MARS COMPANY

RCM-100C, RCM-100HC Remote Counter Modules

Installation / Programming Guide

Table of Contents

Overview

The MARS RCM-100 units are remote digital displays that count pulses which are output from an electronic meter register and totalized on the unit's LCD screen.

There are two versions of the MARS RCM-100:
- · RCM-100C: Cold water meter remote display.
- · RCM-100HC: Dual display for both hot and cold water meters.

In order for the MARS RCM-100 unit to function correctly with either a pulse register or pulse switch and for optimum use of the equipment, the installation and programming procedures outlined in this manual MUST be followed.
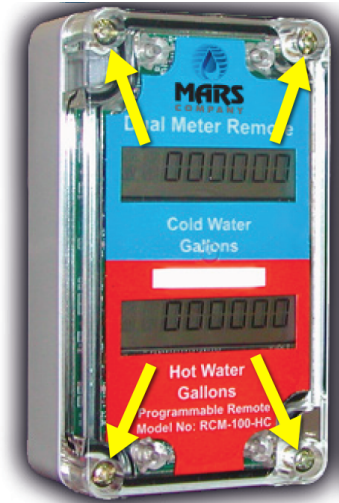
Required Materials

The following materials are required for the installation / programming of the MARS RCM-100:
- · Phillips screwdriver
- · RCM-100 unit (to be installed)
- · RCM-100P Programming Unit
- · Wire Strippers
- · Two (2) mounting screws

Wiring the RCM-100

To wire the RCM-100 unit, first remove the rear cover by removing the four (4) case screws located here:

This exposes the back of the circuit board, where all the connections will be made. Also at this time, the rear of the casing can be mounted to the surface where the unit will be located via the two screw holes on the top left and bottom right of the casing.

To make the connections, please reference the register and AMR (optional) manufacturer's instructions on the input/output of the device. The two three wire connections that will be made shortly include the pulse wire, the tamper wire (optional), and the common return for the register (the ground), and if an AMR system will be used in conjunction with the MARS RCM-100, the AMR clock in, AMR data or pulse out, and the AMR common (ground).

If you are using a Pulse Switch device obtained through MARS, the configuration for the Pulse Switch are as follows:
- GREEN: pulse wire
- RED: tamper wire
- BLACK: common (ground)

If you are using a MARS SmartTransmitter for your AMR solution, the configuration for the MARS SmartTransmitter are as follows:
- GREEN: AMR data wire
- RED: AMR clock wire
- BLACK: common (ground)

Please reference this diagram explaining the connections to the terminals in the RCM 100 unit.

SW S3: UP FOR COLD
SW S3: DOWN FOR HOT

JP1- & JP4-
1. GROUND
2. TAMPER *
3. SIGNAL

JP2- & JP5- **
1. ENCODER: CLOCK
2. ENCODER:DATA, PULSE: SIGNAL
3. ENCODER: GROUND, PULSE, GROUND/TAMPER*

* Only if Meter/AMR are equipped with tamper output. Refer to tamper settings for appropriate configuration.
** Encoder output Sensus-compatible output

Programming the RCM-100

Programming the MARS RCM-100 units is somewhat self-explanatory. Each counter will be programmed separately. To accomplish this, you need to have access to the MARS RCM-100P Programmer, as shown below:
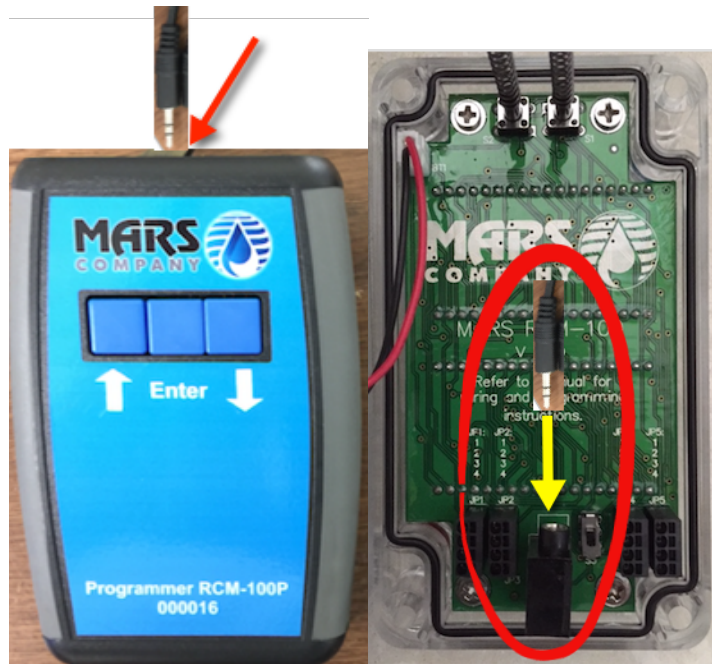
Connect one end of the 3.5mm jack into top of Programmer and the other end of the 3.5mm jack into the bottom center of circuit board.

The following are the menus as displayed on the MARS RCM-100 as well as a brief explanation as to the function. To scroll up and down through the menus, press **up** and **down**.

READING

This is where the current reading on the meter register is entered. The unit will count from this point. To input the reading, press **Enter**, then **up** and **down** to change the values of the blinking digit. Press **Enter** to move to the next digit and return to the main menu.

OUT TYPE

Depending on the AMR system installed, if any, this will be selected in this menu. The options are none, encoder, or pulse.

ID NUM

This is where the unique ID number used with the AMR system is entered. This is the number transmitted as the ID when "encoder" output is selected. To input the ID, press **Enter**, then **up** and **down** to change the values of the blinking digit. Press **Enter** to move to the next digit and return to the main menu.

TAMPER

If enabled and properly wired, this menu will allow you to set the tamper detection. The options are both, case, cable, or all off. When the tamper wire is installed via the input from the meter register, and the tamper detection is set to on, an "X" will be displayed on the left of the LCD if the wire is cut or case is opened.

The "K Factor" is the value of each pulse per whichever measurement in which the unit will be displaying on the LCD. Please refer to the meter register manufacturer's documentation on this value. However, if you are using a Pulse Switch device obtained through MARS, the value will be .5, or .5 times the amount you would like displayed on the LCD unless otherwise stated. This means that for every sweep of the needle in the meter register, there will be two pulses generated. Pay close attention to the decimal point when entering this value. Some examples of these values are as follows:

· 1 pulse/gallon: "01.00"
· 10 pulses/gallon: "00.10"
· 1 pulse/10 gallons: "10.00"
· 100 pulses/gallon: "00.01"

When programming is complete, simply detach the MARS RCM-100P Programmer from the circuit board and reattach inside the device. However, if you are using the tamper detection feature, you will have only a short time (roughly a minute) to close the case, otherwise it will show it has been tampered with.