CONDUCTIVITY ANALYZER / CONTROLLER

MODEL: IND8082

- QUICK AND EASY SET UP
- RESISTIVITY VERSION FOR HIGH PURITY APPLICATIONS
- ON / OFF CYCLE TIMER
- HIGH / LOW ALARM RELAY
- ALARM LED
- STATUS ERROR / FAIL LED
- AUTO TEMPERATURE COMPENSATION
- FIELD-SCALABLE OUTPUT SIGNAL
- PASSWORD PROTECTION
- TEST FEATURE

DESCRIPTION

Indumart *IND8082* is a rugged industrial grade instrument that is designed for controlling conductivity and resistivity in the most demanding environments.

This microprocessor-based analyzer / controller is extremely easy to operate with an intuitive user interface and a large LED display. Packaged in a rugged NEMA 4X fibreglass reinforced polyester enclosure it is suitable for use in a wide variety of industrial and municipal applications.

Frequently used functions are accessed through an intuitive step-through menu printed directly on the front panel for ease of navigation. Pressing the MENU key scrolls through the menu, illuminating a small LED beside the selected item and displaying the stored value. Arrow keys are used to change the value.

Seldom used adjustments such as the temperature units are set using DIP switches on the back of the swing-out front panel.

INPUT

Model *IND8082* acceptsf Indumart's 4983 Epoxy body and CPVC body conductivity sensors. Both have graphite electrodes and can be ordered for use in standard or high temperature / pressure applications.

Special conductivity sensors with polypropylene bodies and electrodes made of stainless steel and titanium are also available, as are special fittings and flanges. Applications include food grade and heavy-duty industrial water processing.

To optimize resolution *IND8082* can be ordered pre-configured for any of seventeen standard conductivity ranges, plus for special ranges.

For high purity applications, the controller can be ordered pre-configured to display resistivity with a range of 0-20 mega Ohms.

OUTPUT

IND8082 provides three analogue outputs, 4-20 mA, 0-5 Vdc and 0-1 mA.

The instrument also provides control of an external device using the control. The control relay can be selected to activate in response to either rising or falling conductivity. Set-points for Relay On and Relay Off are independently set. The control relay has a built-in cycle timer, with easy to adjust Relay On and Relay Off cycle times. This feature enables a tighter control of batch processes.

The Control Relay has a manual override, which overrides the controller, placing the relay in AUTO, OFF, or ON mode. This is a useful feature when servicing auxiliary devices connected to the relay.

An alarm relay has both high and low set-points with a fixed dead-band. When this relay is

energized, the Alarm LED on the front panel also illuminates to clearly indicate an alarm condition.

DIAGNOSTICS

A self-diagnostics program clearly indicates and system errors or faults. When the unit is on-line, the RUN LED on the front panel will illuminate. In the event of a system error the FAIL LED will illuminate. When the FAIL LED is illuminated, the Status menu item will display a fault code. The manual will indicate the source and likely remedy for the fault. When the fault is corrected the FAIL LED will no longer be illuminated.

SPECIFICATIONS

DISPLAY
4 x 7 segment ½" LED
Indicator Lights 4 LED: Run, Fail, Alarm, Relay

MEASURING RANGE
Conductivity
The range is factory set but may be field changed (21 ranges - see the range table)
Temperature 0 to 100 °C

POWER REQUIREMENT
98-132 VAC, 50/60 Hz (less than 10 VA)
Options
196-264 VAC, 50/60 Hz (less than 10 VA)
23-26 Vdc (nomianl current: 150 mA)

AMBIENT CONDITIONS
Temperature -30 to 50 °C
Humidity 0 to 90% RH non-condensing

CONTROL RELAY
Number of Relays One
Rating 5A @ 115/230 VAC, 5A @ 30 VDC, SPDT
On / Off Set-points Field selectable Full Scale
Cycle Timer Field Selectable 0-600 seconds
Manual Override AUTO/OFF/ON
Fail-Safe Normal or Fail-Safe Operation

ALARM RELAY
Number of Relays One High and Low
Rating 5A @ 115/230 VAC, 5A @ 30 VDC, SPDT
Alarm High Field selectable Full Scale
Alarm Low Field selectable Full Scale
Dead-band Fixed at 2% of ful scale
Fail-Safe Normal or Fail-Safe Operation

RELAY INDICATORS
Two individual LED's indicate status of the control relay and the alarm relay.

