



The Flow Conditioning Device: Installation Point, Mechanism, and Meter Accuracy

INSTALLATION POINT & MECHANISM

Installed Just After the Meter — Ahead of Every Validated Process System

The Flow Conditioning Device (FCD) installs between two pipe joints on the main water line immediately after your water meter — ahead of your facility's internal distribution to plant potable and utility water service, chemical feed and polymer makeup, backwash supply on purchased interconnects, and administration and laboratory demand. Each FCD is custom-built to the facility's exact specifications — pipe size, operating water pressure, and existing PRV configuration — and may include an integral check valve depending on the installation requirements. It requires no power and is installed by a licensed plumber or mechanical contractor with water off for approximately one hour.

Mechanically, the FCD creates a slight static back-pressure that extends back through the meter, reducing the air, gas, and turbulence that form during demand events and delivering a laminar-like flow profile through the measurement chamber. Municipal meters register volumetric displacement — entrained air and turbulent flow register as billable volume. Pressure loss through the device is under 0.8 psi across all flow conditions; downstream pressures, temperatures, and flow rates are effectively unchanged. Because the FCD sits just after the meter, it is outside treatment process control, SCADA setpoints, and permit conditions — no process change is required. Complete technical documentation is provided to support your internal change control review.

DIAGNOSTIC CHECKLIST — SIX SIGNS YOUR METER IS OVER-READING

☐ Purchased-water costs above projections

Wholesale or interconnect purchase charges persistently exceed demand models.

☐ Interconnect meters won't reconcile

Master meters between systems won't balance against billing data — non-revenue water that isn't real.

☐ High apparent losses in water audits

AWWA M36 audits show apparent losses that leak detection can't account for.

☐ Plant service billed above plant demand

Metered plant service exceeds chemical feed, backwash, and facility demand.

☐ Pressure variability at high-flow draw

High-flow zones show pressure swings at the purchase meter — entrained air registers as billable volume.

☐ Over-read treated as unavoidable

Meter over-registration is absorbed as a cost of supply rather than corrected at the source.

WHERE OVER-READING HITS THE OPERATION

Purchased Water & Rate Pressure

Over-reading wholesale interconnect meters inflates purchased-water cost — a recurring hit that rate cases have to absorb.

Water Audit Integrity

Apparent losses driven by meter over-registration distort AWWA M36 water balances — correction tightens the audit without infrastructure changes.

High-Flow Demand Events

Pump starts and variable-demand draw on high-flow zones create the exact conditions that entrain air at the purchase meter — continuously.

No Infrastructure Required

The FCD corrects over-registration at the meter — no main replacement, no SCADA changes, no treatment process impact.

ENGINEERING Q&A

Q: Will the FCD affect plant process water, chemical feed, or SCADA-monitored parameters?

A: No. Pressure loss through the FCD is under 0.8 psi across all flow conditions, and it installs just after the purchase or service meter. Process flows, chemical feed rates, and every SCADA-monitored parameter are unchanged.

Q: We're the utility — where does the FCD actually apply for us?

A: Anywhere your system buys metered water: wholesale interconnects with neighboring systems, purchased-supply master meters, and plant service meters. The FCD ensures the volume you're billed for is the volume that actually arrived.

Q: How does this interact with our AWWA M36 water audit?

A: Meter over-registration shows up as apparent loss. Correcting it at purchase and interconnect meters reduces non-revenue water on paper and in the budget — and gives the audit a defensible, accurate intake baseline.

Q: How do we estimate savings before committing?

A: Use the Water & Sewer Bill Savings Calculator at waterflowinnovations.com for an instant projection, then request the free savings analysis — a documented, system-specific projection suitable for a board or public works package.

Q: How quickly do savings appear?

A: The meter reads accurately immediately after installation. Savings appear on the next full water and sewer billing cycle — no ramp-up period. 90% of installed customers reach full return on investment in under 12 months.

ENGAGEMENT PROCESS — FOUR STEPS

From Analysis to Verified Bill Reduction

1

Free Savings Analysis

We review your water and sewer bills and facility demand profile — no cost, no obligation.

2

Documented Projection

You receive a written savings projection specific to your facility before any commitment.

3

FCD Installation

Licensed plumber or mechanical contractor installs immediately after the meter — water off approximately one hour.

4

Verified Bill Reduction

Before-and-after bill comparison verifies the reduction on your next billing cycles.

GUARANTEE & WARRANTY TERMS

6-Month Money-Back Guarantee

If you're not satisfied within 6 months of installation, the FCD purchase is fully refunded — no questions asked. Installation labor is non-refundable.

Lifetime Transferable Warranty

The FCD carries a lifetime warranty, transferable to the new building owner if the facility changes hands (a transfer fee applies).

DEVICE SPECIFICATIONS

Construction, Certification & Installation

Custom-built to each facility's specifications — pipe size, operating pressure, PRV configuration · 316L stainless steel construction; titanium and specialty alloys available by special order for medical and other specialized applications · Configuration may include an integral check valve per installation requirements · No power required · Under 0.8 psi pressure loss · Certifications: IAPMO, NSF/ANSI/CAN 61, KIWA, GMP, SQF · Installed by licensed plumber or mechanical contractor

Regulatory & Standards References: AWWA M36 (Water Audits & Loss Control) · AWWA M6 (Water Meters) · EPA