



MIC 1407™

*Well-Featured, Easy to Setup
and Use*

1/4 DIN Valve Motor Drive Controller

DESCRIPTION

Partlow's MIC 1407 is a 1/4 DIN process controller with a unique VMD tuning algorithm, that is designed specifically to drive valve motors. It provides continuous on-line open loop tuning which gives stable control at all times. With pre-tune and auto-tune, the user set up is also much easier in what is generally considered to be a complex measurement area.

In addition to tuning the P and I terms, the auto-tune also reduces valve activity to an absolute minimum without compromising the control quality, thereby reducing wear and tear on mechanical components such as valves, contactors and relays.

This VMD incorporates the latest in surface-mount and CMOS technology to ensure reliable and accurate control in a wide variety of applications.

APPLICATIONS:

Ideal for temperature control applications requiring a value-priced, user-friendly, versatile and well featured general-purpose 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

- Dual 4-digit LED displays
- 1/4 DIN panel mount
- Universal Input for Thermocouple, RTD, DC linear mA/V/mV, user selectable
- Sensor fault detection
- Up to 3 outputs; relay, DC linear, SSR driver, Triac
- Alarms (process, deviation/band) control
- PID Tune
- Optional RS-485 serial communications
- Program security

PARTLOW™ brand

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Controllers

SPECIFICATIONS*

STANDARD FEATURES

Up to 3 outputs via relay, 4-20 mA current, Triac or SSR driver
Alarm and control outputs
Available inputs for T/C, RTD, Voltage or Current
Sensor fault detection
Optional RS-485 Communications or Dual Setpoint

ENVIRONMENTAL CHARACTERISTICS

Operating Temperature: 0 to 55°C, 32 to 131°F
Storage Temperature: -20 to 80°C, -4 to 176°F
Humidity: 20 to 95% RH, non condensing

ELECTRICAL

Line Voltage: 90 to 264VAC, 50/60 Hz
Optional 20 to 50VAC or 22 to 65VDC
Power Consumption: 4 Watts
Transmitter Power Supply: 24VDC ±20%; Load Impedance: 910 Ohms (22mA @ 22VDC)

INPUTS

Thermocouple types: J, K, T, R, S, B, L and N
RTD: 100 ohm platinum (.00385 Ohm/Ohm/C)
Volts: 0 to 5VDC, 1 to 5VDC, 0 to 10VDC and 2 to 10 VDC
Millivolts: 0 to 50mVDC, 10 to 50mVDC
Milliamps: 0 to 20 or 4 to 20mADC
Sensor Fault Detection: Display indicates **cLL** or **cHH** for thermocouple or RTD inputs and sensor break, SnSr. "Close Valve" input set to ON; alarms operate as if the process variable has gone over-range (TC & RTD) or under-range (V, mV, mA)
Dual Setpoint Selection: Voltage-free or TTL compatible

OUTPUTS

Outputs 1 & 2
Relay: SPDT (Output 1 - Open Valve, Output 2 - Close Valve)
2A @ 120V AC (Motor Drive)
2A @ 240V AC (resistive or independent contactor drive)
Triac: 1 amp @ 40°C derated to 1/2 amp @ 80°C
Output 3
Relay: SPDT, 2A resistive @ 120/240V AC
SSR Driver: > 4.2V DC into 1 K ohms 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 ohms minimum
0 to 5VDC 500 ohms minimum
Triac: 1 amp @ 40°C derated to 1/2 amp @ 80°C

DISPLAY

Digital Display: Dual, Four-digit, 7 segment LEDs. Top Display: 0.53" high; Bottom Display: 0.39" high; Individual LED indicators for function/mode status

ALARM ADJUSTMENT

Process Alarm: ± Input Span
Deviation Alarm: ± Input Span
Deviation Band Alarm: 0 to Input Span

CONTROL ADJUSTMENTS

Proportional Band: 0.5% to 999.9% of Input Span
Auto Reset: 1 sec to 99 min 59 sec/repeat
Rate: 0 sec to 99 min 59 sec
Motor Travel Time: 5 sec to 5 min

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: Better than ± 0.2 deg C any point, (TC and RTD) 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
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

PHYSICAL DIMENSIONS

Dimensions: 1/4 DIN front panel, 100mm (3.9") deep
480 gm. (16.9 oz.) maximum

COMMUNICATIONS

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

RATINGS/AGENCY APPROVALS

CE, UL & cUL recognized (E67237)

WARRANTY

3 years

* 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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Partlow Brand MIC 1407 Data Sheet (7/05)



