www.manasmicro.com

Matching global standards with superior quality flow meters

We are certified with

ISO/IEC 17025:2017 | ISO 9001:2015
ISO 14001:2015 | OHSAS 45001:2018

manas
Technology. Excellence. Trust.

The driving force behind the success

Mr. Shrikant Sahasrabudhe is the founder and CEO of the Manas Microsystems Pvt Ltd. The company was established back in 1998 and has been leveraging its rich experience in manufacturing with a varied range of future-driven flow meters under his leadership. His focus on continuous Innovation has enabled the company to successfully grow and carve its niche in the field of flow meter manufacturing. Because of his vision of offering innovative, high quality, affordable products and satisfactory services to the customer, the company has achieved enormous success and is in a leading position among the global market players today.

He says, "Some of our specialised products that are designed for specific applications, include Thermal Mass Flow Meters for Gas and Air applications, BTU Meters for Air handling Units, chilled water, HVAC applications; Electromagnetic Flow Meter from size DN 02 to DN 08, Electromagnatic Flow Meters in Polypropylene, Orifice Flow Meter and Sanitary Grade Electromagnetic Flow Meter.

It's worth noting here that we developed numerous varieties of flow meters in-house, which is a key part of our dedication to 'आत्मनिर्भर भारत' ('Self-Reliant India').

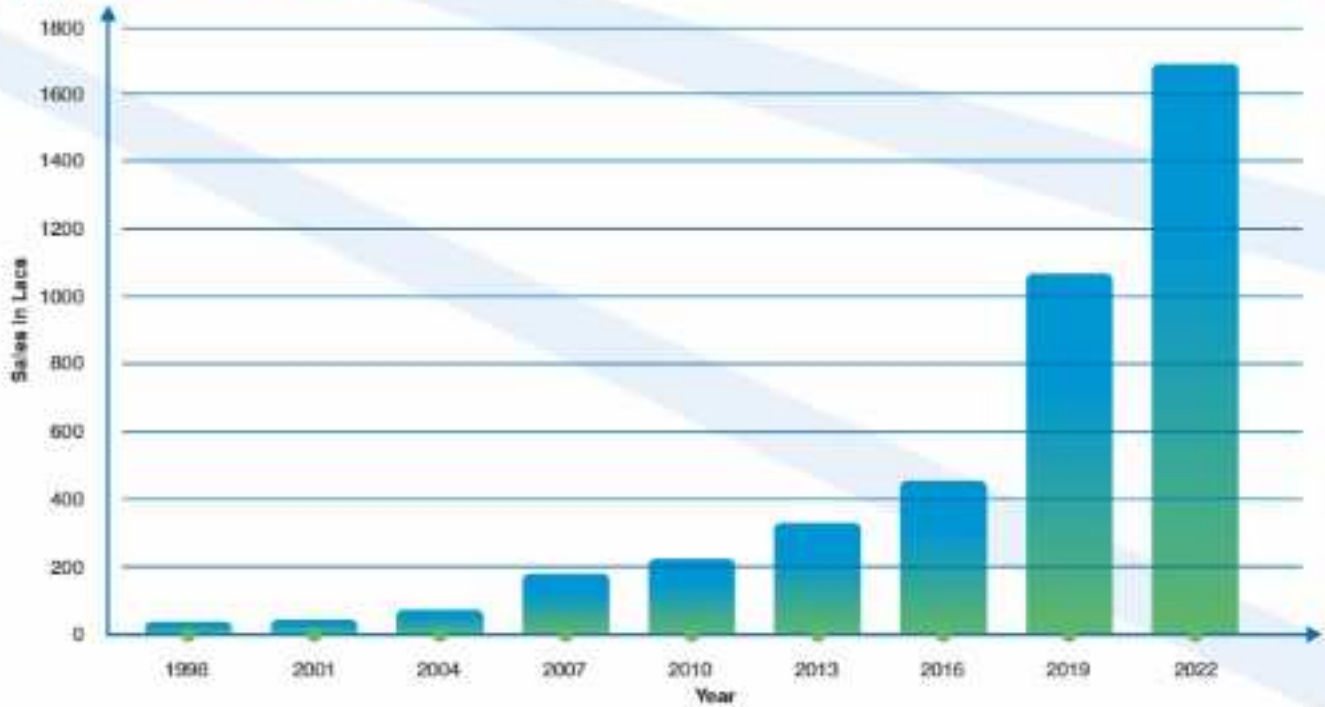
We have two fully equipped liquid calibration labs and one Air Flow Calibration Lab. These are completely designed and developed by Manas. Our Liquid Flow Calibration Lab designed as per ISO 4185, is having flow capacity up to 250 m3/hr and is accredited for ISO/IEC 17025:2017 by NABL. This allows us to be completely self-sufficient, ensuring that our output is unaffected by external forces.

With suitable machinery and calibration facilities, Manas can manufacture flow meters and other process instruments of international repute. Sugar industry, Water and Wastewater industry, Automobile industry, Dairy industry, Textile industry, Pulp and Paper industry are some of the industries we serve."

Why Manas?

- Total solution for flow instrumentation.
- Operating in flow instrumentation field since 1998
- Indigenous design, development and manufacturing
- Present set up spread over 35,000 Sq. Ft. Manufacturing capacity tripled in Y-2021
- Predictable delivery
- More than 15000 EMF, 2000 UFM and hundreds of BTU delivered
- Exported to New Zealand, Korea, Australia, Middle east and African countries
- Excellent record of customer satisfaction 67% repeat sale
- 24X7 service support
- Experienced design and development department to cater to all client needs in short span
- Best value for your money
- Excellent ERP system which maintains data since inception
- Managed by technocrat and qualified committed responsive team
- Line specific 3 calibration lab confirming to ISO 17025 NABL accredited
- 5 stages inspection from raw material to finished product
- High MTBF
- Approved supplier by many consultant and water bodies including MJP, GWSSB and UP Jal Nigam, RWSSB etc.
- Manufacturing portfolio being expanded to IoT
- For relevant supplies calibration certificate by NABL approved laboratory

Manas Microsystems Pvt Ltd
Net Sale in Lacs



Certificates of Registration

ISO 9001:2015

ISO/IEC 17025:2017

NSIC Certificate

ISO 14001:2015

MSME Certificate

Government Approvals

| MJP (Maharashtra Jeevan Pradhikaran)

| PHED Rajasthan

| UP Jal Nigam

Our Prestigious Clients

BLUE STAR

Infosys

Raymond

TATA

THERMAX

सेल SAIL
स्टील अथॉरिटी ऑफ इण्डिया लिमिटेड
STEEL AUTHORITY OF INDIA LIMITED

IN HOUSE CALIBRATION FACILITIES

We have established an Air Flow Lab having Maximum Capacity up to 1725 Nm3/hr.

We have a flow Calibration setup up to DN600 and Max Flow Capacity up to 1000m3/hr as per ISO 4185.

Our Liquid Calibration Lab is as per ISO 4185 Accredited by ISO/IEC 17025:2017. With setup of DN10 to DN250 with flow capacity of 0.2m3/h to 250m3/h.

ELECTROMAGNETIC FLOW METER

Manas Microsystems is India's leading Electromagnetic Flow Meter supplier. We have been recognized as one of India's top Electromagnetic Flow Meter manufacturers recently. We make electromagnetic flowmeters with various sizes, materials, liner materials to suit users' requirements.

Electromagnetic Flow Meter is widely used for flow measurement of conducting fluids. These are used for the measurement of drinking water as well as wastewater applications, any dirty liquids which are conductive or water-based, raw water, etc. The new sensors are more compact in size and more sensitive. Our Flow Meters are field-proven, and we have thousands of installations in India and the world. We have a calibration set up in accordance with NABL requirements.

Manas is an Electromagnetic Flow Meter Manufacturer that has the capacity to manufacture, assemble, test, and calibrate all flow meters in-house. Very few flow meter manufacturers have this capability.

The electrical conductivity of steam condensate is usually between 2 to 5 µS. The electromagnetic flowmeters from most of the suppliers, including multinational companies, do not work for this application. Manas has taken special efforts and come out with a proper solution for this problem. We have developed a special transmitter and flow sensor that works for liquids having electrical conductivity from 2µS onwards. We are proud to mention that no other manufacturer in India makes electromagnetic flowmeters that work at such low conductivity levels.

We have successfully installed our flow meters in several industries for low conductivity applications such as steam condensate and DM water.

