



THE NEED FOR EVERY PROCESS INDUSTRY

An ISO 9001:2008 Certified Company

FLOW

DIGITAL METAL TUBE ROTAMETER

METAL TUBE ROTAMETER

GLASS TUBE ROTAMETER

PURGE ROTAMETER

ACRYLIC BODY ROTAMETER

ORI FLOW METER (By- Pass Rotameter)

ELECTROMAGNETIC FLOWMETER

DIGITAL GAS FLOWMETER

ORIFICE PLATE ASSEMBLY

CONDITIONING ORIFICE PLATE

INTEGRAL ORIFICE PLATE ASSEMBLY

FLUID FLUTE(AVERAGING PITOT TUBE)

MASS FLOW CONTROLLER (MFM)

FLOW INDICATOR TOTALIZER (FIT)

SIGHT FLOW INDICATOR

STATIC ENGINEERING EQUIPMENTS PVT LTD, INDIA.

स्टैटिक इंजिनियरिंग इक्विपमेंट प्रायवेट लिमिटेड



GEM Seller ID : 8C0F180000397396



“About Us”

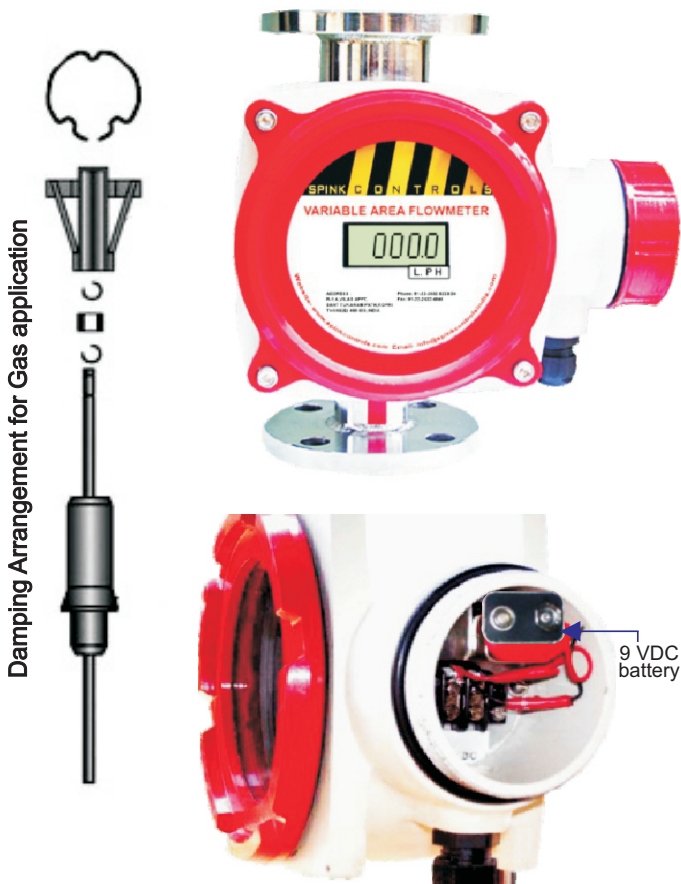
We “SPINK CONTROLS” one of the pioneer in manufacturing and exporting of “process control instruments in the field of FLOW, LEVEL AND TEMPERATURE measurement and controls. Established in 2000, our credo has been to identify and serve the changing need of customers. All the instruments are machine manufactured and are subjected to stringent quality tests on various parameters that ensure qualitative features to increase customers productivity and efficiency.

“Our Goal”

One of the most enduring of all the ancient laws of humanity is that we see the world not as it is, but as we are. By improving, refining and defining who we are, we see the world from the highest clearest perspective.

DIGITAL METAL TUBE ROTAMETER

SERIES : SC / R - 300



It operates on the principal of variable area; the fluid in the metal tube raised a float in the taper tube increasing the area of passage of fluid. The float moves up in proportion to the rate of flow of fluid and get stabilized, when the weight of the float is balanced by the upward hydraulic force. By a magnetic coupling the inner float moment through a series of linkages and counter weight. The tube and the float combination determine the Flowrate. Digital Meter : The inner float magnetic field is detected by the high sensitive magnetic field detection sensor, enable us to show the digital readout As such this flowmeter does not require any electrical connection, since it operates on battery. It has an inbuilt two wire transmitter provide 24 VDC and take 4-20 mA Signal.

BENEFITS OF SPINK CONTROLS DIGITAL VARIABLE AREA FLOW METERS

- Local indication without the need for auxiliary power.
- Minimum pressure loss.
- Easy to read.
- Suitable for low flow (10LPH) and High Flow 150 m³/hr
- Default inbuilt transmitter of 4 - 20mA (Loop Powered)
- No movement assembly reducing the maintenance.

Model Code R - 300/D (with local indicator)

TECHNICAL SPECIFICATION

| | |
|--------------------|--|
| ACCURACY | : +/-1.5% of FSR. |
| RANGEABILITY | : 10:1 |
| REPEATABILITY | : +/-0.5% of FSR |
| TEMPERATURE RATING | : -50 to 120 °C. |
| PRESSURE RATING | : 80 kg/cm ² |
| FLOW DIRECTION | : BOTTOM TO TOP |
| END CONNECTION | : AS PER CUSTOMER'S REQUIREMENT |
| WETTED PART | : TO SUITABLE SPECIFIC LIQUID OR GASES |
| MOUNTING POSITION | : VERTICAL. |
| INDICATION | : DIGITAL FLOW RATE |
| TRANSMISSION | : 2WIRE LOOP POWERED |
| POWER SUPPLY | : 24VDC |
| ENCLOSURE | : Exd IIB T4 IP67 |

MAXIMUM FLOW AND PRESSURE LOSS

| LINE SIZE NB | 20°C WATER FLOW m ³ /hr | 0°C 1 atm AIR FLOW Nm ³ /hr | APPROX PRESSURE LOSS MM WC |
|--------------|------------------------------------|--|----------------------------|
| 15 | 0.2 - 1.2 | 6 - 35 | 200 - 225 |
| 20 | 0.4 - 2.0 | 8 - 60 | 220 - 230 |
| 25 | 1 - 5 | 30 - 150 | 200 - 270 |
| 40 | 2.5 - 10 | 70 - 300 | 200 - 250 |
| 50 | 3.5 - 17 | 100 - 500 | 225 - 280 |
| 65 | 6 - 30 | 200 - 900 | 225 - 240 |
| 80 | 10 - 45 | 300 - 1200 | 225 - 280 |
| 100 | 20 - 100 | 600 - 3000 | 350 - 850 |
| 125 | 30 - 120 | 900 - 4000 | 300 - 850 |
| 150 | 30 - 150 | 900 - 4500 | 350 - 950 |

