



# **DC DYNAMIC<sup>TM</sup>**

Process Equipment

Inductive Conductivity/Concentration Transmitter  
**SmartSense CO-3002-IN-AD-C**

## Core Features of SmartSense Transmitters

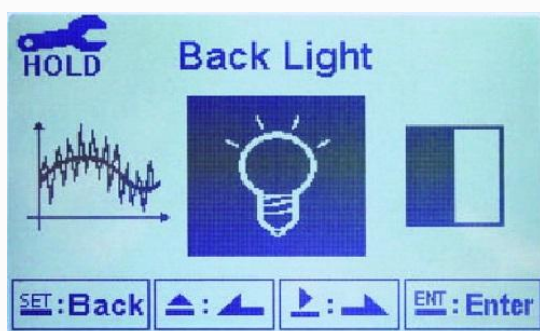
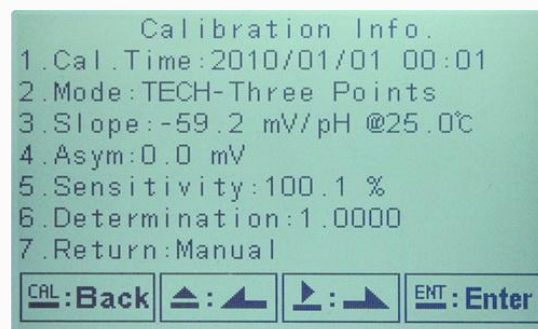


### Waterproof protection

Provides the instrument safety with IP65 waterproof protection and front flap cover design for easy installation and wiring.

### Dot-Matrix LCD

For convenience and better process safety, it reveals the last calibration records and a system setting overview

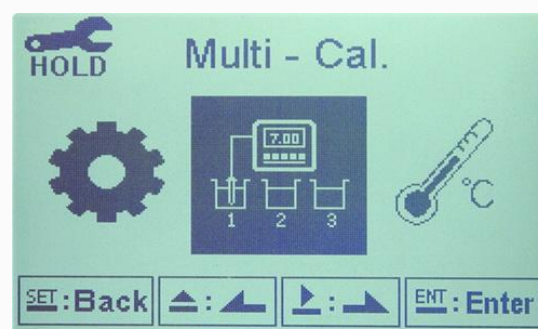


### Auto-Sense Backlight Display

For clear reading and energy saving, it turns on the backlight automatically when the environment becomes dark.

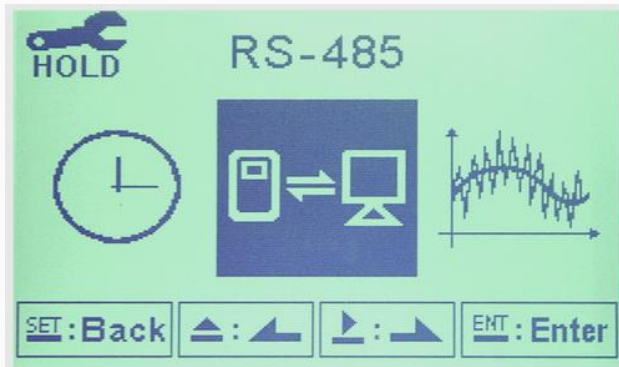
### Graphical Menu

Allows extremely intuitive & quick setting and calibration.





## Special Features of Advanced Version Transmitters

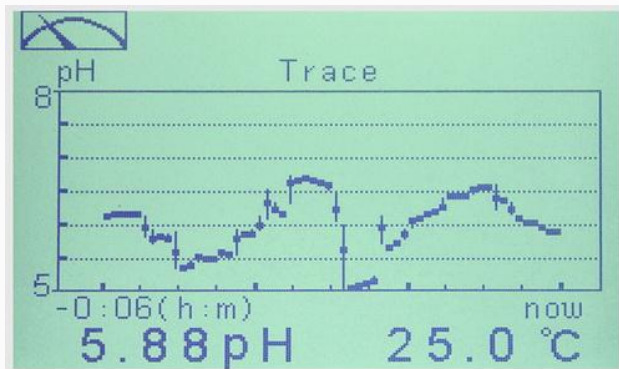


### RS-485 MODBUS protocol

Provides long-distance, multiple values and configuration info transmission and anti-electrical signal protection

