Allegro Pit Installation Guide

Category: Residential and Commercial Metering

Model number: ALLPU1

Type: Installation Manual

Issue: Operation

1. Introduction

The Allegro Pit Unit for wáter meters provides two-way communication capabilitiblites over the Allegro RF Network to transmit encoded wáter meter readings, alarms, and other related functions. The Allegro Pit Unit is battery operated and utilizes an FCC licensed frequency within the 450-470Mhz band.

The following are the main features of the Allegro Pit Unit:

- Periodically transmission of the water meter readings (2 times per day)
- On request reads for last-time meter reads
- Alarm report & data logging
- Remote, over-the-air firmware upgrades
- Remote unit configurations
- Confirmation of network connectivity

2. General Information

- Read the instructions below before installing the unit.
- To prevent injury or damage, do not install, operate, or maintain the unit without following the instructions in this guide.
- Store the unit in a cool, dry place.
- Follow all warnings and instructions marked on the product.

3. Unpacking and handling

- Carefully unpack the unit and inspect all contents for shipping damage before attempting to install. If any indication of physical damage is found, immediately contact the responsible transportation service and your local Master Meter representative.
- Avoid hard blows, jolts, or impact to the unit.

4. Transmitter Information

CAUTION

The User and the Installer should be aware that changes and modifications to the equipment not expressly approved by Master Meter could void warranty and the user's authority to operate the equipment.

Professionally trained personnel should install the equipment.

The Allegro Pit Unit is equipped with an internal antenna/transmitter and 1) must be installed at a minimum separation distance of at least 20 cm from all persons, and 2) must not be co-located or operating in conjunction with any other antenna or transmitter.

5. FCC and Industry Canada (IC) Class B Digital Device Notice

ATTENTION

The digital portion of the transceiver 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:

1.) Reorient or relocate the receiving antenna.

2.) Increase the separation between the equipment and receiver.

3.) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

4.) Consult the dealer or an experienced radio/TV technician for help.

CAN ICES-3 (B)/NMB-3(B)

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numerique de la classe B est conforme a la norme NMB-003 du Canada.

FCC and Industry Canada (IC) Interference Notice

This device complies with Part 15 of FCC Rules and with Industry Canada license-exempt RSS standard(s). 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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) l'appareil ne doit pas produire de brouillage;

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

FCC and Industry Canada Radiation Hazard Warning

WARNING! To comply with FCC and IC RF exposure compliance requirements, the device should be located at a distance of at least 20 cm from all persons during normal operation. The antennas used for this product must not be co-located or operated in conjunction with any other antenna or transmitter.

Le dispositif doit être placé à une distance d'au moins 20 cm à partir de toutes les personnes au cours de son fonctionnement normal. Les antennes utilisées pour ce produit ne doivent pas être situés ou exploités conjointement avec une autre antenne ou transmetteur.

The device meets the exemption from the routine evaluation limits in section 2.5 of RSS-102 and compliance with RSS-102 RF exposure, users can obtain Canadian information on RF exposure and compliance.

6. Product Specifications

Figure 1) Specification Tables

RF Radio Characteristics			
	Operating Frequency	MHz	450-470, License band
	Transmitter output power	dBm	32
	Channel Bandwidth	KHz	6.25
Dimensions			
	Body/Shaft Circumference	Inches	1.75”
	Total Width	Inches	4”
	Total Height	Inches	5.1”
Weight	Product Weight	Lbs	2.2
Environment	Pit installation, IP68, submerge depth	M	1.5
	Submerge time (@0°, 25°, 40°C)	Hours	168
Temperature	Operating temperature range for basic operation (transmission of last 12 reads, no data logger transmission)	°C	-20 to 65
	Operating temperature range for data logger transmission	°C	-10 to 65
	Storage temperature range	°C	-30 to 80
Humidity	Maximal humidity at temperature of 65 °C	%	95
Chemical exposure	Oliec acid + Hydraulic oils + Fuel+ Other Chemicals	Hours	72
Connector Types	Nicor, Bare Wire		
Regulatory	UL, FCC, IC		

Figure 2) Encoder Compatibility List

Master Meter	Elinx, AccuLinx Digital Encoders All Sizes
Sensus	ICE, Ipearl, Accustream Digital Encoders All Sizes
Mueller	Mueller Translator Register All Sizes
Neptune	ARB II – VI Encoded Registers

Figure 3) LED Indicator Behavior

Mode	Details	LED
Magnet sensing	LED should indicate in case of magnet sensing	5 seconds slow blinks (1sec on / 1 sec off)
Fast mode	Indication when unit enters to fast mode	5 seconds fast blinks (0.5Sec on / 05sec off)
Magnet release	Indication for magnet release, 8 seconds after magnet sensing	1 blink, 2 seconds duration
Install mode no parent	After magnet removal when unit enters to install mode and no parent acquirement	5 seconds slow blinks (1sec on / 1 sec off)
Install mode after parent acquirement	Unit acquired a parent, and it still in install mode	2 seconds fast blinks (0.5Sec on / 05sec off)
Normal mode	Device is associated to a parent, got configuration from Command center.	5 seconds fast blinks (0.5Sec on / 05sec off)

7. Installation Requirements

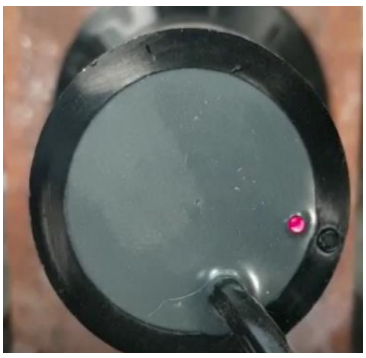
Step 1)
Remove the Meter Pit Lid

Step 2)
Remove threaded locking mechanism

Step 3)
Pass the cable through the Lid hole and install the Allegro Pit Unit into the Pit lid. If mounting brackets are available beneath the meter pit lid, the unit may alternatively be installed in this manner.

Step 4)
Fasten the unit to the meter pit lid using the threaded locking mechanism

Step 5)
Attach the Allegro Pit Unit to the encoded water meter using the appropriate Nicor or Bare Wire connections

Step 6)
Activate the Allegro Pit Unit using a magnet or Allegro Activator tool

Step 7)
Verify Status using the LED Indicators located at the bottom of the unit's neck