

EMS-CF-FP-FC

Compact electromagnetic flow meter, DN4–DN25, 0.14–1.66 L/s

Side-stream branch metering to confirm the 5–15% divert

A compact electromagnetic flow meter in DN 4, 8, 15 and 25 with a measuring range of 0.14–1.66 L/s (0.035–0.44 gal/s), equal to 0.5–6.0 m³/h, and accuracy tiers of ±0.25%, ±0.5% and ±5% of rate. It carries a PN 16 pressure rating, a PFA liner, electrodes in 1.4435 (316L), Alloy C22, tantalum or platinum, and a Modbus RS485 output with pulse, frequency or passive switch. It exists to confirm the divert on the branch, and the ±5% tier marks the bottom of its calibrated band.

ORDERING INFORMATION

Part number	EMS-CF-FP-FC
Instrument	Compact electromagnetic flow meter
Line sizes	DN 4, DN 8, DN 15, DN 25
Measuring range	0.14–1.66 L/s (0.5–6.0 m³/h)
Accuracy tiers	±0.25%, ±0.5%, ±5% of rate
Pressure rating	PN 16
Output	Modbus RS485; pulse, frequency or passive switch
Turndown ratio	Open — confirmed at order

MEASUREMENT

Parameter	Value	Notes
Measurement principle	Electromagnetic (magnetic) flow measurement	Needs a conductive fluid; the minimum conductivity for this model is not published
Line sizes	DN 4, DN 8, DN 15, DN 25	Published size set for the compact family
Measuring range	0.14–1.66 L/s (0.035–0.44 gal/s)	Equal to 0.5–6.0 m³/h. The published top of this band is the sizing anchor for a 6 m³/h side-stream branch
Accuracy tiers	±0.25%, ±0.5% and ±5% of rate	Percent of rate, not percent of full scale. The ±5% tier marks the bottom of the calibrated band rather than a separate specification
Turndown ratio	Open — not published	No turndown figure is published for this meter; the published accuracy tiers are what the datasheet carries, and the ratio is confirmed at order
Minimum fluid conductivity	Not published for this model	The full-bore meter in the same family publishes a 5 µS/cm floor; a low-conductivity loop is confirmed against the supplier document at order
Derived velocity check	About 3.4 m/s through a DN25 bore at 1.66 L/s	Derived; inside the 20 m/s ceiling the full-bore meter publishes
Calibration interval	Open — not published	No interval is published in the source research; confirmed at order

PROCESS, MATERIALS AND SIGNAL

Parameter	Value	Notes
Pressure rating	PN 16	Published maximum process pressure
Liquid temperature by seal	EPDM –20 to 130 °C; silicone –20 to 130 °C; Viton 0 to 150 °C	The seal material sets the temperature window, so the seal is part of the specification
Wetted materials	PFA liner; electrodes 1.4435 (316L), Alloy C22, tantalum, platinum; housing 1.4308	Full published wetted-material list
Process connection	DN 4, DN 8, DN 15 and DN 25 line sizes	Connection standard for each size is confirmed against the supplier document at order
Output signal	Modbus RS485; pulse, frequency or passive switch	Published output set
Protocol	Modbus RS485	Published bus protocol for this model
Supply voltage	Open — not published	The source research publishes no supply figure for this meter; confirmed at order
Ingress protection	IP66/67 type 4X	Published rating
Seal specifications built to	3-A, EHEDG and FDA-compliant seals	Published as specifications the unit is built to; no approval is claimed

FLUID CONDITION THAT CHANGES THE READING

Parameter	Value	Notes
Glycol concentration effect on viscosity	Roughly 1.7 to 8.2 mPa·s between 15% and 55% propylene glycol at 20 °C	Viscosity rises steeply with glycol concentration; a compact meter in the low-flow tier behaves differently at 55% than at 15%
Design basis to check against	25% v/v propylene glycol (PG25)	Verified with EMS-CF-WQ-G
Branch figure this meter confirms	5–15% of circulating loop volume	The divert share the side-stream unit is sized on
Loop type check	De-ionised technology cooling loop: 0.2–20 µS/cm	A magnetic meter needs a conductive fluid, so a near-DI loop is checked against the supplier document before this meter is specified

BANDS THIS INSTRUMENT IS READ AGAINST, BY LOOP TYPE

Parameter	Value	Notes
Conductivity band, glycol-premix or facility-water loop	50–300 µS/cm	A conductive loop, so the electromagnetic principle applies; the loop type is named because a de-ionised loop is a different case
Conductivity band, de-ionised technology cooling loop	0.2–20 µS/cm	The low end of this band sits below the 5 µS/cm floor published for the full-bore family, so a DI loop is a different flow-measurement problem
pH band, glycol-premix or facility-water loop	7.0–9.0 pH	Set by the metallurgy of the loop
pH band, de-ionised technology cooling loop	8.0–9.5 pH	The technology cooling side of the ASHRAE split loop

APPLICATIONS

- Divert confirmation on a side-stream branch
- Flow metering on DN 4 to DN 25 pipework
- Sizing anchor for a 2 m³/h or 6 m³/h side-stream unit
- Trend read beside an element differential pressure

COMPATIBLE PRODUCTS

- EMS-CF-S05 and EMS-CF-S08 side-stream units
- EMS-CF-FP-DP liquid-service element differential-pressure monitor
- EMS-CF-FP-K filter performance monitoring installation kit
- EMS-CF-WQ-G glycol refractometer to confirm the mix behind the reading

FLOW AND DIFFERENTIAL-PRESSURE LADDER

Parameter	Value	Notes
EMS-CF-FP-FL	Full-bore magnetic flow meter	1–24 in (DN25–DN600); ±0.75% of rate
EMS-CF-FP-FC	Compact magnetic flow meter	DN 4, 8, 15, 25; 0.14–1.66 L/s
EMS-CF-FP-D1	Low-range ΔP transmitter	±125 Pa; does not span a liquid element window
EMS-CF-FP-D5	Low-range ΔP transmitter	±500 Pa; does not span a liquid element window
EMS-CF-FP-DP	Liquid-service element ΔP monitor	2 psid clean to 60 psid maximum
EMS-CF-FP-K	Filter performance monitoring installation kit	Static pressure tip, connector, valve

NOTES

- Accuracy is published as percent of rate, not percent of full scale. The ±5% tier marks the bottom of the calibrated band, and no turndown ratio is published for this meter.
- The measuring range 0.14–1.66 L/s is equal to 0.5–6.0 m³/h, which is why a 6 m³/h side-stream branch sits at the top of this meter's band.
- The 3.4 m/s velocity figure is derived from 1.66 L/s through a DN25 bore; it is not a published rating.
- Minimum fluid conductivity, supply voltage and calibration interval are not published for this model. Those rows stay open and are confirmed against the supplier document at order.
- Viscosity rises from roughly 1.7 to 8.2 mPa·s between 15% and 55% propylene glycol at 20 °C, so the glycol concentration is verified before a flow reading is judged.

Full specification sheet and current pricing	EMS-CF-FP-FC
EMS-Trade Cooling · ems-cool.com	Rev. A
Typical lead time confirmed on order acknowledgement.	2026-09-19