Armstrong

SteamEye®
Best Practice Steam Trap Monitoring

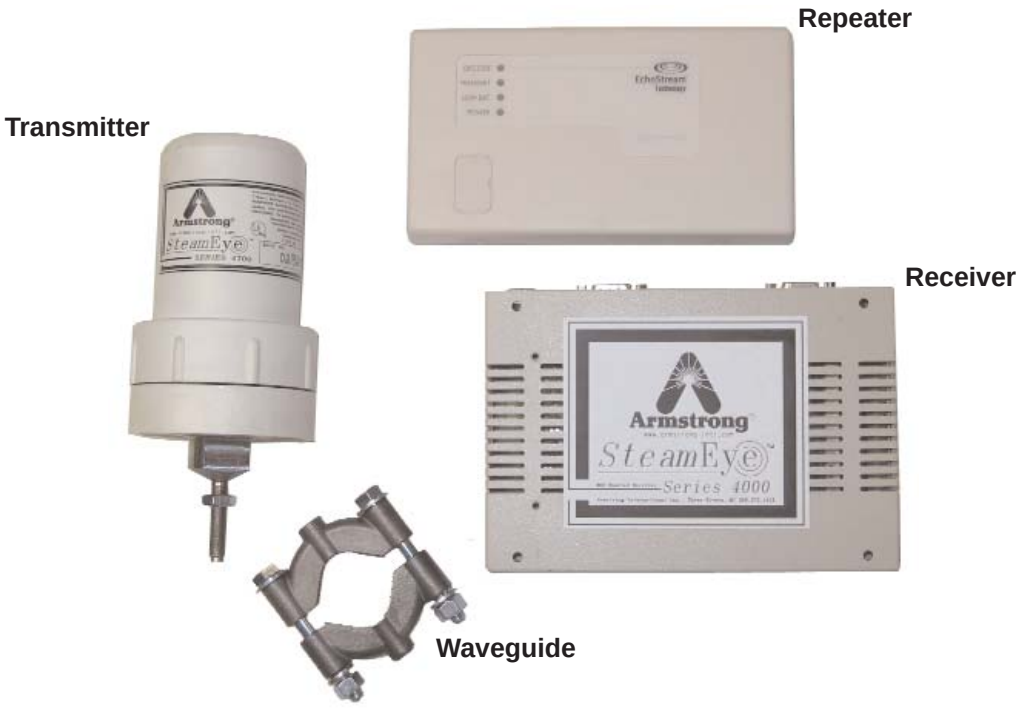
Series 4700E
Installation, Operation and Maintenance

This bulletin should be used by experienced personnel as a guide to the installation and maintenance of the Armstrong SteamEye. Selection or installation of equipment should always be accompanied by competent technical assistance. We encourage you to contact Armstrong or your local Representative if further information is required.

SteamEye Series 4700E (Europe)

Models: URFC 4700E and URFM 4700E conform to EN60079-15:2003 standard.

Main Components (packaged contents will vary)



Accessories

- Transformers (Receiver and Repeater)
- Heat Sink (For pressures above 13.7 bar)
- Insulation Wrap (Outdoor, cold climate applications)
- Pressure switch connection (For Model URFM 4700E)
- Ethernet cable
- Nema IV enclosure (optional)
- Waveguide is the standard transmitter mounting assembly, for other mounting options please consult factory.

Transmitter Model URFC 4700E

Installation Instructions

1. Verify tag number to transmitter as shown in Figure 1.

2. Install waveguide on inlet pipe of steam trap.
   - IMPORTANT: Waveguide must be located no greater than 15cm from steam trap inlet.
   - Ensure waveguide orientation provides clearance for transmitter installation.
   - Torque waveguide bolts to 22 newton-meters. (For alternate transmitter mounting, consult factory)

3. Using 19mm open ended wrench, thread transmitter onto waveguide.
   - Torque transmitter to 17 newton-meters.
   CAUTION: Do not over tighten.

