

# Control Panels

Product	Description	Supported Controllers	Operating Environment	Page
<b>Control Panels</b>	Control panels designed to link with Watlow immersion and circulation heaters	EZ-ZONE® controllers	32 to 95°F (0 to 35°C)	<b>431</b>



Control Panels



# Control Panels

Proper controller schematic and panel design goes a long way toward ensuring the trouble-free operation of a process system. Watlow® has supplied UL® 508 control panels for a variety of process control applications.

Watlow offers control panels that are shipped within 10 working days of order placement. These panels can drive up to 480VAC, three-phase, 120kW heating systems and are Type 4 rated enclosures that carry the cULus mark. Component installation and wiring conform to applicable NEC and/or CEC standards.

## Performance Capabilities

### Amperage

- Up to 144 amperes

### Voltage

- 120/240VAC single phase
- 208/240/480VAC 3 phase

### Operating Environment

- 32 to 95°F (0 to 35°C)

## Features and Benefits

### Main Disconnect Switch

- Utilizes a rotary handle with interlocking door
- Helps assure maximum operator safety

### Safety Contactor

- Enables the definite purpose break of power
- Prevents abnormal condition failure utilizing an over temperature shutdown

### Enclosure

- Built with Type 4 steel enclosures with gray paint
- Designed with rugged construction suitable for industrial and commercial locations
- Suitable for indoor or outdoor installation in non-hazardous locations

### Branch Circuit Fusing

- Assures compliance with NEC and CEC electrical codes
- Increases SCCR rating
- Reduces risk of over-current related failures and hazards

### SCCR Rating

- Assures compliance with Article 409 of the NEC and UL® 508A



## UL® 508A Agency Certification

- cULus assures compliance with appropriate United States and Canadian codes
- Assures prompt product acceptance
- Reduces end product documentation costs

## Customer Field Connections

- Dedicated terminals for supply, load and control interlock for fast and easy customer connection
- Dedicated terminals for sensor connection with matched alloys where applicable

# Control Panels

## Supported Controllers and Devices

### Watlow EZ-ZONE® Integrated Controllers

- Three-year warranty assures Control Confidence™
- Allows integrated PID and limit control
- Decreases required panel space
- Enables use of laptop for programming setup
- Increases user and equipment safety for over and under temperature conditions
- Reduces the component count
- Utilizes TRU-TUNE® adaptive control

### Watlow DIN-A-MITE® Power Controllers

- One- and three-phase power permits use in a variety of applications
- Faster switching with solid state components. Better control saves energy and extends heater life.
- Back-to-back SCR design for increased durability
- Three-year warranty assures Control Confidence
- Accurate and tight set point control

### Pilot Devices

- High limit pilot light assures quick indication of limit condition
- Three position illuminated ON-OFF-SETUP selector switch assures rapid and accurate operator interface

### Documentation

- Complete wiring schematic and outline drawing
- Factory acceptance test
- I O & M manual

### Supports Communication through EZ-ZONE® or SpecView Using USB Cable and USB to Serial Device

- Standard external bus connection allows easy connection to laptop for programming
- A time-limited trial version of SpecView is available free of charge at [www.watlow.com](http://www.watlow.com).

## Specifications

### Voltage

- 120/240 single phase
- 208/240/480 three phase
- 120 control circuit

### Amperage

- 144 amps max.
- 48 amps per branch circuit max.
- 3 branch circuits max.

### Interrupt Rating

- 50,000 SCCR min.

### Sensor Input

- ANSI Type J or K

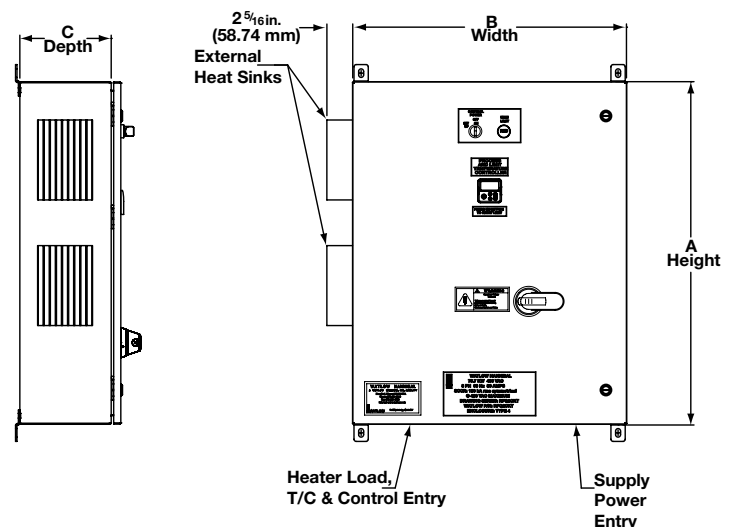
### Environmental

- Storage Temperature: 32° to 104°F (0° to 40°C)
- Relative Humidity: 10% to 90% (non-condensing)
- Ratings: Type 4
- Agency: UL® 508A

