

**103 CLT (FOR CONDUCTIVE MEDIA)**

Capacitance type microcontroller based Level Indicator Transmitter, series 103 CLT, can be used in a variety of applications for continuous level indication in non-fuming conductive liquids with low or medium viscosity like water, water bound solutions. The same unit can also be used for non conductive liquids like mineral oils, turbine oils, cooling oils etc. (For non conductive liquids see leaflet LF-103-0804 R06).

The model 103 CLT is available as an Integral system, where the Transducer Circuit , Amplifier and Transmitter is mounted on the top of the electrode or as a Remote system where Transducer Circuit is mounted separately on the top of the tank and the Transmitter is wall or pipe mounted .

**SPECIFICATIONS:****TRANSMITTER UNIT:**

- Enclosure : Weatherproof(WP), Cast Aluminum Polyurethane painted.
- Protection : IP 65
- Location : Safe Area
- Temperature : 0-55 °C
- Humidity : 0-95% max.(non condensing)
- Display : 6-Digit LCD Display.
- Programming : Magnetic Key PLUGIN for Interface setting and calibration
- Display Range : Level= 0 to 99999 mm  
0 to 9999.9 cm  
0 to 99.999 meter  
(only one unit to be selected)  
% Level=0.00 to 100.00%  
Volume =0 to 99999 Litres.
- Accuracy : 2% of FSD.
- Output : 4-20mA, with max. Load 500 ohm, at 24VDC.
- Power Supply : 24VDC±15%
- Electrical : Suitable for 1.5 sq mm size Connections conductor (Max)
- Cable Entries : 1 Nos. of size ½”NPT(F) Standard, OR ¾” UNF / ET (F) Optional.
- Mounting : Wall or Pipe mounted

**FEATURES:**

- Microcontroller Based System.
- 2-Wire Transmitter.
- Level to Volume conversion with strap.
- Wide range electrodes to suit various duties.
- Calibrations and Programming without opening the transmitter through removable keypad.
- On site calibration. Calibration methods from 2 point to multi-point calibration(upto 10 point).
- Easy to install.

