INDUMART Canada
www.indumart.com

CODUCTIVITY ANALYZER/CONTROLLER/TRANSMITTER

MODEL: CNA450

- MEASURES CONDUCTIVITY/RESISTIVITY
- INDICATES TEMPERATURE & mA OUTPUT
- ACCURATE , STABLE & STURDY (IP65)
- RELAY & ISOLATED mA OUTPUTS
- DATA STORAGE & HISTORY CURVE DISPLAY
- AUTOMATIC TEMPERATURE COMPENSATION
- RS485 COMMUNICATION INTERFACE (OPTION)
- VARIOUS TYPES OF ELECTRODES AVAILABLE

INTRODUCTION

Indumart CNA450 Analyzer/Controller/Transmitter is an excellent solution for accurate and continuous measurement/transmission of conductivity or resistivity in various industrial and municipal applications. Advanced features are incorporated into this instrument to allow control, mA transmission and data recording capabilities.

In addition to being a controller and a transmitter, it stores the measurement data and with the aid of "History Curve" and "Fixed Time & Fixed Point" functions, the important previous measurement values and the time of occurrence can be retrieved simultaneously on the same screen. Also the meter can record 200 recent events with their occurrence time such as high/low and start/end alarms, time and results of calibration, power ON/OFF, etc.

Exceptional stability and repeatability are other important features of CNA450 meter. As a stable instrument equipped with a watchdog program which ensures continuous operation without any halt or interruption, it provides data security for crucial measurements.

It accepts input signals in a variety of ranges (see the Specification Table). It has an electrically isolated and fully adjustable 4-20 mA output; enabling the operator to span the output over the desired range.

The measured conductivity value of the solution is affected substantially by the temperature variations. With Automatic Temperature Compensation function, the meter can convert the value and calculate the conductivity value at the measured temperature. For the conductivity values of pure water, this meter can automatically convert the values into those at 25°C to meet the *"Guide for Chemical Supervision of Water and Steam in Thermal Power Plants"*.

Stores & Depicts Measurement Data

Shows 200 Recent Events + Time Occurrence

Conductivity reading is also affected by the scheme of temperature compensation. The variation of conductivity versus temperature is dependent on the type of solution. The CNA450 allows the user to fine tune the compensation to their specific process. For example, the user can select "Super Pure Water" temperature coefficient option for desalinated water, or "Ordinary Water" for regular water. Additionally an arbitrary coefficient can be selected for a solution, i.e., 2.3 %/°C for salts, 1.9 %/°C for alkali, 1.6 %/°C for acids or any coefficient that the user deems as appropriate.

If the probe does not have a temperature sensor or if the process temperature is constant, the temperature compensation override feature of *CNA450* allows setting of the process temperature "manually".

The *CNA450* can be calibrated by both the wet and the dry calibration procedures. The wet calibration is performed with the cell suspended in a known solution, while the dry calibration procedure eliminates the need for conductivity reference solutions and allows the user to program the K factor of the cell supplied by the manufacturer to the transmitter.

The isolated output (using photocoupling technique) of CNA450 can be selected by the user between 0~10 mA and 4~20 mA. Current output can also be manually set at a certain value, which is a useful feature while performing maintenance. Control of the process can also be performed with the aid of high/low alarm relay. The status of high and low alarms is shown as flicker to attract the attention of the user. The alarm parameters such as setpoints, hysteresis, direction of the alarms can be programmed by the user.

The CNA450 indicates conductivity, mA output value and liquid temperature on the same screen. These values are indicated on an LCD screen (192 x 64 pixel) with back light. Availability of back light makes the meter suitable for application in extreme outdoor light, as well as very dark environment. Additionally, it shows the engineering units, the real time (time and date), uncompensated process data from the conductivity cell in ohms (resistivity) and the state of operation.

The standard digital clock of CNA450 provides the time for various functions of this instrument. The password protection prevents tampering of unauthorized people with calibration and parameter setting.

Anti-interference capability of CNA450 is an important feature which eliminates ground return interference. The electromagnetic compatibility design of this meter is according to EN50081/50082 standard.

The CNA450 is enclosed in a rugged washable polycarbonate case ideal for heavy-duty stand-alone or panel-mount operation, such as industrial wastewater neutralization, municipal water and wastewater treatment, pulp and paper, and other process control applications. It is supplied with either a universal mounting kit for surface, panel, or pipe mounting applications.

The RS485 communication interface may be ordered as an option.

SPECIFICATIONS

Display	192 x 64 pixel LCD with back light
Measuring Range	0.01 to 20,000 µS/cm depending on the probe, see the probe section. Indicates up to 100,000 µS/cm
Conductivity Error	±1.0% F.S.
Temperature Error	0.5°C (0...60°C)
Repeatability	±0.2% F.S.±1
Stability	±0.2% F.S.±1/24 hr
Auto Temp. Comp.	0...99.9°C
Analogue Output	0...10 mA or 4...20 mA selectable
Output Error	Better than 1% F.S.
Output Impedance	1.5 kΩ (for 0...10 mA) 750 Ω (for 4...20 mA)
Alarm Relay	3A @ 220 VAC
Power Supply	85...230 VAC, 50...60 Hz 200...240 VAC, 50 Hz 24 VDC
Data Storage	1 point per 5 minutes for 1 month
Case Material	Heavy-duty PVC
Environ. Protection	IP65
Environ. Condition	-10...+60°C; 0 to 85% RH
Electromag. Comp.	According to EN50081/50082
Mounting	Panel with 138 x 138 mm cut-out, pipe or wall mounting
Dimensions (mm)	146 x 146 x 108 (L x W x D)
Weight	Approximately 0.8 kg (1.8 lb)

Specifications may change without prior notice.

CONDUCTIVITY PROBES (ELECTRODES)

The conductivity instrument consists of two parts: 1) CNA450 meter, 2) Conductivity probe, . Indumart offers four ranges conductivity probes. These industrial probes can be used both in flowthrough and submersible applications. The process pressure must not exceed 0.6 MPa (6 bar or 87 psi).

Model	Electrode Constant	Measurement Span (µS/cm)	Max. Conductivity that Can Measure (but not recommended)
C1	0.01	0.01 ~ 20	100.0 µS/cm
C2	0.1	0.1 ~ 200	1000.0 µS/cm
C3	1.0	1.0 ~ 2,000	10,000 µS/cm
C4	10	10~ 20,000	100,000 µS/cm

ORDER CODE

Model: **CNA450-** ☐ ☐ ☐ - ☐

POWER SUPPLY
85...230 VAC, 50...60 Hz — A
200...240 VAC, 50 Hz — C
24 VDC — D

MOUNTING
Panel Mounting — N
Pipe Mounting — P
Wall Mounting — W

RS485 COMMUNICATION
Not Required — X
Required — R

CONDUCTIVITY PROBE*
Not Required — X
0.01 Electrode Constant — C1
0.1 Electrode Constant — C2
1.0 Electrode Constant — C3
10 Electrode Constant — C4

* Cable length must be specified at the time of ordring.

INDUMART INC.
1 - 15 West Pearce St., Richmond Hill, Ont. L4B 1H6, Canada
Phone: (905) 305-8301 Fax: (905) 305-8303 E-mail: Sales@Indumart.com