

# TS2000-IFM

INSERTION TYPE ELECTROMAGNETIC FLOW METER - SWITCH



## Features

- Compact Insertion Flowmeter
- Suitable for Conductive Liquids
- No Pipe Cutting or Shutdown Required
- Suitable for line sizes ranging from DN 40 to DN 300
- Typical Accuracy of  $\pm 0.5\%$  of F.S.
- Protection Class: IP-68
- Local LCD Display for Real-time Flow Monitoring
- Robust SS-316 Construction ensure durability and resistance to corrosion



## Technical Specifications

| Performance Characteristics |                                                                   |
|-----------------------------|-------------------------------------------------------------------|
| Measuring principle         | Electromagnetic flow measurement                                  |
| Media                       | Liquid (Conductive)                                               |
| Conductivity                | $> 5 \mu\text{S/cm}$                                              |
| Viscosity                   | 200 cp max                                                        |
| Line Size                   | 40 NB to 300 NB                                                   |
| Accuracy                    | $\pm 0.5\%$ of F.S.                                               |
| Response Time               | 1 Sec                                                             |
| Display                     | Backlight LCD - 6 Digit for Flow Rate, 8 Digit for Flow Totalizer |
| Process Conditions          |                                                                   |
| Process temperature         | 200°C max                                                         |
| Process pressure            | 16 kg/cm <sup>2</sup> max                                         |
| Process Connection          |                                                                   |
| Mounting Type               | Insertion Type                                                    |
| Process Connection          | 1" BSP Threaded                                                   |
| Ambient conditions          |                                                                   |
| Temperature                 | 20°C to 75°C                                                      |
| Humidity                    | 5 to 95% non-condensing                                           |
| Output Signal               |                                                                   |
| Output 1                    | 4 to 20mA                                                         |
| Output 2                    | Pulse - Open Collector Type (Optional)                            |
| Alarm or Relay Output       | 1 Relay Output (Optional)                                         |
| Communication Output        | RS-485 MODBUS RTU (Optional)                                      |

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| Protection Class            |                     |
|-----------------------------|---------------------|
| Electronic Protection       | Weather Proof IP-68 |
| Sensor/Flow Tube Protection | Weather Proof IP-68 |
| Electrical Connection       |                     |
| Connector                   | M12 Connector       |
| Power supply                |                     |
| Voltage supply range        | 18-30 V DC          |
| Power consumption           | < 5 VA              |
| Material of Construction    |                     |
| Electrode Materials         | SS-316L             |
| Retractable Assembly        | SS-316              |
| Wetted Parts                | SS-316              |
| Sensor Rod                  | SS-316              |
| Electronics Enclosure       | SS-316              |

## Assembly Overview

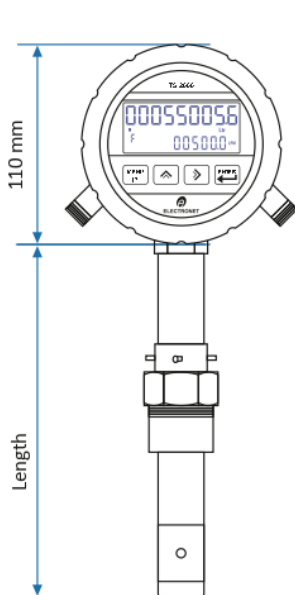


Fig. 1 Front View

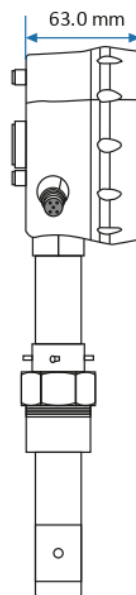


Fig. 2 Side View

| TS2000-IFM |               |
|------------|---------------|
| SIZE       | "L" DIMENSION |
| SIZE 1     | 200           |
| SIZE 2     | 250           |
| SIZE 3     | 300           |
| SIZE 4     | 350           |
| SIZE 5     | 400           |

