# EZ-ZONE® PM Express Users Manual



# Limit Controller



ISO 9001 (4 A)

Made in the U.S.A.

TOTAL

CUSTOMER SATISFACTION

1241 Bundy Boulevard., Winona, Minnesota USA 55987 Phone: +1 (507) 454-5300, Fax: +1 (507) 452-4507 http://www.watlow.com

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Technical Assistance If you encounter a problem with your Watlow controller, review your configuration information to verify that your selections are consistent with your application: inputs, outputs, alarms, limits, etc. If the problem persists, you can get technical assistance from your local Watlow representative (see back cover), by e-mailing your questions to wintechsupport@watlow.com or by dialing +1 (507) 494-5656 between 7 a.m. and 5 p.m., Central Standard Time (CST). Ask for an Applications Engineer. Please have the following information

- available when calling: Complete model number
- All configuration information

· User's Manual

- Factory Page
  Return Material Authorization (RMA)
- Call Watlow Customer Service, (507) 454-1. 5300, for a Return Material Authorization (RMA) number before returning any item for
- repair. If you do not know why the product failed, contact an Application Engineer or Product Manager. The EZ-ZONE PM Controller User's Manual is

copyrighted by Watlow Winona, Inc., © December 2008 with all rights reserved. The EZ-ZONE PM is covered by U.S. Patent No. 6,005,577 and Patents Pending

### Overview

The EZ-ZONE PM Express takes the pain out of solving your thermal loop requirements while reducing the cost of control-loop ownership. You can order this control as over-under Limit controller in either a 16<sup>th</sup> or 32<sup>nd</sup> DIN panel-mount packages.

It just got a whole lot easier to solve the thermal requirements of your system. Because the EZ-ZONE family of controls are highly scalable. you only pay for what you need. So if you are looking for a single or multi-loop PID controller, an over-under limit controller or an integrated control-ler (PID and Limit), the EZ-ZONE family of controls can meet all of your needs. Point your browser to http://www.watlow.com to find out more about the EZ-ZONE family of controls.

For this particular control, serial communications is accomplished using Watlow's Standard Bus protocol. If the need arises to network your controls and communicate using other popular protocols such as Modbus RTU/TCP<sup>®</sup>, EtherNet/IP<sup>TM</sup> or DeviceNet<sup>™</sup>, consider using the EZ-ZONE family Remote User Interface/Gateway (RUI/GTW).

### Safety Information

Safety Information We use note, caution and warning symbols throughout this book to draw your attention to important opera-tional and safety information. A "NOTE" marks a short message to alert you to an important detail. A "CAUTION" safety alert appears with information that is important for protecting your equipment and performance. Be especially careful to read and follow all cautions that apply to your application. A "WARNING" safety alert appears with informa-tion that is important for protecting you, others and equipment from damage. Pay very close attention to all varnings that apply to your application. The electrical hazard symbol, (a lightning bolt in a triangle) precedes an electric shock hazard CAUTION or WARNING safety statement. Further explanations follow:

Symbol	Explanation
	CAUTION – Warning or Hazard that needs further ex- planation than label on unit can provide. Consult users manual for further information.
	ESD Sensitive product, use proper grounding and handling techniques when installing or servicing product.
	Unit protected by double/reinforced insulation for shock hazard prevention.
X	Do not throw in trash, use proper recycling techniques or consult manu- facturer for proper disposal.
$\geq$	Unit can be powered with either alternat- ing current (ac) voltage or direct current (dc) voltage.

CULUSTED PROCESSORTED	Unit is a Listed device per Underwriters Laboratories®. It has been evaluated to United States and Canadian require- ments for Process Control Equipment. UL 61010 and CSA C22.2 No. 61010. File E185611 QUYX, QUYX7. See: www. ul.com
CE	Unit is compliant with European Union directives. See Declaration of Conformity for further details on Directives and Standards used for Compliance.
APPRIOVED	Unit has been reviewed and approved by Fac- tory Mutual as a Temperature Limit Device per FM Class 3545 standard. See: www.fmglobal. com
SP.	Unit has been reviewed and approved by CSA International for use as Temperature Indicating-Regu- lating Equipment per CSA C22.2 No. 24. See: www.csa- international.org

