WATLOW

QUICK START GUIDE

PM6 LEGACY™ LIMIT CONTROLLER

for configurations:
PM6(L,M)_ _ _-_A_ _G_ _

For assistance contact Watlow: www.watlow.com
1-800-WATLOW2 (1-800-928-5692)
wintechsupport@watlow.com

Document No. 10-42032, Part No. 2134-0008 June 30, 2020

1 - MOUNT TO PANEL

NOTE: Mounting requires access to the back of the panel.

1. Make the panel cutout using the measurements in figure 1.
2. Remove the green terminal connectors and the mounting collar assembly.
3. Insert the controller into the panel cutout from the front.
4. Orient the collar base so the flat side faces front and the screw openings are on the sides (see figure 2), then slide the base over the back of the controller.
5. Slide the mounting bracket over the controller with the screws aligned to the collar base. Push the bracket gently but firmly until the hooks snap into the slots in the case.
6. Tighten the two #6-19 x 1.5 in. screws with a phillips screwdriver until the device is flush to the panel (3 to 4 in-lbs torque).
7. Reinstall the terminal connectors to their original locations. (Or first connect field wiring as indicated in this guide and then reinstall the connectors).

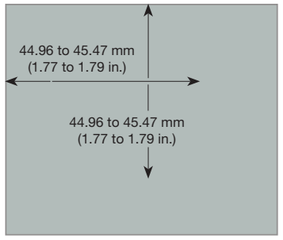


Figure 1

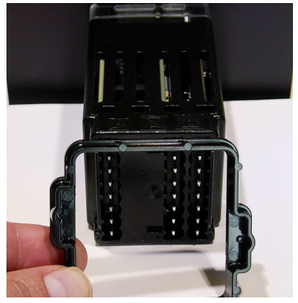


Figure 2

Figure 3

2 - CONNECT THE SENSOR INPUT

Connect your sensor as indicated in the diagram for your sensor input. Figure 4 is an example illustrating the connection shown for a Thermocouple.

Thermocouple

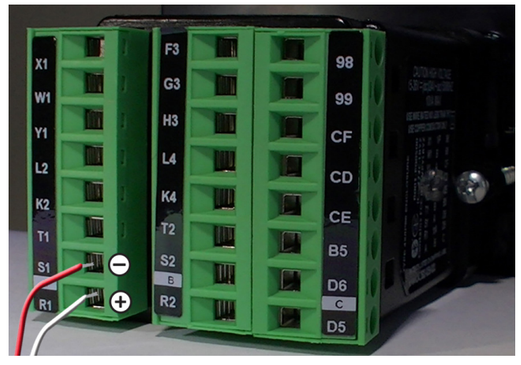
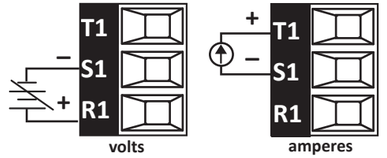
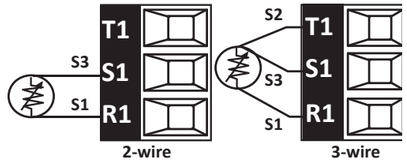


Figure 4: Thermocouple Wiring Example

Voltage: 0 to 10V or 0 to 10V@ 20kΩ
Current: 4 to 20 mA @ 100Ω



Platinum 100Ω @0C RTD
20Ω max. round trip lead resistance



3 - WIRE OUTPUT 1

Refer to the wiring diagram for your configuration code and connect to the slots indicated.

PM6(L,M)_ E _- AAAAG_ _: Form C Relay
5A @240 VAC or 30 VDC

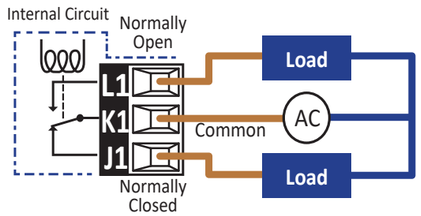
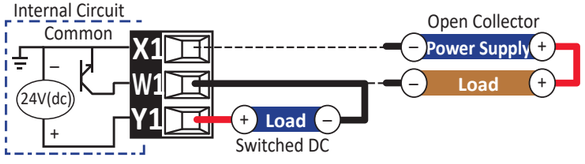


