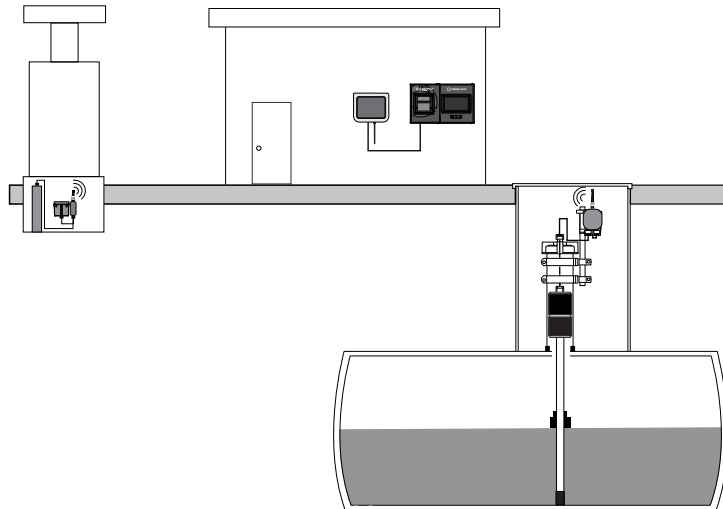


TLS-RF Series 4 Wireless System

Quick Startup Guide



Notice

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Safety Symbols

The following safety symbols may be used throughout this manual to alert you to important safety hazards and precautions.



EXPLOSIVE

Fuels and their vapors are extremely explosive if ignited.



NOTICE

Important information and/or recommended practice.

Safety and Regulatory Content – TLS–RF Series 4 Wireless System

For Gateway safety and regulatory content, refer to the MTCAP–868–041A User Guide, which is available at www.multitech.com/brands/multiconnect-conduit-ap EU Declaration of Conformity document 577014–497 declares that the Transmitter system (including Battery Pack) is in compliance with the essential requirements and other relevant provisions of the applicable EU Directives. Refer to the 577014–245 ATEX EU Foreign Language Manual Notice for the web address from where 577014–497 can be downloaded.

Veeder–Root safety and regulatory information relative to this product is available at: <https://www.veeder.com/eu-manuals>

Package Contents

The TLS–RF Series 4 Gateway kit includes the contents in Table 1:

Table 1. Gateway Kit Components

Qty.	Description
1	TLS–RF Series 4 Gateway
1	577014–482 Site Prep and Installation Manual
1	577014–483 Quick Startup Guide
1	RJ45 Ethernet Cable 1.8m (6')
1	Antenna
1	5 Volt Power Supply
1	Mounting Bracket
1	Bump on set



Contact Veeder–Root if a replacement 5V power supply is needed. Using a different power supply may damage the device and voids the warranty.

The TLS–RF Series 4 Transmitter System kit includes the contents in Table 2:

Table 2. Transmitter Kit Components

Qty.	Description
1	TLS–RF Series 4 Transmitter
1	Battery Pack
1	577014–245 ATEX EU Foreign Language Manual Notice
1	330020–528 or 330020–835 Installation Hardware Kit – Includes hardware required to install Transmitter and Battery Pack
1	(only for kits that include 330020–528) 577014–127 Intrinsically Safe Circuit Protector: Installation References
1	577013–578 ATEX TLS Monitoring Systems Contractors' Site Preparation Guide
1	577014–497 TLS–RF Series 4 Wireless Transmitter & Battery Pack EU Declaration of Conformity
1	331940–005 ATEX TLS Radio Group Descriptive System Document
1	334195–001 Power Cable 1.5m (5')



Batteries are NOT user replaceable. Only replace Battery Packs with Veeder–Root P/N 332425–XXX. 332425–013 is provided in the ATEX/UKEX 330020–836 replacement Battery Pack kit.

Gateway Panel

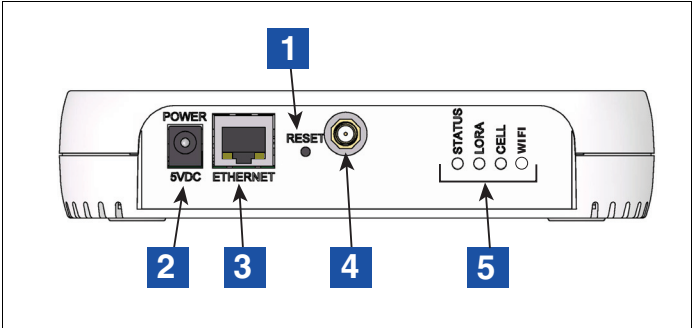


Figure 1. Gateway Panel interface

LEGEND FOR NUMBERED BOXES IN Figure 1

- | | |
|-------------------------------------|---|
| 1. Gateway reset | 4. Gateway antenna connector – type RP-SMA (female) |
| 2. Gateway DC power connector | 5. Gateway LED status annunciators |
| 3. Gateway Ethernet RJ-45 connector | |

Transmitter Board



Changing the DIP switch settings should only be done in consultation with Veeder-Root Tech Support. Most installations will not require the DIP switch settings to be changed from their default positions.



