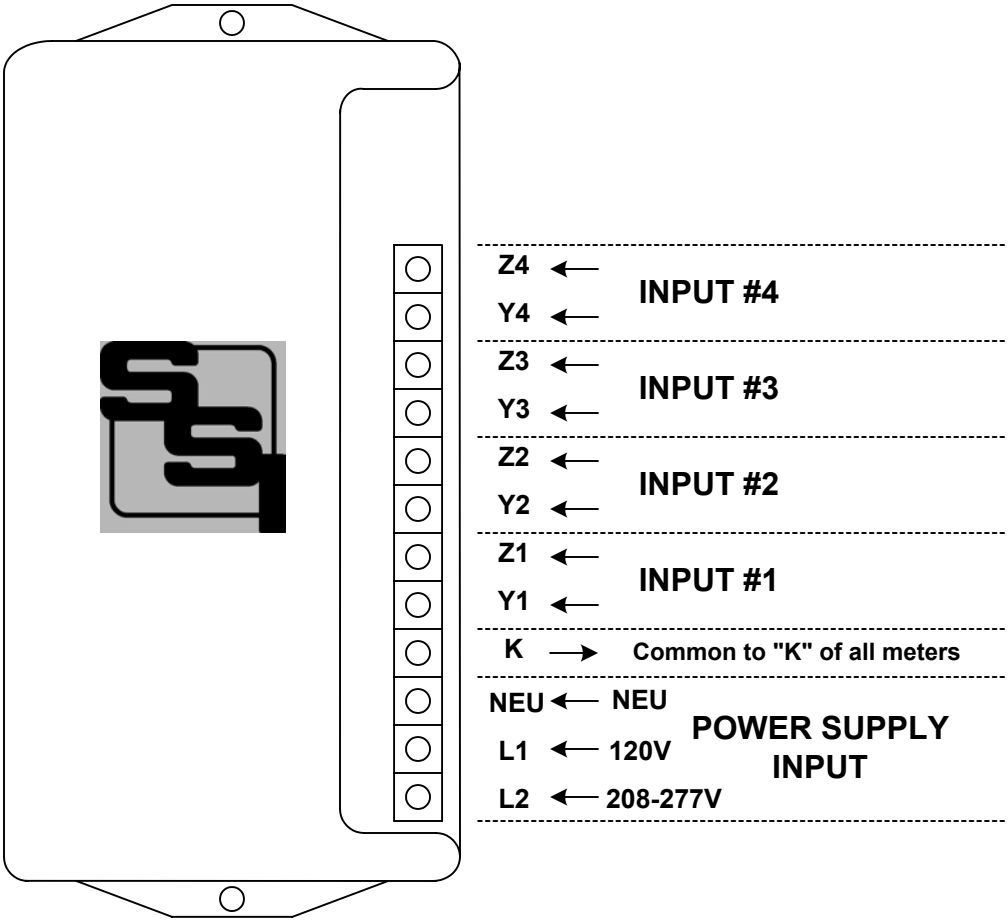
INSTRUCTION SHEET
MPR-4 METERING PULSE REGISTER



MOUNTING POSITION - The MPR-4 may be mounted in any position.

POWER INPUT - To power the MPR-4 with a 120VAC power supply, connect the 120V "hot" lead to the **L1** power supply terminal. Connect the neutral lead to the **NEU** terminal. For 208 to 277 VAC operation, connect the "hot" lead to **L2**.

METER CONNECTIONS - The MPR-4's "K" terminal provides the common return for all of the meters' "K" terminals. The MPR-4 is designed to use only 3-Wire (Form C) inputs. Connect each meter's "Y" and "Z" terminals to the "Y" and "Z" terminals of the desired input channel of the MPR-4. Each "Y" and "Z" input provides its own wetting (sense) voltage to the meter's "Y" and "Z" terminals. The meter's pulse output can be dry-contact, solid state or mechanical.

OUTPUTS - The MPR-4 has no pulse output.

