

# SUNTEX

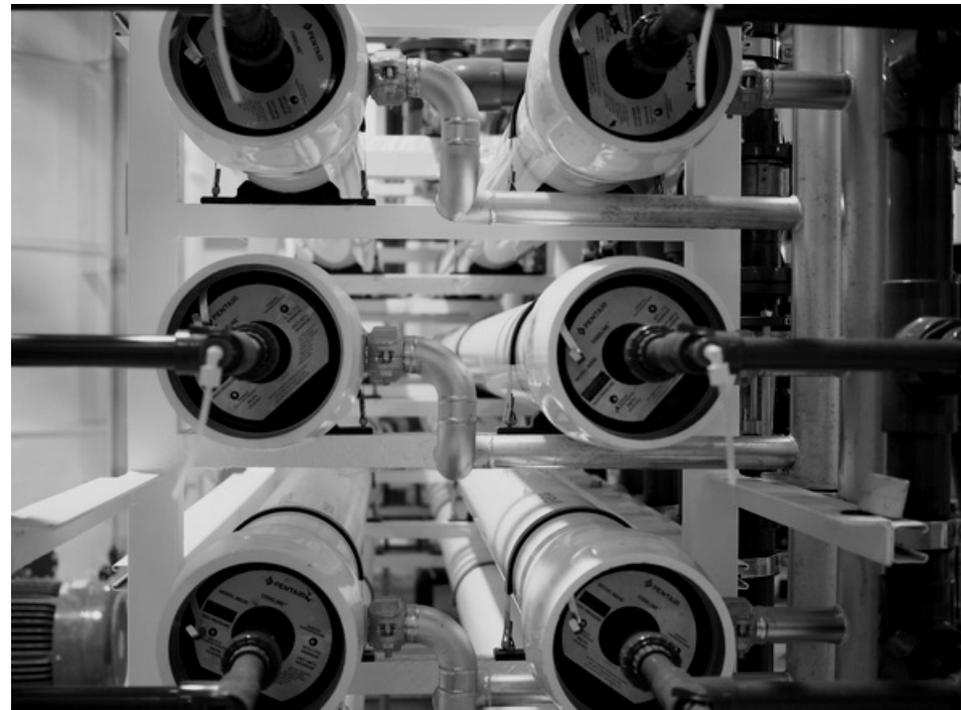
Cond. Res. °C



## Intelligent SUNTEX EC4110(RS) Conductivity Transmitter

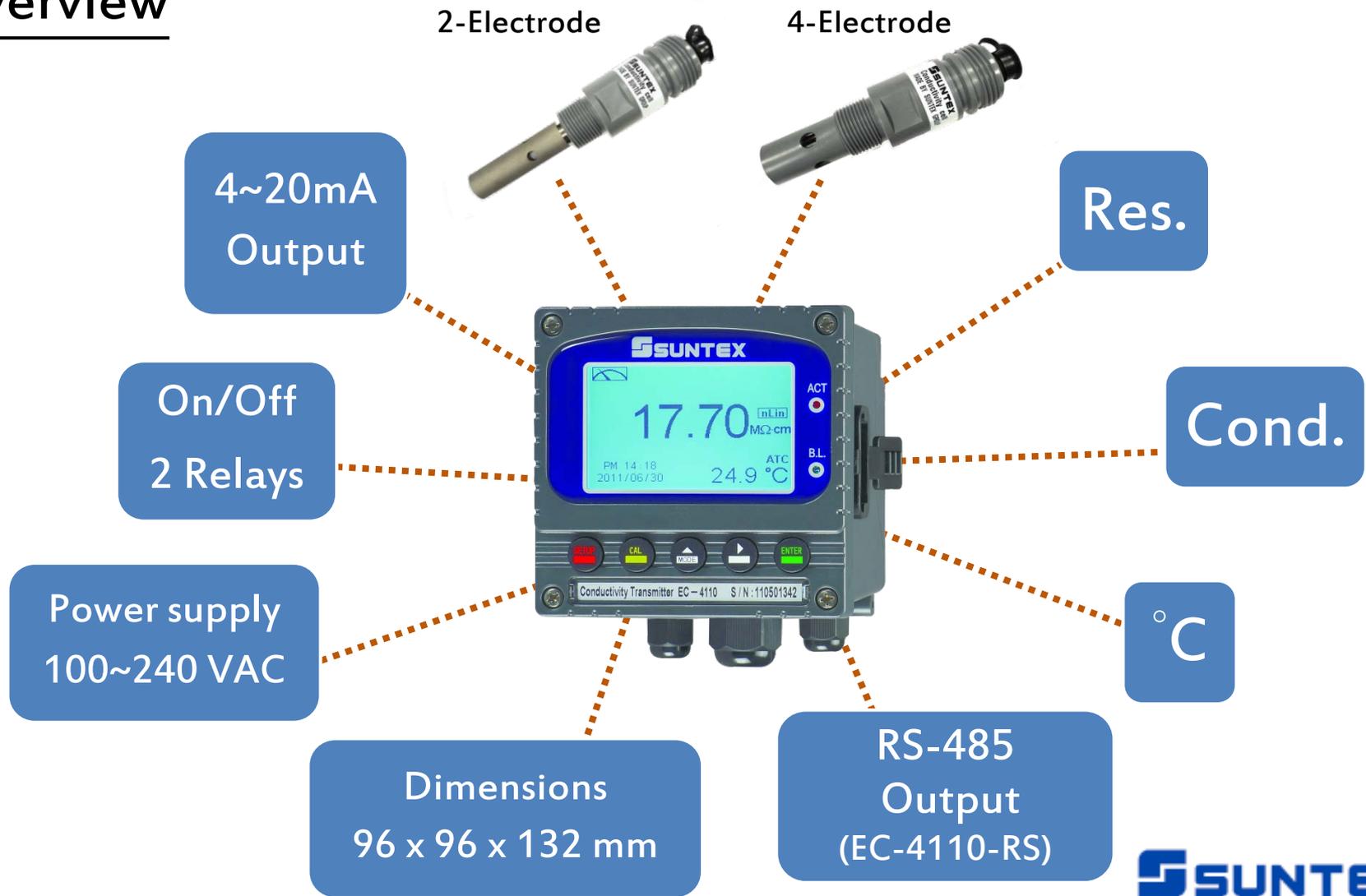
# Principle

**Conductivity**, which is highly dependent on the amount of dissolved salts, is a measurement of the level of ion concentration of a solution and is regarded as a fast, inexpensive and reliable way to indicate the efficiency for the filtering device, or for level of the purity, or concentration. Conductivity measurement is extensively applied in industrial pure water, process water, wastewater, drinking water, and many industrial production process.