The Transmitter LEDs will turn off ~2 minutes after the bright red D8 LED turns on to conserve energy.

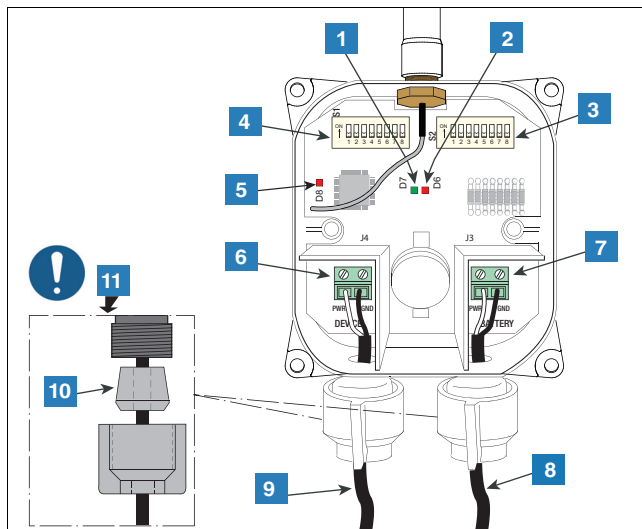


Figure 2. Connecting Device and Power Cables to the Transmitter

LEGEND FOR NUMBERED BOXES IN Figure 2

1. Green LED (D7) – ON during a device poll by the Transmitter
2. Red LED (D6) – ON when the radio is sent data for transmission
3. Switch 2 DIP switches
4. Switch 1 DIP switches
5. Red LED (D8) – ON for 20 seconds once the radio establishes a connection with the Gateway. D8 will turn off within 20 seconds if the radio disconnects from the Gateway and attempts to establish a new connection.
6. Device input terminals (PWR and GND). Observe polarity!
7. Power input terminals (PWR and GND).
8. Cable from Battery Pack – observe polarity
9. Cable from surge protector
10. Cord grip bushing
11. Orient tapered bushing as shown when attaching cord grips to Transmitter. Hand tighten the cord grip nuts until the cables are held firmly.

TLS-RF Series 4 Wireless System Installation Procedure Summary

Special Equipment Required

- Transmitter System:
 - T15 Torx bit and torque wrench, suitable for delivering and measuring between 1.6 and 2.0 Nm (14 and 18 inch-pounds) of torque.
 - Small blade screwdriver (maximum blade width 2.4 mm [3/32"])
 - Wire strippers
- Gateway:
 - Four 3.5mm (#6) screws, with anchors
 - Screwdriver
 - Drill

Installation Procedure Summary

Refer to the 577014-482 TLS-RF Series 4 Wireless System Site Prep and Installation Manual for details on executing the following steps.

1. If applicable, remove the battery isolator from the ATG's backup battery.
2. Install and power up the TLS-4xx console.
3. Install the Gateway mounting bracket on the wall.
4. Verify ATG has software version 10.P or higher.
5. Set the ATG date and time.
6. Configure ETH2 for communication with the Gateway.
7. Register the Gateway to the ATG, using the Gateway serial number read from the label on the rear (facing the wall when mounted) of the unit.
8. Mount the Gateway to the mounting bracket.
9. Connect the Gateway to either of the ATG's (2) ETH2 port RJ-45 connectors.
10. Power up the Gateway.
11. Verify that the Gateway setup screen status is Registration Successful.
12. Record the following Transmitter identification information: location (e.g. tank number and product type), Device EUI, serial number for the device that the Transmitter is connected to.
13. Connect the first Transmitter to its device.
14. Power On the first Transmitter by connecting it to its Battery Pack.
15. Observe the first Transmitter's bright red LED (D8 on far left side of board) turning on, indicating that the Transmitter has joined the Gateway network.
16. Assign the first Transmitter to the address corresponding to its device's serial number indicated in the Diagnostics > Module > Device Directory screen. Refer to the "Establishing Communication with the Transmitter" section within 577014-482.
17. Verify that the device serial number shown in the first Transmitter's Setup > Device screen matches the serial number recorded in Step 11.
18. Once Transmitter 1 is recognized by the ATG, repeat steps 11 to 17 for the remaining Transmitters. Only after a Transmitter is recognized do you proceed to the next one. Refer to the Troubleshooting Section within 577014-482 if a Transmitter is not recognized by the ATG.

Gateway Mounting Bracket Installation



Refer to the label affixed to the Gateway for additional technical information.

Verify that, if applicable, the battery isolator is removed from the ATG's backup battery prior to Gateway installation. Failure to do so can result in the ATG being unable to successfully register the Gateway.

