

Dissolved oxygen meter

Committed to process automation solutions

Datasheet



SUP-DM2800

Dissolved oxygen meter

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Product description:

SUP-DM2800 Dissolved oxygen meter

Measuring principle The oxygen molecules diffused through the membrane are reduced to hydroxide ions (OH⁻) at the cathode. Silver is oxidized to silver ions (Ag⁺) at the anode (this forms a silver halogenide layer). A current flows due to the electron donation at the cathode and the electron acceptance at the anode. Under constant conditions, this flow is proportional to the oxygen content of the medium. This current is converted in the transmitter and indicated on the display as an oxygen concentration in mg/l, µg/l, or Vol%, as a saturation index in % SAT or as an oxygen partial pressure in hPa.



SUP-DM2800
Dissolved Oxygen meter

Application:

- Sewage treatment plants:

Oxygen measurement and regulation in the activated sludge basin for a highly efficient biological cleaning process

- Environmental protection water monitoring:

Oxygen measurement in rivers, lakes or seas as an indicator of the water quality

- Water treatment:

Oxygen measurement for status monitoring of drinking water for example (oxygen enrichment, corrosion protection etc.)

- Fish farming:

Oxygen measurement and regulation for optimum living and growth conditions

Function and system design

Measuring principle
 The oxygen molecules diffused through the membrane are reduced to hydroxide ions (OH⁻) at the cathode. Silver is oxidized to silver ions (Ag⁺) at the anode (this forms a silver halogenide layer). A current flows due to the electron donation at the cathode and the electron acceptance at the anode. Under constant conditions, this flow is proportional to the oxygen content of the medium. This current is converted in the transmitter and indicated on the display as an oxygen concentration in mg/l, µg/l, or Vol%, as a saturation index in % SAT or as an oxygen partial pressure in hPa.

Features

- Support dissolved oxygen(DO), saturation(SAT), oxygen partial pressure(OPP) and temperature measure.
- Support upper/lower limit control, transmitting output, RS485 communication.
- Configurable manual and auto temperature offset function.
- Configurable upper/lower limit alarm and delay.
- Configurable hummer and LCD backlight switch.
- Optional language, Chinese and English.
- Zero oxygen and full-scale calibration.

Technical Specifications

Measurement variables	Dissolved oxygen, saturation, oxygen partial pressure
Measuring range	0 - 20mg/L, 0 - 200%, 0 - 400hPa
Resolution	0.01mg/L, 0.1%, 1hPa
Accuracy	±1.5%FS
Repetition	±0.5%FS
Temperature measurement type	NTC 10K/PT1000
Auto A/manual H Measuring range	-10 - 60°C Resolution: 0.1°C Correction accuracy: ±0.5°C
Output type	4 - 20mA current transmission output
Max.loop resistance	750Ω
Accuracy	0.1%FS
Output type	RS485 digital signal output
Communication protocol	Standard MODBUS-RTU (customizable)
Power supply	AC220V±10%, 50Hz/60Hz (optional 24V±10%)
Alarm relay	AC250V、3A

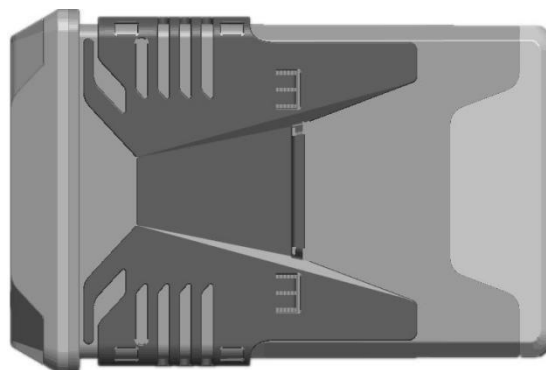
Calibration note	<ol style="list-style-type: none"> 1. To make a calibration please read the manual carefully before calibration and electrode manual tells completed related to electrode polarization, zero point calibration and calibration notes in the air. 2. For calibration please select % or mg/L . One point calibration suggested the use of % calibration in the air. 3. Making one point calibration, you only need to calibrate the slope of the electrode. Under normal circumstances you can simply make one point calibration. 4. Carry out two-point calibration, calibration in an oxygen-free environment is required for electrode zero point, calibration the slope of the electrode in the oxygen-saturated environment. 5. Preparation of oxygen-free water: Configuring 250mL 5% sodium sulphite solution, you can also add a small amount of cobalt chloride as the catalyst. 6. Oxygen-saturated environment: taking distilled water 300~500mL, in relatively stable at an airborne averment at a temperature of at least 30 minutes. 7. the different brands of electrode calibration are slightly different.
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Cleaning and maintenance	<p>Keep the penetration of electrode interface clean. The application from different cleaning requirements may vary from general industrial waste water has suggested that each 7~15 days use clean water to rinse once.</p> <p>General industrial waste water has suggested that each 30~45 days change filling solution and every 6 months change the membrane once.</p>
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Installation methods

① dissolved oxygen transmitter

Open a 92.5 * 92.5(mm) installation hole on the instrument cabinet or installation panel (the dimension is 100*100*150mm). Insert the instrument into the installation hole and latch on the butterfly clasp, as shown below.

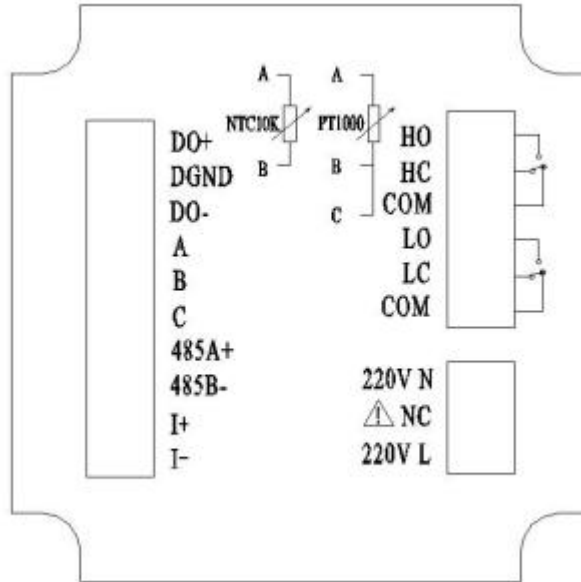


② dissolved oxygen sensor



Dissolved Oxygen Sensor
(Replaceable membrane head)

Identification
of terminal



Wiring diagram

DO+: Dissolved oxygen electrode anode

DGND: Dissolved oxygen electrode shielded wire

DO-: Dissolved oxygen electrode cathode

TEMPA: temperature offset terminal A,NTC10K A and PT1000 A

TEMPB: temperature offset terminal B,NTC10K B and PT1000 B

TEMPC: temperature offset terminal C, temperature of PT1000 three-wire system and PT1000

two-wire system need to be short-circuited with TEMPB, NTC10K does not need to connect with TEMPC.

RS485(A+):RS485 communication interface A+

RS485(B-):RS485 communication interface B-

I(+):4-20mA output port +

I(-):4-20mA output port -

HO: high alarm of normal open relay

HC: high alarm of normal close relay

COM: common port

LO: low alarm of normal open relay

LC: low alarm of normal close relay

COM: common port

220V L:AC220V fire wire

NC: null

220V N:AC220V zero wire



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