Warranty The EZ-ZONE<sup>®</sup> PM is manufactured by ISO 9001-registered processes and is backed by a three-year warranty to the first purchaser for use, providing that the units have not been misapplied. Since Watlow has no control over their use, and sometimes misuse, we cannot guarantee against failure. Watlow's obligations hereunder, at Watlow's option, are limited to replacement, repair or refund of purchase price, and parts which upon examination prove to be defective within the warranty period specified. This warranty does not apply to dam-age resulting from transportation, alteration, misuse or abuse. The purchaser must use Watlow parts to maintain all listed ratings.

Installation and Wiring **Dimensions 1/32 DIN** 





1/32 DIN Maximum Cutout

# Dimensions 1/16 DIN









# Terminal Definitions

Slot C		Terminal Function	Model
98 99		power input: ac or dc+ power input: ac or dc-	PM _(L) AAAAB
CF CD CE		Standard Bus EIA-485 common Standard Bus EIA-485 T-/R- Standard Bus EIA-485 T+/R+	PM _(L) AAAAB
Slot A			
Input 1			
T1 S1 R1		S2 (RTD) or current +, S3 (RTD), thermocouple -, current - or volts - S1 (RTD), thermocouple + or volts +	Universal Sensor input 1: all configurations
Outputs		Terminal Function	Configuration
1	2		
X1 W1 Y1		common (Any switched dc output can use.) dc- (open collector) dc+	Switched dc/open collector, output 1: PM _(L)_ C AAAB
L1 K1 J1		normally open common normally closed	Mechanical Relay 5 A, Form C, output 1: PM _(L)_ E AAAB
	L2 K2	normally open common	Mechanical Relay 5 A, Form A, output 2: PM _(L) J AAAB

# Note:

In the pictures below notice that the Slot A connector does not show labeling for the outputs. Labeling for Slot A outputs is based on the controller part number.





### Installation



- 1. Make the panel cutout using the mounting template dimensions in this chapter. Insert the case assembly into the panel cutout.
- 2. While pressing the case assembly firmly against the panel, slide the mounting collar over the back of the controller.

If the installation does not require a NEMA 4X seal, slide the mounting collar up to the back of the panel tight enough to eliminate the spacing between the gasket and the panel.



controller.

Place the blade of a screwdriver in the notch of the mounting collar assembly.

3. For a NEMA 4X seal, place the blade of a screwdriver in the notch of the mounting collar assembly and push toward the panel while applying pressure to the face of the controller. Don't be afraid to apply enough pressure to properly install the controller. The seal system is compressed more by mating the mounting collar tighter to the front panel (see picture). If you can move the case assembly back and forth in the cutout, you do not have a proper seal. The tabs on each side of the mounting collar have teeth that latch into the ridges on the sides of the controller. Each tooth is staggered at a different depth from the front so that only one of the tabs, on each side is locked onto the ridges at a time.

CASE GASKET BEZEL -

Removing the Mounted Controller from Its Case 1. From the controller's face, pull out the tab on each side until you hear it click



Pull out the tab on each side until you hear it click.

Grab the unit above and below the face and pull forward.

 Once the sides are released, grab the unit above and below the face with two hands and pull the unit out. If it is difficult to pull the unit out, remove the connectors from the back of the controller. This should make it easier to remove.

A Warning:

All electrical power to the controller and con-trolled circuits must be disconnected before removing the controller from the front panel or disconnecting other wiring.

### Returning the Controller to its Case

- 1. Ensure that the orientation of the controller is correct and slide it back into the housing. Note:
- The controller is keyed so if it feels that it will not slide back in do not force it. Check the ori-entation again and reinsert after correcting.

2. Using your thumbs push on either side of the controller until both latches click

# Chemical Compatibility

This product is compatible with acids, weak alkalis, alcohols, gamma radiation and ultraviolet radiation.

This product is not compatible with strong alkalis, organic solvents, fuels, aromatic hydrocarbons, chlorinated hydrocarbons esters and keytones.