Features:

- Robust, rugged, welded steel/stainless steel construction IP67, IP68
- Very much suitable for submerged or buried application.
- No Pressure Drop across the sensor, being full bore construction.
- Measurement independent of un-dissolved solids.
- Long lasting Ebonite [illegible] long life of sensor
- End connection flanges as per customer's requirements.

Applications:

- Effluent treatment plants
- Sewage treatment plants
- Water supply schemes
- Steel Industry
- Sugar Industry and distillery
- Pulp and paper
- Chemical and pharmaceutical
- Food and drug

Note : For detailed technical catalogue scan the QR code

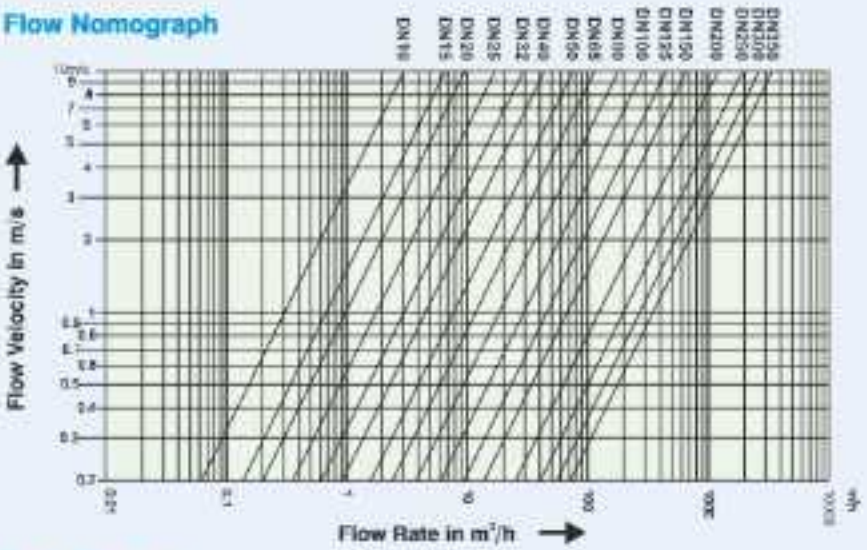
Flow Rate Table (Flow rate at v = 1 m/s)

DN	M3/Hr.	LPM	LPS
10	0.282	4.712	0.078
15	0.636	10.602	0.176
20	1.130	18.849	0.314
25	1.767	29.452	0.490
32	2.895	48.254	0.804
40	4.523	75.398	1.256
50	7.068	117.809	1.963
65	11.945	199.038	3.318
80	18.095	301.592	5.026
100	28.274	471.238	7.853
125	44.178	736.310	12.271
150	63.617	1060.287	17.671
200	113.097	1884.955	31.415
250	176.714	2945.243	49.087
300	254.469	4241.150	70.685
350	346.356	5772.608	96.210

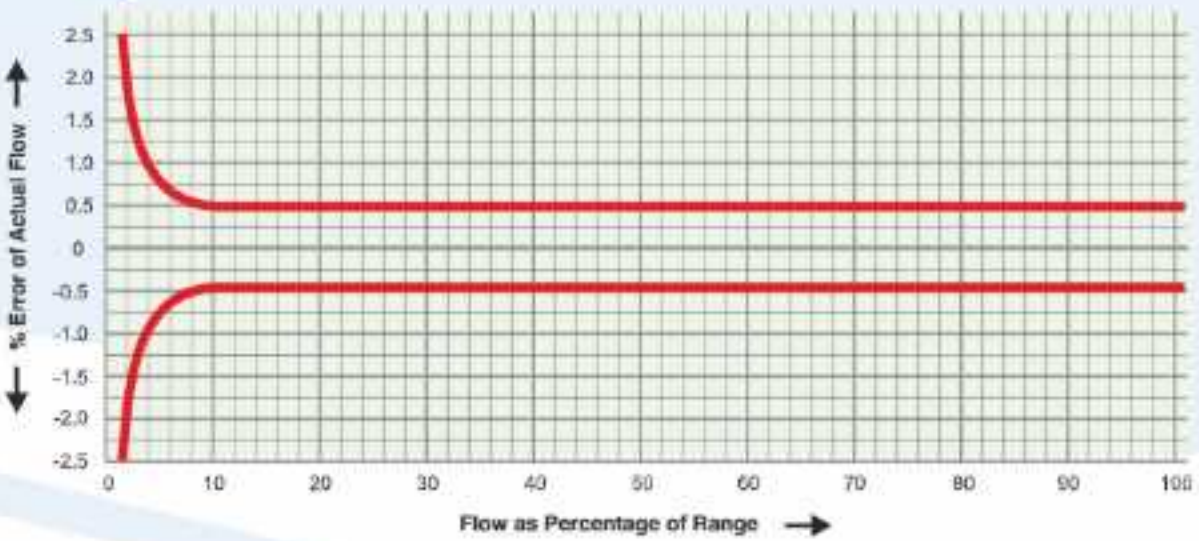
Flow Rate Table (Flow rate at v = 1 m/s)

DN	M3/Hr.	LPM	LPS	MLD
400	452.389	7539.816	125.664	10.8
450	572.555	9542.580	159.043	13.7
500	706.858	11780.960	196.349	16.9
600	1017.875	16964.590	282.743	24.4
700	1385.441	23090.690	384.845	33.2
750	1590.430	26507.170	441.786	38.1
800	1809.556	30159.26	502.654	43.429
900	2290.219	38170.32	636.172	54.965
1000	2827.431	47123.85	785.398	67.858
1200	4071.501	67858.34	1130.972	97.716
1400	5541.765	92362.75	1539.379	133.002
1600	7238.223	120637.1	2010.678	173.717

Flow Nomograph



Error Diagram



Full Bore Electromagnetic Flow Meter SR1000A

USP: Low conductivity fluid flow mesurement upto minimum 2 µs/cm possible. This model is compatible for Molasses, Steam Condensate water and DM Water. Model Approved for Molasses.

Full Bore Electromagnetic Flow Meter by Manas Micro called SROAT-1000 approaches the ideal flow meter suitable for a wide range of liquid flow measurements even with very low conductivities. The meter offers no resistance to flow hence the pressure drop is almost negligible. The measurement is based on Faraday's law of electromagnetic induction, which is independent of viscosity, density, pressure and temperature of the flowing medium. The measurement is not affected by solid impurities, as long as the conductivity of liquid is more than 2 microsiemens/cm. It is true volumetric flow measurement. We offer various materials of construction for meter lining and electrodes to cover the majority of corrosive liquids.

Model approved with Weights and Measurement Certificate and Seal

- Excellent Linearity with Accuracy better than ± 0.5%. Pulse or frequency output also available optionally.
- In case of **SR1001AP**, additionally an RS485 communication port is available (RS232 on request) along with Data Logging facility.

Features

- The use of pulsed DC magnetization and auto-zero technique offers excellent long-term zero stability
- Measurement is independent of the velocity profile across the diameter of the pipeline
- Measurement results are independent of density, viscosity, pressure, temperature, solid – impurities and conductivity variations (above 2 µs / cm)
- No additional pressure drop across the meter relieves the process designer while sizing his pumping requirements. Simple to install as no special precautions of straight pipe lengths are required
- Compatible with virtually all corrosive / non-corrosive liquids.
- The Protection class offered IP 68 for the flow sensor, IP 67 for a transmitter
- Reasonably higher ratio of return on investment

Applications

This meter is more suitable for those fluids which present difficulties in handling. Fluids such as effluents, slurries, pulps, brines and other highly corrosive liquids, acids and bases, fermenter wash, molasses, juice, etc.

Following industries can find a lot of applications of this flow measurement technique.

- Effluent Treatment Plants
- Sewage Treatment Plants
- Water Supply Schemes
- Steel and Aluminum
- Sugar Industries and Distilleries
- Pulp and Paper
- Chemical / Pharmaceutical
- Petrochemicals / Fertilizers
- Food and Drugs

Note : For detailed technical catalogue scan the QR code

Full Bore Electromagnetic Flow Meter SS1002

USP: Without opening the sensors box, parameters can be configured on site. Computer interfacing with RS232/RS485 port, MODBUS, CLOUD. Model approved with Weights and Measurement Certificate and Seal.

We have now introduced a new type of primary flow sensor and smart flow transmitter in their electromagnetic flow meter series. This sensor works on Faraday's law of electromagnetic induction. The meter is a true volume measuring meter. The measurement is independent of Viscosity, Density, Dissolved/Un-dissolved solids, pressure, or temperature of the flowing liquid if it maintains certain minimum conductivity more than 20 µs/cm.

