

# TS2000-CP

## ELECTROMAGNETIC FLOW METER - SWITCH

For Chemical and Pharma applications

|                                                                                   |                                                                                   |                                                                                    |                                                                                     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |
| <b>FLANGED<br/>CONNECTION</b>                                                     | <b>THREADED<br/>CONNECTION</b>                                                    | <b>SMS UNION<br/>CONNECTION</b>                                                    | <b>TRI-CLOVER<br/>CONNECTION</b>                                                    |

### Features

- Compact Flow Meter
- Suitable for Conductive Liquids
- Typical Accuracy of  $\pm 0.5\%$  of M.V.
- Protection Class: IP-68
- Suitable for line sizes ranging from 08 NB to 100 NB
- Local LCD Display for Real-time Flow Monitoring
- Robust SS-316 Construction ensure durability and resistance to corrosion
- Potential free relay output (1Amp@24V DC)
- Optional MODBUS RTU Communication

### Description

Electronet Series TS2000-CP is an advanced full bore-type electromagnetic flow meter designed for precise and cost-effective flow measurement in pipelines ranging from 08 NB to 100 NB. Engineered with SS-316L electrodes, PTFE or PEEK insulation, which ensures excellent corrosion resistance and long-term durability. Process connection of flow meter can have Flanged, Threaded, SMS Union & Tri-clover connection. Sensor probe and electronics have an IP-68 protection class, offering reliable performance even in submerged applications. This high-precision instrument delivers consistent and accurate flow measurement, making it an optimal choice for demanding process control environments.

### Technical Specifications

|                                    |                                                                   |
|------------------------------------|-------------------------------------------------------------------|
| <b>Performance Characteristics</b> |                                                                   |
| Measuring principle                | Electromagnetic flow measurement                                  |
| Media                              | Liquid (Conductive)                                               |
| Conductivity                       | > 5 $\mu\text{S}/\text{cm}$                                       |
| Viscosity                          | 200 cp max                                                        |
| Line Size                          | 08 NB to 100 NB                                                   |
| Accuracy                           | $\pm 0.5\%$ of M.V.                                               |
| <b>Process Conditions</b>          |                                                                   |
| Response Time                      | 1 Sec                                                             |
| Display                            | Backlight LCD - 6 Digit for Flow Rate, 8 Digit for Flow Totalizer |
| Process temperature                | 200°C max                                                         |
| Process pressure                   | 16 kg/cm <sup>2</sup>                                             |
| <b>Process Connection</b>          |                                                                   |
| Mounting Type                      | Inline Horizontal / Vertical                                      |
| Process Connection                 | Flanged / Threaded / SMS Union / Tri-clover                       |
| <b>Ambient conditions</b>          |                                                                   |
| Temperature                        | 20°C to 70°C                                                      |
| Humidity                           | 5 to 95% non-condensing                                           |
| <b>Output Signal</b>               |                                                                   |
| 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)                                      |
| <b>Protection Class</b>            |                                                                   |
| Electronic Protection              | Weather Proof IP-68                                               |
| Sensor/Flow Tube Protection        | Weather Proof IP-68                                               |
| <b>Electrical Connection</b>       |                                                                   |
| Connector                          | M12 Connector                                                     |
| <b>Power supply</b>                |                                                                   |
| Voltage supply range               | 18-30 V DC                                                        |
| Power consumption                  | < 5 VA                                                            |
| <b>Material of Construction</b>    |                                                                   |
| Electrode Materials                | SS-316L                                                           |
| Wetted Parts                       | SS-316                                                            |
| Sensor Assembly                    | SS-316                                                            |
| Electronics Enclosure              | SS-316                                                            |