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## Installation Drawing

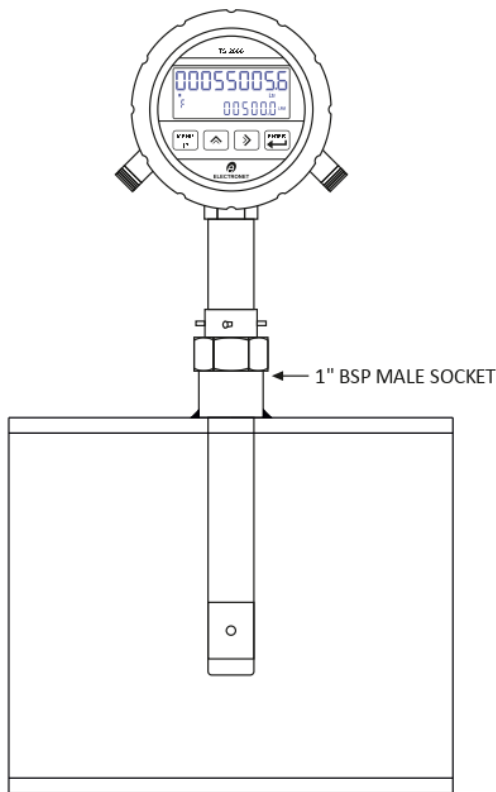


Fig.3

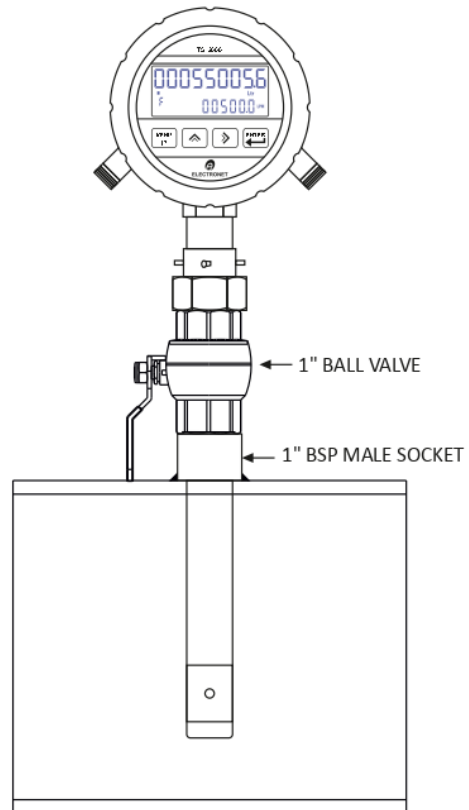


Fig.4

## Connection Details

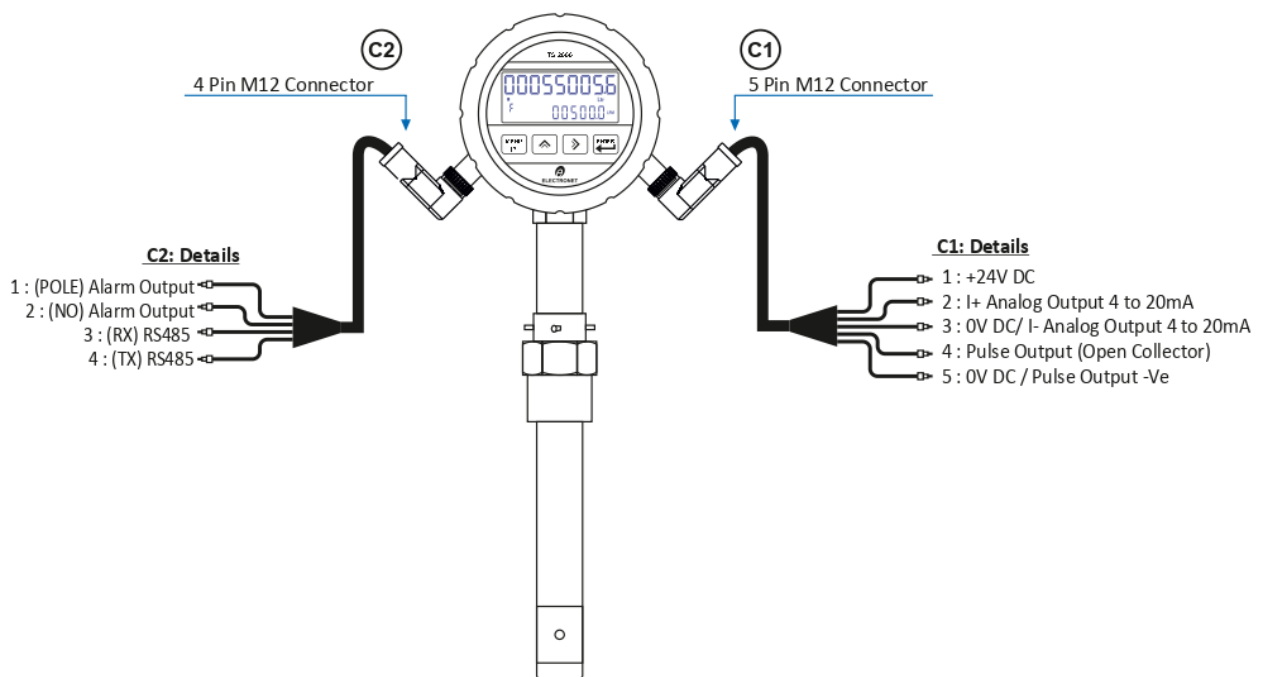


Fig. 5 Front View

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| Line Size |     | Flange To<br>Flange Distance | Flow Range (m <sup>3</sup> /Hr) |                 |               |                |
|-----------|-----|------------------------------|---------------------------------|-----------------|---------------|----------------|
| Inch      | NB  |                              | Velocity 0.3m/s                 | Velocity 2.5m/s | Velocity 6m/s | Velocity 10m/s |
| 1½"       | 40  | 200                          | 1.36                            | 11.31           | 27.143        | 45.24          |
| 2"        | 50  | 200                          | 2.12                            | 17.67           | 42.4115       | 70.69          |
| 2½"       | 65  | 200                          | 3.58                            | 29.86           | 71.675        | 119.46         |
| 3"        | 80  | 200                          | 5.43                            | 45.24           | 108.573       | 180.96         |
| 4"        | 100 | 250                          | 8.48                            | 70.69           | 169.646       | 282.74         |
| 5"        | 125 | 250                          | 13.25                           | 110.45          | 265.071       | 441.79         |
| 6"        | 150 | 300                          | 19.09                           | 159.04          | 381.703       | 636.17         |
| 8"        | 200 | 350                          | 33.93                           | 282.74          | 678.584       | 1130.97        |
| 10"       | 250 | 450                          | 53.01                           | 441.79          | 1060.28       | 1767.15        |
| 12"       | 300 | 500                          | 76.34                           | 636.17          | 1526.81       | 2544.69        |

Note : Flange to flange distance (FD) Tolerance : 1) 1½"(40NB) to 6"(150NB) : +/-3mm 2) 8"(200NB) to 12"(300NB) : +/-5mm

- All dimensions are in 'mm'
- For dimensions of line size above 300NB, please consult factory.
- Typical mounting dimensions are for reference only.
