FLOOD & TEMPERATURE SENSOR

FTS05

USER MANUAL

Congratulations on your purchase! The FTS05 sensor is a Z-WavePlus™ Security-enabled device that detects water leaks and measures temperature. In case of leak or high/low temperature conditions it will send alerts on your network. The FTS05 is compatible with other Z-Wave™ and Z-WavePlus™ certified products. The FTS05 sensor comes in two part numbers for each geographic region (where 'yy' below indicates, for example, US or EU):

- FTS05US and FTS05EU

Pair together with our Automatic Water Shut-off Valve & Flow Meter for a complete Damage Prevention system!

PAIRS GREAT WITH OUR
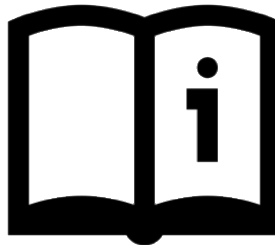
WATER SHUT-OFF VALVE

Flow Meter

WARNINGS AND PRECAUTIONS

- *Do not store highly flammable items such as oily rags or other combustibles near your FTS05.*
- *Do not apply electrical power to the unit unless the unit is fully assembled.*
- *Sensor functionality is based on wireless (RF) transmissions. Any wireless transmission can be subject to RF interference or loss of communication. This interference or loss of communication may cause the unit to not operate as intended. You, the end-user, are responsible for ensuring that the FTS05 functionality and installation meets your desired requirements.*
  - *WARNING – This sensor must not be used in life support and / or safety applications.*
- *Do not place on or near metal objects. This decreases range and/or blocks wireless transmissions.*
- *Information provided in this manual is for your convenience and may be superseded by updates. This manual is subject to change without notice. It is your responsibility to ensure that the FTS05 functionality meets your needs and specifications.*

WHAT'S IN THE BOX?

Components included in the box:

1. FTS05 Sensor
2. 4 Small Casing Screws
3. Install Guide

Installation Guide

** 2x AA Batteries Required (Not included)

ASSEMBLE & TEST YOUR SENSOR

We recommend you test your sensor for its functionality before adding it to your network. Please follow these instructions:
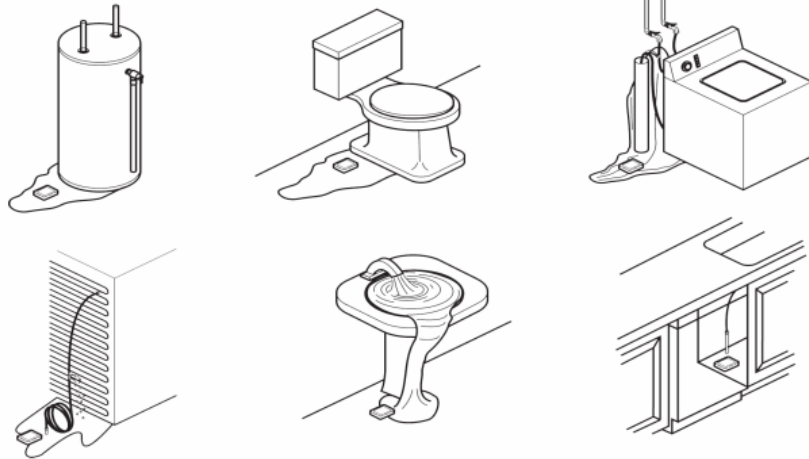
1. Ensure that the LED blinks when inserting new batteries.
2. Make sure the batteries are seated in place and secure.
3. Using the screws (4) provided, attach back cover to sensor making sure to align the sensing prongs.
   Do not over tighten screws.
4. Pour a small amount of water onto a plate or counter top. Place sensor onto the wet area, making sure the sensing element is touching the water.
5. Once detected (within 5s), the LED will blink twice to indicate alert. Dry off the sensor with a towel to reset.
6. If the LED doesn't blink, refer to Troubleshooting section.