This flow meter is field configurable and hence it is easier to change the range on the field. It provides accuracy of ±0.5 % ±(1mm/sec) of Actual Flow Rate between 100 % to 10 % of calibrated range.

This flow meter can be considered where the conductivity of the liquid is more than 20 µs/cm.

This is available in sizes ranging from DN 10 to DN 350 and can cater to velocities from 2.5 m/s to 15 m/s.

Features

- Wide range of sizing DN10 to DN350
- Higher sizes are also available but Model is Mega-Sroat (Diameter DN400 to DN1600)
- Accuracy is better than ±0.5% of actual flow rate between 100% to 10% off calibrated range
- Various types of Liner and Electrode materials are available as per application requirements
- The new sensors are more compact in size and more sensitive. Earth ring or earth electrode, both options are available
- Empty tube detection is also provided
- Wide choices of compatible electrodes, liners and Body materials
- Computer/Printer Interfacing with RS 232 / RS485 port
- Stored/ Online data can be stored in an excel format file by using RS232 Monitor Software PC end

Applications

- Steel and Aluminum Industries
- ETPs and STPs Plants
- Sugar and Distilleries
- Paper and Pulp
- Food and Drug
- Petrochemical
- Fertilizer and Chemical
- Pharmaceutical

Note : For detailed technical catalogue scan the QR code

Insertion Type Electromagnetic Flow Meter SR1000i

USP: Good for large pipelines, as no cutting of pipe or shutdown required.

Insertion Type Electromagnetic Flow Meter is a best solution for water flow measurements in immense diameter pipes. Most reasonably priced compared to its counterpart in full bore dimension or ultrasonic measurement.

Fairly good accuracy of measurement (typical 2% of flow rate) can be achieved with little care in installation of probe and transmitter. The electric conductivity of liquid under measurement can be as low as 5 µs/cm. Being insertion type, there is virtually no pressure loss. This meter is most economical as compared to its counterpart in full bore measurement or ultrasonic measurement.

The technique called as "Pulsed DC" is used for flow measurement, which offers very high zero stability and accuracy of measurement. The standard current output of 4-20 mA DC is provided which is linearly proportional to volumetric flow rate.

This flow meter is available for line sizes from DN200 up to DN2000. The velocity of the flow medium should be between 0.1 m/s to 2.5 m/s.

For remote communication, an RS 485 communication port is available (RS 232 on request) along with Data Logging facility.

Features

- Available for different line sizes from DN 200 to DN 2000
- Typical accuracy is better than ± 2% (Best accuracy in it's class) Measurement results are independent of density, viscosity, pressure, temperature, solid impurities and conductivity variations (above 5 µS/cm)
- Excellent long term stability using pulsed DC magnetization and auto zero technique
- Best suited for irrigation and water supply departments, public service and utility departments for large sized and / or cement pipelines

Applications

- Water Supply
- Public Services and Utilities
- Effluent Treatment Plants
- Pharmaceutical Industries
- Sugar Industries and Distilleries
- Food and Drugs

Note : For detailed technical catalogue scan the QR code

Wafer Style Electromagnetic Flow Meter Jal Oagh

USP: Sandwich type design- saves cost.

Water is the most vital utility in any industry, hence Manas has produced an affordable variety of electromagnetic flowmeters for accurate water flow measurement.

Wafer Style electromagnetic Flow Meter, called Jal-Oagh provides the solution for knowing your water use, not only by guesswork but by proper instrumentation with economy and good accuracy.

Sizes available for Wafer Type are DN 50 to DN 200

Two versions are available:

A. Model JAL-OAGH MFT- 01 is applicable for conductivity of the medium greater than 5 μS/cm and operating velocity range is a fixed velocity. (i.e. 1.25/2.5/3.75/5.0/6.25/7.5/8.75/10.0 m/sec)

B. Model JAL-OAGH SJ 1102 is applicable for conductivity of the medium greater than 20 μS/cm and minimum velocity of 0.3 to maximum 10 m/sec.

Features

- Small in size, light in weight compared to other magnetic meters in its class
- Full bore electromagnetic flow meter with absolutely no restriction to flow
- Has a typical accuracy of ± 1%
- Measurement is independent of the velocity profile across the pipe
- Measurement results are independent of density, viscosity, pressure, temperature, solid impurities, and conductivity variations (above 5 μ S/cm for MFT-01 and above 20 μS/cm for SJ-1102)

Applications

- Effluent Treatment: Untreated as well as Treated Effluent Water Measurement
- Sewage Treatment: Wastewater measurement, Sludge measurement etc.
- Water Supply Schemes: Raw water as well as treated water measurement
- In Boiler, Boiler Feed Water Measurement
- Chemical Industries: Measurement of acidic and alkaline chemicals and slurries

Note : For detailed technical catalogue scan the QR code

Sanitary/Food Grade Electromagnetic Flow Meter

USP: Modle approved Milk Flow Meter. Special models are available for mounting on Milk tankers.

The Series SG-Sroat of Electromagnetic Flow meter is particularly designed for Food and Drug Industries. It is used for measurement of meals liquid mediums like Milk, Cream, Fruit Juices, Pharmaceutical liquids and so on.

It uses certified food grade PTFE liner and SS316L as wetted parts.

It is available with integral or remote version of transmitter. The transmitter can have built-in or remote totalizer display.

Suitable end connections of SMS Union or Tri-clover Clamp are given as in keeping with consumer's necessities.

Special Models are available for mounting on Milk Tankers.

The flow meter model is approved by Metrological department of Central Government and is licensed by Weights and Measure Department of Maharashtra State. It is sealed by the inspector of Weights and Measure Department.

Sanitary Grade
EMFM - SU

Sanitary Grade
EMFM - TC

Features

- Full stainless steel construction with PTFE Liner
- The transmitter can have built-in or remote totaliser display
- Available in two types of end connections; SMS or DIN Union and Tri-Clover clamps
- Sizes available from DN25 to DN100
- Lower Sizes on Request
- Highly Accurate and Linear
- Isolated Analog and digital Output

Applications

- Measuring the volumetric flow of general conductive liquids
- Suitable for any type of Dairy Fluids like milk, cream etc.
- Suitable for Pharma liquids and juices of various fruits
- Used in chemical, metallurgy, textile, paper, environmental protection and food industries

Note : For detailed technical catalogue scan the QR code

Large Electromagnetic Flow Meter
Mega Sroat MS1010 (DN400 To DN1600)

USP: Designed for large pipelines. Without opening the sensor box, parameters can be configured onsite. Computer interfacing with RS232 / RS485 port, MODBUS, Cloud.

Series MEGA SROAT is a large sized electromagnetic flow meter introduced by MANAS. The sizing ranges from DN400 to DN1600. These flow meters are very accurate (typically better than 0.5% of actual flow rate). Hard ebonite rubber lining makes these meters suitable for measurement of Raw Water containing even abrasive sand and quartz particles, mud etc. and still delivering long life. This Series is also suitable for sewage applications.

Some of the advantages of this meter include robust, rugged construction, suitability for submerged or buried applications, better accuracy and availability of end connection flanges as per customer's requirements.

Features

- Diameters are available from DN400 to DN1600 (Higher Diameters on request)
- Extremely suitable for very high flow rate, accurate water metering
- Available in Ebonite lining. Polyurethane on request possible
- High accuracy of measurement like 0.5% of reading
- No Pressure Drop across the sensor, being full bore construction
- Long-lasting Ebonite rubber lining gives the long life to the sensor
- End connection flanges as per customer's requirements

Applications

- Extremely useful for large water supply schemes
- Suitable for Sewage measurement
- Municipal Water measurement schemes
- Irrigation schemes

Note : For detailed technical catalogue scan the QR code

Battery Operated Electromagnetic Flow Meter SS1021

USP: No external power required – Can work for 5 years.

Many flow meters fail to function in remote locations due to scarcity of electrical power. Load shading, Accidental damages or natural calamities are some of the cause of electricity failures. In such locations, a long-lasting solution is possible with a battery-operated flow meter. This meter does not require external electric supply and can function without it as per given specifications.

Battery Operated Electromagnetic Meter the new type of Primary flow transmitter is SS1021. It is available with an integral version of the transmitter.

Battery Operated Electromagnetic Flow Meter is specifically designed where Electric supply is not available and accurate flow measurement is essential.

These meters are popular where meter readings are taken periodically by local authorities for billing purposes, like Municipalities, Industrial Development Corporations etc.

