



A & A CORPORATION

Electromagnetic Flow Meter (Battery Operated)





Electromagnetic flow meters are mainly used in various industries, ETP, STP, WTP Plants, Borewell and for conductive liquids for measuring the flow rate & totalizer.

Working Principle :

Electromagnetic Flowmeters are based on Faraday's Law of Electromagnetic Induction.

In an Electromagnetic Flowmeter, 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. This induced voltage is perpendicular to both, the liquid flow direction and the electromagnetic field direction. The voltage sensed by the electrodes is further processed by the transmitter to give standardised output signal or displayed in appropriate engineering unit.



Technical specifications :

Parameters	
Media	Liquids (Conductive)
Nominal dia (mm)	15 to 3000
Working pressure (kg/cm ²)	10, 16, 25, 40
Working temperature	150°C FOR PTFE LINING & 85°C FOR RUBBER LINING
Electrode material	SS 316L Std.*/HASTALLOY C/PLATANIUM/TITANIUM/TANTALUM
Sensor lining	Std. Rubber*/PTFE/CERAMIC
Display version	Integral/Remote
Measuring tube material	SS 304 Std.*
Sensor housing material	Std. CS*
End connection	Flange/Wafer/Tri-clamp/SMS
Flange standard	ASA 150# ANSI 150 Pn10 PN16
Measuring range	0.2 to 12 m/sec. Bidirectional
Accuracy % of measured value	±0.5% (±0.2% consult factory)
Conductivity	Liquids (Conductive) > 5 µs/cm
Repeatability	±0.2% of Span
Display	GRAPHIC DISPLAY/16X2 LINE DISPLAY
Display units	All standard engineering units in m ³ , litre, gallon, ft ³
Output	RS485
Battery Operated	Lithium-Ion Battery
Protection class for sensor	Std. IP 65 Option IP 67/IP 68 for flow tube in remote type
Protection class for transmitter	IP 65/IP 66/IP 67
Cable length for remote	Std. 5 m*
Installation	Inline flanged type

The flux density of the electromagnetic field in a given Flowmeter and the distance between the electrodes are constant. Therefore, the induced voltage is only a function of liquid velocity.

$$E = K \times B \times \bar{V} \times D$$

where E : Induced voltage
K : Flow tube constant
B : Magnetic field strength
 \bar{V} : Mean flow velocity
D : Electrode spacing

Volume flow is calculated by the equation

$$Q = \bar{V} \times D^2 \times \pi / 4$$

Therefore,

$$Q = \frac{E \times D \times \pi}{K \times B \times 4}$$

The induced voltage is not affected by the physical properties of liquids like temperature, viscosity, pressure, density and conductivity as long as the conductivity of the measured liquid is above the minimum threshold level. For reliable measurement, the pipe must be completely full of liquid. The electromagnetic field coil assembly is excited by pulsed DC technique which eliminates the interfering noise and provides automatic zero correction.

Size

M3/hr.

LPM

LPS

USGPM

DN in mm	Min.	Max.	Min	Max	Min.	Max	Min.	Max.
15	0.13	7.63	2.12		0.04	2.11	0.56	33.61
20	0.23	13.56	3.77	127.21	0.06	3.77	1.00	59.75
25	0.35	21.19	5.89	226.15	0.10	5.88	1.56	93.35
32	0.58	34.91	9.65	353.36	0.16	9.65	2.55	
40	0.90	54.28	15.08	578.96	0.25	15.07	3.98	152.95
50	1.41	84.82	23.56	904.63	0.39	23.56	6.22	238.98
65	2.39		39.82	1413.49	0.66	39.80	10.52	373.40
80	3.62	143.28	60.31	2389.20	1.01	60.30	15.93	631.06
100	5.65	217.08	94.23	3618.55	1.57	94.22	24.89	955.92
125	8.84	339.24		5653.99	2.45		38.90	1493.63
150	12.72	530.16	147.24	8834.38	3.53	147.24	56.01	2333.80
200	22.60	763.32	212.03	12721.50	6.28	212.02	99.58	3360.66
250	35.20	1356.00	376.93	22616.00	9.82	376.93		5974.51
300	50.89	2112.00	588.96	35337.50	14.14	588.96	155.59	9335.18
350	69.26	3053.16	848.10	50886.00	19.24	848.10	224.04	13442.65
400	90.46	4155.72	1154.36	69261.50	25.13	1154.36	304.95	18297.00
450		5427.84	1507.73	90464.02	31.81	1507.74	398.30	23898.12
500	114.49	6869.64	1908.40	114503.76	39.26	1908.43	504.10	30246.00
600	141.35	8481.00	2355.83	141350.03	56.54	2355.85	622.35	37340.76
700	203.54	12212.52	3392.40	203544.04	76.96	3392.42	896.18	53770.68
800	277.04	16622.40	4618.08	277084.68		4617.47	1219.90	73193.88
900	365.44	21926.40	6090.65	365439.00	101.51	6090.48	1593.20	95592.24
1000	457.98	27478.80	7633.87	458032.32	127.23	7634.04	2016.79	121007.52
1200	568.16	34089.60	9469.50	568169.76	157.82	9469.44	2489.38	149362.92
1400	814.18	48850.80	13569.60	814176.12	227.27	13636.44	3584.74	215084.16
1600	1108.18	66490.80	18471.94	1108316.28	307.88	18472.68	4880.30	292818.24
1800	1447.42	86845.20	24125.37	1447522.44	402.08	24124.68	6372.82	382369.20
2000	1831.90	109914.00	30809.45	1848566.76	513.50	30810.12	8139.39	488363.16
2700	2261.60	135696.00	37880.56	2272833.60	631.34	37880.52	9957.53	597451.80
	4121.76	247305.96	68696.11	4121766.82	114.94	68696.64	181475.99	1088855.99



Installation 3D Drawing



Installation precautions

Installation location should be such that the Flowmeter will always remain full of liquid.

