WATLOW

QUICK START GUIDE

PM6 LEGACY™ EXPRESS PID CONTROLLER

for configurations:
PM6 C _ _ _ -_ AAAH_ _
NOTE: Express Only

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

Document No. 10-41691 - Part No. 2126-4397 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).

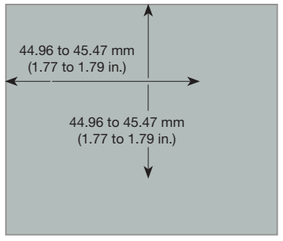


Figure 1

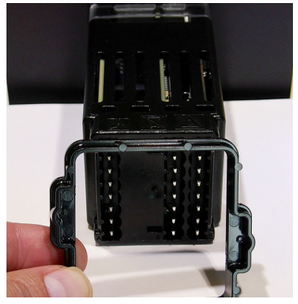


Figure 2

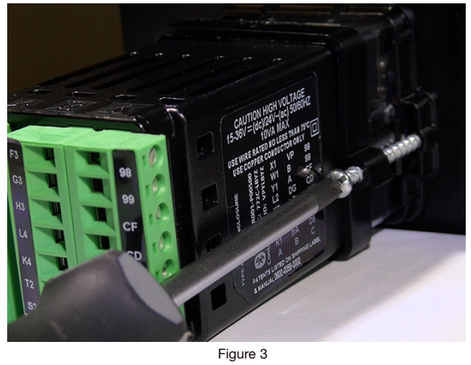


Figure 3

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

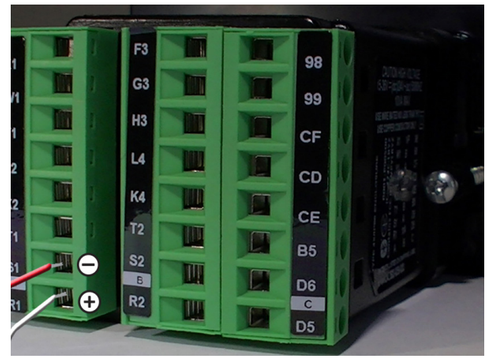
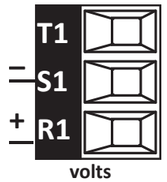
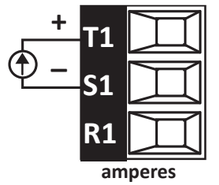


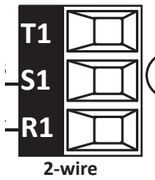
Figure 4: Thermocouple Wiring Example

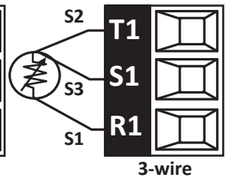
Process Voltage: 0 to 10V@ 20kΩ
Process Current: 0 to 20 mA @ 100Ω





Platinum 100Ω
20Ω max. loop lead resistance

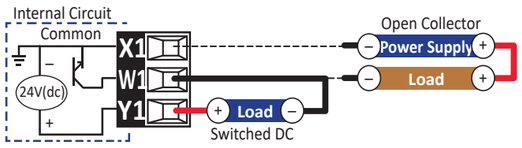




3 - WIRE OUTPUT 1

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

PM6_ _ C _ - _ _ _ _ H _ _: Switched DC or Open Collector



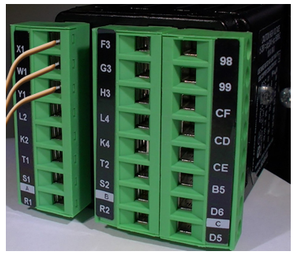
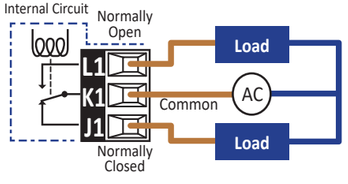
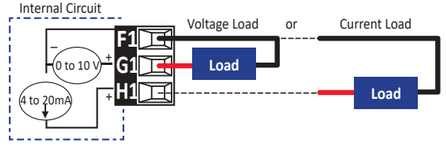


Figure 5: Switched DC Output Wiring

PM6_ _ E _ - _ _ _ _ H _ _: 5A Form C Relay
5A @240 V(ac) or 30 V (dc)

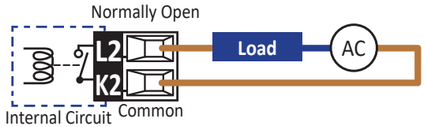


PM6_ _ F _ - _ _ _ _ H_ _: Universal Process
0 to 20 mA: 800 Ω max. load
0 to 10V: 1kΩ min. load

