Incosteam

Conserving Energy, Preserving Tomorrow

SCAN TO VISIT
incosteam.com

FLOW MEASUREMENT · IVFM SERIES

Vortex flow meters

Accurate, reliable measurement of saturated and superheated steam, compressed air, water and gases, with no moving parts.



Incosteam IVFM vortex flow meters · sandwich (wafer) type

1.0% FS
accuracy · 0.5% FS repeatability

DN15–300
sandwich, flanged, tri-clamp, screwed

345 °C
max. medium temperature

40 kg/cm²
pressure rating option

OVERVIEW

One meter for steam, air, water and gases

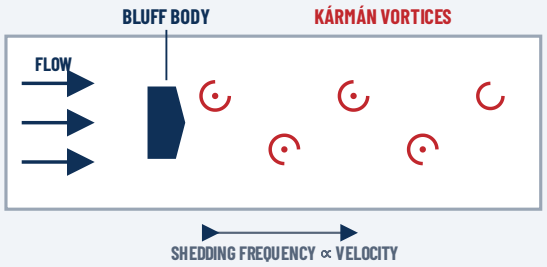
Economical, rugged and reliable: the most widely used meter for steam flow measurement.

Incosteam IVFM series vortex flow meters measure saturated and superheated steam, water, air and gas. They are the most economical and reliable way to put a number on your largest utility cost.

With **no moving parts** and an all-stainless-steel build, the meter withstands vibration, shock and high temperature with very little maintenance.

Choose sandwich, flanged or tri-clamp connections, with temperature or temperature-and-pressure density compensation for true mass flow. **Multiple meters can share a common flow display and totaliser within 500 metres.**

HOW IT WORKS · KÁRMÁN VORTEX SHEDDING



Flow past a bluff body sheds vortices alternately from each side. The in-built sensor counts them: the shedding frequency is directly proportional to velocity. With density compensation, the meter gives accurate mass flow independent of pressure and temperature changes.

WHY INCOSTEAM VORTEX METERS

High accuracy
1.0% FS accuracy with 0.5% FS repeatability.

Rugged and reliable
No moving parts; all-stainless construction; anti-vibration and shock-resistant design.

Density compensation
Temperature, or temperature and pressure, for true mass flow of steam and gases.

Wide applicability
One meter technology for steam, air, water and gases, DN15 to DN300.

Smart and connected
4–20 mA, pulse, HART and RS485 outputs with local LCD display.

Energy savings
Accurate measurement for better control of steam and utility consumption.

MEDIA & APPLICATIONS

Steam
Saturated and superheated steam: boiler output, headers and user-wise energy monitoring

Air
Compressed air consumption, leakage tracking and optimisation

Water
Process water, cooling water and utilities measurement

Gases
Natural gas, nitrogen, CO_2 and other industrial gases

You can't manage the steam you don't measure.

Steam metering is the first step in any steam-system optimisation. Our engineers help you size, select and commission the right meter.

TECHNICAL DATA

Specifications

Standard construction is shown. Other options are available on request.

1.0 % FS
Accuracy

0.5 % FS
Repeatability

DN15–300
Pipe size range

IP65
Protection class

Measurement & signal

Media	Steam (saturated / superheated), air, water, gases
Accuracy	1.0% FS
Repeatability	0.5% FS
Output signals	4–20 mA · pulse · HART · RS485 (Modbus RTU)
Display	Local LCD, flow rate and totaliser
Compensation	Temperature, or temperature & pressure
Power supply	24 V DC or 3.6 V lithium battery

Construction & ratings

Body material	SS304
Construction	All stainless steel
Process connection	Sandwich · flanged · tri-clamp · screwed
Pipe size	DN15 to DN300
Pressure rating	16, 25 and 40 kg/cm^2
Medium temperature	–25 °C to 345 °C
Ambient temperature	–20 °C to 85 °C
Protection	IP65

MODEL CODE · IVFM – X – Y – Z

X Output signal

1 · 4–20 mA & HART

2 · 4–20 mA & RS485

Y Process connection

1 · Sandwich

2 · Flanged

3 · Tri-clamp

Z Measurement / compensation

1 · Temperature

2 · Temperature & pressure (density compensation)

Ordering example **IVFM – 2 – 1 – 2**

RS485 + 4–20 mA output, sandwich connection, temperature and pressure compensation. Add line size, pressure rating and flow range.

CONFIGURE YOUR METER

Built for your line and your media

Every meter is configured to order. Use this guide with our engineers to pick the right combination.



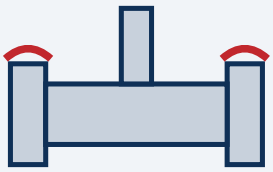
Sandwich (wafer)

Clamped between line flanges. Compact, light and economical.



