5VDC, 1 to 5VDC, 0 to 10VDC and 2 to 10 VDC
Millivolts	0 to 50mVDC and 10 to 50mVDC
Milliamps	0 to 20mADC and 4 to 20mADC
Sensor Fault Detection	Displays cLLo or cHHo for thermocouple or RTD inputs and sensor break, SnSr. Control outputs set to OFF (0% power); alarms operate as if the process variable has gone over-range (TC) and under-range (RTD & V, mV, mA)

Outputs

Relay	SPDT 2.0 A Resistive at 120/240 VAC
SSR Driver	>4.3 VDC into 250 ohm minimum
Current Output	0-20mADC into 500 ohmmaximum 4-20mADC into 500 ohms maximum
Volts DC Output	0-10VDC 500 ohm minimum 0-5VDC 500 ohm minimum

Display

Digital Display	Four 7 segment LEDs, top .39" high, bottom .28" high
Status Indicators	Individual LED indictors for Output 1, Output 2, Manual, Alarm and Pre or Auto Tune

Alarm Adjustment

Process Alarm	– Input Span
Deviation Alarm	– Input Span
Deviation Band Alarm	0 to Input Span

Control Adjustments

On/Off Hysteresis	0.1% to 10.0% of Input Span
Proportional Band	0% to 999.9% of Input Span (0%=On/Off)
Manual Reset	0% to 100% of Output Power
Auto Reset	Off to 99 mins. 59 sec per repeat
Rate	0 sec to 99 mins. 59 sec
Cycle Time	.5, 1, 2, 4, 8, 16, 32, 64, 128, 256, and 512 seconds
Spread	-20% to +20% of PropBand 1 + PropBand 2

Performance

Measurement Accuracy	– 0.25% of span, – 1 LSD at 20 deg C Note: Reduced performance with Type "B" thermocouple between 100-600C (212-1112F)
Ambient Temperature Error	0.01% of span /deg C change in ambient
Linearization Accuracy (TC and RTD)	Better than – 0.2 deg C any point, any 0.1 deg C range (– 0.05 deg C typical). Better than – 0.5 deg C any point, any 1 deg C range
Cold Junction Compensation	Better than – 0.7 deg C
Scan Rate	4 per second
Noise Rejection	Common mode: >120dB at 50/60Hz giving negligible effect at up to 264V 50/60Hz Series Mode: >500% of span (at 50/60 Hz) causes negligible effect
Line Voltage	90 to 264VAC 50/60 Hz
Operating Temperature	0 to 55 C
Storage Temperature	-20 to 80 C
Humidity	20 to 95% non condensing
Source Resistance	1000 ohm maximum (thermocouple)
Lead Resistance	50 ohm per lead maximum balanced (Pt100)
Dimensions	1/16 DIN front panel, 4.33" deep
Weight	8 ounces maximum
Front Panel Sealing	IP65/NEMA4
Power Consumption	4 Watts

Agency Approvals

UL and CSA	U.L. Category QUXY8 Process Control Equipment Certified for Canada File # E67237 Multiple Listed Track # 94ML004326

Digital Communications

Type	RS-485 serial communication port:
Character Format	ASCII
Bit Rate	User configurable to 1200, 2400, 4800, 9600
Address	User configurable 1 to 32