1. Select a mounting wall nearest the storage tanks/forecourt to provide optimum reception. Once the mounting wall has been determined, identify a position for the Gateway so the antenna will be clear of obstacles and will not interfere with employee traffic. The Gateway antenna should be at least 25.4mm (1") clear from any objects and be kept as far away as possible from electrically conductive (in particular metal) objects. Avoid Gateway mounting locations which place metal obstructions or sources of electromagnetic interference within the lines of sight between the Gateway and Transmitters.
2. Get the mounting bracket (see Figure 3) and antenna from the Gateway installation kit. Locate a position on the wall to attach the Gateway mounting bracket.
3. Hold the mounting bracket against the wall and mark the screw locations on the wall. Drill holes for the screws and insert anchors. Place the mounting bracket over the anchors, using the bumpon set if desired, and secure it with screws.

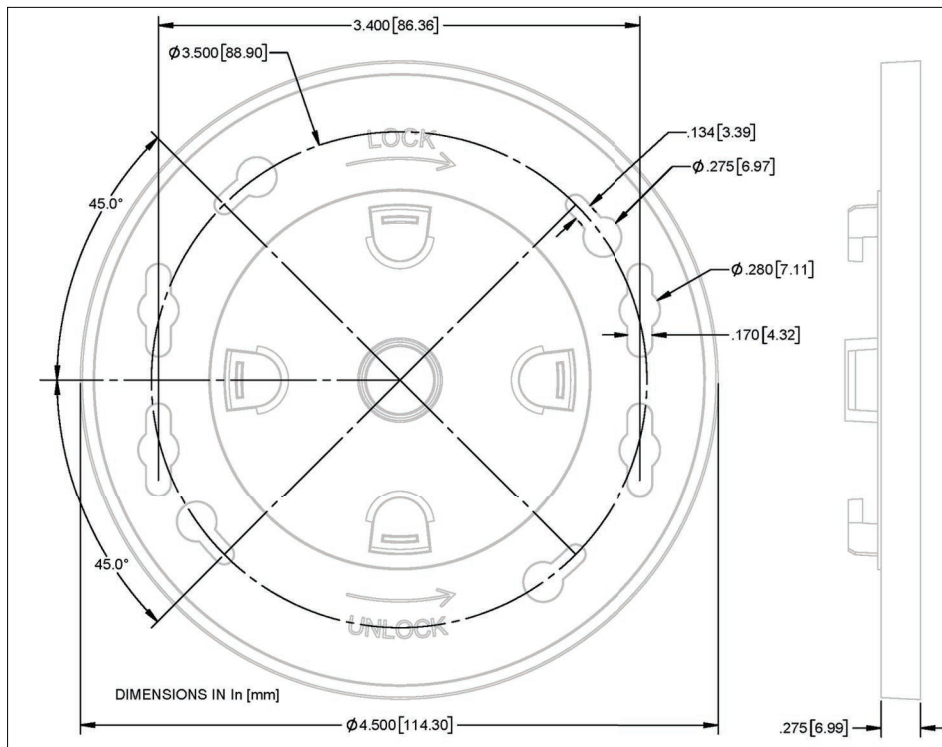


Figure 3. Gateway Mounting Bracket – Dimensions Inches [mm]

Change Gateway Password

It is recommended to change the Factory Default Password to enhance the security of the TLS–RF Series 4 Wireless System. Perform the following steps to change the Default Gateway password.

1. Locate the label on the rear of the unit and note the Factory Default IP Address, Username, and Password (encircled in red on the example label in Figure 4). The Xs in the Password refer to the Gateway's serial number. For example, if the Gateway serial number is 12345678, then its default Password is **Admin12345678!**.

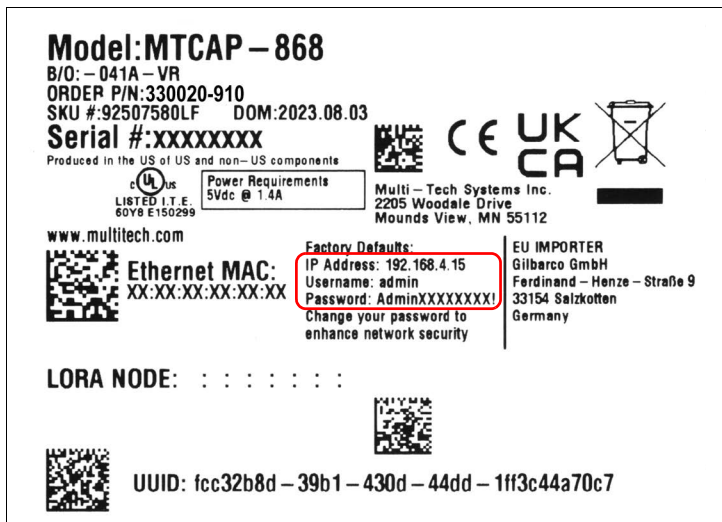


Figure 4. Example Gateway Label – IP Address, Username, and Password

2. Set a web browser and Ethernet enabled device's Ethernet IP settings according to the IP address read from the Gateway label. For example, if the IP address is 192.168.4.15, then set the device's Ethernet IP settings to the following:
 - Disable DHCP / automatic IP address assignment
 - IP address = 192.168.4.13
 - Subnet mask = 255.255.255.0
 - Gateway = 192.168.4.1

Refer to Figure 5 (Windows 10) and Figure 6 (Windows 11) for example Ethernet IP setting configuration steps.