| R-300/D | 001 | A | F | 1 | CC1 | AL | N |
|---|-----|---|---|---|-----|----|---|
| Base Model | | | | | | | |
| Battery Operated & 24 VDC loop powered 4-20 mA | 001 | | | | | | |
| Totalizer with loop powered Transmitter | 002 | | | | | | |
| 230 VAC & 4-20 mA output | 003 | | | | | | |
| Totaliser & Batch Controller- 230VAC | 004 | | | | | | |
| High & Low switch | 005 | | | | | | |
| Totalizer with Density correction Facility | 006 | | | | | | |
| Float Material | | | | | | | |
| SS 304 | | A | | | | | |
| SS 316 | | B | | | | | |
| SS 316 L | | C | | | | | |
| SS with PTFE | | D | | | | | |
| PP / PVC | | E | | | | | |
| Process Connection | | | | | | | |
| Flanged | | F | | | | | |
| Screwed | | S | | | | | |
| Tri-clover | | T | | | | | |
| Any other | | A | | | | | |
| Material of Construction-Body & Process connection | | | | | | | |
| SS 316 | | | | 1 | | | |
| SS 316L | | | | 2 | | | |
| SS 304 | | | | 3 | | | |
| Poly Propylene | | | | 4 | | | |
| Any other | | | | 5 | | | |
| Flange to Flange Distance | | | | | | | |
| 300 mm | | | | | CC1 | | |
| 350 mm | | | | | CC2 | | |
| 400 mm | | | | | CC3 | | |
| 500 mm | | | | | CC4 | | |
| Enclosure | | | | | | | |
| DI-Cast Aluminum - Ex d IIB T4 IP 67 | | | | | | AL | |
| Stainless Steel 304 - Ex d IIA & IIB T6 IP 66 | | | | | | S1 | |
| Stainless Steel 316 - Ex d IIA & IIB T6 IP 66 | | | | | | S2 | |
| Other | | | | | | O | |
| Accessories | | | | | | | |
| Jecketing | | | | | | | J |

METAL TUBE ROTAMETER

SERIES : SC / R - 400

Metal Tube Rotameter is a Variable Area Flow Meter. It consists of a tapered tube, typically made of steel with a 'float', made of SS or PTFE. The differential pressure across the annulus area is constant. The float moves through the tapered tube up and down with respect to fluid flow. The vertical position of the float as indicated by scale is the measure of the instantaneous flow rate.

TECHNICAL SPECIFICATION

| | |
|-------------------|---------------------------------------|
| METER BODY | : METALIC (SS-316L / SS-316 / SS-304) |
| FLOAT | : SS-316L / SS-316 / PTFE |
| SCALE | : ALUMINIUM / SS-304 / WHITE ACRYLIC |
| CONNECTION | : TOP & BOTTOM FLANGED OR THREADED |
| INDICATOR HOUSING | : ABS PLASTIC, CAST ALUMINIUM |
| RATED TEMP. | : 250° C |
| RATED PRESSURE | : 40 BAR |
| ACCURACY | : ±2% ON FULL SCALE |
| REPEATABILITY | : 0.5% |
| RANGEABILITY | : 0:1 |
| ACCESSORIES | : HI - LOW FLOW SWITCH |



SPECIFICATION SERIES : SCMT

| Model No. | Maximum Flow M³/hr Water | Connection Flanged | CC Distance |
|-----------|--------------------------|--------------------|-------------|
| SCMT- 401 | 5 | ½" to 1" | 350mm |
| SCMT- 402 | 10 | 1½" to 2" | 350mm |
| SCMT- 403 | 20 | 2" to 2½" | 350mm |
| SCMT- 404 | 30 | 2½" to 3" | 350mm |
| SCMT- 405 | 50 | 3" to 4" | 350mm |
| SCMT- 406 | 60 | 4" | 350mm |
| | 100 | 4" | 500mm |
| SCMT- 407 | 130 | 5" | 500mm |
| SCMT- 408 | 180 | 6" | 500mm |
| SCMT- 409 | 200 | 8" | 500mm |
| SCMT- 1M | 2 | ½" to 1" | 250mm |
| SCMT- 2M | 5 | 1" to 1½" | 250mm |
| SCMT- 3M | 10 | 1½" to 2" | 250mm |
| SCMT- 4M | 20 | 1½" to 2" | 250mm |

GLASS TUBE ROTAMETER

SERIES : SC / R - 101



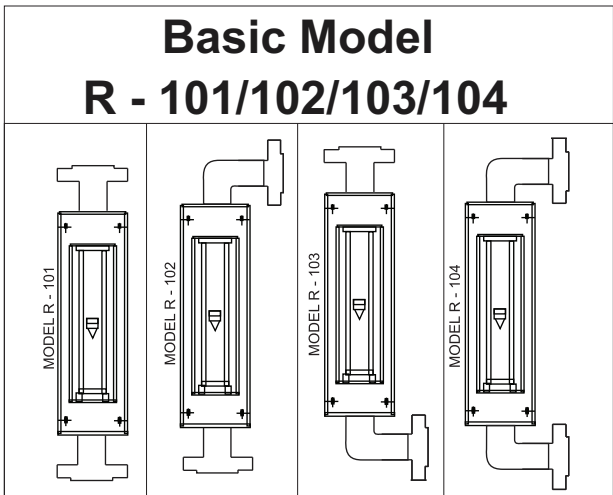
Spink Controls offer an Industrial flowmeter used to measure flowrate of liquids and gases. It operated on the Variable Area Principle, where the fluid flow raises a float in taper tube increasing the area of passage of fluid. The greater the flow, the higher the float is raised. The height of float is raised by a combination of the buoyance of the liquid and velocity head of the fluid. With gases, the buoyancy is negligible, and float responds to the velocity head alone.

TECHNICAL SPECIFICATION

| | | |
|-------------------------|---|---|
| ACCURACY | : | +/- 2 % OF FSR |
| REPEATABILITY | : | +/- 0.5 % OF FSR |
| RANGEABILITY | : | 10 : 1 |
| TEMPERATURE RATING | : | 150° C |
| PRESSURE RATING | : | Up to 10 Kg/cm ² |
| CASING | : | M. S. POWDER COATED/SS316/SS304 |
| END CONNECTION | : | FLANGED/SCREWED AS PER CUSTOMER SPECIFICATION |
| MATERIAL OF WETTED PART | : | C S/ SS 304/ SS 316/ PP/ PVC/ TEFLON |
| METERING TUBE | : | BOROSILICATE GLASS |
| FLOAT | : | SS304/SS316 OR SUITABLE TO SERVICE |
| SCALE LENGTH | : | 175 TO 220 mm |
| END TO END DISTANCE | : | 500mm |
| FLOW DIRECTION | : | FROM BOTTOM TO TOP |
| MOUNTING POSITION | : | VERTICAL |
| ELASTOMERS | : | NEOPRENE/SILICON/ VITON / PTFE |

