



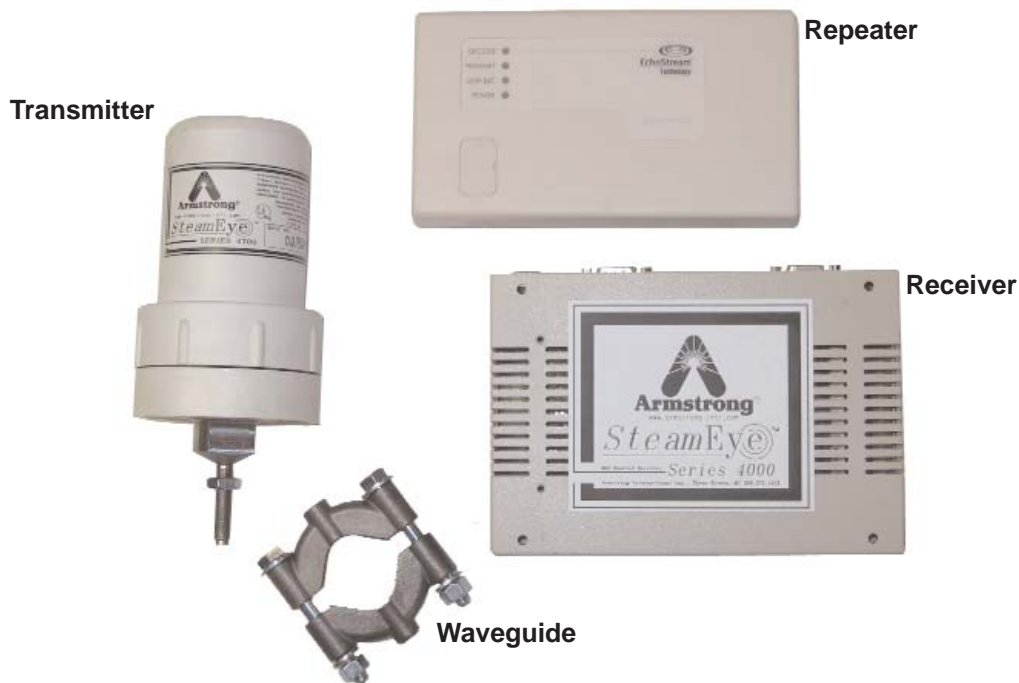
Series 4700 Installation, Operation and Maintenance

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 4700

Models: URFC 4700 and URFM 4700.

Main Components (packaged contents will vary)



Accessories

- Transformers (Receiver and Repeater)
- Heat Sink (For pressures above 200 psi)
- Insulation Wrap (Outdoor, cold climate applications)
- Pressure switch connection (For Model URFM 4700)
- Ethernet cable
- Nema IV enclosure (optional)
- Waveguide is the standard transmitter mounting assembly, for other mounting options please consult factory.

Transmitter Model URFC 4700

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 6" from steam trap inlet.
 - Ensure waveguide orientation provides clearance for transmitter installation.
 - Torque waveguide bolts to 200 inch-lb.
(For alternate transmitter mounting, consult factory)
3. Using 3/4" open ended wrench, thread transmitter onto waveguide.
 - Torque transmitter to 150 inch-lb.
CAUTION: Do not over tighten.
4. Using 1/2" open ended wrench tighten jam nut.

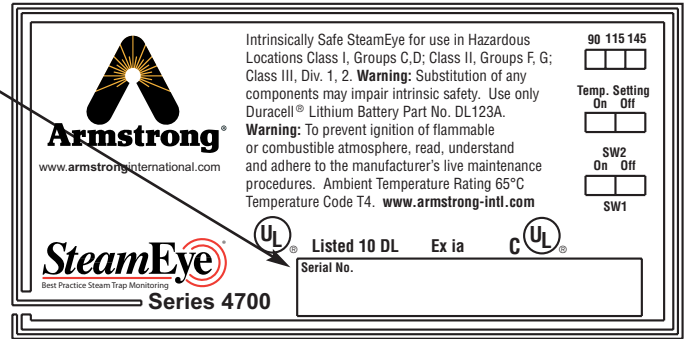


Figure 1. Model URFC 4700 Installation

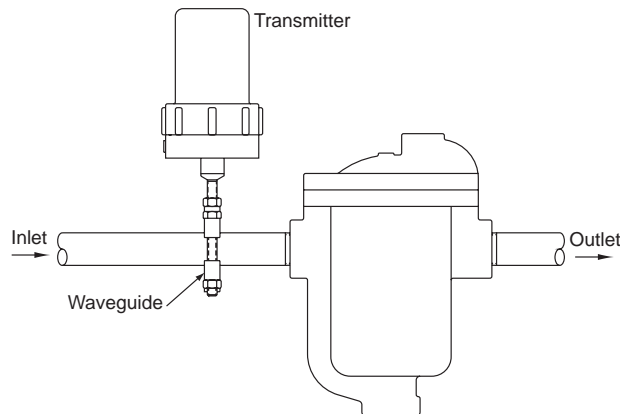


Figure 2. Model URFC 4700 Installation

Transmitter Model URFM 4700

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 6" from steam trap inlet.
 - Ensure waveguide orientation provides clearance for transmitter installation.
 - Torque waveguide bolts to 200 inch-lb.
(For alternate transmitter mounting, consult factory)
3. Using 3/4" open ended wrench, thread transmitter onto waveguide.
 - Torque transmitter to 150 inch-lb.
CAUTION: Do not over tighten.
4. Using 1/2" 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.

