

# MODEL ZCSM-PF

Zurn Connected Pressure Monitor  
(With Optional ZCSM-BTM Connected Flow Meter)

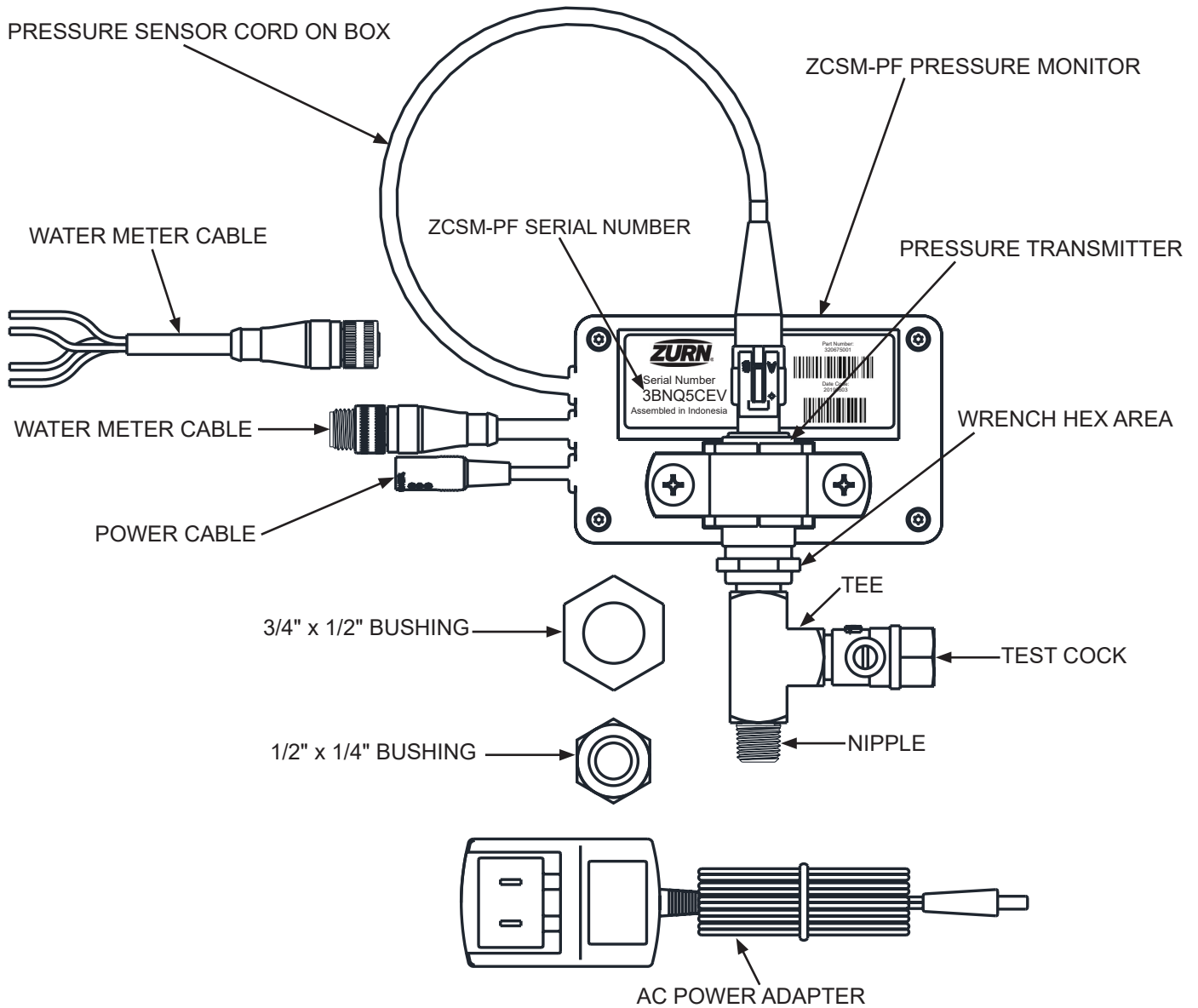
LEAD-FREE\*



## □ Installation □ Testing □ Maintenance Instructions

**CAUTION:** The ZCSM-PF is an electronic device. Use care when handling. Installation and wiring should be performed by qualified personnel.

The ZCSM-PF Connected Pressure Monitor continually monitors your plumbing system water pressure and transmits pressure data to plumbSMART™, the secure web portal powered by Zurn. The optional ZCSM-BTM Connected Flow Meter can also be installed with the ZCSM-PF Connected Pressure Monitor to provide water flow and consumption data. The maximum system water pressure cannot exceed 200 psi.



