

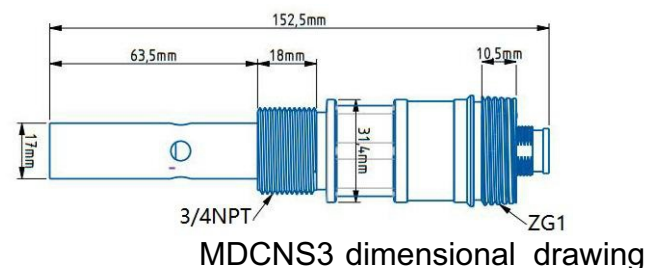
Conductivity electrode operating manual

Safe operation procedure for electrode installation

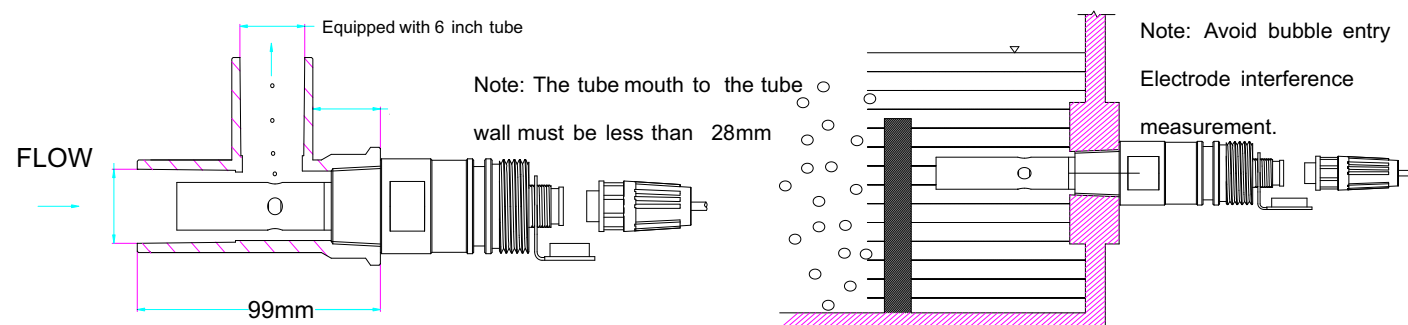
1. Do not remove the electrode when there is pressure in the middle line
 2. Do not exceed the maximum temperature / pressure usage specification
 3. Do not alter the product structure
 4. Wear protective goggles or masks for installation or maintenance
 5. When the electrode is connected to the instrument, please power off the instrument
- Serious personal injury may be caused if it is not performed according to the safe operating procedures

MDCNS3 (2E Sensor Installation)