### Real-time chart mode

3 minutes real-time dynamic graph to help you realize recent development in control



### Trace mode

Set up from 3 mins to four weeks duration of the measured value trend graph to help you master the process history

### Events logbook

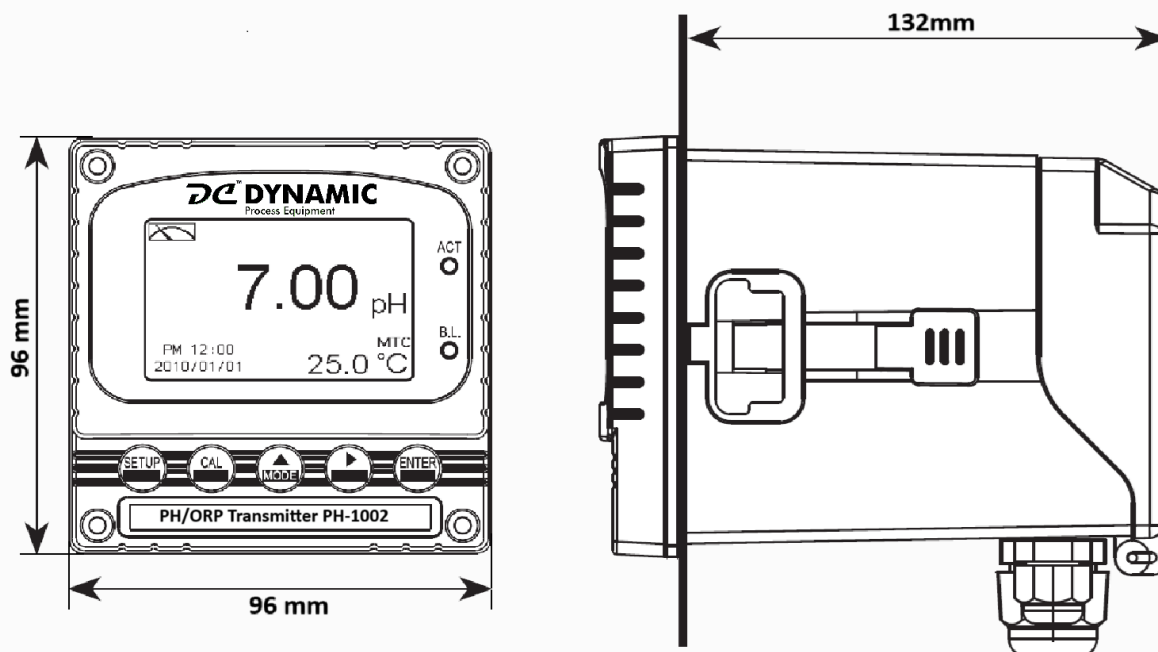
Actions, current output out of range, power outages and error records, no need for standby and record them anymore

Page 1

11/06/29	15:33:56	Set mode
11/06/29	15:33:49	Mea mode
11/06/29	15:33:47	Set mode
11/06/29	15:31:22	Mea mode
11/06/29	15:30:58	Set mode
11/06/29	15:30:26	Mea mode
11/06/29	15:29:59	Set mode

At the bottom of the screen, there are three buttons: 'SET:Back', two arrow buttons (up and down), and a third button with a right-pointing arrow.

## Transmitter Dimension DIN ¼, 96 x 96:



## Flameproof Transmitter Specification:

**Transmitter Type:** DIN1/4 (96 x 96mm)

### Flameproof protection:

EX-d AS PER IS/IEC 60079-1:2014 SUITABLE FOR INSTALLATION IN HAZARDOUS LOCATION OF GAS GROUP IIA & IIB, ZONE 1 & 2.