**⚠ WARNING:** Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)  
**⚠ ADVERTENCIA:** Cáncer y daño reproductivo - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)  
**⚠ AVERTISSEMENT:** Cancer et néfastes sur la reproduction - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)



## Call Before You Install Your ZCSM-PF Connected Pressure Monitor

If you already have a Gateway installed and access to plumbSMART™, skip to Install Your ZCSM-PF Connected Pressure Monitor section.

1. Document the serial number from the label on the backside of your ZCSM-PF Connected Pressure Monitor.
2. Call us at 844-987-6737 or visit [zurn.com/plumbsmart-connect](http://zurn.com/plumbsmart-connect) to save time and money on your installation.
3. Tell us the serial number and provide a contact name, email address, and basic information about the installation site.
4. We will activate your plumbSMART™ account, set up your enterprise, and give you guidance on how to register each connected product as you install it.
5. We will send a confirmation email with a link, or you can go to [plumbsmart.zurn.com](http://plumbsmart.zurn.com) to log into your plumbSMART™ account for the first time.
6. Add other users and installers to your plumbSMART™ account.
7. Make sure you and/or your installers have the plumbSMART™ mobile app, which you can download from the App Store or Google Play.
8. Using the mobile app, enter the serial number to register and locate each connected plumbing product as you install it.
9. Watch the how-to videos in the plumbSMART™ portal's support section if you get stuck, or call us at 844-987-6737 for support.

## Request and Install Your Zurn Gateway

### Install Zurn Gateway

Once you've received your Zurn Gateway, please follow the steps below for installation. More detailed instructions are also included with your Zurn Gateway.

1. Choose a location that is within 1000 feet of the Zurn Connected Product(s) you're installing. Typically, your building's walls should not be an issue. However, be sure to avoid major obstructions, such as thick concrete walls or metal reflective surfaces that will weaken the signal reception.
2. As with any electronic or networking device, install your Zurn Gateway in a cool, dry, dust-free location. In general, airconditioned offices or server rooms work best.
3. Make sure you have access to a standard 120V electrical outlet to plug your Zurn Gateway.
4. Then, depending on your choice of gateway, please follow the instructions below.

### Ethernet LAN

STEP 1: Plug the power cord into the electrical outlet to power up your gateway.

STEP 2: If the network is secured, ask your network administrator to authorize this gateway. You can provide the MAC address for the gateway, which is printed on the bottom of the label.

STEP 3: Confirm the status of the two LED indicators (Status and LoRa) to complete your setup.

- Status LED double-flashes green every two seconds
- LoRA LED is ON (solid green) two minutes after being powered

### LTE Cellular

STEP 1: Check that the location isn't obstructed for sending and receiving cellular signals. You can use your own AT&T cellular device's connectivity as an indicator.

STEP 2: Once location is confirmed, plug the power cord into the electrical outlet.

STEP 3: Confirm the status of the three LED indicators (Status, LoRa and Cell) to complete your setup.

- Status LED double-flashes green every two seconds
- LoRA LED is ON (solid green) two minutes after being powered
- Cell LED is ON (solid green) two minutes after being powered

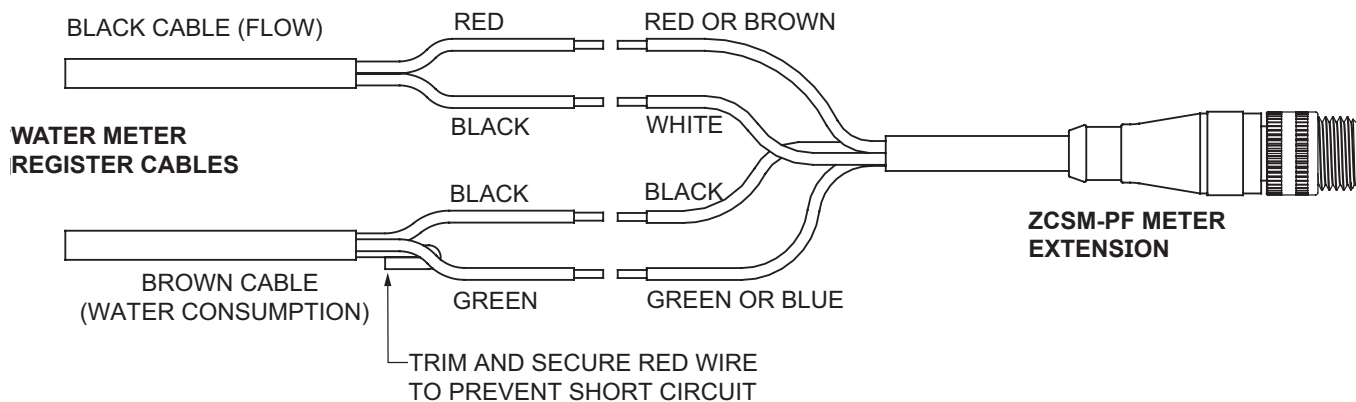
## Install Your ZCSM-PF Connected Pressure Monitor

