



## Water analysis and process control equipment

  
Ming Bo Instrument Co., Ltd.



Operation guidelines of MINBO: Honest,  
Quality, Professional, Enthusiasm.

We have a professional R&D team for  
developing high quality products,  
Because the high quality is our promise for  
our customers.

For the earth to keep developing as well  
as reducing the cost and saving energy,  
To make the world can keep developing.

Trust your choice,let's make a benefit for  
our environment.

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## PH-6100 pH/ORP Transmitter

### Application area

- ♦ Chemical process
- ♦ Recycle & cleaner
- ♦ Industrial process
- ♦ Ferment process
- ♦ Drinking & surface water measurement
- ♦ Water & waste water treatment

### Features

- ♦ 144\*144 microprocessor pH/ORP transmitter
- ♦ Waterproof & dustproof proof design, to fit wall/ panel/ pipe installation
- ♦ With security password for the calibration and parameter setting
- ♦ Equipped RS-485 MODBUS RTU protocol, it can connect to the digital system directly. (PH-6100RS serial only)
- ♦ Isolate current DC 0/4~20mA with programmable according to pH/ORP、Temp. (PH-6100 serial only)
- ♦ Large LCD screen, with operation status and special symbol display
- ♦ Providing a sensor self-cleaning device contact, the program set out
- ♦ Providing a solution grounding function, can eliminate sample charging interference
- ♦ With backlight sensor, automatic and manual backlight setting function
- ♦ It provides a set of electrode cleaning device contact the program set out

### Specifications

- ♦ AC supply 100V~240VAC±10%, 50/60Hz
- ♦ DC supply 20~40VDC
- ♦ Temp 0~50℃
- ♦ Dimensions 144mm×144mm×115mm(H×W×D)
- ♦ Protection Correspond to IP65(NEMA 4)
- ♦ Installation wall/panel/pipe mounting
- ♦ Cut off Dimensions 138mm×138mm (H×W)
- ♦ Weight 0.8Kg

### Ordering Guide

#### Transmitter

- ♦ PH-6100
- ♦ PH-6100D(20~40VDC)
- ♦ PH-6100DRS(20~40VDC) RS-485
- ♦ PH-6100RS RS-485



### Parameters

Range	-2.00...+16.00pH/ -1999...+1999mV/ -30.0...+130.0℃
Resolution	0.01pH/1mV/0.1℃
Accuracy (±1Digit)	±0.01pH/±0.1%/±0.2℃; With manual correction function
Input Resistance	>10 <sup>12</sup> Ω
Temperature Compensation	
Automatic recognition with Pt1000/NTC30K or manual	
Display	LCD display with sensitization sensor for Auto/manual illumination function
Grounding Solution	
A solution can eliminate interference Charged	
Hi/Lo Relay Output	
Two sets Hi/Lo programmable, N/OFF, 240VAC/ 0.5A Max	
Analog Output	
1or 2 sets of programmable & isolated DC 0/4~20mA corresponding to pH/ORP、Temp. measurement. Max. load 500Ω	
Wash Relay Output	
ON: 0...9999sec. / OFF: 0...999.9hours	

#### Standard

- ♦ Electrode
- ♦ Bracket

## EasyDo PH-620 pH/ORP Transmitter

### Application area

- ♦ Recycle & cleaner
- ♦ Chemical process
- ♦ Industrial process
- ♦ Ferment process
- ♦ Drinking & surface water measurement
- ♦ Water & waste water treatment

### Features

- ♦ 144\*144 microprocessor pH/ORP transmitter
- ♦ Isolate current DC 0/4~20mA with programmable according to pH/ORP、Temp. (PH-620 serial only)
- ♦ Large LCD screen, with operation status and special special symbol display
- ♦ Providing a sensor self-cleaning device contact, the program set out
- ♦ Providing a solution grounding function, can eliminate sample charging interference
- ♦ Waterproof & dustproof proof design, to fit wall / panel / pipe installation

### Parameters



Range	0.00...14.00pH/-1999...+1999mV/ -10.0...110.0℃
Resolution	0.01pH/1mV/0.1℃
Accuracy (±1Digit)	±0.01pH/±0.1%/±0.2℃; With manual correction function
Input Resistance	>10 <sup>12</sup> Ω
Temperature Compensation	
Automatic recognition with Pt1000/NTC30K or manual	
Display	LCD display with sensitization sensor for Auto/manual illumination function
Grounding Solution	
a solution can eliminate interference Charged	
Hi/Lo Relay Output	
Two sets Hi/Lo programmable, N/OFF, 240VAC/ 0.5A Max	
Analog Output	
2 channel isolate current DC 0/4~20mA with programmable according to pH/ORP、Temp. Max. load 500Ω	
Wash Relay Output	
ON: 0...9999sec. / OFF: 0...999.9hours	



### Specifications

AC supply	100V~240VAC±10%, 50/60Hz
Temp	0~50℃
Dimensions	144mm×144mm×115mm(H×W×D)
Protection	Correspond to IP65(NEMA 4)
Installation	wall/panel/pipe mounting
Cut off Dimensions	138mm×138mm (H×W)
Weight	0.8Kg

### Operating Principle

The design principle of this instrument is to use the button (   ) to replace the traditional mechanical knob operation mode, suitable for traditional water pollution plant personnel operation and use.

### Ordering Guide

#### Transmitter

- ♦ PH-620

#### Standard

- ♦ Electrode
- ♦ Bracket



## Smart PH-6300 pH/ORP Transmitter

### Application area

Widely used in waste water treatment, purewater , recycled water, boiler water systems, and electronics,electroplating , printing and dyeing , chemical , food, pharmaceutical and other process areas, Large sewage treatment plants, industrial process monitoring applications such excellence.

### Features

- ♦ 96X96 microprocessor pH/ORP transmitter
- ♦ Waterproof & dustproof proof design, to fit wall/ panel/ pipe installation.
- ♦ Providing digital filtering, to filter out interference values to make the water more stable test
- ♦ With security password for the calibration and parameter setting
- ♦ Providing a sensor self-cleaning device contact, the program set out
- ♦ Large LCM screen, with operation status and special symbol display
- ♦ Providing a solution grounding function, can eliminate sample charging interference
- ♦ With 3-point automatic calibration; manual and automatic temperature compensation
- ♦ With backlight sensor, automatic and manual backlight setting function
- ♦ Equipped RS-485 MODBUS RTU protocol, it can connect to the digital system directly(PH-6300RS serial only)
- ♦ Two programmable output (PH-6300 serial only)

### Specifications

AC supply	100V-240VAC±10%,50/60Hz
DC supply	20-40VDC
Temp	0...50℃
Dimensions	96mm×96mm×148mm(H×W×D)
Protection	Correspond to IP65(NEMA4)
Installation	Wall/panel/pipe mounting
Cut off Dimensions	91mm×91mm (H×W)
Weight	0.4Kg



### Parameters

Range	-2.00~16.00pH/-1999~+1999mV/ -30.0~130.0℃
Resolution	0.01pH/1mV/0.1℃
Accuracy	±0.01pH/±0.1%/±0.2℃;With (±1Digit) manual correction function
Input Resistance	>10 <sup>12</sup> Ω
Temperature Compensation	Automatic recognition with Pt1000/NTC30K or manual Display
LCM display with sensitization sensorfor Auto/manual illumination function	
Solution Ground	The electric interference can be eliminated by solution ground
Hi/Low Relay Output	Two sets Hi/Low programmable,N/OFF, 240VAC/ 0.5A Max
Analog Output	2 sets of programmable & isolated DC 0/4-20mA corresponding to pH/ORP, Temp. measurement. Max. load 500Ω
Wash Relay Output	ON: 0...9999sec. / OFF: 0...999.9hours

### Ordering Guide

#### Transmitter

- ♦ PH-6300
- ♦ PH-6300D(20-40VDC)
- ♦ PH-6300RS RS-485
- ♦ PH-6300DRS(20-40VDC) RS-485

#### Standard

- ♦ Electrode
- ♦ Bracket

## pH/ORP Electrodes and Accessories

### POLILYTE PRO 120 FC5 HAMILTON Glass composite pH electrode

#### Feature

- ♦ Hole technology to replace common ceramic membrane technology, porous ceramic is 200 times larger
- ♦ POLISOLVE The reference was a lot of resistance to organic solvents
- ♦ In low conductivity samples equally well

#### Specification

- ♦ Test Range: 0...14pH
- ♦ Pressure range: 0. 6MPa
- ♦ Temperature range: 0...60℃
- ♦ The minimum sample conductivity: 2us/cm
- ♦ Reference electrolyte: POLISOLVE



### MPC1202/MPC1312/MPS1312 two composite/ three composite/four composite pH electrode

#### Feature

- ♦ Adopt annular stain Junction Teflon resistant to pollution
- ♦ PC material/ PET material, easy to install
- ♦ 3/4 NPT teeth mouth for easy installation
- ♦ Composite pH, reference / Warming / solution ground capabilities

#### Specification

- ♦ Test range: 0...14pH/1000mV
- ♦ Pressure range: 0. 6MPa
- ♦ Temperature range: 0...90℃



### MG1202/MG1202ORP Glass composite pH electrode

#### Feature

- ♦ Adopt annular stain Junction Teflon resistant to pollution
- ♦ Corrosion resistance

#### Specification

- ♦ Test range: 0...14pH/1000mV
- ♦ Pressure range: 0. 6MPa
- ♦ Temperature range: 0...90℃