# Intelligent Conductivity Transmitter..EC-4110(RS)

## Overview



ISO 9001:2008  
Certificated supplier

IP65

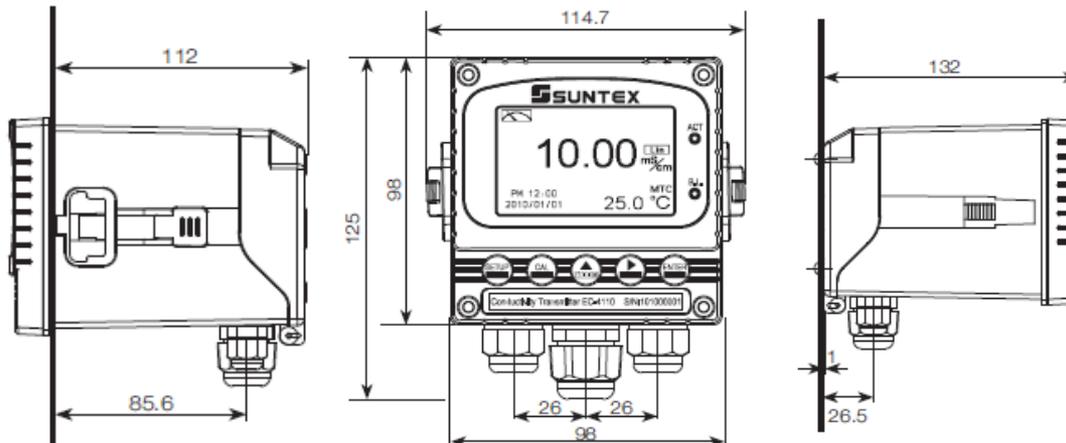
1 year  
warranty

*Leading innovation .....*

# Extraordinary Design

*..... Embrace both small & waterproof advantages*

**The innovative combination** of 1/4 DIN body and IP65 waterproof ability not only save space for indoor panel mounting with highest protection, but also enable flexibility for outdoor installation. (Panel or wall mounting from its body, and pipe mounting when a sun-shield applied).



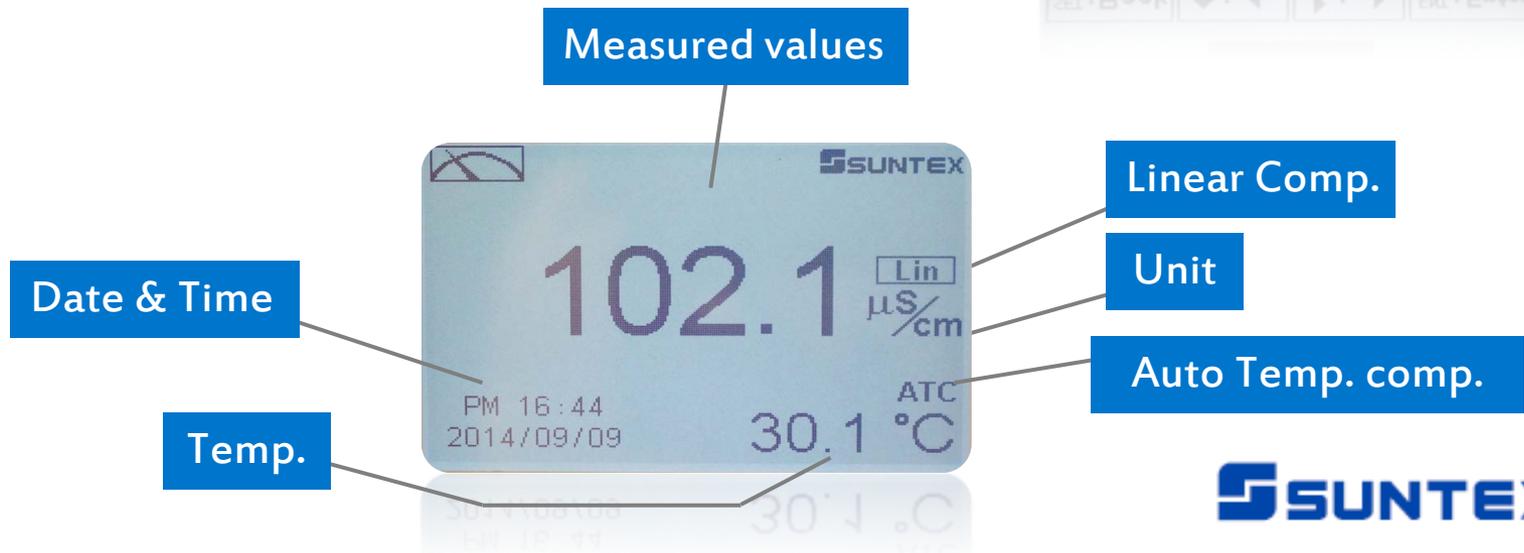
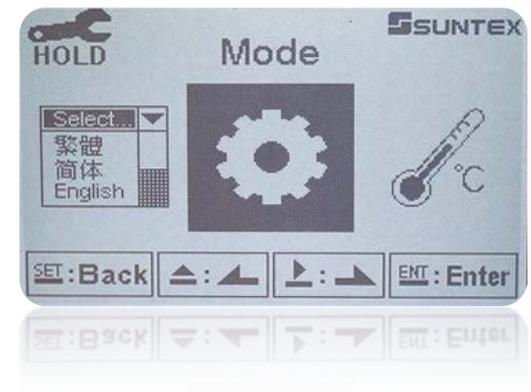
# Intelligent Conductivity Transmitter..EC-4110(RS)

*Clear at a glance.....*

## Informative Display

*.....leading the world of unique design*

**Fine resolution** display simultaneously shows readings, unit, temperature, date, time, alarms, mode, etc., offering clear information and thus providing intuitive operation. The graphical menu with description for the function ensures ease of operation.



