Remote IO Module / Modbus transmitter

UIO-4IN-20mA-12

Features

- Four Channel 0 ~ 20mA 12 bit Resolution ADC
- Modbus RS-485 Protocol Interface.
- Individual Channel offset calibration
- Resolution at 0.005 mA
- Convenient address selection rotatory switch from 1 – 99 Address
- Complete range of baud rate settings supported
- Sensor open indication, Analog values in integer and float values
- Suitable for both Din Rail and Wall Mountable
- Product Dimensions 110mm x 50mm x 55mm (L x W x H)

Supported Modbus Function Codes

02 – Read Discrete Inputs
03 – Read Holding Registers
04 – Read Input Registers
06 – Write Single Register
16 – Write Multiple Registers

Input Registers (Read Only)

(30001) - (30004)

- Channel 1 ~ 4 milli-Ampere in 16bit signed decimal values at resolution 0.001
  0 – 20000

mA in Float Values
(30011) - (30018)

- Channel 1 ~ 4 micro-Ampere in float
- 0 ~ 20000.000 uA

Discrete Inputs (Read Only)

(10001)

- Unused

(10002)

- Unused

(10003)

- Channel 1 Sensor Status.
  1 indicates Sensor Open 0 indicates Working

(10004)

- Channel 2 Sensor Status.
  1 indicates Sensor Open 0 indicates Working

(10005)

- Channel 1 low value alarm status.
  1 indicates alarm is on due to low value / 0 indicates value is with in normal range

(10006)

- Channel 1 high value alarm status.
  1 indicates alarm is on due to high value / 0 indicates value is with in normal range

(10007)

- Channel 2 low value alarm status.
  1 indicates alarm is on due to low value / 0 indicates value is with in normal range

(10008)

- Channel 2 high value alarm status.
  1 indicates alarm is on due to high value / 0 indicates value is with in normal range

Holding Registers (Read/Write)

(40001) - (40004)

- Channel 1~4 milli-Ampere Offset Calibration Register
  -10000 to +10000 in 0.001 milli-Ampere resolution

(40005)

- Alarm 1 Trigger mode register (Set a high or low in Corresponding Input Status)
  0 – Not enabled.
  1 – Either CH1 Minimum Value OR CH1 Maximum Value Triggers Alarm Status
  2 – CH1 Maximum Value Triggers Alarm Status
  3 – CH1 Minimum Triggers Alarm Status

(40006)

- Alarm 1 will Trigger to ON State if the CH1 milli-Ampere is below the set Minimum signed integer -32000 to 32000

(40007)

- Alarm 1 will Trigger to ON State if the CH1 milli-Ampere is above the set Maximum signed integer -32000 to 32000

(40008) - (40009)

- Not Used

(40010)

- Alarm 2 Trigger mode register
  0 – Not enabled.
  1 – Either CH2 Minimum Value or CH2 Maximum Value Triggers Alarm Status
  2 – CH2 Maximum Value Triggers Alarm Status
  3 – CH2 Minimum Value Triggers Alarm Status

(40011)

- Alarm 2 will Trigger to ON State if the CH2 milli-Ampere is below the set Minimum signed integer -32000 to 32000

(40012)

- Alarm 2 will Trigger to ON State if the CH2 milli-Ampere is above the set Maximum signed integer -32000 to 32000

Configuration Setting

(40101)

- Device Address as per the address switch – (Read Only)

(400102)
(Reg.Value) – Baud Rate

0 – 300	8 – 14400
1 – 600	9 – 19200
2 – 1200	10 – 38400
3 – 1800	11 – 57600
4 – 2400	12 – 62500
5 – 4800	13 – 115200
6 – 7200	
7 – 9600	**Default. 9 – 19200**

(40103)
(Reg.Value) – Bits, Parity, Stop Bit

0 – 8 N 1
1 – 8 E 1
2 – 8 O 1
3 – 8 N 2
4 – 8 E 2
5 – 8 O 2

Default. 0 – 8 N 1

Default Mode Switch

Default mode is handy when the serial communication setting are forgotten.
Setting the Address switch to 00 will put the device in default mode

Address Set to 00 - Default mode ON

- Slave Address – 1, Baud 19200, 8N1

Address Set to non 00 - Default mode OFF

- As per the saved configuration values.

Note:

No parameter selection is changed just by entering the default mode. All the parameters remains same including the communication settings unless changed by the master or if there is a corruption in data error indicated in normal mode the device will try to recover to Factory settings.

This mode can be used to read the present settings and/or change the settings

Sensor Open indication

If Channel 1 or 2 Sensor is not connected value is read as 0.0 mA and corresponding Discrete Input bit is set.

Diagnostics

Tx LED - Quick Blink Indicates Tx Data in Normal operation
Rx LED - Quick Blink Indicates Rx Data in Normal operation
Power LED - Power Supply Status

Electrical Details

Power Supply: 15V to 24 V DC
Connector Type: 5.08mm Fixed Screw terminal block

Top Connector

RS485

A+	B-	E
1	2	3

Bottom Connector

Power

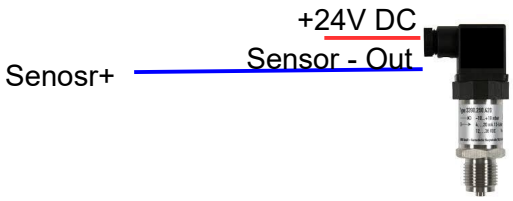
V+	V-
1	2

Sensor Connector

Channel 1		Channel 2		Channel 3		Channel 4	
CH1+	CH1-	CH2+	CH2-	CH3+	CH3-	CH4+	CH4-
1	2	3	4	5	6	7	8

4 to 20mA Remote IO Module wiring connection diagram

Connection Example - 2 Wire Sensor Type



Connection Example - 3 Wire Sensor Type