



FL-1000 WATER LEAK DETECTION SYSTEM

Installation Guide

COMPONENTS

What's in the Box

**FL-1000 In-Pipe Flow Sensor**

Dual-element thermal probe installed inline with main water supply. Detects flow anomalies down to 2 oz per minute. Available in 3/4" and 1".

**Valve & Sensor Controller + Power Supply**

Connects the FL-1000 sensor and actuated ball valve to the IG-1000 hub via **LoRa wireless**. Displays real-time temperature and valve state in app.

**Actuated Ball Valve**

Motorized shutoff valve — closes automatically on leak detection. **Installed size:** 3/4". Available in 3/4", 1", 1 1/4", 1 1/2", and 2".

**IG-1000 Internet Gateway Hub**

Local **LoRa-to-internet bridge**. Connects all SafeHouse devices to the cloud platform via WiFi or LAN. Requires 120V outlet and Ethernet or 2.4 GHz WiFi.

TOOLS REQUIRED

- Pipe cutter
- Adjustable wrench
- Deburring tool
- Drill + screwdriver
- Teflon tape / pipe dope
- Smartphone (iOS/Android)

**Before You Begin**

Shut off main water supply at the meter before any plumbing work.

**LoRa Wireless System**

Devices communicate via **LoRa** (not WiFi). Only the IG-1000 Gateway hub needs either Ethernet/ LAN or WiFi — **2.4 GHz only**.

PRE-INSTALLATION

Inspect & Prepare

1

Inspect Components

Check each item before proceeding

- ☐ FL-1000 sensor body and threads are not damaged is intact — no cracks, dents, or damage to housing
- ☐ Sensor cable and Connector Pins is clean & undamaged
- ☐ Valve & Sensor / Valve Controller powers on — LED default is RED (unplugged from Actuated Ball Valve)
- ☐ Connect Actuated Ball Valve to Controller and Test (LED: Red Closed, Green Open)
- ☐ Press the "Set" button to check Actuated Valve rotates from fully open (Green LED) to fully closed (Red LED)
- ☐ Valve size matches measured pipe OD — confirm before installing
- ☐ All included items match the packing slip

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Prepare Site

Choose installation location and shut off water before cutting pipe

- 1 Identify the water main line; after the Main Manual Shutoff and before the first plumbing branch
- 2 Locate a 120V outlet within 6 ft for Sensor / Valve Controller power supply
- 3 After the Main Manual Shutoff; Verify 12" of straight accessible pipe is available for FL-1000 In-Pipe Sensor and Actuated Valve
- 4 Shut off main water supply at meter — confirm zero flow before cutting
- 5 Open lowest faucet to fully relieve line pressure
- 6 Cut pipe to required FL-1000 insertion length — tip of sensor is in the water flow path
- 7 Deburr and clean both pipe ends thoroughly — no debris inside pipe



Plan cable routing from FL-1000 and Actuated Valve to Controller location before cutting pipe.; IG-1000 Gateway Hub can be in another part of the home; upto 200-300ft from the controller depending on site conditions



For **licensed plumbing professionals**. Read all steps before beginning.

Support: **safehousing.com** · 866-310-1055 · info@safehousing.com

The entire system configures through the app in under 30 minutes. No professional wiring, no hub programming, no IT involvement.

HARDWARE INSTALLATION

Install Sensor & Valve

3

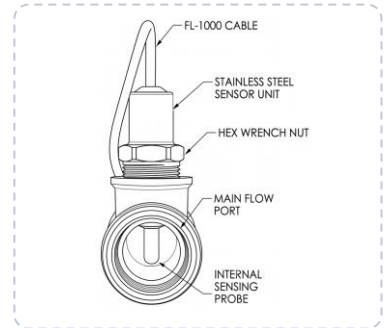
Install FL-1000 In-Pipe Flow Sensor

Tip of Flow Sensor must be in the direct flow path of the Tee

- 1 Locate flow direction arrow — must point downstream
- 2 Position FL-1000 In-Pipe flow sensor — horizontal or vertical orientation is acceptable
- 3 Apply thread sealant or compression fittings per pipe material
- 4 Hand-tighten then wrench ¼ turn — do NOT overtighten
- 5 Route sensor cable to Controller location and secure with clips

⚠ Critical: Pressure test and check for leaks after installation

INSTALLATION REFERENCE



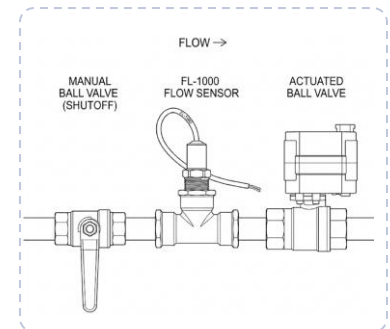
4

Install Actuated Valve

Actuated Ball Valve must face up or 90 deg. **Do not** install facing down

- 1 Install valve **downstream** of FL-1000 (between sensor and appliances)
- 2 Verify flow direction arrow on valve body aligns with water flow
- 3 Maintain minimum 6" of straight pipe between FL-1000 outlet and valve
- 4 Secure per pipe type: soldered, threaded, or push-to-connect
- 5 Route valve cable alongside sensor cable to Controller location

[FL-1000 + Valve position diagram]



DEVICES + APP

Connect Controller

5

Connect Valve & Sensor Controller

Physical wiring — before app setup

- 1 Mount Controller using included mounting screws
- 2 Connect FL-1000 sensor cable to the Controller **SENSOR** port (left, labelled)
- 3 Connect valve cable to the Controller **VALVE** port (right, labelled)
- 4 Plug 24v power supply into 120V outlet