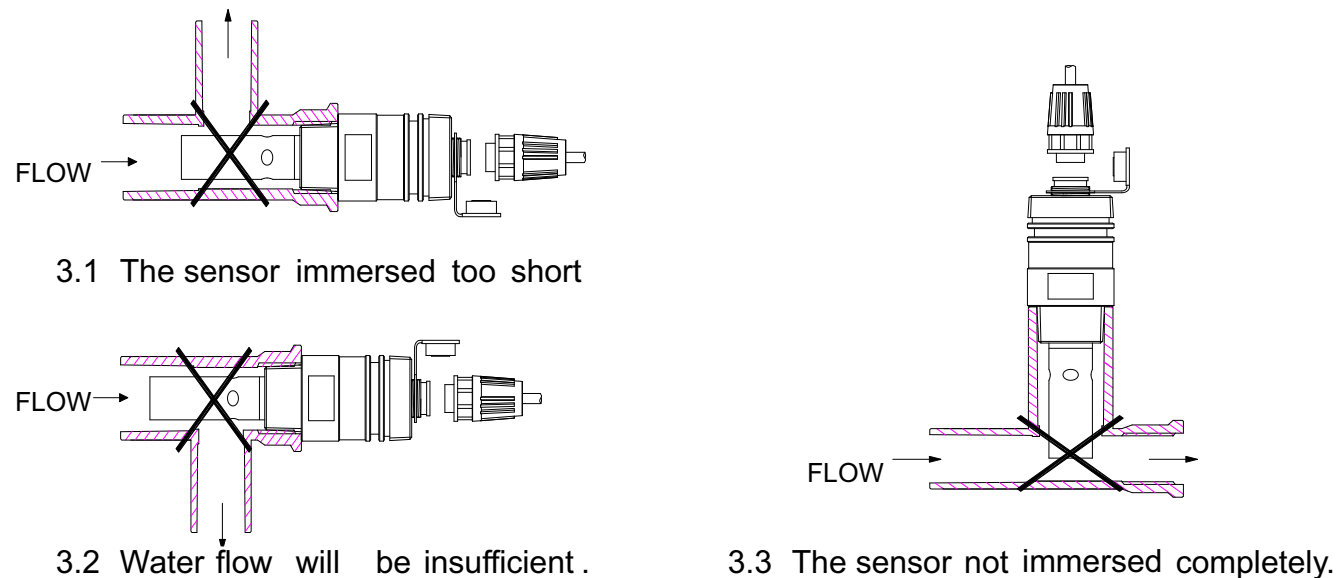
1. Sensor Overview



2. Correct Installation

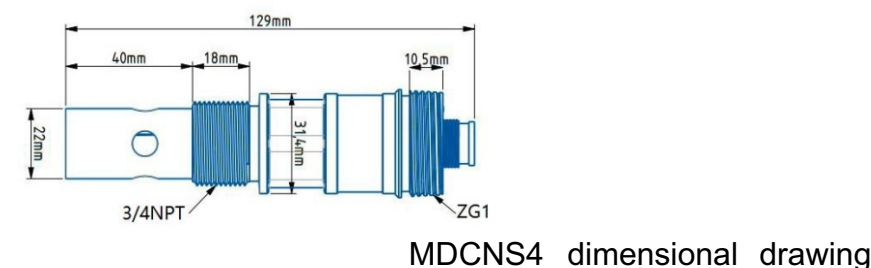


3. Incorrect Installation

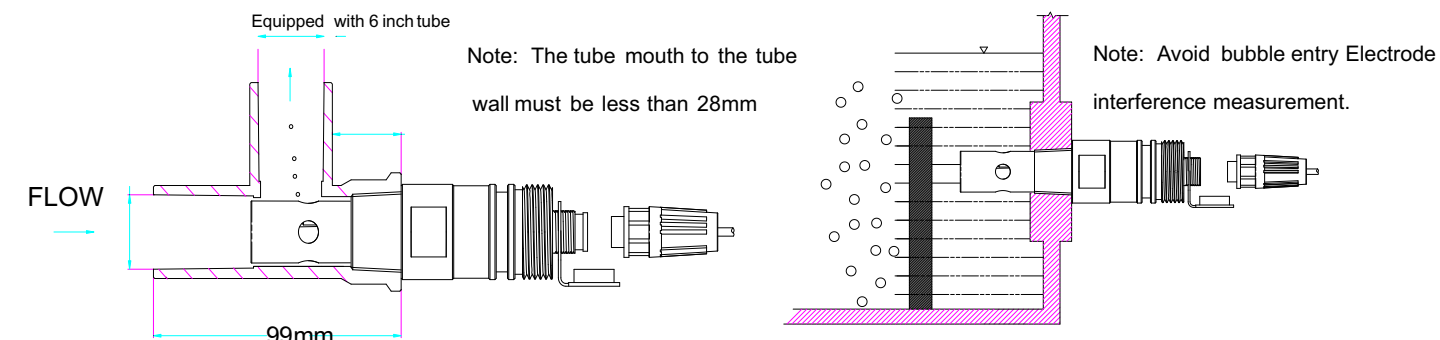


MDCNS4 (4E Sensor Installation)