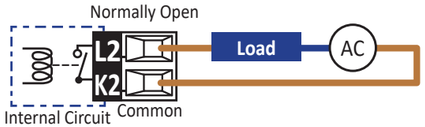
Figure 5: Switched DC Output Wiring

PM6(L,M)_ C _- AAAAG_ _: Switched DC or Open Collector

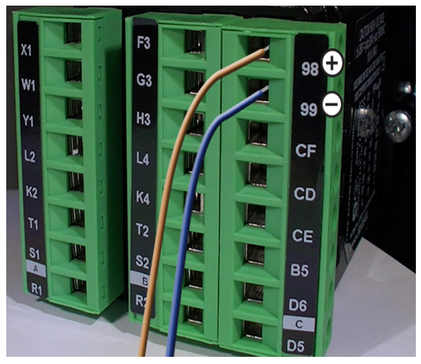


4 - WIRE OUTPUT 2

PM6(L,M)_ _J- AAAAG _ _: Form A Relay



5 - CONNECT POWER



Connect the power source for your configuration code:
PM6 _ [1,2,3,4] _ _ - _ _ _ _ _ _ _

1 or 2:120-240 V (ac)
3 or 4: 24 V (ac or dc)

CAUTION
Do not connect high voltage to a controller that requires low voltage.

6 - CE DECLARATION OF CONFORMITY

Declaration of Conformity - Series EZ-ZONE® PM
WATLOW Electric Manufacturing Company
1241 Bundy Blvd. Winona, MN 55987 USA

Declares that the following product meets the essential requirements of the following European Union Directives by using the relevant standards show below to indicate compliance.

Designation: **Series EZ-ZONE® PM (Panel Mount)**

Model Numbers: PM (3, 6, 8, 9 or 4)(Any Letter or number)(1, 2, 3 or 4)(A, C, E, F or K) (A, C, H, J or K) – (Any letter or number)(Any letter or number)(A, C, E, F or K)(A, C, H, J or K) (Any three letters or numbers)

Classification: Temperature control, Installation Category II, Pollution degree 2, IP65

Rated Voltage and Frequency: 100 to 240 V~ (ac 50/60 Hz) or 15 to 36 Vrms/c 24 V~ac 50/60 Hz

Rated Power Consumption: 10 VA maximum PM3, PM6 Models.
14 VA maximum PM8, PM9, PM4 Models

2014/30/EU Electromagnetic Compatibility Directive

EN 61326-1:2013 **Electrical equipment for measurement, control and laboratory use – EMC requirements (Industrial Immunity, Class B Emissions).**

IEC 61000-4-2:2008 Electrostatic discharge immunity
IEC 61000-4-3:2007 +A1/2008, A2/2010 Radiated, radio-frequency electromagnetic field immunity 10V/M 80–1000 MHz, 3 V/M 1.4–2.7 GHz
IEC 61000-4-4:2012 Electrical fast-transient / burst immunity
IEC 61000-4-5:2014 +A1/2017 Surge immunity
IEC 61000-4-6:2013 + Corrigendum 2015 Immunity to conducted disturbances induced by radio-frequency fields
IEC 61000-4-11:2004 + A1/2017 Voltage dips, short interruptions and voltage variations immunity
EN 61000-3-2:2014 Limits for harmonic current emissions for equipment ≤ 16 Amps per phase
EN 61000-3-3:2013 + A1/2017 Voltage fluctuations and flicker ≤ 16 Amps per phase
SEMI F47-0812 Specification for semiconductor sag immunity Figure R1-1

[1]For mechanical relay loads, cycle time may need to be extended up to 160 seconds to meet flicker requirements depending on load switched and source impedance.

2014/35/EU Low-Voltage Directive

EN 61010-1:2010[2] **Safety Requirements of electrical equipment for measurement, control and laboratory use. Part 1: General requirements**

[2]Compliance with 3rd Edition requirements with use of external surge suppressor installed on 230 Vac~ power line units. Recommend minimum 1000 V peak to maximum 2000 V peak, 70 joules or better part be used.

Compliant with 2011/65/EU RoHS2 Directive Per 2012/19/EU W.E.E.E Directive

OR

Please Recycle Properly. Models PM4, 8 or 9(E contain a type BR1225 coin cell battery which shall be recycled at end of life per 2006/66/EC Battery Directive as amended by 2013/56/EU Directive. Models PM6XXXX – (B, E, F, G, H, J, K)XXXXXX where (X = any letter or number allowed above)

Include *Bluetooth*® wireless technology and have been reviewed to the following additional requirements.

