

Universal Input Digital Process Indicator IDU-210

Function: The IDU-210 is a low cost microprocessor based universal input panel mounting digital process indicator for temperature and process measurement. The IDU-210 has a bright 4 digit red LED display. The display can be factory set, or adjusted by the user, to display engineering units (standard engineering unit labels supplied with each display). The indicators come as standard with a transmitter/transducer excitation supply, one alarm relay and a universal mains power input. The displays are housed in a 1/8 DIN sized enclosure and can be scaled from -1999 to 9999 full scale. Options on the IDU-210 include: an isolated analogue retransmitting output; two further alarm relay outputs; low voltage DC/AC power supply input; and green LED display.

Features/Options on the IDU-210 are as follows:

Universal Input

The IDU-210 can be directly connected to most popular sensors and process signals including Thermocouples, RTD's, 0/4 to 20mA loops and DC signals up to 10V including mV signals from strain gauges and load cells. Temperature can be displayed in °C or °F to 0.1° resolution. Process signals can be scaled to engineering units using any portion of the -1999 to 9999 display range with adjustable decimal point position.

User Configuration

The IDU-210 is available with or without front panel pushbuttons. If requested without front panel pushbuttons, configuration is effected by use of two concealed pushbuttons located behind the front panel. If requested with front panel pushbuttons, the IDU-210 has additional features such as Zero, Tare and Max/Min memory functions. For multiple users there is also a Windows™ based configuration package for uploading configuration details via a simple RS232 link. A special adapter lead can be provided to connect an RS232 interface on the computer to the programming port on the IDU-210. All methods of configuration can have password protection to prevent tampering.



Transmitter/Transducer Power Supply

The IDU-210 comes as standard fitted with an isolated semi-regulated 24 Volt DC transmitter power supply and an isolated regulated 10 volt DC transducer excitation supply. The transmitter supply is suitable for all types of 2 wire 4 to 20mA transmitters and the transducer excitation supply is ideally suited to strain gauge type sensors, e.g. pressure transducers and load cells.

Analogue Re-transmitting Output (Optional)

The measured value can be re-transmitted as a linear 4 to 20mA signal to other devices such as chart recorders or data loggers. The output can be scaled for any portion of the display range e.g. 4 to 20mA = 300 to 800 psi even though the displayed range is 0 to 1000 psi. The analogue output always follows the displayed value, so when using Thermocouples and RTD's the analogue output is linear to temperature, not input signal.

Alarm Relays (Alarm 1 fitted as standard Alarms 2 & 3 are Optional)

The IDU-210 comes fitted as standard with Alarm 1 and can be fitted with up to two further alarm relay outputs as an option. Alarms 1 and 2 are changeover contacts and alarm 3 is a normally open contact. Set-points can be factory set or can be configured by the user using the hidden or front panel pushbuttons. If the set-points are to be adjusted frequently the front panel pushbutton option should be specified. Each alarm can be configured to be a High or Low alarm.

SPECIFICATIONS

INPUTS:

PROCESS

DC Current
0 to ±20mA into < 5 ohms

DC Voltage

0 to ±100mV into > 10Mohm
0 to ±10V into > 1Mohm

TEMPERATURE

Displayed in either °C or °F
Resolution: 1 or 0.1 °C /°F

Resistance Thermometers

3 wire PT100
Excitation: 0.25mA

RTD type	Range Covered
PT100	(alpha=385)-200 to 850°C
	(alpha=392)-200 to 457°C

Accuracy including linearisation:
±0.5°C typically@25°C
±0.8°C worst case

Thermocouple

Type J, K, N, R, S or T
Open circuit sensor detection:
Upscale drive

Type	Range Covered
J Fe/NiCu	-210 to 1200°C
K NiCh/Ni/Al	-270 to 1372°C
N Ncrs/Nisil	-200 to 1300°C
T Cu/CuNi	-270 to 400°C

Accuracy including linearisation:
±0.5°C typically@25°C
±1.0°C worst case
R Pt13%/RhPt -50 to 1767°C
S Pt10%/RhPt -50 to 1767°C
Accuracy including linearisation:
±1.2°C typically@25°C
±2.0°C worst case

