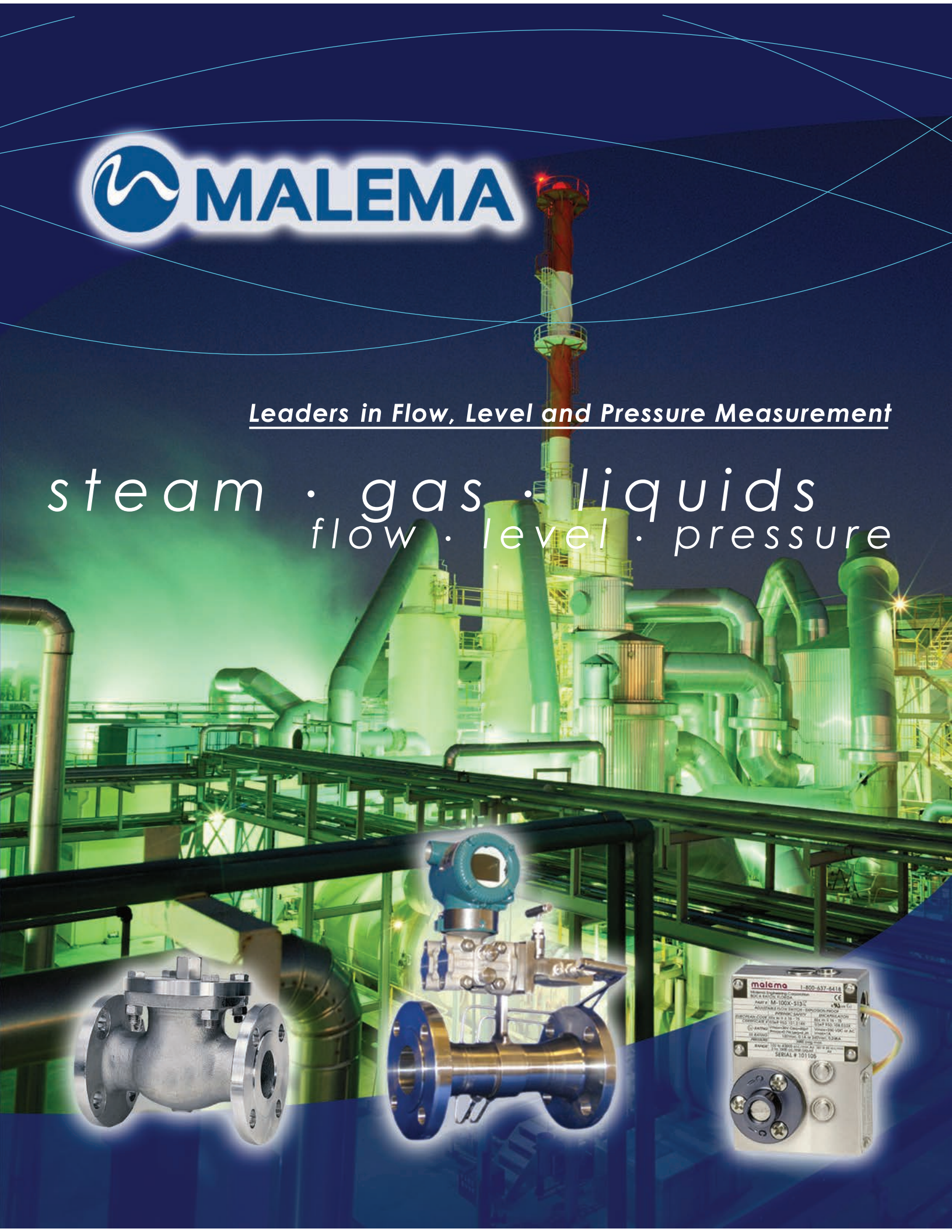




Leaders in Flow, Level and Pressure Measurement

steam · gas · liquids  
flow · level · pressure



malema 1-800-537-6218  
DIGITAL FLOW/LEVEL/PRESSURE TRANSDUCER  
MODEL M-100X-513/2  
PART # M-100X-513/2  
ANALOG OUTPUT: 4-20mA  
ELECTRICAL OUTPUT: 0-5VDC  
SERIAL # 101105



# Company Profile

Established in 1981, Malema designs and manufactures measurement and control instruments for abrasive slurries, surfactants and high purity and corrosive chemicals. Malema Sensors products provide improved process control with new leading edge technologies for measurement. Experienced in sensors, electronics, and process instrumentation, Malema incorporates revolutionary technologies into every instrument.