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Controllers

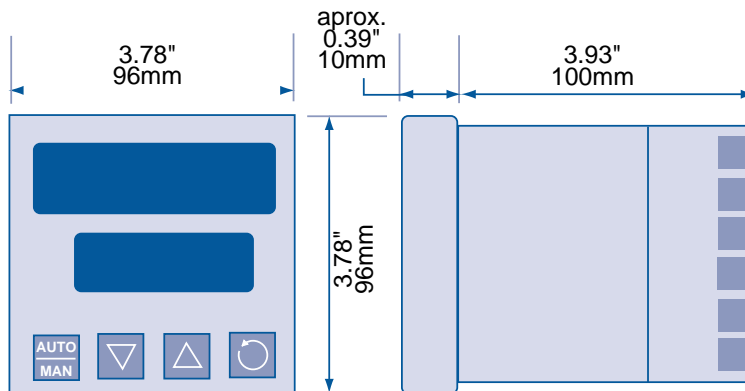
1/4 DIN Valve Motor Drive Controller

MODELS

Code 1: Model #	Code 2: Outputs 1 and 2	Code 3: Output 3	Code 4: Options	Code 5: Suffix
1407	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
I/4 DIN VMD Controller	11 Relay 88 Triac	0 None 1 Relay* 2 SSR Driver* 3 4-20mA Driver 4 Transmitter Power Supply 8 Triac‡	0 None 1 RS485 Communications 2 Dual Setpoint	(Blank) None 02 Line Voltage 24 V AC/DC

* For alarm output only.
‡ Not available if Code 2 is 88

DIMENSIONS - 1/4 DIN



Panel Cutout: 92.0mm x 92mm (3.62" x 3.62")

Customer Service:

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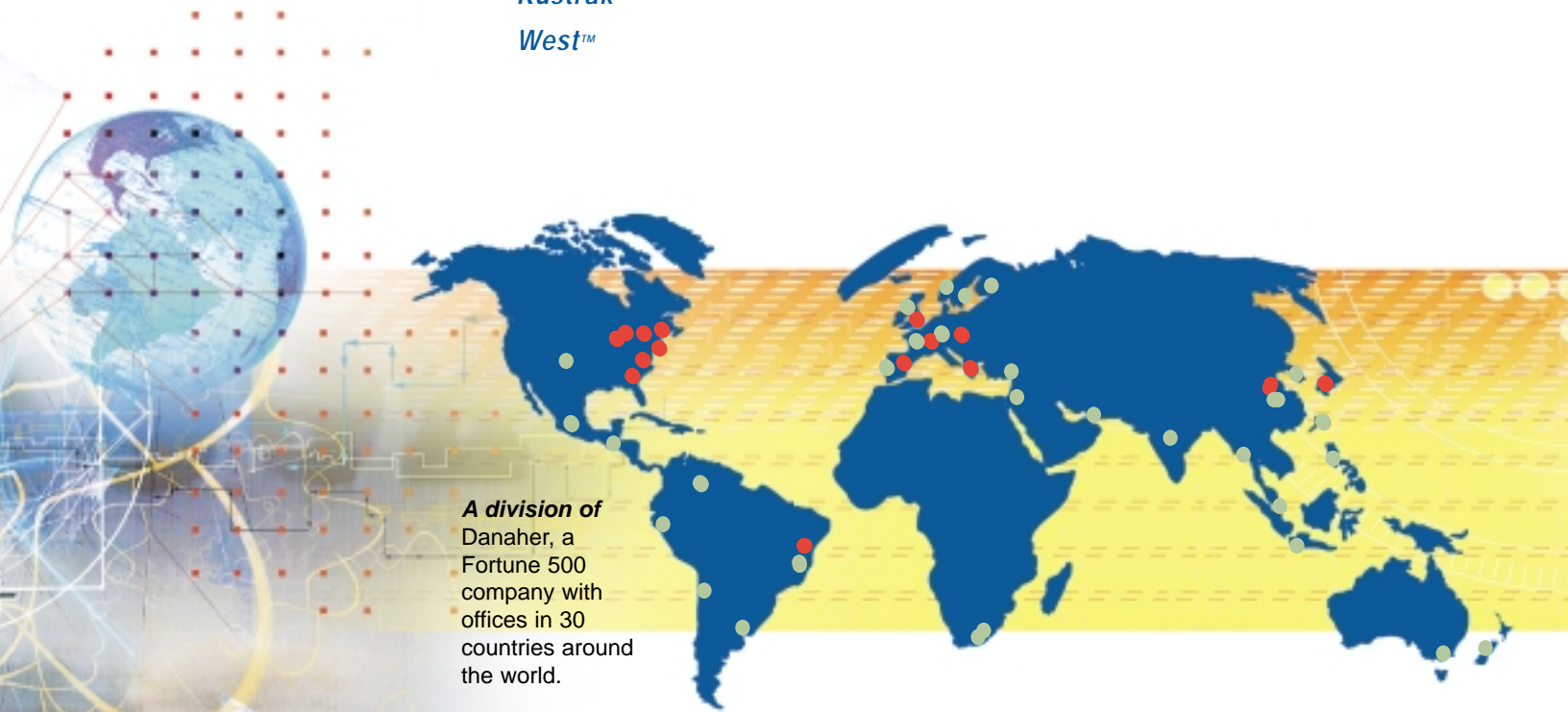
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More Available. With factories around the world, global sales and applications support, and an expansive network of distributors, we stay close to our customers - shortening lead times and fostering responsiveness. Three-day lead time is standard,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

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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