Features

- Battery Operated (Battery Life 5 Years)
- Sizes Available from DN15 to DN500
- Highly Accurate and extremely Linear
- Microvolt signal Proportional flow rate from the primary flow sensor
- Various types of Liner and Earth electrodes, both options are available
- Empty tube detection is also provided

Applications

- Municipal water supply schemes
- Irrigation schemes
- Mining Industry
- Sewage treatment plants
- Management of water and wastewater
- Effluent treatment plants

Note : For detailed technical catalogue scan the QR code

Economical Flow Meter
Smart Jal-Ec

USP: As it is vibration proof, it can be used for Mobile Concrete machinery in Construction industy and also for house hold applications.

Manas offers SMART JAL Ec, which is an economical flow meter for simpler applications. This meter works on Faraday's Law of Electromagnetic Induction.

These meters are compact, lightweight, and are commonly used in treated effluent, sewage water, wastewater, etc.

These meters are also found to be very useful for concrete mixing applications. These can be installed in line with the truck to track any water supplied to the mix.

Some of the important advantages includes battery operation, no external power supply required which is useful in mobile concrete mixing application. CE mark, very fast response to enable user to take small batches also very accurately. The meter works under most adverse conditions. It works even with intense vibrations of the vehicle. The enclosure is UV resistant.

Features

- No moving parts
- Economically Priced
- Do not require much upstream and downstream straight Lengths
- Very fast Operation / small response time
- Long life hence cost effective
- Engineered in PP
- Flowmeter does not obstruct flow, so it can be applied to clean, dirty, corrosive liquids
- Fully Vibration proof

Applications

- Used in Treated Effluent, Sewage water, Wastewater
- Can be used in clean, dirty, or corrosive liquids
- Housing schemes
- Building Automation
- Chiller / HVAC Applications

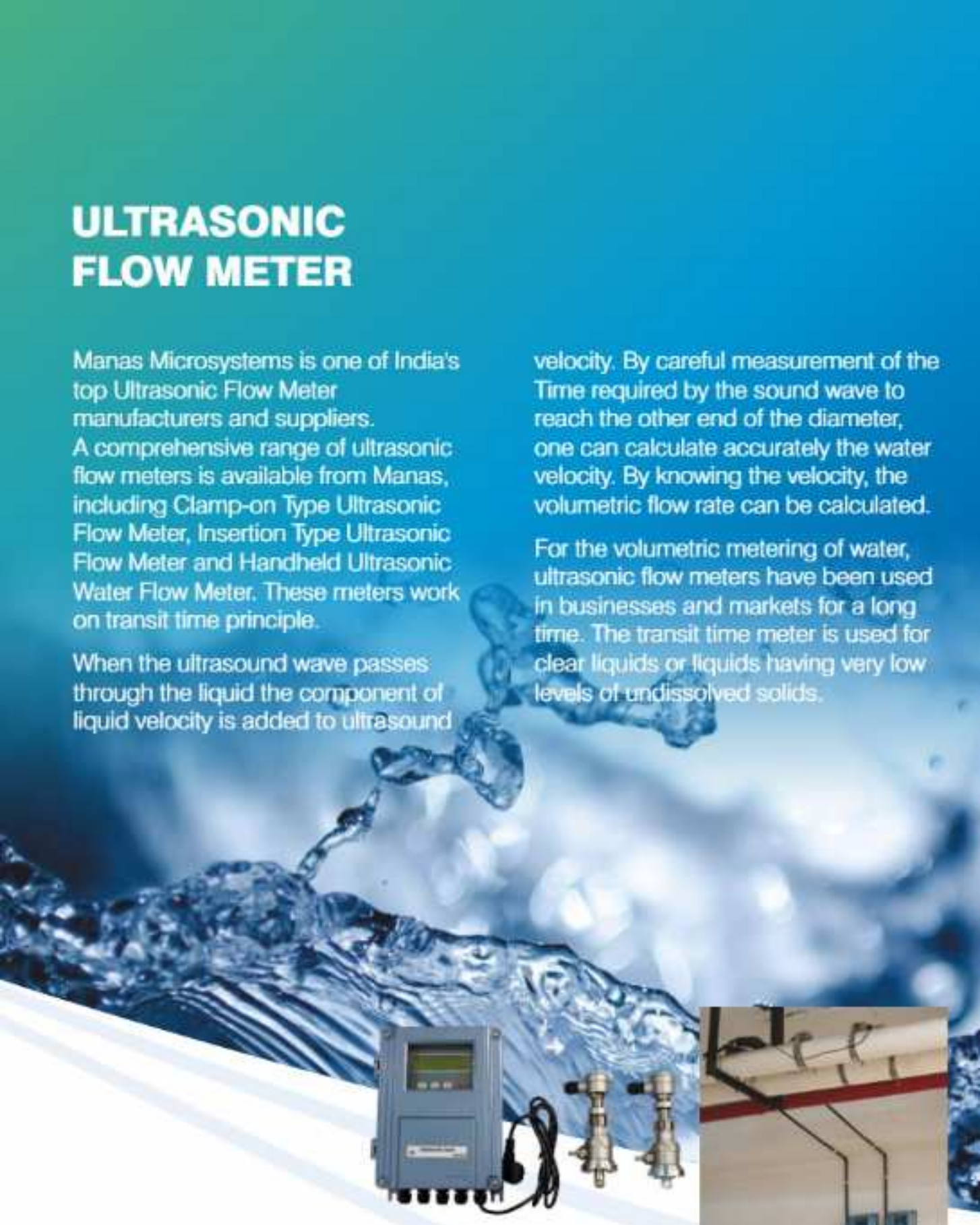
Note : For detailed technical catalogue scan the QR code

ULTRASONIC FLOW METER

Manas Microsystems is one of India's top Ultrasonic Flow Meter manufacturers and suppliers. A comprehensive range of ultrasonic flow meters is available from Manas, including Clamp-on Type Ultrasonic Flow Meter, Insertion Type Ultrasonic Flow Meter and Handheld Ultrasonic Water Flow Meter. These meters work on transit time principle.

When the ultrasound wave passes through the liquid the component of liquid velocity is added to ultrasound velocity. By careful measurement of the Time required by the sound wave to reach the other end of the diameter, one can calculate accurately the water velocity. By knowing the velocity, the volumetric flow rate can be calculated.

For the volumetric metering of water, ultrasonic flow meters have been used in businesses and markets for a long time. The transit time meter is used for clear liquids or liquids having very low levels of undissolved solids.



Note : For detailed technical catalogue scan the QR code

Features

- Advanced DSP technology and the multi-pulse Transducer technology
- Digital cross-correlation technology
- No moving parts, no pressure drop, almost no maintenance.
- Clear, user-friendly, and convenient to use
- A pair of sensors can satisfy different materials, wide range of pipe diameters
- U.S., British and Metric measurement units are available

Applications

- Water, sewage (with low particle content), and seawater
- Water supply and drainage water
- Process liquids; Liquors
- Power plant
- Metallurgy, Laboratory
- Energy conservation, economize on water
- Food and medicine
- Heat measures, Heat balance
- Pipeline leak detection

Clamp On Type Ultrasonic Flow Meter

USP: Can be installed easily, even on running pipeline.

Manas clamp-on type ultrasonic flow meters can measure volumetric flow in closed pipelines from outside the pipe wall.

The meter can be installed without breaking the line and hence it is very popular where flow measurement is essential in a running pipeline. Many other types of flowmeter call for a shutdown of the pipeline, which might be a costly affair and installation of other type of flow meters can also be a tedious activity.

Being able to get installed, removed, and transported easily are the main popular aspects of clamp-on type ultrasonic flow meters.

Manas clamp-on type ultrasonic flow meters can also be used to cross check functioning of other flow meters already installed in the pipeline.

Since these flow meters are easy to install, without any hassle, many industries buy these meters from Manas for any quick checks or for measuring flow in different pipelines where there is no flow device installed.

Features

- Auto adjustable to various pipe materials
- Quick and easy to install and operate
- Requires no special skills or equipment
- Budget-friendly and adaptable
- No need to cut the pipe or stop water, easy installation
- Highly accurate and reliable
- There are no moving parts, no pressure drops, and no maintenance requirements

Applications

- Municipal water supply lines
- Large pipelines
- Utility Plants in all industries
- Refineries – Cooling Towers
- Pharma industry
- Power plants

Note : For detailed technical catalogue scan the QR code

Insertion Type Ultrasonic Flow Meter

USP: Hot tapping possible, saves money and time.

