

DO Electrode (9521-10D) Instruction Manual

Thank you for purchasing the HORIBA DO electrode. Read this manual carefully before using the electrode.
*"DO" is an abbreviation of Dissolved Oxygen.

Conformable standards

This equipment conforms to the following standards:



RoHS: EN IEC 63000
9. Monitoring and control instruments including industrial monitoring and control instruments



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Authorised representative in EU and UK

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Cautions during handling



WARNING



Chemical solution

Highly concentrated potassium hydroxide (KOH) is used in the internal solution of the electrode.
If the internal solution in the electrode comes in contact with your hands or skin, wash immediately with water. If the internal solution comes in contact with your eyes, flush immediately with large amounts of water and seek treatment by a physician. Follow the instructions on the associated Safety Data Sheet (SDS).

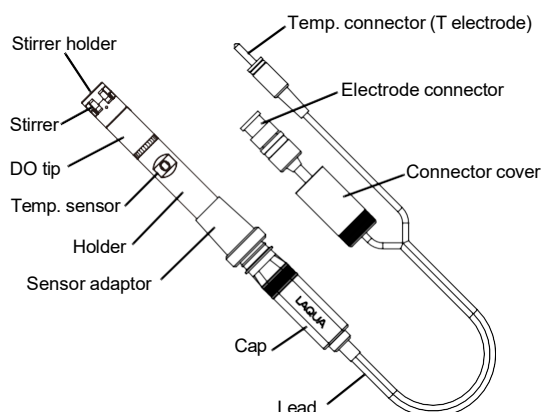
- Do not allow the electrode to be in contact with any hard surface.
- An extremely thin membrane is stretched across the DO tip and DO responsive part. Do not allow the membrane to be in contact with any hard surface and do not exert undue force on the diaphragm.
- When attaching the DO tip to the electrode body, check to make sure that O-ring is attached. Attach the DO tip securely to the electrode body.
- The electrode connector requires high insulation. Do not allow the connector to be in contact with water or dirty hands.
- DO tips that are no longer usable should be disposed of as industrial waste.
- The water-resistant construction of meters can be used in combination with this electrode to provide water resistant construction (conforming to IP-67). When measuring, do not immerse the connector in the sample.

Packaged contents

Name	Q'ty
DO electrode	1 pc
DO tip (7544)	1 pc
Sensor adaptor (For TS19)	1 pc
Stirrer	1 pc
Stirrer holder	1 pc
Instruction manual	1 copy
Packing box	1 pc

Specifications and names of parts

Names of parts



Specifications

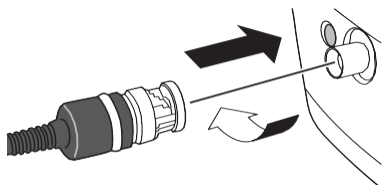
Model	9521-10D	
Measurement principles	Membrane galvanic cell	
Measurement range	0 mg/L to 20.00 mg/L	
Usable temp. range	0°C to 50°C	
Material	Stirrer holder	PPS*
	DO tip	PPS*, Sn, Ag
	Temp. sensor	SUS316L*
	Holder	PC/ABS*
	Sensor adaptor	PVC*
	Cap	PSF
Electrode length	183 mm	
Ext. diam. of wetted part	15.6 mm	
Lead length	1 m	

*: Wetted material

Preparations

Connecting to meter

1. Slide the connector cover to the cable side from the electrode connector.
2. Insert the electrode connector into the connector port sleeve on the meter, after aligning with the pin.
3. Press the electrode connector into the connector port on the meter, while turning the connector to the right.



4. Slide the connector cover over the connector. Then, push the cover in straight until it comes in light contact with the meter case.
5. Insert the temperature connector into the jack on the meter. Insert the connector firmly, until the O-ring on the connector can no longer be seen.

Preparing electrode

1. Remove the DO tip (7544) from the package.
2. Remove the short socket from the DO tip.
3. Attach the sensor adapter to the holder when measuring in BOD bottle.
4. Attached the DO tip to the holder.
5. Put the stirrer into the stirrer holder.
6. Attach the stirrer holder to DO tip.

Note

- Do not dispose of the short socket that was removed. It is necessary when storing the electrode.
- When attaching the DO tip, make sure that the O-ring is attached to the DO tip, and screw the DO tip on firmly, until it stops.

Measurement

Air calibration

1. Clean the electrode with tap water and remove any drop of liquids from the membrane at the end of the DO tip, by wiping away the liquid with a soft cloth.
2. Calibrate the electrode in clean air.

Note

- Equalizing the temperature of the DO electrode and the air is important for achieving a proper air calibration. Allow the DO electrode to sit in the open air for a short time (approx. 20 minutes) prior to calibration.
- Avoid calibrating in places with extreme temperature fluctuations, places exposed to the wind or rain, and places near heating equipment.
- Do not grasp the temp. sensor during or immediately before/after calibration. The body temperature affects the stability of the readings.

Standard solution calibration and sample measurement

1. Clean the electrode with tap water and dry it with a soft cloth, each time prior to immersing it in the solution.
2. Use the stirrer to stabilize the readings (at a speed of approx. 1000 to 1500 rpm) during calibration and measurement.

Note

- The electrode membrane is thin and easily torn. Place it into solution slowly.
- Do not shake the electrode holding the lead in your hand, and do not pull or tie the lead.
- When immersing the electrode in the solution, be sure that the temperature sensor is completely immersed.

- Stir the DO electrode around in the solution, so that the temperature of the electrode becomes the same as that of the solution.
- Make sure the membrane has no dirt or air bubbles on it.
- Measure the DO of the solution, making sure the flow speed on the surface of the membrane is constant.
- Immerse the electrode into the solution at an angle in order to prevent air bubbles from cling to the DO tip membrane.

Maintenance

- After finishing measurement, wash the DO electrode well with tap water, then keep it immersed in tap water. Leave the electrode membrane connected to the meter.
- If the electrode membrane is dirty, clean it by using a soft cloth, taking care not to scratch the membrane. Then, rinse the membrane with tap water.
- If an error occurs during the calibration, replace the DO tip.

Storage

- The electrode should remain to be connected to the meter during storage.
- To store the electrode without the meter, follow the below procedure.
 1. Remove the electrode from the connector on the meter.
 2. Clean the electrode well with tap water, then dry it with a soft cloth.
 3. Remove the DO tip from the holder.
 4. Put the short socket on the DO tip.
 5. Store the DO tip in a closed container in a cool, dark location with an oxygen scavenger.

Note

- Avoid storing the electrode in hot place or places with high humidity. Store the electrode indoors and out of direct sunlight.
- The color of the internal solution may change depending on storage conditions but does not affect performances of the product.

Disposal method

When disposing of the electrode, follow the related laws and/or regulations of your country/region. It is possible to separate the lead part and the electrode part by cutting the cable. The lead is classified as plastic*. The electrode part is mainly composed of hard plastic, but contains metal. The internal solution (highly concentrated KOH) of DO tip is classified as waste alkali*.

Name (Refer to specifications and names of parts)	Disposal classification
Electrode parts (Holder, DO tip)	Plastics (Containing metals)
Internal solution (DO tip)	Waste alkali
Lead part	Plastics
Instruction Manual, Package	Papers

*: Disposal classifications depend on each country or region.

Disassembly method

