Excellence in Compliance Testing

Certification Test Report

Frequency Hopping Spread Spectrum Transmitter

FCC ID: SJS-380153VHP
IC: 5379A-380153VHP

FCC Rule Part: 15.247
IC Radio Standards Specification: RSS-210

ACS Report Number: 07-0290 - 15C

Manufacturer: MARS Company
Model: 380135VHP, 380129VHP

Installation Guide

MARS SmartRadio Installation Guide

To ensure proper connection and resistance to water intrusion a waterproof butt splice is required to connect the SmartTransmitter to the meter register. The recommended type of connector is a Scotchlok™ connector. This type of connector is ideal because it provides a good mechanical connection of the wires and a waterproofing gel that inhibits water ingress.

This device is designed to be installed in a meter pit at or below ground level. Professional installation by factory trained personnel is required for proper use and reliable communication.

Meter Connection Table

Manufacturer	Radio Red	Radio Green	Radio Black
Sensus	Encoder R	Encoder G	Encoder B
Hersey	Encoder R	Encoder G	Encoder B
Neptune	Encoder B	Encoder R	Encoder G
AMCO / ABB Scancoder	Encoder G	Encoder R	Encoder B
AMCO InVision	Encoder B	Encoder R	Encoder Shld
Severn Trent	Terminal 1	Terminal 3	Terminal 5
Severn Trent - Generation 2	Encoder R	Encoder G	Encoder B
Badger RTR	N/C	Red	Black

Installation Steps

1. Refer to the table above for wiring color codes.

2. While holding the Scotchlok™ connector with the button facing down, insert un-stripped wires fully into connector.

3. Once seated, use a crimper and firmly squeeze the connector until you hear a snap and gel seeps out of the end of the connector.

4. Repeat steps 1-3 for the other two pair of wires and test to ensure the SmartTransmitter is transmitting properly.

Information to the User

FCC Class B:

"NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help."

Warning:

Changes or modifications to this device not expressly approved by MARS Company could void the user's authority to operate the equipment.

RF Exposure:

"This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter."

Industry Canada

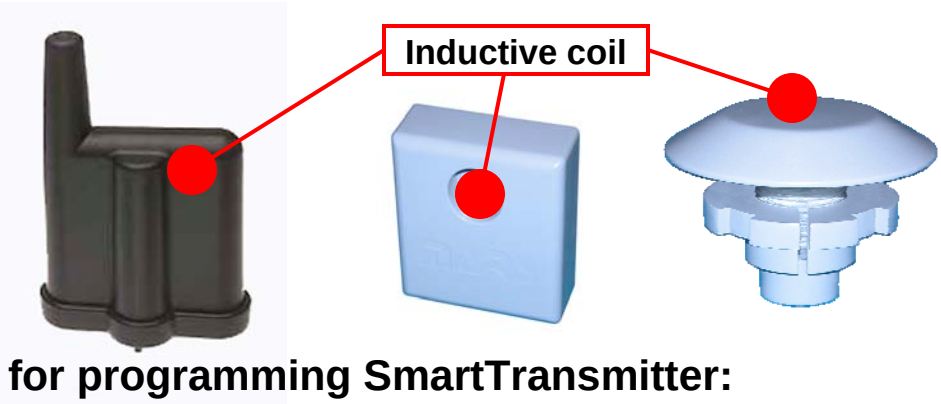
All Equipment:

This Class B digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Cet appareillage numérique de la classe B répond à toutes les exigences de l'interférence canadienne causant des règlements d'équipement. L'opération est sujette aux deux conditions suivantes: (1) ce dispositif peut ne pas causer l'interférence nocive, et (2) ce dispositif doit accepter n'importe quelle interférence reçue, y compris l'interférence qui peut causer l'opération peu désirée.

MARS SmartTransmitter Programming Guide

Programming of the MARS SmartTransmitter is performed using a SmartReader probe loaded with the SmartTransmitter programming software. Parameters are programmed into the SmartTransmitter by selecting options on a menu driven application and holding the SmartReader up to an inductive coil in the SmartTransmitter.



Steps for programming SmartTransmitter:

1. On the SmartReader, select “MARS Radio Setup” and press <Enter>
2. Type in assigned password and press <Enter>
3. Press <F1> to retrieve the current settings from the SmartTransmitter. Hold the SmartReader nozzle up to the SmartTransmitter (where indicated above), pull the trigger and release then continue to hold SmartReader in this position until you hear a tone emit from the SmartReader. Displayed on the screen will be the current parameters of the SmartTransmitter.
4. Select the parameter you wish to change and press <Enter>.
5. You will then be prompted to make your selection or enter a numerical value for the parameter. After making your selection, press <Enter> and then <Exit> to return to the “MARS Radio Setup” parameter menu. If you have entered a numerical value, after you press <Enter> you will automatically be returned to the parameter menu. An * will designate a parameter that you have just entered needs to be programmed into the SmartTransmitter.
6. To send your desired parameters to the SmartTransmitter, press <F6> and hold the SmartReader nozzle up to the SmartTransmitter,

pull the trigger and continue to hold in this position until you hear a tone emit from the SmartReader. You will then be returned to the parameter menu and your new settings will now be displayed.

7. Once all your parameters have been set, you can now turn the SmartTransmitter on. In the same manner you program the parameters, select “Radio On?”, select “ON”, press <Enter>, press <Exit>, <F6> to program, hold the nozzle up to the SmartTransmitter, pull the trigger and wait for the tone. Your SmartTransmitter is now on and transmitting data.
8. Before testing for a good transmission, you must force the SmartTransmitter to get a reading from the meter for the first time. On the parameter selection menu, press <F2>, hold the nozzle up to the SmartTransmitter, pull the trigger and wait for the tone.
9. Your SmartTransmitter is now transmitting the reading and serial number of your meter.

Parameters and Descriptions

Radio On?:

Turns the SmartTransmitter ON or OFF. This parameter should be set independently of any other parameter. If not set independently, a setting may be ignored by the SmartTransmitter.

Enc Type:

Selects the type of encoder the SmartTransmitter will be wired to.

TX Rate:

Sets how often (in seconds) the SmartTransmitter will transmit a meter reading.

Read Rate:

Sets how often (in minutes) the SmartTransmitter queries the meter for a reading.

Time:

Sets the time of day.

Day:

Sets the day of the week.

Freq:

Sets the radio frequency (in Hz) that the SmartTransmitter will transmit the meter reading.

Time Mode?:

Sets the sleep mode.
Timed – SmartTransmitter just goes to sleep at night.
Mon-Fri – SmartTransmitter just goes to sleep on the weekends.
T & M-F – SmartTransmitter goes to sleep at night and on weekends.

Start Time:

Time the SmartTransmitter wakes up.

End Time:

Time the SmartTransmitter goes to sleep.

Serial No:

Displays the serial number of the SmartTransmitter. Not user programmable.

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