The insertion type ultrasonic flow meter works on Transit Time or Time of Flight principle. It utilizes two transducers that functions as both Ultrasonic transmitter and receiver.

The transducer is inserted in the surface of the closed pipes.

The transit time flow meter measures the time it takes for an ultrasonic signal transmitted from one transducer to cross the pipe and be received by second. Then the second transducer sends the signal and is received by the first one.

The flow is then measured by comparing the upstream and downstream time of Ultrasonic signal.

With no flow through the pipe the transit time would be equal in both directions.

The Insertion type ultrasonic flow meter is ideal for flow surveys and closed-pipe applications.

Features

- Auto adjustable to various pipe materials
- Quick and easy to install and operate
- Budget-friendly and adaptable
- Hot tapping possible – Can save a lot of time and money wasted if the line would be isolated and flow stopped for installation
- Highly accurate and reliable
- There are no moving parts, no pressure drops, and no maintenance requirements

Applications*

- Municipal water supply lines
- Large pipelines
- Utility Plants in all industries
- Refineries – Cooling Towers
- Pharma industry
- Power plants

*For clear water application only

Note : For detailed technical catalogue scan the QR code

SOLAR POWERED FLOW METER

USP: Runs without electric supply – very economic. Useful in remote regions where mains power is rarely available or not at all available.

In many remote regions, there are frequent power failures or electricity is not at all available. Manas solar-powered flow meters can be used in such cases. These flow meters are designed to get back-up power even up to one week in absence of incident light on solar panel, especially in monsoon season.With the help of Manas solar-powered flow meters, accurate measurement of water or waste flow is possible in these areas, where it was previously thought to be too expensive due to a lack of power. Solar-powered flow meters save money as these do not need any external power to operate. This solar power system can be used to power both an electromagnetic flow meter and an ultrasonic flow meter.

Features

- Accuracy is better than 0.5% / 1% deviation depending upon type of flow meter
- Solar-powered. No other power supply is needed
- Solar panel adequately rated to suit the flow meter
- LCD with backlight
- 4 Key membrane keypads
- RS 485 interface with MODBUS support and well suited for reliable networking
- GSM/GPRS for cloud connectivity (Optional)
- Pulse output (optional)
- 4 – 20mA output (Isolated)

Applications

A solar Powered Flow Meter is an ideal solution for accurate flow measurement in remote areas where electrical power is not accessible or is not reliably available.

With many such flowmeters in the fields, it is possible to develop a remote flow monitoring network. With this, you can effectively manage the distribution and measurement of irrigation water.

This is used for clear water applications in following areas:

- Irrigation schemes
- Potable water distributed by local bodies
- Waste Water treatment plants
- Mining Industry
- Sewage treatment plants
- Effluent treatment plants

Note : For detailed technical catalogue scan the QR code

BTU METER

When it comes to measuring thermal energy consumption, industry professionals are concerned about the wastage of energy, as it reflects in the energy bill. A BTU meter can be an answer to this problem, as it measures the thermal energy content of liquid flow in British Thermal Units (BTU) or in Kilo Calories (Kcal)., even sometimes in Kw.

Manas is a leading Indian manufacturer of BTU meters who can provide a solution for calculating the BTU or measuring the BTU consumption with their BTU meters with communication support like, BACnet IP, MODBUS IP with LAN Port.

A BTU meter (also called a Heat Meter) comprises of a combination of a flow meter with temperature sensors that measure energy consumption in any liquid heating or cooling system. These are also called Energy Meters and are used to bill the end-user for his/her air conditioning energy usage. A BTU meter can also be used to measure the performance of energy-saving equipment, loss of efficiency within a heating or cooling system which means revenue loss. They are also required in heat recovery systems to find out the quantum of recovered heat.

Features

- Choice of flowmeters: You can go for Electromagnetic or Ultrasonic Flow Meter
- Both Instantaneous and Totalised flow values are available
- Users can define the units for heat measurement
- High-grade Temperature Sensors are used for accurate differential temperature measurement
- Flow units can be selected by the user
- Memory storage is built in to protect the data during power failures
- BACnet IP/MODBUS, TCP/IP/RS485 for remote connectivity
- All flow meters are highly accurate as they are factory calibrated

Applications

- BTU meters are used in chilled water systems for commercial, industrial, and office buildings. These meters are used to bill users for air conditioning energy usage
- Cooling effectiveness measurement in water-based systems
- Useful for identifying leakages in hot or cold-water systems
- Useful for Dredging industries
- Energy measurement in heating/cooling systems
- Useful in heat recovery systems
- Applications in the Mining industry
- Special applications in Water and wastewater management

BTU Meter for Chiller Application- BTU 100L

USP: Measures energy consumption of chilling systems.

BTU Meter for chiller comprises of accurately calibrated Electromagnetic or Ultrasonic Flow Meter, Pair of temperature sensors and Flow Transmitter with energy computing unit to calculate Net Heat consumed.

The function of the chiller is to chill the water in the Air conditioning service. When the chilled water circulates through the AHU and comes back, its temperature rises, as it extracts the heat from the AHU. The chiller again chills this water and returns it to the AHU. BTU meter measures the heat energy extracted by the chiller, thus determining the total energy consumed by all the AHU's.

Features

- Measurement of Thermal Power and Energy consumed through measurement of flow, a Temperature difference of Inlet and Outlet of the medium
- Availability of display of Chilled Water flow, Power, Temperature, etc.
- Data storage up to 1 year with hourly storage facility with real-time
- Display of chilled water flow, power temperature available.
- Choice of mounting either on the inlet or on the outlet as per site conditions

Applications

- Centralized air conditioning systems
- Commercial enterprises - Air conditioning systems
- Manufacturing businesses - HVAC applications
- Office buildings - HVAC applications
- Pharmaceutical Industry

Note : For detailed technical catalogue scan the QR code

BTU Meter for Heat Application- HET 100L

USP: Can measure heat consumption of any industrial heating application.

This is a meter for the Heat Transfer application. It measures Thermal Energy carried by various fluids that are used as heat transfer mediums.

Manas heat transfer meter (Model HET-100L) is popular in Thermic Fluid applications. A thermic fluid is typically circulated in the entire system for transferring heat to the desired processes. Primarily, the combustion process heats up the thermic fluid. Then the thermic fluid carries and passes this heat to the desired fluid to achieve the required process temperature. After passing on the heat, this thermic fluid comes back again to the thermic fluid heater and this cycle goes on.

BTU Meter for Heat Transfer HET-100L takes care of the compensation of variation in density and specific heat with varying temperatures of the fluid. It also measures the thermic fluid flow rate and is also useful for measuring thermal transfer for hot water flow.

Features

- Buzzer on Faults / Errors
- Fault conditions- Indicate by different error codes
- The engineering units available for Heat in Kcal/hr, Energy in MKcal, Flow in m3/hr, Density in kg/m3, Specific Heat in Kcal/kg°C OR KJ/kg°C and Temperature in °C
- Password protection on all programming modes
- Data Logging: Approx readings: 3000 for normal logging and approx 5500 readings for extended logging

Applications

- Suitable for thermic fluids like HYTHERM 500, HYTHERM 600, DOWTHERM A, DOWTHERM T, THERMIA A, THERMIA B, THERMINOL 55, THERMINOL 66, THERMINOL 72, WATER etc.
- Oil and gas processing
- Natural gas purification
- Refining
- Asphalt processing and storage

Note : For detailed technical catalogue scan the QR code

Ultrasonic BTU Meter

USP: For heating or cooling applications – measures energy consumption.

BTU meter measures the thermal energy content of liquid flow in British Thermal Units (BTU) or in Kilo Calories (Kcal), even sometimes in Kw.

Manas makes Ultrasonic BTU meters that can provide a solution for calculating the BTU or measuring the BTU consumption with their BTU meters with communication support like BACnet, MODBUS with LAN Port.

An Ultrasonic BTU meter comprises a combination of an ultrasonic flow meter with temperature sensors that measure energy consumption in any liquid heating or cooling system.

The ultrasonic flow meter can be either Clamp-on type or insertion type.

The Ultrasonic BTU meter gives long life, is trustworthy, and provides good accuracy.