### Ingress protection:

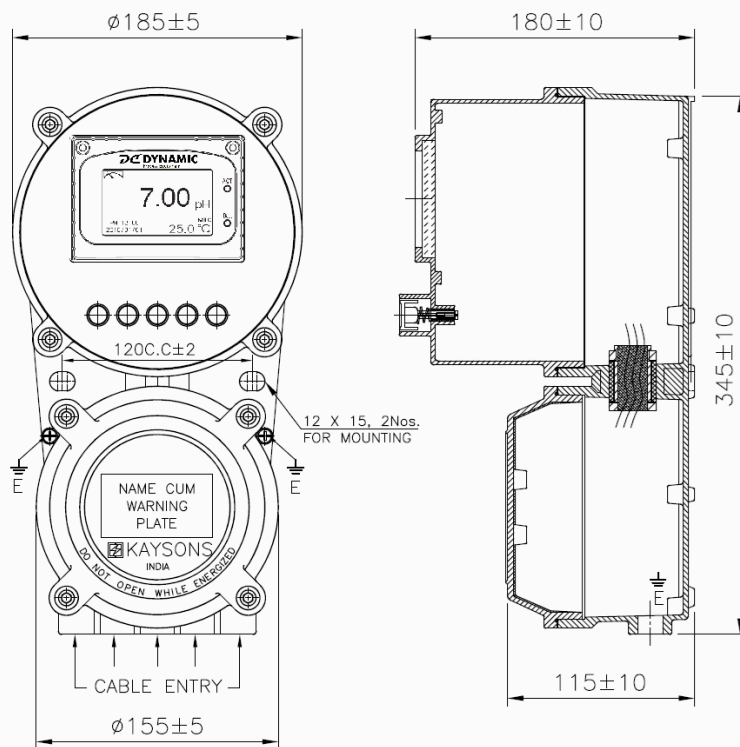
IP-66 AS PER IS/IEC 60529:2001 (REAFFIRMED 2014)

### DUST IGNITION PROTECTION:

(Ex 'db' IIB Gb) (Ex tb IIIC Db) AS PER IS/IEC 60079-31:2013

**Temperature class:** T6

**Material of construction:** DIE CAST AL. ALLOY LM-6.



## SmartSense Inductive Conductivity Transmitter for Concentration Measurement

### CO-3002-IN-AD-C



The SmartSense CO-3002-IN-AD-C transmitter provides precise inductive conductivity measurements even in the harshest chemical conditions. It comes with chemical concentration curves, or a self-defined conversion table. Built-in product adjustment function allows fine-tuning for concentration values to minimize process contamination caused deviations.

#### Applications

- Chemical Concentration
- Food and Beverages
- Industrial Process
- Scrubber
- Reagent dilution

#### Features

- Compatible with anti-fouling electrodeless conductivity sensor
- Conductivity ranges up to 2000 mS/cm
- Chemical concentration measurement with built-in concentration curve for most common chemicals
- User-friendly operation with text and graphic illustration, clear signs and easy to understand
- Chart mode, Trace Mode for graphical data interpretation
- RS-485 MODBUS RTU Digital Output
- Hi/Lo, Hi/Hi, Lo/Lo selectable two limited contact outputs with programmable set-points and hysteresis
- With conductivity, Salinity and TDS measurement available.
- In built temperature compensation
- LED indicated alarm or washing status signal
- Waterproof and dustproof design IP 65 (NEMA 4X)