SOLID STATE INSTRUMENTS

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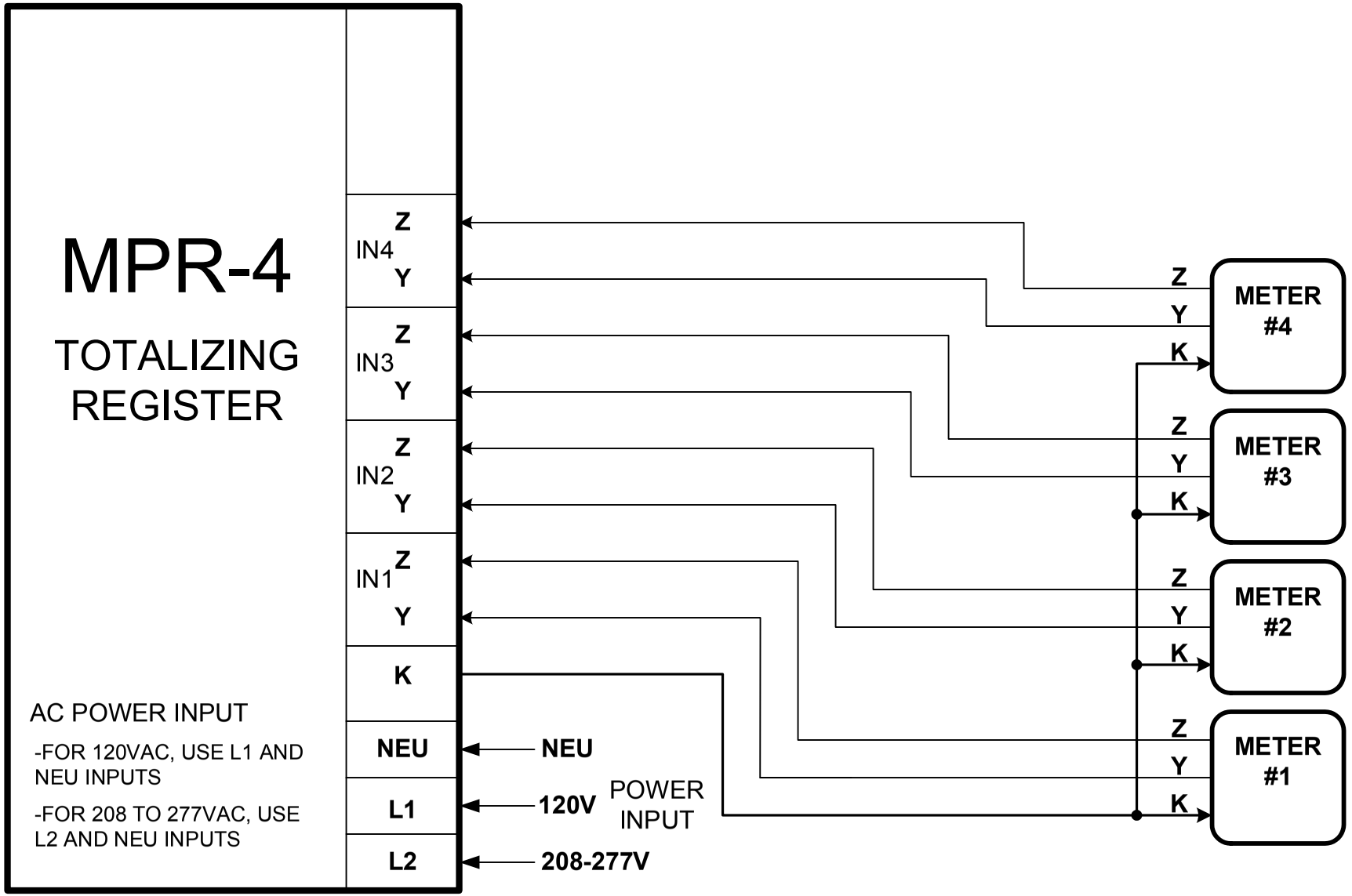
REV. 07/09/07 P/N: 04604-97006B

MPR-4 Electrical Wiring

Solid State Instruments, a Division of Brayden Automation Corp. (970)461-9600 Loveland, Colorado



NOTE: A Sense Voltage of +13VDC is applied to the meters via the "Y" or "Z" leads from the MPR-4. The "K" lead is the common return.