Features

- Size available DN50 – DN1500
- No moving parts and fast response to flow transits
- Highly accurate and reliable
- Isolated 4-20 mA output proportional to flow rate
- No need to cut the pipe or stop water, easy installation for clamp-on type

Applications

- Used for measurement for energy consumed
- Measures thermal energy required for air conditioning system
- Used in chiller water application with temperature sensor

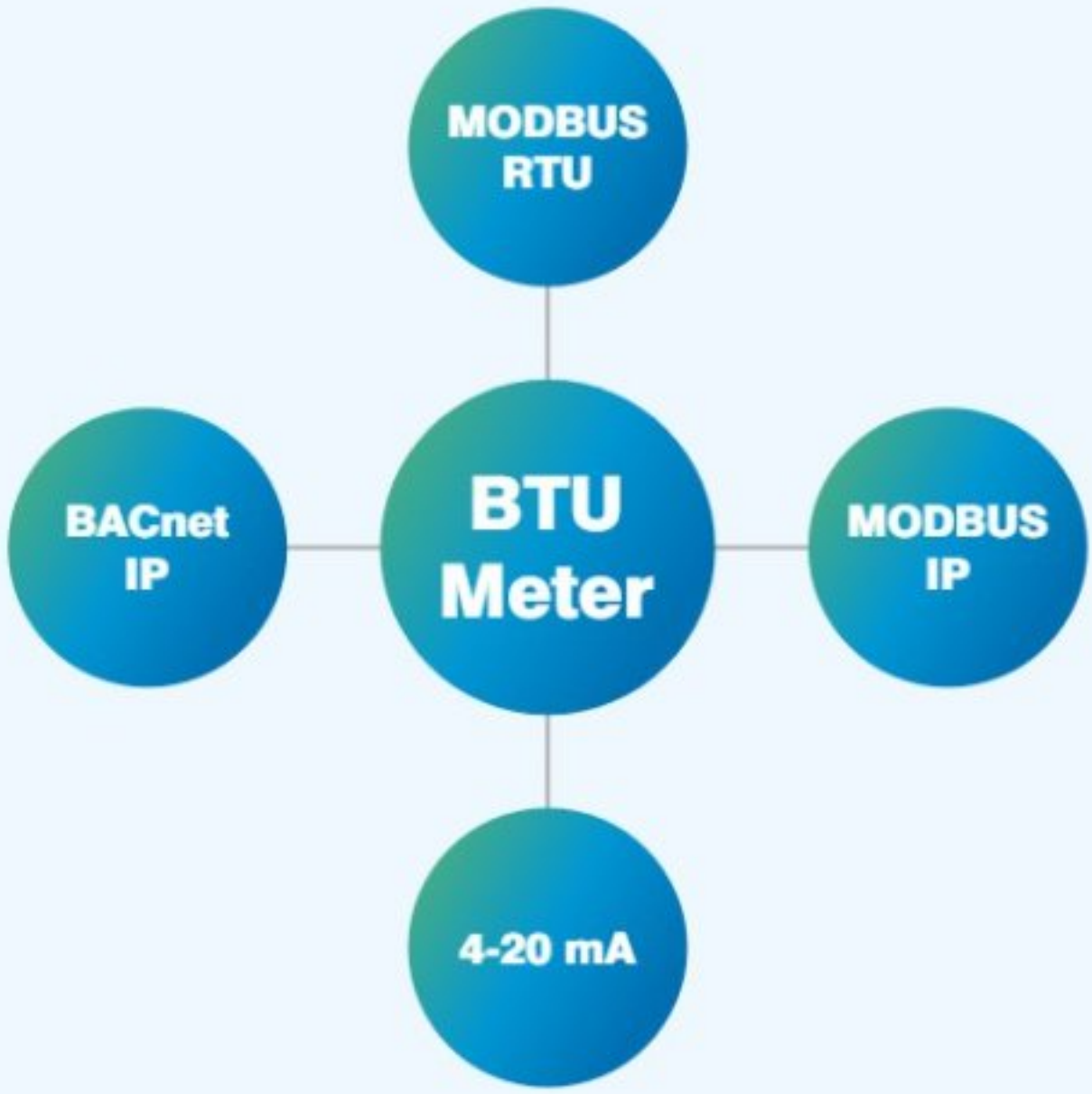
Note : For detailed technical catalogue scan the QR code

Communication Protocols

BACnet Digital Protocol is a building and automation control protocol that is quickly becoming the industry standard among big facility and manufacturing automation, HVAC, and chiller manufacturers.

Our BTU meters now support BACnet digital communication protocol for easy building automation and control.

They also support communication protocols like MODBUS RTU, MODBUS IP.



STEAM FLOW METER MODEL SFMc - 150

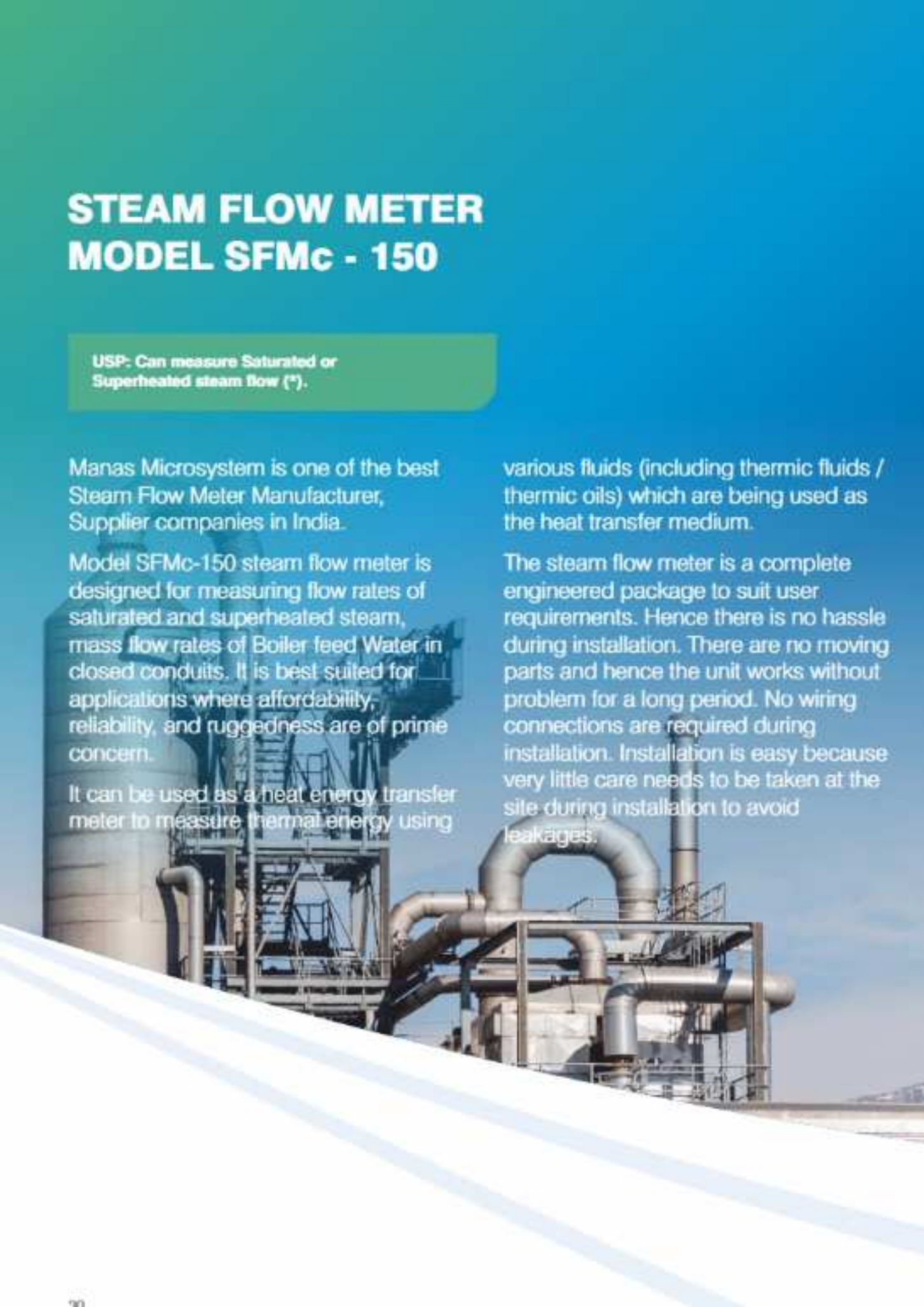
USP: Can measure Saturated or Superheated steam flow (*).

Manas Microsystem is one of the best Steam Flow Meter Manufacturer, Supplier companies in India.

Model SFMc-150 steam flow meter is designed for measuring flow rates of saturated and superheated steam, mass flow rates of Boiler feed Water in closed conduits. It is best suited for applications where affordability, reliability, and ruggedness are of prime concern.