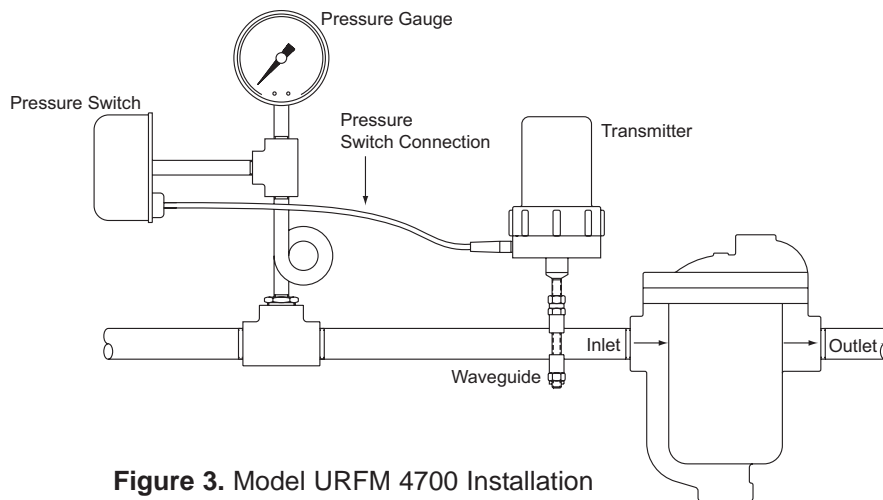


Figure 3. Model URFM 4700 Installation

4700 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

Tx#	Tag#	Location	Type	Model No.	Status	Battery	Radio	# State Changes	Last Report	Previous Report - State	Cycle Count
20006	20006	Plant 1 Tests-R-U's North-West Bay Pump Trap #1	Pump Trap w/ Cycle Count	ARM / PUMP TRAP	LOS	OK	2	804	Thu Sep 28 14:05:26 EST 2006	Wed Sep 27 13:46:41 EST 2006 - FL	9925
20007	20007	Lab	Sump Ejector	ARM / Sump Ejector	OK	OK	1	5321	Thu Dec 21 09:36:29 EST 2006	Wed Dec 20 19:32:59 EST 2006 - FL	N/A
20008	20008	Plant 1 Tests-R-U's North-West Bay Pump Trap #2	Pump Trap w/ Cycle Count	ARM / PUMP TRAP	OK	OK	1	1175	Thu Dec 21 09:40:12 EST 2006	Tue Dec 05 15:32:40 EST 2006 - LOS	14325
22222	22222	Lab Test Station	Pump Trap w/ Cycle Count	ARM / 800	OK	OK	4	29	Thu Dec 21 09:40:17 EST 2006	Thu Dec 21 09:57:30 EST 2006 - CC	275
986720	30	Lab CB-4 Drip Trap Tag # 13-2	Steam Trap	ARM / 2011	CD	OK	4	44	Thu Dec 21 09:05:16 EST 2006	Mon Dec 04 15:06:30 EST 2006 - UNK	N/A
986727	986727	Lab	Steam Trap	ARM / FT4000	CD	OK	18	35	Thu Dec 21 09:24:56 EST 2006	Tue Nov 21 09:40:52 EST 2006 - OK	N/A
986763	986763	Lab Test Station	Steam Trap	ARM / 800	LOS	OK	75	37	Sat Dec 16 14:35:43 EST 2006	Fri Dec 15 14:28:05 EST 2006 - LOS	N/A
986786	986786	Lab Test Station	Steam Trap	ARM / 800	CD	OK	68	9	Thu Dec 21 09:34:27 EST 2006	Tue Dec 05 10:01:28 EST 2006 - OK	N/A
986791	25	Tool Room Unit Heater Tag # 6-2	Steam Trap	ARM / TV5812	CD	OK	16	12	Thu Dec 21 09:05:42 EST 2006	Mon Nov 06 16:11:46 EST 2006 - OK	N/A

Figure 4. Example of SteamEye Web Page

4700 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 supplied 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 (120 VAC adapter provided)
Power Consumption	300 mA
Receiver Type	Narrow-Band Spread Spectrum
Frequency	902 - 928 MHz
Band Width	100 KHz
Cable	Ethernet CAT 5 Cable

Repeater Technical Data	
Power Requirements	14 VDC (120 VAC adapter provided)
Power Consumption	100 mA
Receiver Type	Narrow-Band Spread Spectrum
Frequency	902 - 928 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	902 - 928 MHz
Transmission Band Width	200 KHz
Communications	Proprietary Spread Spectrum Format
Atex Explosion Proof	Class I, Groups C, D; Class II, Groups F, G; Class III, Div. 1,2