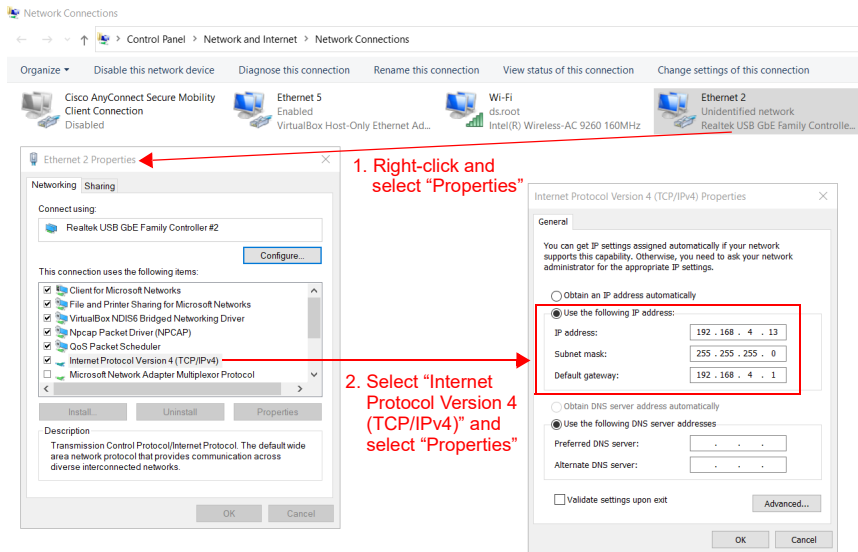


Figure 5. Configure Ethernet IP Settings - Windows 10

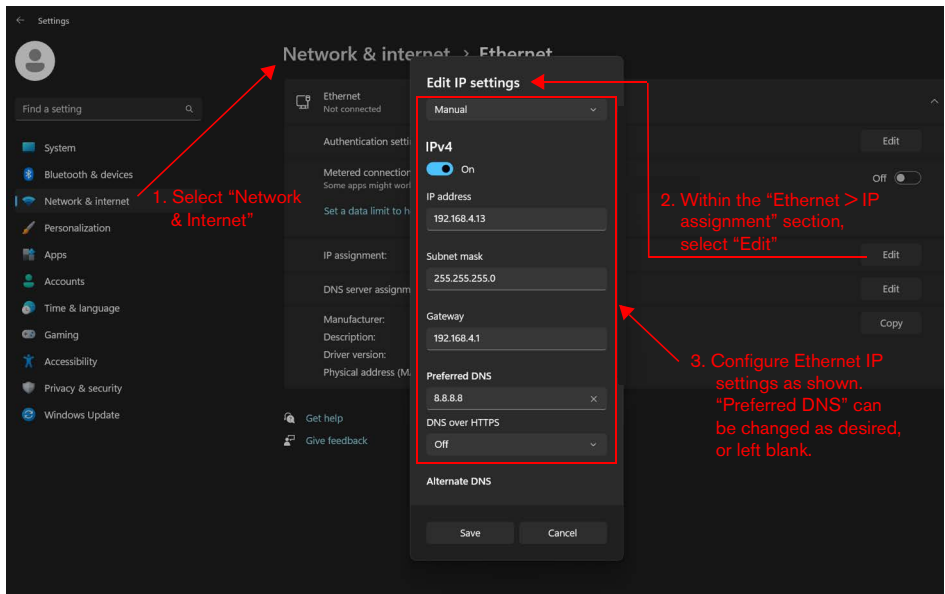



Figure 6. Configure Ethernet IP Settings - Windows 11

3. Connect the Ethernet ports of the Gateway and web browser enabled device using the Gateway's Ethernet cable. Set the web browser address bar to the IP address (e.g. https://192.168.4.15) read from the Gateway label. Wait until the Gateway login page is loaded as shown in Figure 7.

Authorized users only. Individuals using this system are subject to having all their activity monitored and recorded by system personnel. By using this system, you are deemed to have read, understood, and agreed to the terms of the User Agreement. If you do not agree to the terms of the User Agreement, you may not use this system. If you are an administrator, you may delete this message.


 **VEEDER-ROOT**

mPower™ Edge Intelligence Conduit AP

Login

MULTITECH

Figure 7. Example Gateway Login Page

4. Enter the username (e.g. admin) and password (e.g. Admin12345678!) read from the Gateway label into the corresponding login page fields and then select the Login button. Once logged in go to Administration>User Accounts (item 1, Figure 8) and select the  icon in the OPTIONS column for the username on the Gateway label (item 2).