### MG-1205 Glass composite pH electrode

#### Feature

- ♦ Made in German
- ♦ High stability
- ♦ Resistant to pollution
- ♦ Special reference design

#### Specification

- ♦ Test Range: 0...14pH
- ♦ Pressure range: 0. 6MPa
- ♦ Temperature range: -5...+70℃



### pH / ORP buffer

### FC01 flow cell electrode



### PP-100A Bracket

### PP-100B Bracket



### Other Options:

- ♦ PT01 electrode protective tube
- ♦ CLN 01 glass electrode cleaning device
- ♦ CLN 02 Molded electrode cleaning device
- ♦ MF-01 floating electrode protection tube holder

## COND-8100 Conductivity Transmitter

### Application area

- ♦ Industrial process
- ♦ Ferment process
- ♦ Recycle & cleaner
- ♦ Chemical process
- ♦ Drinking & surface water measurement
- ♦ Water & waste water treatment

### Features

- ♦ 144X144 microprocessor conductivity transmitter.
- ♦ Waterproof & dustproof proof design, to fit wall/ panel /pipe installation.
- ♦ The conductivity, resistivity, salinity can be measured.
- ♦ With backlight sensor, automatic and manual backlight setting function
- ♦ Automatic sensor clean function with programable time interval and hysteresis.
- ♦ Large LCD display, it can show the operation status and symbols.
- ♦ It can be connected to two poles and four poles conductivity electrode.
- ♦ Automatic calibration; manual/auto. temperature compensation.
- ♦ With password and multi-key design, security protection enhancement.
- ♦ Equipped RS-485 MODBUS RTU protocol, it can connect to the digital system directly.(Cond-8100RS serial only)
- ♦ Two programmable output (Cond-8100 serial only)
- ♦ TDS optional

### Specifications

AC supply	100V...240VAC±10%,50/60Hz
DC supply	20...40VDC
Temp	0...50℃
Dimensions	144mm×144mm×115mm(H×W×D)
Protection	Correspond to IP65(NEMA4)
Installation	Wall/panel/pipe mounting
Cut off Dimensions	138mm×138mm (H×W)
Weight	0.8Kg

### Ordering Guide

#### Transmitter

- ♦ COND-8100
- ♦ COND-8100D(20...40VDC)
- ♦ COND-8100DRS(20...40VDC) RS-485
- ♦ COND-8100RS RS-485



### Parameters

Range/Resolution/Accuracy(±1Digit)	
Conductivity	0.000uS/cm...200.0mS/cm /0.001uS/cm /±1% /0.001uS/cm/±1%
Specific resistance	0.000uS/cm...20.00MΩ.cm/ 0.01MΩ.cm/±1%
Salinity	0.0ppt...70.0ppt /0.1ppt /±1%
Temp	-30.0℃...+130.0℃ /0.1℃/±0.2%; With manual correction function
TDS	0...19999ppm/0.001ppm /±1%
Electrode coefficient	0.01,0.1,1,10.00 1/cm ; 0.0050...19.99 1/cm adjustable.
Temp. compensation	
Automatic recognition with Pt1000/NTC30K or manual	
Temp. coefficient	
Conductivity: Linear(0.00%...20.00%)or non-Linear ;	
Resistivity: non-Linear	
Hi/Lo Relay Output	
Two sets Hi/Lo programmable,N/OFF, 240VAC/ 0.5A Max	
Analog Output	
1or 2 sets of programmable & isolate current DC 0/4...20mA with programable according to cond. /res. / sal./Temp. Max. load 500Ω.	
Wash Relay Output	
ON: 0...9999sec. / OFF: 0...999.9hours	

### Standard

- ♦ MCS1407 quadrupole conductivity electrode

## COND-8300 Conductivity Transmitter

### Application area

Widely used in waste water treatment, pure water, recycled water, boiler water systems And electronics, electroplating, printing and dyeing , chemical ,food, pharmaceutical and other process areas ,Large sewage treatment plants, industrial process monitoring applications such excellence.

### Characteristic

- ♦ 96X96 microprocessor conductivity transmitter.
- ♦ Waterproof & dustproof proof design, to fit wall/ panel/ pipe installation.
- ♦ The conductivity,resistivity,salinity can be measured.
- ♦ With backlight sensor, automatic and manual backlight setting function
- ♦ Automatic sensor clean function with programable time interval and hysteresis.
- ♦ Large LCM display, it can show the operation status and symbols.
- ♦ It can be connected to two poles and four poles conductivity electrode.
- ♦ Provides digital filter function , can filter out interference value , to make the reading more stable.
- ♦ Automatic calibration; manual/auto. temperature compensation.
- ♦ With password and multi-key design, security protection enhancement.
- ♦ Equipped RS-485 MODBUS RTU protocol, it can connect to the digital system directly.(COND-8300RS serial only)
- ♦ Two programmable output(COND-8300 serial only)
- ♦ TDS optional

### Ordering Guide

#### Transmitter

- ♦ COND-8300
- ♦ COND-8300D(20-40VDC)
- ♦ COND-8300RS RS-485
- ♦ COND-8300DRS(20-40VDC) RS-485
- ♦ Standard
- ♦ MCS1407 quadrupole conductivity electrode



### Parameters

Range/Resolution/Accuracy(±1Digit)	
Conductivity	0.000uS/cm...200.0mS/cm /0.001uS/cm /±1%
Specific resistance	0.000...20.00MΩ.cm/0.01MΩ.cm /±1%
Salinity	0.0ppt...70.0ppt /0.1ppt /±1%
Temp	-30.0℃ ...+130.0℃ /0.1℃/±0.2%;With manual correction function
TDS	0...19999ppm/0.001ppm /±1%±1Digit
Electrode coefficient	
0.01,0.1,1,10.00 1/cm ; 0.0050...19.99 1/cm adjustable.	
Temp. compensation	
Automatic recognition with Pt1000/NTC30K or manual	
Temp. coefficient	
Conductivity: Linear(0.00%...20.00%)or non-Linear ;	
Resistivity: non-Linear	
Hi/Lo Relay Output	
Two sets Hi/Lo programmable,N/OFF, 240VAC/ 0.5A Max	
Analog Output	
2 sets of programmable & isolate current DC 0/4-20mA with programable according to cond. /res. / sal./Temp. Max. load 500Ω.	
Wash Relay Output	
ON: 0...9999sec. / OFF: 0...999.9hours	

### Specifications

AC supply	100V-240VAC±10%,50/60Hz
DC supply	20-40VDC
Temp	0-50℃
Dimensions	96mm×96mm×148mm(H×W×D)
Protection	Correspond to IP65(NEMA4)
Installation	Wall / panel / pipe mounting
Cut off Dimensions	91mm×91mm (H×W)
Weight	0.4Kg



## Electrodes and Accessories

MCS1407 quadrupole conductivity electrode

### Feature

- ♦ In the solution of higher concentration, the electrode is not easy to be polarized, and the stability of the data is stable. Good reproducibility
- ♦ Easy maintenance, the four electrodes on a flat surface is easy to clean
- ♦ In low conductivity samples equally well

### Specification

- ♦ constant: 0.7
- ♦ Test Range: 0...200ms/cm
- ♦ Pressure range: 0. 7MPa
- ♦ Dimensions: the upper and lower teeth 3/4 NPT pipe
- ♦ Electrode body length: 153mm
- ♦ Plus electrode protection tube length: 166mm



Molded electrode flow cell

### Feature

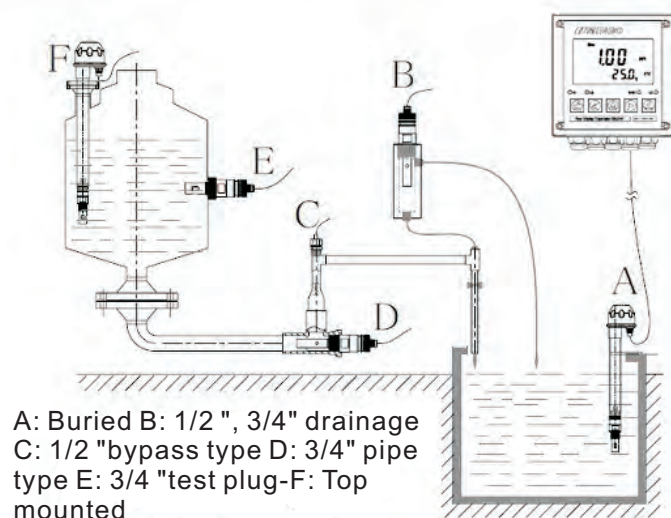
- ♦ Electrode is easy to install and maintain
- ♦ Easy to observe the water sample flow conditions

### Specification

- ♦ Size: 130 \* Φ40mm
- ♦ Quick connector
- ♦ Material: plexiglass



Online electrical conductivity / resistivity measurement system of FIG



## DO-9110 Fluorescence of Dissolved Oxygen Transmitter

### Application area

- ♦ Water & waste water treatment
- ♦ Aquaculture monitoring
- ♦ Drinking & surface water measurement
- ♦ Chemical process
- ♦ Recycle & cleaner

### Features

- ♦ Transmitter is matched by Fluorescence D.O Electrode.
- ♦ Waterproof & dustproof proof design, to fit wall/ panel / pipe installation.
- ♦ Automatic sensor clean function with programable time interval and hysteresis.
- ♦ Large LCD display, it can show the operation status and symbols.
- ♦ With backlight sensor, automatic and manual backlight setting function
- ♦ Automatic calibration; manual/auto. temperature compensation.
- ♦ With password and multi-key design, security protection enhancement.
- ♦ Equipped RS-485 MODBUS RTU protocol, it can connect to the digital system directly.(DO-9110RS serial only)
- ♦ Two programmable output(DO-9110 serial only)

### Parameters

Range	0...200%; 0.00...19.99mg/l; 0.00...19.99ppm; -30...130.0°C Depending on the electrode
Resolution	0.01%; 0.01mg/l; 0.01ppm; 0.1°C
Accuracy	The reading $\pm 3\%$ ; $\pm 0.2^\circ\text{C}$ With manual ( $\pm 1$ Digit) correction function
Pressure compensation	0.500...2.500bar or 7.25...36.25psi Manual adjustment
Temperature compensation	Automatic
Hi/Lo Relay Output	Two sets Hi/Lo programmable, N/OFF, 240VAC/ 0.5A Max
Analog Output	2 sets of programmable & isolate current DC 0/4~20mA with programable according to DO, Temp. Max. load 500Ω.