2014/53/EU Radio Equipment Directive (RED)

EN 61010-1:2010 Safety Requirements of electrical equipment for measurement, control and laboratory use. Part 1: General requirements
Covering the essential requirements of article 3.1(a) or Directive 2014/53/EU

EN 61326-1:2013 Electrical equipment for measurement, control and laboratory use – EMC requirements (Industrial Immunity, Class A Emissions).
CAUTION: This equipment not intended for use in residential environments and may not provide adequate protection to radio reception in such environments.

EN 301 489-1 V2.1.1 ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements; Harmonized Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU and the essential requirements of article 6 of Directive 2014/30/EU

EN 301 489-17 V3.1.1 ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for Broadband Data Transmission Systems; Harmonized Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU

EN 300 328 V1.9.1 Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband transmission systems; Data transmission equipment operating in the 2.4 GHz ISM band and using wide band modulation techniques; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive
NVLAP Test Report 1092854SH-A

EN 300 328 V2.1.1 Additional Receiver blocking test for to cover requirements for 2014/53/EU.
NVLAP Test Report 11649468H-E

Contains Module FCC ID: VPYLBZY Part 15C 2.
Contains Module IC: 772C-LBZY RSS 210

- Japanese Radio Law（日本電波法） Output Power: Frequency Range 2402.0 - 2480.0
Type certification（工事設計 型証） Output Power 0.001 Watts Antenna gain: -0.6 dBi PCB antenna

R 201-P00500

Doug Kuchta — Winona, Minnesota, USA
Name of Authorized Representative — Place of Issue
Director of Operations — May 2018
Signature of Authorized Representative

7 - KEYPAD OVERVIEW

ZONE Display:
Indicates the controller address or zone when using communications.

[1] to [9] = 1 to 9
[A] = 10
[b] = 11
[C] = 12
[d] = 13
[E] = 14
[F] = 15
[h] = 16

Lower Display:
Indicates the current state of the limit.
FAIL or SAFE.

Upper Display:
In the Operations Menu, displays the process value. Entering into menus displays the value of the parameter in the lower display.

Temperature Units:
Indicates the temperature is displayed in Fahrenheit or Celsius.

Output Activity:
Indicate activity of outputs .

Comms Activity:
Flashes when another device is communicating with this controller.

Up and Down Keys:
At Home adjusts the set point in lower display. Inside menus, changes the selected setting in upper display.

Function Key:
Performs reset function. Press to reset Controller after a trip condition has been cleared.

Reset Key:
Press to reset limit after a trip condition has been cleared.

Advance Key:
Advances through menu prompts.

Scan for full manual.

For assistance contact Watlow: www.watlow.com
+1-(507)-494-5656
wintechsupport@watlow.com

http://www.watlow.com/downloads/en/manuals/pmpmi.pdf

8 - INTRODUCTION TO KEYPAD & MENU BASICS

Pages, Menus and Keypad Basics:

NOTE: You must read and understand the role of each key on your controller keypad before proceeding.
See Panel 7 - Keyboard Overview.

These instructions are not inclusive. This Quick Start Guide (QSG) is meant to be a quick reference to show you how to navigate to frequently used areas of the controller. As an example; setting process outputs are not documented in this QSG. Refer to the User's Guide for more detailed instructions.

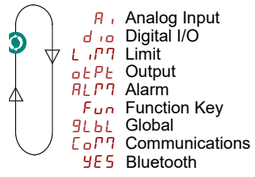
NOTE: These diagrams might vary depending on the controller programming.

Introduction to the Operations & Setup Pages:

Upon power up, the display will default to Home. The upper red row displays process value (PV). The lower green row displays limit status. The Setup Page is a collection of menus having parameters changed typically one time when the controller is first installed or each time hardware changes occur. The Operations Page is a collection of menus having parameters changed more frequently.

Menus in each page contain common parameters that affect a particular function of the controller. Example: Analog Input, Limit, Outputs and Alarms are commonly used functions. Parameters are grouped for each function.