Partnering with other top of their class component manufacturers, Malema offers integrated solutions to fluid delivery and control systems. Utilizing components in the field of fluid measurement with accuracies that are unmatched by any other supplier, Malema offers world class solutions to extreme design challenges in Slurry and Chemical Delivery.

Offering reliability, performance, and quick response times, our solutions deliver innovative solutions of process control.

Malema's reputation for innovative, technical solutions guarantees a continuous supply of value enhanced products. Malema's products are based on proven designs and are manufactured to meet the highest quality standards in the semiconductor, medical, laser, biotechnology, water treatment, chemical, and petrochemical industries. Malema excels in customizing flow products for its OEM customers.

## Flow Meters/ Flow controllers:

**Malema** is a leader in flow metering, offering a wide range of flow meters for industrial customers using various technologies for applications such as liquids, gases and steam. Malema's flow meter range includes:

- Coriolis Mass Flow Meters
- Kinetic Flow Meter (New Technology)
- Metal Tube Variable Area Flow Meters (General purpose & Micro flow Meters)
- Direct Reading Flow Meters
- Glass Tube / Plastic, Variable Area Flow Meters
- Sanitary Flow Meters
- Purge Meters
- Purge Sets
- Orifice and Pitot Tube Flow Meters
- Thermal Mass Flow Meters
- Thermal Mass Flow Controllers
- Magnetic Induction Flow Meters
- Ultrasonic Flow Meters
- Turbine Flow Meters
- Oscillating Piston Flow Meters
- Paddle Wheel Type Flow Meters
- Oval Gear Flow Meter
- Flow Monitors / Flow Switches
- Flow Set Valves



### Metal Tube Variable Area Flow Meters:

**SC250 and SM250** model metal tube variable area flow meters are suitable for gases, liquids and steam flow measurement. It uses a robust metal tube construction with an optional plastic liner to handle tough and corrosive process fluids.

**Features:**

- Linear scales
- High performance measurement in extreme working conditions
- High resistance to temperature, pressure and corrosion
- Low pressure drop
- Damping mechanism to avoid float bounces in gas applications

**Sizes :** ½" to 6" (DN-15 to DN-150), DIN Flanges

**Range :** Water: 2.5 l/h ... 350 m<sup>3</sup>/h ( 0.01... 1540 US GPM)  
Air : 70 NI/h ... 7000 Nm<sup>3</sup>/h ( 0.04 ... 4120 SCFM)

**Materials :** SS-316L (Standard), PVC, PP & PTFE Liner on request

**Output Options :** Alarms; 4-20 mA Transmitter



### Variable Area Flow Meters – Glass Tube

**6001/6002** series glass tube rotameters are designed according to VDI/VDE 3513 standards. Its clear borosilicate tapered glass tube with scales help flow reading with great accuracy and ease. End connection options such as screwed end connections, flanges and sanitary couplings make it suitable for all kind of process industries.

**Features:**

- Easy Installation, no straight pipe required
- Low pressure drop
- Adjustable alarms operated magnetically or with infra-red light
- Measuring tube in Borosilicate glass
- Steel construction, coated with Polyamide 11
- Connections in Steel, SS 316, PVC & PTFE

**Sizes :** ½" to 3" (DN15 to DN80)

**Range :** : 1 L/Hr to 40 m<sup>3</sup>/hr ( 0.004 to 176 GPM) water  
0.07 to 1200nm<sup>3</sup>/hr ( 0.04 to 700 SCFM) air



### Variable Area Purge Meters

**Series 2000** variable area purge meters use a tapered borosilicate glass tube with a fine threaded regulating valve for precise flow adjustment. Various flow tube lengths such as 100 mm, 150 mm and 300 mm are available. Its compact construction with reduced dimensions facilitates easy installation and mounting on control panels

**Features:**

- Easy installation
- Short mounting length
- No straight pipe required before or after the flow meter
- Vertical mounting for rising fluid flow
- Horizontal inlet & outlet connections
- High & Low flow alarms (Optical, inductive or hall effect sensor)
- Constant flow regulators RCA or RCD

**Sizes :** 1/4" to 3/4" NPT

**Range :** 0.1 to 1000 L/Hr (0.026 to 264 GPM) water  
3 to 30000 NL/Hr (0.001 to 17.6 SCFM) air



### Kinetic Flow Meter Model KFM 2100 Series:

**KFM 2100 Series** is an advanced flow element that is suitable for liquid, gas and steam flow measurement with high accuracy and repeatability. This is due to the patented design that uses a stream-lined bullet shaped flow element that causes minimum disruption to the flowing medium with low pressure drop but providing unmatched turndown.