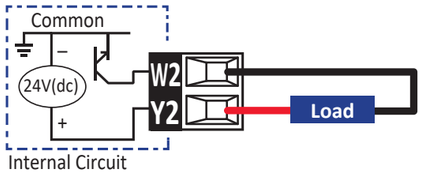


4 - WIRE OUTPUT 2

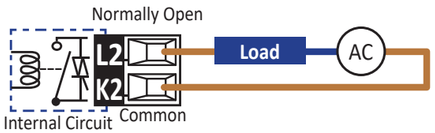
PM6_ _ _ J - _ _ _ _ H _ _: 5A Form A Relay



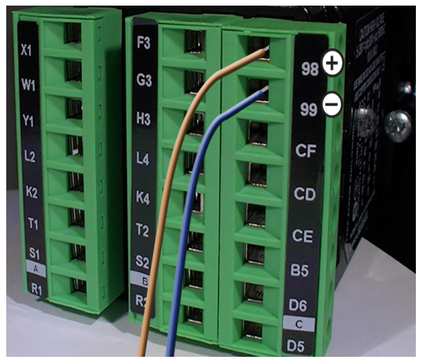
PM6_ _ _ C - _ _ _ _H_ _: Switched DC



PM6_ _ _ H - _ _ _ _H_ _: No-Arc 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 Vesdc/ 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

Please Recycle Properly. Models PM(4, 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
EN 300 328 V2.1.1	NVLAP Test Report 10928545H-A 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（工事設計認証） Output Power 0.001 Watts Antenna gain: -0.6 dBi PCB antenna

R001-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:
Indictes the controller addess when using communications.
[1] to [9] = zones 1 to 9
[A] = zone 10
[b] = zone 11
[C] = zone 12
[d] = zone 13
[E] = zone 14
[F] = zone 15
[h] = zone 16

Lower Display:
Indicates the set point or output power value during operation or the parameter whose value appears in the upper display.

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

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

Output Activity:
Number lights indicate activity of outputs 1 and 2.

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

Up and Down Arrow Keys:
In the Operations Menu, adjusts the set point in the lower display. In the other pages, changes the upper display to a higher or lower value, or changes a parameter selection.

Advance Key:
Advances through parameter prompts.

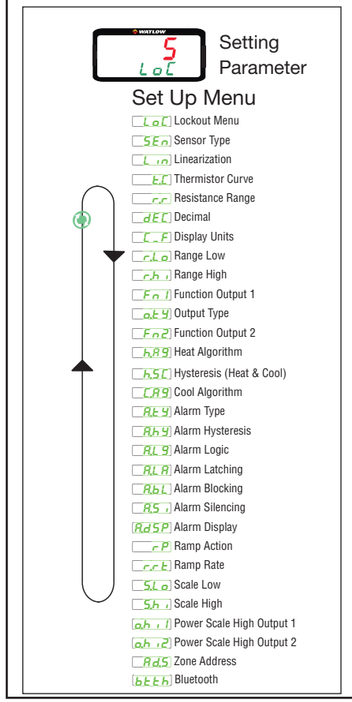
Function Key:
This key will toggle the control mode between the current value of the C.M prompt (Off, MAn, AUto) and Manual when the Function Key is pushed and held for 3 seconds.

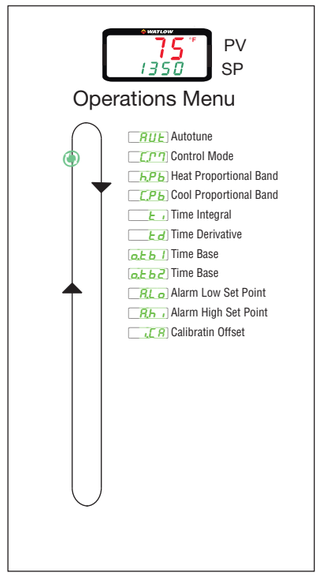
Infinity Key:
Clears and silences alarms, press to back up one level, or press and hold for two seconds to return to the Operations Menu.

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





Menu 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 guide. It will show you how to navigate to frequently used areas of your controller. As an example, settings process outputs are not documented in this QSG. Refer to the User Manual for more detailed instructions. NOTE: These diagrams might vary depending on the Controller programming.

Introduction to the Set Up & Operating Menus

Upon power up, the display will default to the home page in the Operations Menu. The upper red row displays the process value (PV). The lower green row displays the set point (SP).