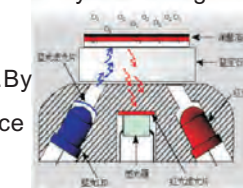


### Specifications

AC supply	100V...240VAC $\pm 10\%$ , 50/60Hz
Temp	0...50°C
Dimensions	144mm $\times$ 144mm $\times$ 115mm(H $\times$ W $\times$ D)
Protection	Correspond to IP65(NEMA4)
Installation	Wall/ panel/ pipe mounting
Cut off Dimensions	138mm $\times$ 138mm (H $\times$ W)
Weight	0.8Kg

### Principle

Luminescent dissolved oxygen measuring instrument based on the principle of fluorescence quenching. Blue light illuminate to fluorescent substance shine red light. Due to oxygen molecules take energy, the time and intensity of shining red light and concentration of oxygen are inverse ratio. By measuring phase difference of red light and reference light to calculate the concentration of oxygen



### Ordering Guide

#### Transmitter

- ♦ DO-9110
- ♦ DO-9110D(20-40VDC)
- ♦ DO-9110RS RS-485
- ♦ DO-9110DRS(20-40VDC) RS-485

#### Standard

- ♦ MD1900 optical dissolved oxygen electrode
- ♦ Bracket

## DO-9100 Dissolved Oxygen Transmitter



## Parameters

Range	0...200%; 0.00...19.99mg/l; 0.000...19.999ppm; -30...130.0°C Depending on the electrode
Resolution	0.01%; 0.01mg/l; 0.01ppm; 0.1°C
Accuracy	The reading±0.5%; ±0.5%; ±0.5%; (±1Digit) ±0.2°C With manual correction function
Pressure compensation	0.500...2.500bar or 7.25...36.25psi Manual adjustment
Temperature compensation	Automatic recognition with Pt1000/NTC30K or manual
Salinity compensation	0.0...45.0ppt
Hi/Low Relay Output	2 sets Hi/Low programmable, N/OFF, 240VAC/ 0.5A Max
Analog Output	1 or 2 sets of programmable & isolate current DC 0/4-20mA with programable according to DO、Temp. Max. load 500Ω.
Wash Relay Output	ON: 0...9999sec. / OFF: 0...999.9hours

## Ordering Guide

## Transmitter

- ♦ DO-9100
- ♦ DO-9100D(20-40VDC)
- ♦ DO-9100RS RS-485
- ♦ DO-9100DRS(20-40VDC) RS-485

## Application area

- ♦ Ferment process
- ♦ Recycle & cleaner
- ♦ Drinking & surface water measurement
- ♦ Water & waste water treatment
- ♦ Aquaculture monitoring
- ♦ Chemical process

## Features

- ♦ 144X144 microprocessor dissolved oxygen transmitter.
- ♦ Waterproof & dustproof proof design, to fit wall/ panel/ pipe installation.
- ♦ Automatic sensor clean function with programable time interval and hysteresis.
- ♦ Large LCD display, with operating status and special symbols display
- ♦ With backlight sensor, automatic and manual backlight setting function
- ♦ Automatic calibration; manual/auto. temperature compensation.
- ♦ With password and multi-key design, security protection enhancement.
- ♦ Equipped RS-485 MODBUS RTU protocol, it can connect to the digital system directly. (DO-9100RS serial only)
- ♦ Two programmable output (DO-9100 serial only)

## Specifications

AC supply	100V-240VAC±10%, 50/60Hz
DC supply	20-40VDC
Temp	0...50°C
Dimensions	144mm×144mm×115mm(H×W×D)
Protection	Correspond to IP65(NEMA 4)
Installation	Wall/ panel/ pipe mounting
Cut off Dimensions	138mm×138mm (H×W)
Weight	0.8Kg

## Standard

- ♦ MD1912 double membrane oxygen electrode
- ♦ Bracket

## DO-9300 Dissolved Oxygen Transmitter



## Parameters

Range	0...200%; 0.00...19.99mg/l; 0.000...19.999ppm; -30...130.0°C Depending on the electrode
Resolution	0.01%; 0.01mg/l; 0.01ppm; 0.1°C
Accuracy	The reading±0.5%; ±0.5%; ±0.5%; (±1Digit) ±0.2°C With manual correction function
Pressure compensation	0.500...2.500bar or 7.25...36.25psi Manual adjustment
Temperature compensation	Automatic recognition with Pt1000/NTC30K or manual
Salinity compensation	0.0...45.0ppt
Hi/Low Relay Output	2 sets Hi/Low programmable, N/OFF, 240VAC/ 0.5A Max
Analog Output	2 sets of programmable & isolate current DC 0/4...20mA with programable according to DO、Temp. Max. load 500Ω.
Wash Relay Output	ON: 0...9999sec. / OFF: 0...999.9hours

## Ordering Guide

## Transmitter

- ♦ DO-9300
- ♦ DO-9300D(20...40VDC)
- ♦ DO-9300DRS(20...40VDC) RS-485
- ♦ DO-9300RS RS-485

## Standard

- ♦ MD1912 double membrane oxygen electrode
- ♦ Bracket

## Application

Widely used in wastewater treatment, aeration monitoring, river sections and lakes coast areas and aquaculture water quality monitoring, in large sewage treatment plants, industrial processes monitoring control and other applications

## Features

- ♦ 96X96 microprocessor dissolved oxygen transmitter.
- ♦ Waterproof & dustproof proof design, to fit wall/ panel/ pipe installation.
- ♦ Automatic sensor clean function with programable time interval and hysteresis.
- ♦ Large graphic LCM display, with operating status and special symbols display
- ♦ With backlight sensor, automatic and manual backlight setting function
- ♦ Automatic calibration; manual/auto. temperature compensation.
- ♦ With password and multi-key design, security protection enhancement.
- ♦ Provides digital filter function, can filter out interference value, to make the reading more stable.
- ♦ Equipped RS-485 MODBUS RTU protocol, it can connect to the digital system directly. (DO-9300RS serial only)
- ♦ Two programmable output (DO-9300 serial only)

## Specifications

AC supply	100V...240VAC±10%, 50/60Hz
DC supply	20...40VDC
Temp	0...50°C
Dimensions	96mm×96mm×148mm(H×W×D)
Protection	Correspond to IP65(NEMA 4)
Installation	Wall/ panel/ pipe mounting
Cut off Dimensions	91mm×91mm (H×W)
Weight	0.4Kg



## DO electrodes and accessories

### MD 1912 DO double membrane electrode

#### Feature

- ◆ No maintenance disposable dissolved oxygen electrode, easy to use
- ◆ Silicone, Teflon reinforced two oxygen permeable membrane, durable, Fast response, Water flow effect is small

#### Specification

- ◆ Test Range: 0...20.00ppm
- ◆ Response time: 98%<60s(25℃)
- ◆ Residual current<0.5% of air current
- ◆ Temperature Sensor: NTC22K
- ◆ Polarization voltage: -670±50mV
- ◆ Air currents: 40...80nA(25℃)
- ◆ Operating temperature: 0~50℃
- ◆ Pressure: 0...0.4MPa



### MD1900 Optical dissolved oxygen electrode

#### Feature

- ◆ fluorescence principle, needn't to replace the membrane and electrolyte
- ◆ Do not consume oxygen, no flow rate and agitation requirements, high accuracy
- ◆ Automatic detection feature ensures that the measured value
- ◆ No flow requirements, can be measured in still water

#### Specification

- ◆ Range: 0...20mg/l(0...20ppm)0...200%SAT
- ◆ Repeatability: +/-0.5%FS
- ◆ T90: 60S
- ◆ Material: Noumenon: SUS316L stainless steel titanium, Phosphor layer cap: POM, fluorescent layer: Silicon
- ◆ Screw connection: G1
- ◆ Cable: 80m



### CLN03 MD1900 Electrode cleaning device

#### Feature

- ◆ Installation and maintenance easy

#### Specification

- ◆ Installation: by screws
- ◆ Size: 120 \* Φ65mm



### Bracket

PP-100B



PP-100A



## TURB-1100 turbidity /suspended solid /sludge concentration (MLSS) Transmitter

### Application area

- ◆ Chemical process
- ◆ Recycle & cleaner
- ◆ Drinking & surface water measurement
- ◆ Water & waste water treatment

