

Base Mount Installation

The 100W may be mounted to a flat surface using the base tab.



Caution Observe the following guidelines for mounting the 100W using the wall mount procedure:

- Endpoint positioning other than upright could negatively affect radio performance and battery life.
- Use only Itron-approved splice kits or inline connectors.

Required Base Mounting Tools and Hardware

- Drill and drill bits appropriate for mounting location material.
- Common hand tools for the selected fastening method.
- Mounting screws: #10 size pan head screws appropriate for the wall or pit box material.

To install the 100W endpoint using the base mount procedure

1. Select a flat surface.
2. Position the endpoint vertically.
3. Mark the mounting-hole location.
4. Drill a pilot hole in the mounting location material. Follow the screw manufacturer's recommendation for the pilot hole size.
5. Position the 100W and insert a #10 pan head screw in the base mounting tab. Carefully tighten the mounting screw until the 100W is secure.

Caution Do not over-tighten the mounting screws. Over-tightening the mounting screws may break the endpoint mounting tabs.



Shelf Mount Installation

This section describes 100W endpoint installation using a shelf mount adapter to mount the endpoint in a pit lid slot.

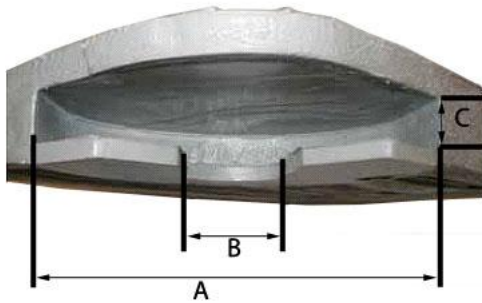


Caution Observe the following guidelines for mounting the 100W using the wall mount procedure:

- Endpoint positioning other than upright could negatively affect radio performance and battery life.
- Use only Itron-approved splice kits or inline connectors.

The pit lid and slot must have the correct dimensions for the 100W or 100WP assembly to fit properly.

The following illustration and the accompanying table give pit lid slot dimensions for the shelf mount installation method.



Pit Lid Slot Dimensions		
Dimension	Minimum (inches)	Maximum (inches)
A	6 3/4	N/A
B	2	5 3/4
C	3/4	1

Required Tools and Hardware

Itron 100W Shelf Mount Kit

To install using the shelf mount adapter

1. With the foam spacers facing up, insert the shelf mount adapter into the opening in the disk.



2. Push the adapter into the opening gently until the adapter snaps into place. Insert the shelf mount adapter into the 100W endpoint antenna slot pushing firmly with your thumb until the adapter tab locks into place in the 100W antenna slot opening.



- Slide the adapter assembly into the pit lid with the foam spacers positioned on each side of the pit lid slot.



Correct position for foam spacers



Caution Do not install the adapter assembly in a manner that provides little or no support under disk's edge.



Incorrect mounting position for foam spacers.

- The installed endpoint position must be vertical and upright when the lid is replaced on the pit.

Caution When placing the pit lid on to the pit box after the shelf mount adapter installation, use care to avoid pinching or damaging the 100W meter cable. Any endpoint position other than upright may negatively affect radio performance and battery life.

Through Lid Mount

This section provides instructions to mount the 100W endpoint in a pit lid with a drilled, round 1-3/4-inch, 1-7/8-inch, or 2-inch hole.



Caution Some pit lids have a molded, recessed cavity that allows Itron 40W-1, 50W-1, and 50W-2 ERT modules to sit flush with the top surface of the lid. However, the dome of the endpoint retainer for the 100W endpoints has a smaller diameter and does not fill the pit lid cavity. This can cause the cavity to become a trip hazard. Itron does not recommend using this type of pit lid with 100W endpoints.

Required Tools and Hardware

This mounting method requires the Pit Lid Mounting Kit. Refer to the 100W Installation Methods Overview (PUB-1300-004) for guidance on which kit to install for different pit lid material and traffic conditions.

Pit Lid Mounting Kit (CFG-1300-004)



Note The Pit Lid Mounting Kit is not intended for applications involving vehicular traffic. Use the Remote Antenna Kit in incidental traffic areas (such as residential environments).