The ZCSM-PF Connected Pressure Monitor should be installed indoors in a dry location. Outdoor installations, direct sunlight, or high humidity may affect the life of the product. Avoid installing the device where the device or cables may extend into walkways or present a tripping hazard.

1. The stainless steel pressure transmitter has a 1/4" NPT male connection. Using Teflon tape for all connections, install the brass tee onto the pressure transmitter. Caution: only wrench on the hex connection of the pressure transmitter. Install the 1/4" test cock into the branch of the tee. Then install the 1/4" brass nipple into the tee. 1/2 x 1/4" and 3/4" x 1/2" bushings are provided so the ZCSM-PF pressure monitor can be installed into 1/4", 1/2", or 3/4" NPT connections.
2. The Connected Pressure Monitor can be installed on any test cock on the ductile iron and stainless steel Zurn model 375 and 475 backflow preventers. Flush all dirt and debris from the system connection before installation. Wrench on the brass fittings to install. This test cock on the cover will allow a safe location to prevent damage to the ZCSM-PF. The 1/4" test cock can be used for bleeding air from the system as well as allowing a backflow preventer to be tested with the ZCSM-PF system monitor in place.
3. The pressure transmitter cable should be plugged into the pressure transmitter. Align the plug to match the socket and press firmly to insert. Use care when unplugging as the locking tab can be damaged.
4. If connecting the optional ZCSM-BTM Connected Flow Meter, please read through this entire step and note the illustrated wire connections below before proceeding. There are two cables that come from the water meter register: a brown cable with three wires (red, black and green) and a black cable with two wires (red and black). Do not attempt to connect the ZCSM-PF to other Badger meter registers. The mating cable provided has four wires: red, white, green, and black. These four wire connections should be made in the field with water tight connections for long life. Then, align plug and thread meter side cable to water meter cable connector on the box.

Note: Prior to connecting the wires from the ZCSM-BTM Connected Flow Meter's top-mounted gray register, cut off the protective pills that come on the end of the water meter register cable ends. Then, strip the wire to provide adequate connection.

**Pulling off the protective cable ends' protective pills may damage the stranded conductors in the cable.**



5. Once the ZCSM-PF is installed, open any system shutoff valve to provide water to the ZCSM-PF. Open the 1/4" test cock to flush air from the system.

**NOTE: Verify a Zurn Gateway is installed with 1,000 feet of your ZCSM-PF prior to completing the next step.**

If a Zurn Gateway is still needed, please refer to proceeding section to request and install your Zurn Gateway to connect your product.

6. Once the water is turned on and optional water meter connections are made, plug the 120vac wall adapter into a nearby power outlet. Insert the small plug into the black cable on the ZCSM-PF. If not previously completed, register your ZCSM-PF Connected Pressure Monitor (see Register Your Products section on next page). The system will take about two minutes to boot up and start transmitting data.

## Test Your Network and Register Your Products

For the following steps, ensure you have the serial number recorded from the ZCSM-PF Connected Pressure Monitor.

### Test Your System Network

Make sure your gateway and products communicate now that everything is installed by conducting a system connection test:

1. Plug in the ZCSM-PF Connected Pressure Monitor, ensuring it is within 1,000 feet of the Zurn Gateway.
2. Browse [plumbsmart.zurn.com/install](http://plumbsmart.zurn.com/install) by typing in the ZCSM-PF Connected Pressure Monitor product serial number.
3. Click on the 'Validate' button. If the system recognizes the Zurn Connected Product, it will instantly connect to the Zurn Cloud.

### Register Your Products

Prior to registering, the building, floor, and room must be setup in plumbSMART™. You may then register your product in plumbSMART™ to start receiving data.

1. Go to [plumbsmart.zurn.com](http://plumbsmart.zurn.com). Log in to your plumbSMART™ account and select the 'Register Products' option from the 'Products' menu within the main blue navigation bar.
2. Follow the prompts to complete the registration.
3. At this point, you can give your Zurn Connected Product a unique name and assign it to a specific building location.
4. Finally, confirm or adjust your alert parameters based on your desired system operation.