#### Features:

- A novel design approach in fluid flow measurement
- High turn down
- No moving parts
- No need for straight runs
- Stream-lined measuring section: Low pressure drop
- Volumetric and mass flow measurement with built-in temperature sensor option
- High accuracy and repeatability
- Suitable for liquids, gases and steam

#### Applications:

- Waste and Waste Water
- Condensate, Cooling Water & Hot Water
- Petroleum Products
- Acids and Alkalis
- Compressed Air
- Industrial Gases
- Steam

#### General Specifications:

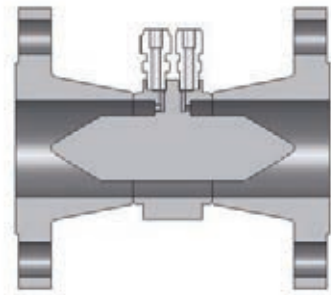
**Sizes:** ½" to 3"

**Versions:** Primary Element

Primary Element with DP transmitter (volumetric flow)

Primary Element with multi-variable transmitter (mass flow)

Note: Other sizes and connection types available upon request



### Coriolis Mass Flow Meter CPFM 8800 Series:

#### General Specifications:

The CPFM 8800 Series is a family of advanced flow meters based on the Coriolis principle. Fabricated exclusively from PFA (Perfluoroalkoxy) polymeric material, the CPFM is ideal for high purity applications. It is the first commercially available all PFA mass flow meter in the world.

(Patents Pending)

#### Features:

- Response is independent of the fluid's physical & chemical properties including viscosity
- Mass flow calibration is fluid independent eliminating the need to calibrate on different fluids
- Accuracy unaffected by flow regime (e.g., laminar or turbulent flow) or variations in flow velocity profile
- Sensors operate and measure in two-phase flow conditions with gas volumetric void fractions in excess of 30%

**Range:** Model 8801 : 6,000 grams/min

Model 8802 : 3,500 grams/min



### Electromagnetic Flow Meters:

**FLOMID FX** series is an advanced magnetic flow meter that is suitable for measuring conductive liquids with great accuracy and repeatability. Because of no moving parts or obstructions in the meter body, the flow meter offers very low pressure drop and high durability. It comes in compact (integral) as well as remote (separated) mounted versions.

#### Features:

- Flow rate measurement is independent of the flow profile
- Readings are independent of density, temperature, viscosity and pressure
- Absence of obstructing elements gives zero pressure loss and will allow solids to pass
- Can be installed with short straight pipe sections (5 x DN / 3 x DN)
- Suitable for corrosive liquids

**Range :** 0...10 l/h to 3500 m<sup>3</sup>/h (0...0.04 to 15400 US GPM)

**Size :** ½" to 20" (DN-10 to DN-500)

**Connection :** Wafer, Flanges and Sanitary end connections



### Insertion Style Magnetic Flow Meters

**FLOMAT** series flow meter is suitable for use in large diameter pipes or open channels as an economical solution for liquid metering. Applications include flow measurement of conductive liquids in water treatment, sewage treatment, acid and alkaline solutions in chemical and pharmaceutical industries. The body is constructed in SS 316 and on request available in PVDF wetted parts with electrodes in Hastelloy C, Zirconium, Titanium.

#### Features:

- Readings are independent of density, temperature, viscosity and pressure
- Alternating magnetic field for metering avoids electrolysis
- Absence of obstructing elements gives low pressure loss and will allow solids to pass
- Can be mounted in any position, provided that the pipe is always full
- Low power consumption
- Good stability with temperature and age
- No moving parts provides zero maintenance
- Can be installed with short straight pipe sections (10DN / 5DN)

**Sizes :** Suitable for installation in 1.5" to 80" pipes

**Range:** 0.2 to 10.0 m/sec ( 0.65 to 32 ft/sec)



### Target Flow Meters

**DP65 and DP500** series target flow meters are suitable for liquid and gas flow measurement. Its design and robust construction makes it suitable for tough applications including liquids containing solid particles.

