

Multi-Zone Process Controller

Highly Versatile 4/7 Zone Ramp & Soak Controller with Programmable Inputs



Only
\$425
Base Unit

MPC400 series - 4 zones
MPC700 series - 7 zones

FEATURES

- ON/OFF and PID control
- Wide range of inputs Thermocouples, RTDs, thermistors, 4-20ma, 0-10vdc, millivolts, etc
- Input type for each zone selectable from front keys
- Scaling for voltage, current and millivolt input signals
- Independent 7-segment ramp and soak profile for each zone
- Separate ON/OFF hysteresis and PID parameters for each controller
- Three display modes: Setpoint only, Process only or both Process and setpoint
- Programmable Heat or Cool modes
- Manual setpoint entry for each zone
- Indefinite hold anywhere along the ramp
- Built-in supply to power external control relays
- Setpoint deviation, Min/Max display
- Built-in Power line filter for operation in harsh industrial environment
- Compact 1/8th DIN (cutout)

DESCRIPTION MPC series is a compact unit that offers the features of seven ON/OFF as well as PID controllers in a single 1/8th DIN (cutout) enclosure. Careful design, high functionality and its compactness allow it to offer **unmatched cost/performance ratio** of any controller in its class.

Input type for each zone is selected independently. Scaling and offset allows current and voltage signals to be converted and displayed in engineering units. Temperature from thermocouples, RTD's and thermistors can be displayed in degrees Centigrade or Fahrenheit. Additionally, each zone has its own ramp/soak profile with up to 7-segments. ON/OFF as well as PID control is offered for optimum process stability. Processes that do not require tight control through complex tuning of PID parameters can be run under simple ON/OFF control. Each zone has its own set of ON/OFF and PID parameters and each zone can be programmed for heating or cooling. Setpoint deviation, positive as well as negative, can be viewed.

Additional functions include min/max reading for each zone, indefinite program hold, automatic scanning and displaying of different zones and three display modes (setpoint only, process only or both setpoint and process). Power, control, and process signal connections are conveniently made with Euro style plug-in connectors.



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SPECIFICATIONS

INPUT TYPE:

- i) J,K,T,E,R,S,B, thermistor, RTD
 - ii) 4-20milliamp loop current
 - iii) Voltage iv) Millivolt
- CJC error: +/- 0.5 C (10C to 45c)
Open T/C indication: HELP displayed

ACCURACY:

- Temperature resolution: 1C/1F
- Voltage = 0.05% FS
- Current = 0.05% FS

RESOLUTION:

1C/F for T/C'S, rtd, 0.1C/F for thermistor

A/D CONVERSION

- 20,000 count A/D converter
- Conversion rate: 7/Sec (typical)

DISPLAY

- Red 7-seg LED display, 0.39" (10mm) Ht
- Display test: 8.8.8.8.8.8.8. on power up

SCAN RATE

Two channels per second

CHANNEL DISPLAY TIME

Programmable from 1-999 seconds.

POWER OPTION

- 120VAC -- 60 Hz (Standard)
- 220VAC -- 50 HZ (Optional)
- 15VDC @ 900ma (optional)

SCALE:

Programmable from 1 - 30000

OFFSET:

- 0 - 20.00 (current), 0 - 100.00 (millivolt)
- 0 - 10.000 (voltage input),
- Dec. Pt: None, 10th, 100th, 1000th

RATE: 0 - 500 Seconds

PROPORTIONAL BAND:

0 - 100% of span

RESET:

0.00 TO 50.00 repeats/ minute

ON/OFF DEADBAND:

Programmable: 0-Fullscale

CONTROL OUTPUT:

5VDC drive @50ma/Per Channel

DIMENSIONS:

- Case: 3.60" x 1.75" x 6.7" (7.3" with connector)
- Bezel size: 4.70" x 2.55" x 0.28"

Each zone has three digit long engineering label that can be programmed to indicate the type of process being controlled e.g. C or F for temperature, PSI for pressure etc. Every controller's run status is indicated by LEDS. Display time is also programmable.



Ideal Solution for Simple & Complex Control Applications

TYPE	RANGE	ACCURACY
J	-200 to 1190C	+ ₁ C+ ₁ cnt
	-328 to 2174F	+ ₂ F+ ₁ cnt
K	-170 to 1370C	+ ₁ C+ ₁ cnt
	-274 to 2500F	+ ₂ F+ ₁ cnt
T	-160 to 400C	+ ₁ C+ ₁ cnt
	-256 to 752F	+ ₂ F+ ₁ cnt
E	-185 to 915C	+ ₁ C+ ₁ cnt
	-300 to 1675F	+ ₂ F+ ₁ cnt
R	0C to 1600C	+ ₃ C+ ₁ cnt
	32F to 2900F	+ ₆ F+ ₁ cnt
S	0 to 1600C	+ ₃ C+ ₁ cnt
	32 to 2900F	+ ₆ F+ ₁ cnt
B	470 to 1800C	+ ₃ C+ ₁ cnt
	900 to 3300F	+ ₆ F+ ₁ cnt
RTD-385	-200 to 800C	+ ₁ C+ ₁ cnt
	-328 to 1472F	+ ₂ F+ ₁ cnt
RTD-392	-100 to 450C	+ ₁ C+ ₁ cnt
	-148F to 842F	+ ₂ F+ ₁ cnt
Thermistor	-8.0 to 100.0C	+ _{0.5} C+ ₁ cnt
	17.2 to 212.0F	+ _{1.0} F+ ₁ cnt
Current	1 to 30000	.05%+ ₁ cnt
Milli-volt	1 to 30000	.05%+ ₁ cnt
Voltage	1 to 30000	.05%+ ₁ cnt

Ordering Guide

To find a model number, fill in blanks 1, 2, 3 and 4 with appropriate selection. Refer to ordering example below:

MPC400
MPC700

/ 1 / 2 / 3 / 4

- BM = J, K, T & E Thermocouples
- R = 'R' type Thermocouple
- S = 'S' type Thermocouple
- B = 'B' type Thermocouple
- TH = Thermistor
- 100MV = 100 Millivolt
- RTD = RTD (.000385 & .000392)

- 3 = 0 - 5 VDC
- 4 = 0 -10VDC

- 1 = 4-20 Milliamp loop Current
- 2 = 0-50 Milliamp loop Current

- 5 = 120VAC
- 6 = 240VAC
- 7 = 15VDC

Ordering Example: MPC400/BM14/5 -- Four Zone Controller with J,K,T & E Thermocouple, 4-20ma and 0-10vdc inputs and 120vac Power.