Model Coding for Glass Tube Rotameter

| R-101 | | GT/ | A | F | 1 | WL | MS | AL | GP1 | PK1 |
|--|------------------------------------|--------------------------|------------|----------------|----|----|----|----|-----|-----|
| Line Size | Pressure Rating Kg/cm ² | Water At AMB.Temp in LPH | Glass Size | Line Size Code | | | | | | |
| 15 | 15 | 10 - 100 | GT/01 | A | | | | | | |
| | | 20 - 200 | GT/02 | | | | | | | |
| | | 30 - 300 | GT/03 | | | | | | | |
| 20 | 10 | 40 - 400 | GT/04 | B | | | | | | |
| | | 60 - 600 | GT/05 | | | | | | | |
| | | 80 - 800 | GT/06 | | | | | | | |
| 25 | 10 | 100 - 1000 | GT/07 | C | | | | | | |
| | | 120 - 1200 | GT/08 | | | | | | | |
| | | 150 - 1500 | GT/09 | | | | | | | |
| | | 200 - 2000 | GT/10 | | | | | | | |
| | | 250 - 2500 | GT/11 | | | | | | | |
| 40 | 7 | 300 - 3000 | GT/12 | E | | | | | | |
| | | 350-3500 | GT/13 | | | | | | | |
| | | 400 - 4000 | GT/14 | | | | | | | |
| | | 500 - 5000 | GT/15 | | | | | | | |
| 50 | 7 | 600 - 6000 | GT/16 | F | | | | | | |
| | | 800 - 8000 | GT/17 | | | | | | | |
| | | 1000 - 10000 | GT/18 | | | | | | | |
| 65 | 7 | 1500 - 15000 | GT/19 | G | | | | | | |
| 80 | 5 | 2000-20000 | GT/20 | H | | | | | | |
| Process Connection | | | | | | | | | | |
| FlangedANSI 150# | | | | | F1 | | | | | |
| Screwed | | | | | S1 | | | | | |
| HoseConnection | | | | | H | | | | | |
| TC | | | | | TC | | | | | |
| Material of Construction –Body & Process connection | | | | | | | | | | |
| SS 316 | | | | | | 1 | | | | |
| SS 316L | | | | | | 2 | | | | |
| SS 304 | | | | | | 3 | | | | |
| Mild Steel | | | | | | 4 | | | | |
| Carbon steel | | | | | | 5 | | | | |
| Cast Iron | | | | | | 6 | | | | |
| Poly Propylene | | | | | | 7 | | | | |
| Special on request (Please specify) | | | | | | 8 | | | | |
| Lining Material | | | | | | | | | | |
| PTFE | | | | | | | PT | | | |
| Without Lining | | | | | | | WL | | | |
| Casing Material | | | | | | | | | | |
| MS duly Powder coated | | | | | | | | MS | | |
| Stainless Steel | | | | | | | | SS | | |
| Scale material | | | | | | | | | | |
| Aluminium Anodized | | | | | | | | | AL | |
| Stainless steel | | | | | | | | | SL | |
| Acrylic | | | | | | | | | AC | |
| Gland Plate & Accessories | | | | | | | | | | |
| Carbon steel Plate | | | | | | | | | | GP1 |
| Stainless Steel | | | | | | | | | | GP2 |
| Other –Please specify | | | | | | | | | | GPX |
| Packing Material | | | | | | | | | | |
| PTFE | | | | | | | | | | PK1 |
| Silicon | | | | | | | | | | PK2 |
| Neoprene | | | | | | | | | | PK3 |
| Viton | | | | | | | | | | PK4 |
| Nitrile | | | | | | | | | | PK5 |

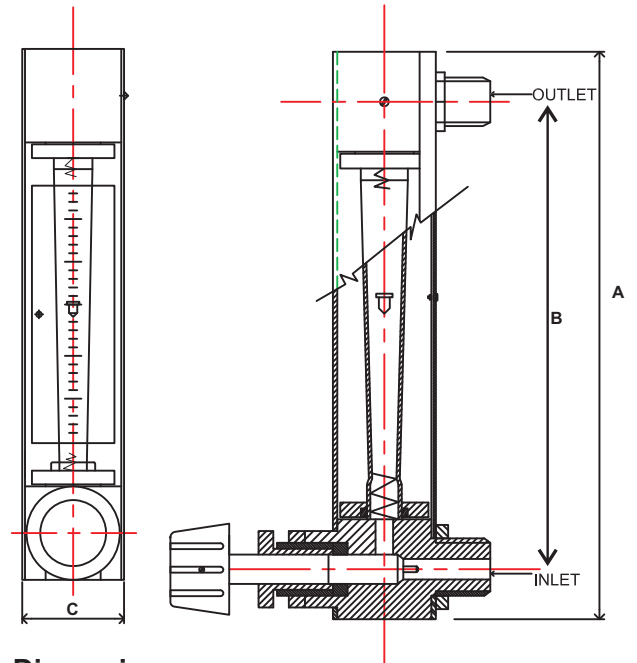


PURGE ROTAMETER

SERIES : SC / R - 200



The Purge Rotameter are low capacity variable area flowmeters for both liquid and gas with an excellent selection of material and scale lengths in a single product family design. They provide optimum flexibility with minimum component proliferation. The Rotameter features, a corrosion resistant, high strength stainless steel body and a safety tested operator protection shield.



TECHNICAL SPECIFICATION

| | |
|--------------------------|--|
| ACCURACY | : +/-3% OF FSR. |
| RANGEABILITY | : 10:1 |
| REPEATABILITY | : +/-0.5% of FSR |
| Max Temperature | : 120°C. |
| MAX PRESSURE | : 10kg/cm ² (HIGH PRESSURE ON REQUEST) |
| CONNECTION | : 1/4" BSP (M/F) OTHERS ON REQUEST |
| DIRECTION OF CONNECTION | : REAR BOTTOM TO TOP |
| MATERIAL OF CONSTRUCTION | : SS 316 |
| PACKING / GASKETS | : NEOPRENE / SILICON / VITON / PTFE |
| COVER | : ACRYLIC / POLY CARBONATE |
| ACCESSORIES | : 1) DIFFERENTIAL PRESSURE REGULATOR 2) HIGH & LOW FLOW ALARMS 3) NEEDLE VALVE |

Dimensions

| Model No | a (mm) | b (mm) | c (mm) | Scale Length (mm) |
|----------|--------|--------|--------|-------------------|
| R-201 | 132 | 105 | 32 | 65 |
| R-202 | 182 | 155 | 32 | 100 |
| R-203 | 232 | 205 | 32 | 170 |

Model Coding

| R - 201 | L | A | S | 1 |
|-----------------------|---|---|---|---|
| Service | | | | |
| Liquid | L | | | |
| Gas | G | | | |
| Flow Direction | | | | |
| Vertical | | A | | |
| Rear | | B | | |
| End Connection | | | | |
| Screwed | | | S | |
| Hose | | | H | |
| Flanged | | | F | |
| C/C Distance | | | | |
| 105 mm | | | | 1 |
| 155 mm | | | | 2 |
| 205 mm | | | | 3 |

Measuring Range

| Water Flow @ 20°C (LPH) | | | Air @ 20°C & 1 ATM (LPH) | | |
|-------------------------|---------|-----------|--------------------------|----------|------------|
| R-201 | R-202 | R-203 | R-201 | R-202 | R-203 |
| 0.05 - 0.5 | — | — | 2 - 20 | — | — |
| 0.08 - 0.8 | — | — | 3 - 30 | — | — |
| 0.1-1 | — | — | 4 - 40 | — | — |
| — | 0.2 - 2 | — | — | 8 - 80 | — |
| — | 0.3 - 3 | — | — | 12 - 120 | — |
| — | 0.4 - 4 | 0.4 - 4 | — | 16 - 160 | 16 - 160 |
| — | 0.5 - 5 | 0.5 - 5 | — | 20 - 200 | 20 - 200 |
| — | — | 0.8 - 8 | — | — | 32 - 320 |
| — | — | 1 - 10 | — | — | 40 - 400 |
| — | — | 0.16 - 16 | — | — | 64 - 640 |
| — | — | 2 - 20 | — | — | 80 - 800 |
| — | — | 3 - 30 | — | — | 120 - 1200 |

ACRYLIC BODY ROTAMETER

SERIES : SC / R - 500



PURGE ATR - 501

Acrylic Body Rotameter is an instrument used to measure instant flow rate of Liquids and Gases and are commonly used for flow measurement. We are leading manufacturer of Acrylic Body Rotameter, supplier of Acrylic Body Rotameter in Mumbai, India.



