

01 • SMART TEMPERATURE-BASED LEAK DETECTION

In-Line Leak Sensor.

Continuously monitors water flow within a home, condominium, or apartment plumbing system through the main feed line. Proprietary temperature-based sensing identifies even the smallest leaks — down to fractions of a gallon per minute — by reading subtle changes as water passes the heated probe tip.

MODEL

FL-1000

FORM FACTOR

In-line brass tee, NPT

CONNECTION

1 in. NPT male / G 1

PIPE SIZE

DN 20 • ¾ in. nominal

KEY FEATURES

§ 1.1

 Thermal Sensing Proprietary heated-probe technology detects flow by temperature change.	 0.015 GPM Floor Identifies leaks as small as a few ounces per minute, day or night.	 Hot or Cold Installs on either hot or cold water feed lines without modification.	 24 / 7 Monitoring Continuous flow monitoring — always on, always sampling.	 Auto Shut-Off Pairs with the FS360 Valve Controller to close the supply automatically.
--	---	---	--	--

.015 GPM DETECTION FLOOR	232 PSI MAX PRESSURE	±1 % ACCURACY	24 V DC POWER SUPPLY
------------------------------------	--------------------------------	-------------------------	--------------------------------



FIG. 01 • FL-1000 — SENSOR PROBE & IN-LINE BRASS TEE FITTING

1 IN. NPT MALE / G 1

Full Specifications.

Hydraulic, electrical, and environmental parameters.
All values reference the FL-1000 source data sheet.

MECHANICAL & ELECTRICAL

§ 2.1

SENSOR

Proprietary heat sensor

Dual-element probe

DETECTION SENSITIVITY

0.056 LPM

0.015 GPM lower bound

PRESSURE RATING

PN 16

Max 232 PSI

MEDIUM TEMP

32 °F to 194 °F

0 °C to 90 °C, non-freezing

NOMINAL PIPE SIZE

¾ in. • DN 20

Standard residential feed

POWER SUPPLY

24 V DC

From paired controller

ACCURACY

±1% range / reading

Repeatability ±1%

PIPE SECTION

Brass

In-line tee body

AMBIENT TEMP

32 °F to 158 °F

0 °C to 70 °C

PROCESS CONNECTION

1 in. NPT male

G 1 male thread

Sensing Elements

§ 2.3

- Heater at probe tip +50 °F
- Temperature reference TOP OF PROBE
- Voltage-change detection ONBOARD MCU
- Compensates seasonal swings LOW FALSE-ALARM
- Filters hot-water usage BASELINE REF.

System Integration

§ 2.4

- VSC

1000
- ASV

1000
- IGW

10000
- Pairs with Valve Controller AUTO-CLOSE
 - Triggers shut-off valve ON LEAK
 - SafeHous App alerts REAL-TIME

HOW IT WORKS

§ 2.2

A precision stainless-steel probe carries two sensing elements. An electronic heater at the tip is held ~50 °F above ambient water temperature; under no-flow conditions, it stays stable. Even a small leak draws heat from the tip, producing a measurable voltage change that the controller's onboard microprocessor reads.

A second temperature-monitoring element near the top of the probe tracks baseline water temperature. By comparing both elements, the microprocessor filters out seasonal and hot-water swings — so only genuine flow events trigger an alert, minimizing false alarms while keeping sensitivity high.

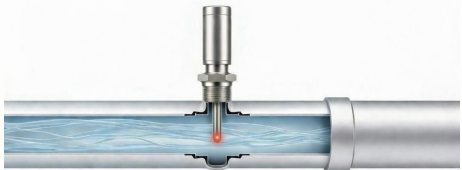
Installation

§ 2.2.1

- Tees into 1 in. NPT female fitting MAIN FEED
- Install upstream of branch lines WHOLE-HOME
- Pair with FS360 Valve Controller AUTO SHUT-OFF
- Probe seated in flow path SUBMERGED TIP

In-Pipe Operation

§ 2.5



HEATED TIP SUBMERGED IN FLOW PATH

APPLICATIONS

§ 2.6

A

Single-Family Homes

Main water feed line

B

Condominiums

Per-unit shut-off pairing

C

Multifamily Buildings

Bulk per-unit deployment

D

Hot or Cold Feeds

Either line, same install