DATA SHEET

INFINITY

IMFLOW PRO SERIES Electromagnetic Flow Meter

Best Suited for Conductive Liquids, Acids, Alkalies, Water, Pulps, and Slurries

The Infinity Equipments's Electromagnetic Flow Meter is a highly advanced and dependable instrument, specifically designed to accurately measure flow rates in conductive liquids, acids, alkalies, water, pulps, and slurries. For various industrial applications, the flow meter provides a maintenance-free solution with an unparalleled blend of performance, flexibility, and cost-effectiveness.
Its non-intrusive design makes it perfect for applications where contamination is a problem because it doesn't require any contact with the fluid. It also has a high degree of accuracy, typically within 0.5% of full scale.

Working Principle: In Electromagnetic Flow Meter, the magnetic field is generated by a set of coils. As the conductive liquid passes through the electromagnetic field, an electric voltage is induced in the liquid which is directly proportional to its velocity. The induced voltage is perpendicular to both the liquid flow direction and the electromagnetic field direction.

Key Features

- **High precision**: Often within 0.5% of the reading.
- **Broad Measuring Range**: With a measuring range of 0.2 m 3/h to 1300 m3/h, this device is suitable for a wide range of applications.
- **No moving parts**: Non-invasive measurement techniques guarantee excellent dependability.
- **Universal Power Supply**: 85 V AC-270 V AC, 50 Hz-60 Hz/ 24 V DC.
- **Bidirectional measurements**: Measurements that can be made in both directions—forward and backward.
- Designed for tough settings and highly corrosive or abrasive liquids, this material is **resistant to wear and tear**.
- **Unaffected by fluid characteristics**: The flow meter's measurement accuracy is unaffected by variations in the temperature, pressure, density, or viscosity of the fluid.
- **Flameproof** (IS/IEC 60079-1:2007)/ **Weatherproof/** Can **function in Potentially Explosive Atmosphere** (IS/IEC 60079-0: 2004)
- **Empty pipe alert**

Benefits

- **No Pressure Drop**: Electromagnetic flow meters **use less energy** since they don't cause a pressure drop, in contrast to conventional flow meters.
- **Low total cost** of ownership due to low maintenance requirements and **lengthy operational life**.
- **Versatility**: Due to its great **flexibility** and broad measuring range, it is appropriate for a diverse variety of applications like acidic chemicals, corrosive liquids, wastewater, cold/warm/hot water; and industries like food processing, pharmaceuticals, power generation industries, textile industries, pulp and paper industries, etc.
- **Eliminates the risk of contamination**.
- **Outstanding value relative to performance**

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IMFLOW PRO SERIES

TECHNICAL SPECIFICATIONS

Measurement Principle	**Electromagnetic**
Line Size Options	**15 NB To 350 NB (½ inches to 14 inches)**
Types Available	**Integral/ Remote (Up to 10 m Cable Length)**
Flow Measuring Range	0.2 m^3/h to 1300 m^3/h
Measured Variables	Volume flow, mass flow
Accuracy (or Max. Measurement error)	0.5% of F. S. (or ±0.5%)
Repeatability	±0.1%
Protection Class	Flow Sensor Unit: IP66/ IP67/ IP68 Transmitter/ Display Unit: IP65/ IP66
Liner	PTFE (Teflon)
Process Connection	Flange End
Flange Material	MS / CS / SS304 / SS316
Flange Class	#150
Coil Housing Material	MS / CS / SS304 / SS316
Flow Tube	SS304/ SS316
Electrode Material	SS316L/ Hastelloy C22
Media	Conductive Liquid
Flow Direction	Forward & Reverse (Reverse flow indicated with (-) sign before flow rate)
Electrical Conductivity of Liquid	>5 µS/cm
Process Pressure	20 bar or 20 kg/cm^2
Operating Temperature Range (Medium Temperature Range)	-10 (0) °C to +100 °C -10 (0) °C to +200 °C (Remote display) PTFE: up to 230 °C
Ambient Temperature Range	-25 °C to +60 °C
Relative Humidity	0-95%
Display Unit	
Display	Standard 16*2 LCD
Display Resolution/ Smallest Division	Flow-rate: 0.01 L/min or 0.01 m^3/h Totalizer: 9 digits Totalizer