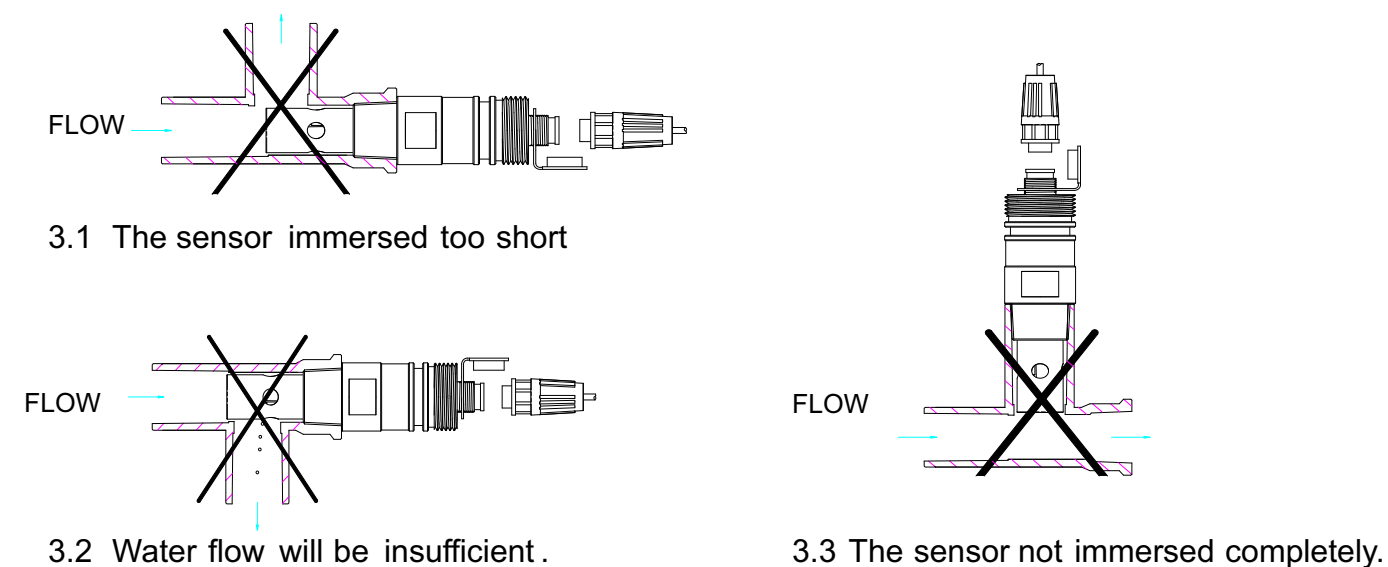
1. Sensor Overview



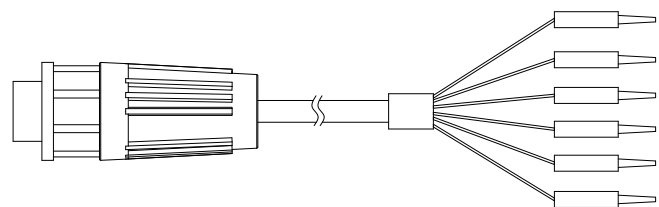
2. Correct Installation



3. Incorrect Installation



Wiring illustration



Wire color	Wire description
Transparent	SHIELD
Brown	CELL1
Red	CELL2
Orange	CELL3
Black	CELL4
Yellow	T / P

Specification

■ Pure water / ultrapure water electrode MDCNS3

The electrode constant: 0.01
Measuring range: 20.0μS/cm~20.00MΩ-cm
Material: titanium metal、PPS
Temperature compensation: NTC-30K
Working temperature: 0 ~ 110℃
Maximum pressure: 6 bar @25℃
Fixed mode : Lower 3 / 4 " NPT: Upper ZG 1
Electrode connector: 6pin waterproof connector

■ Quad-pole-type conductance electrode MDCNS4

The electrode constant: 0.5
Measuring range: 0 ~ 500.0 mS/cm
Material: Titanium metal (MCS1405-TI)/Ha type alloy (MDCNS4)PPS:
Temperature compensation: NTC-30K
Working temperature: 0 ~ 130℃
Maximum pressure: 6 bar @25℃
Fixed mode : Lower 3 / 4 " NPT: Upper ZG 1
Electrode connector: 6pin waterproof connector

Maintenance

Any attachments on the electrode will cause an offset or slow reaction using a neutral cleaning solution with a soft brush or cotton stick. Clean the electrode metal surface.