#### Features:

- Metallic, simple and robust construction
- Operates horizontally or vertically
- Low pressure drop
- Straight pipe requirement of only 3 x DN before & after
- Provides accurate measurement for fluids containing suspended solids
- Local or remote volume totalizer

**Sizes :** 1.5" to 20" (DN40 to DN500)

**Range:** Water: 0.8 m<sup>3</sup>/h up to 1600 m<sup>3</sup>/h ( 3.5 to 7000 GPM)

Air: 45 Nm<sup>3</sup>/h up to 24000 Nm<sup>3</sup>/h ( 26.5 to 14000 SCFM)



### Turbine Flow Meters:

**TM44** series turbine flow meter is used in precise measurement of clean fluid flow. The TM44 can be supplied as a basic sensor with a pulse output or a 4-20mA output. Alternatively, a number of electronic units are available to provide batch control, totalization and a display of instantaneous flow rate.

The standard TM44 turbine flow meter is resistant to most severe process fluids including acids, alkali, solvents, water, CIP fluids, oil, minerals, petrochemical products, cryogenic liquids, and other liquids.

#### Features:

- Accuracy better than  $\pm 0.5\%$
- Body: SS 316L; Bearing: Graphite
- Low Pressure Drop
- Vertical or horizontal installation
- Flanged and Screw connections

**Sizes** : DN10 to DN500

**Range** : Water: 100 l/h up to 6700 m3/hr



### Oscillating Piston Flow Meters

**COVOL** volumetric counter is ideal meter for viscous fluids such as oils, waxes and polymers. The sensor is constructed in SS-316, PVC, PP and PTFE material options to suit corrosive applications. It can be easily cleaned and sterilized.

#### Features:

- Viscosity up to 120,000 mPa.s
- Functional in any position
- High pressure versions available
- Does not require straight runs

**Sizes** : DN10 TO DN100 (3/8" to 4")

**Range**: 8 L/H to 60 m3/hr ( 0.035 to 264 GPM) water



### Paddle Wheel Flow Meters

**M-10000** Paddle Wheel Flow Meters from Malema has a tangential turbine that helps measuring low flow rates. Designed with smaller foot print, M-10000 Flow Meters are easier to install and more accurate than ever before.

#### Features:

- Compact configuration with built-in pulse generator
- Simple and firm construction. Inexpensive
- Ideal for fuel cell applications or other low to micro flow measurement.

**Sizes** : 1/8" to 3/4"

**Range**: 0.12 - 500 LPH (0.0005 - 2.2 US GPM)



### Oval Gear Flow Meters:

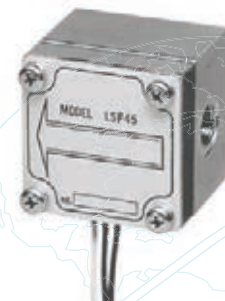
**Malema** Oval Gear (positive displacement type) Flow Meters are designed for monitoring fuel consumption of combustion appliances and heaters or applications where low flow measurement is required. They are also suitable for a variety of liquid flow applications with high viscosities.

#### Features:

- Compact configuration with built-in pulse generator
- Simple and firm construction. Inexpensive
- Ideal for fuel cell applications or other low to microflow measurement

**Sizes** : 1/8" to 3/4"

**Range**: 0.12 - 500 LPH (0.0005 - 2.2 US GPM)



### Thermal Flow Meter Model MTHF Series

**MTHF** series of Thermal Flow Meters come with or without an LCD display, and all models come with linear 0-5 V DC and 4-20 mA output with high performance. Thermal flow measurement technology offers advantages in accuracy, sensitivity and turn quality components.

**Features:**

- $\pm 1\%$  Accuracy
- Linear Output
- No Moving Parts
- Thermal Technology

**Sizes :** 1/4" FNPT

**Range :** 0 - 50 NLPM ( 0 - 1.76 SCFM)



### Thermal Flow Meter/Controller Model MTLFC

**MTLFC** series of Thermal Flow Meter/Controller comes with or without an LCD display, and all models comes with linear 0-5 V DC and 4-20 mA output. The MTLFC Series combines a mass flow transducer with an electromagnetic proportional valve.

**Features:**

- $\pm 1\%$  Accuracy
- Linear Output
- No Moving Parts
- Thermal Technology

**Sizes :** 1/2" FNPT

**Range :** 0 - 500 NLPM in 18 ranges (0 - 17,65 SCFM)



### Thermal Flow Meter Model MTMF Series

**MTMF** series of Thermal Flow Meters come with or without an LCD display, and all models come with linear 0-5 V DC and 4-20 mA output. High performance. Thermal flow measurement technology offers advantages in accuracy, sensitivity and turn quality components.

