Incosteam

Conserving Energy, Preserving Tomorrow

SCAN TO VISIT
incosteam.com

FLOW MEASUREMENT · PRODUCT CATALOGUE

Electromagnetic flow meters

Accurate, obstruction-free measurement of water, effluent, chemicals and slurries, with no moving parts and no pressure drop.



Incosteam electromagnetic flow meter · integral LCD transmitter

±0.5%
of reading accuracy

DN15+
sizes, flanged ANSI #150

5 µS/cm
minimum conductivity

IP66
die-cast aluminium housing

OVERVIEW

Precise flow measurement for conductive liquids

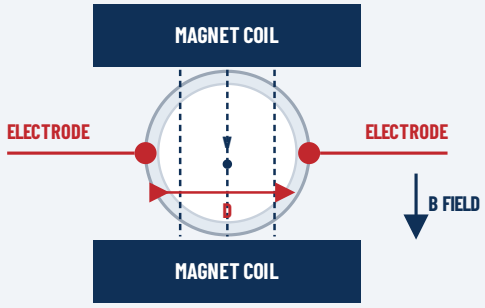
True volumetric measurement that is unaffected by viscosity, density, pressure or temperature.

Incosteam electromagnetic flow meters give accurate, repeatable measurement for a wide range of liquids, from clean water and condensate to effluent, slurries, brines and highly corrosive chemicals.

The full-bore flow tube has **no moving parts and nothing in the flow path**, so there is no added pressure drop, no wear and almost no maintenance. A choice of linings and electrodes matches the meter to the media.

A 4–20 mA output proportional to flow, RS485 Modbus and a local flow-rate display with totaliser make integration into PLC, DCS and SCADA systems simple.

HOW IT WORKS · FARADAY'S LAW



A conductive liquid moving through the magnetic field induces a voltage across the electrodes: $E = B \cdot v \cdot D$. With B and D fixed, the signal is directly proportional to velocity, and so to volumetric flow.

WHY INCOSTEAM MAG METERS

No pressure drop
Full-bore tube with no obstruction; no need to oversize pumps.

Accurate and stable
±0.5% of reading with ±0.2% repeatability; pulsed-DC coil excitation for long-term zero stability.

Handles difficult media
Effluent, slurries, pulps, brines and acids, with PTFE, rubber, neoprene or PFA linings.

Bi-directional flow data
Directional flow measurement with adjustable damping.

Integration-ready
4–20 mA, RS485 Modbus and optional pulse output.

Rugged build
IP66 die-cast aluminium transmitter, epoxy-painted sensor, integral or wall-mounted remote display.

INDUSTRIES & APPLICATIONS

Effluent & sewage treatment	Water supply & distribution	Chemicals & pharma	Food & beverage, dairy	Sugar & distillery
Pulp & paper	Textile processing	Steel, aluminium & mining	Petrochemicals & fertilisers	Boiler feed & utilities

Measure the loss. Engineer the fix. Verify the saving.

Flow metering is the first step in any utility optimisation. Our engineers help you size, select and commission the right meter.

TECHNICAL DATA

Specifications

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

±0.5 %
Accuracy, of reading

±0.2 %
Repeatability, of FSD

5 µS/cm
Minimum conductivity

0.3–12 m/s
Flow velocity range

Electrical & signal

Power supply	230 V AC or 24 V DC
Power consumption	25 VA
Outputs	RS485 Modbus · 4–20 mA isolated · 4–20 mA
Optional output	Pulse output (open collector)
Accuracy	±0.5% of reading
Repeatability	±0.2% of FSD
Time constant	0.8 to 8 s, adjustable
Min. conductivity	5 µS/cm
Flow data	Directional flow
Display · LCD	16×2 alphanumeric: 5-digit flow rate, 10-digit totaliser
Display · LED	4-digit flow rate, 9-digit totaliser

Transmitter enclosure

Housing	Die-cast aluminium, epoxy painted
Protection	IP66
Cable entry	M12, 2 nos.
Mounting	Integral with sensor, or wall-mounted remote (10 m cable)
Ambient temperature	–20 °C to +60 °C

Certification

Quality	ISO 9001:2015
Water meters	ISO 4064-1:2014
Marking	CE

Flow sensor

Nominal bore	15 NB and above
Lining	PTFE (Teflon) · rubber · neoprene · PFA
Electrodes	SS316 · Hastelloy C · titanium
Flow tube	SS304, non-magnetic
Sensor body	MS · CS · SS304 · SS316

Flanges	MS / CS, ANSI B16.5 #150 (SS on request)
Process temperature	PTFE lining 125 °C · rubber lining 80 °C
Process pressure	up to 80 NB: 25 kg/cm² · above 80 NB: 15 kg/cm²
Paint	Epoxy
Velocity range	0.3 to 12 m/s

CONFIGURE YOUR METER

Built to suit your media and your plant

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



Integral mounting

Transmitter and display mounted on the sensor. Compact, single unit, ideal for accessible lines.