# Intelligent Conductivity Transmitter..EC-4110(RS)

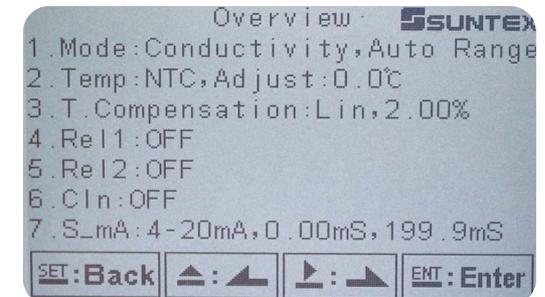
*Easy to understand ....*

## Informative Display

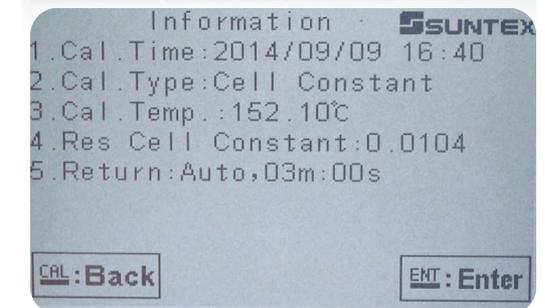
*..... all settings & last calibration record at a glance*

**Overview of setting** allows users no need to check every function one by one. Saving much more operation time and thus leads efficiency. Thanks to its superior design , all setting can be confirmed easily & safely.

Besides, the built-in two-level password protection allows setting & calibration controlled by authorized personnel and having separate calibration password for specific operators.



*System setup overview*



*Last calibration record*

# Intelligent Conductivity Transmitter..EC-4110-RS

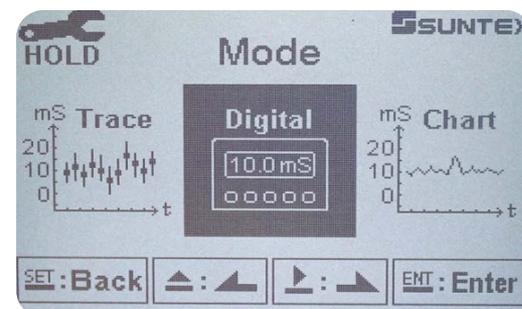
*Advanced graphic curve display .....*

## Trace & Real-Time Mode Display

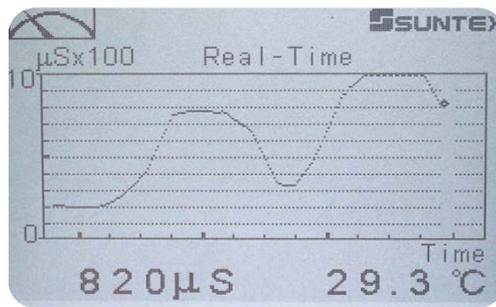
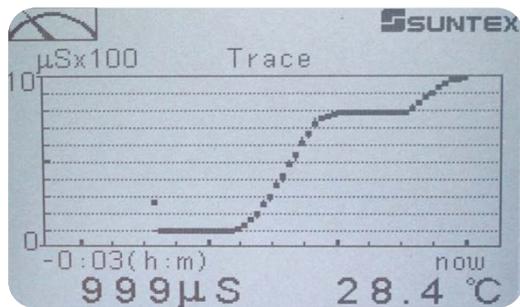
*.....offering recordable or updating trend*



**EC-4110-RS** exclusively provides graphical curve display for easily understanding the historical field conditions. Trace mode records reading from minimum 3 minutes up to 4 weeks. Chart mode works for 3 minutes trend and continuously updates the latest records.



