



PMC-509 MDI Basic Operations
Revision 1

Front Panel Operations

The front panel of the PMC-509 includes a five line LCD screen and four buttons. The user can navigate through the screen menus to view real-time and maximum data.

Main Display

Screen Saver

If there is no front panel activity for a period longer than 3 minutes (default Backlight Timeout), the LCD backlight and the main parameter display area will be turned off as shown in Illustration 1: Screen Saver Mode below. Only the Date and Time at the top of the display remains. Pressing any button will resume the normal display mode.

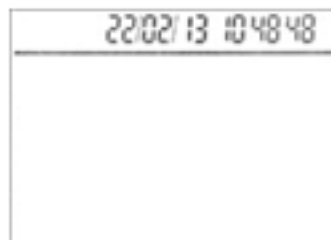
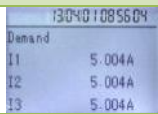
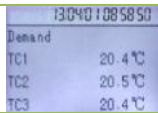
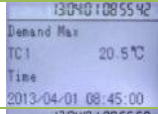
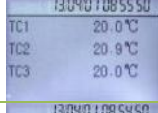
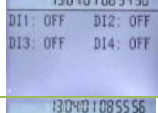
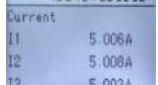


Illustration 1: Screen Saver Mode

Auto-Scroll Mode

The PMC-509 front panel operation defaults to Auto-Scroll mode. In this mode, the display will automatically scroll to the next measurement page every 4 seconds as shown below without any button operation or user interaction.

Display Screens	First Row	Second Row	Third Row	Fourth Row	Example
1	Current "Demand" (A)	I1	I2	I3	
2		I4	I5	I6	
3*		I7	I8	I9	
4	Current "Demand Max" (A)	I1 to I6	"Time"	Date/Time Stamp	
5					
6					
7					
8					
9					
10*					
11*	I7 to I9				
12*					
13 [#]	RTD "Demand"	TC1	TC2	TC3	
14 [#]	RTD "Demand Max"	TC1	"Time"	Date/Time Stamp	
15 [#]		TC2			
16 [#]		TC3			
17 [#]	TC1	TC2	TC3		
18	DI1 & DI2	DI3 & DI4			
19	Current	I1	I2	I3	
20		I4	I5	I6	
21*		I7	I8	I9	

* When the Hardware Option is 6I+3RTD, the relevant parameters for SM7, SM8 and SM9 are not available.

[#] When the Hardware Option is 9I, all relevant parameters for RTD1, RTD2 and RTD3 are not available.

Fixed Display Mode

In Fixed Display mode, the screen will advance only when either **<◀/▶>** or **<▲>** is pressed. While in Auto-Scroll mode, the operator can interrupt the Auto-Scroll operation and manually control what measurements to display by using the same two buttons. The following table illustrates the display operation in Fixed display mode. Pressing the **<◀/▶>** button at any time moves the display to the next Measurement Category. Pressing the **<▲>** button moves the display to the next Sub-Page within a particular Measurement Category. When the last Sub-Page is reached within a Measurement Category, pressing the **<▲>** button again moves the display back to the first Sub-Page of the Measurement Category.

Button	Page	Measurement Category	Button	Sub-Page	Parameters	Sample Display
<◀/▶>	1	Current Demand	<▲>	1	I1, I2, I3	130401085604 Demand I1 5.004A I2 5.004A I3 5.004A
				2	I4, I5, I6	
				3*	I7, I8, I9	
	2#	RTD Demand		4 - 9	Current Demand Max I1-I6 I7-I9	130401085612 Demand Max I1 5.004A Time 2013-03-11 16:30:00
				10* - 12*		I7-I9
				1	TC1, TC2, TC3	130401085850 Demand TC1 20.4°C TC2 20.5°C TC3 20.4°C
				2	RTD Demand Max TC1 TC2 TC3	130401085542 Demand Max TC1 20.5°C Time 2013-04-01 08:45:00
				3		
				4		
	3#	RTD Temperature		1	TC1, TC2, TC3	130401085550 TC1 20.0°C TC2 20.9°C TC3 20.0°C
	4	DI Status		1	DI1, DI2 DI3, DI4	130401085450 DI1: OFF DI2: OFF DI3: OFF DI4: OFF
	5	Current		1	I1, I2, I3	130401085556 Current I1 5.008A I2 5.008A I3 5.003A
				2	I4, I5, I6	
				3*	I7, I8, I9	

*When the Hardware Option is 6I+3RTD, the relevant parameters for SM7, SM8 and SM9 are not available.

[#]When the Hardware Option is 9I, all relevant parameters for RTD1, RTD2 and RTD3 are not available.