Minimum 5D inlet & 3D outlet straight lengths should be maintained at installation locations where 'D' is the pipe diameter.

The Flowmeter installation location should be free of bends, elbows, tees, valves, etc



Certificate

This is to Certify that
M/S. A & A CORPORATION
(Brand Name: - Manjeera)

Address:-6-3-186, Jay Nagar Colony, New Bhoiguda, Hyderabad,
Telangana-500003, India
Factory Add:- 105, Shyam Ind. Estate, Bakrol Bujrang, Tal-Daskroi,
Ahmedabad, Gujarat-382430, India
Factory (II):-S. No 116/6, Chavan Bang, Pune-411041, Maharashtra, India

has been found in Compliance with requirements of
Quality Management System

ISO 9001:2015

for the following scope:

CHLORINE ANALYSERS, ELECTROMAGNETIC FLOW METER,
ULTRASONIC FLOW METER, WATER METER, PP SADDLES,
COMPRESSION FITTINGS, HDPE PIPE, COMPOSITE PIPE AND
FITTINGS, FLOW CONTROL VALVE, GI, CI, PVC, MS, DI PIPE AND
FITTINGS, BRASS VALVE, SLUICE VALVE AND SS TAPS, PP
INTEGRATED SADDLES AND MDPE PIPE

Certificate No. : QMS/022752/0621
Original Certificate Date: 29-June-2021
Issue Date : 28-June-2024
Expiry Date : 27-June-2027

To check this certificate status visit:
"http://uasl.uk.com/certifiedorganization"



Quality Control Certification
UK Office: 82, ADLEY STREET,
LONDON - E5 0DZ, United Kingdom
India Office: 2nd Floor, Aman Market,
Narela Mandi, Delhi - 110 040, India

"Quality Control Certification (QCC)" accredited by "UASL, England, UK". This certificate remains the property of "QCC" to whom it must be returned on request.



Certificate of Compliance

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(Brand Name: - Manjeera)

Head Office:-6-3-186, Jay Nagar Colony, New Bhoiguda, Hyderabad,
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Ahmedabad, Gujarat-382430, India
Factory (II):-S. No 116/6, Chavan Bang, Pune-411041, Maharashtra, India

is in Compliance with

Water Meters for Cold Potable Water and Hot Water

ISO 4064-2:2014

for the following scope:

Manufacturing of Water Meters, Gas Meters, Flow Meters, Pressure Meters,
Ultrasonic Water Meter, Electromagnetic Flow Meter

Certificate No. : WMFC/A32D/0224
Original Certificate Date: 03-February-2024
Issue Date : 03-February-2024
Expiry Date : 02-February-2027

To check this certificate status visit:
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Certificate

This is to Certify that
A & A Corporation
(Brand name:- MNJ-RSVP & MANJEERA)

Head Office:- 6-3-186, Jay Nagar Colony, New Bhoiguda,
Hyderabad, Telangana-500003, India

has been found in Compliance with requirements of
Environmental Management System

ISO 14001:2015

for the following scope:

Manufacturer and Supplier of Gas Chlorination Systems, Chlorinators Like
Vacuum Feed, Gravity Feed, Cylinder / Tonner Mounted, Pedestal Mounted
System, Electro Chlorinator - batch Process, Chlorine Analyzer, Water Meter,
Flow Meter, Sodium Hypochlorite System, WTP, STP and Continuous Process

Certificate No. : EMS/012018/0919
Original Certificate Date: 10-September-2019
Issue Date : 09-September-2022
Expiry Date : 08-September-2025

To check this certificate status visit:
"http://uasl.uk.com/certifiedorganization"



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India Office: 2nd Floor, Aman Market,
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Certificate

This is to Certify that
A & A Corporation
(Brand name:- MNJ-RSVP & MANJEERA)

Head Office:- 6-3-186, Jay Nagar Colony, New Bhoiguda,
Hyderabad, Telangana-500003, India

has been found in Compliance with requirements of
Occupational Health and Safety Management Systems

ISO 45001:2018

for the following scope:

Manufacturer and Supplier of Gas Chlorination Systems, Chlorinators Like
Vacuum Feed, Gravity Feed, Cylinder / Tonner Mounted, Pedestal Mounted
System, Electro Chlorinator - batch Process, Chlorine Analyzer, Water Meter,
Flow Meter, Sodium Hypochlorite System, WTP, STP and Continuous Process

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Head Office

**#6-3-186 M & N, JAINAGAR COLONY,
BHOLAKPUR, BHOIGUDA, SECUNDERABAD,
TELANGANA 500080**



Manufacturing Unit

**C-211, FLORAL DECK PLAZA, RD NUMBER 12,
SUNDER NAGAR, ANDHERI EAST, MUMBAI,
MAHARASHTRA 400093**



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