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# A Warning:

Use National Electric (NEC) or other countryspecific standard wiring and safety practices when wiring and connecting this controller to a power source and to electrical sensors or peripheral devices. Failure to do so may result in damage to equipment and property, and/or injury or loss of life.

- Maximum wire size termination and torque rating: 0.0507 to 3.30 mm<sup>2</sup> (30 to 12 AWG) single-wire termination or two 1.31 mm<sup>2</sup> (16 AWG)
- 0.8 Nm (7.0 lb.-in.) torque

# 98 power fuse 199 Ш Ш Ш $\square$ Ц Ī

Power

- 85 to 264V~ (ac)
- •100 to 240V~ (ac) Semi Sig F47

Note In the drawings below for each input notice that the Slot A connector labeling is identified.

### Note:

When using a 2 wire RTD, jumper S1 and T1 together.

Inputs



Thermocouple 2 or 3 Wire T1 <u>S1</u>

Process Amperes



# Note

Adjacent terminals may be labeled differently, depending on the model number. Note:

To prevent damage to the controller, do not connect wires to unused terminal

 47 to 63 Hz 10VA maximum power consumption Low Power

Power

- 12 to 40V≕ (dc)
- 20 to 28V~ (ac) Semi Sig F47
- **High Power**

All inputs shown below represent input 1 the only input available on the Express Limit and is connected to slot A of the Control. RTD Process

Volts -R1



- S1 ±R1

Ş1 -R1

S2







### Inputs

- **Process Volts and Amperes**
- 0 to 20 mA @ 100 Ω input impedance
- 0 to 10V= (dc) @ 20 k $\Omega$  input impedance Scalable
- **Resistance Temperature Detector (RTD)** platinum, 100 Ω @ 0°C
- ٠
- calibration to DIN curve (0.00385 Ω/Ω/°C)
- 20 Ω total lead resistance RTD excitation current of 0.09 mA typical. Each ohm of lead resistance may affect the reading by 0.03°C.
- For 3-wire RTDs, the S1 lead (usually white) must be connected to R1.

### For best accuracy use a 3-wire RTD to compensate for lead-length resistance. All three lead wires must have the same resistance

- Thermocouple
- 2 KΩ maximum source resistance >20 MΩ input impedance
- 3 microampere open-sensor detection
- Thermocouples are polarity sensitive. The negative lead (usually red) must be connected to \$1.
- To reduce errors, the extension wire for thermocouples must be of the same alloy as the thermocouple.

dc +

Y1 and/or Y2

PM \_ (L) \_ C C - A A A A B \_

-0+

# Outputs

Please note all outputs are connected exclusively to slot A. Output availability is based on the part number of your Limit Control

## Note

In the drawings below for each output notice that the Slot A connector labeling is identified with the corresponding part number below



Quencharc Note

\_(L)\_\_J-AAAAB\_

Switching pilot duty inductive loads (relay coils, solenoids, etc.) with the mechanical relay, or open collector output options requires use of an R.C. suppressor.



With a few exceptions, all of the key functions described above for the 16th DIN LIMIT apply to the 32nd DIN LIMIT controller as well

Left Display: On power up, displays the process value, otherwise displays the value of the parameter in the right display.



# Responding to a Displayed Message (16<sup>th</sup> or 32<sup>nd</sup> DIN)

An active message will cause the display to toggle between the normal settings and the active message in the upper or left display and **REEn** in the lower or right display.

Your response will depend on the message and the controller settings. If the message is generated by a latched alarm or limit condition, the message can be silenced 5.1 or cleared (III) by simply pushing the reset key (IIII) when the condition no longer exists.

<b>RLL I</b> Alarm 1 Low <b>RLL I</b> Alarm 1 High
Alarm Error 1 to 4
Er. 1 Error Input 1
LI I Limit Low 1
Limit High 1 راج ا
L .E I Limit Error 1

# current

# Switched DC

Outputs

- 22 to 32V=(dc) @ 40mA maximum supply
- short circuit limited to <50 mA
- 22 to 32V-(dc) open circuit voltage
- Use dc- and dc+ to drive external solid-state
- relay
- DIN-a-mite compatibility is for output 1 only. - single-pole: up to 4 in parallel or 4 in series - 2-pole: up to 2 in parallel or 2 in series
- 3-pole: up to 2 in series Open Collector

- 100 mA maximum output current sink 30V- (dc) maximum supply voltage
- Any switched dc output can use the common terminal
- Use an external power supply to control a dc load, with the load positive to the positive of the power supply, the load negative to the open collector and common to the power supply negative.

