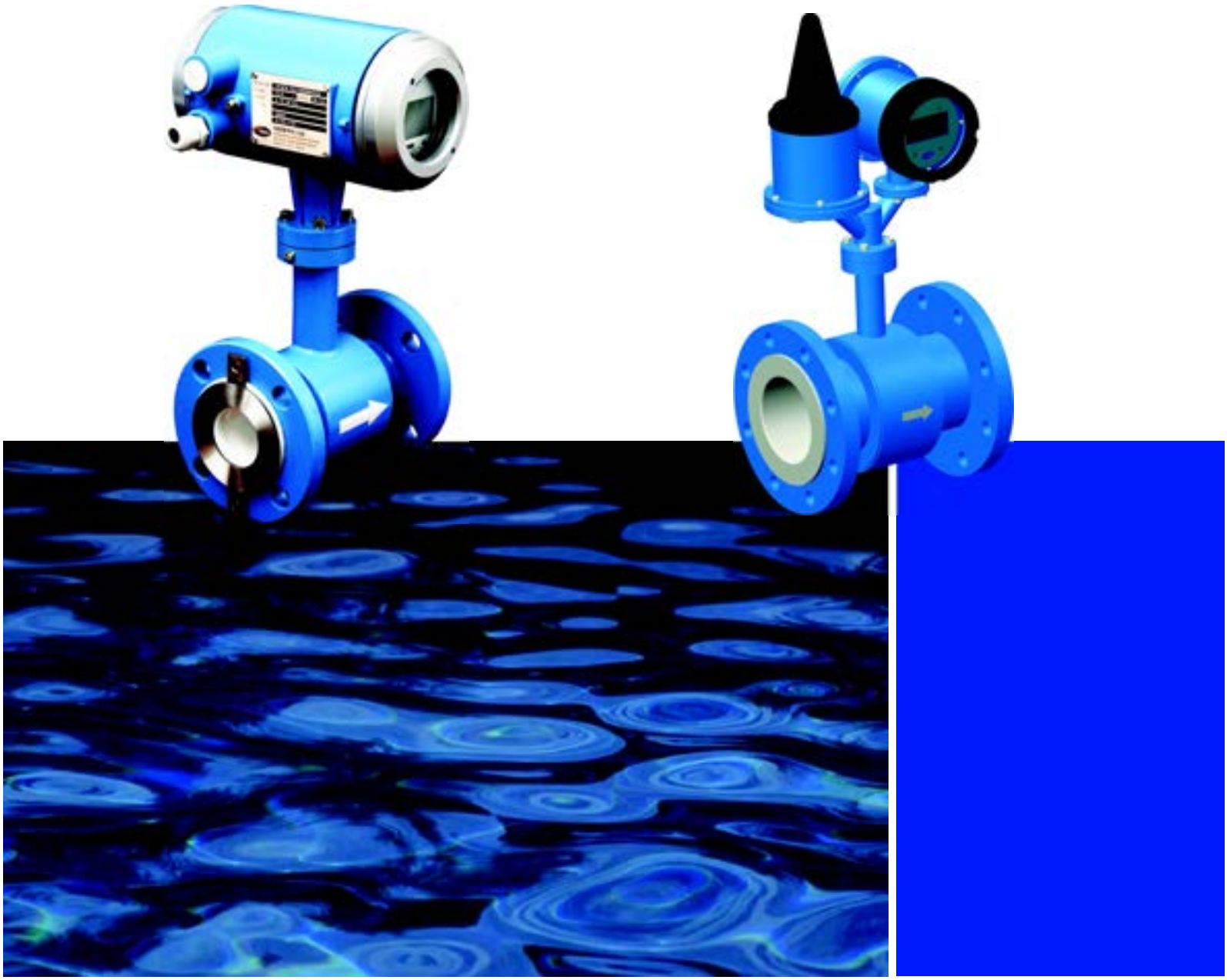
Partner For Level & Flow Measurement

SBEM



Flow Monitoring Solutions

Contents

About SBEM

SBEM was established in 1974 and is India's market leader in Level Instrumentation. With a futuristic approach and a warm beginning in providing Oil Companies, with tank Level Gauging Solutions, SBEM has evolved into an organization offering multiple products. SBEM Pvt. Ltd. has established itself as a FLOW MEASUREMENT Solutions Provider. It has now entered in Analytical Solutions for PHE, WTP Sectors. SBEM is an ISO 9001:2008 certified company with a DSIR approved R & D Centre. SBEM's core strength is its ability to custom design solutions for each application & customer's from every industry including :

Thermal Power

Steam Turbine, Turbo Generator, Condenser / Heat Exchanger, Condensate Polishing Unit (CPU), Coal Handling Plant (CHP), Ash Handling Plant (AHP), Fuel Oil Handling, DM Plant, Pre Treatment – Water Treatment Plant (PT-WTP), Effluent Treatment Plant (ETP), Cooling Tower and Fire Protection

Public Health Engineering

Over head tanks (OHT), Elevated storage reservoirs (ESR), Reservoirs and Distributed pipelines.

Indian Navy

Steel

Cement

Oil Refineries & Gas

Edible Oil

Vision:

To become the Preferred Partner and Solution Provider in the Process Control and Automation Industry

Mission:

To provide Continuous Value Addition to our Customers by offering Reliable, Cost effective and Customized Solutions

SBEM in a capsule:

- 100% indigenous Level Measuring instruments since 1978
- SBEM has aggressively moved into the Flow measurement domain & has Electromagnetic, Battery Operated & Ultrasonic Flow Meters on offer.
- One of first SSI's to obtain ISO 9001:2008 certification in India
- Largest number of installed Tank Farm Management Systems in India
- The only 100% indigenous Servo Gauge in 1992
- Integration of Radar Gauges (other makes) with SBEM Tank Farm Management systems
- Indigenously developed Phased Capacitance Level Transmitters and Ultrasonic Switches for Indian Naval Submarines
- Pioneered Magnetostrictive Probes for Automotive LPG Dispensing Stations (ALDS)
- Accurate Magnetostrictive Level Probes for Retail Outlet Automation
- Weight and measure model approval
- SIL 2 certified 139 Servo Gauge as per IEC 61508
- NABL accredited flow meter calibration laboratory as per ISO/IEC 17025 : 2005

What sets us apart from our competition is our extensive application engineering knowledge garnere over 3 decades + of successful supply to users installations in India and abroad

Site Installations

SBEM site installations ensure the highest standards & quality of measurements

Magflow Meter, 151 MFM

Features

- Maximum Range (Velocity): 10 m/s
- Meter Sizes: 25 to 2000 mm
- Process Connection: Flange (ANSI/AWWA/ DIN) & Wafer
- Electrode Material: SS/Hastalloy C/ Tantalum/Titanium
- Lining Material: Rubber/ Neoprene/ Hard Rubber/ PTFE
- Measuring Tube Material: SS 304 / SS 316
- Coil Housing Material: CS / SS 304 / SS 316
- Power Supply: 85-265 VAC or 24VDC
- Analog 4-20 mA superimposed with HART output
- Application: All conductive liquids having Conductivity ≥ 20µS/cm
- Empty pipe detection

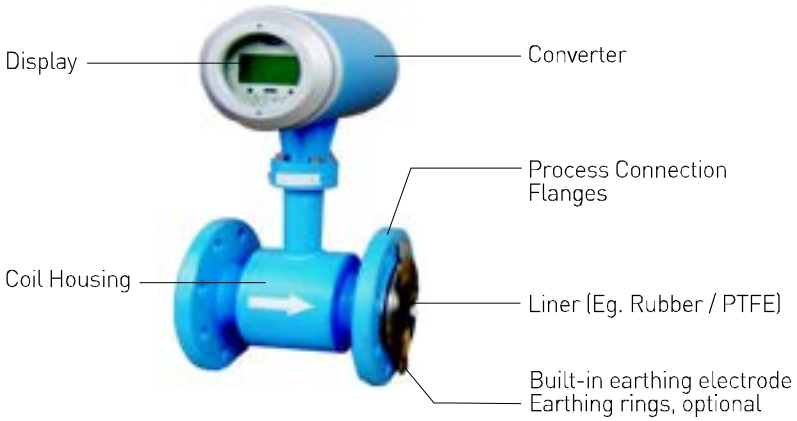
Product Benefits

- Suitable for all conductive liquids
- No wear & tear, long life
- No pressure loss
- No process losses

Features

- Two Line LCD Display, 16 characters per line Or Graphical LCD display
- High measurement accuracy up to ± 0.3%
- Available in all types of Electrode material
- Low Power Consumption
- Versions for high temperature up to 150 °C
- Integral & Remote Versions
- RS 232/RS 485 (MODBUS Protocol)
- GSM/ GPRS connectivity for communicating field data through SMS on mobile phones and/or control & monitoring through central SCADA system
- In-built data logger
- Built In Self Diagnosis Feature
- Bidirectional Flow Measurement
- Selectable Response Time
- Protection Class
  Sensors: IP 67 (Std) / IP 68 (for remote versions only)
  Indicator-Converter: IP 67
- Interchangeable Converter
- No earthing rings required because of built in Earthing Electrode
- Earthing Rings in SS 304/ SS 316 also available
- Lengths in accordance with ISO : 13359
- Five level Password
- Flameproof and Weatherproof versions

Electromagnetic Flow Meter Components



Areas of Application

- Water & Waste Water Management
- Chemical, Petrochemical and Process Industries
- Fertilizer Industries
- Mining Industries
- Cement
- Paper and Pulp Industries
- Pharmaceutical Industries
- Food and Drug Industries
- Beverage Industries
- Leather & Tanning Industries

Overview

Features / Model	151MFM W	151MFM E	151MFM P	151MFM B
Accuracy	± 0.5%	± 0.3%	± 0.3%	± 0.5 %
Display	2 line LCD, backlit	2 line LCD, backlit	Graphical LCD, backlit	Graphical LCD
4-20 mA current output	Yes	Yes	Yes	No
MODBUS - RS 232	Add-on	Add-on	Add-on	No
MODBUS - RS 485	Add-on	Add-on	Add-on	Add-on
HART	Add-on	Add-on	Add-on	No
GSM - SMS	M2M	M2M	M2M	Add-on
GPRS	M2M	M2M	M2M	Add-on
In-built Data Logger	No	No	Add-on	Add-on
Digital output	1 Pulse / Frequency 1 digital output (configurable)	1 Pulse / Frequency 1 digital output (configurable)	1 Pulse / Frequency 4 digital output	1 Pulse / Frequency 1 digital output (configurable)

For possible combination of outputs, please refer to ordering codes on page nos. 11, 13, 15 and 17





Application

The 151 MFM electromagnetic flow meter has been designed to measure volume flow rates of electrically conductive liquids in closed piping systems. Measurements can be done in both flow directions, with high measurement accuracy over a wide range of flow rates. The minimum required conductivity of the measured medium is 20 µS/cm.