Compliances/ Certifications

CE · ISO 9001-2015 Certified Company · IP66 Waterproof · IP67 Protection · IP68 Waterproof Protection · Rugged · Easy to Install · ISO 4064 Certified · Legal Metrology Model Approval · Make in India

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TECHNICAL SPECIFICATIONS

Transmitter Unit	
Power Supply	**85 V AC-270 V AC, 50 Hz-60 Hz/ 24 V DC**
Optional power supply	1. Solar powered with 30 hours uninterrupted operation through 24 V rechargeable battery pack, in absence of sunlight 2. 3.7 V Rechargeable Li-ion Battery operated
Output	**4-20 mA/ RS485/ Pulse** (All ***three*** outputs available for ***non-telemetry*** flow-meter) (In ***Inbuilt*** Telemetry- ***None*** available externally as Gateway by-default uses RS-485 In ***External*** Telemetry- Gateway connects with RS-485 and ***4-20 mA/ Pulse*** outputs remain available)
Power Consumption	<10 VA
Isolation	1.4 kV between Input, Output & Power Supply
Alarm Output	Low & High Flow Alarm (Open Drain)
Transmitter Housing Material	Die-cast Aluminum
Configuration functions/parameters	
Configuration Data	3 Tactile Membrane Keys for Data Configuration
Flow Totalizer Reset	Totalizer Reset Facility by Password Protection
Units of Measurement	L, m^3, kg, kL (User Configurable)
Low Flow Cut-Off	User Configurable- 0 to 10%
Damping Time	User Configurable
Security	Password Protection for Configuration of Data
Special Function (As Optional Accessories)	
Batching Facility	Available
Data Logging	Available
Telemetry	Available
Certifications and Warranty	
Meteorological Approvals and Certificates	Calibration performed on accredited calibration facilities (acc. To ISO/IEC 17025) (NABL Calibration) (provided at extra cost)
Other Approvals	CE, ISO 4064:2014
Warranty	1 Year

Name plate and warning inscription: The name-cum-warning inscription plate and rating plate made of Brass/ SS is permanently fixed on the cover of enclosure by hammer driven rivets leaving min. 3 mm material thickness around the rivets.
The warning inscription shall read as “DO NOT OPEN WHEN ENERGIZED”.

***We retain the prerogative to effect modifications or adjustments, without prior notification, at our discretion.**

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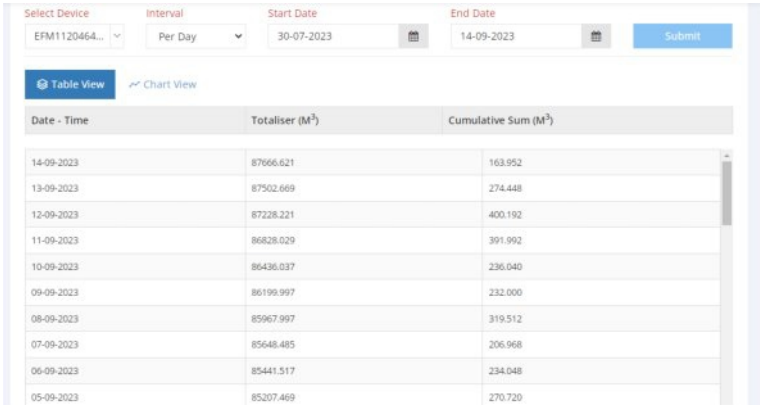
IMFLOW PRO SERIES

ELECTROMAGNETIC FLOW-METER WITH TELEMETRY	
All specs as mentioned above for Non-Telemetry , +	
Communication Types	GPRS / GSM or LAN Gateway
Telemetry System	**Inbuilt - GPRS / GSM,** **External - GPRS / GSM or LAN Gateway**
Cloud Application	
Dashboard	☑ Compatible on PC/ Mobile Phone/ iPad
Reports	☑ Real-Time Data Access
Multi-User Login	☑
Group Allocation	☑
Alerts	☑ Temper Alert and Power Failure Alert
Subscription	Yearly via Payment Gateways

Dashboard View:



Tabular view

Chart view

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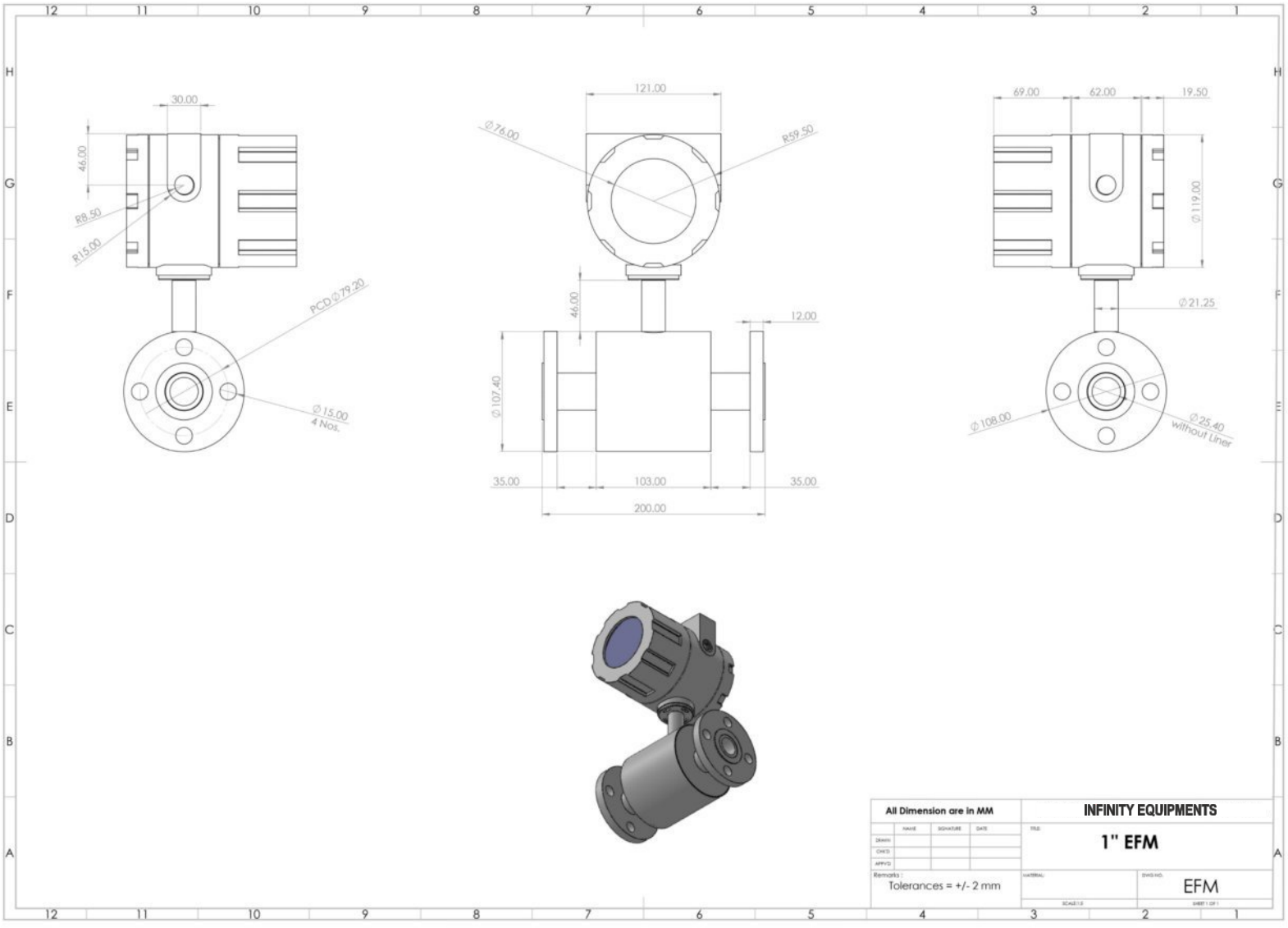
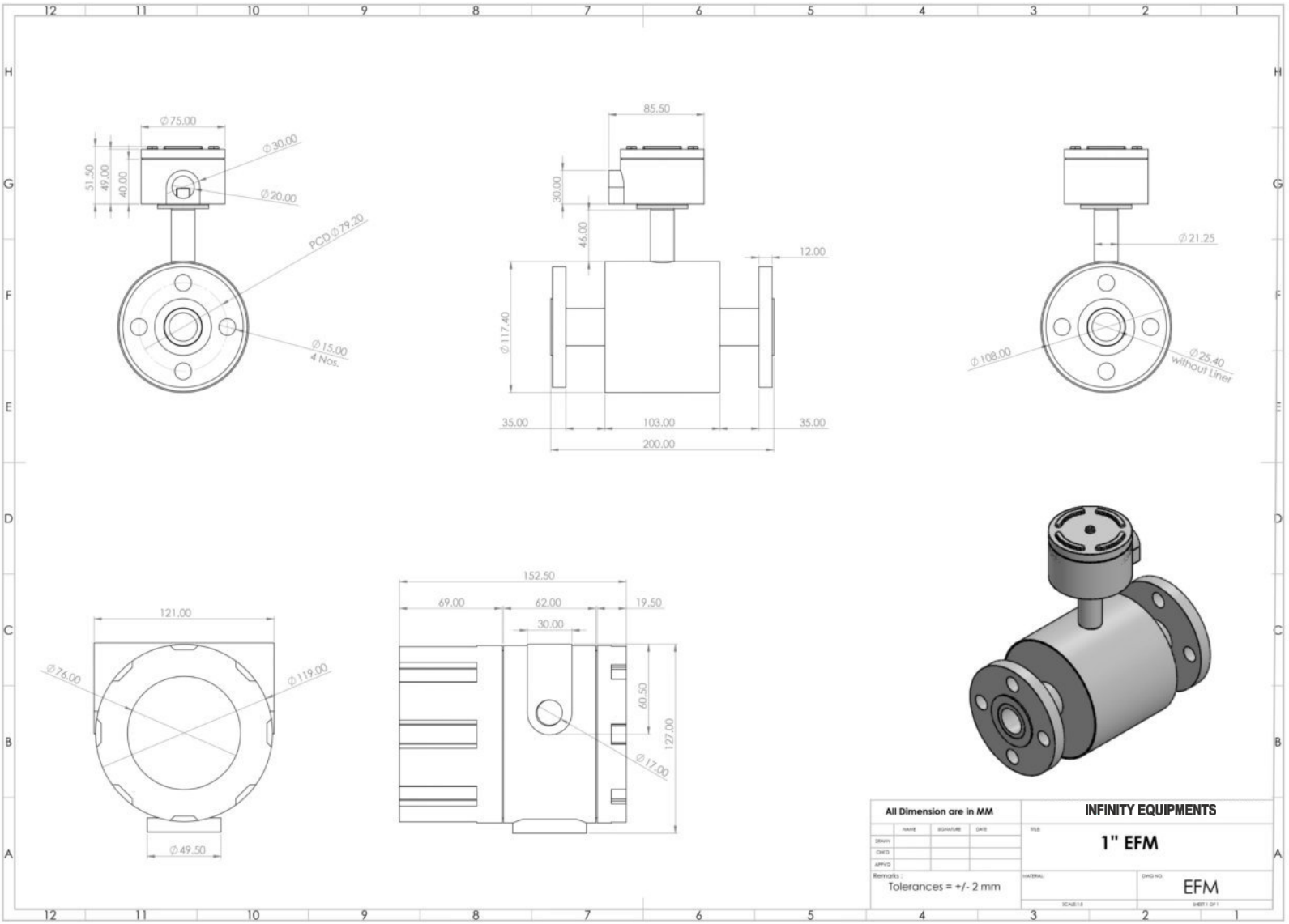
Dimensional Drawings