See Quencharc note

# Mechanical Relay Form C 5 A at 240V~ (ac) or 30V= (dc) maximum resistive load, output 1

- 20 mA at 24V minimum load
- 125 VA pilot duty at 120/240V~ (ac), 25 VA at 24V~ (ac)
- 100,000 cycles at rated load
- . Output does not supply power. .
- for use with ac or dc See Quencharc note.

# Mechanical Relay Form A

- 5 A at 240V~ (ac) or 30V= (dc) maximum resistive load, output 2
- 20 mV at 24V minimum load 125 VA pilot duty @ 120/240V~ (ac), 25 VA at
- 24V~ (ac) 100,000 cycles at rated load

Range

(Defaults are shown bold)

-1,999.000 to 9,999.000°F

-1,128.000 to 5,537.000°C

or units

- Output does not supply power.
- for use with ac or dc See Quencharc note.

12 Upon power up of the control, using the advance key will scroll through the

9 10

# various prompts found in the Operations Menu. At any point within the Operations menu to return to the default display push the Reset asso key

Operations Menu		low or both.	Units, 0.0°F or -18.0°C
LL.5 Low Set Point	<b>L h.5</b> [ Lh.S]	Limit High Set Point Set the high process value that will trigger the limit. Appears if: Limit sides set to high or both.	-1,999.000 to 9,999.000°F or units -1,128.000 to 5,537.000°C Units, 0.0°F or -18.0°C
Point Point Point Point Point Point	<b>A.L.o</b> [ A.Lo]	Alarm Low Set Point Process - set the process value that will trigger a low alarm. Appears if: Alarm Type (A.ty) is set to Process Alarm	-1,999.000 to 9,999.000°F or units -1,128.000 to 5,537.000°C Units, 32.0°F or 0.0°C
Calibration Offset	<b>Я.</b> Ь., [ A.hi]	Alarm High Set Point Process - set the process value that will trigger a high alarm. Appears if: Alarm Type (A.ty) is set to Process Alarm	-1,999.000 to 9,999.000°F or units -1,128.000 to 5,537.000°C Units, 300.0°F or 150.0°C
	[ i.CA]	Calibration Offset Set an offset value for a process output. Appears if: Always	-1,999.000 to 9,999.000°F or units -1,110.555 to 5,555.000°C

Operations Menu 16<sup>th</sup> & 32<sup>nd</sup> DIN Limit Controller

Display

**LL.5** [LL.S]

Parameter Name

Description

Set the low process value

that will trigger the limit.

Limit Low Set Point

To enter the Setup Menu push and hold the up and down arrow keys for ap-proximately 3 seconds. Once there, push the green advance key to scroll through to the prompt of choice and then use the up and down arrow keys to change the range. At any point within the Setup menu to return to the default display push the Reset associated to the setup.

# Setup Menu

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LoC Lockout Menu **SEn** Sensor Type Linearization **dEC** Decimal **\_\_\_** Display Units r.L o Range low **r.h** , Range High Fn I Function One Fn2 Function Two L.5d Limit Sides L.H.Y Limit Hysteresis R.E. 9 Alarm Type Alarm Hysteresis RLR Alarm Latching **R.L.** Alarm Blocking R.5 , Alarm Silencing R.d SP Alarm Display PRr I Upper or Left Display PRr2 Lower or Right Display Rd.5 Zone Address