LOCATIONS TO INSTALL SENSOR

The sensor is suitable for use in normally dry, interior locations only. Do not install outside or in areas that become wet normally or have high humidity. Avoid placing the unit close to a metal frame, or other metal appliances that may affect its' range. Place the unit flat on the floor or inside cabinet so that any leaks that may occur will not drip **directly** on the unit, but next to it, and form a puddle that will wet the sensor. Using Velcro tape is a great way to keep sensors in place.

Recommended Uses:

- Under sinks
- Next to Sump pumps
- Water Heaters
- Laundry Room Appliances
- Behind toilets
- Dishwashers
- Refrigerators
- Bath tubs

Sensing Element

Note: *Water must come into contact with this part of the sensor to activate the sensor. Be sure to place sensor flat on its bottom surface (pictured right) with the sensing element in the flood path.*

Note about Concrete or Natural Stone Floors: *Placing the sensor directly onto a cold surface, such as a concrete or natural stone floor may cause false alarms. The humidity and out-gassing that rises out of curing concrete may set off the sensor, triggering a water alarm. To avoid this, you can place a small spacer (such as a piece of foam tape or Velcro) between the sensor and the floor, making sure not to cover the sensing element. The 3mm thickness is enough to keep the sensing element low to detect leaks, but high enough to avoid false alarms. Using Velcro tape is a great way to keep sensors in place and avoid them being displaced while cleaning floors.*

INCLUDING THE SENSOR IN YOUR Z-WAVE NETWORK

1. Install the two AA batteries and secure the bottom cover using the 4 supplied screws.
2. Walk sensor to its installation location. Make sure it is within 25 feet of the Z-Wave hub or another Z-Wave signal repeating device.
3. Set your Z-Wave Hub into Inclusion mode. Refer to your controller's user manual for specific details on network inclusion, exclusion or association.

Inclusion (adding to network)

1. Set inclusion mode on your controller
2. Press and hold the program button for 1-3 seconds. The LED on the sensor will blink **twice** if successful.

Exclusion (Removing from network)

1. Set up exclusion mode on your controller
2. Press and hold the button for 1-3 seconds. The LED on the sensor will blink **four** times once complete.

Trouble connecting to your Z-wave Network?

1. *Check to make sure the sensor isn't already in a network. Press the program button and observe LED indicator. You may need to first exclude the unit from a network, then include it.*

Note: *Your Z-Wave HUB may not support this device. Check our website, or Contact us for a list of compatible Hubs'.*

Status LED Indications

Number of LED Blinks	Meaning
Fast Blinks	
1	(switch pressed; continually on while switch is pressed)
2	In-Network After Battery Replacement or Add/Inclusion (also, after button held while in-Network)
4	Out of Network After Battery Replacement or Remove/Exclusion (also given if Add was not completed) – *May take up to 30 seconds to display after button press*
5	Low Battery (repeated every approx. 40 seconds)
Slow Blinks	
1	Firmware Update (OTA) mode has been started; continuous while waiting for update to start
2	Water Alarm
3	Heat Alarm (either high or low set point triggered)
4	An active alarm has been cleared (when a water alarm or a temperature alarm is no longer active)

DURING AN ALARM

Water Alarm

If water is detected at the monitoring location or an over/under-temperature condition is detected, the unit will send an alert message(s) to the Z-Wave™ network. The type of alert message depends on how the sensor is configured.

Clearing an Alarm

Drying the sensor contacts will clear the Water Alarm. If an over/under temperature alarm occurred and the temperature alarm conditions are no longer present, an 'alarm clear' message is also sent.

Remote Alert

Depending on your specific controller's capabilities you will be able to remotely check the status of the sensor in your network and setup automatic notifications to your mobile devices when an alarm is detected.