### Features

- ◆ 144X144 microprocessor turbidity/suspended solid, MLSS transmitter.
- ◆ Waterproof & dustproof proof design, to fit wall/ panel/ pipe installation.
- ◆ Automatic sensor clean function with programmable time interval and hysteresis.
- ◆ Large LCD display, it can show the operation status and symbols.
- ◆ With backlight sensor, automatic and manual backlight setting function.
- ◆ 5 points auto. Calibration; single point calibration can be according to lab. or field analysis and adjustable.
- ◆ With password and multi-key design/security protection enhancement.
- ◆ Stainless steel electrode housing design with scratch resistant lenses.
- ◆ Without color, bubbles interfere with built-in automatic cleaning system.
- ◆ 90 degree angle optical monitoring principles designed to meet the US EPA and ISO7027.
- ◆ Equipped RS-485 MODBUS RTU protocol, it can connect to the digital system directly. (Turb-1100RS serial only)
- ◆ Two programmable output (Turb-1100 serial only)

### Ordering Guide

#### Transmitter

- ◆ TURB-1100
- ◆ TURB-1100D(20-40VDC)
- ◆ TURB-1100RS RS-485
- ◆ TURB-1100DRS(20-40VDC) RS-485

#### Standard

- ◆ TC-100/500/3000 Japan OPTEX turbidity sensor
- ◆ TCS-1000 Japan OPTEX suspended solids sensor
- ◆ TCMS-50 Japan OPTEX sludge concentration sensor
- ◆ Bracket



### Parameters

Turbidity	NTU,FTU,FNU
Suspended solids	ppm,mg/l
MLSS	g/l
range	Depending on the electrode
Resolution	AUTO(0.01,0.1,1)
Hi/Lo Relay Output	
2 sets Hi/Lo programmable,N/OFF, 240VAC/ 0.5A Max	
Analog Output	
1 or 2 sets of programmable & isolate current DC 0/4-20mA with programmable according to Turb./SS/MLSS.	
Wash Relay Output	
ON: 0...9999sec. / OFF: 0...999.9hours	

### Specifications

AC supply	100V-240VAC±10%,50/60Hz
DC supply	20-40VDC
Temp	0...50℃
Dimensions	144mm×144mm×115mm(H×W×D)
Protection	Correspond to IP65(NEMA 4)
Installation	Wall/panel/pipe mounting
Cut off Dimensions	138mm×138mm (H×W)
Weight	0.8Kg



TURB-1200 Turbidity Transmitter

Application

- Drinking & surface water measurement
- Water & waste water treatment
- Chemical process
- Recycle & cleaner

Characteristic

- 144X144 microprocessor Turbidity Transmitter
- Waterproof & dustproof proof design, to fit wall/panel / pipe installation.
- Automatic sensor clean function with programable time interval and hysteresis.
- Large LCD display, it can show the operation status and symbols.
- With backlight sensor, automatic and manual backlight setting function
- 5 points auto. Calibration; single point calibrationcan be according to lab. or field analysis and adjustable.
- With password and multi-key design,security protection enhancement.
- 90 degree angle optical monitoring principles designed to meet the US EPA and ISO7027.
- Equipped RS-485 MODBUS RTU protocol, it can connect to the digital system directly.(Turb-1200RS serial only)
- Two programmable output(Turb-1200 serial only)

Ordering Guide

Transmitter

- TURB-1200
- TURB-1200D(20-40VDC)
- TURB-1200RS RS-485
- TURB-1200DRS(20-40VDC) RS-485

Standard

- MTU-100/MTU-500/MTU-5000Turbidity Sensor
- Pipe Flange mounting



Technical Parameters

Turbidity unit	NTU,FTU,FNU
Range	Depending on the electrode
Resolution	AUTO(0.01,0.1,1)
Hi/Lo Relay Output	2 sets Hi/Lo programmable,N/OFF, 240VAC/ 0.5A Max
Analog Output	1 or 2 sets of programmable & isolate current DC 0/4~20mA with programable according to Turb./SS/MLSS.
Wash Relay Output	ON: 0...9999sec. / OFF: 0...999.9hours

Basic Parameters

AC supply	100V-240VAC±10%,50/60Hz
DC supply	20-40VDC
Temp	0...50℃
Dimensions	144mm×144mm×115mm(H×W×D)
Protection	Correspond to IP65(NEMA 4)
Installation	Wall/ panel/ pipe mounting
Cut off Dimensions	138mm×138mm (H×W)
Weight	0.8Kg

Principle

The incandescent light emitted from the sensor light sourcecomponent is down into the turbidity meter, and the suspended particles in the sample are encountered to produce scattered light. The sensor is able to detect the scattered light in the water sample at a 90 degree angle to the incident beam.

TURB-1300 Suspended solids / sludge concentration Transmitter

Application area

- Chemical process
- Recovery and detergents
- Drinking & s urface water measurement
- Water & waste water treatment

Features

- 144X144 microprocessor turbidity/suspended solid/MLSS transmitter.
- Waterproof & dustproof proof design, to fit wall / panel / pipe installation.
- Automatic sensor clean function with programable time interval and hysteresis.
- Large LCD display, it can show the operation status and symbols.
- With backlight sensor, automatic and manual backlight setting function
- Single-point calibration can be adjusted according to the laboratory or on-site analysis
- With password and multi-key design,security protection enhancement.
- Equipped RS-485 MODBUS RTU protocol, it can connect to the digital system directly. (Turb-1300RS serial only)
- Two programmable output(Turb-1300 serialonly)

Specifications

AC supply	100V...240VAC±10%,50/60Hz
DC supply	20...40VDC
Temp	0...50℃
Dimensions	144mm×144mm×115mm(H×W×D)
Protection	Correspond to IP65(NEMA 4)
Installation	Wall / panel / pipe mounting
Cut off Dimensions	138mm×138mm (H×W)
Weight	0.8Kg



Principle

There is a built-in LED light source in transmitter,it can emit near-infrared light of 880nm which beam scattered by suspended particles.The detector detects scattered light at a 90 degree with incident light to calculate sample's turbidity. The detector detect scattered light at a 140 degree with incident light to calculate sample's MLSS.It doesn't affect the measurement result if sample is colorful.

Parameters

Suspended solids	ppm,mg/l
MLSS	g/l
Range	Depending on the electrode
Resolution	AUTO(0.001,0.01,0.1,1)
Hi/Lo Relay Output	2 sets Hi/Lo programmable,N/OFF, 240VAC/ 0.5A Max
Analog Output	1 or 2 sets of programmable & isolate current DC 0/4-20mA with programable according to SS/MLSS.
Wash Relay Output	ON: 0...9999sec. / OFF: 0...999.9hours

Ordering Guide

Transmitter

- TURB-1300
- TURB-1300D(20-40VDC)
- TURB-1300RS RS-485
- TURB-1300DRS(20-40VDC) RS-485

Standard

- MLSS-2000 / MLSS-120 sensor suspended solids / sludge concentration sensor
- PP-100B immersion bracket (Molded electrode)
- Pipe Flange mounting

# TURB-1210 Low Turbidity Transmitter

## Application area

- ♦ Tap water ♦ water filtration ♦ Water quality
- ♦ drinking and surface monitoring

## Features

- ♦ 144\*144 Low turbidity controller designed by Microcomputer
- ♦ Waterproof & dustproof proof design, to fit wall/ panel/ pipein stallation.
- ♦ Automatic sensor clean function with programable time interval and hysteresis.
- ♦ Large LCD display, it can show the operation statusand symbols.
- ♦ With backlight sensor, automatic and manualbacklight setting function
- ♦ 5 points auto. Calibration; single point calibrationcan be according to lab. or field analysis and adjustable.
- ♦ With password and multi-key design,security protection enhancement.
- ♦ 90 degree angle optical monitoring principles designed to meet the US EPA and ISO7027.
- ♦ Equipped RS-485 MODBUS RTU protocol, it can connect to the digital system directly(Turb-1210RS serial only)
- ♦ Two programmable output(Turb-1210 serialonly)

## Ordering Guide

### Transmitter

- ♦ TURB-1210
- ♦ TURB-1210D(20-40VDC)
- ♦ TURB-1210RS RS-485
- ♦ TURB-1210DRS(20-40VDC) RS-485

### Standard

- ♦ MTU-20S/MTU-200S low turbidity sensor



Parameters	
Turbidity unit	NTU,FTU,FNU
measuring range	0...20.000/0...200.00
Resolution	AUTO (0.001,0.01,0.1,1)
Hi/Lo Relay Output	
2 sets Hi/Lo programmable,N/OFF, 240VAC/ 0.5A Max	
Analog Output	
1 or 2 sets of programmable & isolate current DC 0/4-20mA with programable according toTurb.	
Wash Relay Output	
ON: 0...9999sec. / OFF: 0...999.9hours	
Specifications	
AC supply	100V-240VAC±10%,50/60Hz
DC supply	20-40VDC
Temp	0...50℃
Dimensions	144mm×144mm×115mm(H×W×D)
Protection	Correspond to IP65(NEMA 4)
Installation	Wall/ panel/ pipe mounting
Cut off Dimensions	138mm×138mm (H×W)
Weight	0.8Kg

# Turbidity sensor and accessories

TC-100 /500/3000Japan TC-100 turbidity sensor  
TCS-1000 Japan OPTEX suspended matter (SS) sensor

## Feature

- ♦ Design principles using 860nm infrared light principle,Cameo glass high-precision optical window,Built-in self-cleaning procedures to ensure measurement accuracy

## Specification

- ♦ Range: 0...100/500/3000NTU 0...1000mg/l
- ♦ Diameter: 32mm\*170mm
- ♦ Cleaning interval: The preset is 10min
- ♦ Accuracy: Of full scale ± 3%
- ♦ Cleaning System: After the automatic cleaning electrode
- ♦ Material: SUS 316L