4. Using 13mm open ended wrench tighten jam nut.

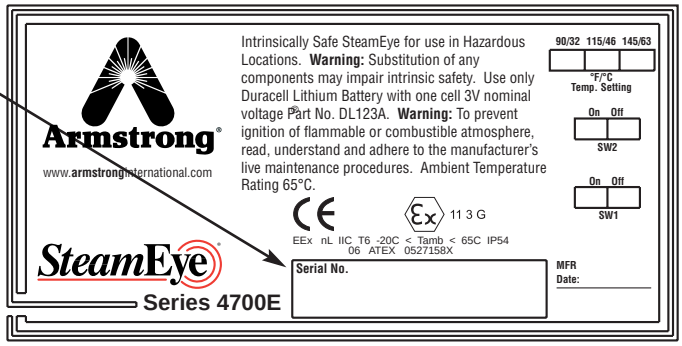


Figure 1. Model URFC 4700E Installation

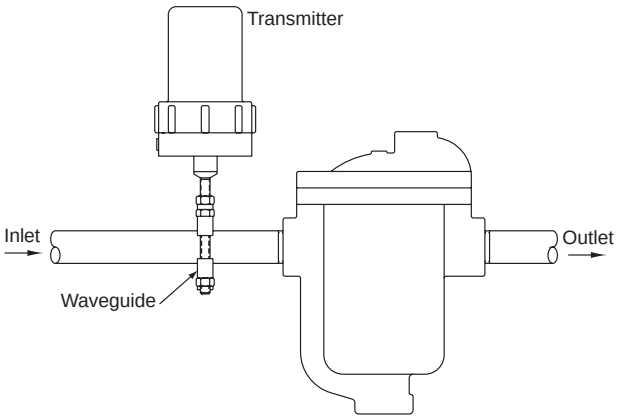


Figure 2. Model URFC 4700E Installation

Transmitter Model URFM 4700E

Installation Procedure

1. Verify tag number to transmitter as indicated in Figure 1.

2. Install waveguide on inlet pipe of steam trap.
   IMPORTANT: Waveguide must be located no greater than 15cm from steam trap inlet.
   - Ensure waveguide orientation provides clearance for transmitter installation.
   - Torque waveguide bolts to 22 newton-meters. (For alternate transmitter mounting, consult factory)

3. Using 19mm open ended wrench, thread transmitter onto waveguide.
   - Torque transmitter to 17 newton-meters.
   CAUTION: Do not over tighten.

4. Using 13mm open ended wrench tighten jam nut.

5. Verify pressure switch has been properly installed up stream of steam trap.

6. Connect cable from transmitter to pressure switch.
   - See figure below for proper pressure switch wiring.

   CAUTION: Cable cannot rest on steam pipes or hot surfaces.

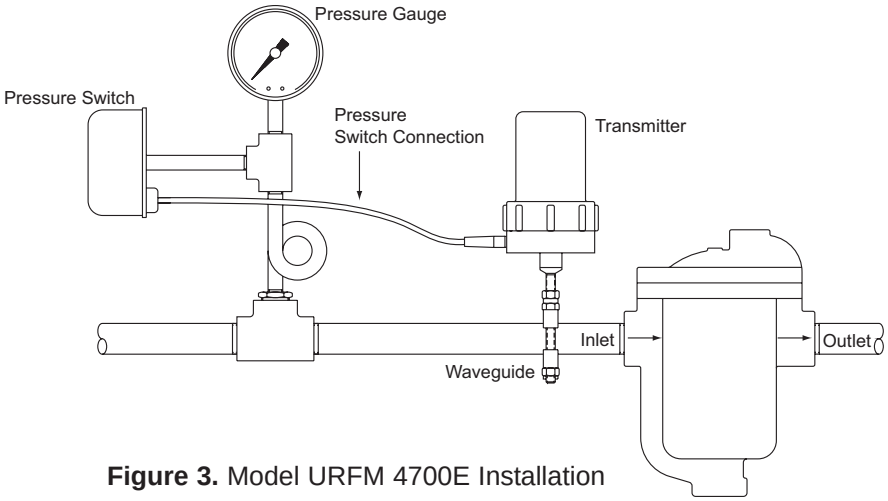


Figure 3. Model URFM 4700E Installation

4700E Receiver

Installation Procedure

1. Gateway Receiver (WER)
   a. Preprogrammed by Armstrong from device configuration sheet supplied by the customer.

2. Connect power supply

3. Connect LAN cable

4. Logon to web address assigned with user name and password provided.
   a. Web address supplied by customer. (http://xxx.xxx.xxx.xxx)

5. SteamEye web page
   a. Critical equipment tab
      i. List of traps deemed critical by customer
      ii. Email or txt message sent when critical trap has changed state
   b. Failed equipment tab
      i. List of all failed traps
   c. All equipment tab
      i. Total trap population monitored by SteamEye
   d. Configuration tab
      i. Network Configuration
      ii. Hardware Profile