ASSOCIATIONS

Once in a network, use your controller to associate the sensor with other devices in the Z-Wave™ network, such as a water valve. For example, when a water leak is detected, the sensor can be set up to automatically send a command to turn off a Water Shut-off Valve. *Refer to your controller's documentation on how to associate the sensor with another device in your network.* The sensor supports eight association groups with a maximum of 2 associated devices in each group.

Note: Association groups 5 through 8 allow the temperature to be sent to an associated device (such as the controller). The sensor allows the sending rate of the reports to be optimized so that the battery life can be maximized by using the longest acceptable interval between temperature updates. The temperature report was not included in the Lifeline so that you have the most flexibility for optimizing battery life and getting updates for your specific application. If you want temperature updates, you should **only select one** of these association groups to send to a particular device.

Caution – More frequent notifications will decrease battery life!

Association Group (Name)	Max. Associations per Group	Supported Events (Command Classes)

1 (**Lifeline** – the controller should automatically set up this association)	2	• Device Reset Locally (via 3 quick presses of the program switch)
		 • Battery Report (when calculated battery life percentage changes)
		 • Notifications
		    ○ Water (Type 5; Event Waterleak_Detected)
		    ○ Heat (Type 4; Event Underheat_Detected)
		    ○ Heat (Type 4; Event Underheat_Detected)
		    ○ Power (Type 8; Events Power_Applied, Replace_Soon, Replace_Now)

2	2	Basic Set Command ON (default, 0xFF) or OFF (0x00) is sent to the associated nodes to indicate that a Water Alarm is active. This depends on the parameter 4 configuration value. When the water alarm is cleared, one additional report with the opposite value is sent.
3	2	Basic Set Command with value = 0xFF is sent to the associated nodes to indicate that a Temperature High condition has been detected. When the temperature is back in the normal range, one additional report with value = 0x00 is sent.
4	2	Basic Set Command with value = 0xFF is sent to the associated nodes to indicate that a Temperature Low condition has been detected. When the temperature is back in the normal range, one additional report with value = 0x00 is sent.
5	2	Temperature report (Multilevel Sensor) when the temperature has changed (with filtering/hysteresis to avoid continuous transmissions at a transition point).
6	2	Temperature report (Multilevel Sensor) every 5 minutes
7	2	Temperature report (Multilevel Sensor) every 20 minutes
8	2	Temperature report (Multilevel Sensor) every 60 minutes

ADVANCED CONFIGURATIONS FOR YOUR SENSOR

The high and low temperature set points in the sensor can be configured. The low temperature set point must always be set at least two degrees below the high temperature set point. The low temperature set point cannot be set less than –10 degrees C and the high temperature set point cannot be set greater than 70 degrees C. The temperature set points can be configured using your Z-Wave controller after your sensor is included into the network.

Configuration Command Class Parameters

PARA-METER	DESCRIPTION	DEFAULT VALUE	SIZE (bytes)	POSSIBLE VALUES
1	Temperature low threshold	0x04 (4°C)	1	0xF6..0x45 (-10..69°C)
2	Temperature high threshold	0x46 (70°C)	1	0xF7..0x46 (-9..70°C)
4	Water Alarm Association Mode (send Basic Set ON or Basic Set OFF when alarm detected)	0xF0 (send Basic Set ON)	1	0x00 (send OFF) or 0xF0 (send ON)

FACTORY RESET & FIRMWARE UPDATES

Reset the device to factory Defaults:
**Please use this procedure only when the Z-Wave controller is missing or otherwise inoperable.
1. Press and hold the program button for longer than 15 seconds.
2. Release the button.
3. The LED will flash approx. 30 times.

This can be done while the device is either in or out of a network. *Caution – When this is done in-network, the device will no longer be in the network and all configurations and associations will be set to default.*

Over-the-Air (OTA) Firmware Update mode: If running on batteries, a firmware update should only be done with new batteries.
1. Quickly press the program button 3 times while in-network.
2. Then quickly activate your controller's update mode.

