

# Industrial Grade ORP Sensor

## *KE- ORPS 1001*

### TECHNICAL DATA SHEET

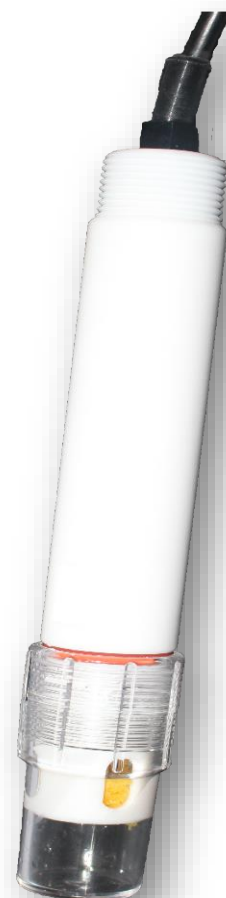
The industrial standard **KE- ORPS 1001** sensor is a solid dielectric sensor used for continuous monitoring of *Oxidation Reduction Potential* of surface water, ground water, alkali chemicals, chlorination systems, pigments, dyes, pulp and paper, electroplating industries and industrial effluent water. The durable PTFE body has an excellent chemical compatibility with anticlogging design which provides easy maintenance.

### Sensor Features

- ⇒ Long Distance reference diffusion path extends electrode life even in harsh environments.
- ⇒ High accuracy with fast response and good repeatability.
- ⇒ Electrode made of high-quality low noise cable, which provides signal output without any interference.
- ⇒ *Pt1000 RTD*, the temperature element used in the **KE- ORPS 1001** sensor is highly accurate and linear throughout the range.

### Sensor Technical Data

Measuring Range (ORP)	Upto $\pm 2000\text{mV}$
Maximum Operating Temperature	85.0°C
Safety Pressure	6 Bar
Connection Mode	Tinned Wire Connection
Cable Length	15 Meter



### Sensor Installation

- ⇒ Do not put Sensor directly into water, the sensor should be installed with Female Thread Socket for Inline Flow through Measurement and Threaded Sensor Housing for Offline Measurement.
- ⇒ Before installation, use Teflon Tape (at 3/4" Thread) to ensure no leakage occurs
- ⇒ Connect the Sensor to Controller, let it stable for 3 Mins, then start calibration work.
- ⇒ Connect / Insert the Sensor vertically upright in the Solution whenever doing calibration.
- ⇒ Sensor to be installed Inline to piping where the pipe line doesn't get dry whenever process is not operational.

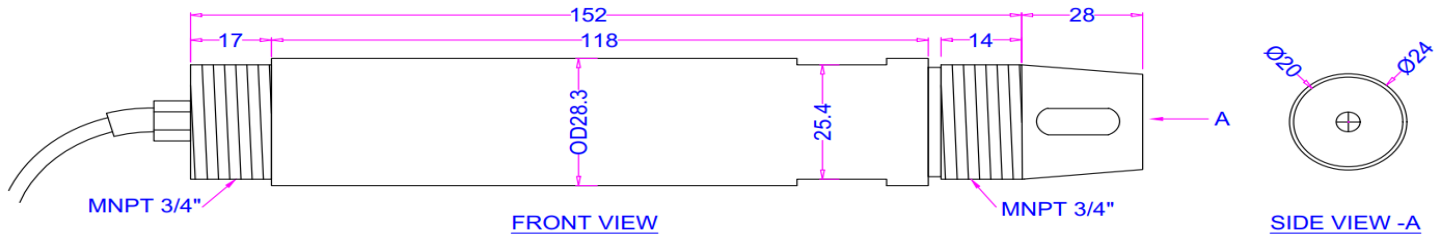
### Sensor Maintenance

- 1- Sensor comes in a container filled with 3.3M KCL bubble solution in the packing and electrode soaks into the sponge to keep the glass bulb and liquid junction activating, however sensor can be washed with De-ionized water before use.
- 2- Throw off air bubbles that are noticed on the glass bulb, otherwise it will cause measurement errors.
- 3- Check if the tinned wires are dry and clean, otherwise use anhydrous alcohol scrub to clean and blow some air to wipe out dust particles.
- 4- Stir the test solution with sensor to accelerate sensor response when calibrating than place the sensor in calibration solution.

PTO

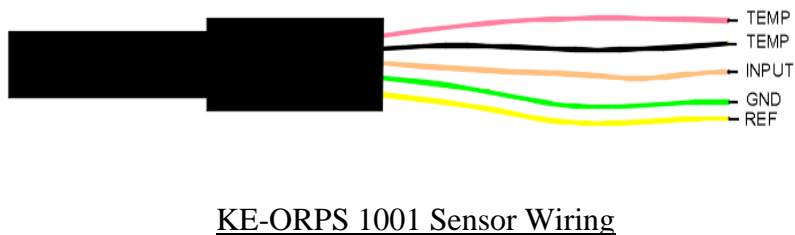
- 5- The Electrode if stained with oil to be cleaned with acetone or alcohol wipes.
- 6- The electrode if stained with insoluble inorganic matter to be cleaned with 30-50% Hydrochloric Acid.
- 7- Use 1 Point calibrations with 2 types of NIST standard and TCT standard buffers for use with RCB ORP controller *KE-ORP 1000*:
  - a) Use 4.00 pH buffer and add a small amount of concentrated Quinhydrone, resulting in saturated solution with theoretical value of  $256\text{mV} \pm 20\text{mV}$ .
  - b) Use 6.86 pH buffer and add a small amount of concentrated Quinhydrone, resulting in saturated solution with theoretical value of  $83\text{mV} \pm 20\text{mV}$ .
- 8- The sensor should be cleaned and calibrated periodically, if the liquid junction between sensor glass bulb and PTFE casing is contaminated use surfactant for cleaning.

## Sensor Dimensional Drawing

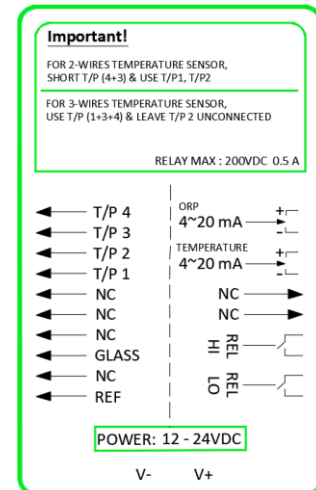


Note: All Dimension are in Millimeters unless otherwise mentioned.

## Sensor Wiring and Connections



KE-ORPS 1001 Sensor Wiring



KE-ORP 1000 Controller Connections Layout

Image above shows the wiring connection names for RCB ORP Sensor *KE-ORPS 1001* and RCB ORP Controller *KE-ORP 1000*. Each Sensor wire connection detail is given below:

- 1- For 2 wire temperature sensor, short **T/P4** and **T/P3**. Connect **TEMP Wire 1** (Pink) with **T/P 1** and **TEMP Wire 2** (Black) with **T/P 2**.
- 2- Connect **INPUT Wire 3** (Copper) with **GLASS** connection of Controller.
- 3- **GND Wire 4** (Green) can be used if required.
- 4- Connect **REF Wire 5** (Yellow) with **REF** connection of Controller.

## Notes:

- ⇒ In case of any issue other than mentioned above, immediately inform RCB representative about the issue which will be resolved at the earliest.
- ⇒ Special fittings Inline or Offline for ORP Sensor *KE-ORPS 1001* can be ordered to RCB separately.