IND-100 PANEL MOUNT INDICATOR

4 TO 20 MA , 0 – 5VDC , 0 – 10VDC

PANEL MOUNT INDICATOR

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IND-100 - PANEL MOUNT INDICATOR

MAIN FEATURES

- Size : **144x72x175 mm**
- Power supply could be 230VAC (Terminals 1 & 2) or 24VDC (Terminals 3 & 4)
- Freely-selectable input: 4 ... 20 mA , 0 - 5 VDC or 0 - 10 VDC
- Built in transmitter power supply 24 VDC.
- Easy to configure.
- 2 freely-programmable Alarm Relay outputs
- 4-key membrane keyboard

DESCRIPTION

IND-100 is a Digital Indicator has been developed specifically for the display of measured values from various process transmitters, such as pressure , temperature and Differential Pressure .

It offers various input configurations for 4 - 20 mA , 0 - 5 VDC and 0 - 10 VDC standard signals, which can be selected through an internal selector DIP switch and through the Indicator configuration.

Thus, as an alternative, transmitters with current or voltage signals can be connected on the same instrument.

Using the 24VDC outgoing power supply terminals in the Indicator for the 4-20 mA transmitter current loop transmitter (2-wire) as well as for the 0-5VDC or 0-10VDC (3-wire) transmitter.

Two alarm outputs AL1 and AL2 are also available. Alarm Setpoint , direction (Alarm Hi or Alarm Low) and Alarm Dead band can be simply configured .

IND-100 Indicator offers possibility of Automatic Zero Offset adjustment for correcting zero offsets and sensor drift.

Sensor calibration and linearization of up to 1500 points which makes it a very accurate and unique indicator .

IND-100 is provided with a PEAK TEST facility mainly used to indicate the highest or lowest measured signal during the Test.

All configuration and programming can be carried out through the four front-panel Push Buttons

TECHNICAL DATA

Display

- Principle 7-segment red LED
- Display 6-digit
- Indication range -99999 - 999999

Scale setting

- Process Range Values are freely adjustable via individual program numbers
- Adjustable decimal point

Input

- Number and type 1 input for standard signals
- Input signal 4 ... 20 mA or
- DC 0 - 5 VDC or
- DC 0 - 10 VDC
- Input configuration selectable via DIP switches and programming

A/D Converter

- 24 bit (16000000 points) - 8 MHz

Accuracy

- <± 0.05 % of the measuring span ± 1 digit

Alarm Relays Outputs

- 2 independent Relays with separate switch contacts , freely-programmable
- Relay contact Load: AC 230 V, 5 A (resistive load)
- DC 30 V, 5 A (resistive load)

Memory EEPROM parameter memory

- Data preservation > 20 years

Transmitter power supply

- DC 24 V, max. 50 mA, galvanically isolated

Power supply

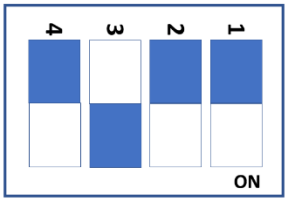
- AC 230 V, 50/60 Hz, ± 10 % or
- 24VDC
- Power consumption max. 8 VA
- Wire cross-section 2.5 mm²

Permissible ambient conditions

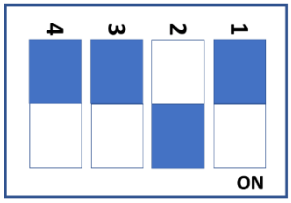
- Operating temperature 0 - 50 °C
- Storage temperature -20 ... +70 °C
- Humidity relative humidity ≤ 75 %, non-condensing

SELECTING THE TYPES OF SENSORS

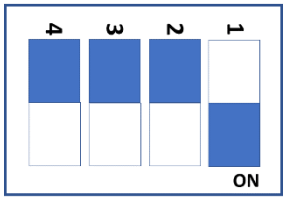
Remove the back 4 screws and pull out the indicator . On the main board position the 4 DIP switches on one of the following 3 position depends on the type of input to be indicated.