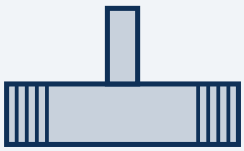
Flanged

Integral flanges for higher pressure and larger lines.



Tri-clamp

Hygienic connection for food, dairy and pharma.



Screwed

Threaded ends for small-bore lines.

Compensation

Temperature Density from temperature: for saturated steam, where pressure and temperature are linked.

Temperature + pressure Full density compensation: for superheated steam, compressed air and gases.

Output & display

- 4–20 mA analogue
- Pulse, for totaliser / PLC / DCS
- HART, configuration & diagnostics
- RS485 Modbus RTU
- Local LCD display
- Common remote display & totaliser for multiple meters (within 500 m)

Pressure rating

- 16 kg/cm²
- 25 kg/cm²
- 40 kg/cm²

Power supply

- 24 V DC loop
- 3.6 V lithium battery

Battery option for sites without power at the meter.

Line size

- DN15 to DN300

Size the meter for the actual flow range, not just the pipe size.

Send us your data sheet

Media · line size · min/normal/max flow · operating pressure and temperature · saturated or superheated · output and display required · end connection. We will recommend the right size and configuration.

SMART OUTPUTS & COMMUNICATION

Connects to the way your plant runs

Standard analogue, pulse and digital outputs feed the meter into control, display and energy-management systems.

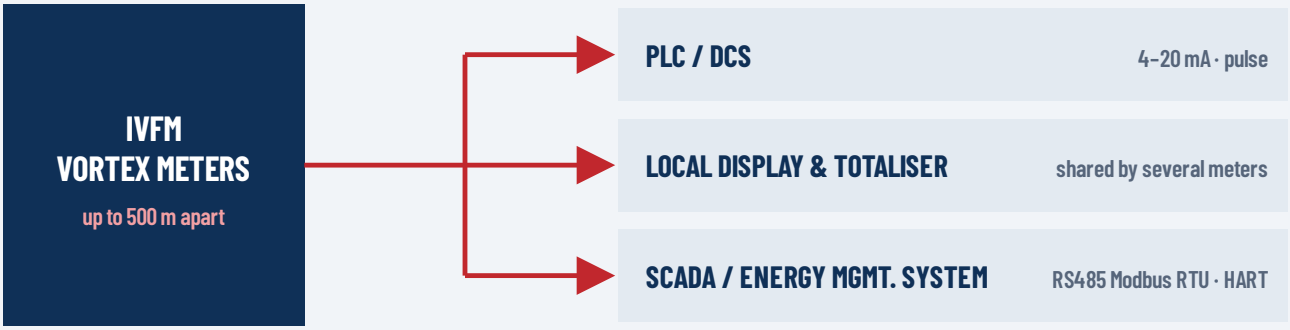
4–20 mA
Standard analogue output

Pulse
For totaliser, PLC or DCS

HART
Configuration and diagnostics

RS485
Modbus RTU digital communication

SYSTEM INTEGRATION



KEY FEATURES

Local LCD display with instant readings

Multi-parameter measurement

Data logging & totalisation

Easy configuration via HART / RS485

Remote monitoring & diagnostics

TYPICAL RECENT SUPPLIES · STEAM MAIN LINES, TEXTILE PLANT (IBR)

Line size	Connection	Pressure, bar	Flow range	Duty
80 NB	Sandwich	10.5 → 8.5	0–2,500 kg/h	Sizing machine
100 NB	Sandwich	10.5 → 8.5	0–3,500 kg/h	Rope dyeing machine
100 NB	Sandwich	7 → 5	0–2,500 kg/h	Process machine line
150 NB	Sandwich	10.5 → 8.5	0–3,500 kg/h	Sheet dyeing machine

Model IVFM25 sandwich meters with flow display and totaliser. Every meter is ranged to the actual load of the machine it serves.