Trouble Shooting

Madeco original insists on things, the product design for the actual condition of water quality, to ensure that the user can accurately grasp the quality of water, to present the real water quality data, this includes, of course, the installation or system interference factors such as the water bubbles, measuring water or not fully contact with water and lead to measuring range or measurement distortion phenomenon. Please refer to this specification for details and install correctly to ensure correct reading.

(1) Pure water / ultrapure water electrode MDCNS3:

Fault phenomenon	Possible factors	Processing method
measurement value shows---- MΩ - cm (Over range)	1.Bad wiring 2.Electrodes are not sufficiently submerged 3.Electrodes are disturbed by air bubbles	1.Re-check that the wiring is correct 2.Verify that the electrode installation position is located correctly (see the electrode installation instructions) 3.Remove the air bubbles and check for the correct installation
Measurement offset	1.The electrodes were contaminated	1. Clean the electrodes and recalibrate the electrode coefficient if necessary
Measurement value low	1. Electrode immersion is too short to cause stagnant water	1. Attached drawings indicating that the installation are in place

■ How to judge the factors of the instrument or system assembly?

It can be checked in the following several steps:

1. Check for the correct electrode wiring.(Please refer to the wiring diagram of the operation instructions.)
2. Electrodes are cleaned according to the maintenance procedures.(Please refer to the electrode installation instructions for maintenance)
3. The electrode constant of the instrument should be set correctly, and the error of the temperature should not be too large (normal is ± 0.5℃).
4. After placing the electrode out in the air, the instrument measurement value should show - - - -MΩ -cm (display excess range).
5. Hold the outer tube against the inner tube to short circuit the electrode, the instrument measurement shall show 0.0 MΩ -cm
- 6.Place the electrode in the circulation tank or beaker, and drain the water sample to be measured from the sampling port to the circulation tank or beaker. Keep the water sample overflow all the time, measure and record the reading, prepare a set of corrected portable conductivity meter or a corrected comparison electrode for comparison verification.

After checking in the above steps, it can be determined that the instrument assembly is correct. If the electrode

installation is not properly immersed in water or affected by the bubble shows the excess range or the measurement

error, please install the electrode according to the electrode installation instructions.

(2) Quad-pole-type conductance electrode MDCNS4:

Fault phenomenon	Possible factors	Processing method
measured values shows ---- μ S/cm (Over range)	1. Displays the excess range 2. Bad wiring	1. Please switch to the higher-grade position 2. Re-check that the wiring is correct
Measurement offset	1. The electrodes were contaminated	1. Clean the electrodes and recalibrate the electrode coefficient if necessary
Measurement value low	1. Electrodes are disturbed by air bubbles	1. Remove the air bubbles and check for the correct installation
The measured value shows 0.0 μ S / cm	1. Poor electrode wiring (open circuit)	1. Re-check that the wiring is correct

■ How to judge the factors of the instrument or system assembly?

It can be checked in the following steps:

1. Check for the correct electrode wiring.(Please refer to the wiring diagram of the operation instructions.)
2. Electrodes are cleaned according to the maintenance procedures.(Please refer to the electrode installation instructions for maintenance)
3. The electrode constant of the instrument should be set correctly, and the error of the temperature should not be too large (normal is $\pm 0.5^{\circ}\text{C}$).
4. After removing the electrode and placing it in the air, the instrument measurement shall be 0.0 μ S / cm.
5. A. Place the electrode in the circulation tank or beaker, drain the water sample to be measured from the sampling port to the circulation tank or beaker, measure and record the reading, prepare a set of corrected portable conductivity meter or a corrected comparison electrode for comparison verification. Note: the measurement must be taken alternately to avoid the mutual interference of the measurement value.
B. Place the electrode in the conductivity standard solution (1413 μ S / cm at 25°C , or the standard solution of any other standard value) and rescale the coefficient.
6. After checking the above steps, the instrument can be determined, causing the measurement error because the electrode is contaminated or the electrode is affected by bubble interference.



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