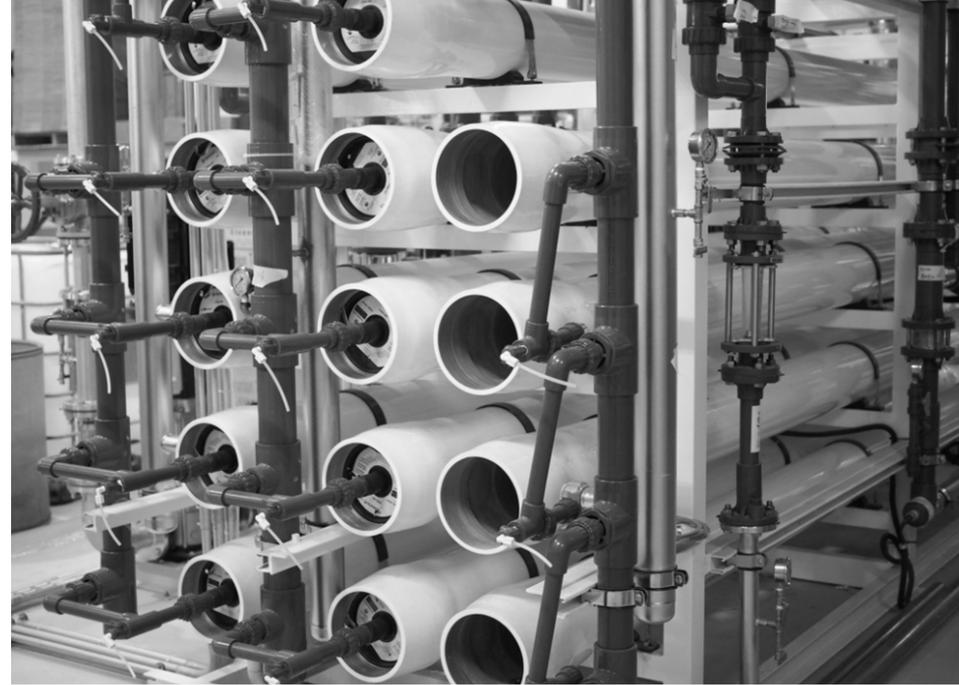
Real-time & trace mode can only be seen in RS-series



# Main Applications

## ● Pure / Ultrapure Water

Efficiency of pure water equipments including membrane filter system, reverse osmosis devices, ion exchange system can be ensured via resistivity, which can be a reliable parameter to indicate the purity of the water sample.



## ● Process / Scrubber

Conductivity is applied as an important index for the concentration/status of the current production reagent, for the exhaust loading of the scrubber's reagent, or for the purity index of cooling water.



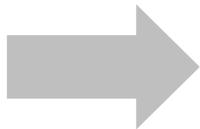
# Intelligent Conductivity Transmitter..EC-4110(RS)

*Programmable Automatic Adjustment.....*

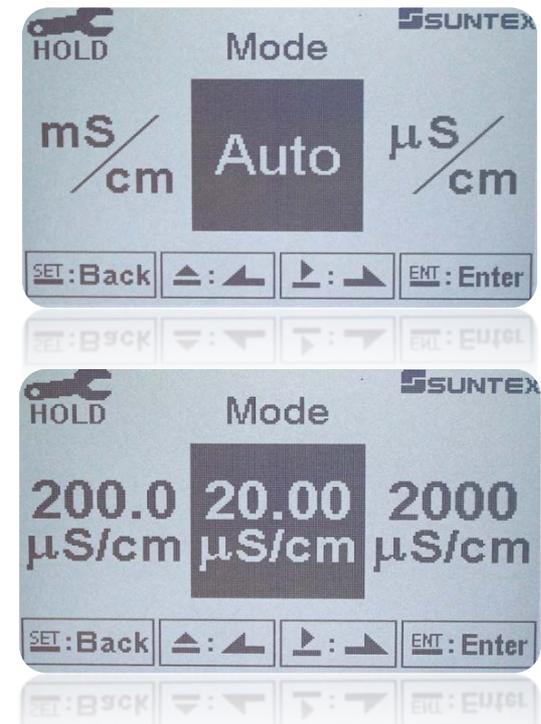
## Built-in Auto Range Selection

*.....offering high resolution measurement*

The intelligent EC-4110 series has auto range selection for conductivity mode that helps find out the finest resolution's measuring range. With this considerate feature, as long as users select the optimum electrode, the transmitter performs the highest accuracy without manually changing the range .