DOT

mPower™ Edge Intelligence Conduit AP - Application Enablement Platform

MTCPAP-915-041A Firmware 6.3.0 TLS-RF Series 4 Gateway

Home

Setup

Administration

User Accounts

Access Configuration

Web UI Customization

Usage Policy


Support

Status & Logs

Help

LOCAL USER ACCOUNTS

Users

ENABLED	USERNAME	ROLE	CREATION DATE	LAST LOGIN	PASSWORD CHANGED	OPTIONS
✓	admin	tlrf-user	07/14/2023 18:53:26	09/01/2021 07:14:37	09/01/21	

Records: 10 25 50 100

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Figure 8. Gateway Local User Accounts Page

5. Within the Edit User Account page select the Change Password button (item 1, Figure 9).

EDIT USER ACCOUNT ⓘ

Users

User Details

Enabled

Username: admin

Role: tlarf-user

First Name:

Last Name:

Title:

Division:

Employee Identification:

Change Password ⓘ

Contact Information

Figure 9. Gateway Edit User Account Page

6. Within the Change My Password window enter the password read from the Gateway label into the Old Password field and enter the desired new password, which must follow the guidelines listed in the window, into the New Password field. Select the OK button (item 1, Figure 10).

CHANGE MY PASSWORD

Old Password

New Password

1. At least 6 characters long

2. At most 64 characters long

3. Characters from at least 1 of 4 character classes (Uppercase, Lowercase, Numeric, Special)

OK Cancel

Figure 10. Change My Password Window

7. Observe the notification that the password was updated successfully (item 1, Figure 11). The notification can be selected to hide it.

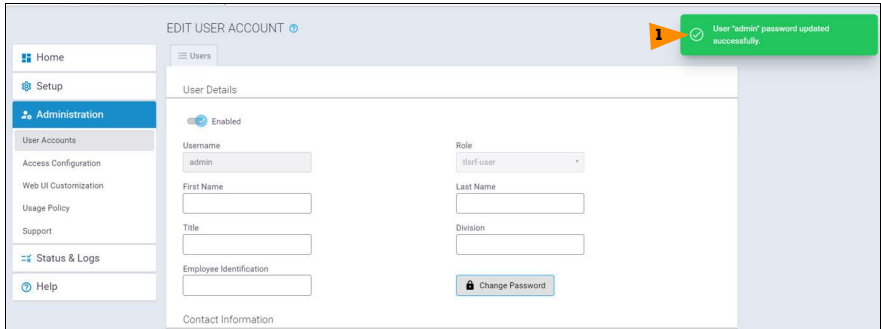


Figure 11. Password Updated Successfully Notification

Register the Gateway with the ATG

1. Configure the ATG to communicate with the Gateway and then register the Gateway to the ATG. Refer to the “Setup ATG to Recognize the Gateway” and “Connect and Register the Gateway with the ATG” sections in the 577014–482 TLS–RF Series 4 Wireless System Site Prep and Installation Manual for additional details.
2. Position the Gateway on the bracket and rotate it clockwise to lock it into place. Once mounted to the bracket the Gateway’s antenna and panel interface will be facing down toward the floor.
3. Screw the Gateway antenna onto the antenna connector on the bottom of the unit.
4. If the mounting wall is metal, rotate the Gateway antenna up 45 degrees from vertical, otherwise the antenna should be pointing straight down.
5. Connect the Ethernet cable between the Gateway and the ATG. The Gateway must be connected to the TLS console’s ETH2 port (either of the (2) RJ–45 connectors).
6. Connect the Gateway power cable to a dedicated outlet.
7. Power on the Gateway – observing the LED annunciators on the Gateway Panel Interface (ref. Figure 1) wait for the LORA LED to turn on solid and the STATUS LED to blink twice. This indicates that the Gateway is ready for use. However, another approximately 3 minutes is required after the Gateway LED’s indicate that it is ready for use until the ATG receives the Gateway’s identification/status information and then registers the Gateway to it.

Gateway User Interface

The Gateway provides a User Interface (UI) that is accessible through a web browser. Although most TLS–RF Series 4 Wireless System installations will not require any changes to the Gateway configuration through the UI, certain installations may either benefit from or require Gateway configuration changes through the UI.


The Gateway UI can be returned to its factory default state by holding the Gateway’s reset button for between 5 and 30 seconds and then releasing. Note that holding the Gateway’s reset button for less than 5 seconds and then releasing will reboot the Gateway without changing its configuration.

Upon logging into the Gateway UI as described in the “Change Gateway Password” section the Device Information home page will be displayed. Figure 12 depicts the home page with the menu of available pages on the left side fully expanded.