PURGE ATR - 502

TECHNICAL SPECIFICATION

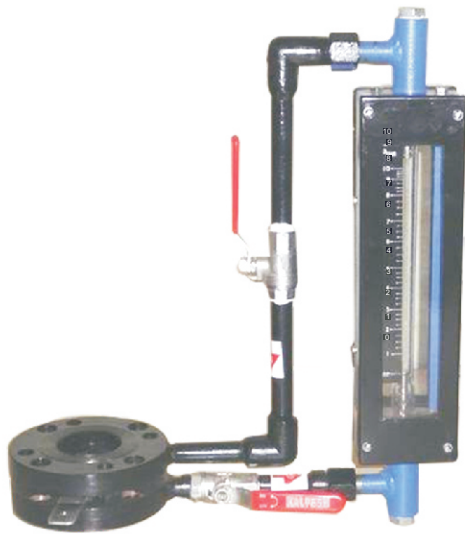
| | | | |
|----------------------|---|--------------------------|--|
| Maximum Range | : Water up to 50 m ³ /hr, Air up to 1500 nm ³ /hr | Material of Wetted Part: | SS304 / SS316 / PP / MS |
| Line Size | : 1/4" to 4" | Float | : SS304 / SS316 Or Suitable To Service |
| Range Ability | : 10:1 | Scale | : Engraved on Meter Body |
| Repeatability | : +/- 0.5 % | Optional | : Needle Valve / Wall Mounting |
| Accuracy | : +/- 2 % of FSR | C/C Distance | : 190 mm to 450 mm |
| Temperature Rating | : 60° C | End Connection | : FLANGED / TC / SCREWED (NPT / BSP) |
| Pressure Rating | : 10 kg/cm ² | Mounting Position | : Vertical |
| Body / Metering Tube | : Acrylic | | |

| MODEL & RANGE SPECIFICATION | | | | DIMENSIONAL DETAIL | | MAXIMUM PRESSURE RATING |
|-----------------------------|----------|-------------------|-----------|--------------------|-------------|-------------------------|
| MODELNo. | | MAXIMUM FLOW RATE | | CONNECTION | CC DISTANCE | |
| | | LPM AIR | LPH WATER | BSP 'F' | | |
| SCPN-1 | SCPN-501 | 50 | 100 | 1/4" | 114 | 2kg / cm ² |
| SCPN-2 | SCPN-502 | 150 | 200 | 1/4" | 110 | |
| SCPN-3 | SCPN-503 | 100 | 500 | 1/4" | 159 | |
| SCPN-4 | SCPN-504 | 500 | 1000 | 1/2" | 200 | 3kg / cm ² |
| SCPN-5 | SCPN-505 | 1400 | 2500 | 3/4" | 194 | |

| MODEL & RANGE SPECIFICATION | | | | DIMENSIONAL DETAIL | | MAXIMUM PRESSURE RATING |
|-----------------------------|------|-------------------|-------------|--------------------|--------------------|-------------------------|
| MODELNo. | | MAXIMUM FLOW RATE | | CONNECTION | CC DISTANCE | |
| | | LPM AIR | LPH WATER | BSP 'F'/FLANGED | THREADED / FLANGED | |
| SCPT-501 | 50 | 100 | 1/4" | 190 | NA | 2kg / cm ² |
| SCPT-502 | 150 | 250 | 1/4" & 1/2" | 190 | NA | |
| SCPT-503 | 100 | 150 | 1/4" | 240 | NA | |
| SCPT-504 | 600 | 1200 | 1/2" | 250 | 275 | 5kg / cm ² |
| SCPT-505 | 1500 | 2500 | 3/4" | 250 | 275 | |
| SCPT-506 | 2500 | 6000 | 1" & 1 1/2" | 300 | 325 | |
| SCPT-507 | 3000 | 8000 | 1" & 1 1/2" | 400 | 450 | 15kg / cm ² |
| SCPT-508 | 8000 | 15000 | 1 1/2" & 2" | 400 | 450 | |
| SCPT-509 | NA | 20000 | 1 1/2" & 2" | 400 | 450 | |
| SCPT-510 | NA | 40000 | 2" & 2 1/2" | NA | 450 | |
| SCPT-511 | NA | 50000 | 2 1/2" & 3" | NA | 450 | |
| SCPT-512 | NA | 80000 | 4" | NA | 450 | |

ORI FLOW METER (By- Pass Rotameter)

SERIES : SC / R - 700



The ori-flow meter measures flow by inserting an orifice at part of the piping, generating differential pressure before and behind the orifice by means of the flow, and extracting this differential pressure by a suitable method.

Differential pressure (p1-p2) of main orifice & the flow Q have shown in Equation given below. The flow is proportional to square root of the differential pressure.

$$Q = CF \sqrt{2g \frac{(P1-P2)}{\rho}}$$

- Q : Volumetric flow
- C : Flow co-efficient
- F : Cross sectional area of orifice hole
- g : Acceleration of gravity
- P1-P2 : Differential pressure
- ρ : Specific weight of fluid

