

# INSTRUCTION MANUAL

## CAPACITANCE LEVEL TRANSMITTER

(JAYCEETRANS – 5000N -2W SERIES)

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### FUNCTION:

Capacitance Level Transmitter is a compact, low cost, 2 wire level transmitter with 4-20 mA analogue out-put designed to measure the level of various liquids, and solid in tanks or storage vessels. Measuring range is 0.2 to 3 mtrs for rod probe version. The probe forms an electrical capacitor with the surrounding metal contained wall, or with auxiliary reference probe. With the vessel empty, initial capacitances exists between the electrode and the metal well or the auxiliary reference probe. When the probe becomes covered with material to be measured the capacitances will increase and the change will be measured and covered into an analogue (4-20 mA) output signal proportional to the change. Rod or flexible (rope) cable can be used for various conductive or non-conductive Liquids.

### LIQUID APPLICATION:

Acids, Acitone, AmoniaBenzine, Feed water, CTC, diesel, oils, fruit juice, milk, and wine

### PROBE SPECIFICATION CHART

**Conductive material:** Water based solutions. Acids, Bases etc – only insulated probe are suggested.

**Non-Conductive material:** Mostly petrochemical and solvents – Insulated or non-insulated probes can be used.

### INSTALLATION OF JAYCEETRANS:

#### MOUNTING:

- The probe must be mounted in parallel with the reference electrode (tank wall/reference probe).
- Probes should not come into the path of the material inflow. Thus a suitable location must be selected to avoid direct inflow on to the probe.

#### REFERENCE PROBE:

- The reference probe can be insulated or un-insulated, mounted parallel to the measuring probe in a close distance.

- In case of horizontal tank or the electrically non-conductive tanks a metallic pipe can be used as reference probe. The measuring probe has to be mounted in the reference pipe in this case.
- The ID of the reference pipe has to be selected as per the viscosity and the dielectric constant of the process material.
- For installing the probe vertically from the top, sufficient clearance (equal to the probe length minimum) should be available above the tank top to facilitate to hoist the probe over the tank top for insertion.

**Following precautions should be taken during installations -**

- The rod probe should not be bent or position distorted.
- In case of wire rope probe, the same should not be moved over a sharp or rough surface. It will damage the insulation.
- The mounting nozzle should not be longer than the mounting nut thread length. This is to avoid false output due to the oscillation of the rope probe.
- During installation of probe with screwed mounting, turn the hexagonal mounting bush of the probe and not the housing.
- The standard unit has TRANSMITTER Insert with the probe.
- The transmitter unit should not be mounted at the location where the ambient temperature is not more than 60° C.
- Precaution has to be taken to avoid fall of Sunrays on to the Electronic Unit housing and the probe. In case it is not possible to avoid, a suitable Sun protection cover should be provided over the housing.

**ELECTRICAL CONNECTION TO JAYCEETRANS:**

Please refer the connection diagram for the electrical connection. Appropriate mains voltage should be connected to the terminals of the instruments as specified. The connectors are suitable for

**1.5 sq.mm cable cross section. The probe connection in the standard integral model is connected internally.**

## CALIBRATION:

To Calibrate the Indicator following procedure has to be followed

- Connect the Electronic Insert to the mains. 24 V DC to terminal +ve and -ve. Don't connect 24VDC directly between "+" & "-".
- Connect Multimeter/indicator **IN SERIES** between terminal +ve and -ve. (Indicator should be 2 wire type suitable for loop power type transmitter)
- Keep the trim pots at the MIN positions. (There are 20 tern pots.)
- Fill the Vessel / Tank to desired 100% level & set "100.00" by "SPAN" setting trim pot. At this condition the current O/P will be 20.000 milliamps.
- Fill the Vessel / Tank to desired 0% level & set "ZERO" by "ZERO" setting trim pot. At this condition the current O/P will be 4.000 milliamps.
- Check the calibration by once again by emptying the tank up to "0%" if some difference comes then again set 0% & fill the tank 100%. Check & set 100%.