The converter electronic unit includes a display to show the measured values where various operational parameters of the meter can be selected by means of an associated keyboard. Current, frequency / pulse , digital outputs are also available. GSM interface allows sending flow rate and totalised flow through SMS on mobile phones. Wireless communication between flow meter and PC is possible with the GPRS connectivity.

Working

The electromagnetic flow meter consist of a sensor through which the measured liquid flows, and a converter (electronic unit) where the low-level signal from the sensor is amplified for further processing. The output signal is proportional to the volume flow rate of the measured liquid. The electromagnetic flow meters can be applied only where the measured liquid is conductive and non-magnetic. The electromagnetic flow meter can be designed either as an integral device or with the sensor separated from the associated converter (electronic unit). In the Integral type, the electronics is fitted directly onto the sensor and in another case i.e., of remote type, the converter is connected to the sensor by special cable.

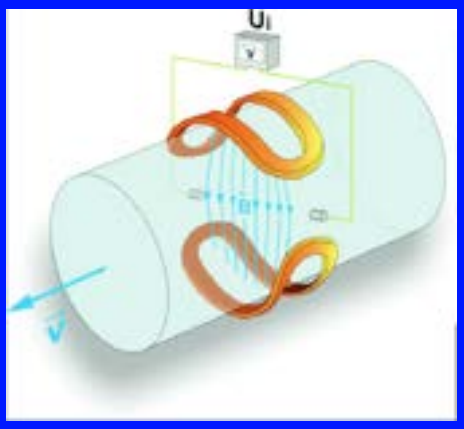
Operating Principle

The function of an electromagnetic flow meter is based on Faraday's law of electromagnetic induction. The sensor consists of a non-magnetic and non-conductive tube with two embedded measuring electrodes to pick up the induced voltage. To create an alternating magnetic field, two coils are fitted onto the tube in parallel with the plane defined by the active parts of the measuring electrodes. Now if a conductive liquid flows across magnetic field **B**, voltage **U** will appear on the measuring electrodes proportional to the flow velocity v and the distance between conductor **d**.

U = B x d x v

U induced voltage
B magnetic flux density
d distance between the measuring electrodes
v liquid flow velocity

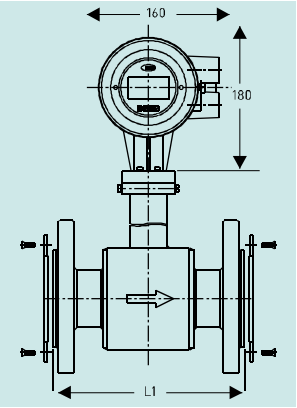
As the magnetic flux density and distance between the electrodes are constant, the induced voltage is proportional to the liquid flow velocity in the tube. The value of the volume flow rate can then be readily determined as a product of the flow velocity and square section of the tube, **Q = v x S.**