TS-MxS-A Japan OPTEX MLSS MLSS sensor

## Feature

- ♦ Regular automatic wiper cleaning
- ♦ Design principles using 860nm infrared light principle,Cameo glass high-precision optical window,Built-in self-cleaning procedures to ensure measurement accuracy

## Specification

- ♦ Range: 0...50g/l
- ♦ Diameter: 48mm\*133mm
- ♦ Cleaning interval: The preset is 10min
- ♦ Accuracy: Of full scale ± 3%
- ♦ Cleaning System: After the automatic cleaning electrode
- ♦ Material: SUS 316L



MTU 100/500/5000 Turbidity (MTU) sensor

## Feature

- ♦ Optional cleaning brush with automatic cleaning, greatly reducing the amount of sensor maintenance

## Specification

- ♦ Range: 5...100/500/5000NTU
- ♦ Diameter: 32mm\*170mm
- ♦ Cleaning interval: 1min/5min/15min /30min/1hr/ 4hr/12hr/1day/3day/7day
- ♦ Accuracy: Less than the value of the reading of 5%
- ♦ Cleaning System: Automatic cleaning
- ♦ Material: SUS 316L  
Viton rubber,PVC(Ti)



MLSS-120 sludge concentration (MLSS) sensor  
MSS-2000 suspended solids (SS) sensor

## Feature

- ♦ Digital sensor with strong anti-interference ability, transmission distance

## Specification

- ♦ Range: 0...120g/l<sub>(MLSS-120)</sub> 0~20,000ppm<sub>(MSS-2000)</sub>
- ♦ Diameter: 32mm\*170mm
- ♦ Cleaning interval: 1min/5min/15min/30min/ 1hr/4hr/12hr/1day/3day/7day
- ♦ Accuracy: Less than the value of the reading of 5%
- ♦ Cleaning System: Automatic cleaning
- ♦ Material: SUS 316L  
Viton rubber,PVC(Ti)



MTU-20S/MTU-200S low turbidity sensor

## Feature

- ♦ Using the current international advanced 90° scattered light measuring principle.
- ♦ Turbidity sensor with a unique design and advanced regulator degassing technology, high sensitivity.

## Specification

- ♦ Range: 0...20.000NTU 0...200.000NTU
- ♦ Diameter: 48mm\*133mm Material: ABS
- ♦ Accuracy: <1%FS
- ♦ Signal line length: Standard 400cm
- ♦ Operating temperature: 0...40℃
- ♦ Water flow: 400...100ml/min
- ♦ Response time: Immediate response (Initial 2 min)



MTU-100S/MTU-1000S low turbidity sensor

## Feature

- ♦ Operation and maintenance is simple and easy to install
- ♦ Long life with light emitting diode as light source measurement

## Specification

- ♦ Range: 0...100NTU 0...1000NTU
- ♦ Diameter: 0.001...0.1/0.01...1
- ♦ Principle: Turbidity method
- ♦ light source: High brightness LED
- ♦ Temperature: 0...40℃
- ♦ pressure: 70...135KPa
- ♦ Water flow: 250...750 mL/min





## ION-7100 Ion concentration transmitter

### Application area

For monitoring wastewater treatment and effluent of semiconductor, solar panel and LCD industries

### Features

- ♦ 144\*144 Microcomputer Design ion concentration transmitter
- ♦ Waterproof & dustproof proof design, to fit wall/ panel/ pipe in stallation.
- ♦ Automatic sensor clean function with programable time interval and hysteresis.
- ♦ Large LCD display, it can show the operation status and symbols.
- ♦ Automatic calibration; manual/auto. temperature compensation.
- ♦ With password and multi-key design, security protection enhancement.
- ♦ Equipped RS-485 MODBUS RTU protocol, it can connect to the digital system directly.(ION-7100RS serial only)
- ♦ Two programmable output(ION-7100 serialonly)

### Parameters

Range	0.00...20000(ppm、mg/l)/ -2000.0...2000.0mV/-10.0...110.0℃
Resolution	1/0.1/0.01(ppm、mg/l)/0.1mV/0.1℃
Accuracy (±1Digit)	±0.06%/±0.02℃ Digit With manual correction function
input resistance	>10 <sup>12</sup> Ω
Reproducibility	±0.05%/ ±10% of reading (Depends on ISE sensor and sample )
Digital filtering	0...60 seconds adjustable / factory setting 30
Temperature compensation	Automatic recognition with Pt1000/NTC30K or manual
Correction mode	Two or three-point calibration, offset correction (providing three zones Section optional)
Hi/Lo Relay Output	2 sets Hi/Lo programmable,N/OFF, 240VAC/ 0.5A Max
Analog Output	1 or 2 sets of programmable & isolate current DC 0/4~20mA with programable according to DO、Temp. Max. load 500Ω.



### Specifications

AC supply	100V...240VAC±10%,50/60Hz
DC supply	20...40VDC
Temp	0...50℃
Dimensions	144mm×144mm×115mm(H×W×D)
Protection	Correspond to IP65(NEMA 4)
Installation	Wall/ panel/pipe mounting
Cut off Dimensions	138mm×138mm (H×W)
Weight	0.8Kg

### Ordering Guide

#### Transmitter

- ♦ ION-7100
- ♦ ION-7100D(20...40VDC)
- ♦ ION-7100RS RS-485
- ♦ ION-7100DRS(20...40VDC) RS-485

#### Standard

##### Fluoride ion measurement:

- ♦ MF1221 online chlorine ion selective electrode
- ♦ Bracket

##### Other ion measurement:

- ♦ Other ISE - electrode
- ♦ Reference electrode
- ♦ Bracket
- ♦ Housing

## ION-7300 Ion concentration transmitter

### Application area

Widely used in semiconductor, pv, metallurgy, fluorine chemicals Build fluoride, such as industrial waste water, waste gas treatment, emissions monitoring and various Ion monitoring and other fields.

### Features

- ♦ 96\*96 microprocessor Ion transmitter.
- ♦ Waterproof & dustproof proof design, to fit wall / panel / pipe installation.
- ♦ Automatic sensor clean function with programable time interval and hysteresis.
- ♦ Large LCM display, with operating status and special symbols.
- ♦ With backlight sensor, automatic and manual backlight setting function.
- ♦ Provides the solution ground, it can eliminate the interference from sample of water.
- ♦ Provides digital filter function , can filter out interference value , to make the reading more stable.
- ♦ Automatic calibration; manual/auto. temperature compensation.
- ♦ With password and multi-key design、 security protection enhancement.
- ♦ Equipped RS-485 MODBUS RTU protocol, it can connect to the digital system directly. (ION-7300RS serial only)
- ♦ Two channel isolate current DC 0/4-20mA with programable according to ppm, mg/l, Temp. (ION-7300 serial only)



### Parameters

Range	0.00...20000(ppm、mg/l)/ -2000.0...2000.0mV/-10.0...110.0℃
Resolution	1/0.1/0.01(ppm、mg/l)/0.1mV/0.1℃
Accuracy (±1Digit)	±0.06%/±0.02℃With manual correction function
Reproducibility	±0.05%/ ±10% of reading(Depends on ISE sensor and sample )
Digital filtering	0...60 seconds adjustable / factory setting 30
Temperature compensation	Automatic recognition with Pt1000/NTC30K or manual
Correction mode	Two or three-point calibration, offset correction (providing three zones Section optional)
Hi/Lo Relay Output	2 sets Hi/Lo programmable,N/OFF, 240VAC/ 0.5A Max
Analog Output	2 sets of programmable & isolate current DC 0/4-20mA with programable according to ppm, mg/l, Temp. Max. load 500Ω.

### Ordering Guide

#### Transmitter

- ♦ ION-7300
- ♦ ION-7300D(20-40VDC)
- ♦ ION-7300RS RS-485
- ♦ ION-7300DRS(20-40VDC) RS-485

#### Standard

##### Fluoride ion measurement:

- ♦ MF1221 online chlorine ion selective electrode
- ♦ Bracket

##### Other ion measurement:

- ♦ Other ISE - electrode
- ♦ Reference electrode
- ♦ Bracket
- ♦ Housing

### Specifications

AC supply	100V-240VAC±10%,50/60Hz
DC supply	20-40VDC
Temp	0...50℃
Dimensions	96mm×96mm×148mm(H×W×D)
Protection	Correspond to IP65(NEMA 4)
Installation	Wall/ panel/ pipe mounting
Cut off Dimensions	91mm×91mm (H×W)
Weight	0.4Kg



## ION-7110 Ammonia concentration transmitter



## Parameters

The input measurement variables depend on the type of sensor  
ammonia nitrogen:  $\text{NH}_4\text{-N}, \text{NH}_4^+$  [mg/l] 0.1...1000 mg/l  
potassium ion:  $\text{K}^+$  [mg/l] 1...1000 mg/l (Optional)  
response time: ammonia nitrogen: < 2 min.

potassium ion: < 2 min.  
Accuracy: measured values of + 5% + 0.2 mg/l

Repeatability: display value of + 3%

input resistance  $> 10^{12} \Omega$

## Correction mode

Two or three-point calibration, offset correction (providing three zones Section optional)

## Hi/Lo Relay Output

2 sets Hi/Lo programmable, N/OFF, 240VAC/ 0.5A Max

## Analog Output

2 sets of programmable & isolate current DC 0/4~20mA with programable according to DO、Temp. Max. load 500Ω.