Integral display EFM



Note: The dimensional drawings provided are of 1” meters with integral and remote display respectively, are added in here for illustration purposes only. The buyers can ask for the ones specific to their purchased line size/s.

Remote display EFM



Note: The dimensional drawings provided are of 1” meters with integral and remote display respectively, are added in here for illustration purposes only. The buyers can ask for the ones specific to their purchased line size/s.

IMFLOW PRO SERIES

Application Areas

- Water & Wastewater Treatment
- Food & Beverage Industry
- Chemical & Pharmaceutical Industries
- Paper & Pulp Industry
- Mining & Metallurgical Industries
- Oil and gas
- Power generation (Cooling stations)
- Effluent Treatment Plants
- Textile Industry
- Ceramic Industry
- Marine Industry
- Nuclear Industry (Cooling stations)
- Sustainable Energies Industry

LINE SIZE/ MINIMUM AND MAXIMUM FLOW RATE CHART

PIPE SIZE	PIPE ID	MIN FLOW (m^3/h) (in general, 5% of Max Flow)	MAX FLOW (m^3/h)
0.5”	15	0.2	4
0.75”	20	0.3	6
1”	25	0.45	9
1.25”	32	0.7	14
1.5”	40	1.1	22
2”	50	1.8	36
2.5”	65	3	60
3”	80	4.5	90
4”	100	6.05	121
5”	125	10	200
6”	150	15.9	318
8”	200	22.5	450
10”	250	30	600
12”	300	42.5	850
14”	350	65	1300

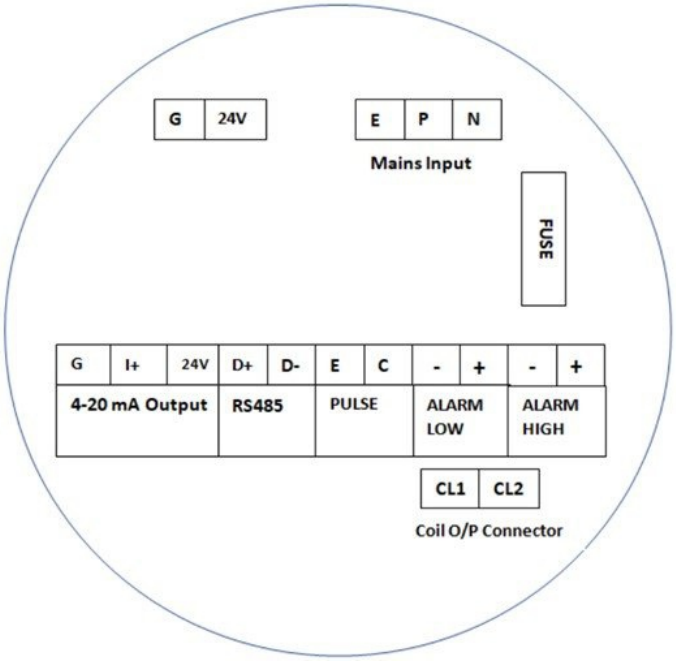
Note: Responsibility for the choice of the lining and electrode materials (abrasion and corrosion resistance) lies with the purchaser; the effect of any change in the process medium during the operation of the meter should be considered. Incorrect selection of the lining and/or electrode could lead to a failure of the meter.
*Can be customized.

Options and Customization:

- Lining Material: Options for various lining materials are available to meet a range of application requirements (e.g., PTFE, hard rubber, polyurethane).
- Process Connection: Numerous flange choices are available for various process connections/ Multiple electrode materials are available to suit different process fluids.
- Display Options: Local/Integral or remote displays are offered depending on the installation requirements.
- Output Options: Multiple output options are available, including 4-20 mA, pulse, and RS485.

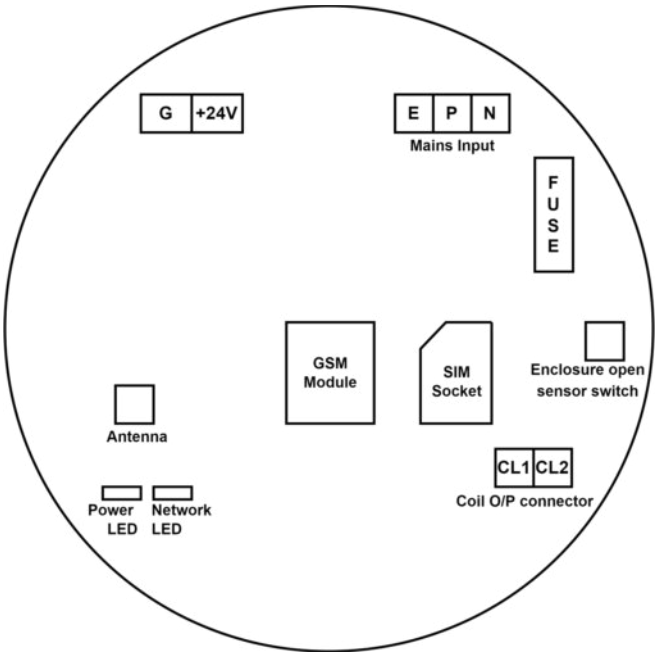
Visual Representation of the Connection Ports and User Interface