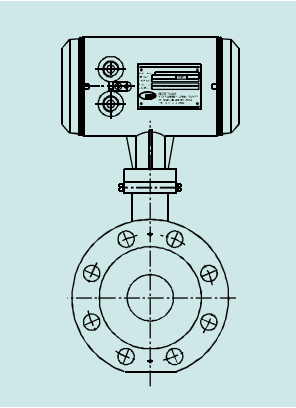


Versions

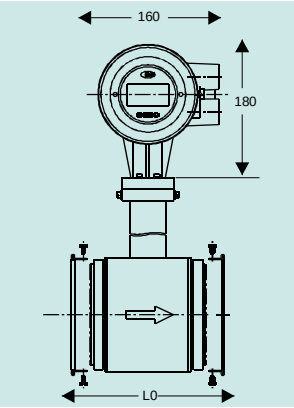
A) Integral

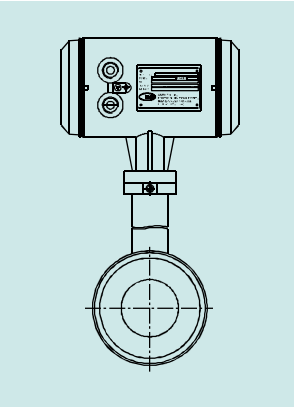
A.1 Flanged





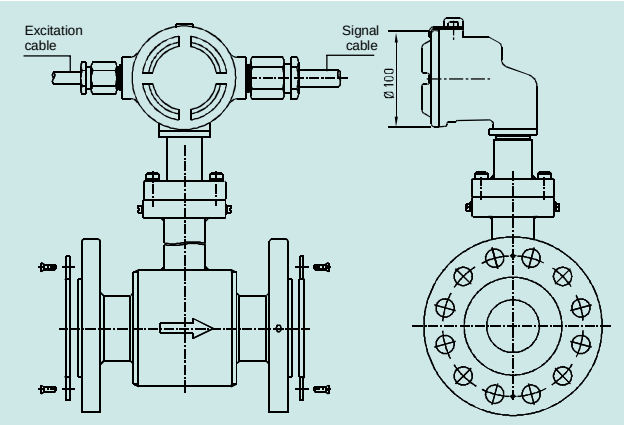
A.2. Wafer



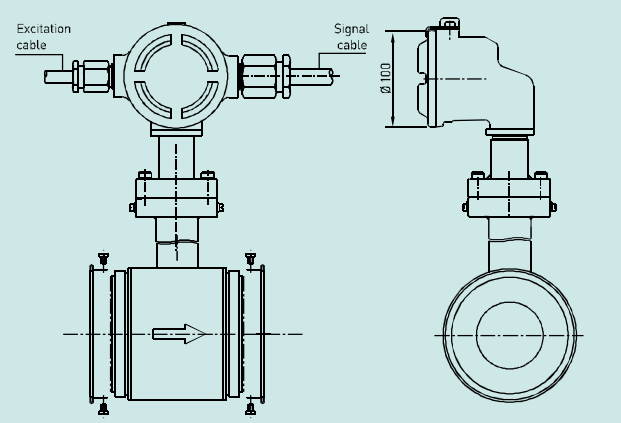


B) Remote - Sensor

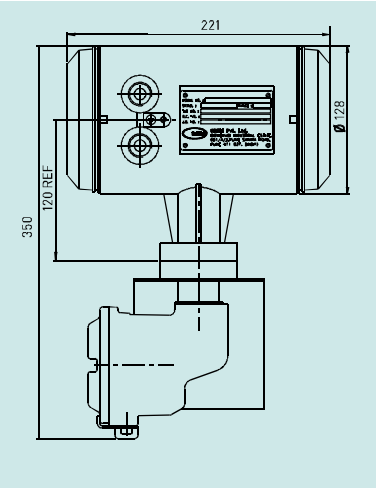
B.1 Flanged



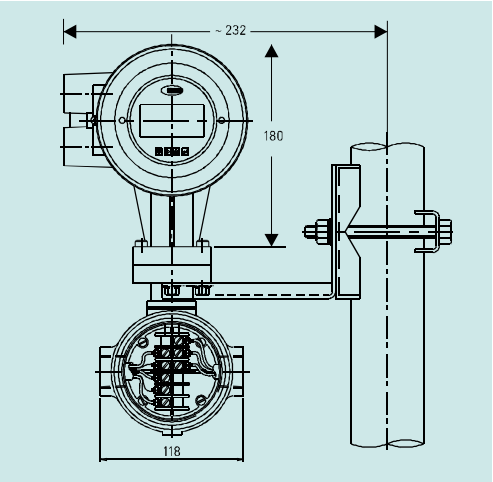
B.2 Wafer



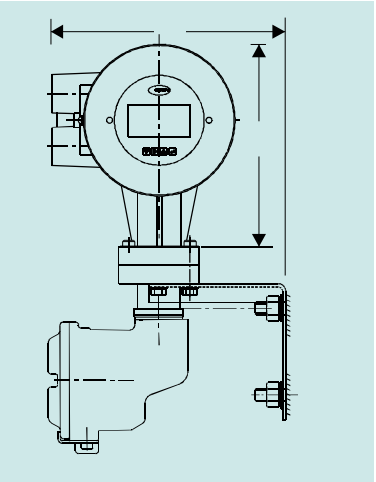
C) Remote - Converter



Pipe Mounting Arrangement



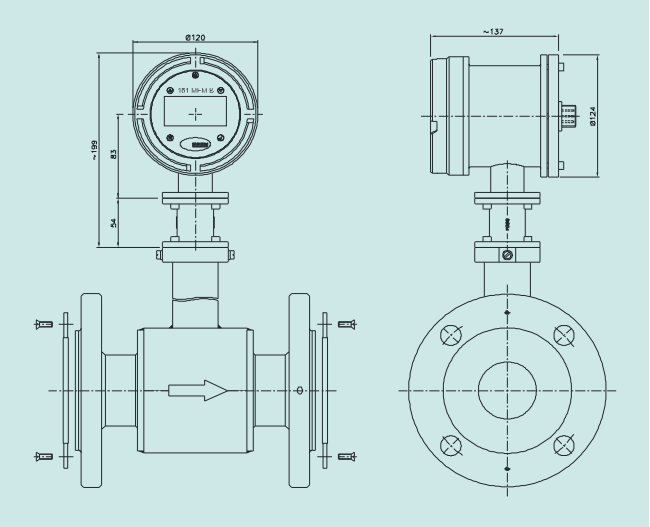
Wall Mounting Arrangement



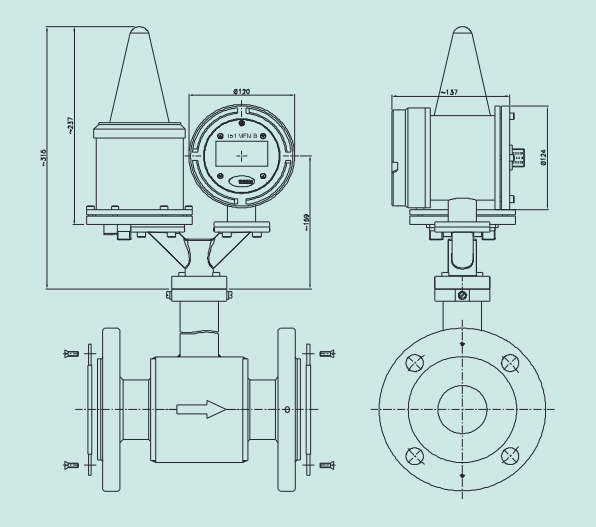
Versions

D) Battery Operated Flow Meter

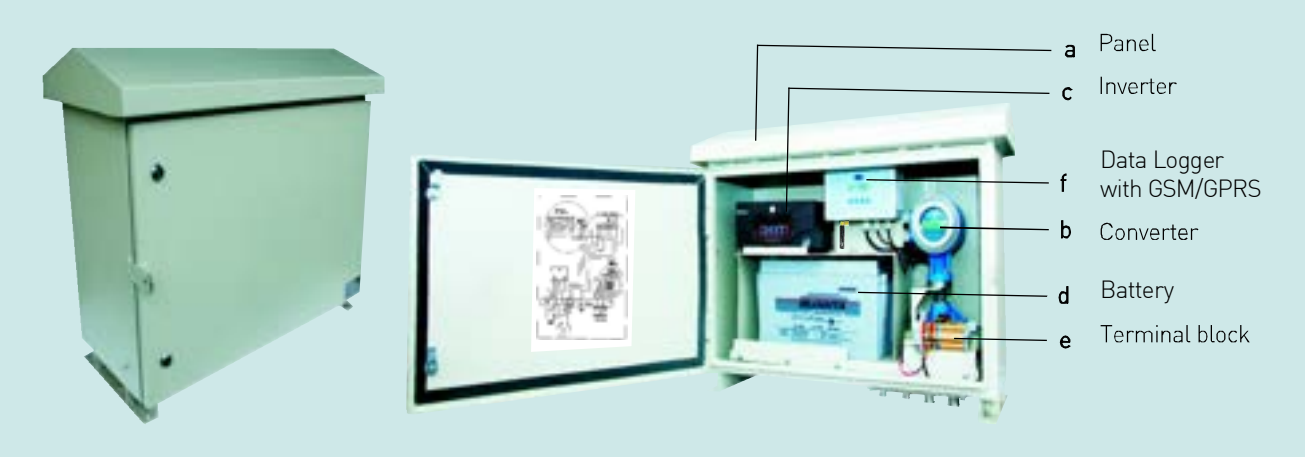
D.1 Basic Model



D.2 Add-On Facilities

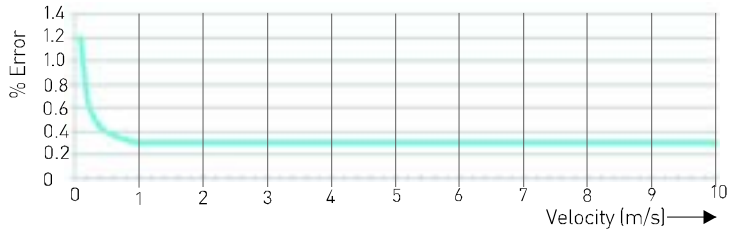


Converter & Data Logger Mounting Inside Panel With Battery Backup

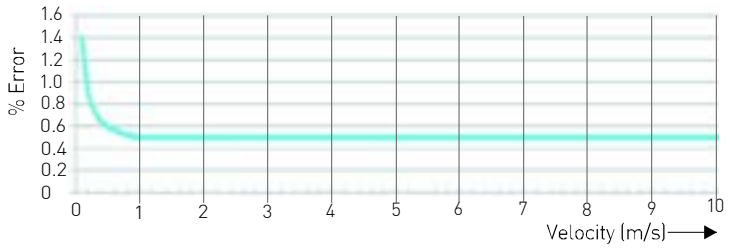


Accuracy

A)



B)



Curve	Velocity ≥ 1m/s	Velocity < 1m/s
A	± 0.3%	± 0.2% ± 1mm/s
B	± 0.5%	± 0.4% ± 1mm/s

At constant flow.

* Under reference conditions

Specifications for 151MFM- W

Nominal internal diameter DN (mm)	15 to 2000
Working pressure	6 Kg/cm^2 or 10 Kg/cm^2 or 16 Kg/cm^2
Ambient Temperature	-10^0 C to 55^0 C
Electrode Material	Std.- Stainless Steel SS 316; Optional - SS 316L, Hastealloy C, Titanium or Tantalum
Conductivity of measured liquid	≥ 20µS/cm
Sensor lining	Rubber/ Teflon (PTFE)/ Hard Rubber /Neoprene / Polyurethane
Display version	Integral or Remotely mounted
Measuring Tube Material	Std. - SS 304 ; Optional - SS 316
Sensor Housing Material	Std. - CS ; Optional - SS 304/ SS 316
End Connection	Flanged (ANSI/DIN/AWWA) or Wafer
Measuring Range	Upto 15 m/s
Accuracy	± 0.5 % of flow *
Repeatability	± 0.2 %
Display	Liquid Crystal Display, Two Line, Backlit 16 characters per line, 5 digit - Instantaneous flow & 9 digit - Total flow
Displayed units	Totalised flow : m^3,L Instantaneous flow : m^3/hr, m^3/min, m^3/sec, L/hr, L/min, L/sec
Outputs	Std.- Current 4 to 20 mA, Frequency (0 to 5000 Hz) / Pulse (0.001 to 1 m^3) Optional - RS 232(MODBUS RTU) / RS 485 (MODBUS RTU)/ HART /
Power Supply	Std.- 85 to 265 VAC,45 to 65 Hz or Optional - 24 VDC
Protection Class	Sensor : Weather Proof - IP 67 - Standard , IP 68 - Optional for Remote version Converter/ Transmitter : IP 67
Cable Length (For Remote version)	10 m (Std.) / Additional metres on request. Maximum cable length up to 300 m.**

* Under reference conditions ** For cable length higher than 300mtrs., Consult H.O.

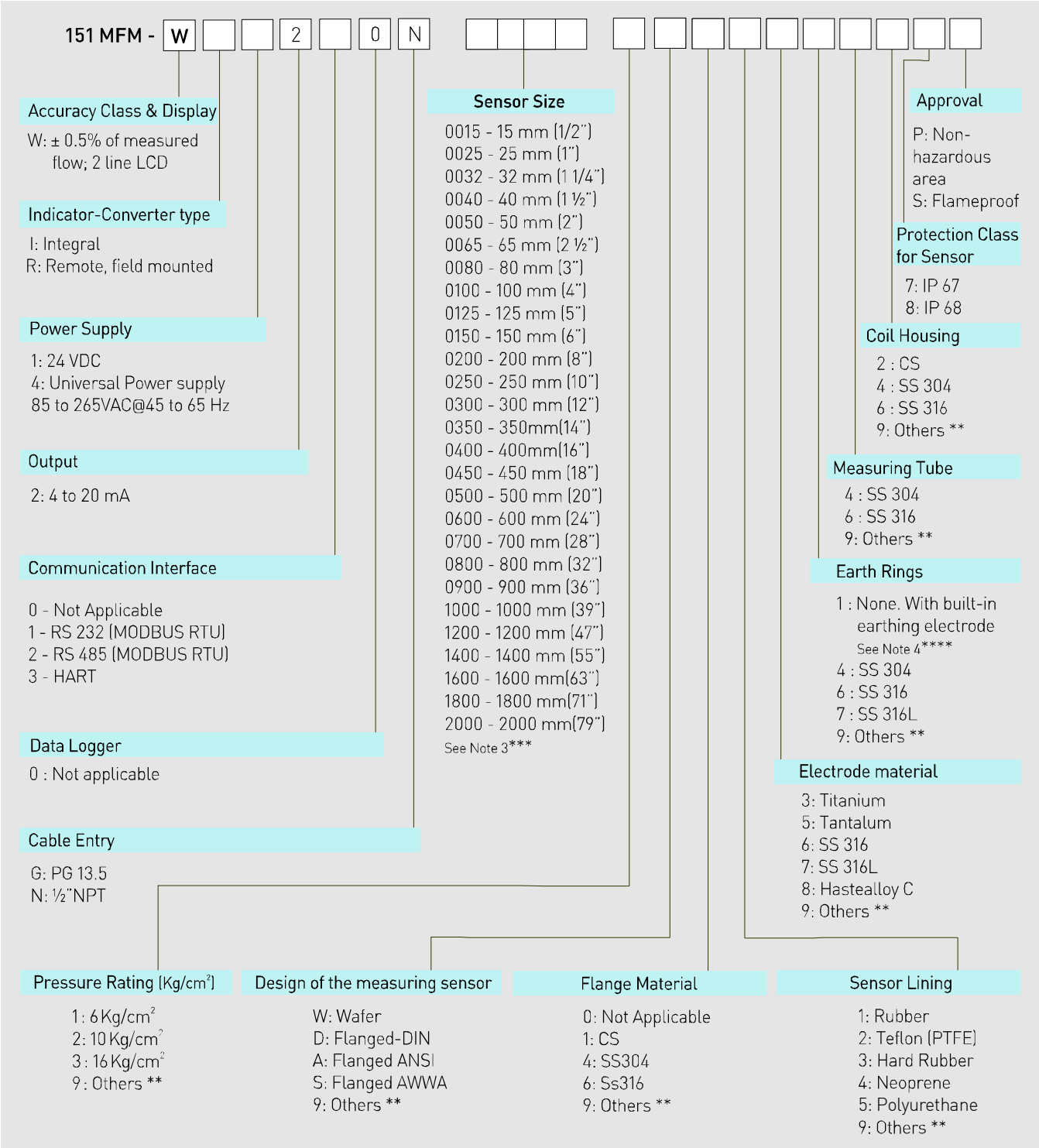
Sensor Size (mm), FLOW @ 3 m/s

Sensor Size (mm)	25	32	40	50	65	80	100	125	150	200	250	300	350	400
Flow @ 3 m/s (m^3/h)	5	9	14	21	36	54	85	133	191	340	530	764	1040	1357