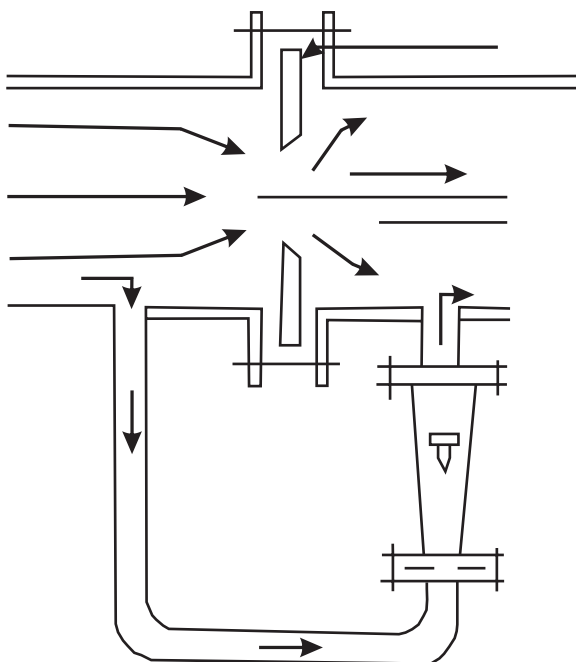


TECHNICAL SPECIFICATION

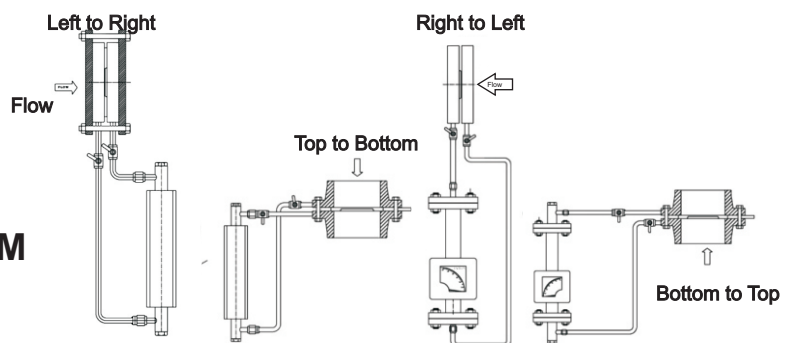
| | |
|----------------------|----------------------------|
| ACCURACY | : +/- 2% of FSR. |
| RANGEABILITY | : 8:1 |
| TEMPERATURE RATING | : 150°C. |
| PRESSURE RATING | : 25 kg/cm ² |
| MOC | |
| ORIFICE PLATE | : SS 316 / HASTELLOY C |
| CARRIER RING | : SS 316 / MS / CS. |
| FLANGED | : ASTM - A - 1 & 2 / A-105 |
| FLANGED STD | : ANSI B. 16.5 |
| BY PASS PIPING | : SS 316 / MS / CS. |
| INDICATING ROTAMETER | : SS 316 / MS / CS. |

Capacity Guide Maximum m³/h of Water

| Main Pipe Size | | Main Pipe Maximum Flow m/h (20°C Water) | | |
|----------------|------------|---|-----------|----------|
| | | Differential Pressure | | |
| Inch | Millimeter | 1500mmWC | 2500 mmWc | 5000mmWc |
| 2 | 50 | 15 | 20 | 28 |
| 2 ½ | 65 | 22 | 28 | 40 |
| 3 | 80 | 30 | 40 | 44 |
| 4 | 100 | 55 | 70 | 100 |
| 5 | 125 | 90 | 110 | 160 |
| 6 | 150 | 130 | 150 | 220 |
| 8 | 200 | 220 | 280 | 380 |
| 10 | 250 | 350 | 450 | 600 |
| 12 | 300 | 500 | 650 | 850 |
| 14 | 350 | 600 | 800 | 1050 |
| 16 | 400 | 800 | 1000 | 1400 |



LINE DIAGRAM



ELECTROMAGNETIC FLOWMETER



SERIES : SC / R - 600



Spink Electromagnetic Flowmeter-Instrument designed for measuring and indicating flow and total volume of conductive liquids. As there are no moving parts in the flow profile the device can be used to measure extremely dirty liquids containing solids. The flowmeter is for use with conductive liquids only. Range of applications. The flowmete has been designed for use in all process industries including chemical, water and wastewater.

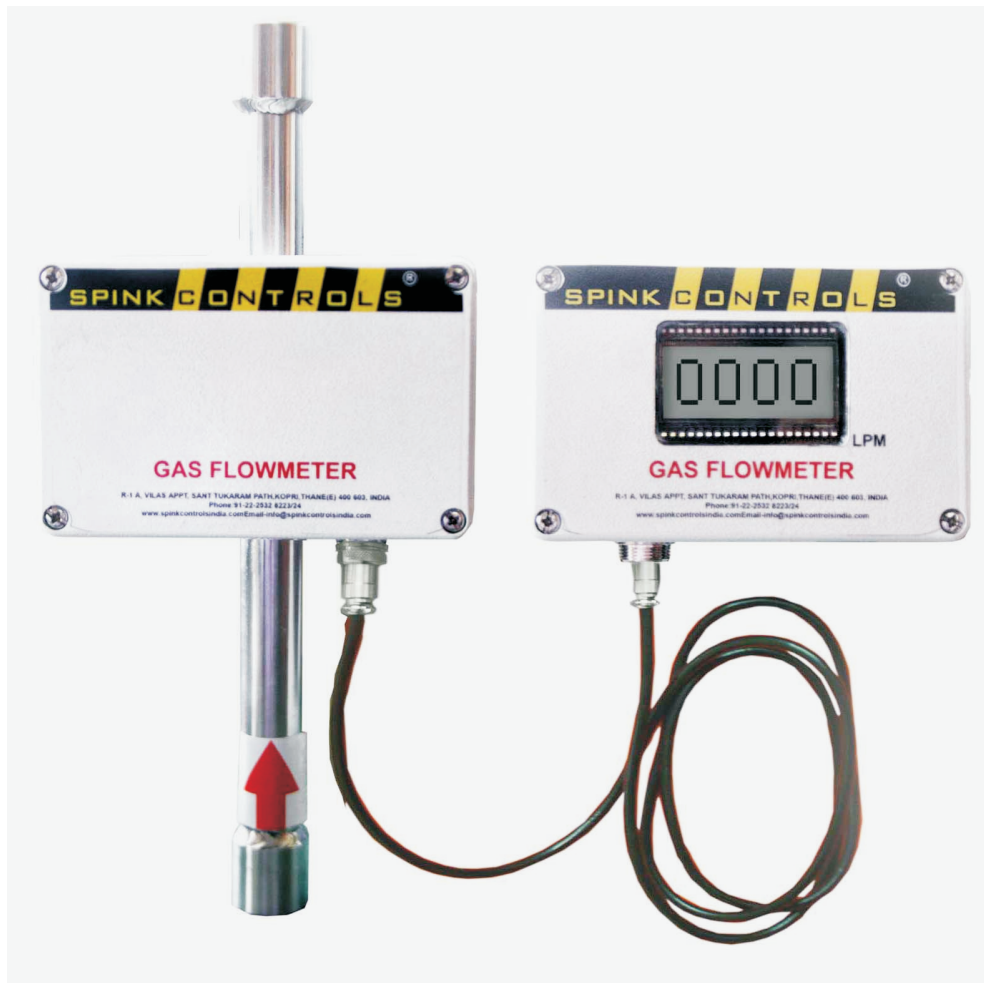
FEATURES The inductive flowmeter R-401 is a highly accurate and stable device. The construction of the flowmeter uses components with a long-term time and temperature stability.