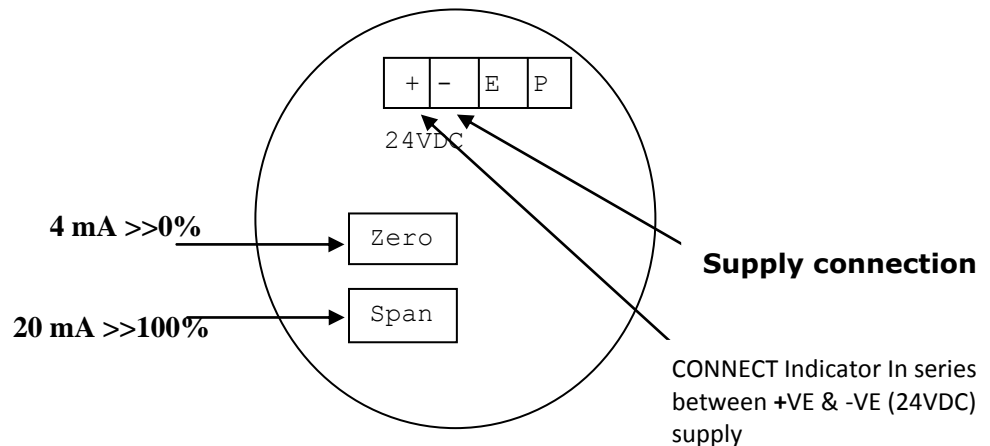
**Now Indicator is calibrated. Connect the 4-20 output to your indicator etc for processing.**

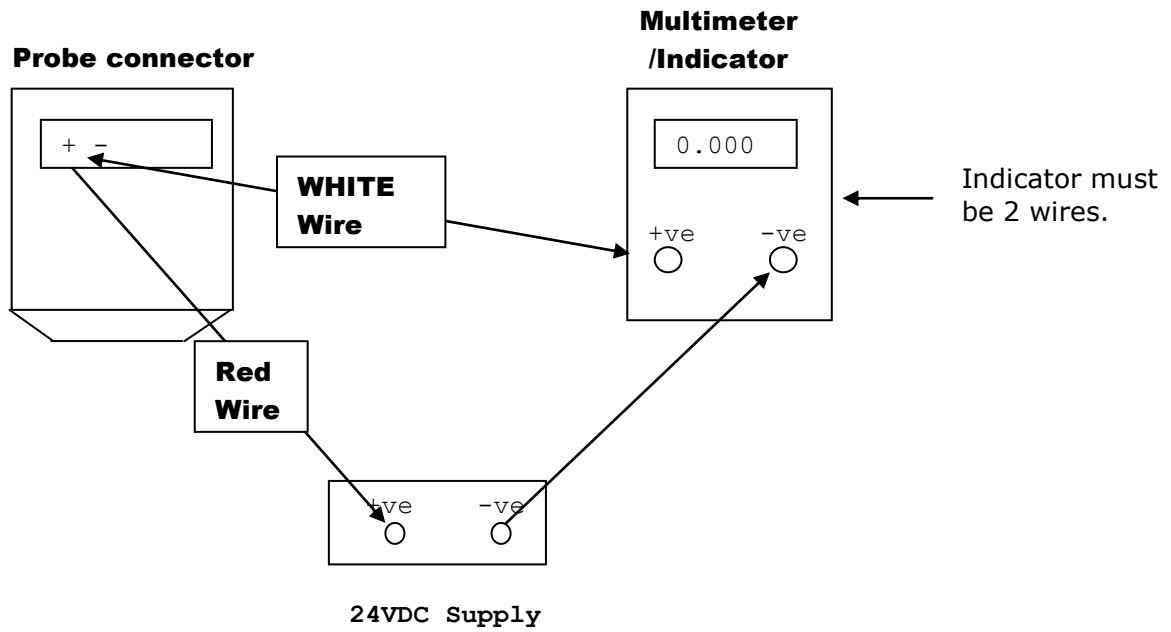
## MAINTENANCE:

**In normal conditions the JAYCEETRANS need no maintenance.**

**However, if the material has built up tendency, over a period of time, probe should be cleaned whenever need occurs.**

**Ensure that the cable glands and the housing lid are sealed to prevent ingress of moisture.**





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