Sensor Size (mm)	450	500	600	700	800	900	1000
Flow @ 3 m/s (m^3/h)	1717	2120	3053	4156	5428	6870	8481

Sensor Size (mm)	1200	1400	1600	1800	2000
Flow @ 3 m/s (m^3/h)	12213	16623	21711	27478	33924

Ordering Code



Notes:

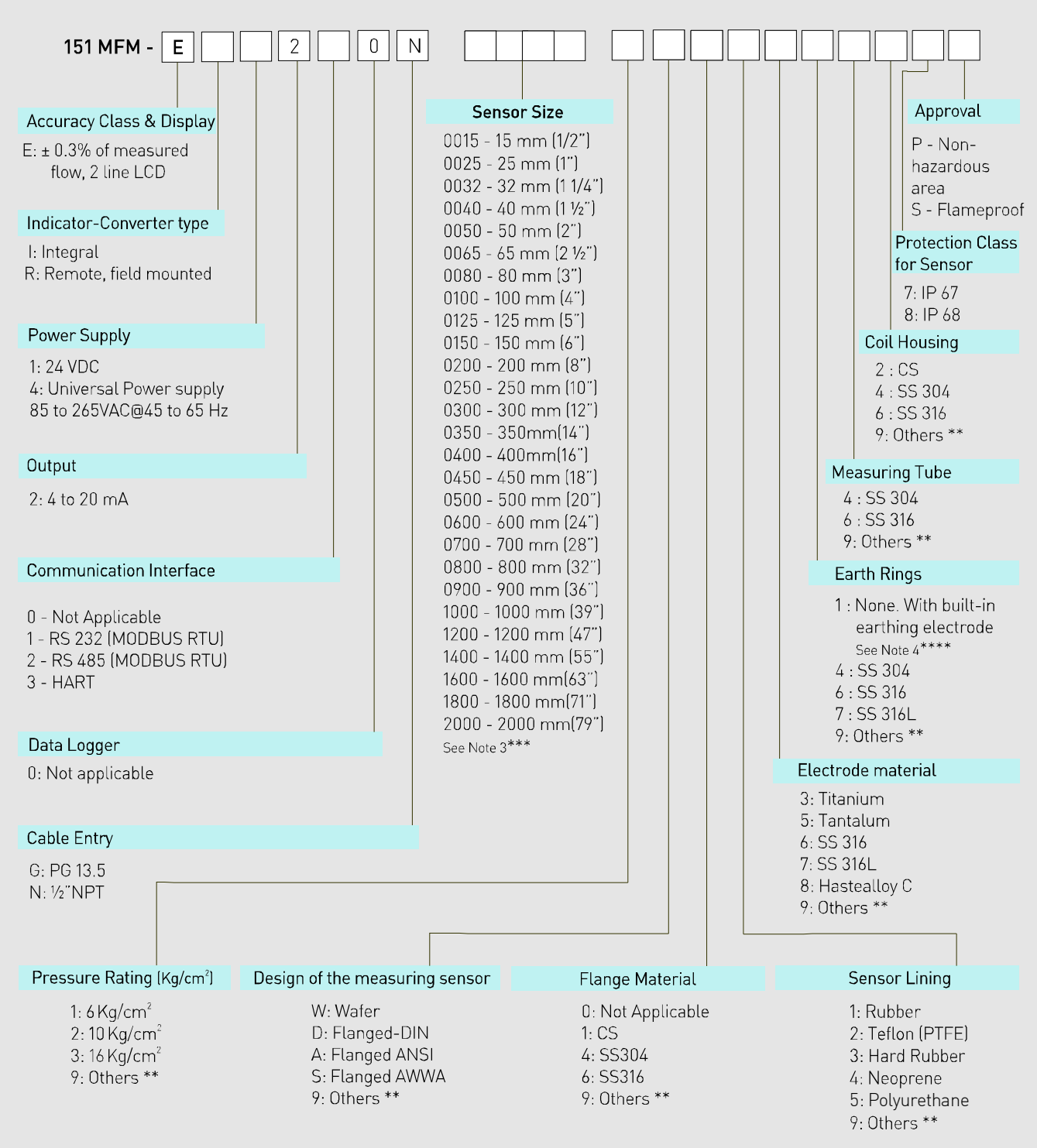
1. * Flameproof version available for Sensor sizes up-to 400mm
2. ** Other material/ options on request, please refer to H. O.
3. *** Other line sizes available on request, please refer to H. O.
4. **** Built-in earthing electrode is available for sensor sizes 40 mm and above. Up to 32 mm, earthing rings are compulsory.
5. ***** In corrosive application if selected Hastealloy C, Titanium & Tantalum sensing electrode, then earthing electrode / earthing ring should be of same material
6. ****** In case of non-metallic pipeline earthing rings are compulsory.

Specifications for 151MFM- E

Nominal internal diameter DN (mm)	15 to 2000
Working pressure	6 Kg/cm^2 or 10 Kg/cm^2 or 16 Kg/cm^2
Ambient Temperature	-10^0 C to 55^0 C
Electrode Material	Std.- Stainless Steel SS 316; Optional - SS 316L, Hastealloy C, Titanium or Tantalum
Conductivity of measured liquid	≥ 20μS/cm
Sensor lining	Rubber/ Teflon (PTFE)/ Hard Rubber /Neoprene / Polyurethane
Display version	Integral or Remotely mounted
Measuring Tube Material	Std. - SS 304 ; Optional - SS 316
Sensor Housing Material	Std. - CS ; Optional - SS 304/ SS 316
End Connection	Flanged (ANSI/DIN/AWWA) or Wafer
Measuring Range	Upto 15 m/s
Accuracy	± 0.3 % of flow *
Repeatability	± 0.1 %
Display	Liquid Crystal Display, Two Line, Backlit 16 characters per line 5 digit - Instantaneous flow & 9 digit - Total flow
Displayed units	Totalised flow : m^3,L Instantaneous flow : m^3/hr, m^3/min, m^3/sec, L/hr, L/min, L/sec
Outputs	Std.- Current 4 to 20 mA, Frequency (0 to 5000 Hz) / Pulse (0.001 to 1 m^3) Optional - RS 232(MODBUS RTU) / RS 485 (MODBUS RTU)/ HART /
Power Supply	Std.- 85 to 265 VAC,45 to 65 Hz or Optional - 24 VDC
Protection Class	Sensor : Weather Proof - IP 67 - Standard , IP 68 - Optional for Remote version Converter/ Transmitter : IP 67
Cable Length (For Remote version)	10 m (Std.) / Additional metres on request. Maximum cable length up to 300 m.**

* Under reference conditions ** For cable length higher than 300mtrs., Consult H.O.

Ordering Code



Notes:

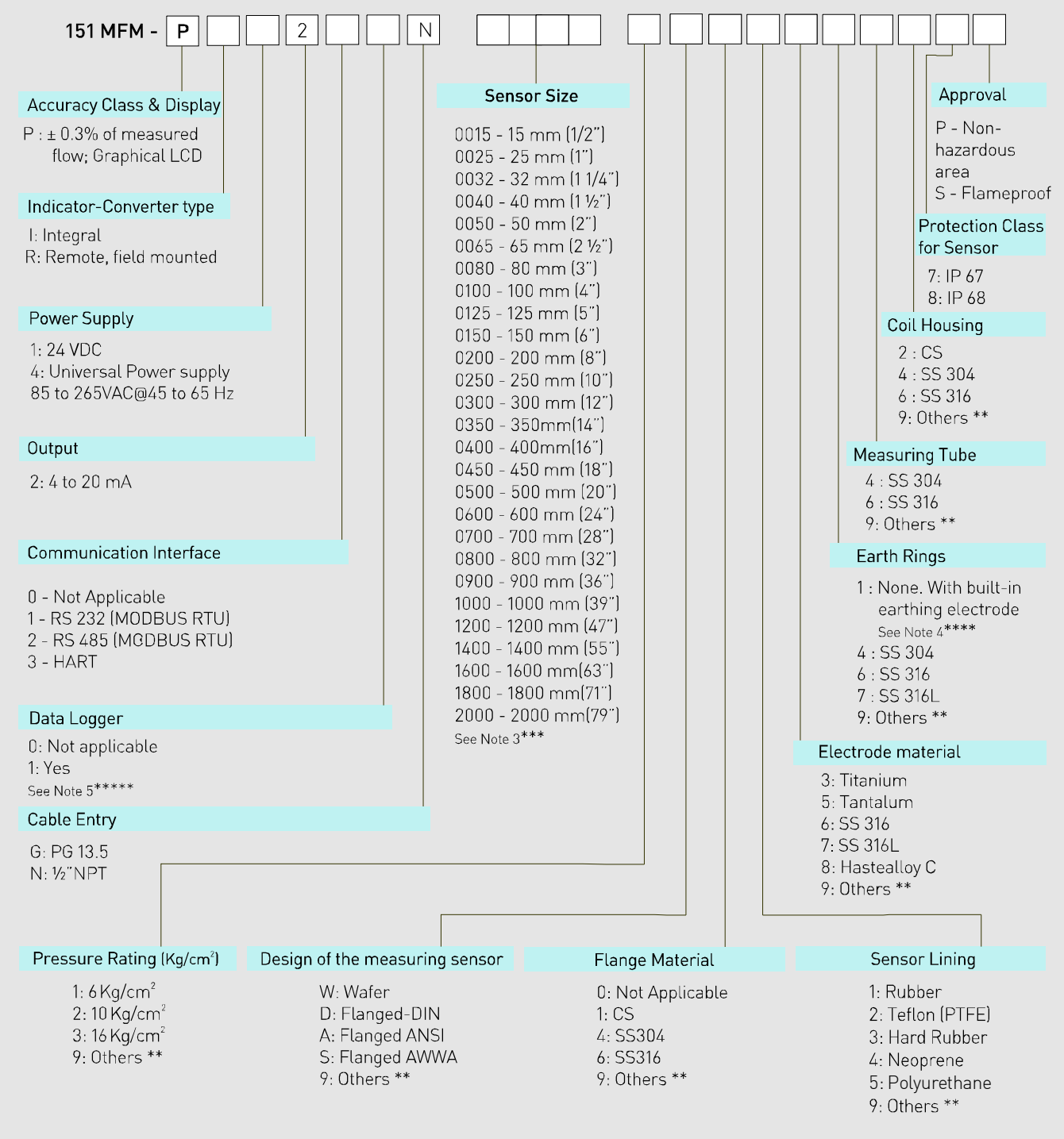
1. * Flameproof version available for Sensor sizes up-to 400mm
2. ** Other material/ options on request, please refer to H. O.
3. *** Other line sizes available on request, please refer to H. O.
4. **** Built-in earthing electrode is available for sensor sizes 40 mm and above. Up to 32 mm, earthing rings are compulsory.
5. ***** In corrosive application if selected Hastealloy C, Titanium & Tantalum sensing electrode, then earthing electrode / earthing ring should be of same material
6. ****** In case of non-metallic pipeline earthing rings are compulsory.