Remote (wall) mounting

Display and transmitter wall-mounted up to 10 m away. Use where the line is hot, vibrating, hard to reach or in a pit.

Display & output

- **LED · 4-digit rate · 9-digit totaliser · 4–20 mA**
- **LCD · 5-digit rate · 10-digit totaliser · RS485 Modbus + 4–20 mA**
- Optional pulse output

End connections

- **Flanged ANSI #150**
- ANSI #300
- DIN PN16 / PN25 / PN40
- BS10 Table D / F
- Tri-clamp
- Union
- Sandwich (wafer)
- Insertion type for large lines

Body & flanges

- **MS / CS, epoxy painted**
- SS304
- SS316
- SS316L

LINING SELECTION

Lining	Max °C	Typical media
PTFE (Teflon)	125	Acids, alkalis, chemicals, hot water
PFA	—	Aggressive chemicals, high purity
Hard / soft rubber	80	Water, effluent, slurries, abrasive media
Neoprene	—	Water, sewage, mild chemicals

Process temperatures as per standard datasheet. Higher-temperature PTFE/PFA constructions on request.

ELECTRODE SELECTION

Electrode	Typical media
SS316 / SS316L	Water, effluent, most general process liquids
Hastelloy C	Acids such as HCl, chlorides, caustic solutions
Titanium	Chlorides, seawater, brines
Tantalum	Highly corrosive acids, on request