## Environment condition

Ambient temperature range -20 ... 50°C (-4 ... 120°F)

Storage temperature 2 ... 40°C (36 ... 100 °F)

Protection class IP 65

## Process condition

Process temperature range 2 ... 40°C (36 ... 100°F)

Maximum allowable pressure of process pressure: 400 mbar (160 inH<sub>2</sub>O)

## pH value of medium

• ammonia nitrogen: pH 5...8.3 (No pH compensation)  
pH 5 ... 10 (with pH compensation)

• potassium ion: pH 2 ... 12

## Application area

The ion selective sensor is installed directly in the activated sludge tank of the sewage treatment plant, Without any sample pretreatment or sample transfer. The whole measuring system includes sensors and transmitters: Sensor containing electrode, Transmitter includes display and operating unit. Sensor for monitoring the concentration of ammonia nitrogen:

- Sludge tank
- The primary settling tank outlet.

## Features

- Without sample pretreatment, direct ammonia nitrogen measurement
- Potassium ion measurement is optional, can also compensate for the high concentration of interference
- pH measurement and compensation
- Without reagents, the use of low cost
- Range: 0.1-1000 mg/l  $\text{NH}_4\text{-N}$
- Direct installation in the pool, without liquid collector or sample transfer pump
- Compressed air cleaning optional, low maintenance cost
- Every 6 months to replace the coated cap, effectively extend the life of the electrode

## Ordering Guide

## Transmitter

- ION-7110
- ION-7110D (20...40VDC)
- ION-7110RS RS-485
- ION-7110DRS (20...40VDC) RS-485

See page 23 ION-7110 standard

## ION-7120 Nitrate concentration transmitter



## Application area

The ion selective sensor is installed directly in the activated sludge tank of the sewage treatment plant, Without any sample pretreatment or sample transfer. The whole measuring system includes sensors and transmitters: Sensor containing electrode, Transmitter includes display and operating unit. Sensor for monitoring the concentration of Nitrate concentration:

- Sludge tank
- The primary settling tank outlet

## Features

- Without sample pretreatment, direct Nitrate concentration measurement
- Chloride ion measurement is optional, can also compensate for the high concentration of interference
- Range: 0.1-1000 mg/l  $\text{NO}_3\text{-N}$
- Direct installation in the pool, without liquid collector or sample transfer pump
- Compressed air cleaning optional, low maintenance cost
- Every 6 months to replace the coated cap, effectively extend the life of the electrode

## Specifications

AC supply	100V-240VAC $\pm$ 10%, 50/60Hz
DC supply	20-40VDC
Temp	0...50°C
Dimensions	144mm $\times$ 144mm $\times$ 115mm (H $\times$ W $\times$ D)
Protection	Correspond to IP65 (NEMA 4)
Installation	Wall/panel/pipe mounting
Cut off Dimensions	138mm $\times$ 138mm (H $\times$ W)

## Standard

- $\text{NO}_3$  electrode (filled with new liquid, can be used directly)
- Reference electrode (with temperature)
- Bracket
- Electrode special line
- Electrode extension line

## Parameters

The input measurement variables depend on the type of sensor  
Nitrate concentration:  $\text{NO}_3\text{-N}, \text{NO}_3^-$  [mg/l] 0.1...1000 mg/l  
Chloride ion:  $\text{Cl}^-$  [mg/l] 1...1000 mg/l  
response time: Nitrate concentration: < 2 min.

Chloride ion: < 2 min.  
Accuracy: measured values of + 5% + 0.2 mg/l

Repeatability: display value of + 3%

input resistance  $> 10^{12} \Omega$

## Correction mode

Two or three-point calibration, offset correction (providing three zones Section optional)

## Hi/Lo Relay Output

2 sets Hi/Lo programmable, N/OFF, 240VAC/ 0.5A Max

## Analog Output

2 sets of programmable & isolate current DC 0/4~20mA with programable according to DO、Temp. Max. load 500Ω.

## Environment condition

Ambient temperature range -20 ... 50°C (-4 ... 120°F)

Storage temperature 2 ... 40°C (36 ... 100°F)

Protection class IP 65

## Process condition

Process temperature range 2 ... 40°C (36 ... 100°F)

Maximum allowable pressure of process pressure: 400 mbar (160 inH<sub>2</sub>O)

pH value of medium

- Nitrate concentration: pH 5...8.3 (No pH compensation)  
pH 5 ~ 10 (with pH compensation)
- Chloride ion: pH 2 ... 12

## Ordering Guide

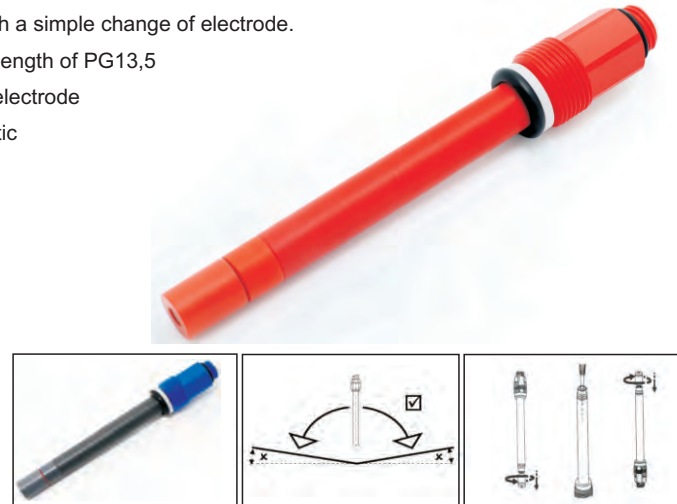
## Transmitter

- ION-7120
- ION-7120D (20-40VDC)
- ION-7120RS RS-485
- ION-7120DRS (20-40VDC) RS-485

## Ion selective sensor and accessories

### Ion selective sensor

- ♦ High speed measurement, direct, continuous, long-term measurement (without interruption), especially suitable for process control
- ♦ Selective measurement, measurement does not require sampling, so that it can greatly reduce the cost of compression
- ♦ There is no need for an additional reaction solvent or standard solution, which reduces the cost and reduces the maintenance time.
- ♦ The different water quality parameters can be measured with a simple change of electrode.
- ♦ Standard installation interface 100mm (GSA), the standard length of PG13,5
- ♦ Modular electrode, which ensures longer service life of the electrode
- ♦ ISE- electrodes, automatic updates, only films and electrolytic solutions need to be replaced periodically
- ♦ Protection level: IP67
- ♦ Temperature pressure: 25 °C/1013 KPa
- ♦ Error range: Measurement range of 5%
- ♦ Plug: Coaxial S7-thread
- ♦ texture of material: POM, Glass, Pt-Conductive filament, Viton, PTFE
- ♦ size: 100\*12mm
- ♦ weight: 45g



Electrode model	measuring range
NH4 S-003	0.1ppm-1200ppm
NO3 S-004	0.3ppm-30000ppm
NO2 S-015	0.1ppm-1000ppm
CN- S-008	0.01ppm-1000ppm
So32-	0.5ppm-1000ppm
S2-	0.5ppm-1000ppm
F- S-010	0.05ppm-1000ppm
Cl- S-009	0.5ppm-50000ppm
Br-	0.1ppm-1000ppm
Na+ S-011	0.001ppm-10000ppm
K+ S-005	0.1ppm-1000ppm
Ca2+ S-006	0,01ppm-10000ppm
Hardness	0,01 °dH-50 °dh
Ag2+ S-014	0,02ppm-1000ppm
Pb	0,01ppm-1000ppm

### A complete measurement system

- ♦ ISE (ion selective electrode) electrode
- ♦ Reference electrode or other (such as pH composite electrode)
- ♦ Connecting measuring cable
- ♦ Bracket
- ♦ Measurement controller, such as /ION-7120 ION-7100/ION-7300/ION-7110 and so on
- ♦ Replacement cycle :electrolyte (3 to 6 months) , film (6 months), The electrode can be used repeatedly (replacement cycle depends on environment )

### Other optional accessories

- ♦ Electrode Recovery Kit with replaceable film, electrolyte solution and mounting tool
- ♦ Thin film set
- ♦ Electrolyte solution 20 ml- titration vessel
- ♦ ISE- electrode (filled with new liquid, can be used directly)

## Ammonia nitrogen / Nitrate nitrogen / Fluoride ion electrode and fittings

### Ammonia ion selective electrode

#### feature

- ♦ There is no need for an additional reaction solvent or standard solution, which reduces the cost and reduces the maintenance time.
- ♦ Modular electrode, which ensures longer service life of the electrode
- ♦ Protection level: IP67
- ♦ Temperature pressure: 25 °C/1013 KPa
- ♦ Error range: Measurement range of 5%
- ♦ Plug: Coaxial S7-thread
- ♦ texture of material: POM, Glass, Pt-Conductive filament, Viton, PTFE
- ♦ size/weight: 100\*12mm/45g
- ♦ Range: 0.1ppm-1200ppm
- ♦ Material: Teflon
- ♦ model: Nh4 S-003



Housing  
MH-03/MH-04

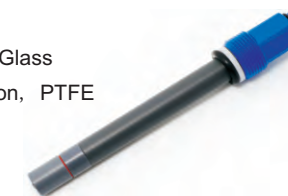
### Nitrate ion selective electrode

#### Feature

- ♦ There is no need for an additional reaction solvent or standard solution, which reduces the cost and reduces the maintenance time.
- ♦ Modular electrode, which ensures longer service life of the electrode

#### Specification

- ♦ Protection level: IP67
- ♦ Temperature pressure: 25 °C/1013 KPa
- ♦ Range: 0.3ppm-30000ppm
- ♦ Error range: Measurement range of 5%
- ♦ Plug: Coaxial S7-thread
- ♦ texture of material: POM, Glass, Pt-Conductive filament, Viton, PTFE
- ♦ size: 100\*12mm
- ♦ weight: 45g
- ♦ Material: Teflon