1. For Non-Telemetry

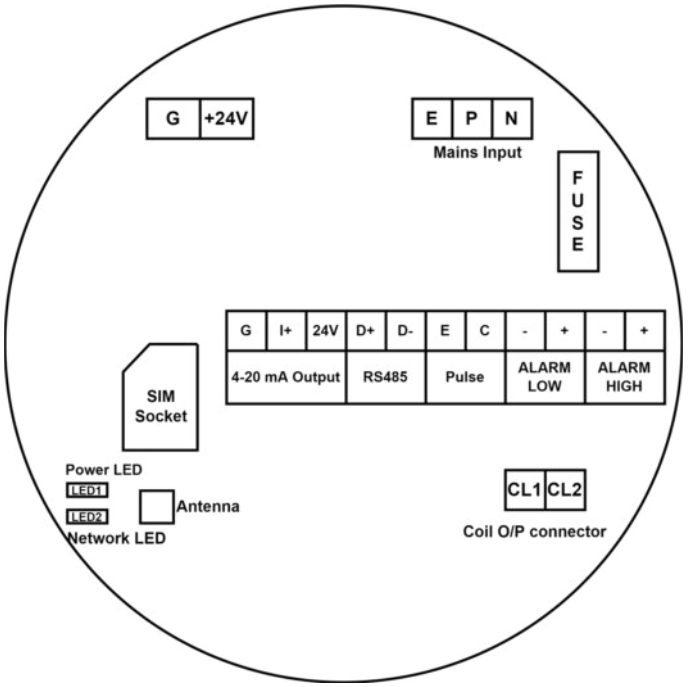


2. For Telemetry

2. a. Inbuilt Telemetry



2. b. External Telemetry



Within Telemetry

a. Inbuilt Telemetry

b. External Telemetry

b.1. GSM Gateway

OR

b.2. LAN Gateway

Installation Instructions:

The application and the customer's requirements will determine the precise installation procedure.

- Orientation: The flow-meter can be put in any direction, although for optimal results, horizontal installation is advised. **U-bend** is ideal for these flow-meters. Refer to the installation manual for details.
- Pipe Conditions: For precise measurements, make sure the pipe is continually filled with liquid.
- These meters are also susceptible to damage from lightning strikes if installed outside without canopy.

Upkeep and calibration:

- Maintenance: Because there aren't any moving parts, little maintenance is needed. The only maintenance typically required is cleaning the electrodes and sensor. Nonetheless, it is advised to perform regular check-ups on the electronic components. However, deposits developing on the electrodes, air in the liquid, turbulence, and to some extent water pounding can all influence the accuracy of electromagnetic meters (Pressure transients).
- Calibration: Regular calibration guarantees the best results. To find out the recommended calibration intervals, contact the manufacturer.

Ordering details:

Product Code: Use this special product code to order this model.

Identifying the data plate (Selecting the model):
EFM-A-B-C-D-E-F-G-H-I-J-K

A: Line Size (NB)
B: Lining Material (PTFE, Rubber)
C: Electrode Material (SS316L, Hastelloy 'C')
D: Flange and Coil Housing (MS, SS)
E: Class of Flange (Class 150, 300, 600)
F: Special Paint (No (Siemens Grey), Mention Color)
G: Output 4-20 mA (No: 0, Yes: 1)
H: Output RS485 (MODBUS) (No: 0, Yes: 1)
I: Display (Integrated: I, Remote: R)
J: Pulse Output (No: 0, Yes: 1) (Pulse 0 for Telemetry)
K: Supply Voltage (220V AC, 110V AC, 24V DC)
E.g.: EFM-50-PTFE- SS316L-MS-150-NO-1-1-I-0-220V

Included Accessories: L-clamp and power cable in *remote* type EFM.

Optional Accessories: Available upgrades or extra features that can be purchased separately are considered optional accessories.

Batch Controllers

Ethernet LAN Device

GSM Gateway

Solar panel with 24 V rechargeable battery pack