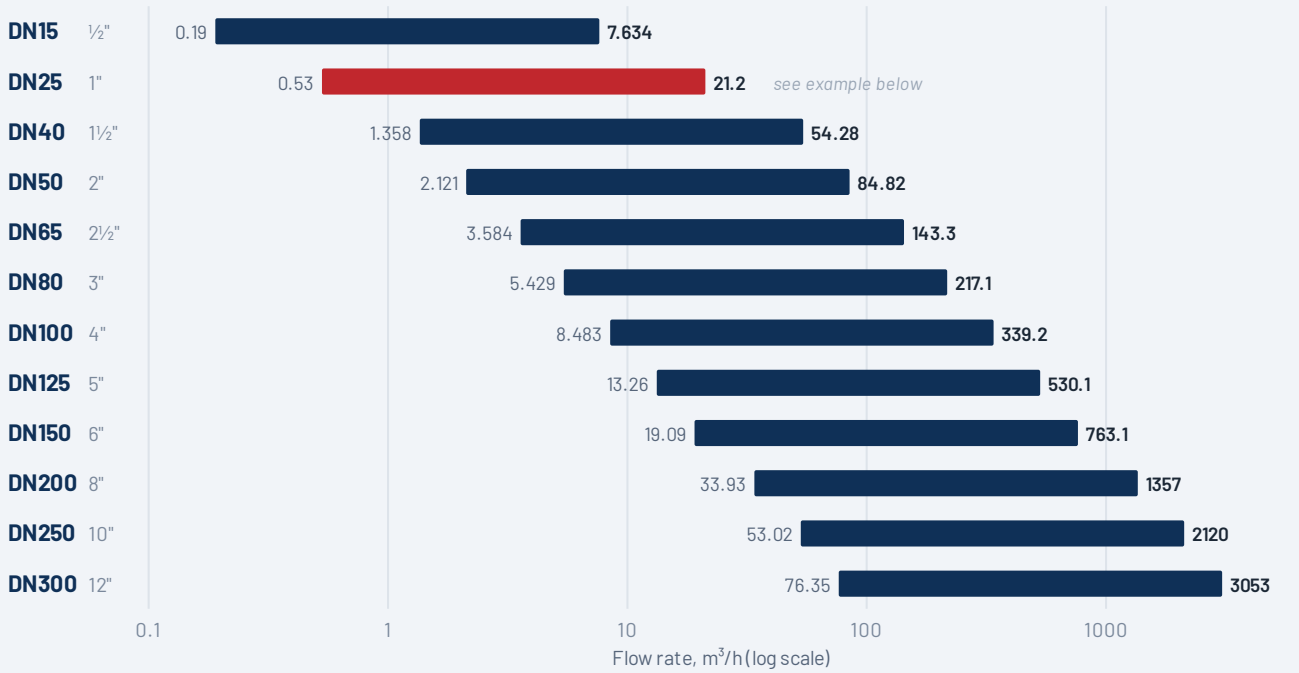
Send us your data sheet

Line size · media and concentration · min/normal/max flow · operating pressure and temperature · output and display required · end connection. We will recommend the right size, lining and electrode.

SIZING GUIDE

Flow range by line size

Ranges correspond to flow velocities of about 0.3 to 12 m/s. Size the meter for the process flow, not just the pipe.



FLOW RATE GUIDELINE

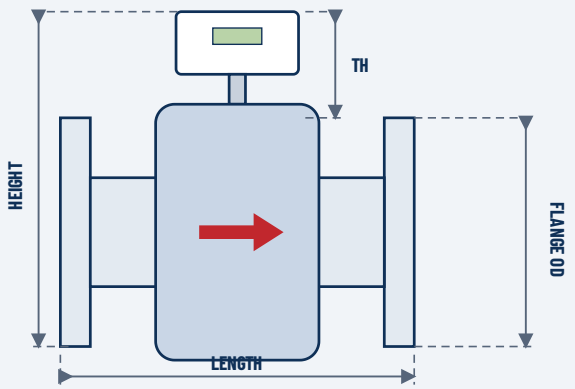
Size	LPM min	LPM max	LPH min	LPH max	m³/h min	m³/h max
DN15 (½")	3.06	127.23	190	7,634	0.190	7.634
DN25 (1")	8.83	353.33	530	21,200	0.530	21.20
DN40 (1½")	22.63	904.66	1,358	54,280	1.358	54.28
DN50 (2")	35.35	1,413.66	2,121	84,820	2.121	84.82
DN65 (2½")	59.73	2,388.33	3,584	1,43,300	3.584	143.30
DN80 (3")	90.48	3,618.33	5,429	2,17,100	5.429	217.10
DN100 (4")	141.38	5,653.33	8,483	3,39,200	8.483	339.20
DN125 (5")	221.00	8,835.00	13,260	5,30,100	13.26	530.10
DN150 (6")	318.16	12,718.33	19,090	7,63,100	19.09	763.10
DN200 (8")	565.50	22,616.66	33,930	13,57,000	33.93	1,357
DN250 (10")	883.66	35,333.33	53,020	21,20,000	53.02	2,120
DN300 (12")	1,272.50	50,883.33	76,350	30,53,000	76.35	3,053

Example: a 25 mm (1") Teflon-lined meter covers 0.5 to 21 m³/h, as supplied for acid and caustic duty in chemical plants. Larger sizes on request.

DIMENSIONS & WEIGHTS

Flanged meters, ANSI B16.5 #150

All dimensions in mm. TH (transmitter height) is 155 mm for all sizes.