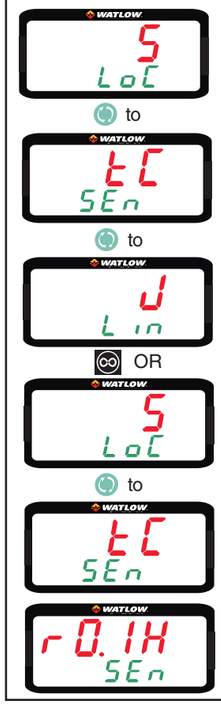
Operations Menu

To enter the Operations Menu, press ◎ to return to Home Page. Press the green advance key ◔ to scroll through the various prompts found in the Operations Menu. Press the Infinity key ◎ at any point within the Operations Menu to return to the Home Page. Use Arrow Keys ▲▼ to increment or decrement settings or change selection.

Set Up Menu

To enter the Setup Menu press ◎ to return to Home Page. Press both Arrow Keys ▲▼ for 6 seconds. Press green Advance Key ◔ to scroll through to the prompt of choice. Use Arrow Keys ▲▼ to increment or decrement settings or change selection. At any point within the Setup Menu, push the ◎ Infinity Key to return to the Home Page.

9 - SET UP THE INPUT



◎ Start from Home.

Press ▲ + ▼ for 6 seconds to enter Setup Menu.

Must be level 5 to make changes.

▲ If Thermocouple select (tC).

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

◎ Return Home.

OR

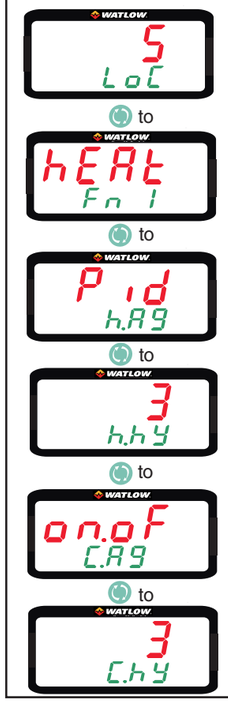
Press ▲ + ▼ for 6 seconds to enter Setup Menu.

Must be level 5 to make changes.

▲ If rtd 100 ohm select rtd.

◎ Return Home

10 - SET UP OUTPUTS FOR HEAT, COOL AND ALARM



◎ Start From Home. Press ▲ + ▼ for 6 seconds to enter Setup Menu. Must be level 5 to make changes.

▲ Heat, Cool, Alarm, or Off. Select function output 1. (See Fn 2 for output 2).

▲ Advance to PID, on/off, none. Select heat control method.

▲ If on/off enter degrees. Select at switching hysteresis.

▲ Advance to PID, on/off, none. Select cool control method.

If on/off, enter degrees. Select cool switching hysteresis.

◎ Return Home.

◎ Start from Home.

▲ If heat or cool >= 20 if mechanical relay. Select time base output 1.

▲ If heat or cool >= 20 if mechanical relay. Select time base output 2.

◎ Return Home.

11 - SET UP AN ALARM

◎ Start from Home.

Press ▲ + ▼ for 6 seconds to enter Setup Menu. Must be level 5 to make changes.

▲ Advance to Process, deviation. Select type, enter.

▲ Enter degees. Select Hysteresis.

▲ Close, open. Select logic.

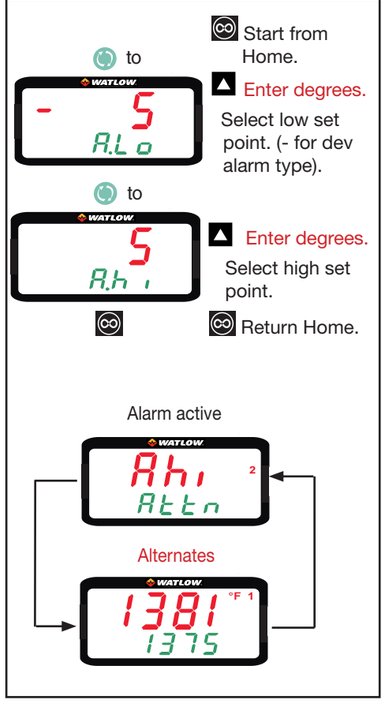
▲ Non-latching, latching.

Select latching.

◎ Return Home

For other alarm settings see the user manual.

12 - SET ALARM SET POINTS



◎ Start from Home.

▲ Enter degrees. Select low set point. (- for dev alarm type).

▲ Enter degrees. Select high set point.

◎ Return Home.

13 - LOOP CONTROL MODE/ LOOP SET POINT

Set Loop Control Mode

◎ Start from Home.

◎ Enter degrees. Ensure that CM is set to Auto

◎ Return Home.

Adjust Loop Set Point

▲ Enter degrees. Select set point.

14- AUTOTUNE THE CONTROL LOOP

◎ Start from Home.

▲ No/yes. Select Auto Tune. (Returns to no when completed).

◎ Return Home.

Tuning in progress