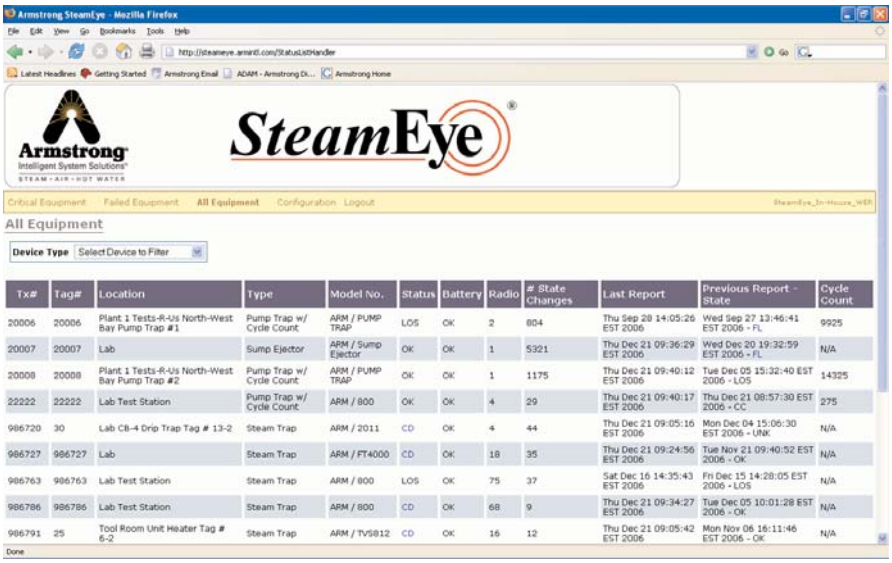


Figure 4. Example of SteamEye Web Page

4700E Repeater

Installation Procedure

1. Locate receiver installation location as designated by RF survey.
2. Mount enclosure and repeater inside enclosure.
3. Run electrical cord and plug in transformer.
4. Make sure power lights are activated.

System Operation and Trouble Shooting

Verify that transmitters are checking in by logging on to designated web address with user name and password provided by Armstrong.

1. BLOWTHRU indicated

a. Check trap operation and sizing. An oversized or undersized trap could result in a BLOWTHRU condition.
b. If there is a pressure switch, verify connection.
c. Consult factory if trap is good and problem persist.

2. COLD indicated

a. Is steam turned on to the trap?
b. Strainer ahead of trap may need cleaning
c. Are valves upstream and downstream of the trap working properly?
d. Trap maybe undersized.
e. Excessive air in the steam system can cause "air binding".
f. Dirt and scale in the system may have plugged the orifice or the bucket vent inside the trap.

3. LOST indicated

a. Make sure transmitter is still installed in the trap.
b. Replace battery and press the "reset" button. (consult factory on procedure)
c. Repeater may not be close enough to transmitter or may not be functioning properly. Make sure power is sup plied to repeater.

4. LOW battery status indicated

a. Replace battery following battery replacement procedure.
b. Battery Replacement
   1. Wipe down unit with damp cloth to remove any potential electrical discharge.
   2. Remove outer cap by unscrewing cap counterclockwise.
   3. Remove battery clip and battery.
   4. Replace battery (with only Duracell Lithium battery part no. DL123A).
   5. Snap battery clip back into place.
   6. Screw cap clockwise back onto base unit.

Technical Data

Series 4000 Gateway Receiver	
Power Requirements	12 VDC
Power Consumption	400 mA
Receiver Type	Narrow-Band Spread Spectrum
Frequency	868-869 MHz
Band Width	100 KHz
Cable	Ethernet CAT 5 Cable

Repeater Technical Data	
Power Requirements	12 VDC
Power Consumption	70 mA
Receiver Type	Narrow-Band Spread Spectrum
Frequency	868-869 MHz
Band Width	100 KHz

4700 Transmitter Technical Data	
Battery	Duracell #DL123A 3 VDC: 2/3" size; $LiMnO_2$
Battery Life	5 Years (typical)
Operating Frequency	868-869 MHz
Transmission Band Width	200 KHz
Communications	Proprietary Spread Spectrum Format
Atex Explosion Proof	ATEX Zone 11, CE Marked, CE11 3G EEx nl 11C T6 IP54