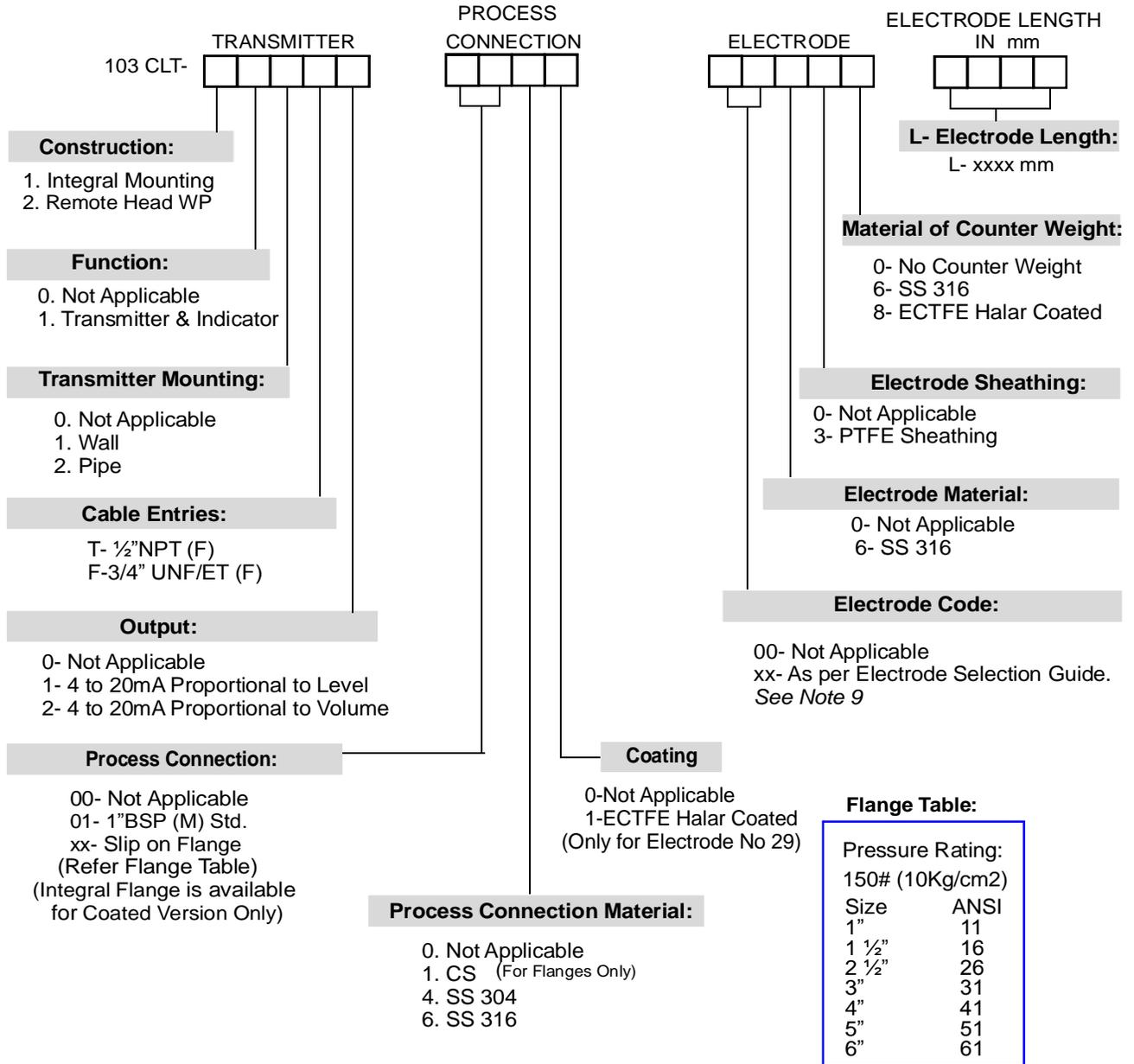
**ELECTRODE SPECIFICATIONS:**

- Electrode Type : Rigid/Flexible
- Electrode Material : SS 316
- Insulation : PTFE Sheathing/ PTFE wrapped.
- Mounting : On top of the tank.
- Process Connection : 1” BSP/Flanged
- Material : CS, SS 316, SS 304.

**OPTIONAL ACCESSORIES:**

- 176 Remote Indicator (with inbuilt Power Supply Unit)
- Power Supply Unit: 24VDC.

**ORDERING CODE:**



**Example of model code selection for Integral Mounting :**

**Model no -103 CLT 110T1 0160 16630 L=0600**

The above model code specifies that Capacitance Type Level Indicator Transmitter 103 CLT with Integral mounting, with cable entry ½"NPT (F) & 4-20 mA output proportional to level. Process connection for electrode is 1" BSP(M), Material of process connection is SS 316 without coating. Electrode is of following type i.e Rigid PTFE sheathed dia 16mm,electrode material is SS 316 length = 600mm.

**Example of Model code selection for Remote Mounting :**

**Transmitter Model No- 103 CLT 211T1 0000 00000 XXXX (Underlined Code Need not be mentioned)**

Capacitance Type Level Indicator Transmitter 103 CLT , wall mounted with cable entry ½" NPT(F) & 4-20 mA output proportional to level.

**Electrode: Model No: 103 CLT 200T0 0160 16630 0600.**

Electrode is rigid PTFE Sheathed, Electrode Diameter is 16mm, Electrode material is SS 316,cable entry is ½"NPT, process connection is 1"BSP(M), Material of process connection is SS 316 & Electrode length = 600 mm.

**Example of Model code Selection with Slipon Flange:**

**Model No-211T1 2661 29636 0600**

The above model code specifies that Capacitance Type Level Indicator Transmitter 103CLT , with Integral mounting, with cable entry ½" NPT(F) & 4-20 mA output proportional to level. Process Connection is 1"ANSI 150#.

Material of process connection is SS 316. Electrode description is as follows:

Electrode is Double loop flexible ,PTFE sheathed,electrode material is SS 316 ,length = 600mm.