### Mechanical

- Conduit entry: designed for bottom entry of supply, load and control
- Enclosure wall: blank for customer installations of conduit
- Dimensions: see part number chart on following page

## Dimensional Drawing



# Control Panels

## Standard Control Panels

### Ordering Information

#### Part Number

① ②	③ ④ ⑤ ⑥	⑦	⑧ ⑨ ⑩ ⑪
Control Panel	Process and/or Hi-Limit Control	Opt. Process & Hi-Limit Sensor	Part Number
CP			

① ②	Control Panel
CP =	DIN-A-MITE C power controller

③ ④ ⑤ ⑥	Process and/or Hi-Limit Control
EZPR =	EZ-ZONE PM process controller only
EZPL =	EZ-ZONE PM process and hi-limit controller

⑦	Optional Process and Hi-Limit Sensors
J =	Type J Input
K =	Type K Input

⑧ ⑨ ⑩ ⑪	Part Number
See chart below for Part number	

#### Catalog part numbers include the following features:

- Type 4 enclosure (carbon steel with gray paint)
- Control transformer
- Fused disconnect switch
- Control and load fusing (feed and branch circuit)
- Three position lighted selector switch (on, off, control power only)
- Pilot light (EZPL models only)
- High limit
- Through-wall bus communications input (standard bus with 485)
- Load power, remote interlock and sensor terminal blocks

#### Part Number Chart (Choose part number for Ordering Information 8, 9, 10 and 11 above.)

Nominal Volts	Max. Heater kW	Phase	Circuits	Branch* Circuit Max. Amps	A x B x C ** Enclosure Size in.	Est. Shipping Weight (lbs)	Part Number
208	8.6	3	1	24	16 x 16 x 8	110	<b>2312</b>
208	17.3	3	2	24	36 x 24 x 8	220	<b>2322</b>
208	25.9	3	3	24	36 x 30 x 8	290	<b>2332</b>
240	10.0	3	1	24	16 x 16 x 8	110	<b>3312</b>
240	19.9	3	2	24	36 x 24 x 8	220	<b>3322</b>
240	29.9	3	3	24	36 x 30 x 8	290	<b>3332</b>
480	19.9	3	1	24	16 x 16 x 8	110	<b>4312</b>
480	39.9	3	2	24	36 x 24 x 8	220	<b>4322</b>
480	59.8	3	3	24	36 x 30 x 8	290	<b>4332</b>
208	17.3	3	1	48	24 x 20 x 8	160	<b>2314</b>
208	34.5	3	2	48	36 x 36 x 8	330	<b>2324</b>
208	51.8	3	3	48	42 x 36 x 12	400	<b>2334</b>
240	19.9	3	1	48	24 x 20 x 8	160	<b>3314</b>
240	39.9	3	2	48	36 x 36 x 8	330	<b>3324</b>
240	59.8	3	3	48	42 x 36 x 12	400	<b>3334</b>
480	39.9	3	1	48	24 x 20 x 8	160	<b>4314</b>
480	79.7	3	2	48	36 x 36 x 8	330	<b>4324</b>
480	119.6	3	3	48	42 x 36 x 12	400	<b>4334</b>
120	2.9	1	1	24	16 x 16 x 8	110	<b>1112</b>
240	5.8	1	1	24	16 x 16 x 8	110	<b>3112</b>
240	11.5	1	2	24	36 x 24 x 8	220	<b>3122</b>
240	17.3	1	3	24	36 x 30 x 8	290	<b>3132</b>
120	5.8	1	1	48	24 x 20 x 8	160	<b>1114</b>
240	11.5	1	1	48	24 x 20 x 8	160	<b>3114</b>
240	23.0	1	2	48	36 x 24 x 8	230	<b>3124</b>
240	34.6	1	3	48	42 x 36 x 12	400	<b>3134</b>

\* 24 amp circuits fused at 30 amps  
 48 amp circuits fused at 60 amps  
 Installation must comply to local electrical codes

\*\* Add 2<sup>5</sup>/<sub>16</sub> inch to "C" dimension for external heat sink