0.00 $\mu$ S/cm ~ 20.00  $\mu$ S/cm  
0.0  $\mu$ S/cm ~ 200.0  $\mu$ S/cm  
0  $\mu$ S/cm ~ 2000  $\mu$ S/cm  
0.00 mS/cm ~ 20.00 mS/cm  
0.0 mS/cm ~ 200.0 mS/cm



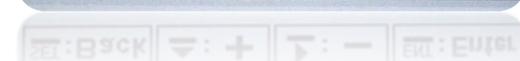
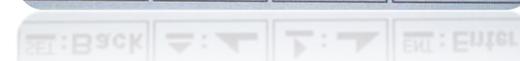
# Intelligent Conductivity Transmitter..EC-4110(RS)

*Indispensable functionality .....*

## Temperature Compensation

*.....measurement accuracy can be optimized*

**Temperature compensation** is the most critical factor for the accuracy of the conductivity/resistivity measurement. Different sample has its own linear character of coefficient for the temperature compensation. The EC-4110 series provides 0.00~40.00% programmable setting for conductivity measurement; while the resistivity mode usually applies non-linear compensation mode for pure water application.



# Intelligent Conductivity Transmitter..EC-4110(RS)

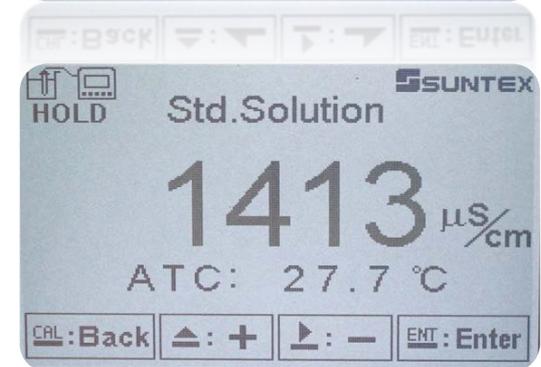
*As close as required field needs.....*

## Standard Solution Calibration

*.....for ease of use and maintenance of desired accuracy*

**Precise result** can be achieved by a well performed calibration. Standard solution calibration provides convenience of routine checks and system calibration. According to user's main measuring range, select the suitable value standard solution for ensuring accuracy.

The EC-4110 series provides low-to-high pre-set standard values and offers flexibility to modify it until reaching other desired value.



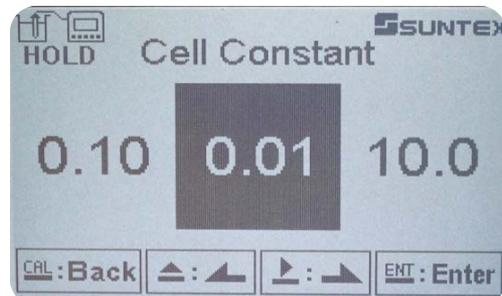
# Intelligent Conductivity Transmitter..EC-4110(RS)

*Simple & easy-to-use....*

## Cell Constant Calibration

*.....revealing top sensor performance*

**Cell constant calibration** can be set for initial installation or comparison calibration adjustment. There are five pre-set cell constants in the EC-4110 series for quick setup and adjustment. It also allows free adjustment from 0.008~19.99  $\text{cm}^{-1}$ . The measuring reading can be simultaneously revealed while adjusting to make the calibration work easier.