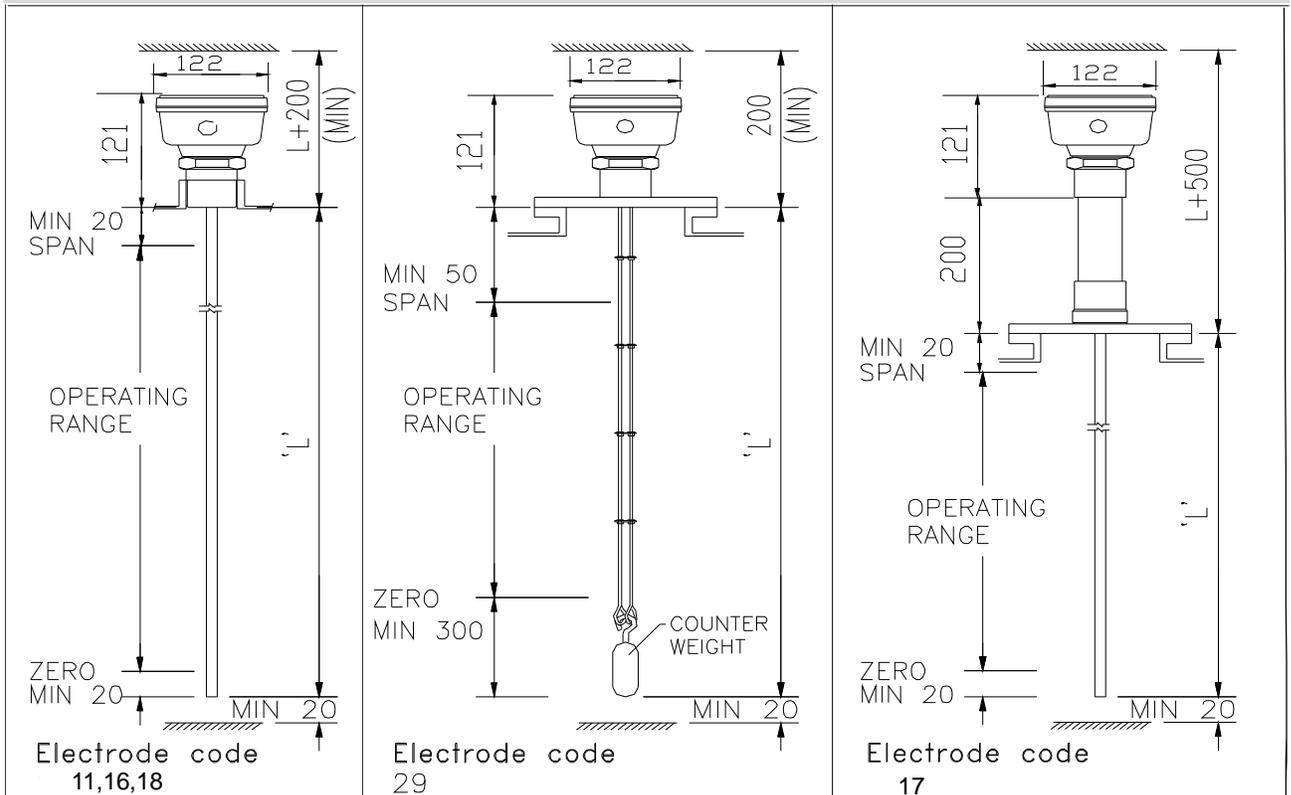
\* **Slipon Flanges to be ordered separately.**