**Features:**

- $\pm 1\%$  Accuracy
- Linear Output
- No Moving Parts
- Thermal Technology

**Sizes :** 1/2" FNPT

**Range :** 0 - 200 NLPM (0 - 7 SCFM)



### Thermal Flow Meter Model MTSF Series

**MTSF** series of Thermal Flow Meters come with or without an LCD display, and all models come with linear 0-5 V DC and 4-20 mA output. High performance. Thermal flow measurement technology offers advantages in accuracy, sensitivity and turn quality components.

**Features:**

- $\pm 1\%$  Accuracy
- Linear Output
- No Moving Parts
- Thermal Technology

**Sizes :** 1/2" FNPT

**Range :** 0 - 1500 NLPM in 4 ranges (0 - 53 SCFM)





## Adjustable Flow Switches

**M-100** series of Adjustable Flow Switches are an extremely sensitive flow switch. It has been engineered to monitor vital flow parameters for instrumentation in process control and inert gases blanket. Infinite adjustment permits detection and signaling of very low fluid flows with the added capability of detection at high flows.

### Features:

- Field adjustable
- Wide flow range
- For corrosive and non-corrosive liquids or gases
- Extremely accurate and sensitive
- Explosion proof options
- Universal mounting available

**Sizes :** 1/8", 1/4" FNPT

**Range :** Water 1 - 950 mLPM ( 0.00026 - 0.250 US GPM)  
Air 20 - 60000 NmLPM (0.0007 - 2.1 SCFM)



## Adjustable Flow Switches

**M-200** series of Adjustable Flow Switches are engineered and field tested for sensing increasing and decreasing flow rates of gases or liquids. Pressure variation effects are minimal. This series features such versatility, economy, and accuracy that can be used in virtually any application requiring fool-proof inexpensive flow detection.

### Features:

- Field adjustable
- For corrosive and non-corrosive liquids or gases
- Extremely accurate and sensitive
- Low pressure drop
- Explosion proof options

**Sizes :** 3/8", 1/2", 3/4" FNPT

**Range :** Water 0.2 - 40 LPM ( 0.052 - 10.56 US GPM)  
Air 28 - 2830 NLPM (1- 100 SCFM)



## Fixed Set Point Flow Switches

**M-50X/55X** series of low flow, Fixed Set Point Flow Switches monitor increasing and decreasing flow. They utilize a single moving part which responds to fluid (liquid or gas) flowing within a system. These switches are suitable for a wide range of applications in industrial, biomedical, and OEM products.

### Features:

- Very accurate custom flow settings
- For corrosive and non-corrosive liquids or gases
- Explosion proof options
- Hermetically sealed

**Sizes :** 1/8", 1/4" FNPT

**Range :** Water 1 - 750 mLPM (0.00026 - 0.198 US GPM)  
Air 50 - 5000 NmLPM (0.00176 SCFM - 141.55 SCFM)



## Fixed Set Point Flow Switches

**M-60X** series of Fixed Set Point Flow Switches monitor increasing and decreasing flow. They utilize a single moving part which responds to fluid (liquid or gas) flowing within a system. These switches are suitable for a wide range of applications used in semiconductor, industrial, biomedical, and OEM products.

### Features:

- For corrosive and non-corrosive liquids or gases
- Very accurate custom flow settings
- Hermetically sealed
- Explosion proof options
- Universal mounting available

**Sizes :** 1/4", SAE6

**Range :** Water 10 - 1600 mL/min (0.0029 - 0.422 US GPM)  
Air 300-55000 NmLPM (0.010 - 1.94 US GPM)



### Fixed Set Point Flow Switches

**M-64** Fixed Point Flow Switches monitor increasing and decreasing flow. They utilize a single moving part which responds to fluid (liquid or gas) flowing within a system. These switches are suitable for a wide range of applications in industrial, biomedical, and OEM products. The flow monitors operate only when fluid flow is positively established.