0 – 10VDC INPUT



4 – 20 mA INPUT



0 – 5VDC INPUT

ELECTRICAL CONNECTIONS

CONNECTOR NUNBERS		FUNCTION
1 (L)	2 (N)	220VAC – Supply Voltage
3 (+)	4 (-)	24VDC – Supply Voltage
5		4 – 20 mA Input supply (24VDC)
6		4 – 20 mA Input Negative
7		0-5VDC Input
8		0 – 10VDC Input
9		24VDC Output (+ve)
10		Ground
11		Relay 1 – N.O. Contact
12		Relay 1 – Com. Contact
13		Relay 1 – N.C. Contact
14		Relay 2 – N.O. Contact
15		Relay 2 – Com. Contact
16		Relay 2 – N.C. Contact

PROGRAMING

Buttons

*At the F*ront panel there are 4-key membrane Push Buttons

1- "▲" Increase Push Button
2- "▼" Decrease Push Button
3- "●" Accept Push Button
4- "■" TEST (to be used during the Peak Test)

MAIN CONFIGURATION

1- Enter Password

- *Press "▲ + ▼", display shows first "1230".*
- *Press"▲" to change password to "1234"*
- *Press"●" to accept and enter programming mode*
- *(Press wrong password will logout programming mode.)*

2-Setting

Set INPUT Signal (Signal to be displayed 4-20mA , 0- 5VDC or 0-10VDC):

- *The Display will show "Input", then the type of input stored in the EEPROM.*
- *Display will show "4 – 20 "*
- *Press "● " to save and enter if 4-20 mA is the required input to be measured.*
- *Press "▲", the display will show "0 – 5V"*
- *Press "● " to save and enter if it is the required input to be measured.*
- *Press "▼", the display will show "0 – 10V"*
- *Press "● " to save and enter if it is the required input to be measured.*
- *You can go back to any type of input by pressing "V".*

Decimal point:

- *Display shows "-dP-". Then Decimal Pont position .*
- *"1" for the decimal point at the 1st digit , "4" decimal point at the 4th digit.*
- *Press "▲"or "▼" to change decimal point position.*
- *Press "● " to save and enter next level.*

Set zero(The displayed value at 4mA):

- Display shows "-LL-" to set Pressure Transmitter Zero value in Bars. (typical = 0)
- Press "▲" to increase, press "▼" to decrease.
- *Press "● " to save and enter next level.*

Set Span (value to be displayed at 20mA):

- Display show "-HH-" to set Pressure Transmitter Max. value in Bars . (typical 700)
- Press " ▲ " to increase, press " ▼ " to decrease.
- *Press " ● " to save and enter next level.*

Set UNITS (Signal units , SIGNAL , BAR , TON or Knt):

- Display show "-Unit- " . Then the Units stored in the EEPROM.
- *Press " ▲ "or " ▼ " to change between the units* "signal" , "BAR" , "TON" , "Knt".
- *Press " ● " to save the Units in the EEPROM . The dedicated LED will be ON.*

Set Area (Piston Area in meter square):

- If "UNIT" is Ton or KNT , the area of the Piston has to be entered
- Display show "-Area- " . Then Area stored in the EEPROM. (Typical 0.0314)
- *Press " ▲ "or " ▼ " to change area in meter square.*
- *Press " ● " to save the Area in the EEPROM .*

RELAYS AND ALARM SETTING

1- Enter Password

- *Press " ▲ + ▼ " , display shows first "1230".*
- *Press" ▲ " to change password to "1236"*
- *Press" ● " to accept and enter programming mode*
- *(Press wrong password will logout programming mode.)*

2-Setting

RELAY – 1 Action:

- *Display shows "AL- 1". It means ALARM RELAY 1*
- *"ACT - 0". means that RELAY-1 is NOT ACTIVE*
- *"ACT - 1". means that RELAY-1 is set For LOW ALARM.*
- *"ACT - 2". means that RELAY-1 is set For HIGH ALARM.*
- *Press " ▲ or ▼ " , to set the required action*
- *After selection , press " ● " to save and enter next level.*

RELAY – 1 Setting:

- Display shows "-Set 1 -". Then Relay-1 setting value stored in the EEPROM.
- *Press " ▲ or ▼ " to set the required Relay-1 Alarm setting.*
- *Press " ● " to save and enter next level.*

RELAY – 1 Dead Band:

- Display shows "db-1 ". Then Relay-1 Dead Band setting stored in the EEPROM.
- *Press " ▲ or ▼ " to set Relay-1 Dead Band setting.*
- *Press " ● " to save and enter next level.*

RELAY – 2 Action:

- *Display shows "AL- 2". It means ALARM RELAY 2*
- *"ACT - 0". means that RELAY-1 is NOT ACTIVE*
- *"ACT - 1". means that RELAY-1 is set For LOW ALARM.*
- *"ACT - 2". means that RELAY-1 is set For HIGH ALARM.*
- *Press " ▲ or ▼ " , to set the required action*
- *After selection , press " ● " to save and enter next level.*

RELAY – 2 Setting:

- Display shows "-Set 2 -". Then Relay-2 setting value stored in the EEPROM.
- *Press " ▲ or ▼ " to set the required Relay-2 Alarm setting.*
- *Press " ● " to save and enter next level.*

RELAY – 2 Dead Band:

- Display shows "db-2 ". Then Relay-2 Dead Band setting stored in the EEPROM.
- *Press " ▲ or ▼ " to set Relay-1 Dead Band setting.*
- *Press " ● " to save and enter next level.*

KNT MAXIMUM SETTING

1- Enter Password

- *Press " ▲ + ▼ " , display shows first "1230".*
- *Press" ▲ " to change password to "1232"*
- *Press" ● " to accept and enter programming mode*
- *(Press wrong password will logout programming mode.)*

2-Setting

Knt Maximum Setting:

- Display shows "nt " , then the display will show the max Knt setting stored in the EEPROM.
- *Press " ▲ or ▼ " to adjust the max Knt value .*
- *Press " ● " to save.*

ZERO ADJUSTMENT

IND-100 Indicator offers possibility of Zero adjustment for correcting zero offsets and sensor drift.

In order to do so ,

- set the process value to its zero level (0 VDC or 4mA).
- Press the " ▲ " Push Button .
- The indicator will show "OFFSET" , then "------" , to indicate that programing adjustment is done and the Zero Offset value is stored inside the EEPROM.
- The Indicator should now read Zero.

PEAK TEST

In order to perform the PEAK test :-

- Press the TEST push Buttons " ■ " , The yellow test LED will be illuminate.
- The indicator shall only indicate the highest input signal received "the Final Peak value".
- Pressing "▼" , resets the indicator and go back to normal operation mode.
- During Peak Testing . and after the test is completed , and the applied pressure is dropped to Zero. Press the "ZERO ADJUSTMENT " Push Button " ▲ " to reset the Zero back and begin another Peak Test.

HOW TO ORDER

IND-100 – AA – BB – CC – DD – EE - OPTIONS

AA – TYPE OF PROCESS VARIABLE TO BE INDICATED
PRESSURE . TEMPERATURE , ... (PLEASE SPECIFY)

BB – UNITS REQUIRED (SELECT 4 UNITS MAXIMUM)
BAR , TON , oC , oF , oK ,....(PLEASE SPECIFY)

CC – REQUIRED INPUT SIGNALS
4 - 20 MA
0 – 5VDC
0 – 10VDC
OTHERS (PLEASE SPECIFY)

OPTIONS - PLEASE SPECIFY DIRECTLY.