Figure 12. Gateway Home Page with Menu Expanded

The following is a description of the functionality that each page provides:

Page	Sub-Page	Functionality
Home	—	Overview of the Gateway configuration (see Figure 12)
Setup	Network Interfaces	Includes the following eth0 configurable fields: <ul style="list-style-type: none"> • IP address (default – 192.168.4.15) • IPv4 mode (default – Static) • Network direction (default – WAN)
	DHCP Configuration	Allows the Gateway to be configured as a DHCP server.
	Time Configuration	Set the Gateway Date & Time
		 The Gateway does not provide date & time backup while unpowered. As a result, the date & time will revert to default after a power cycle. Power the Gateway through an Uninterruptible Power Supply (UPS) to retain its date & time through power outages.
Administration		Enable SNTP.
	User Accounts	Change the password.
	Access Configuration	Includes the following configurable fields: <ul style="list-style-type: none"> • Web server ports • SSH port • Reverse SSH Tunnel (default – Disabled)
	Web UI Customization	Product and support information that is specific to the Gateway P/N, which is indicated as the Custom ID on the Home page.
	Usage Policy	Gateway usage policy
Status & Logs	Support	Technical Support contact information for the TLS–RF Series 4 Wireless System that is specific to the Gateway P/N, which is indicated as the Custom ID on the Home page.
	Statistics	Wireless communication data such as number of CRC errors, network join requests/responses, total packets, and packets dropped.

Install Transmitter

A Transmitter/Battery Pack pair is required for each device that will be monitored by the ATG. Follow the steps below to install the Transmitter system within a sump. Refer to the 577014–482 TLS–RF Series 4 Wireless System Site Prep and Installation Manual for the steps to install the Transmitter system within a dispenser pan.

When replacing the Transmitter cover onto the housing verify the following to ensure a watertight seal:

- Retaining washers are assembled to the screws.
 - Gaps don't exist between the cover, washers, and enclosure.
 - Gasket is properly seated within the cover.
 - Screws are tightened to between 1.6 and 2.0 Nm (14 and 18 inch-pounds).
1. Attach the two 12.7 mm [1/2"] conduit clamps to the two riser hangers from the installation hardware kit (330020–528 or 330020–835) (50.8 mm [2"] or 101.6 mm [4"], as required) as shown in Figure 13. Orient riser hangers so holes for 12.7mm (1/2") clamps (Item 4) are vertically aligned.

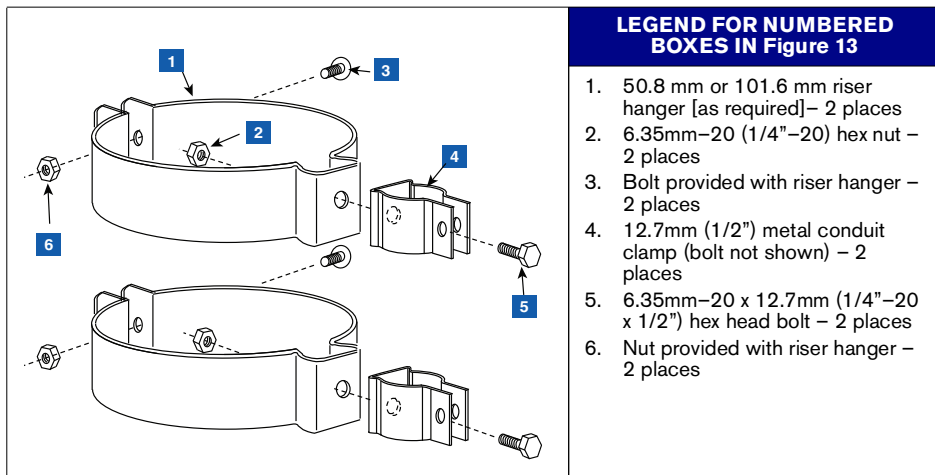


Figure 13. Attaching 12.7 mm [1/2"] Conduit Clamps to Riser Hangers

2. Attach 12.7 mm (1/2") conduit to the 12.7 mm (1/2") metal clamps as shown in Figure 14 and tighten. The clamp bolts are integral to the clamps and do not require retention nuts.

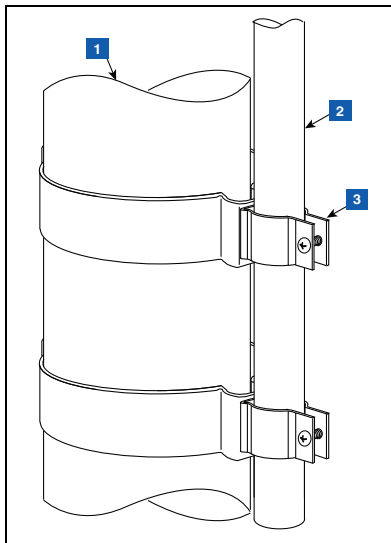


Figure 14. Attaching 12.7mm Conduit to 12.7mm Clamps on Riser

LEGEND FOR NUMBERED BOXES IN Figure 14

- | | |
|--|--|
| 1. Probe Riser | 3. 12.7mm (1/2") metal clamps with integral bolts – 2 places |
| 2. Customer supplied 12.7mm (1/2") conduit. For a sump installation the conduit should be of an appropriate length to allow for the Transmitter to be installed with a 25.4mm (1") gap between the antenna tip and sump lid. | |