ANALOGUE OUTPUTS
Non-Isolated 0-1 mA, 100 ohms maximum load
Non-Isolated 0-5 VDC, 1000 ohms maximum load
Isolated 4-20 mA, 800 ohms maximum load
Range Expand
The analogue outputs can be scaled to represent any segment of the instrument scale to a minimum of 10% of full scale
Output Hold
Outputs are automatically placed on hold when the instrument is placed in the menu mode
Temperature
The 0-1 mA and 0-5 VDC output can be selected to track either the process or the temperature, 0 to 100 °C

SENSORS
Standard
Standard Conductivity Cells, See the range table for correct Cell constant
Max. Distance Cell to Controller 300 ft. (100 m)
Calibration 1 point, manual
Temperature Compensation 0-100 °C

DIAGNOSTICS
Invalid Entries
Identified by flashing menu LEDs
Fail LED
Illuminates red to indicate Status Fault. Scroll to Status in menu to determine fault code. Refer to Manual for probable cause and remedy
Alarm LED
Illuminates red when Alarm Relay is energized, indicating high/low process value or memory loss

TEST
Display value ad analog outputs can be manually set to any value for testing and diagnostic purposes.

SAFETY AND SECURITY
Operator
Password protected (activated by DIP switch)
Memory
Non-volitale memory (EPROM)
Microprocessor
Watchdog timer monitors microprocessor. Instrument automatically returns to online operation if left in menu mode for more than 10 minutes and no key pressed

SENSITIVITY
0.1% of span

STABILITY
0.1% of span per 24 hours non-cumulative

TEMPERATURE DRIFT
Zero 0.01% of span per °C
Span 0.01% of span per °C

ENCLOSURE
NEMA 4X molded fibreglass reinforced polyester enclosure with four ½"conduit holes and mounting feet for surface mount. A NEMA 4 plug is provided for one hole

MOUNTING
Surface Mount
Options
Panel Mount Kit, P/N C35-68
Pipe Mount Kit, P/N C35-69

NET WEIGHT
3 ½ lb (1.6 kg)

APPROVALS
CSA

RANGE TABLE

CONDUCTIVITY RANGE (Micro Siemens / cm)	CELL CONSTANT
0 - 2	0.01
0 - 5	0.01
0 - 10	0.05
0 - 20	0.05
0 - 50	0.05
0 - 100	0.05
0 - 200	0.5
0 - 500	0.5
0 - 1000	0.5
0 - 2000	1
0 - 5000	1

CONDUCTIVITY RANGE (Milli Siemens / cm)	CELL CONSTANT
0 - 10	10
0 - 20	10
0 - 50	10
0 - 100	20
0 - 500	50
0 - 1000	50

SPECIAL RANGES	
0 - 10% H2SO4	50
0 - 15% H2SO4	50
0 - 10% NAOH	50
0 - 15% NAOH	50

SENSORS AND ACCESSORIES

4983P
Graphite, Epoxy, EPDM, CPVC, low / high pressure Compression Fitting 3/4" NPT

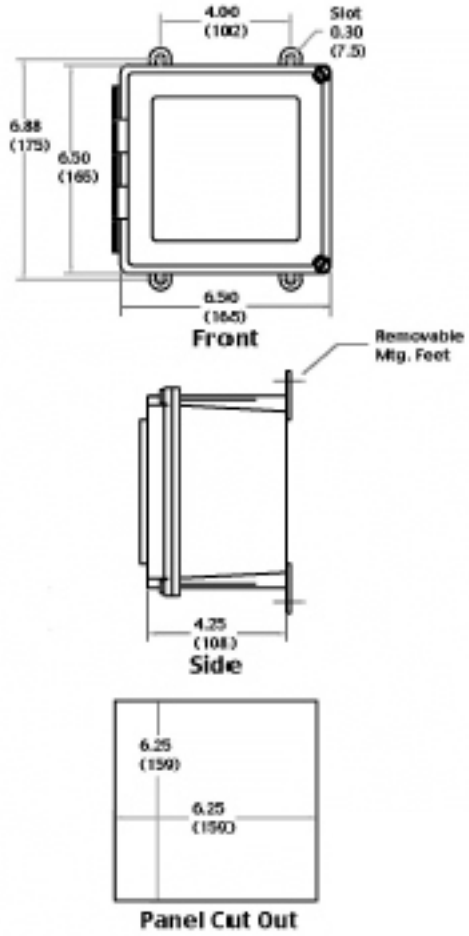
4983S
Graphite, Epoxy, Polypropylene,316 SS, low / high pressure, Compression Fitting 3/4" NPT

4983R
Resistivity, 0-20 Mega Ohm. Constant of 0.01

MHMSC
Tank Mount Hardware for 4983P and 4983S Cells.

BVCPVC
Hot Tap Mount Hardware for 4983P and 4983S

DIMENSIONS



ALSO AVAILABLE: PH, ORP AND DISSOLVED OXYGEN ANALYZER / CONTROLLER

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