DISPLAYS:

Display
4 digit high brightness
red LED's

Option:
Green LED's

Digit Size
14.2mm

Full Scale Range
-1999 to 9999

Decimal Point
Programmable to any
location in the range
-1.999 to 9999

Display Update
2 updates per second

A/D Converter
Dual slope integrating
with auto-zero

Conversion Rate
500mS

SUPPLY:

Power Supply Voltage
Universal mains power:
90 to 265 Volt AC

Option:
Universal low voltage:
10 to 32 Volt AC/DC

Power Required
7VA maximum

**Transducer/Transmitter
Excitation Voltage:**

Transducer Supply
10V dc at 35mA max

Transmitter Supply
Unregulated 24 Volt DC at
35mA max

Isolation: 500 Volt DC or AC
peak

OUTPUT:

Alarm Relays Output

Alarm 1 standard

Alarm 2 & 3 optional

Alarm 1 & 2- Changeover
contacts, Alarm 3 normally
open contacts:
rated at
1 Amp at 250 Volt AC
5 Amp at 30 Volt DC

**Analogue Re-transmitting
Output**

4 to 20mA into 10 to 900 ohms
Maximum output: 22mA
Temperature drift: <150ppm
Accuracy: 0.2% of span typical
0.4% of span worst case
Resolution: 0.02mA

GENERAL:

Accuracy (Process i/p)
±0.1% (worst case)
±0.05% typical @ 25°C

**Temperature
Coefficient**
<200ppm/°C

**Cold Junction
Compensation
Accuracy**

better than 0.5°C after
30 minutes

**Common/Series Mode
Rejection**

>150dB/>70dB at 50/60 Hz

**Operating/Storage
Temperature/RH**

+10 to +50°C/-10 to +70°C
0 to 95% RH
non-condensing

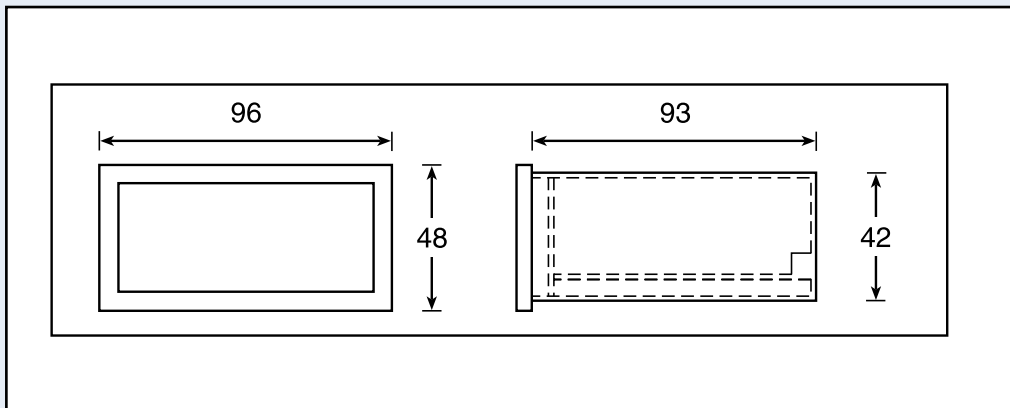
Protection Level

Fascia panel to IP65

Weight

Mains or Low Voltage powered
0.4 Kg (max) net
0.55 Kg including handbook,
labels and packaging.

MECHANICAL DETAILS



Dimensions (mm):
48(H) x 96(W) x 100(D)

Panel Cut-out (mm):
44(H) x 92(W)

ORDERING DETAILS

- (a) Give identification code, i.e. IDU-210
- (b) Give details of power supply, i.e. 90 to 265 Volt AC
- (c) Give details of input type and range, i.e. 0 to 100 mV
- (d) Give details of calibration, i.e. 0 to 150.0 psi
- (e) Specify if front panel pushbuttons required
- (f) Specify if Green LED display required
- (g) Specify if alarm relays required and if so how many, i.e. 2 alarm relays
- (h) Specify if analogue retransmitting output required