TECHNICAL SPECIFICATION

| Parameter | MagFlow6410 | EcoMag6420 | MagBP6440 | MagProb6450 |
|--|--|--|--|--|
| Nominal dia(mm) | 10 to 3000 | 10 to150 | 10 to 1000 | >100 |
| Working pressure (kg/cm ²) | 10,16,25,40 | 5 | 16,16,25,40 | 20 |
| Working temperature | Integral PTFE -120°C Remote PTFE -180°C Others - 70°C | Up to 55°C | Up to 55°C | Up to 120°C |
| Electrode material | SS316 Std.* | SS316 Std.* | SS316 Std.* | SS316 Std.* |
| Sensor lining | Std. Rubber* | NA | Std. Rubber* | NA |
| Display version | integral/Remote | integral/Remote | integral/Remote | integral/Remote |
| Measuring tube material | SS301Std.* | HDPE | SS301 Std.* | SS316 Std.* |
| Sensor housing material | Std.CS* | HDPE | Std.CS* | NA |
| End Connection | Flange/Water/Tri-clamp/SMS | Flange | Flange/Water/Tri-clamp/SMS | NA |
| Flange - Standard | ANSI 150* | ANSI 150* | ANSI 150* | NA |
| Measuring range | 0.2 to 12 m/sec.Bidirectional | 0.2 to 12 m/sec.Bidirectional | 0.2 to 12 m/sec.Bidirectional | 0.2 to 12 m/sec.Bidirectional |
| Accuracy % of measured value | +0.5% (+0.2 consult factory) | +1% | +0.5% | +2% |
| Repeatability | +0.2% of scan | +0.2% of scan | +0.2% of scan | +0.2% of scan |
| Display | 2 line LCD | 2 line LCD | LCD | 2 line LCD |
| Display urits | All standard engineering units in m ³ ,liter,gallon,ft ³ , imperial gallon | All standard engineering units in m ³ ,liter,gallon,ft ³ , imperial gallon | All standard engineering units in m ³ ,liter,gallon,ft ³ , imperial gallon | All standard engineering units in m ³ ,liter,gallon,ft ³ , imperial gallon |
| Output | Std.4 - 20 mA+ | Std.4 - 20 mA+ | Pulse+ | Std.4 - 20 mA+ |
| Power Supply | 18 - 60 V DC or 80 - 300 VAC/DC | 18 - 60 V DC or 80 - 300 VAC/DC | Batery powered 6 years batery life | 18 - 60 V DC or 80 - 300 VAC/DC |
| Protection class or sensor | Std.IP 65 Option IP 68 or flow tube in remote type | Std.IP 65 Option IP 68 or flow tube in remote type | Std.IP 65 Option IP 68 or flow tube in remote type | Std.IP 68 |
| Protection class or rransmier | IP 67 | IP 67 | IP 67 | IP 67 |
| Cable length for remote | Std.10 m | Std.10 m | Std.10 m | Std.10 m |
| Installation | Inline flanged type | Inline flanged type | Inline flanged type | Insertion type with use of isolating ball alve assembly on pipeline. |

DIGITAL GAS FLOWMETER

SERIES : SC / R - 800



Spink Controls Gas Flowmeter specifically designed to measure the flow of clean gases non-corrosive to silicon. The physical pressure is measured to piezoresistive pressure sensing element where the pressure is converted into a differential voltage signal which is almost proportional to the pressure. This differential voltage is corrected and conditioned in multiple steps, and derive the flow of the gas.

TECHNICAL SPECIFICATION

| | | |
|--------------------|---|---------------------------|
| TYPE | : | DIFFERENTIAL TYPE |
| ACCURACY | : | +/- 1% of FSR |
| RANGEABILITY | : | 20:1 |
| REPEATABILITY | : | +/- 0.25% |
| PRESSURE RATING | : | 2 BAR |
| TEMPERATURE RATING | : | 70°C |
| DP | : | 1 PSI |
| MOC | : | SS 304/SS 316 |
| FLOW DIRECTION | : | HORIZONTAL / VERTICAL |
| POWER SUPPLY | : | 18 – 30 VDC |
| OUT PUT | : | 2 WIRE LOOP POWERED |
| ENCLOSURE | : | FLAMEPROOF / WEATHERPROOF |
| LINE SIZE | : | ½" to 1" |

ORIFICE PLATE ASSEMBLY

SERIES : SC / R - 900



The Orifice Plate with Flange Assemblies are Employed for Measuring the Rate of Flow or Quantity of Moving Fluids like Liquids, Gases or Vapours. The Orifice Plates are Designed as per Bs 1042-1981 / ISO 5167 & L K. Spink Standards.

Orifice Plate Types: Square Edge Concentric, Eccentric, Segmental, Quadrant Edge, Conical Entrance Plates

Plate thickness: 3.18 mm, 6.35 mm, 9.52 mm, 12.7 mm as standard, other on request

Plate Material: SS304, SS316, SS304L, SS316L as standard. Hastelloy C, Monel, Inconel, Polypropylene (PP), PVC, PTFE coated, Stellite coated, other on request.

Orifice Flanges: available in forged construction Weld neck, Slip On, Threaded, Socket Weld with RF, FF, RTJ facing rated 150# to 2500# and higher on request, rated in accordance with ASME 16.36 for size upto 8" or male – female flanges in accordance with ASME B 16.5, ASME B 16.47 series A/B

TECHNICAL SPECIFICATION

| | | | |
|-----------------|--|-----------------|---|
| LINE SIZE | : 15 NB TO 600 NB | TYPE OF TAPPING | : FLANGE TAPS /CORNER TAPS/ RADIUS TAPS |
| FLANGES | : ASTM-A-105/A182 /S 316/SS 314/ MONEL | SIZE OF TAPS | : ½ INCH NPT (F) |
| OPTIONAL | : IBR APPROVED FLANGES | STUDS / BOLTS | : ASTM-A-193 GR B7 |
| TYPE OF FLANGES | : WELD NECK /SLIPON /SOCKET- WELD | NUTS | : ASTM-A-193 GR 2H |
| GASKET | : SPIRAL WOUND/CAF/ TEFLON | | |

CONDITIONING ORIFICE PLATE

SERIES : SC / R -1000



Conditioning Orifice combines a flow conditioner with an orifice plate into a highly accurate primary element.

- Requires only 2 diameters of straight pipe run Upstream and Downstream from most flow disturbances
- Suitable for gas, liquid and steam application Available in 2 to 24 inch

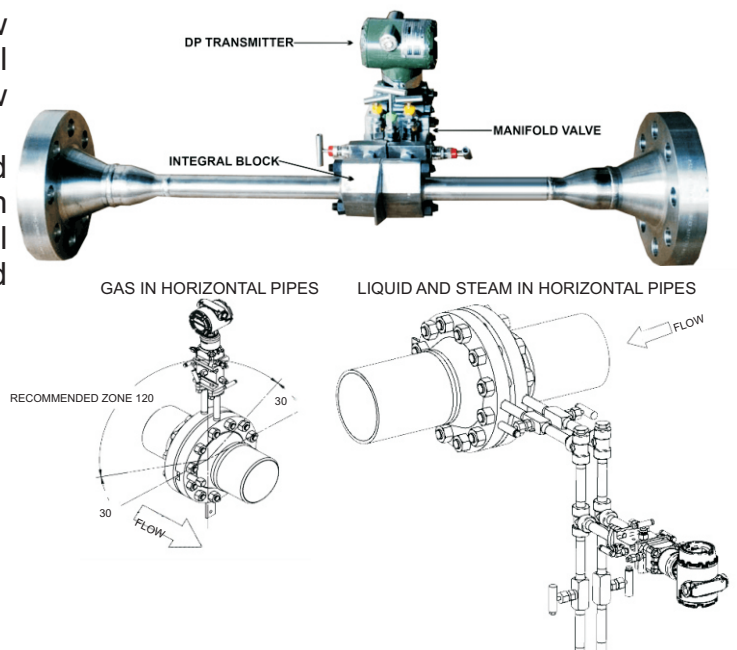
INTEGRAL ORIFICE PLATE ASSEMBLY

Spink controls provides economical flow measurement products based on differential pressure principle suitable for the line size of below 2 inch.