Specifications for 151MFM- P

Nominal internal Diameter DN (mm)	15 to 2000
Working Pressure	6 Kg/cm^2 or 10 Kg/cm^2 or 16 Kg/cm^2
Ambient Temperature	-10^0 C to 55^0 C
Electrode Material	Std.- Stainless Steel SS 316; Optional - SS 316L, Hastealloy C, Titanium or Tantalum
Conductivity of measured liquid	≥ 20μS/cm
Sensor lining	Rubber/ Teflon (PTFE)/ Hard Rubber /Neoprene / Polyurethane
Display version	Integral or Remotely mounted
Measuring Tube Material	Std. - SS 304 ; Optional - SS 316
Sensor Housing Material	Std. - CS ; Optional - SS 304/ SS 316
End Connection	Flanged (ANSI/DIN/AWWA) or Wafer
Measuring Range	Upto 15 m/s
Accuracy	± 0.3 % of flow *
Repeatability	± 0.1%
Display	Graphical backlit LCD, 3 line 5 digit - Instantaneous flow & 9 digit - Total flow
Displayed units	Totalised flow : m^3,L Instantaneous flow : m^3/hr, m^3/min, m^3/sec, L/hr, L/min, L/sec
Outputs	Std.- Current 4 to 20 mA, Frequency (0 to 5000 Hz) / Pulse (0.001 to 1 m^3) Optional - RS 232(MODBUS RTU) / RS 485 (MODBUS RTU)/ HART / Optional - Data Logger
Power Supply	Std.- 85 to 265 VAC,45 to 65 Hz or Optional - 24 VDC
Protection Class	Sensor : Weather Proof - IP 67 - Standard , IP 68 - Optional for Remote version Converter/ Transmitter : IP 67
Cable Length (For Remote version)	10 m (Std.) / Additional metres on request. Maximum cable length up to 300 m.**

* Under reference conditions ** For cable length higher than 300mtrs., Consult H.O.

Ordering Code



Notes:

1. * Flameproof version available for Sensor sizes up-to 400mm
2. ** Other material/ options on request, please refer to H. O.
3. *** Other line sizes available on request, please refer to H. O.
4. **** Built-in earthing electrode is available for sensor sizes 40 mm and above. Up to 32 mm, earthing rings are compulsory.
5. ***** When data logger is selected, communication interface will be Rs232
6. ****** In corrosive application if selected Hastealloy C, Titanium & Tantalum sensing electrode, then earthing electrode / earthing ring should be of same material
7. ******* In case of non-metallic pipeline earthing rings are compulsory.

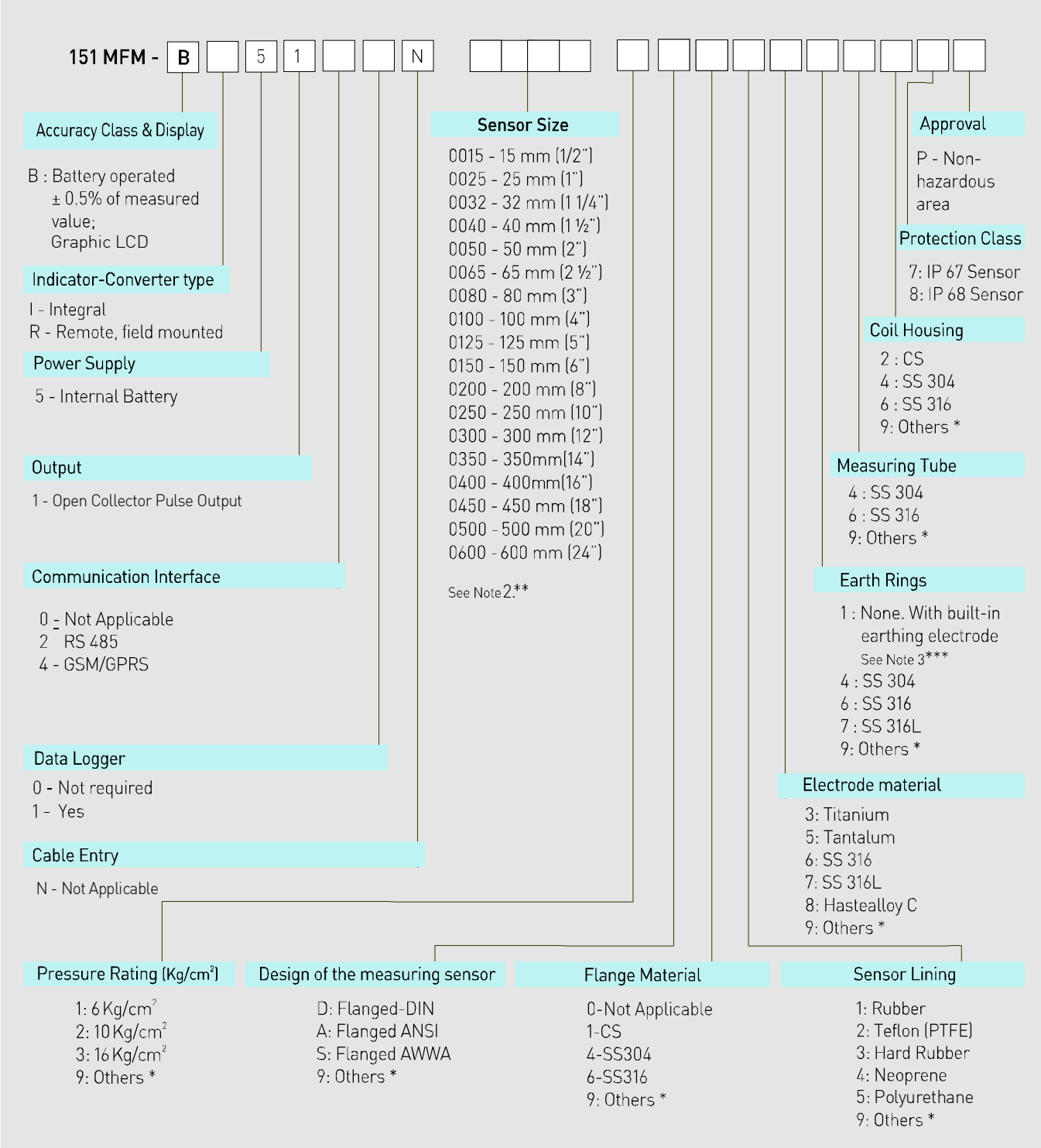
Battery Operated ElectromagneticFlow Meter

Specifications for 151MFM-B

Nominal internal Diameter DN (mm)	15 to 600
Working Pressure	6 Kg/cm^2 or 10 Kg/cm^2 or 16 Kg/cm^2
Ambient Temperature	0°C to 55°C
Electrode Material	SS 316 / SS 316L / Hastealloy C / Titanium
Conductivity of measured liquid	≥ 50µS/cm
Sensor lining	Rubber/ Teflon (PTFE)/ Hard Rubber /Neoprene / Polyurethane
Display version	Integral or Remote (Cable Length Max. 10m)
Measuring Tube Material	SS 304, SS 316
Sensor Housing Material	Std. - CS ; Optional - SS 304, SS 316
End Connection	ANSI/DIN/AWWA
Measuring Range	Upto 15 m/s
Accuracy	± 0.5 % of flow *
Repeatability	± 0.2%
Display	Graphical LCD
Alarm Indication	Sensor Fault (Excitation Open Circuit), Reverse Flow, High / Low Flow, Low Battery, Empty Pipe
Outputs	Opto-mos Relay Pulse output, 50 Hz maximum.
Power Supply	3.6 V Battery Pack
Protection Class	Sensor:- W/P IP67-Standard,IP68-Optional for Remote Sensor. Converter/Transmitter - IP 67
Communication Interface	RS 485 (Optional) / GSM/GPRS (Optional)
Displayed units	Totalised flow : m^3,L Instantaneous flow : m^3/hr, m^3/min, m^3/sec, L/hr, L/min, L/sec

* Under reference conditions

Ordering Code



Notes:

1. * Other material/ options on request, please refer to H. O.
2. ** Other line sizes available on request, please refer to H. O.
3. *** Built-in earthing electrode is available for sensor sizes 40 mm and above. Up to 32 mm, earthing rings are compulsory.
4. **** In corrosive application if selected Hastealloy C, Titanium & Tantalum sensing electrode, then earthing electrode / earthing ring should be of same material
5. ***** In case of non-metallic pipeline earthing rings are compulsory.

Water Balancing SCADA (WBS)

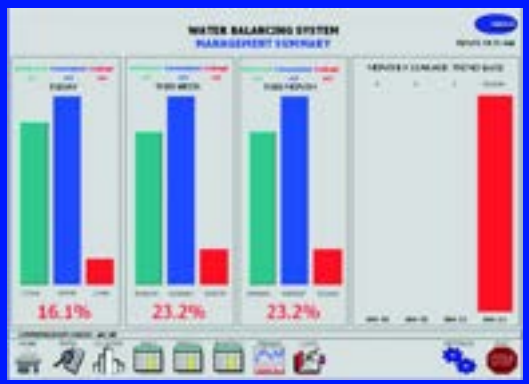
SBEM's Water Monitoring / Balancing system is used in large industrial setups (Power, Cement, Chemical etc.) for reliable online monitoring of water withdrawals from water sources, consumptions & thereby calculating losses. Real time / totalized flow data is read from SBEM flow meters by SBEM M2M (Machine to Machine interface) & sent to centralized water balancing system SCADA by using GPRS communication. The collected data is represented to the user in the form of various screens a & reports for intensify water usage / loss trends.

