MIC 1460
MICROBASED 1/4 DIN PROFILE CONTROLLER

1460 □ □ □ □ □ □

ORDERING

OUTPUT 1

1	Relay
2	SSRD
3	4-20 mA*

OUTPUT 2#

0	None
1	Relay*
2	SSRD
3	4-20mA
4	Transmitter Power Supply+

OUTPUT 3#

0	None
1	Relay*
2	SSRD
3	4-20mA**
4	Transmitter Power Supply++

OPTION 1

0	None
1	RS-485 Communications

OPTION 2

0	None
10	Event Putputs (4)
20	Remote profile control outputs (6)***
30	Both event outputs & remote inputs

SUFFIX

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

* For alarm output only.
** For retransmission only.
*** Field changeable to 0/100mV, 0/10V, or potentiometer
+ Cannot be included if output 3=4.
++ Cannot be included if output 2=4.

WARRANTY
This instrument is backed by the Partlow comprehensive 2 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 17.

DESCRIPTION

The MIC 1460 is a 1/4 DIN microprocessor based, single loop process controller with programmable setpoint programs. It can function either as a basic process controller, utilizing manual setpoint changes, or it can execute any one of eight setpoint programs. Each program is adjustable in the range of 1 to 16 segments and are cascadable to a maximum length of 121 segments. Each segment may be a ramp, a dwell, a join or an end. A delayed start feature is standard as is an end of program relay. By using the auto-hold feature, assured dwells are possible.

The instrument can include two 4-20mA current outputs which can be used for control and a third current output to be used for retransmission. In lieu of current control outputs, relays or SSR drivers are available. Four event outputs (relay) are available as an option.

SPECIFICATIONS

Input

Thermocouple types	R, S, J, T, K, L, B, and N
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

Output 1 & 2

Relay	SPDT 2.0 A Resistive at 120/240 VAC
SSR Driver	> 4.2V DC into 1K ohm minimum
Current Output	0 to 20mADC into 500 ohms max 4 to 20mADC into 500 ohms max
Volts DC Output	0 to 10VDC 500 ohm minimum 0 to 5VDC 500 ohm minimum
Transmitter Power Supply (Output 2 only)	20 to 28VDC (24VDC nominal) 910 ohm (22mA @ 20VDC)

Output 3

Relay	SPDT 2.0 A Resistive at 120/240 VAC
SSR Driver	> 4.2V DC into 1K ohm minimum
Current Output (retransmission only)	0 to 20mADC into 500 ohms max 4 to 20mADC into 500 ohms max
Volts DC Output (retransmission only)	0 to 10VDC 500 ohm minimum 0 to 5VDC 500 ohm minimum
Transmitter Power Supply	20 to 28VDC (24VDC nominal) 910 ohm (22mA @ 20VDC)

Display

Digital Display	Four 7 segment LEDs, top .40" high, bottom .36" high, message .19" high, profile/segment .25" high
Status Indicators	Individual LED indictors for Output 1, Output 2, Manual, Alarm, Pre or Auto Tune, Run, Hold, Times 60 Time Base, and Event 1 thru Event 4

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 (Off), 0.5% to 999.9% of Input Span
Manual Reset	0% to 100% of Output Power
Auto Reset	1 sec to 99 min 59 sec/repeat and OFF
Rate	0 sec to 99 mins. 59 sec
Cycle Time	.5, 1, 2, 4, 8, 16, 32, 64, 128, 256, and 512 seconds
Deadband/Overlap	-20% to +20% of PropBand 1 + PropBand 2

Program Specifications

Programs	Eight, each with free-form segments
Length of Program	1 to 16; cascadable max of 121 seg.
Segment Types	Ramp, Dwell, Join, Repeat or End
Program Cycling	1 to 9999, infinite
Delayed Start	0 to 99 hrs 59 mins
Control	Run, Hold, Abort, Time Base x60 (local/remote); select program (local/remote); jump to next segment
Start From	Current process variable or controller setpoint value, user selectable
End On	Final Value or Controller Setpoint, user selectable

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 / 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
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 (standard) 20 to 50V AC 50/60Hz or 22 to 65V DC (optional)
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)
EMI Susceptibility	Designed to meet EN50082 Part 2
EMI Emissions	Designed to meet EN50081 Part 2
Dimensions	Front panel: 96mm x 96mm (3.78" x 3.78") 100mm deep
Weight	16 ounces maximum
Front Panel Sealing	IP66/NEMA4
Power Consumption	4 Watts

Agency Approvals

UL Recognized (pending)
cUL Certified for use in Canada (pending)

Digital Communications

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