Integral orifice assembly is a specially designed prefabricated meter used when a high accuracy in flow measurement is required for extremely small flow rates. Bodies with socket-weld or threaded end connections are available.

- Line size : 15 NB – 40 NB
- Material : ANSI 316, ANSI SS 304, MONEL, Hastelloy "C"
- Gasket : PTFE

SERIES : SC / R -1100



FLUID FLUTE(AVERAGING PITOT TUBE)

SERIES : SC / R - 1200



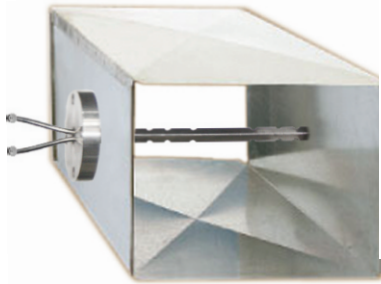
The pitot tube produces a differential pressure (dp) signal proportional to the square of the flow rate in accordance with bernoulli's theorem. This signal has two components, the high pressure (hp) and the low pressure (lp).

$$Dp = hp - lp$$

When the fluid impacts the sensor, it creates a high pressure zone, greater than pipe static pressure, in front of the sensor. As the fluid moves past the sensor, it accelerates and a low pressure zone is created to the sides and rear of the sensor. Multiple sensing ports are positioned in the high and low pressure zones and an averaged differential pressure is produced. The dp increases proportionally to the square of the velocity of the fluid.

TECHNICAL SPECIFICATION

Line size : 150 NB – 750 NB (6" to 30")
 Mounting : Sensor Fitted With Flange & Fixed to Mounting Flange on Pipeline
 Optional Insert : Isolation Valve / Retract Mechanism



Equations to Calculate Differential Pressure in mm of H₂O

1.Liquid (Volume rate of flow)*

$$D P = (SG_1) \left[\frac{m^3 / hr}{0.000396 K D^2} \right]^2$$

2.Liquid & Gas (Mass rate of flow)*

$$\Delta P = (1/\delta) \left[\frac{kg / hr}{0.0125 K D^2} \right]^2$$

3.Gas (Standard Volume rate of flow)*

$$\Delta P = \left[\frac{T SG_2}{P} \right] \left[\frac{Nm^3 / hr}{0.0191 K D^2} \right]^2$$

4.Gas (Actual volume rate of flow)*

$$\Delta P = (SG_2) \left[\frac{Am^3 / hr}{0.0125 K D^2} \right]^2$$

ΔP = dp in mm of H₂O
 m³ / hr = cubic meter per hour
 kg / hr = Kilogram per Hour
 Nm³ / hr = Normal cubic meter per Hour
 Am³ / hr = Actual cubic meter per Hour
 K = Flow Coefficient of Averaging Pitot Tube
 D = Pipe ID in mm
 A = Cross Section area in m²
 V = Flow Velocity in m/s
 δ = Flow Density in Kg/m³

For Gas

$$\delta = \frac{P \times 289 \times 1.225}{101.35 \times T}$$

 1.225 air density at 15°C and 101.35 KPa
 T = °C + 273
 P = KPa (ab)

SG₁ = Specific Gravity of Liquid
 SG₂ = Specific Gravity of Gas

*Thermal Expansion factor of CS pipe = 1 between 0 to 40°C
 *Gas Expansion factor assumed to be 1.0 to calculate ΔP

Approximate Flow Rate of Water and Air* with indicated differential pressure for Nominal Pipe size (SCH 40, SCH STD)

| NB | Pipe ID | Water | ΔP | Air | K |
|------|---------|---------------------|------------|-------|-------|
| inch | mm | m ³ / hr | mmc WC | SCFM | |
| 6 | 154 | 260 | 1168 | 4295 | 0.624 |
| 8 | 202.7 | 350 | 1109 | 5846 | 0.646 |
| 10 | 254.5 | 470 | 752 | 7836 | 0.668 |
| 12 | 303.2 | 580 | 563 | 9791 | 0.671 |
| 14 | 333.3 | 700 | 550 | 11815 | 0.678 |
| 16 | 381 | 820 | 437 | 13838 | 0.682 |
| 18 | 428.6 | 950 | 362 | 16037 | 0.686 |
| 20 | 477.8 | 1080 | 299 | 18216 | 0.690 |
| 24 | 574.6 | 1290 | 202 | 21779 | 0.694 |
| 30 | 742.95 | 1700 | 119 | 28686 | 0.712 |

*Air Flow at 15°C and 101.35 KPa

Fluid Flute for Air Duct

Equations to Calculate Differential Pressure, Volume Flow & Velocity

$$\Delta P = (\delta) \left[\frac{V}{4.43 K^*} \right]^2 \text{ mm of H}_2\text{O}$$

$$Q = A \times V \times 3600 \text{ m}^3 / \text{hr}$$

$$V = 4.43 \times K^* \sqrt{\Delta P / \delta}$$

* Equivalent Round Diameter of Rectangular Duct = $\sqrt{1.27 \times W \times H}$

Where W & H are in inches. This D can be used to find K from above table

MASS FLOW CONTROLLER (MFM)

SERIES : SC / R - 1300



MFM 393

APPLICATIONS

Model **MFM 393** is micro-controller based arithmetical computation unit generally used in mass flow applications. The unit accepts three 4-20mA inputs at a time. Computed output is equal to,

$$\sqrt{\frac{(\text{Input1}) \times (\text{Input2})}{(\text{Input3})}}$$

where,

Input 1 is Differential Pressure from D.P.Tx (Non Square Rooted)

Input 2 is Line pressure from Pressure Tx

Input 3 is Line Temperature from Temperature Tx

Facility to program Gain & Bias to each input and for Calculated Output.

MFM 393 displays instantaneous Mass Flow rate on

FEATURES

- Dual functionality Mass flow rate indication / 8digit flow totalizing.
- Field settable flow totalizing rate.
- Optional - Retransmission output corresponding to mass flow.
- Optional - Serial communication port with MODBUS protocol.
- User configurable ranges for all three mA inputs viz. Differential Pressure, Temperature, Pressure and Mass

4 digit LED Display. Flow Rate and Totaliser range can be configured as required even on site. Totaliser is a 8 digit LED Display. Totaliser can be reset manually from password protected PROG menu.

Power Supply for external transmitter (24VDC@100mA) is a standard feature. It eliminates need of separate power supply to power the transmitter.