It can be used as a heat energy transfer meter to measure thermal energy using various fluids (including thermic fluids / thermic oils) which are being used as the heat transfer medium.

The steam flow meter is a complete engineered package to suit user requirements. Hence there is no hassle during installation. There are no moving parts and hence the unit works without problem for a long period. No wiring connections are required during installation. Installation is easy because very little care needs to be taken at the site during installation to avoid leakages.



Features

- Size: DN25 to DN350
- Type of flow element: Differential flow element
- Typical turndown: 10:3
- Density compensation: Online monitoring and compensation of density
- Communication protocol: MODBUS, RTU
- Used to measure the flow of Saturated (100°C to 300°C) and Super-heated (300°C – 600°C) steam in closed conduits for pressures up to 30bar
- Used to measure the flow rate of boiler water in closed conduits
- Can be used as a heat energy transfer meter to measure thermal energy using various fluids which are being used as the heat transfer medium

Applications

- Engineering and Automation
- Textiles
- Chemical / pharmaceutical
- Food and Drugs
- Petrochemicals
- Fertilizers
- Steel / Aluminum
- Sugar Factories / Distilleries

Note : For detailed technical catalogue scan the QR code

THERMAL MASS FLOW METER

How does a Thermal Mass Flow Meter work?

Whenever a fluid of a certain temperature is passed over any substance hotter than the fluid, the heat of the hot substance is taken away because of forced convection by the fluid, and the temperature of that substance drops. This fall in temperature is related to the mass flow of the fluid passing over the substance. If one can measure the amount of heat taken away by the flowing fluid one can calculate the mass flow rate.

Where are Thermal Mass Flow Meters used?

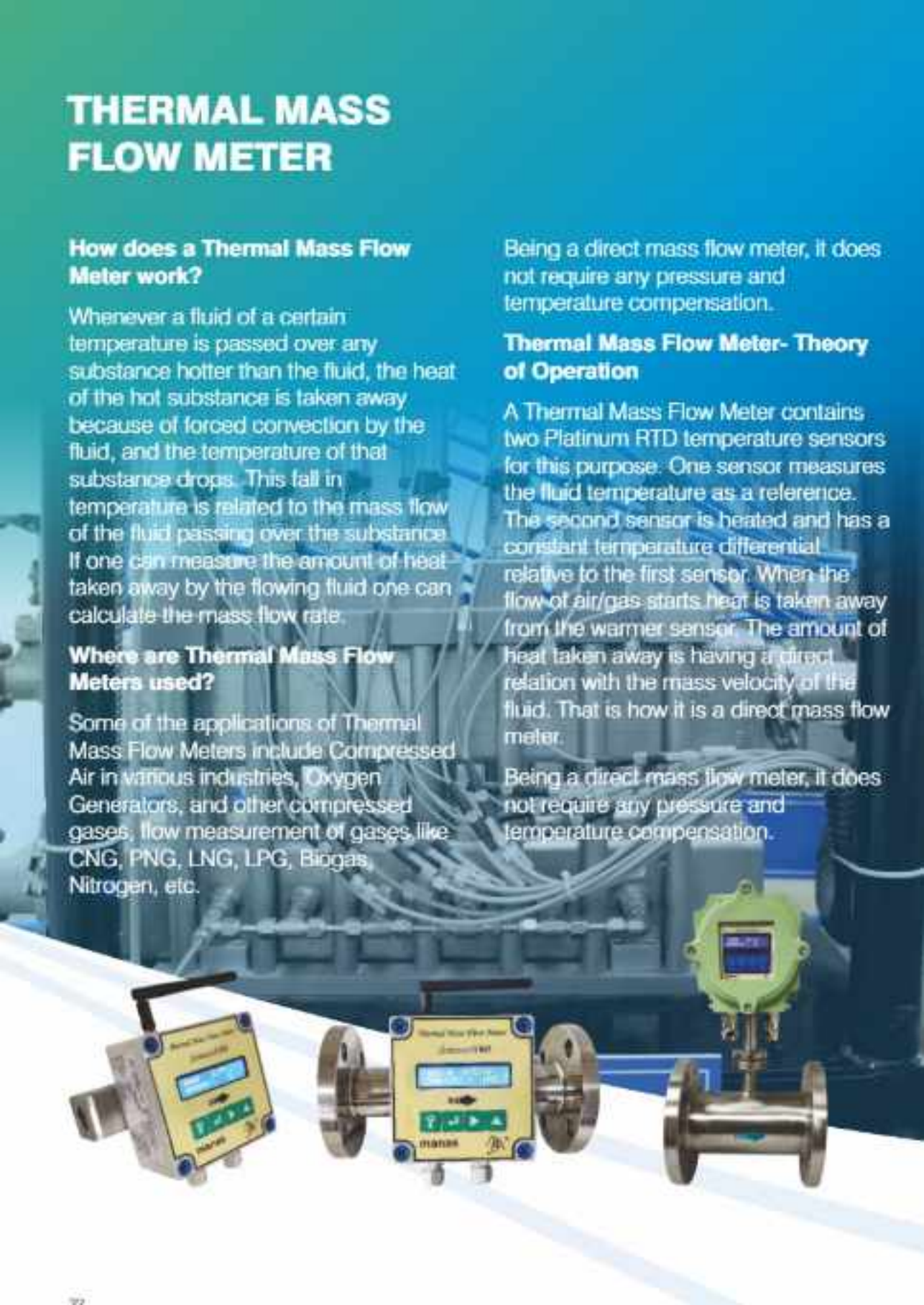
Some of the applications of Thermal Mass Flow Meters include Compressed Air in various industries, Oxygen Generators, and other compressed gases, flow measurement of gases like CNG, PNG, LNG, LPG, Biogas, Nitrogen, etc.

Being a direct mass flow meter, it does not require any pressure and temperature compensation.

Thermal Mass Flow Meter- Theory of Operation

A Thermal Mass Flow Meter contains two Platinum RTD temperature sensors for this purpose. One sensor measures the fluid temperature as a reference. The second sensor is heated and has a constant temperature differential relative to the first sensor. When the flow of air/gas starts heat is taken away from the warmer sensor. The amount of heat taken away is having a direct relation with the mass velocity of the fluid. That is how it is a direct mass flow meter.

Being a direct mass flow meter, it does not require any pressure and temperature compensation.



Features

- Direct measurement of mass flow
- No pressure or temperature compensation required
- 20:1 turndown ratio
- Wireless data transfer is possible. Remote readings are available on wireless
- Pulse, milliamps, and RS485 output for networking

Applications

- Compressed air/ Gas Consumption measurement
- Very low-pressure flowing conditions
- Fuel Gas consumption measurement
- Furnace and burner control
- Biogas measurement and digester and ahead
- HVAC applications

Available Sizes: SCIROCCO 1000

Nominal Size	Range $Nm^3/Hr.$	Range SCFM
DN 15	69	40
DN 20	122	72
DN 25	190	112
DN 32	312	184
DN 40	487	287
DN 50	761	448
DN 65	1287	757
DN 80	1949	1147
DN 100	3046	1793
DN 125	4759	2801
DN 150	6853	4034
DN 200	12184	7171

Table 1, Nm^3/Hr is defined at 0°C, 101.325 kPa

Note : For detailed technical catalogue scan the QR code

COMPUTING UNITS

We offer computing units, by which one can measure the mass flow of the fluid like water, gases and Steam. According to fluids, it comes into three versions that are: Steam Flow Totalizer, Gas Flow Totalizer and Liquid Mass Flow Totalizer.

There are other two versions of the computing unit, viz. Heat Monitor for Heat transfer application and BTU Monitor for chiller application.

Data logging, Computer connectivity and GSM connectivity is also available in all versions of computing Units.

Liquid Mass Flow Totalizer (LMFT)

- The LMFT-2 (Wall) / LMFT-200P (Panel) Water Mass Flow Meter is suitable for measurement of mass flow of water
- The unit displays instantaneous mass flow rate and totalized mass of water
- Two Alarms can be configured on mass flow rate

Note : For detailed technical catalogue scan the QR code

Steam Flow Totalizer

- The SFT200 Steam Flow Meter is suitable for measurement of mass flow of superheated and saturated steam
- The unit displays instantaneous mass flow rate and totalized mass of steam
- Unit offers facilities for accurate flow totalizing in compensated mode
- It computes instantaneous density from online pressure and temperature signals, as per ASME norms and computes the mass flow as per guide lines from BS1042/ISO: 5167

Gas Flow Totalizer

- The GFM series GFT-100 is suitable for measurement of mass flow of gases. The unit displays instantaneous mass flow rate and totalized mass of gas
- It computes instantaneous density from instantaneous pressure and temperature signals and computes the mass flow as per guidelines from BS1042/ISO: 5167

PROCESS INSTRUMENTS

We offer a wide collection of process instruments that are used for various purposes. These instruments are exquisitely designed and made of quality raw material to meet international quality standards. All our products are highly appreciated for their features that include accuracy, longer service life, durability, reliability, high quality, etc. Our clients can avail these products at very best prices.

