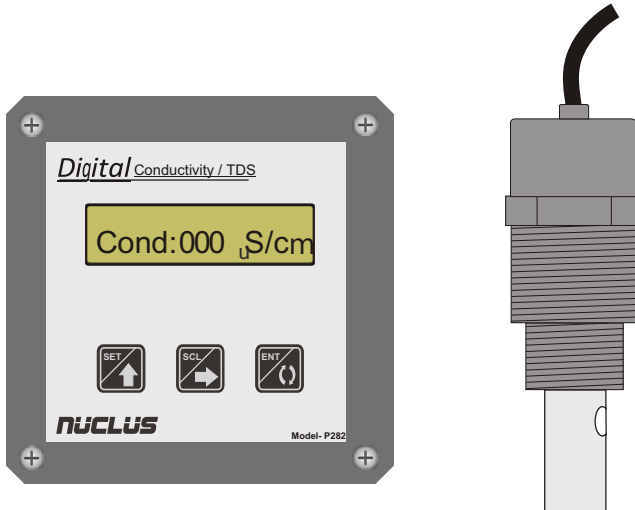


**NUCLUS**

# Operating Manual

Model- C181

Conductivity / TDS Indicator



Authorised Dealer



*NK Instruments Pvt. Ltd.*

B-501/504, 5th floor, Raunak Arcade, Near THC Hospital, Gokhale Road, Naupada,  
Thane(W) 400602. Maharashtra INDIA      Telefax Nos.: 91-22-25301330 / 31 / 32  
E-Mail: sales@nkinstruments.com      Web: <http://www.nkinstruments.com>  
Skype: nitinkelkarskype      Gtalk: nkinstruments2006



**Nuclus** make a *Digital* Conductivity / TDS indicator model- C181 are suitable for a wide variety of applications from high purity water quality monitoring to weak acids and bases. electrode surface finishes are controlled to ensure measurement accuracy and repeatability. Double threaded connections in either ½ inch or ¾ inch BSP enable quick and easy installation in submersible or in-line configurations. Microprocessor based electronics allow wide operating range and long term signal stability.

### Features

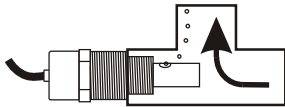
- Dual-threaded (½ & ¾ inch BSP male )
- Weather proof enclosure (IP65 protection )
- Universal power supply 70 to 270V AC SMPS
- Compact electrode length for easy in-line installation in small pipe sizes
- In-line / Submersible installation
- Electrode surface finishes are controlled ensure measurement accuracy and repeatability.

### Application

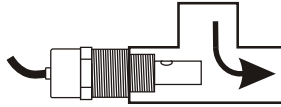
- Water Treatment plants  
Reverse Osmosis  
Deionization  
Distillation
- Cooling tower and Boiler Protection
- Semiconductor
- Chemical concentration

### Installation Tips

- Liquid levels must be high enough to cover orifice on sensor body.
- Install sensors in an area that will remain free of air bubbles and sediment build-up. • Conductivity measurements are affected if electrodes are coated by process substances.



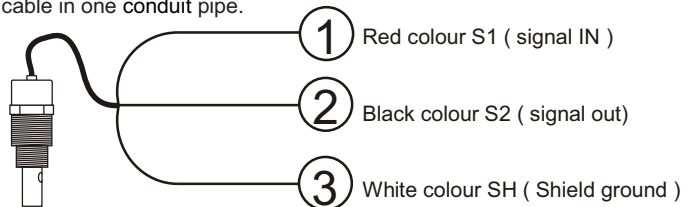
For Inline installation



Use caution to avoid air bubble or sediment trapping inside the electrode cavity.

### Connection details

- Before sensor connection to instrument Please Refer the manual for specific wiring details.
- Disable power to instrument before connecting this sensor.
- Do not keep power cable and cell cable in one conduit pipe.



### Display mode selection i.e. Conductivity / TDS selection

Switch OFF the instrument & than unscrews front for screws and pull out front cover of instrument. On top side of display PCB there are three jumper select jumper is as follow.

If jumper Jp4 select display shows only conductivity reading.