**Features:**

- In-line flow switch
- Low pressure drop features
- Senses increasing or decreasing flow
- Very accurate custom flow settings
- Hermetically sealed
- Universal mounting

**Sizes :** 3/8", 1/2" FNPT

**Range :** - Water 0.1-7.0 GPM  
Air 1- 70 SCFM



### Fixed Set Point Flow Switches

**M-80** series of Fixed Point Flow Switches are engineered and field tested for sensing increasing and decreasing flow rates of gases or liquids. Pressure variation effects are minimal. This series features such versatility, economy, and accuracy that they can be used in virtually any application requiring fool-proof inexpensive flow detection.

**Features:**

- Available in a wide range of fixed flow settings
- Stainless steel construction
- High reliability
- Extremely resistive
- Low hysteresis
- Low pressure drop
- Large port sizes

**Sizes :** 1" BSPP, 2" Flanged ANSI(150# RF)

**Range :** Water 2.5 - 80 LPM (0.66 - 21US GPM)  
Air 5- 200 SCFM



### Flow Switch with Flow Indicator

**AD-15/ADI-15/ADT-15** series flow switches can be fitted with local flow indicators. AD series flow switches can be used for monitoring liquid and gas flows.

**Features:**

- Can be mounted vertically or horizontally
- Alarms : Reed switch
- Analog Output : 4-20mA transmitter (ADT-15 only)

**Materials :** Brass, SS-316L

**Scale :** 10:1

**Range :** Water : 15 - 16,000 l/h (0.165 - 4200 USGPH)  
Air : 180 NI/h - 240 Nm<sup>3</sup>/h (0.105 - 141 SCFM)



### Paddle Flow Switches for Liquids

**MFS 25** series of Paddle Flow Switches sense liquid flow in either direction to monitor flow/no-flow conditions. They are supplied in different paddle lengths. The paddle is trimmed during installation to permit switch actuation at the desired flow rate.

**Features:**

- Easy installation into existing pipe
- Suitable for a wide range of pipe sizes 25 to 200 mm (1" to 8")
- Reed switch provides a SPDT contact function

**Sizes :** 1" to 8"

**Range :** range dependent on pipe size (Refer datasheet)



## Excess Flow Valves & Globe type Control Valves:

Malema offers a range of Excess Flow Valves that prevent fluid spillage in case of pipe line breaks. Its globe type control valves are designed for harsh media and applications that demand precise flow, pressure and temperature control.

- Large Size Excess Flow Valves (Spring Return)
- Small Size Excess Flow Valves (Velocity Fuse)
- Globe Control Valves : Modulating and On/Off
- 3- Way Flow Mixing/ Diverting Valves
- Pressure Control/Reducing Valves
- Pressure Reducing And Desuperheating Valves
- Desuperheating Valves

### Excess Flow Valves

**M-XF** Excess Flow Valves provide instant shut off in the event of a hose break or line failure, preventing the release of hazardous or flammable products to the area, which can result in a disastrous fire or explosion causing untold damage to personnel and equipment.

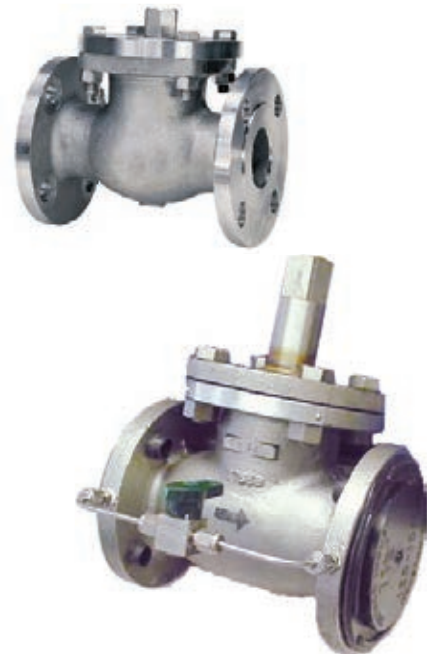
#### Features:

- Can be disassembled for repair or inspection without removal from pipeline
- Field adjustable
- Wide adjustable range
- Meets OSHA requirements for safety shutoff valves
- Operates effectively with liquids or gases
- In-line flow

**Sizes :** 3/4" to 12"; optional up to 20"

**Range :** - Water 0.1 - 2500 USGPM

Air 0.5- 40000 SCFM



### Safety Excess Flow Valves ( Velocity Fuses)

**M-VF** series Safety Excess Flow Valves are engineered for fast automatic shut-off in case of line, hose, or fitting failure protecting plant, personnel, and instruments. Designed for protection of systems handling corrosive, toxic, radioactive, and flammable materials; the valve will instantly detect surges in the system and stop fluid flow.