Product Features

- Real time monitoring of instantaneous flow rate & cumulative flow.
- Reliable Measurement & wireless data transfer considering remote locations.
- Seamless integration with SCADA using standard MODBUS TCP or SBEM proprietary protocol (ASCII).
- TCP/IP or UDP Transport Layer. Displays the Flow rate trends & reports of the field devices with selectable Date / Time ranges.
- Historical data of Individual Cluster with multiple Flow Meters for measuring the Withdrawals/Consumptions.
- Separate Consumptions are provided for Industrial / Domestic Purpose.
- New Stages, Clusters, devices can be added as per user requirement.
- Multi Location monitoring to view data / reports simultaneously.
- Other process instruments (level, pressure etc.) can be integrated with the system.
- Provision for virtual flow meters
- Daily / Weekly / Monthly Consumption
- Expandability in System.
- Export Data to Excel
- Customized Reports

Applications

Water and Waste water Management (WTP).
Effluent Treatment Plant (ETP).
Public Health Engineering (PHE).
Elevated Storage Reservoirs & Distributed
Pipeline Monitoring

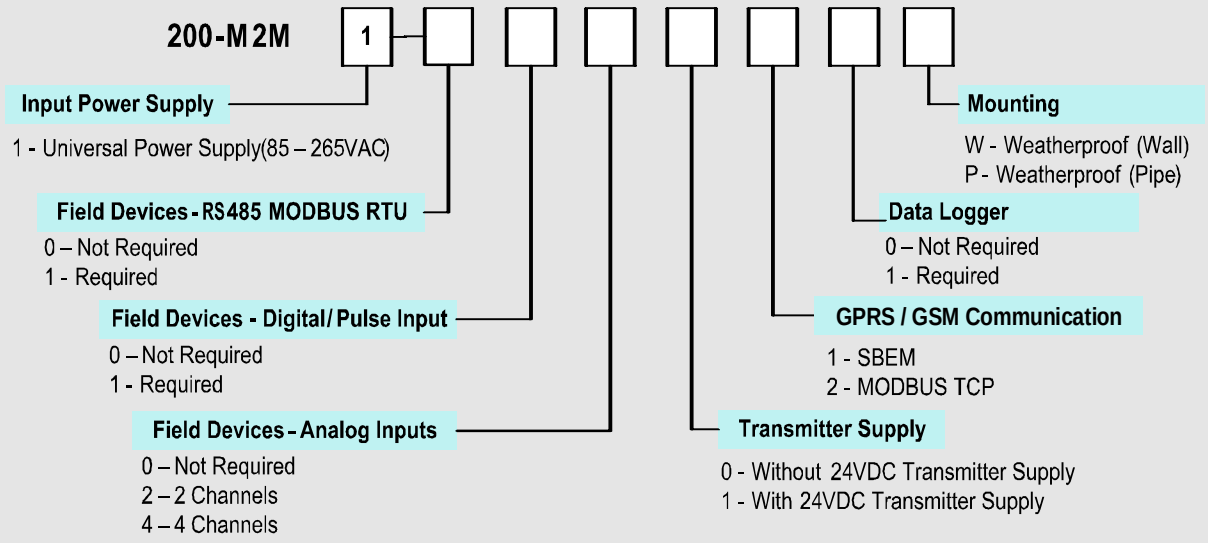


Machine to Machine Interface [M2M]

Specifications for 200 – M2M

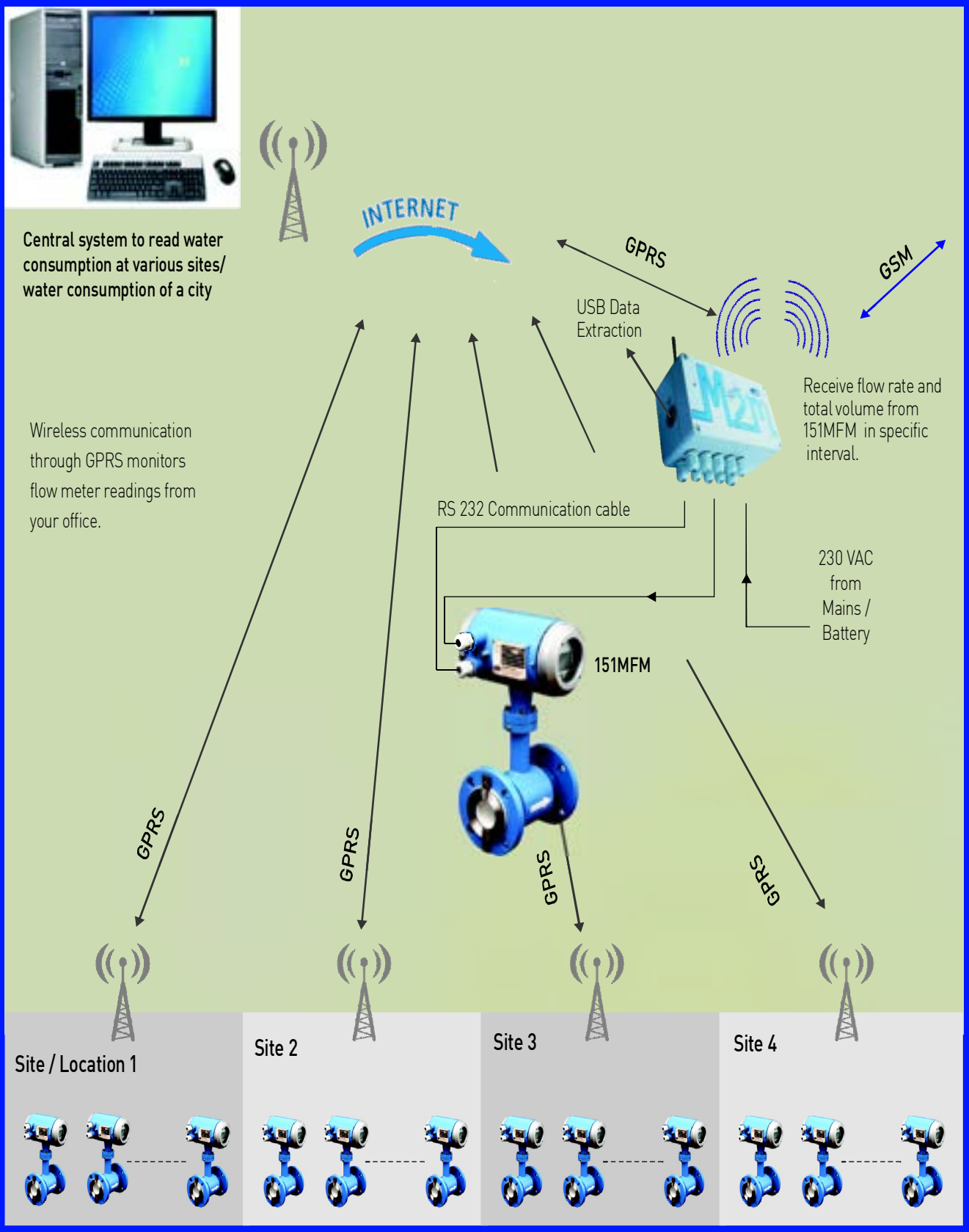
Power Supply	Universal 85 to 260VAC, 50~60 Hz
Commincation	GSM/GPRS850/900/1800/1900MHz
Temperature	0 to +55°C
Protection Class	IP67
Transmitter Supply O/P	24VDC @ 200mA Optional
Cable Entries	9 X PG9, 2 X PG11
Field Device Inputs	RS485-2Wire MODBUS RTU
Analog Input	Nos of Channels – 4 with Built-in Current loop protection / I/P Impedance: 27 ohm + 2V Protector Drop
Digital / Pulse Input	4 Nos. Max Frequency 500 Hz
Built-in Data Logger	Min to max interval : 5min to 31 days Max-min no of records stored : (34K - 2K) Min-max no of parameters enabled : (1 - 40)
USB Port	For Data Retrieval on Flash Drive or host PC

Ordering Code



Typical ordering Code 200- M2M 1 1 1 2 1 2 0 W - The above model code specifies that M2M is required to have input supply of 85-230VAC and collect data from MODBUS RTU Slave(s), 4 Digital or pulse inputs, 2 nos two wire 4-20 mA transmitters with supply from M2M, The GPRS output should be MODBUS TCP and the unit should be wall mounted, Data Logging not required.

GSM/ GPRS connectivity



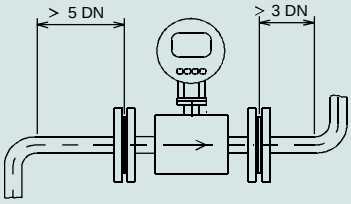
Installation Guidelines

The meter performance will be the best if the liquid flow in the piping is well stabilized; therefore it is necessary to observe specific rules for the sensor placement in piping. In the contact planes between the sensor and the adjoining piping sections should be no edges as these would cause flow turbulence. Make sure that straight piping sections are provided before and after the sensor; their required length is proportional to the inner diameter of the piping concerned.

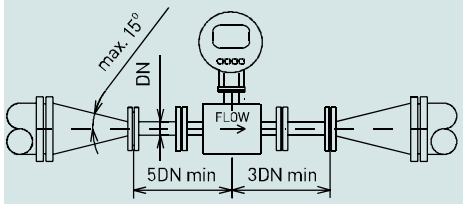
If more than one flow-disturbing elements such as pipe bend or fitting are located near the sensor, the required length of straight piping section on the sensor side should be multiplied by the quantity of such Elements.

Inner diameter of the connected pipeline must not be smaller than and should not me bigger than inner diameter of sensor.

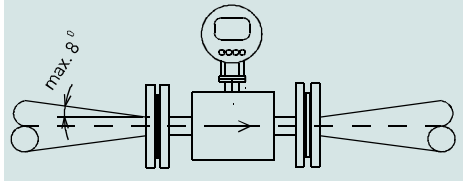
In the case of bi-directional flow, the same principles are valid before and after flow meter's body.