Five pre-set cell constant



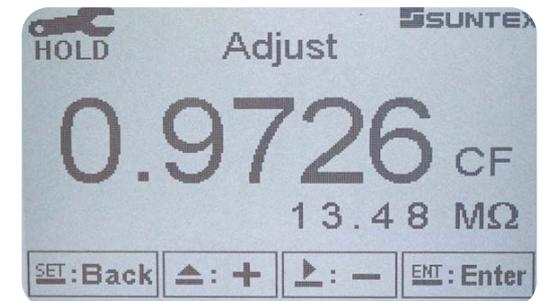
# Intelligent Conductivity Transmitter..EC-4110(RS)

*For ultrapure water level .....*

## Fine Tuning of Cell Constant

*.....providing high resolution calibration*

The advanced product adjustment function is especially designed for ultrapure water calibration work. By tuning the adjusting factor, the calibration can be made for resolution up to 0.01  $M\Omega \cdot cm$ . The considerate function not only increases the comparison calibration's accuracy, but also provides great convenience for operation.



Adjust the factor of cell constant



# Intelligent Conductivity Transmitter..EC-4110(RS)

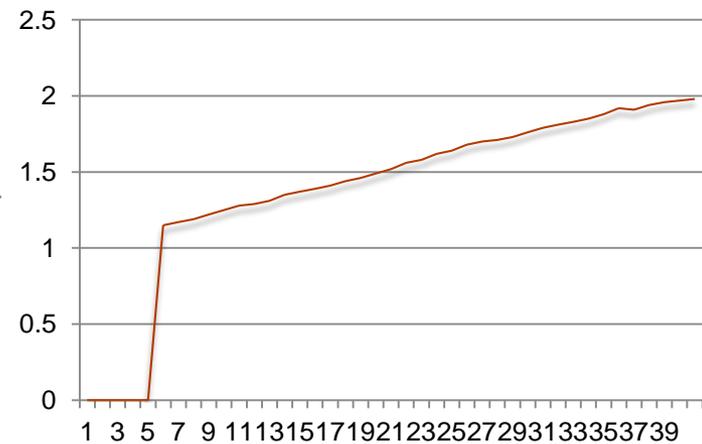
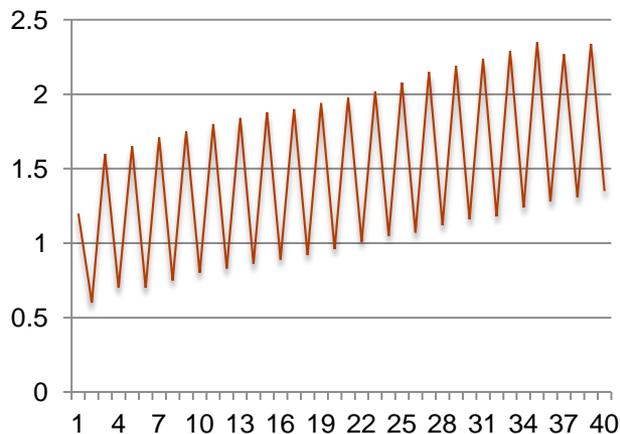
*Programmable .....*

## Digital Filter

*.....enhancing measurement stability*

**Setting the number of sample** to be moving averaged becomes a readout. It enhances the stability of measurement. (Available from 1~60 second.) The higher setting number, the more stable result & insensitiveness to measurement change.

***Ex: 5 samples to be averaged each time***



**Note:** "0" means auto setting according to the conductivity measurement

# Intelligent Conductivity Transmitter..EC-4110(RS)

*Superior.....*

## Noise Reduction

*.....removing the noise from the signal*

**Stability** is enhanced by the noise reduction function. For convenience of usage, the EC-4110 series power input is designed as 100~240VAC $\pm$ 10%, 50/60Hz. This extra frequency setting function additionally sets the noise filter of the device and thus reduces the electromagnetic influence of the power frequency to the signal transmission, and enhances measurement stability.



# Intelligent Conductivity Transmitter..EC-4110(RS)

*Indispensable.....*

## Programmable Relay

*.....effectively controlling the external devices*

**Depending upon** requirements of the process, two individual programmable relays can be applied accordingly. Set-point and hysteresis that can be set to ensure appropriate timing for activation of the external devices such as pumps or valves to avoid frequently activating pump or solenoid valves. An additional clean timer relay is prepared for external clean devices, or can be used as a timer alarm.