To install in lids with holes using the Pit Lid Mounting Kit (CFG-0771-011)

This section provides the instructions to install the 100W endpoint in a pit lid with a hole using the Pit Lid Mounting Kit (CFG-1300-004).

1. Verify you have the following items to complete the installation.

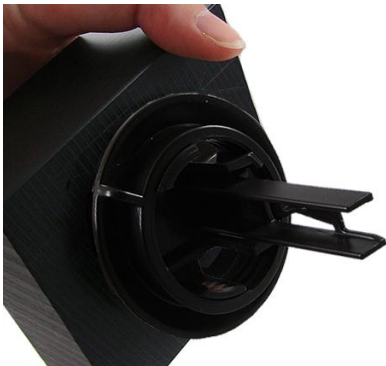


- A Retainer clip
- B Pit lid with a pre-drilled hole
(simulated pit lid material shown)
- C Retainer clip collar
- D 100W endpoint

2. Insert the retainer clip into the pit lid hole with the convex surface on the top of the pit lid.



3. From the bottom side of the lid, screw on the threaded retainer clip collar until the beveled top rests against the pit lid.



Note Ensure the beveled edge of the clip collar is toward the top of the pit lid.

4. Align and insert the retainer clip tab into the retainer clip receptacle on the 100W housing.



5. Verify the clip locks into place in the housing.



Caution Carefully align the 100W through lid assembly. If the assembly is improperly aligned, the pit lid may not close.



Pit Lid Mounting Kit installation is complete.

Installing the Endpoint in a New Lid

This section describes installation of the 100W endpoint in a pit lid without a drilled hole.

To install the 100W in new lids

1. Select a hole location with enough clearance on the bottom side of the lid to attach the threaded clip collar.
2. Drill a 1-3/4 inch hole in the lid.
3. See [To install in lids with holes using the Pit Lid Mounting Kit](#) on page 21 to complete installation in a new lid.

Optional Leak Sensor Installation

Leak Sensors (LS) analyze water flow sound patterns to detect new, evolving, and pre-existing leaks. LS analysis data is uploaded to mlogonline™ Network Leak Monitoring for data analysis and accessed through a secure Internet portal unique to your utility. This section describes installation of the Leak Sensor (LS) in a 100W system.

The 100W endpoint stores 20 days of Leak Sensor data. On the 21st day, the 100W begins to write over stored data in a first in, first out manner.

The 100W automatically detects the presence of connected Leak Sensors. The 100W will automatically detect the Leak Sensor within 22.5 minutes and begin reading Leak Sensor data. To immediately detect the Leak Sensor and begin reading data, perform a **Check ERT** with a handheld computer running FDM software.

The LS is used in conjunction with both indoor (basement) and outdoor (mounting on the exterior of the house) 100W endpoint installations. LS devices are mounted on a water service pipe or meter insetter (meter horn) and connect to the appropriate endpoint wires as described in [To connect the Leak Sensor to the 100W endpoint](#) on page 25. The mounting bracket shipped with the Leak Sensor accommodates an (up to) 1-1/2-inch OD pipe. An optional mounting bracket is available for pipe sizes (up to 2 1/2-inch OD).

Required Equipment

Equipment	Itron Part Number	Description
Leak Detection Sensor	LDS-0001-002	LDS with inline connector, environmental connector cap; 5-foot cable, and mounting bolt (fits up to 1 1/2-inch OD pipe).
Optional mounting bracket	CFG-0349-002	Mounting bolt fits up to 2 1/2-inch OD pipe.
100W endpoint	ERW-1300-002	Dual port 100W for LS and environmental connector caps.
25-foot extension cable	CFG-0349-101	25-foot cable with coordinating connectors (LS blue connector, register black connector).
100W LS environmental replacement cap	MSC-0019-005	Protects Leak Sensor connector when the Leak Sensor is not connected to the 100W endpoint.

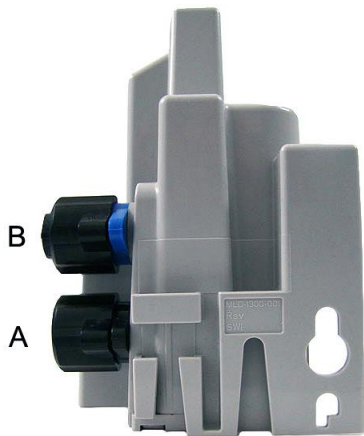


Warning When the 100W or 100WP is installed but the Leak Sensor is not attached, you must protect the blue Leak Sensor port with the environmental cap (MSC-0019-005). If you remove the Leak Sensor from the 100W, the environmental cap must be replaced to protect the connector.