PROGRAMMING THE MPR-4 TOTALIZING REGISTER

Version 2.0 Software

The MPR-4 Meter Pulse Totalizing Register is programmed by using the three small pushbutton switches (keys) located just above the LCD display. The left key with the yellow cap is the "Move Back" or previous screen key. The middle key with the orange cap is the "Move Forward" key and moves the cursor (the dash under a number on the LCD display) forward from display item to item. The right pushbutton switch (key) with the black cap is used to change the value in the column above the cursor. If the value above the cursor were 5, pressing the black key three times would change the display above the cursor to 8. Continued pressing of the black key would advance the number to the value 9 and then 0, then 1…2…3…4…5…6…7…8…9…0…and so on. When the correct value to be entered is reached, press the orange key to move to the next display item. If the value at the previous display item has changed, the new value will be saved into memory. If no change is desired, just press the orange key again. Pressing the yellow key will move you to the previous screen. All functions of the totalizing register are accessible by repeatedly pressing the yellow or orange key. Upon reaching the last screen, and pressing the orange key again, the display will loop back and start again at the first display. Consequently, all the inputs can be changed and saved with a combination of pushes of the yellow, orange and black keys, as the instructions that follow will illustrate.

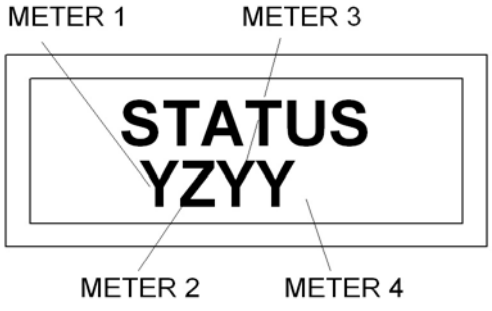
START-UP DISPLAY: DISPLAYS SOFTWARE VERSION

When the MPR-4 is powered up, the start-up screen will be displayed. This screen displays the Model Number on the top line and software version number of the totalizer on the bottom line. **PRESS THE ORANGE KEY TO GO TO NEXT DISPLAY.**

START-UP DISPLAY

FIRST DISPLAY: STATUS OF INPUTS

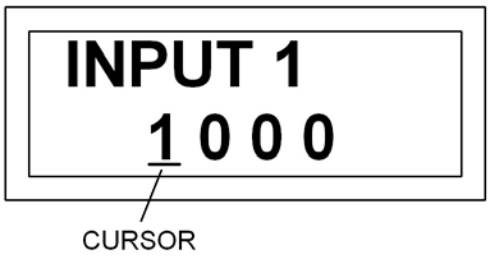
If you (or the meter) cause the "Z2" input terminal to be connected to the MPR-4's "K" common terminal, meter #2's status shown here on the display will change to a "Z". Any input which is not used will have a "-" displayed in its position. Each input shows the last transmitted status to the MPR-4.



INPUT STATUS DISPLAY

PRESS THE ORANGE KEY TO GO TO NEXT DISPLAY

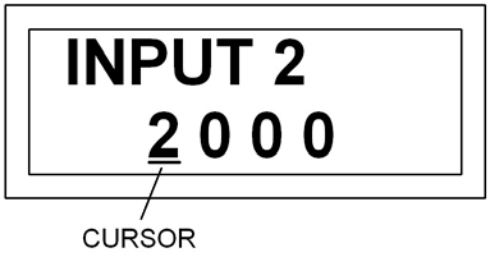
SECOND DISPLAY: METER #1 KWH/PULSE VALUE



METER #1 KWH/P VALUE DISPLAY

The second display is the KWH/PULSE value programmed in for METER #1. The value of each digit may be changed by first moving the cursor to the digit desired using the **ORANGE KEY.** To change the digit's value press the **BLACK KEY.** Press this key any number of times until the desired number is displayed. Press the **ORANGE KEY** once to advance the cursor to the next position to the right. Again enter the correct number with the **BLACK KEY**. Press the **ORANGE KEY** once. Enter the third number with the **BLACK KEY**. Press the **ORANGE KEY** once and enter the fourth number with the **BLACK KEY**. This time when you press the **ORANGE KEY**, you will advance to the third display.

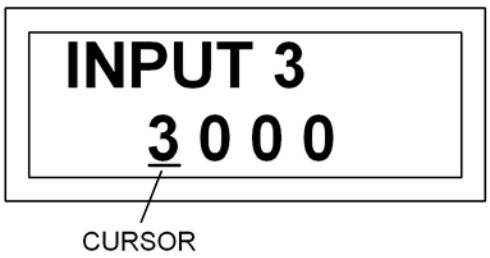
THIRD DISPLAY: METER #2 KWH/PULSE VALUE



METER #2 KWH/P VALUE DISPLAY

The third display works to input KWH/PULSE values for METER #2 in the same manner as display #2 worked for METER #1.