		- (	
Display	Parameter Name Description	Range (Defaults are shown bold)	
[LoC]	Lockout Menu Set the security clearance level. The user can access the selected level and all lower levels. Appears if: Always	1 to 5 1 Operations Menu (read only)* 2 Operations Menu (Set point R/W)* 3 Operations Menu (Set point R/W, Control Mode R/W)* 4 Operations Menu R/W access)* 5 Operations Menu and Setup Menu full R/W access *You can change the security level at any level	
[ SEn]	Sensor Type Set the analog sensor type to match the device wired to this input. Appears if: Always.	LE Volts dc PTB Milliamps dc CLH RTD 100 Ω	
لي مر [ Lin]	Linearization Set the linearization to match the thermocouple type wired to this input. For example, select <u>H</u> for a type K thermocouple. Appears if: Sensor Type is set to Thermocouple.	J J 5 S H K E T N	
<b>dec</b> [dec]	Decimal Set the precision of the displayed value. Appears if: Always.	Image: Display state       Image: Display state       Image: Display state       Image: Display state	
[C_F]	Display Units Select which units will be displayed. Appears if: Always.	<u> </u>	
[ r.Lo]	Limit Set Point - Range Low Set the low range for the Limit low set point. Appears if: Always.	-1,999.000 to 9,999.000 0.0	
[ r.hi]	Limit Set Point - Range High Set the high range for the Limit high set point. Appears if: Always.	-1,999.000 to <b>9,999.000</b>	
<b>F</b> <u>n</u> [ fn1]	Function of Output 1 Select which function will drive this output. Appears if: Always.	• NOTE: Switched DC/Open Collector option should only           • L^??         Limit*           • BL??         Alarm	
[ fn2]	Function of Output 2 Select which function will drive this output. Appears if: Always.	፲ ፲ ፲ ፲ ፲ ፲ ፲ ፲ ፲ ፲ ፲ ፲ ፲ ፲ ፲ ፲ ፲ ፲ ፲	
<b>L.5</b> <i>d</i> [ L.Sd]	Limit Sides Select which side or sides of the process value will be monitored. Appears if: Always.	<u>しっとら</u> Both <u>ト・9</u> 51 High ( <b>上ゥし</b> ) Low	

# 13 14

		15 16	-			
e Setup Menu push and hold down arrow keys for ap- v 3 seconds. Once there, push	Setup Menu 16 <sup>th</sup> & 32 <sup>nd</sup> DIN PID Controller					
dvance key to scroll through	Display	Parameter Name Description	Range (Defaults are shown bold)			
n arrow keys to change the ny point within the Operations urn to the default display eset assa key.	<u>したり</u> [L.hy]	Limit Hysteresis Set the hysteresis for the limit function. This determines how far into the safe range the process value must move before the limit turns the output back on. Appears if: Always.	0.001 to 9,999.0°F or units 0.001 to 5,555.0°C Units, 3.0°F or 2°C			
tup Menu	<b>R.E. Y</b> [ A.ty]	Alarm Type Select how the alarm will or will not track the set point. Appears if: Always.	DEF Off Pr.RL Process Alarm			
<i>L in</i> Linearization <i>dEC</i> Decimal	<b>. <u>Я</u>.Ь У</b> [ A.hy]	Alarm Hysteresis Set the hysteresis for an alarm. This determines how far into the safe re- gion the process value needs to move before the alarm can be cleared. Appears if: When alarm type is set to process.	0.001 to 9,999.000°F or units 0.001 to 5,555.000°C Units, 1.0°F or 1.0°C			
<b>r.i.o</b> Range low <b>r.h.</b> , Range High <b>F.o.1</b> Function One	[ <b><i>A.L.R</i></b> ] [ A.LA]	Alarm Latching Turn alarm latching on or off. A latched alarm has to be turned off by the user. Appears if: When alarm type is set to process.	Image: Image and the second			
<b>Fn2</b> Function Two <b>L.5</b> Limit Sides <b>L.5</b> Limit Hysteresis <b>R.E</b> Y Alarm Type	<b>Abl</b> [A.bL]	Alarm Blocking Select when an alarm will be blocked. After startup and/or after the set point changes, the alarm will be blocked until the process value enters the normal range. Appears if: When alarm type is set to process.	oFF     Off       SEr     Startup       SEPE     Set Point       both     Both			
<b>RF9</b> Alarm Hysteresis <b>RF9</b> Alarm Latching <b>RF1</b> Alarm Blocking	<b>R.5</b> , [A.Si]	Alarm Silencing Turn alarm silencing on to allow the user to disable the output tied (con- figured) to this alarm Appears if: Always.	OFF Off			
<b>R5</b> , Alarm Silencing <b>R35P</b> Alarm Display <b>P8</b> , 1 Upper or Left Display	<b>R.d5P</b> [A.dSP]	Alarm Display Display an alarm message when an alarm is active. Appears if: When alarm type is set to process.	Off on On			
<b>PR-2</b> Lower or Right Display <b>Rd5</b> Zone Address	[PAr1]	Upper or Left Display Select parameter to display. Appears if: Always.	REPU Active Process Value			
	[PAr2]	<i>Lower or Right Display</i> Select parameter to display. Appears if: Always.	L5:       Limit State         L5:       Limit High Set Point         L5:       Limit Low Set Point         Rh.       Alarm High Set Point         RLo.       Alarm Low Set Point         none       None			
	<i>Rd.</i> 5 [ Ad.S]	Zone Address - Standard Bus Communication Set zone address from 1-16. Appears if: Always.	1-16 1			