200
Length, DN15–80

155
Transmitter height TH

4.5–67 kg
Weight range, DN15–300

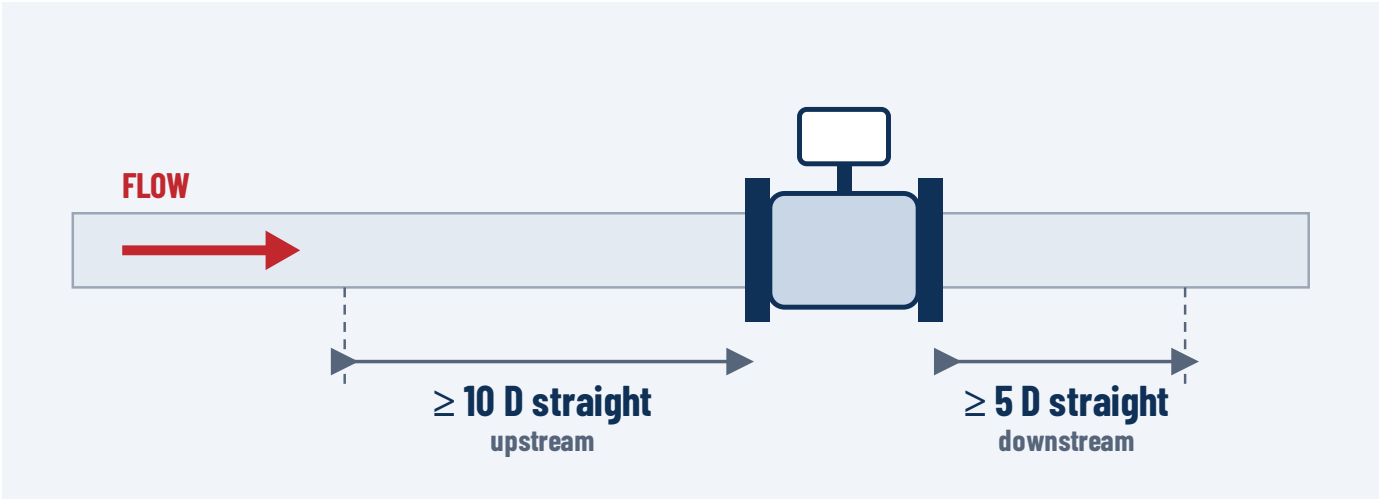
Lengths are face-to-face across the flanges. Weights are approximate (±1 kg) for MS/CS body with integral transmitter. Dimensions for other flange standards and sizes on request.

DN	Size	Length	Height	Flange OD	Hole PCD	Holes	Hole Ø	Weight kg
15	½"	200	244	89	60.3	4	15.9	4.5
20	¾"	200	254	99	69.8	4	15.9	5
25	1"	200	263	108	79.4	4	15.9	5.5
32	1¼"	200	272	117	88.9	4	15.9	6
40	1½"	200	282	127	98.4	4	15.9	6.5
50	2"	200	307	152	120.6	4	19.0	8
65	2½"	200	343	188	139.7	4	19.0	10
80	3"	200	345	190	152.4	4	19.0	11.5
100	4"	250	384	229	190.5	8	19.0	17
125	5"	250	409	254	215.9	8	22.2	24
150	6"	250	434	279	241.3	8	22.2	26
200	8"	300	498	343	298.4	8	22.2	36
250	10"	350	561	406	361.9	12	25.4	55
300	12"	350	638	483	431.8	12	25.5	67

INSTALLATION

Install right, measure right

Correct installation keeps the tube full and the flow profile steady for rated accuracy.



GUIDELINES

- Provide at least **10 D** straight pipe upstream and **5 D** downstream of the meter
- The pipe must run **full** at the meter; avoid the highest point of the line
- In vertical lines, install with flow **upward**; an NRV below the meter keeps the tube full
- Match the arrow on the body to the flow direction
- Keep the meter away from strong magnetic fields and large motors
- For hot, vibrating or inaccessible lines, choose remote mounting

RS485 MODBUS · SETUP CODES

Parameter	Codes
Unit	0 = LPS · 1 = LPM · 2 = LPH · 3 = m^3/h
Baud rate	0 = 2400 · 1 = 9600 · 2 = 19200
Parity	0 = none · 1 = odd · 2 = even
Slave ID	Configurable, register 40023

MODBUS HOLDING REGISTERS

Variable	High byte	Low byte
Totalised flow	40001	40002
Flow rate	40003	40004
Batch 1 current value	40005	40006
Batch 1 counter	—	40007
Batch 2 current value	40008	40009
Batch 2 counter	—	40010

Variable	High byte	Low byte
Low range	40011	40012
High range	40013	40014
Unit · baud · slave ID	—	40021 · 40022 · 40023
Decimal point · parity	—	40024 · 40025
Batch 1 reference	40026	40027
Batch 2 reference	40028	40029

Two-register values: total value = low register + (high register × 65535), as per the device register map.

Incosteam
Conserving Energy, Preserving Tomorrow

SCAN TO VISIT
incosteam.com

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.

Electromagnetic flow meters
Water, condensate, effluent and chemicals

Vortex flow meters
Saturated and superheated steam, air and gas

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

ISO 9001:2015 | ISO 4064-1:2014 | CE

ENQUIRIES & SIZING SUPPORT

+91 8055 813179
sales@incosteam.com

Incosteam International Pvt. Ltd.
A/P Dehu, Gat No. 73, Parandwal Chowk, Bypass Road, Vitthalwadi,
Tal. Haveli, Dist. Pune 412109, Maharashtra, India

Conserving Energy,
Preserving Tomorrow

www.incosteam.com