## Specification:

Inductive Conductivity Transmitter SmartSense CO-3002-IN-AD-C		
Model		CO-3002-IN-AD-C
Measuring Modes		Conductivity / TDS / Salinity / Temp / Concentration
Measurement Range	Conductivity	0.0 $\mu$ S/cm to 2000 mS/cm (depends on selected range); Auto or Fixed $\geq 1$ mS/cm: $\pm 1\%$ ( $\pm 1$ Digit), $< 1$ mS/cm: $\pm 10$ $\mu$ S/cm
	Salinity	0.0 to 70.0 ppt, $\pm 1\%$ ( $\pm 1$ Digit)
	TDS	0 to 19999 ppm ; 0.00 to 199.99 ppt
	Temperature	Pt-1000: -30.0 to 200.0°C, NTC - 30K: -30.0 to 130.0°C $\pm 0.2^\circ\text{C}$ ( $\pm 1$ Digit)
	Concentration	NaCl_28%: 0 to 28.% HCl_18%: 0 to 18%, HCl_39%: 22 to 39% HNO3_30%: 0 to 30%, HNO3_30%: 35 to 96% NaOH_24%: 0 to 24%, NaOH_50%: 15 to 50% H2SO4_37%: 0 to 37%, H2SO4_88%: 28 to 88%, H2SO4_99%: 89 to 99%, H3PO4_35%: 0 to 35% (Range incl. different temp. condition; Resolution 0.01%)
Temperature Compensation		Automatic with Pt-1000 or NTC 30K Or Manual Input
Temperature Coefficient		Linear temperature compensation at 0.00% to 40.00%, Non-linear compensation and Off-compensation
Cell Constant		Freely adjustable 0.008 to 9.9999 $\text{cm}^{-1}$
Production Adjustment		Factor: 0.7000 to 1.3000
Display		LCD with auto/manual illumination function, Text, Chart, Trace mode
Analog Output		Isolated DC 0/4 to 20 mA corresponding to measurement, max load 500 $\Omega$
Serial Communication		RS-485 (MODBUS RTU or ASCII)
Calibration		Manual cell-constant adjustment / Conductivity standard solution calibration / Zero-point calibration
Event Log		Last 50 Events
Output Relay	Rating	240 VAC, 0.5A max. (recommended)
	Set Point	Hi/Lo, Hi/Hi, Lo/Lo selectable two limited programmable, ON/OFF
Wash Relay	Rating	240 VAC, 0.5A max. (recommended)
	Time	On: 0-99min. 59sec, Off: 0-999hr 59min.
Ambient Temperature		0 to 50°C
Storage Temperature		-20 to 70°C
Power Supply		100V to 240V AC $\pm 10\%$ , 50/60Hz, 8W Max.
Installation		Wall mounting, Pipe mounting, Panel mounting
Dimensions	Enclosure	H: 96 mm W: 96mm D:132 mm (1/4 DIN)
	Panel Cut out	93 mm x 93 mm
Weight		~ 500 Grams
Protection		IP 65 (NEMA 4X), Flameproof (Optional)

Also check out our range of **Retractable Housings** for Liquid Analytics...



#### SmartDip 405M

SmartDip 405M is a retractable electrode housing with pneumatically operated drive Unit. This metal body model can be implemented in harsh chemical applications through flan...



#### SmartDip 220M

SmartDip 220M is a compact retractable electrode housing with manual drive Unit. This metal body model can be implemented in different chemical applications including ferment...



#### SmartDip 405P

SmartDip 405P is a retractable electrode housing with pneumatically operated drive Unit. This plastic body model can be implemented in harsh chemical applications through flan...



#### SmartDip 250M

SmartDip 250M is a manually operated Retractable electrode housing with long Immersion lengths and ball valve for isolation. It can fit 120mm long Sensor.



#### SmartDip 420M

SmartDip 420M is a compact retractable electrode housing with pneumatically operated drive Unit. This metal body model can be implemented in different chemical applicatio...



#### SmartDip 240M

SmartDip 240M is a compact retractable electrode housing. This version can fit 120mm long sensor. It comes with 1" NPT, Triclover connection.



#### SmartDip 450M

SmartDip 450M is a pneumatically operated retractable electrode housing with long immersion length and isolation ball valve. This unique model can fit 120mm long sensor.