To enter the Setup Menu push and the up and down arrow keys for ap proximately 3 seconds. Once there the green advance key to scroll thr to the prompt of choice and then i up and down arrow keys to change range. At any point within the Oper menu to return to the dofault displ menu to return to the default displ push the Reset asso key.

Setup Menu

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## **Specifications**

# Line Voltage/Power All voltage levels represent minimums and

- maximums 85 to 264V~(ac), 47 to 63Hz
- 20 to 28V~(ac), +10/-15 percent; 50/60Hz, ±5 percent
- 12 to 40V=(dc)
- 10VA maximum power consumption • Data retention upon power failure via nonvola-
- tile memory
- Compliant with SEMI F47-0200, Figure R1-1 voltage sag requirements @ 24V~(ac) or higher

### Environment

- -18 to 65°C (0 to 149°F) operating temperature
- -40 to 85°C (-40 to 185°F) storage temperature 0 to 90 percent RH, non-condensing

### Accuracy

- Calibration accuracy and sensor conformity:  $\pm 0.1$  percent of span,  $\pm 1^{\circ}$ C @ the calibrated ambient
- temperature and rated line voltage Type S, 0.2 percent Type T, below -50°C; 0.2 percent
- Calibration ambient temperature @ 25°C ±3°C (77°F ±5°F)
- Accuracy span: 540°C (1000°F) minimum Temperature stability: ±0.1°C/°C (±0.1°F/°F)
- rise in ambient maximum

- Agency Approvals
  UL®/EN 61010 Listed File E185611
- UL® 50, NEMA 4X, EN 60529 IP66 CSA C22.2 No. 24 File 158031, CE RoHS, W.E.E.E.

- FM Class 3545 File 3029084 SEMI F47-0200
- Serial Communications
- Isolated communications

### Standard Bus Configuration Protocol

- Wiring Termination—Touch-Safe Terminals
- Input, power and controller output terminals are touch safe removable 12 to 22 AWG
- Use 75°C, Cu conductor only
- Universal Input

Series PM

Watlow Winona, Inc.

1241 Bundy Blvd. Winona, MN 55987 USA

- Thermocouple, grounded or ungrounded sensors  $>20M\Omega$ input impedance
- Maximum of  $2K\Omega$  source resistance RTD 2- or 3-wire, platinum, 100Ω @ 0°C
- calibration to DIN curve (0.00385  $\Omega/\Omega^{\circ}$ C) Process, 4-20mA @ 100 $\Omega$ , or 0-10V=(dc) @

- 20kΩ input impedance; scalable
- Functional Operating Range

   Functional Operating Range

   Type J: -210 to 1200°C (-346 to 2192°F)

   Type K: -200 to 1370°C (-328 to 2500°F)

   Type N: -200 to 1300°C (-328 to 252°F)

   Type N: -200 to 1300°C (-328 to 252°F)

   Type S: -50 to 1767°C (-58 to 3214°F)

   Type S: -50 to 1767°C (-328 to 750°F)

   RTD (DIN): -200 to 800°C (-328 to 1472°F)