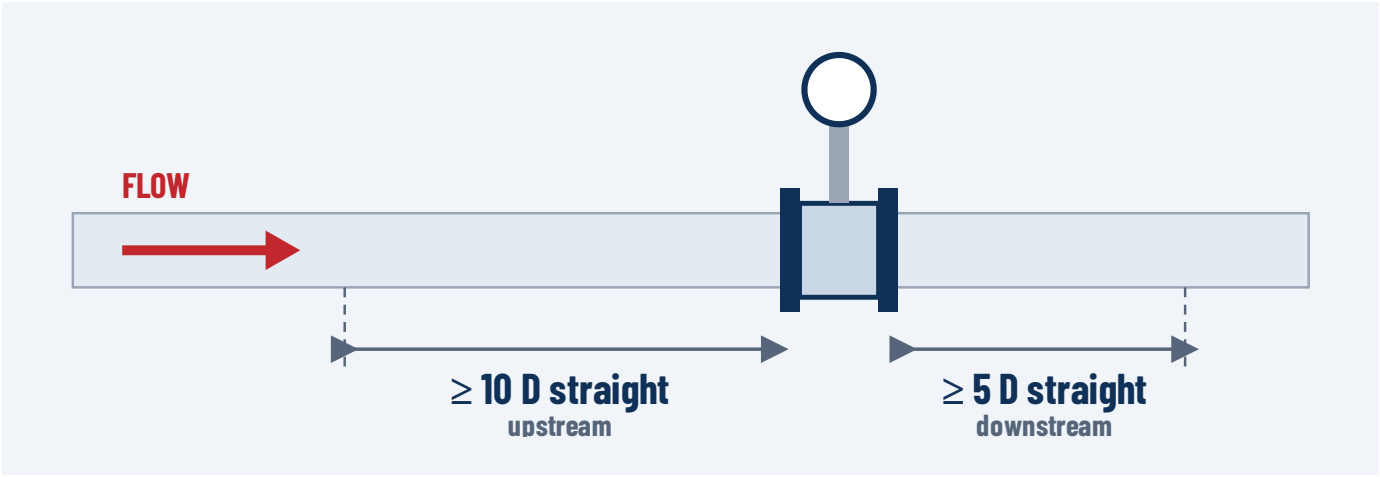
Many meters, one display.

Club multiple vortex meters on a common flow display and totaliser within 500 metres, for a single view of steam across the plant.

INSTALLATION

Install right, measure right

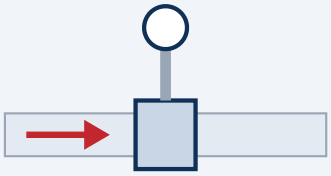
A fully developed flow profile and a full pipe are the keys to rated accuracy.



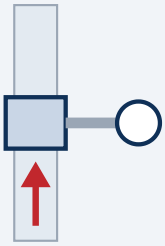
GENERAL INSTALLATION TIPS

- Provide at least **10 D** straight pipe upstream and **5 D** downstream (D = nominal pipe diameter)
- Install in horizontal pipe, or vertical pipe with **upward flow**
- Make sure the pipe is completely filled with the fluid
- Avoid installation near strong vibration sources
- Provide isolation valves for maintenance
- For steam, ensure proper drainage upstream of the meter so condensate does not reach it
- Match the flow arrow on the body to the flow direction

LAYOUT OPTIONS



Horizontal



Vertical · up-flow

RECOMMENDED STRAIGHT RUN

Upstream min. 10 D · downstream min. 5 D



COMMISSIONING SUPPORT

Our engineers can review your layout before installation

Share a piping sketch or photo of the meter location. We will confirm straight runs, drainage and orientation, and help configure the meter at site.

APPLICATIONS

Accurate measurement, measurable savings

Metering turns steam and utilities from an overhead into a managed cost, line by line and machine by machine.

Steam

- Boiler output and steam-to-fuel ratio
- Header and department-wise distribution
- Machine-wise consumption (dyeing, sizing, dryers)
- Energy monitoring at utility stations

Compressed air

- Compressor output and specific power
- Leak detection by night-time baseline
- Consumption per line or shop

Water

- Process and cooling water
- Boiler feed and utility water
- Plant water balance

Gases

- Natural gas to boilers and furnaces
- Nitrogen and CO_2 distribution
- Other industrial gas flows

ENERGY SAVINGS WITH ACCURATE FLOW MEASUREMENT

Reduce steam consumption

Find and fix excess use machine by machine

Improve process efficiency

Steam per tonne of product, tracked over time

Lower energy costs

Allocate utility cost to the right department

Reduce CO_2 emissions

Less fuel burnt for the same production

TRUSTED PERFORMANCE. PROVEN VALUE.

Engineered for accurate, long-term performance in demanding industrial environments.

The ideal solution for utilities, process industries and energy management, backed by Incosteam's steam-system expertise.



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ONE PARTNER FOR UTILITIES

Measure every utility, then optimise it

Incosteam supplies a complete metering range alongside our steam and condensate products, so one team can measure, engineer and verify savings across your plant.

Vortex flow meters
Saturated and superheated steam, air and gas

Electromagnetic flow meters
Water, condensate, effluent and chemicals

Smart steam sensors
Clamp-on steam quality and trap monitoring, with Brenpower

Steam traps & valves
TD traps, float trap modules, piston valves

Condensate recovery
Pumps, flash vessels and deaerator heads

Steam audits
Plant surveys, energy balance and verified savings

ENQUIRIES & SIZING SUPPORT

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