XINGHANG



NINGBO XINGHANG METER | SMART METER DIVISION

ODM SOLUTIONS FOR MECHANICAL-TO-SMART RETROFIT

Smart Retrofit Module ODM

Turn your existing mechanical water meters into smart meters. IP68 sealed. 10+ year battery. 8 communication options.

- LoRaWAN
- LoRa RF
- M-BUS
- RS-485
- wM-Bus
- NB-IoT
- 4G (CAT-1)
- Pulse Output

Document: ODM Service Proposal · Mechanical-to-Smart Retrofit Module
Version: 1.1

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Share your meter info for quotation. Send samples only for custom mould development.

We can provide quotation for retrofit modules based on your mechanical water meter specifications, drawings, photos, or details of the existing smart module fitted on your meter.
We supply water meter modules only. All meter data is transmitted directly to your own AMI/AMR head-end system.

Extensive Compatibility with Leading Global Brands
We can custom develop retrofit modules to fit mechanical water meters from well-known manufacturers across Europe, the US, and the Middle East, including:
Itron · Zenner · Diehl · Sensus · Kamstrup · Baylan · Arad · Badger etc.

* All trademarks belong to their respective owners. We are an independent hardware solution provider and are not affiliated with these brands.

GET STARTED

Path A (Benchmark Reference Development):
Sample package: 1 reference smart module + 1 matched mechanical water meter.
We analyze the reference samples and conduct communication performance testing for our independently developed module.

Path B (Custom Adaptation Development):
Sample: 1 mechanical water meter.
We develop a compatible smart module and complete validation tests with the provided meter sample.

Legal Note: Path A is for functional benchmarking only. All developments are new designs.
All technical figures are reference ranges and will be finalized in the signed ODM agreement.

Keep your proven meter. Add a smart module.

Millions of mechanical meters stay in service, but AMI/AMR mandates are coming. Instead of replacing the entire meter, you can retrofit a smart module. It reads dial data via non-magnetic inductive sensing and transmits data over your selected network.

100% **Meter body retention**
The existing mechanical movement keeps working.

IP68 **Fully sealed module**
Permanent underwater operation, no cable needed.

10 yr **Battery life**
10-year long field service life.

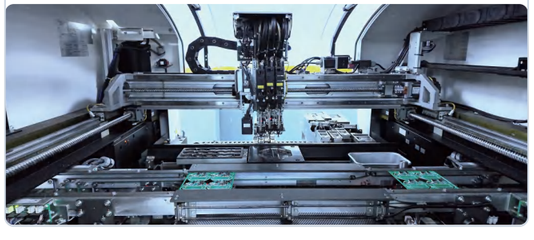


Hardware only, open protocol:
Open protocol design for seamless integration.
Meter data connects directly to your existing AMI/AMR head-end system.

Core Smart Features

Comprehensive smart metering and protection capabilities.

- Magnetic tamper alarm
- Tamper-evident alarm
- Leakage alarm
- Reverse flow metering
- Data logging
- Remote water consumption reading



One-stop engineering

Full hardware stack, mass-produced on our own production line.

1. **Mechanical & structural**
Drop-in fit to your meter neck, dial and lens. IP68 enclosure, tamper-evident seal.

2. **PCB hardware**
Sensing front-end (non-magnetic inductive dial reading),MCU, RF front-end, power management. EMC-tested layout.

3. **Embedded firmware**
8 communication options for selection.

4. **Enclosure, battery & tooling**
Engineering-plastic housing, custom mold. 3.6V Li-SOCl2 battery for 10-year field life; we manage tooling.



PCB Assembly, Accuracy&Communication Verification

- In-house PCB assembly of smart modules, RF and low-power circuits developed internally.
- Own flow test bench: meter reading accuracy tested with real water flow.
- Complete communication testing: RF connectivity and data transmission verified before shipment.

XINGHANG ·Smart Retrofit Module ODM

Two ODM paths - pick the one that matches your business

Both solutions deliver a custom smart retrofit module for you, with full intellectual property rights assigned to you. The differences lie in the samples you provide, development scope and lead time.

Path A Drop-in Replacement



WHAT YOU SEND
Finished smart module (reference sample) + Matching mechanical meter (for testing).

WHAT WE DO
- Independent R&D of hardware (PCB, housing, lithium battery) and embedded firmware.
- Housing appearance designed per your requirements.
- 3D printed prototype available for plastic housing (3D printing cost applies).
- Mount and test on your meter to ensure 100% compatibility.

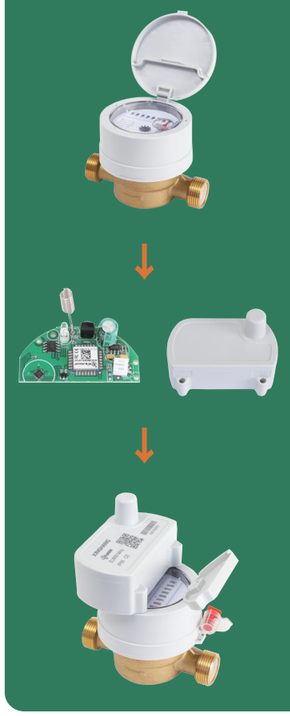
DEVELOPMENT LEAD TIME
3–4 weeks to working sample delivery.

TOOLING / NRE FEE
Custom tooling cost will apply if new mould is required after 3D prototype validation.

UNIT COST VS. ORIGINAL
At least 50% cost reduction, identical functions.

APPEARANCE / DESIGN RIGHTS
We redesign based on your reference sample; drawings for your approval. This design is exclusive to you.

Path B Custom Turnkey ODM



WHAT YOU SEND
One of your mechanical water meters, fully specified.

WHAT WE DO
- Independent R&D of hardware (PCB, housing, lithium battery) and embedded firmware.
- Housing appearance designed per your requirements.
- 3D printed prototype available for plastic housing (3D printing cost applies).
- Mount and test on your meter to ensure 100% compatibility.

DEVELOPMENT LEAD TIME
5–6 weeks to 3D-printed prototype.

TOOLING / NRE FEE
Custom tooling cost will apply if new mould is required after 3D prototype validation.

UNIT COST VS. ORIGINAL
Competitive; BOM optimized for your volume.

APPEARANCE / DESIGN RIGHTS
Exclusive to you — we do not sell this design to anyone else.

Quick reference

	Path A · Drop-in Alternative	Path B · Custom ODM
What you send	One finished **reference module**	One **specified mechanical meter**
Development work	**Independent R&D** for full interoperability	Design everything from scratch
Lead time	3–4 weeks to samples	5–6 weeks to 3D prototype
Tooling / NRE	Tooling negotiable; 3D sample fee applies	Tooling negotiable; 3D sample fee applies
Unit cost	Up to 50% lower	**Cost-effective,** volume-optimized
Design rights	**Exclusive design, client-owned IP**	**Exclusive design, client-owned IP**
Best suited to	Fast migration, cost-down, compatible replacement	Own branded smart line