OPTIONAL

- **MFM 393** provides linear 4-20mA retransmission signal corresponding to Calculated Mass Flow Rate for other panel mounted instruments like recorders, controllers etc.
- Serial connectivity on RS485 port with MODBUS RTU protocol

TECHNICAL SPECIFICATION

| | |
|-----------------------------------|---|
| Input | 4-20mA DC Linear-3 |
| Display | 7 Segment LED, 5-Digit Process Value, 8-Digit Totaliser |
| Keyboard | 4 Key Track-tile Keyboard |
| Resolution | 4 and ½ digit for flow rate |
| Accuracy | ± 0.3% of FS, ± 1 LSD (Flow) and ± Count (Totaliser) |
| Totaliser | 8 Digit Totaliser for calculated Mass flow |
| Scaling | Flow Rate and Totaliser, Span scalable by front key pad |
| Data Storage | Totaliser value and settings stored in Battery Backed RAM |
| LED Indications | LED indications for Serial Communication and Input Selection |
| Excitation | 24 VDC, 100 mA excitation supply for external Flow Transmitter |
| Re-transmission (Optional) | 4-20 mA re-transmission output corresponds to Mass Flow Rate for external indicators/recorders or PLC. Maximum load 500 Ω |
| Serial Port (Optional) | RS485 port with MODBUS RTU protocol for on-line communication |
| Supply | 230 VAC or 110 VAC, ±10 % Single Phase, 50Hz. Factory set |
| Connections | On Screw Type Connectors |
| Cabinet | On Screw Type Connectors. Bezel:96x96mm (H x W) Depth:150mm Cutout:92x92mm (H X W) |

FLOW INDICATOR TOTALIZER (FIT)

SERIES : SC / R - 1400



FIT



FIT(48x96)

FEATURES

- Dual functionality flow rate indication / 8 digit flow totalizing and Batch Counter mode.
- User configurable flow rate range.
- Field settable flow totalizing rate.
- Relay outputs - Optional for Batch or Set point operation.
- 24VDC 100 mA Excitation Supply for external use.
- Retransmission output - Optional.
- Serial communication port with MODBUS protocol - Optional.
- Flameproof enclosure - Optional.

OPTIONAL

- Type of input 4-20 mA Linear / Square root type.
- Relay output for 2 set points on flow rate or One for flow rate and one for totalizer (Batching) relay.
- **FIT** also provides linear 4 - 20 mA true retransmission signal for other panel mounted instruments like recorders, controllers etc.
- Serial connectivity on RS485 port with MODBUS RTU protocol.

APPLICATIONS

Flow Indicator Totalizer model instrument with multi-functionality viz. Flow Rate indication, Flow Totalizing, batch counter & alarm for instantaneous flow. It accepts mA signal proportional to flow rate from flow transmitter. Flow Transmitter can be DPT with orifice assembly, Rotameter, Magnetic Flowmeter etc. with output of 4-20 mA.

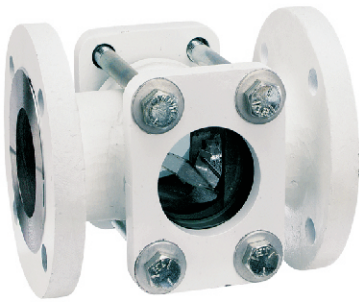
FIT displays instantaneous flow rate on 5 digit LED Display. Flow Rate and Totalizer range can be configured as required even at site. Totalizer is a 8 digit LED Display. Totalizer can be reset manually or remotely as optional. The unit incorporates two relays, from which one can be used for alarm for instantaneous flow & one for batch counter or both for alarm. On each set point one contact output is given, which can be used for control or hooter applications. Power Supply for external transmitter (24 VDC @ 100mA) is a standard feature. It eliminates need of separate power supply to power the transmitter. For batch counting, batch count can be set. When flow total equals preset count, system gives a contact output. It can be used for control operations like dosing, stoppage etc.

TECHNICAL SPECIFICATION

| | |
|-----------------------------------|---|
| Input | 4-20 mA DC Liner or Square root corresponding to Flow rate factory set |
| Display | 7 Segment LED, 5-Digit Flow rate, 8-Digit Totaliser |
| Keyboard | 4 key Track-Tile Keyboard |
| Resolution | 4 and ½ Digit for Flow rate |
| Accuracy | ± 0.3% of FS, ± 1 LSD (Flow) and ± 2 count (Totaliser) |
| Totaliser | 8 Digit Totaliser for Flow |
| Scaling | Flow rate and Totaliser, span and zero are scalable by front keypad |
| Data Storage | Totaliser value and set points stored in battery backup RAM |
| LED Indications | LED indications for Relays and Serial Communication. |
| Excitation | 24 VDC, 100 mA excitation supply for external Flow Transmitter |
| Re-transmission (Optional) | True 4-20 mA re-transmission output for external indicators/recorders or PLC. Maximum load resistance 500 Ω |
| Remote Reset (Optional) | Remote Totaliser reset facility through potential free switch input |
| Alarm Output (Optional) | Relay output for 2 set points on flow rate or one for flow rate and one for totaliser (Batching) relay |
| Serial Port (Optional) | RS 485 port with MODBUS RTU Protocol for on-line communication |
| Supply | 230 VAC or 110 VAC ± 10%, Single Phase, 50 Hz Factory set |
| Connections | On Screw Type Connectors |
| Cabinet | Panel Mounting type. Bezel: 96 x 96mm (H x W) Depth: 120mm Cutout: 92 x 92mm (H x W) |

SIGHT FLOW INDICATOR

SERIES : SC / R - 1500



SPINK CONTROLS make Sight Flow Indicators which are most commonly used for monitoring liquid flow in pipelines without compromising the integrity of the piping system. Visual observation and supervision of the process flow stream are two of the main concerns. Single / double window constructions, Sight Flow Indicators are available in various figures & material. CS / SS made bodies with Toughened borosilicate Glass Windows and standard units in flanged / threaded connections provide immunity at higher temperature & pressures. These offer a quick, reliable and inexpensive way to affirm flow rate and direction, and monitor color and clarity in fluid lines.



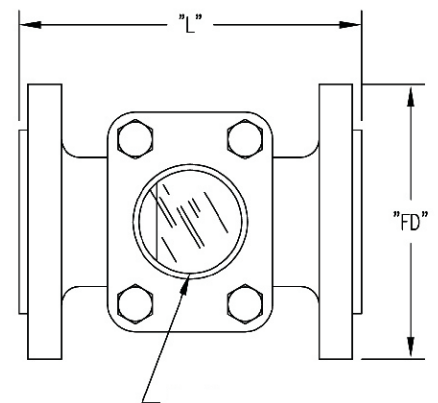
TECHNICAL SPECIFICATION

| | |
|------------------|--|
| Service | : Compatible gases and liquids. |
| Wetted Materials | : Window: tempered glass; Body: carbon steel or 316 SS; Gasket: Buna-N, fluoroelastomer or PTFE; |
| MOC | : M.S./ S.S./P.P/PTFE Lined in FABRICATED OR IC |
| Type | : Glass Window Liquid Flow Indication |
| Temperature | : 350°C |
| Pressure | : up to 70 Kg/cm ² other on your request |
| Line Size | : Up to 14 Inches (350 mm) other size is Customize |
| Glass | : Toughened Glass |
| Version | : Double / Single Window Viewing |
| Connection | : Flanged / Threaded. |



APPLICATIONS

The basic applications of Sight Flow Indicators are spread across several industries and include measuring levels of water, condensate, coolant, diesel, solvent, chemicals, alcohol, lube oil, juices etc.



DIMENSION DRAWING



| Line Size (Inches) | Length (mm) | Face Diameter (mm) |
|--------------------|-------------|--------------------|
| 1 ½ | 165 | 127 |
| 2 | 200 | 152 |
| 3 | 250 | 191 |
| 4 | 300 | 229 |

All Dimensions are in mm



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CERTIFICATE

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Spink Controls
Thane (E)

1st April 2023

Vinayak Rangdal
Managing Director

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