## ELECTRODE SELECTOR GUIDE FOR CONDUCTIVE MEDIA

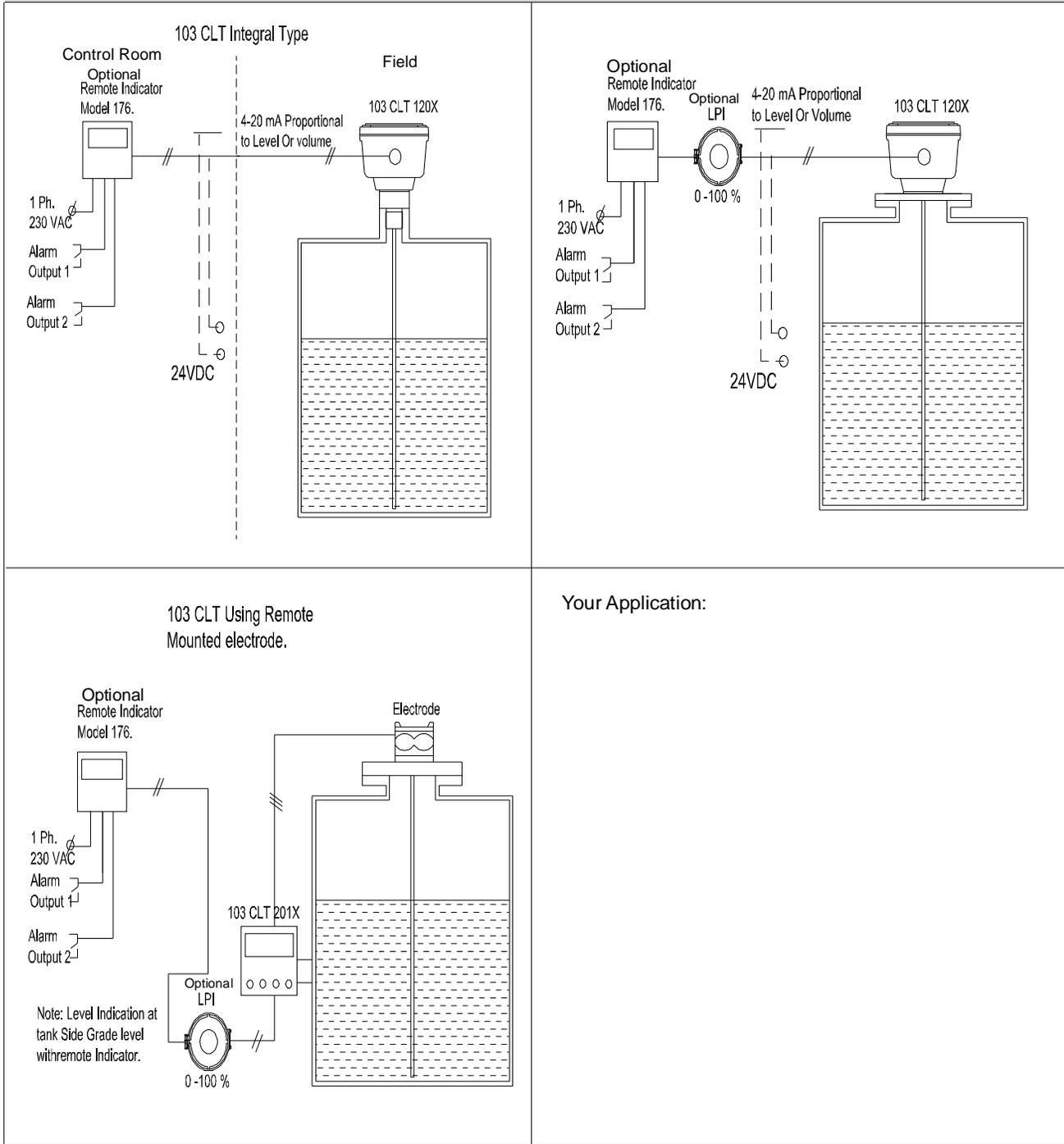
| Code No. | Electrode Description   | Process Connection |                 |                         | Material of Construction |                             | Electrode Length |      | Operating Condition |                      | Service   |
|----------|---|--------------------|-----------------|-------------------------|--------------------------|-----------------------------|------------------|------|---------------------|----------------------|---|
|          |   | Threaded           | Integral Flange |                         | Sensing electrode        | Counter Weight              | Min.             | Max. | Temp in deg C max.  | Pres. in Kg/cm2 max. |   |
|          |   |                    | Size (min)      | Coating Thickness in mm |                          |                             |                  |      |                     |                      |   |
| 16       | Rigid PTFE Sheathed, 16mm   | 1" BSP             | —               | —                       | SS316                    | —                           | 350              | 3000 | 60                  | ATM                  | Water, Non-corrosive liquids in metallic tanks. |
| 17       | Rigid PTFE Sheathed, 16mm with HTSO   | 1" BSP             | —               | —                       | SS316                    | —                           | 350              | 3000 | 180                 | 10                   | Water, Non-corrosive liquids in metallic tanks. |
| 18       | Rigid PTFE Sheathed, 16mm   | 1" BSP             | —               | —                       | SS316                    | —                           | 350              | 3000 | 60                  | 10                   | Water, Non-corrosive liquids in metallic tanks. |
| 29       | Double loop flexible PTFE sheathed (Inner Conductor SS316)<br><b>Notes:</b> | 1" BSP             | 1"              | 0.8                     | SS316                    | SS316 OR ECTFE Halar Coated | 1000             | 7000 | 60                  | ATM                  | Water, Corrosive liquids.                       |

1. In case of remote mounting transmitter unit and the probe unit must have separate model codes.
2. High temperature stand off is recommended for process temperature above 60°C.
3. For corrosive duties, only flanged process connections are recommended. ( Electrode No 29).
4. With zener barrier 103 CLT may be used in hazardous area.
5. Power supply 230 VAC to 24 VDC module can be supplied optionally.
6. Transmitter power supply should be 24VDC +/- 1% ripple and noise < 100mV.
7. Display can be set to show the parameters level, volume, and % volume sequentially.
8. Maximum permissible distance between remote head transmitter and electrode is 300 meter with 1.5 sq mm copper wire.
9. All combinations are not possible. Please refer "Electrode Selection Guide" for compatible options.

### ELECTRODES:



**APPLICATION:**



Note : 1. Load resistance is 500 ohm at 24VDC.

2. Addition of 28V Zener Barrier reduces Load resistance by 220 ohm at 24VDC.

3. Addition of LPI reduces Load resistance by 100 ohm at 24VDC..

\*\*\* Continuous developments may necessitate changes without notice.

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