   Process: -1999 to 9999 units

- **Output Hardware** 
  - Switched dc
  - 22 to 32V=(dc) @ 40mA
- Open collector, maximum sink current 100 mA. @ 30V=(dc)
- Electromechanical relay, Form C, 5A, 24 to 240V~(ac) or 30V≕(dc) maximum, resistive load, 100,000 cycles at rated load Electromechanical relay, Form A, 5A, 24 to 240V~(ac) or 30V≕(dc) maximum, resistive load, 100,000 cycles at rated load
- Operator Interface
- Dual 4 digit, 7 segment LED displays Typical display update rate 1Hz
- - Advance, RESET, up and down keys

# Ordering Part Number

# (Part number digits 1 through 14) PMXLXXX-AAAABXX All Models include: \*Universal Sensor Input, Standard Bus Configuration Communications \*Dual line Red over Green 7 Segment displays

Package Size (Digit #3) 3 = 1/32 DIN

- 6 = 1/16 DIN
- 8 = 1/8 DIN vertical (future option) 9 = 1/8 DIN horizontal (future option)
- 4 = 1/4 DIN (future option)

Primary Function (Digit #4)

L = Limit Controller w/ Universal Input

Power Supply (Digit #5) 1 = 100-240 VAC

3 = 12-28 VAC/DC

# Output 1 and 2 Hardware Options (Digits #6 and #7)

Output 1 AJ = None CJ = Switched dc/open collector EJ = Mechanical Relay 5 Amp form C Future Options (Digits #8 thru #11) AAAA = None

Output 2 Mechanical relay 5A, Form A Mechanical relay 5A, Form A Mechanical relay 5A, Form A

Menu Type (Digits #12) B = Express

Additional Options (Digits #13 and #14) AA = Standard EZ-ZONE face plate

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## How to Reach Us

Europe

Watlow France SARL Immeuble Somag 16, Rue Ampère 95307 Cergy-Pontoise CEDEX France

France Tel: + 33 (0)1 30 73 24 25 Fax: + 33 (0)1 30 73 28 75 Email: info@watlow.fr Website: www.watlow.fr

Watlow GmbH Postfach 11 65, Lauchwasenstr. 1 D-76709 Kronau

Germany Tel: +49 (0) 7253 9400-0 Fax: +49 (0) 7253 9400-900 Email: info@watlow.de Website: www.watlow.de

Italy Tel: +39 024588841 Fax: +39 0245869954 Email: italyinfo@watlow.com Website: www.watlow.it

Watlow Italy S.r.I. Viale Italia 52/54 20094 Corsico MI

**Corporate Headquarters** 12001 Lackland Roa St. Louis, MO 63146 St. Louis, MD 63146 Sales: 1-800-WATLOW2 Manufacturing Support: 1-800-4WATLOW Email: info@watlow.com Website: www.watlow.com

From outside the USA and Canada: Tel: +1 (314) 878-4600 Fax: +1 (314) 878-6814

North America Watlow Electric Manufacturing Company 1241 Bundy Blvd. Winona, MN 55987 Tel: 1-507-454-5300 Fax: 1-507-452-4507

# Latin America

Watiow de México S.A. de C.V. Av. Fundición No. 5 Col. Parques Industriales Querétaro, Qro. CP-76130 Mexico Mexico Tel: +52 442 217-6235 Fax: +52 442 217-6403

Asia and Pacific

Watlow Singapore Pte Ltd. 16 Ayer Rajah Crescent, #06-03/04, Singapore 139965 Tel: +65 6773 9488 Email: info@watlow.com.sg Fax: +65 6778 0323 Watlow Australia Pty., Ltd. 4/57 Sharps Road Tullamarine, VIC 3043 Australia Tel: +61 3 9335 6449 Fax: +61 3 9330 3566 瓦特隆电子科技(上海)有限公司

(销售办事处) (場合)(第2)(第2) 上海市浦东新区张江工业园区碧波路115号572弄22棟\* 邮编: 201203

电话: 86 21 5080-0902 传真: 86 21 5080-0906 Website: http://www.watlow.cn/

电子邮箱: info@watlow.cn Wattow Electric Manufacturing (Shanghai) Company 115-228, 572nd Lane, Bibo Road, Zhangiang High-Tech Park, Shanghai, IPR 201203 People's Republic of China Teci-1-88 21 5880-0902 Emait: info@wattow.cn Website: http://www.wattow.cn