### MF1221 fluorine ion selective composite electrode

#### Feature

- ♦ The annular liquid junction is not easy to block and absorb, easy to clean
- ♦ 3/4 pipe thread for easy to install

#### Specification

- ♦ Test range: 0.20...20000ppm
- ♦ Electrode slope: 56±3mV(25 °C)
- ♦ pH range: 5.00...10.00pH
- ♦ Blank potential > 200mV(Deionized water)
- ♦ Electrode rod diameter: 28mm\*150mm
- ♦ Material: PPS
- ♦ Connection mode: 3/4 pipe thread



### ION-7110 standard

- ♦ NH4 electrode(Can be used directly)
- ♦ Reference electrode(With temperature)
- ♦ pH electrode
- ♦ Bracket
- ♦ Electrode special line
- ♦ Electrode extension line

### Other optional accessories

- ♦ Electrode Recovery Kit with replaceable film, electrolyte solution and mounting tool.
- ♦ Thin film
- ♦ Electrolyte solution 20 ml- titration vessel
- ♦ Potassium ion selective electrode
- ♦ Chloride ion selective electrode
- ♦ PP-100A immersed stent (for glass electrode)
- ♦ PP-100B immersion bracket (for plastic electrode)

## CH-2100 Chlorine transmitter



## Parameters

Measurement model	Cl <sub>2</sub> /pH/Temp
measuring range	0.00...14.00pH/ 0~10.00ppm(mg/l) -30...130 °C
Resolution	0.01ppm(mg/l) /0.01pH/0.1 °C
accuracy	±0.5%±1Digit/±0.01pH±1Digit/ ±0.2 °C±1Digit
Storage temperature	-20...70 °C
digital filtering	0~60 seconds adjustable / factory setting 30
temperature compensation	Automatic recognition with Pt1000/NTC30K or manual
Correction mode	Two or three-point calibration, offset correction (providing three zones Section optional)
Hi/Lo Relay Output	2 sets Hi/Lo programmable, N/OFF, 240VAC/ 0.5A Max
Analog Output	1 or 2 sets of programmable & isolated DC 0/4-20mA corresponding to concentration, pH, Temp., measurement.

## Specifications

AC supply	100V-240VAC±10%,50/60Hz
DC supply	20-40VDC
Temp	0...50 °C
Dimensions	144mm×144mm×115mm(H×W×D)
Protection	Correspond to IP65(NEMA 4)
Installation	Wall/panel/pipe mounting
Cut off Dimensions	138mm×138mm (H×W)
Weight	0.8Kg

## Application area

To monitor Residual Chlorine/Ozone of swimming pool, drinking water, water treatment and industrial process.

## Features

- ♦ 144X144 microprocessor Residual Chlorine/ Ozone transmitter.
- ♦ Waterproof & dustproof proof design, to fit wall/ panel / pipe installation.
- ♦ The pH electrode can be connected by the transmitter to do the pH compensation for Residual Chlorine measuring.
- ♦ Automatic calibration; manual/auto. temperature compensation.
- ♦ Automatic sensor clean function with programable time interval and hysteresis. Equipped RS-485 MODBUS RTU protocol, it can connect to the digital system directly. (CH-2100RS serial only)
- ♦ 2 channel isolate current DC 0/4-20mA with programable according to ppm, mg/l, Temp. (CH-2100 serial only)
- ♦ Automatic protection function of water

## Ordering Guide

## Transmitter

- ♦ CH-2100
- ♦ CH-2100D(20-40VDC)
- ♦ CH-2100RS RS-485
- ♦ CH-2100DRS(20-40VDC) RS-485

## Standard

- ♦ CH-2100
- ♦ CH-2100-P(With PH compensation)
- ♦ CH-2100-P-F(With PH compensation and flow rate sensor)

## CH-2110 Chlorine transmitter



## Application area

The residual chlorine in swimming pool water, drinking water, water treatment and industrial process measurement.

## Features

- ♦ 144X144 microprocessor Residual Chlorine/ Ozone transmitter.
- ♦ Waterproof & dustproof proof design, to fit wall/ panel / pipe installation.
- ♦ The pH electrode can be connected by the transmitter to do the pH compensation for Residual Chlorine measuring.
- ♦ Automatic calibration; manual/auto. temperature compensation.
- ♦ Automatic sensor clean function with programable time interval and hysteresis.
- ♦ Equipped RS-485 MODBUS RTU protocol, it can connect to the digital system directly. (CH-2110RS serial only)
- ♦ 2 channel isolate current DC 0/4~20mA with programable according to ppm/, mg/l, Temp. (CH-2110 serial only)
- ♦ Suitable for three electrode connection measurement

## Ordering Guide

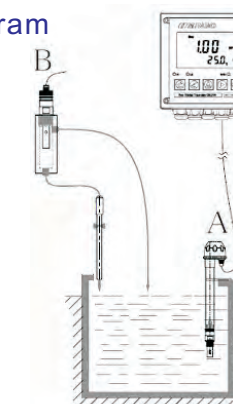
## Transmitter

- ♦ CH-2110
- ♦ CH-2110D(20...40VDC)
- ♦ CH-2110DRS(20...40VDC) RS-485
- ♦ CH-2110RS RS-485

## Standard

- ♦ MCL1200 Chlorine electrode

## Schematic diagram



## Parameters

Measurement model	Cl <sub>2</sub> /O <sub>3</sub> /pH/Temp
measuring range	0.00...100.00ppm(mg/l)depends on sensor/0.00...14.00pH/ 0.00...10.00ppm(mg/l)depends on sensor/-30...130 °C
Resolution	0.01ppm(mg/l) /0.01pH/ 0.01ppm(mg/l) /0.1 °C
accuracy(±1Digit)	±0.5%/±0.01pH±0.5%/±0.5%
Storage temperature	-20...70 °C
digital filtering	0...60 seconds adjustable / factory setting 30
temperature compensation	Automatic recognition with Pt1000/NTC30K or manual
Correction mode	Two or three-point calibration, offset correction (providing three zones Section optional)
Hi/Lo Relay Output	2 sets Hi/Lo programmable, N/OFF, 240VAC/ 0.5A Max
Analog Output	2 sets of programmable & isolate current DC 0/4-20mA with programable according to concentration, pH, Temp, measurement

## Specifications

AC supply	100V-240VAC±10%,50/60Hz
DC supply	20-40VDC
Temp	0...50 °C
Dimensions	144mm×144mm×115mm(H×W×D)
Protection	Correspond to IP65(NEMA 4)
Installation	Wall/panel/pipe mounting
Cut off Dimensions	138mm×138mm (H×W)
Weight	0.8Kg



## Residual chlorine electrode and accessories

### MCL1200 constant voltage residual chlorine electrode

#### Feature

- ♦ The electrode structure is simple, easy to clean and replace
- ♦ Made in Germany
- ♦ Test data is stable

#### Environmental conditions

- ♦ Greatest pressure: 10 bar at 20°C
- ♦ The minimum resistivity:  
>150  $\mu\text{S}/\text{cm}$ , with ASR > 200  $\mu\text{S}/\text{cm}$
- ♦ Temp: -5.. +70 °C



### MCL01 chlorine measurement system

#### Feature

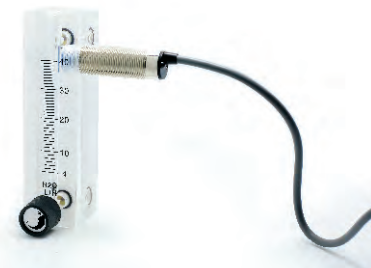
- ♦ Current residual chlorine sensor for measuring inorganic chlorine
- ♦ Flow cup measuring device is designed for pH and residual chlorine electrode can be integrated into an organic whole, can reduce installation disk.
- ♦ High quality organic glass.
- ♦ Optional flow induction device, can effectively control the flow rate, to avoid excessive dosing.



Residual chlorine electrode



Residual chlorine velocity sensors



Velocity sensor components

## CP-5100 Chlorophyll Transmitter



### Application area

Widely used in ocean, river, reservoir and watershed, tap water and water quality of field investigation and research. Early warning system for drinking water and farming fishery, Can quickly know the reproduction of toxic algae.