# TS2000-CP

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## Assembly Overview

### Flanged Connection

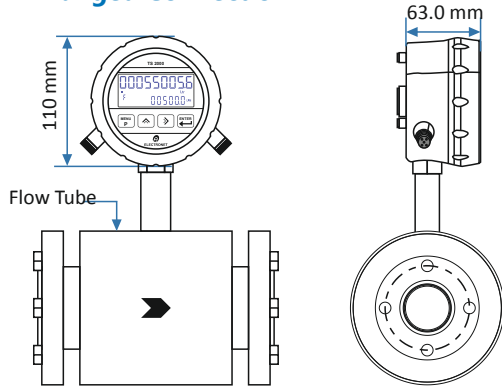


Fig. 1 Front View

Fig. 2 Side View

### SMS Union Connection

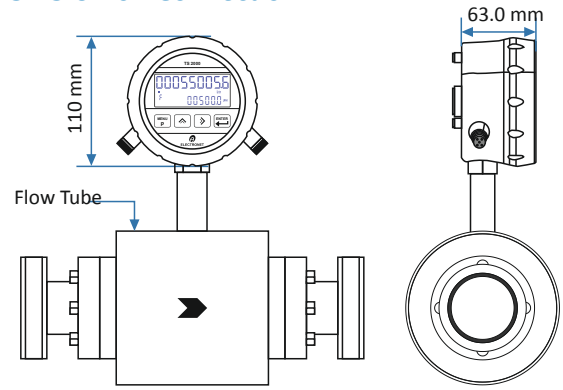


Fig. 3 Front View

Fig. 4 Side View

### Threaded Connection

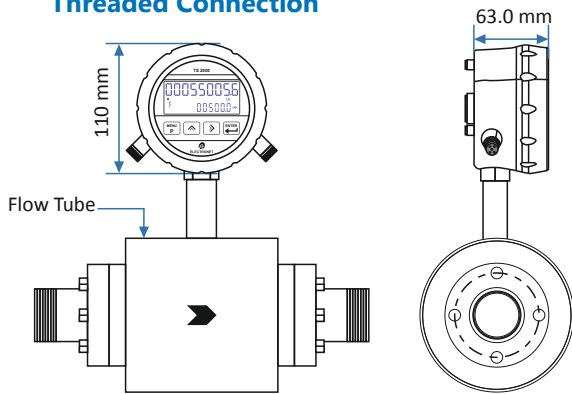


Fig. 5 Front View

Fig. 6 Side View

### Tri-clover Connection

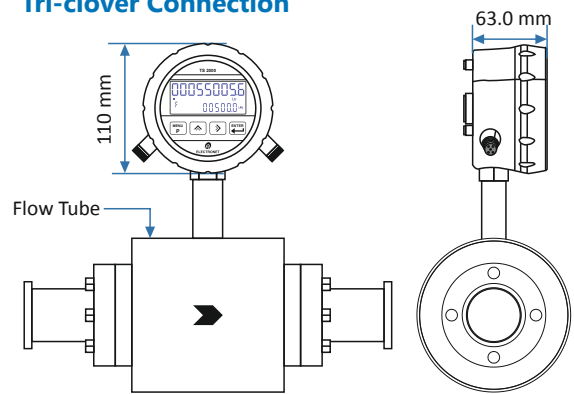


Fig. 7 Front View

Fig. 8 Side View

## Connection Details

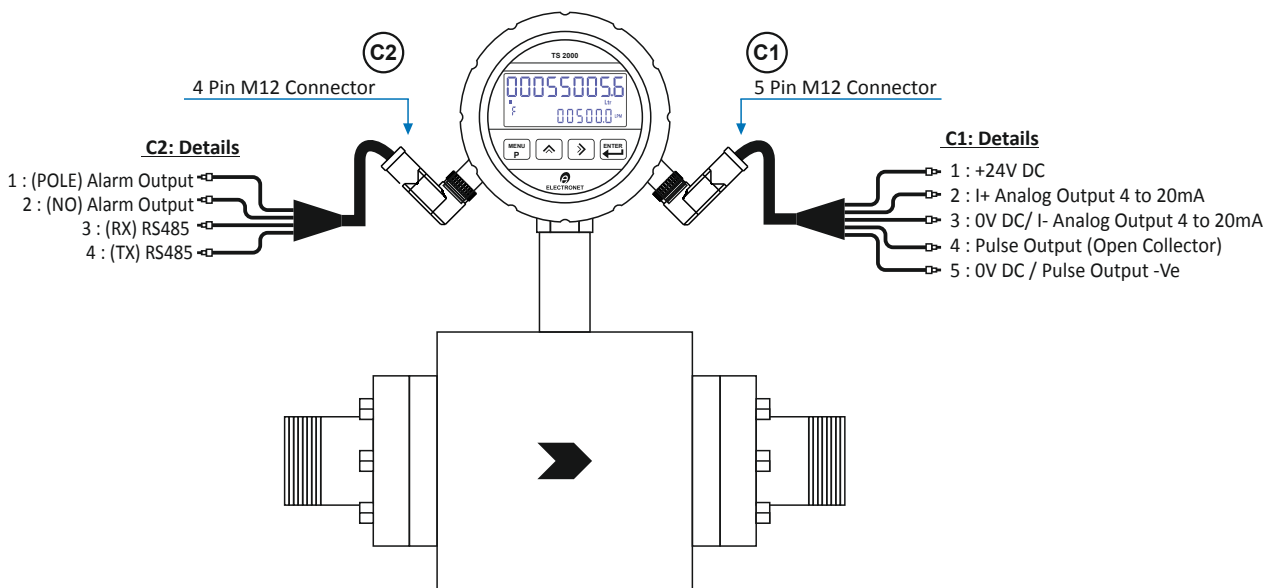


Fig. 9 Front View

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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 |
| ¼"        | 8   | 160 (Threaded Connection)    | 0.07                            | 0.45            | 1.7           | 1.81           |
| 3/8"      | 10  | 160 (Threaded Connection)    | 0.11                            | 0.71            | 1.09          | 2.83           |
| ½"        | 15  | 200                          | 0.19                            | 1.59            | 3.81          | 6.36           |
| ¾"        | 20  | 200                          | 0.34                            | 2.83            | 6.785         | 11.31          |
| 1"        | 25  | 200                          | 0.53                            | 4.42            | 10.602        | 17.67          |
| 1¼"       | 32  | 200                          | 0.87                            | 7.24            | 17.371        | 28.95          |
| 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         |

Note : Flange to flange distance (FD) Tolerance : 1) 1/4"(8NB) to 4"(100NB) : +/-3mm

- All dimensions are in 'mm'
- For dimensions of line size above 100NB, 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 CP-TX-A1-B1-C1

| Parameter                  | Code | Value                                  |
|----------------------------|------|----------------------------------------|
| TX Transmitter Electronics | TX   | TS2000-CP                              |