LED STATUS

- **Solid Green** • Valve Open
- **Solid Red** • Valve Closed
- • Valve not connected

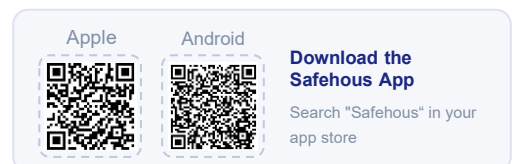
App Setup

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Install App, Create Account

The app manages all devices on the property

- 1 Download **Safehaus** from Apple App Store or Google Play
- 2 Create account — email + username + password



i Approve all notifications and alert permissions on your phone

APP SETUP CONTINUED

Configure IG-1000 Gateway

LoRa-to-internet Gateway

7 Option 1 – Ethernet LAN “Plug and Play”

- 1 Plug the USB cable and power adapter into a wall outlet to power the IG-1000
- 2 **Easy – Plug and Play**
“Plug Ethernet cable into the IG-1000 and the homeowner's router or network switch



- Blue Internet LED On Solid - connected to Internet
- Green PWR LED On - Power On



Option 2 – WIFI to Gateway Setup

⚠ 2.4 GHz WiFi only. 5 GHz networks are not supported. Have the homeowner's WiFi password ready before this step.

- 3 Log into your WiFi on your device

SafeHous App Select “Hub”



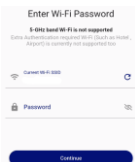
SafeHous App Tap “WIFI” icon
Review the instructions - Setup Wi-Fi screen



- 4 **Gateway Hub** SET Button



- 5 Press and Hold 5-10 seconds: WiFi Settings
Internet LED will begin to flash blue



- 6 **SafeHous App**
Confirm WiFi name and Password



Continue WiFi setup complete

Add Devices

Each device has a unique QR code on front or back

8 Add All Devices via QR Code

- 1 Tap the **QR scanner** icon in the top bar



- 2 Point camera at the QR code on the device to add it to the account



- 3 Device appears in app — repeat for every sensor



FINAL CONFIGURATION

Calibrate FL-1000 Flow Sensor

9 Bind Leak Controller

Scan QR → Bind Device → Done

10 Calibrate the FL-1000 Sensor

Teaches baseline water temp — takes 20 seconds

- 1 Tap the **Leak Controller** Device
- 2 Tap the “Detail” icon
- 3 Select **Cold Water** or **Hot Water** to match the monitored supply line
- 4 Navigate to **Calibration** → ensure *no water is flowing*
Wait **20 seconds** — app confirms: Heated thermistor, Water temp, Differential ✓

⚠ No water must be flowing during calibration.
Close all faucets and confirm zero pressure before starting.

Set Leak Schedule

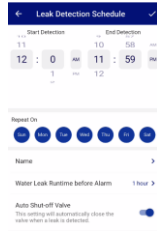
11 Set Leak Detection Time Windows

Schedule when system actively monitors for leaks

Navigate to **Alert** → choose **Leak Schedule**

Leak Schedule → + Icon

- 1 Create 24 hour leak detection schedule
- 2 12:00am to 11:59 PM
- 3 Water Leak Runtime 1 hour
- 4 Auto Shutoff Valve – On (Blue)

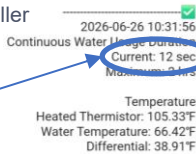


Test Leak Schedule

12 Leak Quick Test – “Refresh” icon

3 minute leak test

- 1 Start Test → Tap **Refresh** on Leak Controller (located under the Water Temperature)
- 2 Open House Faucet; Start water flow
Current: Timer will start
- 3 Stop Test → Close House Faucet
Stop water flow
Current: Timer will return to 0
- 4 Test Complete



⚠ If the quick test is unsuccessful, Calibrate the FL-1000 Sensor and try the quick test again

✓ INSTALLATION COMPLETION CHECKLIST

- ☐ FL-1000 Sensor & Actuated Valve shows no leaks
- ☐ IG-1000 Gateway Hub online (Solid Blue LED)
- ☐ Controller wired, power on, LED on (Green OPEN, Red CLOSED)
- ☐ APP Valve Controller bound in app — Online, valve toggle works
- ☐ DEVICES are all on the Safehaus App using the QR Code
- ☐ APP: All Device icons are Blue and status show "Normal"
- ☐ APP: FL-1000 calibration complete — readings confirmed
- ☐ APP: Leak detection schedule configured + tested
- ☐ APP AUTOMATIONS: POL Sensors: setup and tested

Alarm Alerts

13 Alert - Leak Detected

Water Flow exceeds Leak Schedule time window

- 1 Bell Icon Alarm will Appear
- 2 Investigate for potential water leaks
- 3 Reset Alarm State
- 4 Open Valve
- 5 Refresh → Current: 0



Reset Alarm State

If Refresh → Current is still counting

- 1 Investigate → Check that all water is turned off
- 2 Calibrate Sensor Again → (All water must be off)

Automation

14 Point of Leak Floor Sensor

Floor Pucks and Ropes

- 1 Add Point of Leak Sensor using QR Code
- 2 Smart Tab (bottom tool bar in Safehaus App)
- 3 Automation tab
- 4 Open Valve
- 5 + Icon → Name Automation
When → Device Actions → “Choose POL Sensor → WATER DETECTED → ✓
Add More Conditions → Add remaining POL Sensors
Behavior → Device Actions → Valve Controller → Close → ✓ → ✓
Test POL Automation is Working

- 1 Use a moist towel to wet the pins on POL sensor
- 2 Sensor will alarm
- 3 Leak Controller will close Actuated Valve