Device Configuration

How to change CT Ratio

1. Pressing the <  > button while in the Main Display enters PMC-509's Main Menu as detailed in Illustration 2: Main Menu.

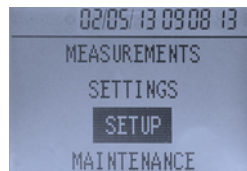


Illustration 2: Main Menu

2. Press the <  /  > or <  > button to scroll the cursor to SETUP and then press <  >. The operator is immediately prompted to enter a password. Press <  > again and the following screen appears. Press <  > to increment the highlighted digit and <  /  > to move the cursor one position to the left. The default password is "0". Enter the correct value for the password and then press <  >.

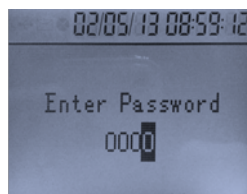


Illustration 3: Password Screen

3. Select SYSTEM SETUP and then press <  >.

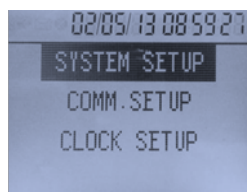
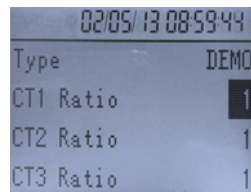


Illustration 4: Setup Menu

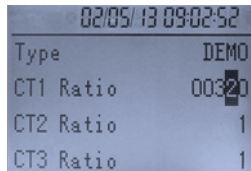
4. Press the <◀/▶> or <▲> button to scroll the cursor to the desired parameter and then press <↵>.



02/05/13 08:59:44	
Type	DEMO
CT1 Ratio	1
CT2 Ratio	1
CT3 Ratio	1

Illustration 5: System Setup Menu

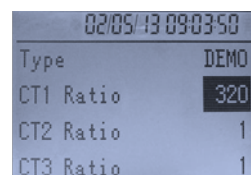
5. Press the <◀/▶> or <▲> to enter the desired value and then press <↵>. The CT Ratio is the ratio between CT Primary and CT Secondary. For example, if CT Primary=1600 and CT Secondary=5, CT Ratio = $1600/5 = 320$.



02/05/13 09:02:52	
Type	DEMO
CT1 Ratio	00320
CT2 Ratio	1
CT3 Ratio	1

Illustration 6: Changing CT Ratio

6. When finished, press <↵> to save the entered value.



02/05/13 09:03:50	
Type	DEMO
CT1 Ratio	320
CT2 Ratio	1
CT3 Ratio	1

Illustration 7: Saving Changes

7. Repeat Steps 4 to 6 to until all the CT Ratios have been correctly entered.

How to View Setup Parameters

From the Main Menu, scroll to SETTINGS with <◀/▶> and then press <↵>. The SETTINGS option allows the viewing of the Setup parameters. The following table illustrates all the available Setup parameters.

Sub-Menu	Setup Parameters	Description (Range/Options)	6I+3RTD	9I
			Default	
System Setup	Type	Wiring Connection (WYE/DELTA/DEMO)	WYE	
	PT Ratio [~]	PT Ratio (1 [~] to 2200)	1	
	CT1 Ratio [~]	Set Sub-Meter's CT Ratio 1 [~] to 6000 (5A input) 1 [~] to 30000 (1A input)	320	80
	CT2 Ratio [~]		320	80
	CT4 Ratio [~]		320	80
	CT4 Ratio [~]		80	80
	CT5 Ratio [~]		80	80
	CT6 Ratio [~]		80	80
	CT7 Ratio ^{~#}		80	80
	CT8 Ratio ^{~#}		80	80
	CT9 Ratio ^{~#}		80	80
	DMD Period	Sliding Window Interval (1 to 99 minutes)	10	
	Num of Windows	Number of Sliding Windows (1 to 15)	1	
Comm. Setup	Unit ID	Modbus Address (1 to 247)	100	101
	Baud rate	Data rate in bits per second (bps) (1200/2400/4800/9600/19200)	9600	
	Data Format	Data Format (8N2/8O1/8E1/8N1/8O2/8E2)	8E1	
Clock Setup [^]	Date Format	Data Format of date (YYYY/MM/DD, DD/MM/YYYY, MM/DD/YYYY)	YYYY/MM/DD	
	Date	Set Date	20YY/MM/DD	
	Clock	Set Time	HH:MM:SS	

[~]The PT/CT Ratio are defined as the PT/CT Primary divided by PT/CT Secondary.

[^]When the Hardware Option is 6I+3RTD, these Setup parameters are not available.

[#][^]These sub-menus are only available in the SETUP option and not the SETTINGS option.