To connect the Leak Sensor to the 100W endpoint

Caution Verify you have the correct 100W or 100WP endpoint. Leak Sensors must mount to Port B (top port) of the endpoint. Connecting the LS to Port A (bottom port) will cause electrical damage to the LS and 100W endpoint.

1. Remove the environmental cap from the 100W endpoint blue connector (B).



B. 100W blue connector: Leak Sensor connection

A. 100W black connector: Register connection

2. Remove the environmental cap from the Leak Sensor connector. Verify the connectors (100W LS connector and the Leak Sensor connector) are clean and dry.



3. Align the Leak Sensor connector with the endpoint's blue connector and insert.



4. Rotate the connector locking ring until the security holes align.



Caution Do not force the connector ends together. While holding the LS connector, engage the 100W connector by rotating the locking ring until both connectors securely connect. Twist only the connector locking ring, not the body of the connector. Twisting the connector body could damage the connector's pins.

To attach an Itron Security Seal through the connector security hole

Required Materials

Itron Security Seal (MSC-0018-001)



1. Insert the pointed end of the security seal through the inline connector and the 100W connector security holes.



2. Insert the pointed end of the security seal into the capped end and push until the seal locks.



This completes 100W endpoint and Leak Sensor connections.

Pipe Preparation

Clean any dust or dirt from the pipe to facilitate direct contact with the LS surface.

To install the Leak Sensor on a pipe or meter insetter

1. Select a Leak Sensor mounting location within 5-feet of the 100W endpoint. Mount the sensor on the water input side of the meter.

Caution Mount the Leak Sensor on the water input side of the meter. Failure to follow this mounting requirement could result in errors in the leak detection data. Installation requires Itron mounting hardware. Repair costs and service charges relating to the use on non-compliant mounting hardware will be charged to the customer. Contract Itron Support for more information.

2. Verify the pipe's mounting surface is free from dirt and debris. Place the curved surface of the LS against the pipe.



3. Insert the mounting U-bolt over the pipe and into the LS mounting holes.

Caution Do not mount the Leak Sensor on a pipe coupler, joint, or nut.



4. Insert the mounting plate over the U-bolt's threaded screw ends. Attach the two wing nuts over the clamp screw ends and tighten the wing nuts until snug (to a minimum of 5-inch pounds) to prevent device rotation on the pipe. After you tighten the second wing nut, check the Leak Sensor to verify the device is snug. If the sensor moves, tighten the wing nuts until there is no movement.

Caution Do not tighten the Leak Sensor to more than 20 inch-pounds. Over-tightening could damage the Leak Sensor housing and/or the pipe.



Note Leak Sensor mounting orientation is not critical. Orient the Sensor to best accommodate your installation. The most important installation practice is to mount the Sensor securely to the pipe.



To install the Leak Sensor on a pipe (up to 2 1/2-inch OD)

1. Select a Leak Sensor mounting location within 5 feet of the 100W endpoint.

Note Leak Sensor mounting orientation is not critical. Orient the sensor to best accommodate your installation. The most important installation practice is to fasten the Sensor securely to the pipe.

Caution Mount the Leak Sensor on the water input side of the meter. Failure to follow this mounting requirement could result in errors in the leak detection data. Installation requires Itron mounting hardware. Repair costs and service charges relating to the use on non-compliant mounting hardware will be charged to the customer. Contract Itron Support for more information.

2. Insert the mounting plate screws into the holes on the Leak Sensor's curved surface.



3. Secure the mounting plate to the Leak Sensor.



4. Verify the pipe's mounting surface is free from dirt and debris. Place the curved surface of the LS against the pipe.

Caution Do not mount the Leak Sensor on a pipe coupler, joint, or nut.

5. Insert the U-bolt around the pipe and into the holes in the plate/Leak Sensor assembly. Secure the U-bolt with the wing nuts. Tighten the wing nuts until snug (to a minimum of 5-inch pounds) to prevent device rotation on the pipe. After the second wing nut is tightened, check the Leak Sensor to verify the device is snug. If the sensor moves, tighten the wing nuts until there is no movement.