(A) Draft Gauge

USP: For better fuel control and better efficiency of boiler.

Boiler draft needs to be measured at seven different locations in a boiler. Accurate draft measurement can reduce emissions, improve boiler efficiency and reduce your energy bills.

Manas Microsystems manufactures Digital Draft Indicators / Transmitters. These digital instruments are more accurate and easier to read, compared to the mechanical gauges with analog indicators.

The mechanical gauges are of no use for control purposes as they cannot deliver any signal, while digital instruments can!

Manas Draft measuring instruments are very economical compared to sophisticated electronic gauge transmitters and are comparable in price with mechanical gauges.

In addition, the instruments can pay you back quickly in the form of saved energy due to perfect combustion.

(B) Capacitance type Level Switch

USP: Sense the level of liquid at high temperatures, up to 140°.

Manas makes LSC series level switches, based on the principle of measurement of capacitance. These can be widely used to sense the level of liquid at high temperatures, up to 140°. These switches are available in different stem lengths of 50mm-350mm in steps of 50mm (Model LSC-02) and are suitable for the top as well as side mounting.

Note : For detailed technical catalogue scan the QR code

PRODUCTS FOR CLOUD BASED COMMUNICATIONS

Modem for cloud-based communication - ST 11

USP: IoT Gateway suitable for remote monitoring and automation.

Manas Microsystems is manufacturer, supplier and exporter of various types of flow meters with IoT suits. We use IoT Gateway suitable for remote monitoring and automation. This Gateway has the capability of integrating seamlessly with almost every sensor globally where it periodically collects the data from sensor and communicates with cloud real time. It is completely customizable where we can add peripheral add-ones enabling it to cater to the most complex requirements.

Features

- Real time data visibility with real time alerts
- Insight driven decision
- Reduced operational downtime
- Forecasting and predictive maintenance
- Elimination of transmission and distribution Loss
- Improved operational efficiencies
- Very simple to install, just plug and play

Applications

- Water flow monitoring
- PLC monitoring
- Irrigation systems
- Water distribution networks in cities and towns
- Industrial water distribution and control
- Effluent monitoring

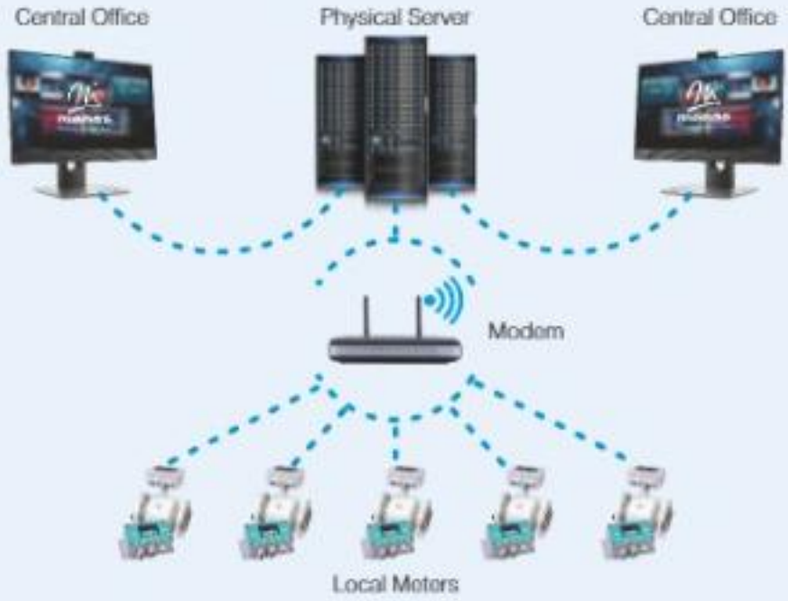
Note : For detailed technical catalogue scan the QR code

Cloud Server

- Server located on cloud
- Client Software accessible through cloud
- User accounts

Dedicated Server

- Modems
- Physical Server
- Static IP
- Client software for data acquisition and data analysis
- User Accounts



Flowmeter data sharing to central server

- Remotely reads data from flow meters and then transfers the data to Central server / cloud
- Reduce the need for meter readers to manually gather utility meter readings each month

SERVICES

Calibration Process

We, Manas Microsystems are leading manufacturers in flow meters which are used by various industries. We are devoted to helping you in keeping up with the most elevated levels of exactness of your flow meters. At Manas microsystems, we provide calibration services for other manufacturers just as our own manufactured flow meter. Intermittent recalibrations are regularly needed to guarantee discernible precision and repeatability. We use a primary method of gravimetric calibration for fluid flow calibration. Our laboratory has a grounded quality framework going along to in line with the prerequisite of the global standard ISO/IEC 17025:2017.

Annual Maintenance Contract

One of the major advantages of using annual maintenance services is that AMC services save your meters from unexpected maintenance and repair cost. The annual maintenance contract assures the clients that only genuine spare parts of the flow meters are used for better performance and durability. For installations wherever an good number of Manas Flowmeters (more than 15 to 20 nos) are installed, we tend to undertake Annual Maintenance Contract (AMC) at a nominal value. During this contract, we proactively visit the site location, quarterly. Throughout each visit, we proactively check the health of the flow meters and carry-out, on-the-site standard dictation once during a year.

Installation and Commissioning

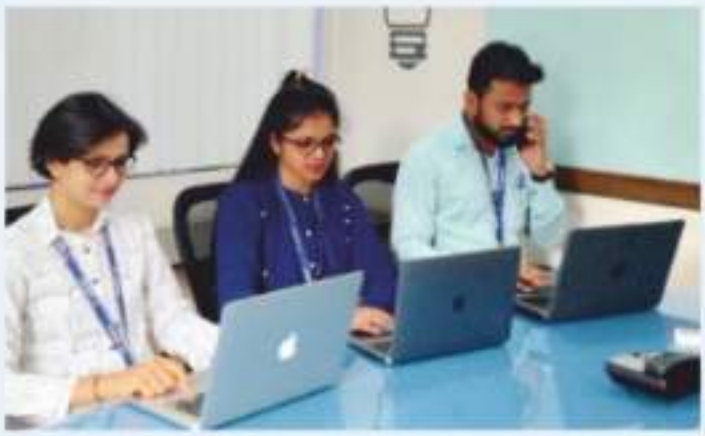
With specific expertise in flow metering, Manas Microsystems is an excellent choice to assist you in commissioning any type of new flow meter. With trained and experienced engineers, we will ensure proper operation of flow meter. this will reduce issues in flowmeter installation which is expensive and inconvenient. The commissioning services can include- 1- Advice on flow meter positioning for placement. 2- Flow meter testing. Your meters will be commissioned by our expert engineers, who will ensure technically correct installation so that you can trust the results.

Repairs

At Manas Microsystem, we provide repair services for our flow meters. Our trained technicians will resolve issues you facing in the flow meter and you can put the flow meter back in work confidently. Our step-by-step approach in solving the problems and the technology we use helps us diagnose and complete repairs quickly, allowing you to get back to work sooner.

Technical Advice

For any of your flow metering problem, we can give you an expert advice to ensure correct metering. We can help you selecting right flow meters for various applications, may it be a slurry, hot steam, mixture of immiscible liquids, hazardous gases, conductive liquids, variety of gases or gas mixtures, we can suggest a workable and cost-effective solution to you. While suggesting solutions, we also consider the fluid properties and physical dynamics of the site. Physical characteristics include pipe size, configuration, pipe material, and the surrounding environment. Our technical team will provide you with advice on flow meter selection and commissioning after inspecting all these variables.



Spares

We, Manas Microsystems are leading manufacturers in flow meters which is used by various industries. To our customers, we provide spare parts, as required as an interchangeable part that is kept in an inventory and used for the repair or replacement of failed units.

Global Presence

We are one of the top 10 flow meter manufacturing companies in India

manas microsystems private limited

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For more information scan the QR code

We are certified with

ISO/IEC 17025:2017 | ISO 9001:2015
ISO 14001:2015 | OHSAS 45001:2018

24/7 **Service Helpline**
98607 92275