Required straight piping sections



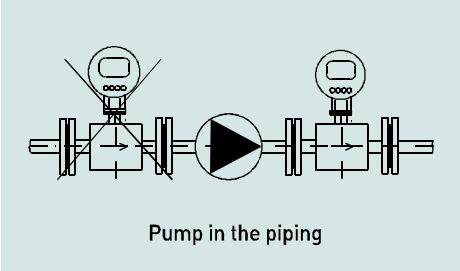
Pipe narrowing



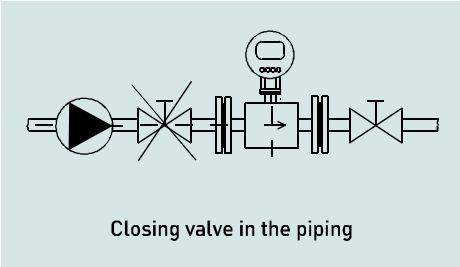
In the case where the pipeline nominal size is bigger than nominal size of flow meter, it is necessary to use conical reduction with the maximum slope 15^0. In the case of bi-directional flow, conical reduction must be installed on both sides, both with minimum straight piping 5 DN.

Pipe narrowing sections with angles not exceeding 8^0 can be taken for straight sections.

In the cases where the liquid is pumped, the flow sensor shall always be placed at the output side of the pump to prevent underpressure in the piping which might damage the sensor.



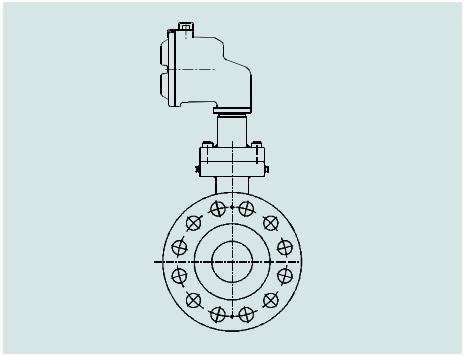
Pump in the piping



Closing valve in the piping

For the same reason, the sensor shall be always placed before the closing valve in the piping.

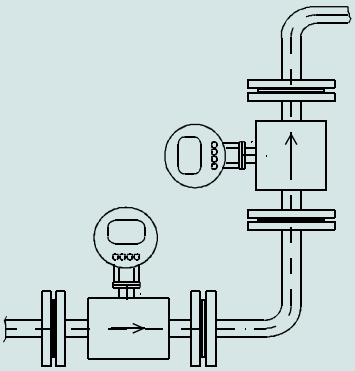
The sensor can be fitted in the piping in either horizontal or vertical position. However, make sure that the electrode axis is always horizontal and, if the sensor is mounted in a Horizontal position, the flange section.



Must Do

- Measuring tube must be fully filled at all times
- Earthing Ring/Electrodes must be installed
- No exposure to direct sunlight, canopy is recommended.

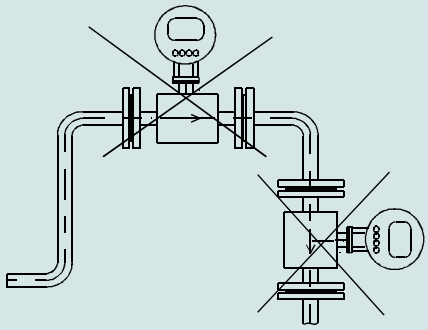
Installation Guidelines



Sensor mounted in a vertical position

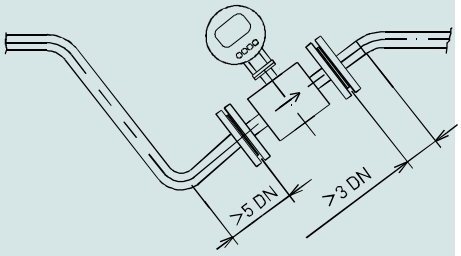
In the cases where the sensor is mounted in a vertical position, the flow direction shall always be upwards.

To ensure correct meter function at all times, the measured liquid shall completely fill up the sensor and no air bubbles shall be permitted to



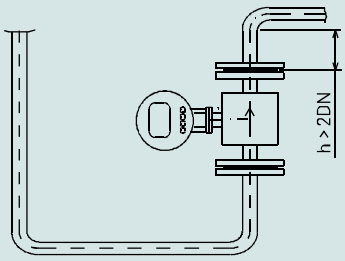
Risk of liquid aeration

accumulate or develop in the sensor tube. Therefore the sensor shall never be placed in the upper Pocket of the piping or in a vertical piping section wher e the flow direction is downwards.



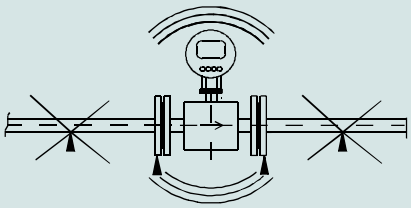
Permanent flooding of sensor

In piping systems where complete flooding of the piping cannot always be guaranteed, consider placing the sensor in a bottom pocket where full flooding is sure.



Sensor placement near free discharge

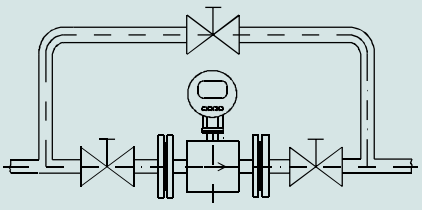
If the sensor is located near a free discharge point, such point shall be by at least 2 DN higher than the top part of the sensor.



Undesirable sensor vibrations

Make sure that the adjoining piping is clamped/supported as close to the sensor as possible, to prevent vibrations and damage to the sensor.

In applications where continuous liquid flow is essential, a bypass shall be provided to allow

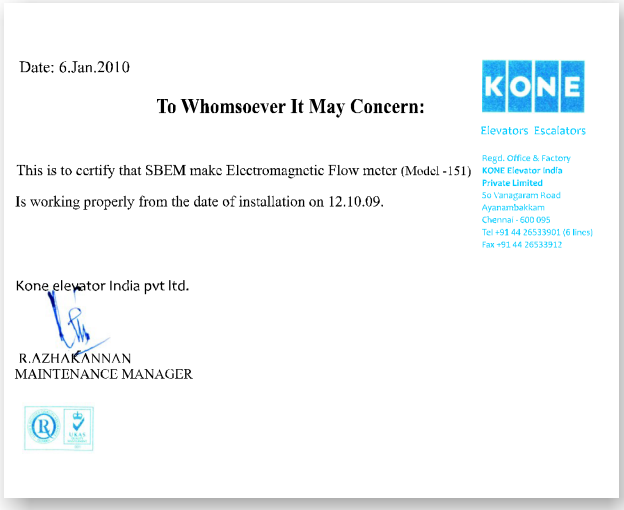


Sensor bypass

for sensor servicing. A Sensor bypass may be a also reasonable solution in the cases where, to dismantle the flow sensor from the piping, Liquid from a very long piping section would have to be discharged.

Customer Appreciation- Our Success Stories

Our biggest motivation is customer satisfaction. Words of appreciation from our customers not only make us happy, but drive us for further innovation and better service. A token of appreciation from our customers- our hard earned reward.



Date: 6.Jan.2010

To Whomsoever It May Concern:

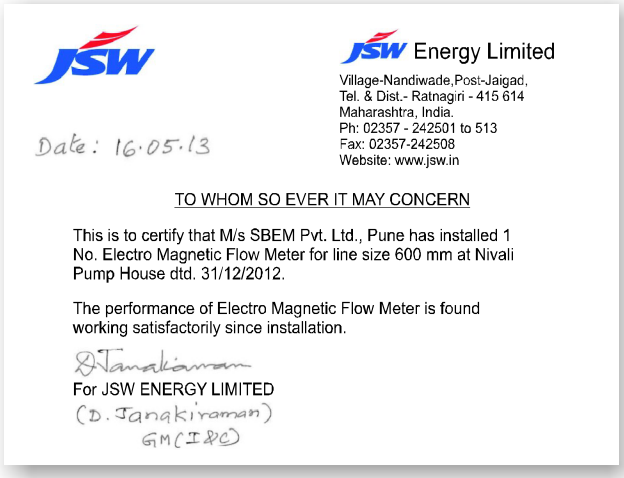
KONE
Elevators Escalators

Regd. Office & Factory
KONE Elevator India
Private Limited
50 Vanagaram Road
Ayanambakkam
Chennai - 600 095
Tel +91 44 26533901 (6 lines)
Fax +91 44 26533912

This is to certify that SBEM make Electromagnetic Flow meter (Model -151) Is working properly from the date of installation on 12.10.09.

Kone elevator India pvt ltd.

R.AZHAKANNAN
MAINTENANCE MANAGER



JSW Energy Limited
Village-Nandiwade,Post-Jaigad,
Tel. & Dist.- Ratnagiri - 415 614
Maharashtra, India.
Ph: 02357 - 242501 to 513
Fax: 02357-242508
Website: www.jsw.in

Date: 16.05.13

TO WHOM SO EVER IT MAY CONCERN

This is to certify that M/s SBEM Pvt. Ltd., Pune has installed 1 No. Electro Magnetic Flow Meter for line size 600 mm at Nivali Pump House dtd. 31/12/2012.

The performance of Electro Magnetic Flow Meter is found working satisfactorily since installation.

D.Tanakiraman
For JSW ENERGY LIMITED
(D.Tanakiraman)
GM(I&C)

TATA Marcopolo

04th Sept 2012

To whomsoever it may concern

This is to certify that the SBEM Model 151, Electromagnetic Flow Meters were installed & commissioned at our Dharwad (Karnataka) address in March 2011.

PO Details:
PO No. : 7500000713
PO Date : 31.07.2010
Quantity : 10 Nos

The performance of the Electromagnetic Flow Meters are continuously verified and found satisfactory.

We wish to continue the same services.

For Tata Marcopolo Motors Ltd

G.Y. Ram
Head-Plant Engineering
Mob:+91-9243291707

JSW Steel Limited
Vijayanagar Works :
P.O. Vidyanagar, Toranagallu,
Dist. Bellary - 583 275, Karnataka, India
Ph: 08395 - 250 120 - 130
Fax: 08395 - 250 138/250 665
Website: www.jsw.in

To whomsoever it may concern

08/05/2013

This is to certify that the SBEM Model 151 Electromagnetic Flow Meter (Size: 1200NB) is installed & commissioned at our Bellary site from last 06 months.