- Wet Calibrated at IEC/ISO/EN17025 Accredited Calibration Rig.
- Flow meter should be selected with the help of Nomograph (recommended full scale velocity).

## Ordering Information of Transmitter

Sample Order Code: TS 2000 IFM-TX-A1-B1-C1

| Parameter                  | Code | Description                            |
|----------------------------|------|----------------------------------------|
| TX Transmitter Electronics | TX   | TS2000-IFM                             |
| A Alarm / Relay Output     | A1   | One Relay Output                       |
|                            | AX   | NA                                     |
| B Communication Output     | B1   | RS-485 (only In Case of 24 VDC Supply) |
|                            | BX   | NA                                     |
| C Pulse Output             | C1   | Open Collector Pulse output            |
|                            | CX   | NA                                     |

Note: ▪ Due to our continuous product revisions, design specification and model numbers are subject to change without notice.  
 ▪ Accuracy defined at Lab Conditions.  
 ▪ For other requirement please consult factory.  
 ▪ This product is meant for laboratory/Process application only & not for custody transfer application.

## Ordering Information of Flow Tube

Sample Order Code: TS 2000 IFM-FT40-N1

| Parameter                            | Code   | Description     |
|--------------------------------------|--------|-----------------|
| FT Flow Tube                         | FT 40  | 40NB            |
|                                      | FT 50  | 50NB            |
|                                      | FT 65  | 65NB            |
|                                      | FT 80  | 80NB            |
|                                      | FT 100 | 100NB           |
|                                      | FT 125 | 125NB           |
|                                      | FT 150 | 150NB           |
|                                      | FT 200 | 200NB           |
|                                      | FT 250 | 250NB           |
|                                      | FT 300 | 300NB           |
| N Insertion Flow sensor Installation | N1     | Fixed Inline    |
|                                      | N2     | Hot Retractable |

## ELECTRONET EQUIPMENTS PVT. LTD.

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