#### Features:

- High Reliability
- Field adjustable
- Exceeds OSHA requirements for safety shutoff valves
- Low pressure drop
- Right-angle flow

**Sizes :** 1/8", 1/4", 3/8", 1/2", 3/4" FNPT

**Range :** Air : 0.177 - 130 SCFM

Water : 0.0026 - 20 USGPM



## Constant Flow Valves

Constant flow control valves maintain a constant pre-set flow rate of water, over a wide pressure range. For flow rate sensitive pumps, filters, pump glands and water distribution systems, the installation of these valves can offer many benefits and valuable protection. The technology is based on a precision moulded rubber control ring in the valves body, with an orifice diameter that varies in response to the pressure differential applied to it. The greater the pressure, the smaller the orifice, and vice versa, thereby maintaining a constant flow.

**Features:** The valves are reliable, compact, self-cleaning and are maintenance free throughout the life of the valve. Flow rate increases generally one half to one percent per year. Therefore depending on the accuracy required by the installation, valve life can be up to 20 years.



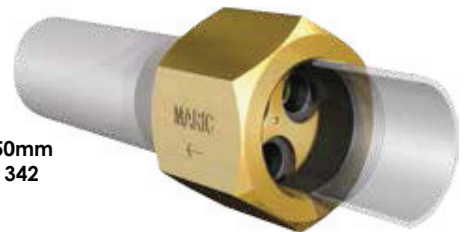
Maric Flow Valves Marketed and Distributed by MALEMA SENSORS for Southeast Asia and India

## Screwed Type Constant Flow Valves

Available in; Brass, Chrome, UPVC & Stainless steel.  
Flow control Check valves available in Screwed and Wafer configurations.  
Screwed available in FF MF FM - First letter denotes inlet

Flow rates available are from 0.2 litres/minute up to the maximum listed below.

Body Size;	1/4"	10mm	15mm	20mm	25mm	32mm	40mm	50mm
Max. Flow L/Minute;	9	9	23	54	114	233	233	342



## Wafer Type Constant Flow Valves

For mounting between flanged pipe fittings.  
(can fit in between ANSI, DIN, BS Flanges)

**Available in :** Brass, UPVC, Gunmetal & Stainless Steel. Wafers are supplied with an o'ring in each face for sealing.

### Benefits of using Maric flow control valves

#### WATER AUTHORITIES

- Severely restricting flow encourages payment of overdue water bills
- Improve mains distribution pressure
- Extend water meter life
- Enable agreed maximum flow to consumers tanks.
- Enable economical distribution to sparsely populated areas
- Enforce water restriction
- Reduce infrastructure costs

#### WATER TREATMENT

- Prevent media loss during back-flushing of media filters
- Protect delicate filters from excessive flow rates
- Enable controlled flow rate of sampling water to analysing equipment
- Ensure 100% bacteria kill in ultraviolet water sterilisation

#### CENTRIFUGAL PUMP PROTECTION

Extend pump life by;

- Keeping pump on its curve by limiting maximum flow rate
- Prevent up-thrust damage (common on high draw-down submersibles)
- Prevent cavitation damage
- Prevent over-pumping beyond the supply capacity
- Maximise gland packing life through carefully controlled gland-water flow



## TESI Ignition devices

### Ignition Systems made by TESI, Distributed in South East Asia and Australia by Malema Sensors.

Best in class ignition systems for industrial burners, supplying major petrochemicals, chemical and energy players with state of the art devices

#### Product range includes:

High voltage device HT  
High energy devices HE  
Portable devices

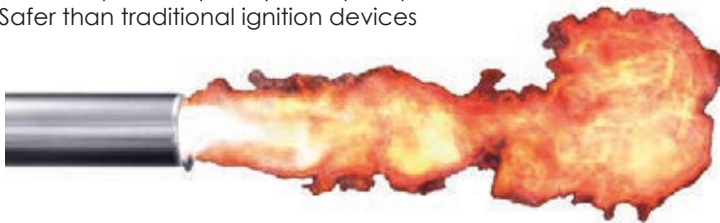


## High voltage & High energy Devices

High energy and High voltage ignition devices are the best solution to ignite all kind of fuels, and also the perfect solution to ignite oils and liquid fuels.