Caution Do not tighten the Leak Sensor to more than 20 inch-pounds. Over-tightening could damage the Leak Sensor housing and/or the pipe.

Optional Remote Antenna Installation

The optional 900 MHz remote mount antenna provides increased RF range coverage for the listed mobile applications:

- Meters located deep in a pit boxes.
- Meters submerged in water for extended periods of time.
- Meters in Fixed Network systems.

This section provides antenna mounting instructions through a pit lid and the instructions to connect the antenna to the 100W.



Caution Optional remote antenna installation applies only to mobile applications.

Mounting the Remote Antenna

Metal lids on water pit boxes require a through-lid solution for optimal endpoint radio performance. The remote antenna is designed to fit in a pit lid hole with a diameter between 1-3/4-inch to 2-inches and lid thicknesses from 1/4-inch to 1-3/4-inch.



To mount the optional remote antenna through a pit lid

1. Insert the remote antenna into the pit lid hole with the convex surface on the top of the pit lid. (These instructions show a simulated pit lid material.)



2. From the bottom of the lid, screw on the threaded collar two or three turns. Turn the threaded collar until it is tight against bottom of the pit lid. Verify the antenna dome does not move up and down or shift laterally



Note Ensure the beveled edge (1) of the threaded collar is toward the top of the lid (2). The Itron-recommended placement centers the remote antenna and takes up the extra space in mounting holes up to 2-1/2-inches.

To connect the remote antenna coupler to the endpoint

1. Insert the remote antenna cable coupler into the endpoint's antenna slot with the flat side of the coupler against the endpoint housing.



2. Push the antenna coupler into the antenna slot until the coupler locks into the tabs of the antenna slot.



Important Verify the antenna coupler locks with the antenna slot's tabs.

Remote antenna installation is complete.

APPENDIX A

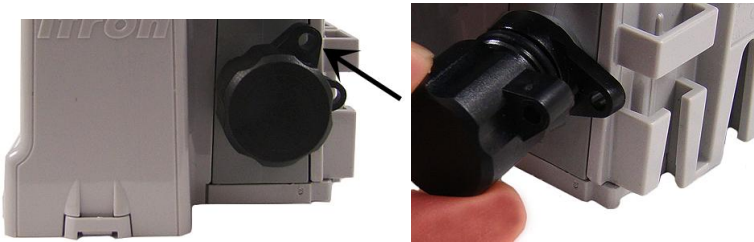
Using an Inline Connector

This section describes the 100W and 100WP connections to the water meter register using the inline connector assembly. Follow the manufacturer's recommended procedure for installing the water meter register on the meter.

To connect the inline connector

Note If an inline connector is not used and the 100W endpoint is already connected to the water meter register, skip this step.

1. Remove the protective cover from the connector by twisting the two halves in opposite directions. Pull the halves apart.

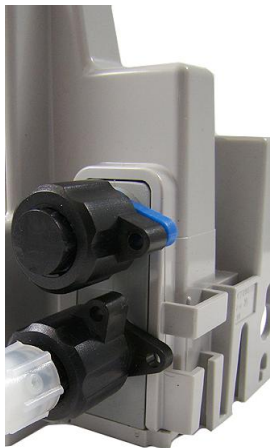


Caution Verify the connector halves are clean and dry before assembly.

If any of the following conditions occur, do not install the endpoint:

- Any of the three pins are damaged or missing.
 - The O-ring is missing.
 - The cable is cut or nicked.
-