Fax: +86 21 5080-0906 Website: http://www.watlow.cn/ ワトロー・ジャパン株式会社

, co in

〒101-0047 東京都千代田区内神田1-14-4 四国ビル別館9階 Fax: 03-3518-6632 Tel: 03-3518-6630 Email: infoj@watlow.con

Watlow Japan Ltd. 1-14-4 Uchikanda, Chiyoda-Ku Tokyo 101-0047 Japan Tel: +81-3-3518-6630 Email: infoi@watlow.c Fax: +81-3-3518-6632 Watlow Ibérica, S.L.U. CME - Avda. de la Via Láctea, s/n. Oficina 24 28830 - San Fernando de Henares Madrid Spain Tel: +34.91.675.1292

Fax: +34.91.648.7380 Email: info@watlow.es Website: www.watlow.es Storgatan 24 302 43 Halmstad Sweden Tel: + 46 (0)35 27 11 66 Fax: +46 (0)35 27 11 67 Email: info@watlow.se Website: www.watlow.se

Website: www. Watow.se Watow UK Ltd. Linby, Industrial Estate Linby, Notingham, NG15 8AA United Kingdow Telephone. (b) 115 964 0777 Fax: (b) 115 964 0071 Email: Info ® watow.co.uk Website: www.vatow.co.uk Website: www.vatow.co.uk Website: www.vatow.co.uk Team.co.uk Website: www.vatow.co.uk Website: www.vatow.co.uk

 
 Watlow Korea Co., Ltd.

 #1406, E&C Dream Tower, 46, Yangpyeongdong-3ga

 Yoengdeungpo-gu, Secul 150-103

 Republic of Korea

 Teit-182 (2) 2628-770

 Fax: +82 (2) 2628-57

 Website: www.watlow.co.kr
 Fax: +82 (2) 2628-5771 Watlow Malaysia Sdn Bhd No. 14-3 Jalan 2/114 Kuchai Business Centre Jalan Kuchai Lama 58200 Kuala Lumpur Malawia Malaysia Tel: +60 3 7980 7741 Fax: +60 3 7980 7739 丙特離雷機股份有限公司 80143 高雄市前金區七賢二路189號 10樓之一 電話: 07-2885168 傳真: 07-2885568 Watlow Electric Taiwan Corporation 10F-1 No.189 Chi-Shen 2nd Road Kaohsiung 80143 Tel: +886-7-2885168 Fax: +886-7-2885568

# Your Authorized Watlow Distributor

TOTAL CUSTOMER SATISFACTION



standards show below to indicate compliance

### 2004/108/EC Electromagnetic Compatibility Directive

Declaration of Conformity

EN 61326-1	2006		Electrical equipment for measurement, control and lab- oratory use – EMC requirements (Industrial Immunity, Class B Emissions).
EN 61000-4-2	1996	A1, A2, 2001	Electrostatic Discharge Immunity
EN 61000-4-3	2006		Radiated Field Immunity
EN 61000-4-4	2004		Electrical Fast-Transient / Burst Immunity
EN 61000-4-5	2006		Surge Immunity
EN 61000-4-6	1996	A1, 2, 3, 2005	Conducted Immunity
EN 61000-4-11	2004		Voltage Dips, Short Interruptions and Voltage Variations
EN 61000-3-2 IEC 61000-3-3 <sup>1</sup>	2006 2005		Harmon <sup>i</sup> c Current Emissions Voltage Fluctuations and Flicker

<sup>1</sup>For mechanical relay loads, cycle time may need to be extended up to 150 seconds to meet flicker requirements depending on load switched and source impedance.

2006/95/EC Low-Voltage Directive

requirements

EN 61010-1

Winona, Minnesota, USA Place of Issue

December 2008 Date of Issue

Safety Requirements of electrical equipment for measurement, control and laboratory use. Part 1: General

Raymond D. Feller III Name of Authorized Representative General Manager Title of Authorized Representative

Kapen D. fuller III Signature of Authorized Representative

2001