#### FEATURES:

- Not affected by dirty deposits left onto electrodes by the burning process
- Not affected by humidity or liquids (100% waterproof)
- Very reliable and long lasting electrodes
- Maintenance free
- High adaptability in all kind of burners even replacing old traditional ignition devices
- Lower ignition costs
- Custom spark frequency and spark power to fit all kinds of industrial burners
- Safer than traditional ignition devices



## High Energy Portable Igniters

High Energy Portable ignition systems are the best back up solution during failure of existing igniters or in case of emergency.

- These systems provide high energy sparks, suitable to ignite all kind of fuels even in tough applications.
- The rechargeable battery pack is loaded by a built-in charger circuit fitted to the grid, through the SCHUKO plug cable.

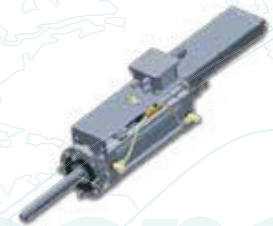
#### FEATURES

- 3/4 sparks per second at 18 Joule per spark
- Suitable to generate approx. 800 ignition cycles with a fully charged battery.
- SCHUKO plug power cable provided with the unit
- Built-in battery charger suitable for 110Vac and 230Vac
- Multicolor LED battery charge status indicator (only for safe area units)
- Wide range of accessories to facilitate the portable unit usage.



## Pneumatic Coaxial Retraction Unit

Prevent tips from flames and corrosive atmospheres (for example in sulfur burners) a smart and compact retractable device that can be easily mounted on standard ignition rods. This device allows retraction of the spark tip in a protected area of the combustion chamber, once sparking is finished.



## Level gauges/switches:

### Displacer Level Instrument

**LP80** uses a rod with a density similar to the measured liquid and suspended by a spring to maintain equilibrium with its weight. A variation in liquid level produces a change in the weight of the rod (partially submerged), which can be measured by the extension of the spring that supports the rod. The variation of the length of the spring is transmitted to the indicating needle via a magnetic coupling between a magnet on the end of the spring and a magnet fixed to the indicator.

This design enables operation under extreme process conditions (very high temperatures, pressures and with corrosive fluids). The LP-80 is used in a broad range of applications, such as:

- Chemical and Petrochemical
- Oil and Gas
- Food and beverage
- Storage of toxic products

**Features:**

- High and low alarm contacts
- Electric output signal of 4-20 mA
- Pneumatic output signal of 3-15 psi or 0.2-1 bar

**Range:**

- 300 mm to 6 m (12 inch to 20 ft)



### Ultrasonic Level Instrument

**LU90** series transmitter is an advanced level instrument based on the transmission of ultrasonic waves to measure the level of liquid or solid in a vessel. Its non contact measurement makes it suitable for highly corrosive liquids. User friendly programming keys and local read out helps setting up and operating the instrument with ease.

**Features:**

- Sensor: PP, PVDF; Housing: Polycarbonate
- Alarm outputs with programmable hysteresis level
- Programmable current output proportional to the distance or level
- HART TM protocol compatibility (model LU90H)
- Low Power consumption

**Range:**

- LU91: 0.3 m .... 6 m (12 inch to 20 ft) for liquids  
0.3 m ... 3.5 m (12 inch to 11.5 ft) for solids
- LU93: 0.45 m ... 12 m ( 17.8 inch to 40 ft) for liquids  
0.45 m to 7 m ( 17.8 inch to 23 ft) for solids



### Vibrating ( Tuning ) Fork Level Switch

**LD60/LD61** is a level switch based on the vibrating (tuning) fork technique. It is a robust and compact switch for the measurement of liquids and solids (only LD60).

**Applications:**

- Pump control
- Tanks with agitation
- Distillation columns
- Evaporators
- Chemical dosing tanks


**Features:**

- No moving parts
- Not affected by temperatures or pressure changes
- Suitable for liquids with viscosity up to 10,000 cSt.
- Corrosion resistant materials
- LED status indication (bicolor)
- Functions test with external magnet

**Connections:**

- Thread: BSP / NPT
- Flange: DIN / ANSI
- Sanitary: Clamp, Naue, DIN 11851





**Malema** endeavors to provide its customers with state of the art flow, pressure, temperature, integrated closed loop (with pumping) solutions and fluid delivery system designs.

We support these endeavors with a large engineering multi-faceted team with specialities in every aspect of fluid delivery. We customize these solutions to match the customers specific requirements.

Our goal is to have a satisfied customer in terms of product or system functionality at a competitive price and timely delivery with lasting relationships.

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# Our Mission

headquarters USA

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