| 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 CP-FT08-N1-O1-P1-Q1

| Parameter              | Code  | Value                    | Code   | Value |
|------------------------|-------|--------------------------|--------|-------|
| FT Flow Tube           | FT 08 | 08NB                     | FT 40  | 40NB  |
|                        | FT 10 | 10NB                     | FT 50  | 50NB  |
|                        | FT 15 | 15NB                     | FT 65  | 65NB  |
|                        | FT 20 | 20NB                     | FT 80  | 80NB  |
|                        | FT 25 | 25NB                     | FT 100 | 100NB |
|                        | FT 32 | 32NB                     |        |       |
| N Electronics Location | N1    | Integral (local )        |        |       |
|                        | N2    | Remote ( Max 5 mtr )     |        |       |
| O Process Connection   | O1    | Threaded (15 to 50 NB)   |        |       |
|                        | O2    | Flanged (08 To 100 NB)   |        |       |
|                        | O3    | Triclover (15 to 100 NB) |        |       |
|                        | O4    | SMS Union (25 to 100 NB) |        |       |
| P Lining Material      | P1    | PEEK                     |        |       |
|                        | P2    | PFA                      |        |       |
|                        | P3    | PTFE                     |        |       |
|                        | P4    | Ceramic                  |        |       |
| Q Electrode Material   | Q1    | SS316L                   |        |       |
|                        | Q2    | Hastelloy C              |        |       |
|                        | Q3    | Platinum                 |        |       |
|                        | Q4    | Tantalum                 |        |       |



### Office & Manufacturing Unit

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## ELECTRONET FLOWMETERS LLP

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