

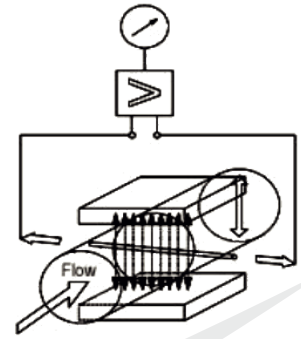
# ELECTROMAGNETIC FLOW METER



## Introduction

Arrowmech Instruments & Automation AEFM-100 are micro controller based full bore type electromagnetic flow meter specially used for various industrial applications. This flow meter accurately measure the flow rate of conductive liquids and slurries in closed pipes. Due to simple and rigid design, the flow meter is an obstruction less & maintenance free instrument in place of convectional mechanical flow measuring devices. The use of advance technology offers highest ability & better measuring accuracy in the form of electrical signal 4-20 mA DC, Pulse, RS 485 linearly proportional to volumetric flow.

## Construction



## Industries We Serve

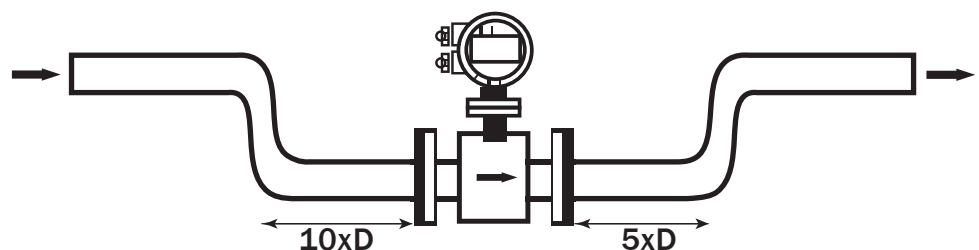
- ❖ Effluent Treatment Plant
- ❖ Water Supply Scheme
- ❖ Food & Drug Industries
- ❖ Chemical & Fertilizer Industries
- ❖ Dairy Industries
- ❖ Sugar Industries
- ❖ Textile Processing Industries
- ❖ Petrochemical Industries
- ❖ Pharmaceutical industries
- ❖ Metallurgy industries

## Technical Specification

Parameters	Specifications
Nominal Diameter (mm)	15 to 300
Process Pressure (kg/cm <sup>2</sup> )	10
Conductivity	≥ 10 μS/cm
Response time	0.3 Second
Empty pipe detection	Yes
Environment temperature	0°C to 55°C
Measuring Tube Material	SS 316
Sensor Hosing Material	MS / SS 304 / SS 316
Connection	Flange ANSI 150
Internal Lining	PTFE / Rubber
Electrode Material	SS 316/Hastelloy C/Titanium/Tantalum
Process Temperature	PTFE - 150°C
Display Version	Remote / Integral
Processor	ARM Microprocessor
Electronic Housing	Die cast Alluminium, IP 65
Display	LCD Display Multiple Information
Measuring Units	Selectable : M <sup>3</sup> /h, M <sup>3</sup> /m, M <sup>3</sup> /s, Kg/h, Kg/m, Kg/s, L/h, L/m, L/s.
Power supply	230V AC or 24V DC
Output	4 – 20 mA (Isolated) /RS 485/Pulse
Remote Display	Std. 10 meter Cable
Measuring Range	0.2 to 12m/sec. (Bidirectional)
Accuracy % of Measured Value	±0.5 (±0.2% Contact Factory)
Repeatability	± 1% of Span
Protection class for transmitter	IP 67

## Features

- ❖ Surge Protector
- ❖ Auto “Zero” Calibration
- ❖ Detect Empty or Full Pipe by Capacitance Technology
- ❖ Measuring both forward & reverse flow.
- ❖ Multiple Flow Rate Unit Available
- ❖ Adjustable Damping Time
- ❖ Low Flow Rate Removal
- ❖ Reset Totalizer
- ❖ Pre-set totalizer