3. Attach Transmitter to support bracket as shown in Figure 15.

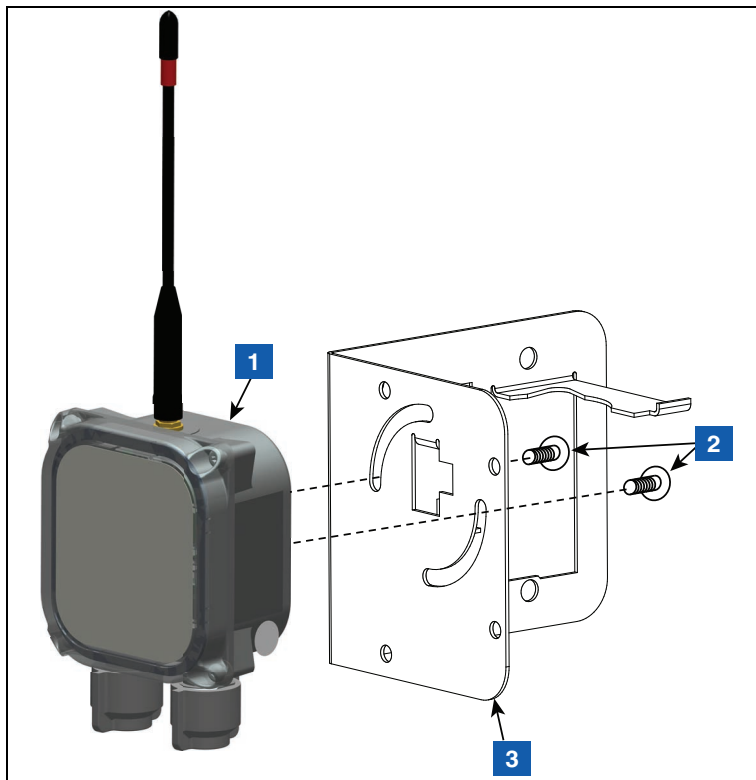


Figure 15. Attach Transmitter to 332295-001 Bracket

LEGEND FOR NUMBERED BOXES IN Figure 15

- | | |
|---|--------------------|
| 1. Transmitter | 3. Support bracket |
| 2. #10-32 x 12.7mm (1/2") taptime screw –
2 places | |

4. Attach two 12.7mm (1/2") plastic clamps to the support bracket as shown in Figure 16.

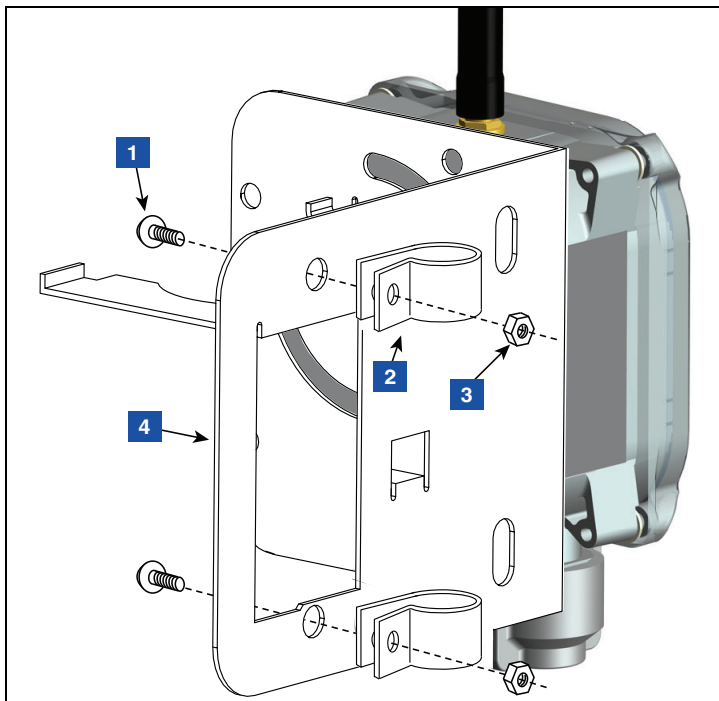


Figure 16. Attach Conduit Clamps to Support Bracket

LEGEND FOR NUMBERED BOXES IN Figure 16

- | | |
|--|------------------------------|
| 1. #10-32 x 12.7mm (1/2") taptite screw – 2 places | 3. #10-32 hex nut – 2 places |
| 2. 12.7mm (1/2") plastic clamp – 2 places | 4. Support bracket |

5. Loosen the clamps installed in Step 4 on the back of the support bracket and slide the two clamps down over the conduit. Position the support bracket so the tip of the antenna is about 25.4mm (1 inch) below the top of the sump, then tighten the two conduit clamps (see Figure 17). Insert the Battery Pack into its support bracket cradle as shown.