Set Up Page



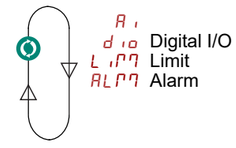
Set Up Page

To enter the Setup Page, press the Reset Key to return to Home. Press and hold the Up and Down Arrow Keys ▲+▼ for 6 seconds. Press the green Advance Key to enter the selected menu. Some menus have sub-menus. See graphic below. Use Arrow Keys to select sub-menu if present. Press the Advance Key to enter selected sub-menu. Press the Reset Key to return to the Home Page.

Sub-menu

Menu

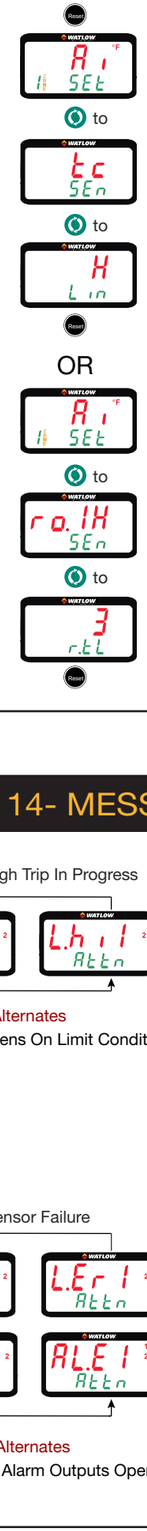
Operations Page



Operations Page

To enter the Operations Page, press the Reset Key to return to Home. Press and hold the Up and Down Arrow Keys ▲+▼ for 6 seconds. Press the green Advance Key to enter selected menu. Some menus have sub-menus. See graphic below. Use Arrow Keys to select sub-menu if present. Press the Advance Key to enter selected sub-menu. Press the Reset Key to return to the Home Page.

9 - SET INPUT



Start from Home.

Press ▲+▼
6 seconds to enter Setup Page.

If thermocouple select tc.

Select thermocouple type (J, K is letter H, T is letter t).

Return Home.

OR

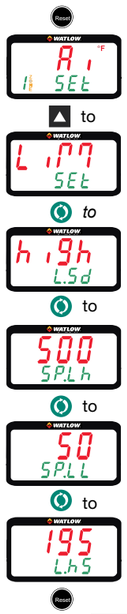
Press ▲+▼
6 seconds to enter Setup Page.

If rtd 100 ohm, select rtd.

If 3 leaded rtd, select 3.

Return Home.

10 - SET LIMIT



Start from Home.

Press ▲+▼
6 seconds to enter Setup Page.

Select Limit Menu.

Both, high, low
Select limit sides.

Enter degrees.
Set the maximum value of what the limit trip points can be.

Enter degrees.
Set the minimum value of what the limit trip points can be.

If high limit (low limit L.LS) enter degrees.
Select limit trip point.

Return Home.

For other limit settings see the user manual.

11 - SET OUTPUTS

Start From Home.

Press ▲+▼
6 seconds to enter Setup Page.

Select Output Menu.

Submenu 1 or 2.
Select output number.

Off, alarm, limit.
Select function of output.
Output 2 always limit.

If alarm,
select which alarm (1 to 4).

Return Home.

Limit is safety contact which opens and latches on trip.
Alarms are programmable for latching, open and close action.

For other output settings see the user manual.

12 - SET ALARM

Start from Home.

Press ▲+▼
6 seconds to enter Setup Page.

Select Alarm Menu.

Sub menu 1 to 4.
Select which alarm.

Off, process
select alarm type.

Close on alarm.
Open on alarm.
select alarm logic.

Both, high, low
select alarm sides.

13 - SET ALARM SET POINTS

Start from Home.

Press ▲+▼
3 seconds to enter Operations Page.

Select Alarm Menu.

Submenu 1 to 4.
Select which alarm.

Enter degrees.
Select low set point.

Enter degrees.
Select high set point.

Return Home.

Alarm High 1 Active

Alternates

ack Alarm

14- MESSAGES

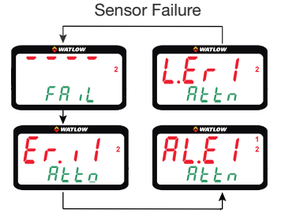
Limit High Trip In Progress

No Limit Condition

Alternates

Output 2 Opens On Limit Condition

Sensor Failure



Sensor Out Of Range

Alternates

Limit And Alarm Outputs Opens On Error Conditions