D= Diameter of Flow Meter in Inch

## Application

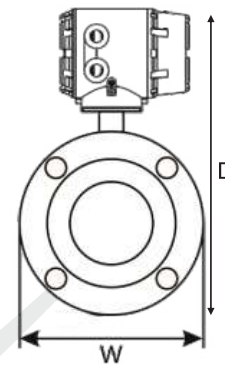
- ❖ Raw Water
- ❖ Portable Water
- ❖ Sea Water
- ❖ Waste Water
- ❖ Heat Exchanger
- ❖ Industrial & Domestic Effluent Syrup
- ❖ Molasses
- ❖ Fruit Juice
- ❖ Pulp & Beverages
- ❖ Acidic & Alkaline Solution
- ❖ Cooling Water
- ❖ Brine Solutions
- ❖ Paper Pulp
- ❖ Black, Green & White Liquor
- ❖ Neutral Salts Solution

## Flow Rate Chart (M3/h)

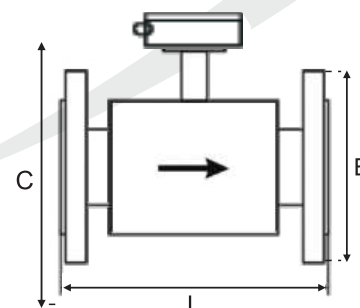
DN (mm)	Flow Range 0.3 m/s to 10 m/s	Accuracy Range 1 m/s to 6 m/s
DN 15	0.19 - 6.35	0.64 - 3.82
DN 20	0.33 - 11.34	1.13 - 6.78
DN 25	0.52 - 17.66	1.77 - 10.6
DN 32	0.86 - 29.93	2.90 - 17.4
DN 40	1.35 - 45.21	4.52 - 27.24
DN 50	2.12 - 70.65	7.07 - 42.41
DN 65	3.58 - 119	11.95 - 71.68
DN 80	5.43 - 180	18.10 - 108.87
DN 100	8.48 - 282	28.27 - 169.65
DN 125	13.25 - 441	44.18 - 365.07
DN 150	19.08 - 635	63.62 - 381.7
DN 200	33.91 - 1130	113.09 - 678.58
DN 250	52.99 - 1766	176.7 - 1060.3
DN 300	76 - 2543	254.4 - 1526.8
DN 350	103 - 3461	346.35 - 2078.3
DN 400	135 - 4521	452.3 - 2714.3
DN 450	171 - 5722	572.54 - 3435.3
DN 500	211 - 7065	706.84 - 4241.2

## Dimension Chart

DN (mm)	L (mm)	B (mm)	C (mm)	D (mm)	PCD OF FLANGE
DN 15	191	88.9	193.9	253.9	60.5
DN 20	191	98.4	293.4	263.4	70.0
DN 25	191	107.9	212.9	272.9	79.5
DN 32	191	117.5	222.5	282.5	89.0
DN 40	191	127.0	232.0	292.0	98.5
DN 50	192	152.4	257.4	317.4	120.5
DN 65	192	177.8	282.8	342.8	139.5
DN 80	192	190.5	295.5	355.5	152.5
DN 100	237	228.6	333.6	393.6	190.5
DN 125	240	254.0	359.0	419.0	216.0
DN 150	240	279.6	384.6	444.6	241.5
DN 200	310	342.9	447.9	507.9	298.5
DN 250	362	406.9	511.9	571.9	362.0
DN 300	412	482.6	587.6	647.6	432.0
DN 350	412	533.4	638.4	698.4	476.0
DN 400	515	596.4	701.4	761.4	539.5
DN 450	515	635.0	740.4	800.4	578.0
DN 500	515	698.5	803.5	863.5	635.0



**Integral**



**Remote**

# Characteristics

- No Moving Parts. Easy to Maintain. There is no pressure drop as there are no choked flow parts.
- Minimum Conductivity can be as low as 10  $\mu\text{s}/\text{cm}$ . With proper lining, AEFM-100 is perfect for Acidic, Alkali, Neutral Salts Solutions with high Accuracy of  $\pm 0.3\%$  to  $\pm 0.5\%$ .
- AEFM-100 is based on volume flow rate measuring, which is independent to flow pressure, temperature, density and viscosity.
- The induced voltage is generated in the area filled with magnetic field, which is cross section area of pipe, so very short pipe section is needed for (10x Diameter) for upstream and (5x Diameter) for downstream.
- Corrosion resistance and Abrasion resistance can be achieved by choosing appropriate materials for the wetted parts (Lining & Electrode).
- Converter Features: High Reliability, High Accuracy, Lower Power Consumption, stable "Zero" output, easy to use, LCD display for flow rate, velocity, total flow, empty line, direction etc.
- Output: RS485, Pulse, 4~20 mA (Isolated).



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