It was purchased under
PO No. : JSW/VJNR/R/UTI/33011/114201 Dt. 11th Aug. 2011
Quantity : 02 Nos
Application : Water

The performance of the Electromagnetic Flow Meter is continuously monitored and is found satisfactory from the day of commissioning.

This confirmation is being issued on request of SBEM & it does not absolve SBEM from any contractual commitment in future.

We wish to continue the same services.

For JSW Steel Ltd.,

Vaze Shekar K.
AGM, Utility Dept.
09449598317

JINDAL Part of O.P .Jindal Group

Regd. Office :
Jindal Mansion,
5 A, Dr. G. Deshmukh Marg,
Mumbai - 400 026,
Phone : 022-2351 3000
Fax : 022-2352 6400

Our Clients Portfolio

Ingenious solutions from Indigenous source

Our products are used across multiple industries and clients. From raw water to sewage and treated water, SBEM has an extensive presence in the market. Illustrations are given below:

Power	BHEL	NTPC	Reliance	MAHAGENCO	ESSAR	Adani
	LANCO	Jindal Power	India Bulls	Tata Power	Coastal Energen	DVC
Water & Waste water	Thermax	VATECH	Ion Exchange	PRAJ	Driplex	BGR Energy
Cement & Steel	Ambuja	India Cements	Aditya Birla	SAIL	Tata Steel	JSW
Chemical, Sugar & Food	Deepak Nitrite Limited	Shree Renuka Sugars Ltd.	MECTECH	Cargill	Desmet ballestra	Ruchi Soya
Oil, Refineries & Gas	IOCL	BPCL	HPCL	ONGC	VANAZ	EMERSON
	Indian Strategic Petroleum Reserves Limited		ONGC Petroleum Additions Limited		IOT Infrastructure & Energy Services Ltd	
Turnkey Automation	L & T	Honeywell	ABB	Alfa Laval	ThyssenKrupp	GE
Consultants	EIL	Avant-Garde	TCE	Mecon	DCPL	
	Fichtner	Jacobs	M.N.Dastur	Mott MacDonald	Uhde India	Toyo Engg.
Indian Navy & Marine	Mazagaon Dock Limited (MDL)	Ship Building Centre (SBC)	Defence Machinery Design Establistment (DMDE)		INS Sindhu dhwaj	INS Sindhukesari

Product Overview

Level Indicators & Transmitters

Pulse Radar
138C/K

Ultrasonic,
136ULT

Hydrostatic,
103HPT

Magnetostrictive,
134TM + 134H

Float & Board Type
Indicator, 131T

Open Channel Flow Meters

Float & Tape Type
Automatic Tank Level
Gauge, 133ATLG

Servo Gauge,
139M

Capacitance
103CLT

Loss of Head Indicator-
Transmitter, 104LOH

Capacitance Based
Rate of Flow
Transmitter 104ROF

Ultrasonic Based
136ULT

Level Switches

Conductivity
130IC/RC

Capacitance
114MLS/RFS

Top Mounted
Float, 134S

Rotary Paddle
135LC

Acoustic Rod
136ARS

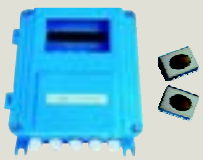
Side Mounted
Float, 137

Top Mounted
Displacer,
137D, P, Y, L

Closed Pipe Flow Meters / Accessories

Electromagnetic
151MFM

Battery Operated
Electromagnetic
Flow Meter 151 MFMB



Ultrasonic Flow Meter
153 UCW

Machine 2 Machine Interface
200-M2M

Analysers

140 Analytical Series

Tank gauging solutions

- Servo (139M) based, Float & Tape type level gauges (133ATLG) based, Magnetostrictive (134TM) based, etc.
- Tank farm management systems with field gauges, control room unit and SBTFMS software
- Site survey, project planning, detailed engineering, execution, installation & commissioning, support & training

- **Solutions for solids and liquids**
- **Multiple technologies**
- **Multiple segments**
- **Multiple parameters**
- **Multiple applications**

Your Applications & Our Solutions

Thermal Power

Application	SBEM Solution
Coal Bunkers	Pulse Radar, 138
Travelling Water Screens	Hydrostatic Pressure Transmitters, 103 HPT, Ultrasonic Transmitters, 136 ULX
Gravity Filter beds	Loss of Head Level Indicator - Transmitters, 104 LOH
Flow Measurement	Electromagnetic Flow Meters, 151 MFM
Various Tanks	Float, displacer, conductivity, capacitance type level
Ash Slurry	Ultrasonic Level Transmitters, 136 ULX, Pulse Radar,
Ash Hoppers	RF Admittance type level switches, 114 RFS

Public Health Engineering

Application	SBEM Solution
Gravity Filter beds	Loss of Head Level Indicator - Transmitters,
Sumps at Water Treatment	Ultrasonic Level Transmitters, 136 ULX
ESR at various locations	Ultrasonic Level Transmitters, 136 ULX
Raw water intake, Distribution channels	Ultrasonic Flow Meters, 153 UFM; Electromagnetic Flow Meters, 151 MFM
Sewage Treatment Plants	Open Channel Flow Meters, 136 ULX

Water & Waste Water Treatment / Distribution

Application	SBEM Solution
Raw Water Intake	141pH,Turbidity 143 TURL, Disoloved Oxygen 144 DOT, Electromagnetic Flowmeter 151 MFM
Coagulation	141pH, Turbidity 143 TURL, Conductivity Controller 142COC
Chlorine Injection	Free Chlorine 145 CLO,141pH
Effluent Treatment Plant	141pH,Conductivity Controller 142COC
Aeration Besin	Disoloved Oxygen 144 DOT,141pH, Conductivity Controller 142COC
Secondary Clarifier	141pH,Conductivity Controller 142COC
Swimming Pool and Spa	Free Chlorine 145 CLO,141pH

Steel Industry

Application	SBEM Solution
Gas Holder	Float & Tape Level Gauge with Two Wire Transmitter, 133 ATLG +TWT
Iron Ore/ Direct Reduced Iron (DRI)	Ultrasonic Level Transmitter, 136 ULX; Pulse Radar, 138
Back filter hopper	Capacitance Type Level Switch, 114MLS
LPG Tanks	Servo Gauge,139 M
Fuel Oil Tanks	Float & Tape Level Gauge with Two Wire Transmitter, 133 ATLG +TWT

Oil, Gas & Refineries

Application	SBEM Solution
Cone Roof & Floating Roof Tank	Float Operated Microprocessor based Level Transmitter & Indicator 133/ STDT/CIU/SBTFMS
	Servo Operated Microprocessor based Level Transmitter & Indicator 139/ TSIC /CIU/SBTFMS
Spheres / Mounded Vessels	Magnetically coupled Level Switch 137 L / 137 P
	Servo Operated Microprocessor based Level Transmitter & Indicator 139/ TSIC /CIU/SBTFMS
Mounded Vessels and Underground Bullets in Auto LPG Stations	Displacer Level Switch 137 L / 137 P
	Magnetostrictive Level Transmitter & Indicator, 134 TM / 134 H / 134 S / 176
CAVERNS	Servo Operated Microprocessor based Level Transmitter & Indicator 139/ TSIC /CIU/SBTFMS

Cement Industry

Application	SBEM Solution
Coal Bunkers	Pulse Radar, 138; Paddle Type Level Switch, 135 LC
VRM Feed Belt Disc / VRM Lime Stone	
Coal Mill	
Kiln & Cooler ESP	Capacitance Level Switch, 114 MLS; Paddle Type Level Switch, 135 LC
Bauxite Storage	
Limestone Storage	
Fly Ash ESP Hoppers	
Cement Bins	Pulse Radar, 138;
CM CLR Hoppers	Pulse Radar, 138; Paddle Type Level Switch, 135 LC
Lime Stone, Iron Ore, Bauxite,Lignite,	
Silo HLA	
Kiln Feed Bin	
Water Balancing System	151 + SCADA

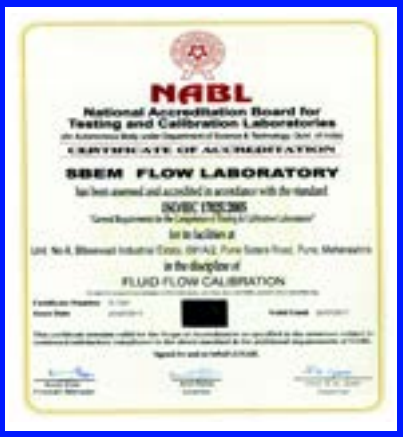
Edible Oil

Application	SBEM Solution
Raw material storage	Paddle Level Switch, 135 LC; Float type Level Switch, 137EA; Top mtd. Displacer Type Level Switch 137 D
Cleaning, Dehulling	Paddle Level Switch, 135 LC; 135 VS; Capacitance Level Switch, 114 MLS
Crush, Cooking, Expelling	Capacitance Level Switch, 114 MLS; Float type w Level Switch, 137EA;Top mtd. Displacer Type Level Switch 137 D
Refining, Deodorising	Vibrating Fork type Level Switch, 135 VLM; Side mounted Float type Level Switch, 137EA; Top mounted Displacer Type Level Switch 137 D; Capacitance Level Switch, 114 MLS
Oil Storage	
Hydrogenation	
Liquid Extraction	

Flow Laboratory

Certificate No.:C-1247

Laboratory accredited by
NABL as per ISO/IEC 17025:2005
Lab No. : C-0828


NABL
National Accreditation Board for Testing and Calibration Laboratories
CERTIFICATE OF ACCREDITATION
SBEM FLOW LABORATORY
ISO/IEC 17025:2005
in the discipline of
FLUID FLOW CALIBRATION

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Head Office: 39 Electronic Co-operative Estate, Pune-Satara Road, Pune - 411 009
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Works : 691A/2, Bibwewadi Industrial Estate, Pune-Satara Road, Pune - 411 037.

Certificate No.: C-1247 ISO 9001:2008

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