### Features

- ♦ 144\*144 microprocessor pH/ORP transmitter
- ♦ Waterproof & dustproof proof design, to fit wall/panel /pipe installation
- ♦ With backlight sensor, automatic and manual backlight setting function
- ♦ Providing a sensor self-cleaning device contact, the program set out
- ♦ Large LCD screen, with operation status and special symbol display
- ♦ Automatic calibration; manual/auto. temperature compensation.
- ♦ With security password for the calibration and parameter setting
- ♦ Equipped RS-485 MODBUS RTU protocol, it can connect to the digital system directly.(CP-5100RS serial only)
- ♦ Two sets of programmable output

### Ordering Guide

#### Transmitter

- ♦ CP-5100
- ♦ CP-5100D(20-40VDC)
- ♦ CP-5100RS RS-485
- ♦ CP-5100DRS(20-40VDC) RS-485

#### Standard

- ♦ MCP-20Chlorophyll electrode
- ♦ PP-100B immersion bracket (molded electrode)

### Parameters

measuring range	0...5ug/L,0...50ug/L,0...500ug/L
Pressure range	≤0.1 Mpa / 0...10m water depth
Storage temperature	-15...65°C
Measuring temperature	0...45°C
Shell	SUS316L
O-ring	Fluorine rubber
Cable	PVC

#### accuracy

1 PPB rhodamine WT dye signal level corresponding value plus or minus 5% correction function

**requirements** Water chlorophyll distribution is very uneven, it is recommended that the multipoint monitoring; Water quality turbidity should be less than 50 NTU

#### Digital filtering

0~60 seconds adjustable / factory setting 30

#### Hi/Lo Relay Output

2 sets Hi/Lo programmable,N/OFF, 240VAC/ 0.5A Max

#### Analog Output

1 or 2 way 4~20mA programmable analog signal output, the user can set the corresponding output value, load 500

### Specifications

AC supply	100V-240VAC±10%,50/60Hz
DC supply	20-40VDC
Temp	0...50°C
Dimensions	144mm×144mm×115mm(H×W×D)
Protection	Correspond to IP65(NEMA 4)
Installation	Wall/panel/pipe mounting
Cut off Dimensions	138mm×138mm (H×W)
Weight	0.8Kg

## BG-4100 Blue green algae transmitter

### Application area

Widely used in ocean, river, reservoir and watershed, tap water and water quality of field investigation and research. Early warning system for drinking water and farming fishery, Can quickly know the reproduction of toxic algae.

### Features

- ♦ 144\*144 microcomputer design blue green algae transmitter
- ♦ Waterproof & dustproof proof design, to fit wall/panel / pipe installation.
- ♦ With backlight sensor, automatic and manual backlight setting function
- ♦ With backlight sensor, automatic and manual backlight setting function
- ♦ Providing a sensor self-cleaning device contact, the program set out
- ♦ Large LCD screen, with operation status and special symbol display
- ♦ Automatic calibration; manual/auto. temperature compensation.
- ♦ With security password for the calibration and parameter setting
- ♦ Equipped RS-485 MODBUS RTU protocol, it can connect to the digital system directly. (BG-4100 RS serial only)
- ♦ Two sets of programmable output (BG-4100 serial only)

### Ordering Guide

#### Transmitter

- ♦ BG-4100
- ♦ BG-4100D(20-40VDC)
- ♦ BG-4100RS RS-485
- ♦ BG-4100DRS(20-40VDC) RS-485

#### Standard

- ♦ MBG-20 blue green algae electrode
- ♦ PP-100B immersion bracket (molded electrode)



### Parameters

measuring range 0-5ug/L, 0-50ug/L, 0...500ug/L

Pressure range ≤0.1 Mpa / 0-10m water depth

Storage temperature -15...65℃

Measuring temperature 0...45℃

#### accuracy

1 PPB rhodamine WT dye signal level corresponding value plus or minus 5% correction function

#### requirements

Water Blue green algaedistribution is very uneven, it is recommended that the multipoint monitoring; Water quality turbidity should be less than 50 NTU

#### Digital filtering

0~60 seconds adjustable / factory setting 30

#### Hi/Lo Relay Output

2 sets Hi/Lo programmable, N/OFF, 240VAC/ 0.5A Max

#### Analog Output

1 or 2 way 4-20mA programmable analog signal output, the user can set the corresponding output value, load 500

### Specifications

AC supply	100V-240VAC±10%, 50/60Hz
DC supply	20-40VDC
Temp	0...50℃
Dimensions	144mm×144mm×115mm(H×W×D)
Protection	Correspond to IP65(NEMA 4)
Installation	Wall/panel/pipe mounting
Cut off Dimensions	138mm×138mm (H×W)
Weight	0.8Kg

## Chlorophyll/Blue green algae electrode and accessories

### MCP-20 chlorophyll sensor

#### Feature

- ♦ Fluorescent dye-based measurement of target parameters can be identified before the impact caused by continuous measurement, to avoid affecting the water samples shelved due to potential water samples
- ♦ Sensor-site installation convenience

#### Specification

- ♦ Calibration: deviation calibration, slope calibration
- ♦ Sensor length: 10M standard whole cable
- ♦ Dimensions: length 220mm diameter 37mm
- ♦ Weight: 0.8KG
- ♦ Waterproof grade: IP68 / NEMA 6P
- ♦ Shell: SUS316L
- ♦ O-ring: Fluorine rubber
- ♦ Cable: PVC



### MBG-20 blue-green algae sensors

#### Feature

- ♦ Fluorescent dye-based measurement of target parameters can be identified before the impact caused by continuous measurement, to avoid affecting the water samples shelved due to
- ♦ Sensor-site installation convenience

#### Specification

- ♦ Calibration: deviation calibration, slope calibration
- ♦ Sensor length: 10M standard whole cable
- ♦ Dimensions: length 220mm diameter 37mm
- ♦ Weight: 0.8KG
- ♦ Waterproof grade: IP68 / NEMA 6P
- ♦ Shel: SUS316L
- ♦ O-ring: Fluorine rubber
- ♦ Cable: PVC



## MP-3100 Multi-parameter Transmitter

### Application area

Widely used in the field of process waste water treatment, clean water, loop water, boiler water, electronics, electroplating, printing and dyeing, chemical, food, pharmaceutical and so on, in large sewage treatment plants, industrial process monitoring, and other applications, performance excellence.

### Features

- ♦ 310\*190 multi-parameter controller microcomputer design
- ♦ Waterproof & dustproof proof design, to fit wall installation
- ♦ Can be stored at the same time the values of the parameters, can be viewed in the past record
- ♦ Scalable wireless transmission function, or Ethernet network
- ♦ Large touch panel display, and six kinds of the same image or different parameters
- ♦ Electrode signal can be extended, without the influence from distance
- ♦ 6 sets of Relay, 4 sets of current as well as a set of RS485 outputs

### Parameters

Range	Depending on the sensor
Resolution	Depending on the sensor
Accuracy	Depending on the sensor
Reproducibility	Depending on the sensor
input resistance	$>10^{12}\Omega$
Digital filtering	
0~60 seconds adjustable / factory set value 30	
temperature compensation	
Automatic recognition with Pt1000/NTC30K or manual	
Correction mode	
Two or three-point calibration, offset correction (providing three zones Section optional)	
Hi/Lo Relay Output	
6 sets Hi/Lo programmable, N/OFF, 240VAC/ 0.5A Max	
Analog Output	
2 sets of programmable & isolate current DC 0/4~20mA with programmable	
Cable	PVC



**NEW**

### Specifications

AC supply	100V...240VAC $\pm$ 10%, 50/60Hz
Temp	0...50°C
Dimensions	310mm $\times$ 190mm $\times$ 120mm(H $\times$ W $\times$ D)
Protection	Correspond to IP65(NEMA 4)
Installation	Wall
Weight	0.8Kg

### Ordering Guide

#### Transmitter

- ♦ MP-3100
- ♦ MP-3100RS RS-485

#### Standard

- ♦ PH digital electrode
- ♦ Electrical conductivity digital electrode
- ♦ DO digital optical oxygen electrode
- ♦ Turbidity digital electrode
- ♦ Sludge concentration digital electrode
- ♦ Digital electrode

## Multi-parameter electrode and accessories

### MD1900 Optical dissolved oxygen electrode

#### Feature

- ♦ fluorescence principle, needn't to replace the membrane and electrolyte
- ♦ Do not consume oxygen, no flow rate and agitation requirements, high accuracy
- ♦ Automatic detection feature ensures that the measured value
- ♦ No flow requirements, can be measured in still water

#### Specification

- ♦ Range: 0...20mg/l(0...20ppm)0...200% SAT
- ♦ Repeatability:  $\pm$ 0.5%FS
- ♦ T90: 60S
- ♦ Material: Noumenon: SUS316L stainless steel titanium, Phosphor layer cap: POM, fluorescent layer: Silicon
- ♦ Screw connection: G1
- ♦ Cable: 80m



### pH Digital electrode

#### Feature

- ♦ Hole technology to replace common ceramic membrane technology, porous ceramic is 200 times larger
- ♦ POLISOLVE The reference was a lot of resistance to organic solvents
- ♦ In low conductivity samples equally well

#### Specification

- ♦ Test Range: 0...14pH
- ♦ Pressure range: 0.6MPa
- ♦ Temperature range: 0...60°C
- ♦ The minimum sample conductivity: 2us/cm
- ♦ Reference electrolyte: POLISOLVE



### MCS1408 graphite electrodes

#### Feature

- ♦ In the solution of higher concentration, the electrode is not easy to be polarized, and the stability of the data is stable. Good reproducibility
- ♦ Easy maintenance, the four electrodes on a flat surface is easy to clean
- ♦ In low conductivity samples equally well

#### Specification

- ♦ constant: 0.4...0.7
- ♦ Test Range: 0...200ms/cm
- ♦ Pressure range: 0.6MPa
- ♦ Mounting dimensions: 3/4NPT



### MTU100 / 500/5000 Digital turbidity electrode

#### Feature

- ♦ Using precision optical components
- ♦ Sensor Check electrode self-test function to ensure reliable operation
- ♦ Long-term stability
- ♦ Installation and maintenance easy

#### Specification

- ♦ Test Range: 0...100/500/5000NTU
- ♦ Reproducibility: Full range of  $\pm$  2%
- ♦ Pressure range: 0.6Mpa
- ♦ Temperature range: 0...90°C



### Other Options:

- ♦ Conductance digital electrode
- ♦ Other digital electrode
- ♦ A converter module
- ♦ PC software



# Practical application



Ocean Stations



Groundwater monitoring to fluorine



Taiwan, a dairy beverage plant  
food processing wastewater



An electronics factory suspended solids monitoring