pH Indicator with Isolated Transmitter, Model 122pH

Features

- Accurate pH display with calibration facility on front panel.
- Large 0.8” Red 7 Segment Display
- Auto Temp Compensation using external PT100
- Isolated 4-20mA transmitter output for logging, remote display etc.
- Digital calibration for pH-7 and pH-4
- Slim enclosure of only 50mm depth

Specifications

- Display : 3½ Digit Red, 0.8” character height LED display
- Range : 0.00 to 14.00 pH
- Auto Temp : 0-100˚C using PT100 ext. sensor compensation
- Calibration : Standard pH-7 : 7.00 ± 1
  Slope pH-4 : 4.00 ± 1
- Accuracy : 0.5% ± 1 Digit
- Transmitter Out : 4-20mA Isolated transmitter output for 0-14.00pH
  Maximum termination resistance is 250Ω
- Input Impedance: $>10^{12}\,\Omega$
- Supply :220V AC ±10% @ 50/60Hz
- Size : Front facia - 96mm x 96mm x 50mm
  Cut Out - 92mm x 92mm
- Enclosure : Plastic ABS
- Weight : 700gms

INSTALLATION

The pH sensor has a very high Input Impedance and hence should be connected using the shortest shielded co-axial cable as possible. Usually the sensor has a 1m lead. You may extend it up to a maximum of 5m using co-axial BNC couplers (Never make joints as this will pick-up noise)

Ensure that the original bottle connected to the pH sensor is unscrewed from the sensor before dipping the sensor into the solution. This bottle is provided only for storage purposes of the sensor. Never let the sensor dry. Always keep it in some solution.

A PT100 sensor is connected for temperature compensation. If not available, a fixed resistance corresponding to the PT100 resistance at room temperature must be terminated in lieu of the PT100 sensor. In actual usage, if auto-temperature compensation is desired, the 110Ω resistance is removed and a PT100 temperature sensor is wired in its place. This must then be dipped in the solution under test.

Further, it is important to note that the pH sensor cable and the PT100 sensor cables are highly sensitive to noise and therefore must not be bundled with high voltage or high current cables. The very high input impedance of the pH sensor is prone to pick up noise, so avoid sparking etc in its vicinity. It may be a good idea to provide additional shielding by running the wire through a grounded metallic tube.

Once the power wiring is completed, connect the pH sensor using the BNC input on the head plate of the instrument.

If automatic temperature compensation is desired, remove the resistance from the rear terminals and connect a PT100 sensor instead. If temp. is different connect the appropriate resistance in case on non-availability of PT100 sensor

The following table gives the resistance offered by a PT100 sensor for different temperatures.

Typical Values are

10°C	15°C	20°C	25°C	30°C	35°C
103.9Ω	105.8Ω	107.7Ω	109.7Ω	111.6Ω	113 Ω

Now power can be switched ON to the instrument.

Calibration

- Dip the sensor in a standard solution of pH-7. If the sensor reads 7.00 then further pH 7 calibration is not required. If reading is not 7.00, then press the CAL switch, the display shows “CAL7” and then the current pH value with MSB digit blinking. Use Increment and Decrement switches to set the display to 7.00. Then press the CAL switch again. The display shows 7.00
- Now, dip the sensor in a standard solution of pH-4. If the sensor reads 4.00 then further pH 4 calibration is not required. If reading is not 4.00, then press the CAL switch, the display shows “SPAN” and then the current pH value with MSB digit blinking. Use Increment and Decrement switches to set the display to 4.00. Then press the CAL switch again. The display shows 4.00
- It is advisable to repeat the above 2 steps once more. Also, when the sensor is shifted from one solution to another, give the sensor sufficient time to stabilize. Also ensure you do not contaminate the solution when shifting the sensor from one to the other.
- Also ensure that the sensor is cleaned regularly.

Factory Calibration:

- In case, the calibration needs to be reverted back to factory calibration, press the UP and Down keys together.
- The Display shows ”FCAL”. Keep the switches pressed till “done” is displayed.
- This will revert the calibration to factory calibration. Any calibration done by the user will be lost.

Isolated Re-transmission output

- An isolated 4-20mA re-transmission output is provided.
- The 4-20mA output is calibrated for 0-14.00pH
- Maximum termination resistance is 250Ω