FOURTH DISPLAY: METER #3 KWH/PULSE VALUE

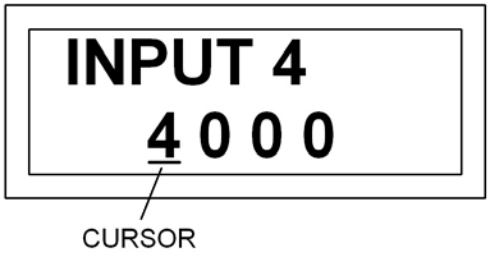


METER #3 KWH/P VALUE DISPLAY

The fourth display works to input KWH/PULSE values for METER #3 in the same manner as display #2 worked for METER #1.

FIFTH DISPLAY: METER #4 KWH/PULSE VALUE

The fifth display works to input KWH/PULSE values for METER #4 in the same manner as display #2 worked for METER #1.



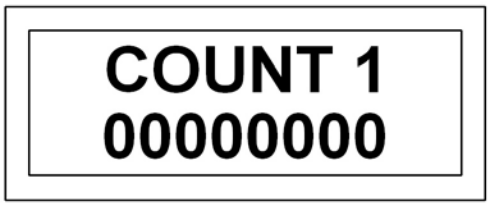
METER #4 KWH/P VALUE DISPLAY

SIXTH DISPLAY: PULSE VALUE DISPLAY

PULSE VALUE DISPLAY

The sixth display shows the accumulated numerical value contained within the processor's memory at any given time. For example, if you were to set METER #1's input pulse value to 1000, and all other METER inputs to 0000, upon entering one pulse into METER #1's input, the pulse accumulator would register 1000. The PV TOTAL display will show the total KWH's of all inputs used after each count has been multiplied by its weighted value and added to the accumulator register. The maximum number allowed here is 8 digits or 99,999,999. This number is saved in non-volatile memory in the event of loss of power. Press the **ORANGE KEY** to advance to the next display.

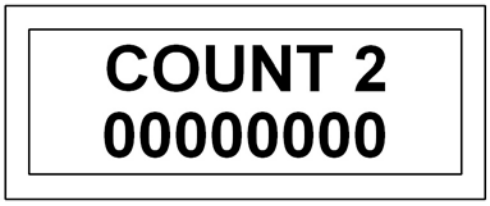
SEVENTH DISPLAY: INPUT PULSE COUNT – METER #1



METER #1 PULSE COUNT DISPLAY

The seventh display allows you to see the total number of pulses that have been counted by meter input #1 since the last reset. This number is simply a counter that increments by one (1) count each time a pulse is recorded by meter input #1. This value is non-weighted and represents the number of counts only. This count is saved in non-volatile memory upon loss of power. Press the **ORANGE KEY** to advance to the next display.

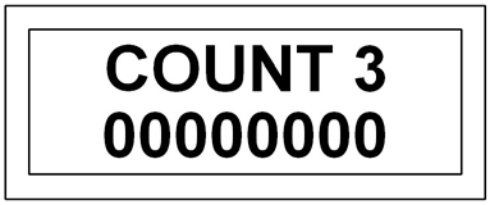
EIGHTH DISPLAY: INPUT PULSE COUNT – METER #2



METER #2 PULSE COUNT DISPLAY

The eighth display allows you to see the total number of pulses that have been counted by meter input #2 since the last reset. This number is simply a counter that increments by one (1) count each time a pulse is recorded by meter input #2. This value is non-weighted and represents the number of counts only. This count is saved in non-volatile memory upon loss of power. Press the **ORANGE KEY** to advance to the next display.

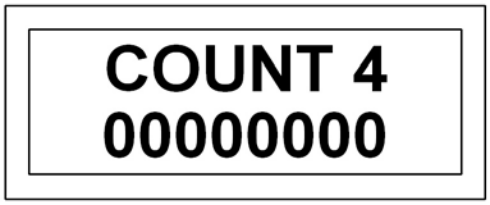
NINTH DISPLAY: INPUT PULSE COUNT – METER #3



METER #3 PULSE COUNT DISPLAY

The ninth display allows you to see the total number of pulses that have been counted by meter input #3 since the last reset. This number is simply a counter that increments by one (1) count each time a pulse is recorded by meter input #3. This value is non-weighted and represents the number of counts only. This count is saved in non-volatile memory upon loss of power. Press the **ORANGE KEY** to advance to the next display.