If jumper Jp3 select display shows only TDS reading.

If jumper Jp4 & Jp3 both select display shows conductivity & TDS reading as per toggle time select

After jumper selection fix the front cover as per earlier & than switch ON the instrument

### Technical specification of Model- C-181

|                     |                                 |
|---------------------|---------------------------------|
| Function:           | Conductivity & TDS Indicator    |
| Display:            | backlit alphanumeric 1 x 16 LCD |
| Supply Voltage:     | 70V AC to 270V AC SMPS          |
| Linearity:          | + 2% of FSD_                    |
| Input:              | from Nuclus Cell                |
| Configuration Lock: | Password Protection.            |
| Calibration:        | Using front keys                |
| Housing:            | Plastic ABS.                    |
| Protection:         | IP 65                           |
| Meter Size:         | 110mm X 110 mm X 140mm          |
| Cutout Size:        | 90 mm X 90 mm                   |

### Technical specification of Conductivity cell

#### Wetted Materials

|                      |                         |
|----------------------|-------------------------|
| Cell Body            | Polypropylene (White)   |
| Electrode:           | SS316                   |
| Insulator:           | PTFE with epoxy potting |
| Threaded Connection: | ½ & ¾ inch BSP          |
| Cable length :       | 3 meter (STD)           |
| Cell Weight:         | 500 gms ( Approx. )     |

#### Cell Range

0.01 Cell constant : 0.055 to 100 mS/cm

0.10 Cell constant : 1 to 1000 mS/cm

1.00 Cell constant : 10 to 10000 mS/cm

**Programing for model- C-181**



Digital Conductivity / TDS i.e. Model C-181 is conductivity & TDS indicator

**Calibration Procedure**

Press key for 3 seconds display shows Password: 0000

Press & keys to set password as Password: 1603

Then press key display shows cell constant Cell Const: 0.1

Press key to select cell constant this value can be change 1, 0.1 & 0.01  
 than press Key display shows actual cell constant ActualCC: 0.100

Press & keys to set actual cell constant this value can be change +10% of cell constant select i.e.

- If 1 cell constant is set than actual cell constant will change from 0.9 to 1.1 ( i.e. 10% of cell constant)
- If 0.1 cell constant is set than actual cell constant will change from 0.09 to 0.11 ( i.e. 10% of cell constant)
- If 0.01 cell constant is set than actual cell constant will change from 0.009 to 0.011 ( i.e. 10% of cell constant)

If actual cell constant not in the above range display shows Act.CC Not Valid

and go back to actual cell constant menu & process repeat if set within range

Then display shows cable length of cell Cable Len : 3.5M

Press key to select cable length of cell 3.5M / 1M, than press key

Display shows toggle time Tog Time : 0 5 This time is applicable if Conductivity & TDS both are select

Press & keys to set toggle time in seconds max set time is 99 seconds

Than press key display shows regular Conductivity / TDS reading

**Trouble shooting**

| Problem   | Possible Causes   | Suggested Solutions   |
|---|---|---|
| Display Remains zero  | No flow through the cell T fitting  | Open the sampling valve.<br>Mount T as per mention in installation tips<br>Keep the outlet tuning at a higher point than the inlet so that the cell always remains dipped in water. |
|   | Air trapped in the cell T fitting   |   |
|   | Cell not inserted in the correct plane.   | Check the cell wire if brake joined properly  |
|   | Cell wire cut not connected.  |   |
| Display shows over range  | the conductivity of water is higher than the range of meter                     | Use meter of correct range or wait for the conductivity to drop down.   |
| Reading getting displayed but not correct. Or reading fluctuating | Meter and cell are not matching. Mainly applicable where cell wire is extended. | Ensure that the serial number of meter & Connected cell are same.<br>Do not extend the cell cable length.   |
|   | Cell not clean  | Ensure cell is free of any coating of scale or grease.  |
|   | Earthing not connected or improper earthing                                     | Provide proper earthing, voltage between neutral & earth should be <5V.   |
|   | power cable and cell cable is in one conduit pipe.                              | Separate the power cable and cell cable.  |
| No display  | No power supply   | Checks input supply and make proper connections.  |