**More instructional videos can be found on the support page in the plumbSMART™ portal.**

## Testing

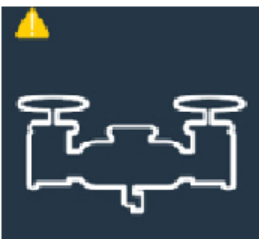
1. To check accuracy of pressure readings: Install a calibrated pressure gauge in the test cock port. Read gauge. Power cycle the ZCSM-PF by unplugging and plugging the power cord back in. After five minutes, a new pressure reading should be available on the portal. Compare pressure reading on portal to pressure gauge. If a system shutoff valve is installed between the pipe line and the ZCSM-PF, you can close this valve, then open the test cock to bleed pressure down to zero. Now power cycle the ZCSM-PF. Verify the new pressure reading on the portal is zero psi +/- 4psi.
2. To verify accuracy of flow meter readings. Read the total value on the meter register. 24 hours later read the value again. Subtract the first reading from the second reading. Check the water usage in the portal to see if the water usage change matches. If usage each day is very similar, this may work if performed at any point during the day. If usage varies, you may need to read the meter near the time that the website portal calculates its daily usage, which is UTC time zone midnight. This is 9pm EST, 8pm EDT or 6pm PST, 5pm PDT.

## Maintenance

At least once per year, open the test cock to flush any debris or rusty water from the pipe connection and pressure sensor. If you encounter lots of debris or rust, increase the frequency of flushing.

## Troubleshooting

### "Pressure Signal out-of-range" alert posted in plumbSMART™:



#### Step 1

Check pressure sensor wiring & connections:

- locking tab fully engaged
- no terminal corrosion
- terminals in sensor bent/broken,
- terminals in connector pushed in
- terminals broken, missing

Repair as needed to restore proper electrical connection. Alert on product's page in plumbSMART™ should clear within 1 hour after successful repair. (May need to refresh the web page by clicking on reload icon in the browser to clear the alert.)



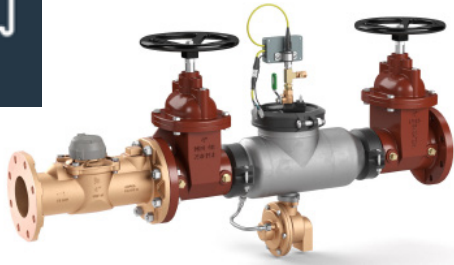
#### Step 2

Verify actual line pressure is within expected range.

#### Step 3

If problem persists, replace pressure sensor.

## "Flow Signal out-of-range" alert posted in plumbSMART™:



### Step 1

Verify flow signal wiring & connections:

- wires properly paired to flow meter wires
- connection secure
- no corrosion

Repair as needed to restore proper electrical connection. Alert on product's page in plumbSMART™ should clear within 1 hour after successful repair. (May need to refresh the web page by clicking on reload icon in the browser to clear the alert.)



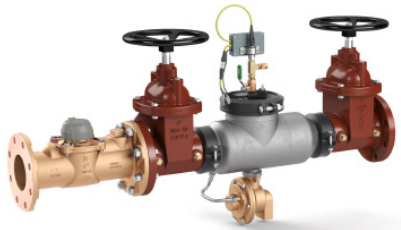
### Step 2

Verify actual flow is within expected range.

### Step 3

If problem persists, consult flow meter register troubleshooting guide.

## "Unscaled Consumption Pulses signal out-of-range" alert posted in plumbSMART™:



### Step 1

Verify flow meter water consumption signal wiring & connections:

- wires properly paired to flow meter wires
- electrical connection secure
- no corrosion

Repair as needed to restore proper electrical connection. Alert on product's page in plumbSMART™ should clear within 1 hour after successful repair (May need to refresh the web page by clicking on reload icon in the browser to clear the alert.)



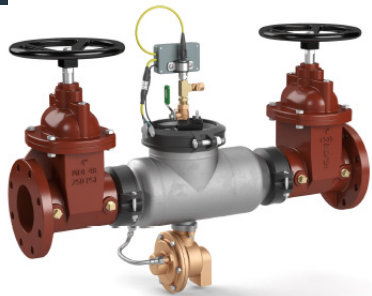
### Step 2

Verify actual flow is within expected range.

### Step 3

If problem persists, replace flow meter register.