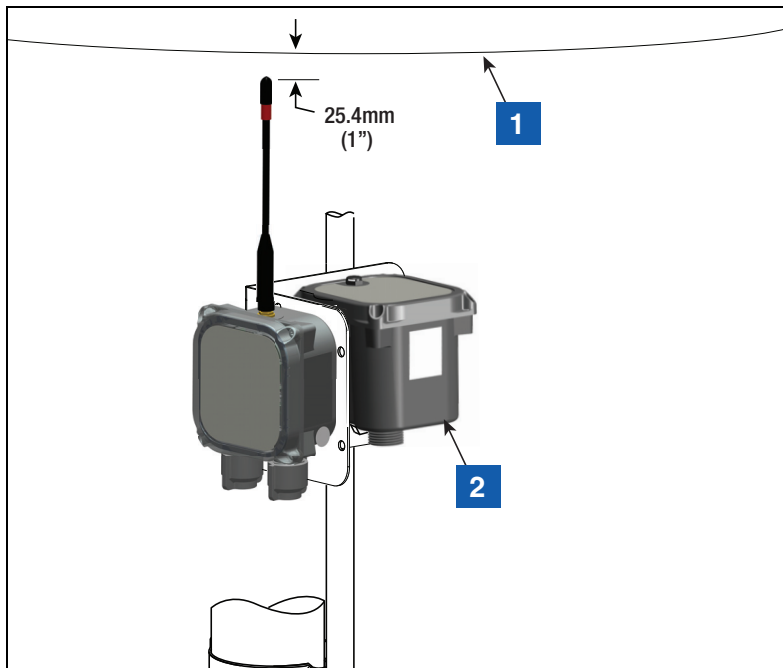


Figure 17. Installing Support Bracket at Recommended Transmitter Antenna Position

LEGEND FOR NUMBERED BOXES IN Figure 17

1. Top of sump

2. Battery Pack

6. Get the surge protector from the 330020–528 installation hardware kit and splice it in the cable between the device (e.g. Mag Probe or Mag Sensor) and the Transmitter.

7. Secure cables to the 12.7mm (1/2") conduit using (2) 12.7mm (1/2") plastic clamps, (2) #10–32 x 25.4mm (1") screws, and (2) #10–32 hex nuts included in the kit.
8. Refer to Figure 18 for an example of a completed Transmitter installation within a sump.

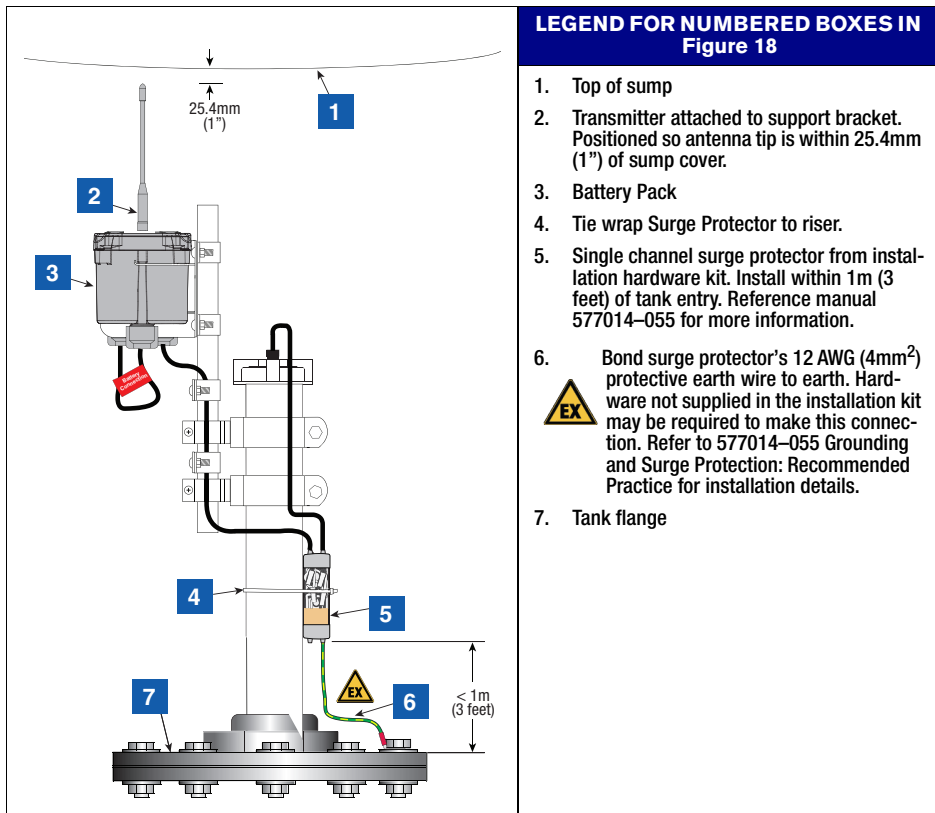


Figure 18. Example Mag Probe Transmitter Cable Connections



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other assistance, please visit:
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