Individual Hi/Lo programmable relay



Additional clean timer relay setting

# Intelligent Conductivity Transmitter..EC-4110(RS)

*Flexible & reversible.....*

## Analog Output

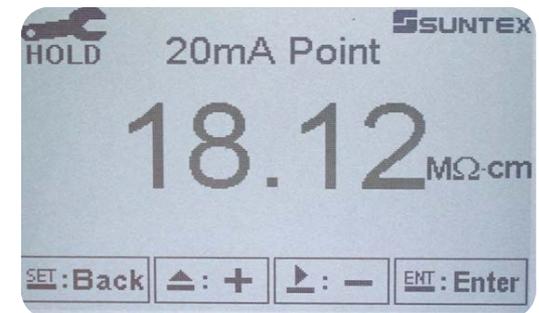
*.....for PLC communication or recorder*

**Two 0/4~20mA outputs** are equipped in EC-4110. One is corresponding to the measuring value, and the other is to temperature. Programmable setting with desired range also enhances the output resolution.

The EC-4110-RS equipped one RS-485 output with MODBUS protocol and there is one 0/4~20mA analog output for measurement value.



PLC module



Setting 20mA output to desired value

# Intelligent Conductivity Transmitter..EC-4110-RS

*Digital communication.....*

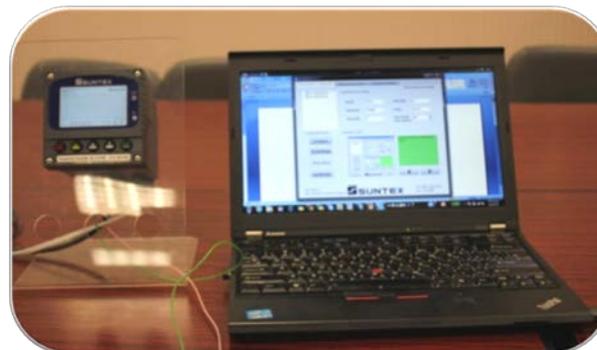
## **MODBUS RS-485 Interface**

*.....accessible to HMI, PLC, or PC*



**EC-4110-RS** exclusively provides one digital output and one analog output. The RS-485 digital output applies MODBUS protocol that can transmit data in dual ways and allow the serial connection up to 31 devices.

Suntex also provides optional data logger software, DLT, for personal computer connection. That makes it easy for recording measurement and transfer it to excel format for further data processing and study.



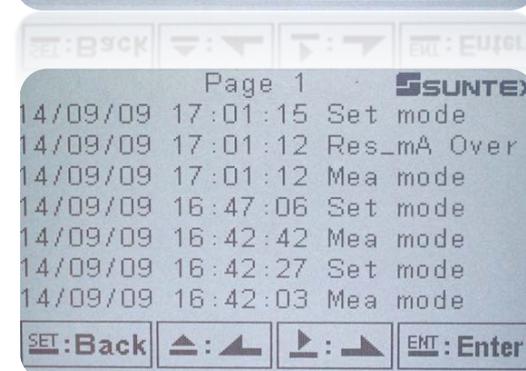
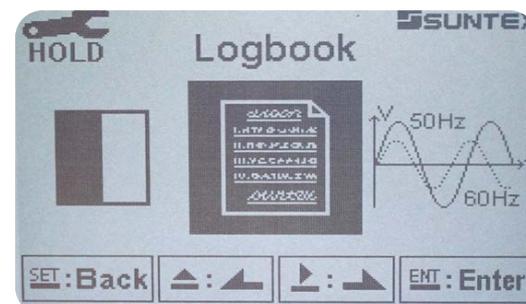
# Intelligent Conductivity Transmitter..EC-4110-RS

*All-inclusive events.....*

## Events History Logbook

*.....completely presenting a continuous record of all changes*

**EC-4110-RS** exclusively provides an event logbook function that records 50 events such as analog output over-range, power failure, relay on/off, entering measurement mode or setting mode, etc., with detailed time and date. This function is ideal for auto recording the working conditions for future appropriate setting plan, and can be a great reference for trouble shooting.



# EC-4110 & EC-4110-RS

*Intelligent Conductivity Transmitter*



**SUNTEX**