Caution – This should not be done unless a firmware update will be immediately started at the controller. Do not allow the OTA mode to continue indefinitely without starting the firmware update at your controller. Refer to your controller's manual for update procedures. Press the button once to exit the OTA mode.

MAINTAINANCE

Sensor uses 2 AA standard alkaline 1.5V batteries (not included).

When low, the sensor will send low battery alerts via Z-Wave.

Replacing batteries: (Do this at minimum Once a Year)
1. Remove the bottom cover to expose the batteries.
2. Remove the AA batteries and replace with NEW ones.
3. Re-fasten bottom cover using the four screw's.

TECHNICAL APPENDIX

Z-Wave™ INFORMATION

Node Information Frame (NIF):   Always listening flag set, Optional functionality flag set
Manufacturer ID   0X0084
Product ID   0x0073 (FTS05, US), 0x00A3 (FTS05P, US)

Device Type / Supported Command Classes
Generic Device Type: GENERIC_TYPE_SENSOR_NOTIFICATION
Specific Device Type: SPECIFIC_TYPE_NOTIFICATION_SENSOR

COMMAND_CLASS_ZWAVEPLUS_INFO_V2
COMMAND_CLASS_VERSION_V2
COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2
COMMAND_CLASS_DEVICE_RESET_LOCALLY_V1
COMMAND_CLASS_ASSOCIATION_GRP_INFO (Info about Root Associations)
COMMAND_CLASS_NOTIFICATION_V3 (Power Management, System Fault, Water, and Heat alarm handling)
COMMAND_CLASS_ASSOCIATION_V2 (Refer to Association Section)
COMMAND_CLASS_POWERLEVEL
COMMAND_CLASS_BASIC (for controlling associated nodes when Water and Heat alarms exist; Basic commands to the
    water sensor are ignored)
COMMAND_CLASS_SENSOR_MULTILEVEL_V9 (Temperature value type)
COMMAND_CLASS_CONFIGURATION
COMMAND_CLASS_WAKE_UP
COMMAND_CLASS_BATTERY

COMMAND_CLASS_NOTIFICATION

Notifications are sent for the following types and events:

Power Management
EVENT_INACTIVE	0x00	
EVENT_POWER_HAS_BEEN_APPLIED	0x01	
EVENT_AC_MAINS_DISCONNECTED	0x02 (FTS05P only)	
EVENT_AC_MAINS_RECONNECTED	0x03 (FTS05P only)	
EVENT_REPLACE_BATTERY_SOON	0x0A	
EVENT_REPLACE_BATTERY_NOW	0x0B	

Heat
EVENT_INACTIVE	0x00
EVENT_OVERHEAT_DETECTED	0x02
EVENT_UNDERHEAT_DETECTED	0x06

Water
EVENT_INACTIVE	0x00
EVENT_WATERLEAK_DETECTED	0x02
EVENT_WATERLEVEL_DROPPED	0x04 (FTS05P only)

System
EVENT_INACTIVE	0x00
EVENT_SYSTEM_HARDWARE_FAILURE	0x03

   Parameter = 0x01, Probe disconnected / Thermistor open
   Parameter = 0x02, Thermistor shorted

TROUBLESHOOTING

Please check our Frequently Asked Questions (FAQ's)

Check our FAQ's section on our website for commonly asked questions specific to your product.

For more troubleshooting help, online resources, and more, please visit our website or contact us

CONTACT US   MAIN OFFICE: (704) 940-9118   HOURS: (M-F 9AM-5PM EST)

Sales & Product Inquiries: sales@fortrezz.com

Tech Support / Warranty Inquiries: support@fortrezz.com

Or Visit our website at http://www.fortrezz.com/support/#Contact-Us to submit a support inquiry.

