TC910 Transmitter for AMR Systems

User Manual

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The TC910 Meter Interface Unit (MIU) is a radio transmitter designed for use in the 902 to 928 MHz ISM band, and a license is not required to use this equipment.

It is part of a system that requires the use of a matching radio receiver (TCR900L) to collect the readings, and a programming unit that will allow customization of input data during installation, if required.

The system is suitable for walk or drive-by radio systems, and is a one-way radio link. The transmitter sends the meter reading continuously at intervals of 5 seconds or greater and does not require a “wake-up” signal.

The transmitter is offered in three main variants

TC910 E	For interfacing with a variety of encoder registers (and single pulse meters)
TC910 G	For connection to the generator type meter interface
TC910 P	For use with single and dual pulse type meters

Within these headings other options are available for a larger battery to give a longer operating life, and data logging.

Important Note
The TC910 must only be fitted by authorized installers in approved underground water meter pits. Failure to do this will invalidate the FCC Certification.

Installation

The TC910 is supplied with a 4 core cable to connect to the meter register.

Encoders
For ECR type encoders connect as follows

Red	Clock / Power
Green	Data
Black	Ground / Common
White	Optional tamper

Note that for other encoder types the connections may be different

Generators

White	+
Black	-

The TC910 can accept pulses of either polarity without damage

Pulse

Green	Input
Black	Ground / Common
Red	Input 2
White	Optional tamper (connect to Black wire at the meter)

For wire jointing, the use of “Gel-Caps” is highly recommended for maintaining reliable connections. Unused wires should also be sealed with a Gel-Cap connection.

To achieve the best radio performance the TC910 should be mounted vertically with the cable at the bottom.
It should be mounted away from large metal areas by at least 6 inches if possible, and should preferably be hung from beneath the pit lid, or fixed to a wooden stake hammered into the ground at the bottom of the pit

For shipping, the radio transmitter is set to be switched off, and needs to be switched back on for use. For this, use the programmer unit which also allows other parameters to be set if desired.

TC910 configuration

On installation the use of the Programmer unit allows a number of settings to be adjusted. Use the arrow keys to scroll up or down to the required menu. Select the setting to change with the “Enter” key. Then type in the number, or scroll through the options and press “Enter” to change the data and store in the TC910. To back out of a menu use the “back” button.

After switch-on and in the main menu the following selections are available

Meter setup	For typical installation requirements
Meter type	
Leak test	
Batch	This allows for simple switching on or off of a number of units

In the “Install settings” menu there is the choice of

Radio ID	This is pre-programmed with the radio serial number (last 9 digits)
Reading	Sets the initial meter reading if used with pulse meters
Tamper count	Resets the tamper count
Enable the MIU	Switches the TC910 on
Disable the MIU	Switches the TC910 off
Transmitter delay	Sets the transmitter repetition period in seconds (5 secs min)

Meter Type menu

This menu allows selection of the meter type to be used with the TC910

Leak test menu

Enable leak test	Switches leak detect function on
Disable leak test	Switches the leak detect function off
Sampling interval	
Sampling count	

For more information on the use of the Programmer please refer to the reference manual for this device.

TC910 Specification

Operates in the 902 to 928 MHz band and complies with the requirements of FCC Part 15.249. It must be only be installed in an underground water meter pit of the approved type.

Temperature Range	-40°F to +158°F (-40C to +70C)
Battery Life	Over 10 years (15 years with extended life battery option)
Battery	Replaceable Lithium Thionyl Chloride
Case	High grade Polycarbonate
Antenna	Internal
Transmitted data	Meter reading Serial Number MIU Status

Notes

Please note that under FCC rules, the following notice applies

This device complies with Part 15 of the FCC Rules.
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.

This transmitter is in a sealed compartment and should not be opened or modified in any way.

Specifications for this unit may be changed without notice
The information given in this user manual may also be changed without notice

TClarity™ is a trade name for a range of AMR products manufactured by Transmit Technology Ltd
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