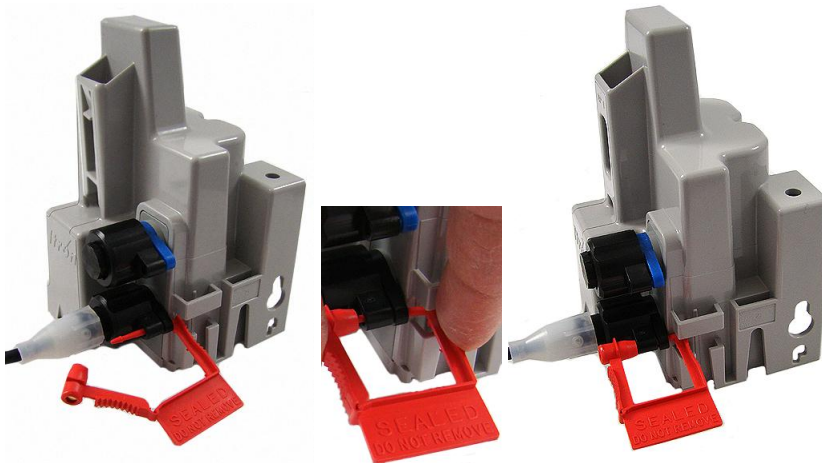
2. Connect the register cable to the endpoint connector. Holding the connectors by the back shells, rotate one end to align the keyed slots. Push until snug. Slide the black coupling nut over the O-ring. Make sure the O-ring stays seated. If the O-ring does not stay seated, disconnect and try again.



3. Twist the register cable's black coupling nut to align the two tabs.



4. Install the security seal as shown. Push it until it snaps into place.



Note For future meter or endpoint servicing, break the security seal by pulling the seal apart. The original protective connector covers can be reused if kept clean and dry. Install a new security seal after servicing either device. To order more parts, see the *Water Endpoint Ordering Guide* (PUB-0063-001).

Caution Shield connectors with protective environmental covers. Do not leave an exposed connector in the field.

- Leak Sensor connector environmental cover: MSC-0019-005
- Register connector environmental cover: MSC-0019-001, 1-year life.

The Leak Sensor environmental cap employs multiple seals to increase cap life. The Leak Sensor's cap design allows utilities to install the endpoint and install the Leak Sensor at a future date.

APPENDIX B

Using Gel-cap Connectors

This section describes connecting the 100W endpoint to the water meter register using gel cap connectors.

Required Materials

- E-9R 3M® gel cap crimping tool
- Itron Splice Kit (OEM-0034-002)

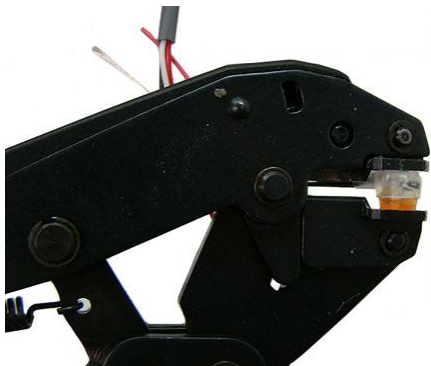


1. Push two wires as far as possible into the connector.



Caution Do not strip insulation from the ends of the wires before inserting them into the connector.

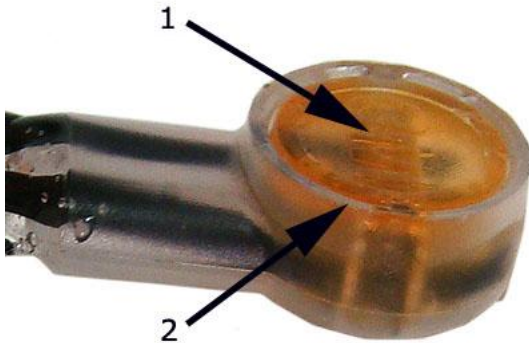
2. Carefully place the connector and wires into the jaws of the crimping tool. Make sure the wires remain fully inserted in the gel-cap connector.



3. Crimp the connector by squeezing the handles until the connector cap is fully seated. Continue to apply pressure for three seconds.



4. A connector is crimped properly when the top of the movable yellow center (1) is flush with the top of the connector body (2).



Warning Crimping the connector forces some sealant out of connector. The sealant protects the inside of the connector against insects, moisture, and other contaminants.

The sealant may cause minor eye and skin irritation. Avoid eye contact. Avoid prolonged or repeated skin contact. Contact Itron Support for Material Safety Data Sheets (MSDS).



5. After you complete all endpoint to register wire connections, arrange the connectors in a single file.



6. Insert the connectors and wires into the splice tube until the connectors and wires completely immerse in the tube's gel material.



7. Separate the cables to the sides and close the splice tube cover.



8. Discard any leftover materials from the customer premises.

APPENDIX C

Troubleshooting

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