LIMITED WARRANTY

THE PRODUCT IS PROVIDED WITH ONE YEAR LIMITED MANUFACTURER WARRANTY.   FORTREZZ, LLC warrants its products to be free from defects in material and workmanship under normal use for one year, and is not responsible for consequential damages or installation costs of any nature. FORTREZZ, LLC. expressly disclaims all implied warranties, including but not limited to the implied warranties of merchantability and fitness for a particular purpose.   FORTREZZ, LLC. does not warrant, guarantee, or make any representations regarding the use or the results of the use of the products or any accompanying materials in terms of their correctness, accuracy, reliability or otherwise. In no event shall FORTREZZ, LLC. be liable to Purchaser hereunder or in respect of any products ordered or delivered to Purchaser, whether in contract, tort including negligence or otherwise for a loss of profits or loss of use or for any incidental, consequential, special or indirect damages howsoever caused whether or not FORTREZZ, LLC. has been advised of the possibility of such loss or damage. FORTREZZ, LLC's maximum liability to Purchaser under these conditions shall in no event exceed the amount paid by Purchaser for the products that are the subject of the claim and in respect of all claims for products ordered from FORTREZZ, LLC. to which these conditions apply to the amount paid by Purchaser for the products which are the subject of the claims. If you are not comfortable with your limited warranty, or not completely satisfied with the MIMO, or the FTS05 does not perform as expected we encourage you to return the FTS05 to your DISTRIBUTOR for an exchange or for a full refund within 30 days of purchase. Or, you can return the FTS05 to FORTREZZ, LLC with an RGA number.

REGULATORY INFORMATION

FCC Compliance Statement Statements

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.   Contains Transmitter Module FCC ID: WRD-FM5202

FCC Warning (Part 15.21). Changes or modifications not expressly approved by the party responsible for compliance could void he user's authority to operate the equipment.

FCC Interference Statement (Part 15.105 (b)). This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. 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 of the following measures:

(1) Reorient or relocate the receiving antenna / (2) Increase the separation between the equipment and receiver / (3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected / (4) Consult the dealer or an experienced radio/TV technician for help.

Industry Canada Statement per Section 4.0 of RSP-100

The term "IC:" before the certification/registration number only signifies that the Industry Canada technical specifications were met.

Section 7.1.5 of RSS-GEN. 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.

From section 5.2, RSS-Gen, Issue 2, June 2007 Equipment Labels: Contains IC: 8156A-FM5202; PN: Model: FM5202-US-SMT

From section 7.1.6, RSS-Gen, Issue 2, June 2007

Digital Circuits:

If the device contains digital circuitry that is not directly associated with the radio transmitter, the device shall also have to comply with ICES-003, Class A or B as appropriate, except for ICEC-003 labeling requirements. The test data obtained (for the ICES-003 tests) shall be kept by the manufacturer or importer whose name appears on the equipment label, and made available to Industry Canada on request, for as long as the model is being marketed in Canada.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables 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.

Note: Changes or modifications not expressively approved by the party responsible for compliance could void the user's authority to operate the equipment.   HELPFUL WEB SITE: Industry Canada http://www.ic.gc.ca/

Europe

The FMI module has been tested for use in European countries. The following testing has been completed:

Test standard EN 300 220 ; (2012-05)   Test standards ETSI EN 301 489-1 ; (2011-09)

A helpful document that can be used as a starting point in understanding the use of short range devices (SRD) in Europe is the European Radio Communications Committee (ERC) Recommendation 70-03 E, downloadable from the European Radio Communications Office (ERO) http://www.ero.dk. The end user is responsible for ensuring compliance with harmonized frequencies and labeling requirements for each country the end device is marketed and sold. A Declaration of Conformity must be issued for each of these standards and kept on file as described in Annex II of the R&TTE Directive.

	The Waste Electrical and Electronic Equipment (WEEE) directive (2002AA/96/EC) was approved by the European Parliament and the Council of the European Union in 2003. This symbol indicates that this product contains electrical and electronic equipment that may include batteries, printed circuit boards, liquid crystal displays or other components that may be subject to local disposal regulations at your location. Please understand these regulations and dispose of this product in a responsible manner.