## "Product Model Selection Error Detected" information alert posted in plumbSMART™:



### Step 1

Verify the product model installed matches the product model selected in plumbSMART™.

### Step 2

If an incorrect product model was selected in plumbSMART™, then contact Zurn Customer Service at 844.987.6737 for assistance in changing the product model selection. Alert should automatically clear within 1 hour after selecting the correct product model. (May need to refresh the web page by clicking on reload icon in the browser to clear the alert.)



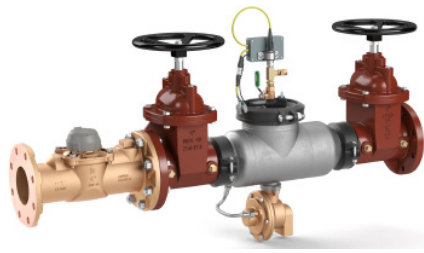
### Step 3

If no flow meter installed, then,

- a) Verify Zurn monitor flow meter signal wiring are properly protected from unintended contact with power wires or metal surfaces.
- b) Momentarily remove power from the Zurn monitor.
- c) Verify alert automatically clears within minimum 15 minutes after re-powering the monitor. (May need to refresh the web page by clicking on reload icon in the browser to clear the alert.)



## “Flow Meter Wiring Error Detected” information alert posted in plumbSMART™:



### Step 1

Verify the product model installed matches the product model selected in plumbSMART™.

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### Step 2

If an incorrect product model was selected in plumbSMART™, then contact Zurn Custom Service at 844.987.6737 for assistance in changing the product model selection. Alert should automatically clear within 1 hour after selecting the correct product model. (May need to refresh the web page by clicking on reload icon in the browser to clear the alert.)



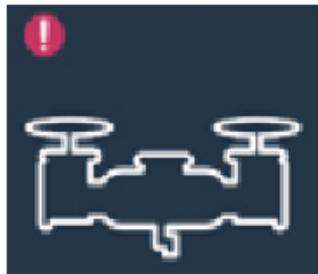
### Step 3

If proper flow meter is installed, then,

- Verify meter's flow signal wires & connections properly protected from unintended contact with power wires or metal surfaces.
- Momentarily remove power from the Zurn monitor.
- Verify alert automatically clears within 15 minutes of re-powering the Zurn monitor. (May need to refresh the web page by clicking on reload icon in the browser to clear the alert.)



## “Device Not Communicating” severe alert posted in plumbSMART™:



### Step 1

Verify the Zurn monitor has power. If AC adapter is disconnected or unplugged from the wall outlet, then re-connect or plug into wall outlet. Alert should automatically clear within 1 hour after re-powering the monitor. (May need to refresh the web page by clicking on reload icon in the browser to clear the alert.)



### Step 2

If Zurn monitor has power yet Device Not Communicating severe alert still has not cleared after 1 hour or after refreshing the web page, then verify Zurn gateway has power and its LoRa Status LED is on solid. If AC adapter is disconnected or unplugged from wall outlet, then re-connect or plug into wall outlet. Alert should automatically clear within 1 hour after re-powering the gateway. (May need to refresh the web page by clicking on reload icon in the browser to clear the alert.)



### Step 3

If alert persists, then contact Zurn Customer Service at 844.987.6737 for assistance in replacing the Zurn monitor and/or the Zurn gateway.



## “Large spike in Water Consumption History Charts”



**Large spikes** of Water Consumption in a single hour following many hours of zero gallons consumed in the History Charts without the High Water Consumption Alert getting tripped is most likely due to the Zurn gateway being offline for a long, continuous period of time. Water Consumption measurements will return to normal levels without any further action.

### Electronic Emission Notices

**FCC Warning:** This device complies with Part 15 of the FCC Rules. 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.

**Industry Canada (IC) Warning:** This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicable aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

The following information refers to Zurn Smart Connected Products:

**Radiation Exposure Statement:** To comply with FCC and Industry Canada RF exposure limits for general population / uncontrolled exposure, the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 30mm from all persons and must not be operating in conjunction with any other antenna or transmitter, except in accordance with FCC multi-transmitter product procedures.

**FCC Interference Statement:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference intended for use in non-residential/non-domestic environments. 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

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an authorized dealer or service representative for help.

Zurn is not responsible for any radio or television interference caused by using other than specified or recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

Responsible party: ZURN INDUSTRIES, LLC 511 W. Freshwater Way, Milwaukee, WI U.S.A. 53204 • Ph. 1-855-ONE-ZURN, Fax 919-775-3541