TENTH DISPLAY: INPUT PULSE COUNT – METER #4



METER #4 PULSE COUNT DISPLAY

The tenth display allows you to see the total number of pulses that have been counted by meter input #4 since the last reset. This number is simply a counter that increments by one (1) count each time a pulse is recorded by meter input #4. This value is non-weighted and represents the number of counts only. This count is saved in non-volatile memory upon loss of power. Press the **ORANGE KEY** to advance to the next display.

ELEVENTH DISPLAY: RESET COUNTERS

RESET COUNT DISPLAY

The eleventh display allows you to reset both the four INPUT counters and the PV TOTAL register, all at one time. The default of this display is “N” for no. To go back to

the status display and not reset the totals, press the **ORANGE KEY**.

To reset all counters to zero, press and hold down the **BLACK KEY** for 3 seconds. A “Y” will be displayed, indicating that you are correctly pressing the key.

RESET COUNT DISPLAY

Once the MPR-4 has correctly reset all counters to zero, the display will indicate DONE. Let off the **BLACK KEY**. Upon releasing the **BLACK KEY,** the display will automatically jump back to the first display, the Status display.

RESET COUNT DISPLAY

INFORMATION ON SCALING OF VALUES FOR DATA ENTRY

Most Totalizing Registers are ratio devices, and the MPR-4 is no different. By a "ratio device" we mean that if the number in the right most column of the value for meter #1 is the "ones" value for KWH/PULSE, then all other values in the right-hand most column will also represent "ones". The second column to the left of the right column will represent "tens" values. The third column will represent the "hundreds" values, etc. This means that the decimal point, when used, can be located between any two columns or to the left or right of the first or last digit. However, once the decimal point is placed in a column, it must run top to bottom in that position only.

EXAMPLES

CORRECT		**CORRECT**	
METER #1	**.1000**	**METER #1**	**1.000**
METER #2	**.1234**	**METER #2**	**1.234**
METER #3	**.2345**	**METER #3**	**2.345**
METER #4	**.3456**	**METER #4**	**3.456**
OUTPUT	**05.0000**	**OUTPUT**	**05.000**

INCORRECT		**INCORRECT**	
METER #1	**.1000**	**METER #1**	**1000.**
METER #2	**1.234**	**METER #2**	**123.4**
METER #3	**.2345**	**METER #3**	**23.45**
METER #4	**345.6**	**METER #4**	**3.456**
OUTPUT	**05.0000**	**OUTPUT**	**00.5000**

While we have used KWH/PULSE for the pulse values throughout this document, the values could be watts, megawatts, gallons or any other common unit of measure.

TECHNICAL SUPPORT

For additional information or technical help, call Brayden Automation Corp./Solid State Instruments division at (970) 461-9600 or toll free at (888)BRAYDEN.

INSTALLATION RECORD

METER
NAME/NUMBER……
METER LOCATION……..…….
DATE INSTALLED……..
TOTALIZING REGISTER TYPE……. MPR-4
SOFTWARE VERSION …. VERSION 2.0
MANUFACTURER……. SOLID STATE INSTRUMENTS
A division of Brayden Automation Corp.
6230 Aviation Circle
Loveland, CO 80538
HELP …… (970) 461-9600

FILL OUT BEFORE PROGRAMMING TOTALIZING REGISTER

METER # 1 CIRCUIT NAME …… …. …. …. …. KWH/PULSE

METER # 2 CIRCUIT NAME …… …. …. …. …. KWH/PULSE

METER # 3 CIRCUIT NAME …… …. …. …. …. KWH/PULSE

METER # 4 CIRCUIT NAME …… …. …. …. …. KWH/PULSE

NOTE: The MPR-4 does not actually display a decimal point. Simply decide where you want the decimal point to be and enter all numbers accordingly. When entering your values on the above record/worksheet, all decimals for data entries **must** be in a vertical straight line for the math to work correctly. The decimal point may be between, before or after any column.