

## PID / PROGRAMABLE ON/OFF INDICATOR CUM CONTROLLER

- Input: Universal (RTD/Thermocouple/Voltage/Current)
- Size: 48mmx48mm, 48mmx96mm, 96mmx96mm
- Indication: 4 Digit, 7 Segment RED LED Display
- No. Of Set points: Up to 4 set points, 4~20 mA (Analog Output) + 4 relays (5A/230VAC)
- No. Of Analog Output: Isolated 0/4~20 mA or 0-10 V DC for control / retransmission output
- Communication Port/Protocol: RS485 / MODBUS RTU
- Supply Voltage: 85~265 V AC SMPS/ 20~35 V DC (Optional)
- Auto / Manual selection PID, Proportional and ONOFF control versions
- Standard - relay or Analog control output VMD open + close relay output
- Transmitter Power Supply: 22 V nominal, 30 mA max.
- Relay Logic: (a) Heat (b) Cool, Programmable.



### Specification

All Specification at ambient temperature 25°C, unless specified otherwise

|                                       |   |  |   |
|---------------------------------------|---|--|---|
| <b>Indication</b><br>Process Variable | Upper: 4 Digit, 7 segment RED LED for Process Variable.                 | <b>Programmable Parameters</b><br>Set Points | Full Range (See Table 1/2)<br>°C, °F, EU<br>0.01, 0.1 or 1 for linear Input<br>0.1 or 1 for Temperature<br><b>a.</b> Heat <b>b.</b> Cool<br><b>c.</b> Full Scale High Alarm<br><b>d.</b> Full Scale Low Alarm<br>-99.9 ~ 99.9<br>0 ~ 9999<br>ON, OFF<br>Direct / Reverse<br>Self-reset or latched and can be disabled at Power ON |
| Set Points                            | Lower: 4 Digit, 7 segment Green LED for Set Value.                      | Unit   |   |
| Status Indication                     | LEDs for Relay Status<br>LEDs for Set Points<br>LEDs for RX, TX (RS485) | Resolution                                   | Relay Logic   |
| <b>Inputs</b>                         |   | Relay Logic                                  |   |
| No. of Inputs                         | 2 (Input1, Input2)  | Bias (for Process Variable)                  | 48mm(H) x 48mm(W) x 100mm(D)<br>48mm(H) x 96mm(W) x 100mm(D)<br>96mm(H) x 96mm(W) x 100mm(D)<br>Panel Mounting<br><b>a.</b> 85~265 VAC, 50/60 Hz<br><b>b.</b> 12~30 VDC   |
| RTD                                   | Pt100, 3 wire   | Hysteresis                                   |   |
| Thermocouple                          | J, K, R, S, T, E, N, B  | Set Point Lock                               | 4 watts Maximum<br>0~50°C<br>Below 90%, noncondensing<br>Automatic<br>User Programmable   |
| Voltage                               | 0~50mV  | Relay Action                                 |   |
| Current                               | 0~20mA, 4~20mA  | Alarm Type                                   | See Table 1/2<br>See Table 1/2  |
| <b>Outputs</b>                        |   | <b>Others</b>                                |   |
| No. of Relays                         | 0 / 1 / 2 / 3 / 4   | Dimensions                                   |   |
| Relay contact type                    | NO-C-NC   | Mounting                                     |   |
| Relay contact rating                  | 5A, 230VAC, resistive   | Supply Voltage                               |   |
| No. of Analog Outputs                 | 0 / 1 / 2 (Current or Voltage)  | Power Consumption                            |   |
| Current Output                        | 0~20mA, 4~20mA, 20~0mA, 20~4mA isolated from Inputs                     | Operating Amb. Temperature                   |   |
| Max. Load for Current                 | 500 Ohms  | Relative Humidity                            |   |
| Voltage Output                        | 0~10V, User Specified   | Cold Junction compensation                   |   |
| Max. Load for Voltage                 | >10 Kohms   | Sensor Break Protection                      |   |
| <b>Transmitter Supply</b>             | 22V Nominal, 30mA Max.  | Range Limit                                  |   |
|                                       |   | Accuracy                                     |   |

**Table 1**

| Sensor/Input                    | Range Limits (°C, EU) |            | Range Limit in which Accuracy Specified |            | Accuracy at 30°C (°C / EU) | Worst case Accuracy (°C / EU) |
|---------------------------------|-----------------------|------------|---|------------|----------------------------|-------------------------------|
|                                 | Low Scale             | High Scale | Low Scale                               | High Scale |                            |                               |
| <b>Input Group 1</b>            |                       |            |   |            |                            |                               |
| Pt100, 3 wire                   | -200                  | 850        | -200                                    | 600        | ± 0.3                      | ± 1.0                         |
| Iron / Constantan (J)           | -210                  | 760        | 0                                       | 760        | ± 1.0                      | ± 3.0                         |
| Chromel / Alumel (K)            | -270                  | 1372       | -50                                     | 1200       | ± 1.0                      | ± 3.0                         |
| Pt / Pt-13% Rh (R)              | 0                     | 1760       | 400                                     | 1760       | ± 2.0                      | ± 5.0                         |
| Pt / Pt-13% Rh (S)              | 0                     | 1760       | 400                                     | 1760       | ± 2.0                      | ± 5.0                         |
| Copper / Constantan (T)         | -270                  | 400        | -200                                    | 400        | ± 1.0                      | ± 3.0                         |
| Chromel / Constantan (E)        | -270                  | 850        | 0                                       | 850        | ± 1.0                      | ± 3.0                         |
| Nicrosil / Nisil (N)            | -270                  | 1300       | -50                                     | 1200       | ± 1.0                      | ± 3.0                         |
| Pt-6%Rh / Pt-30%Rh (B)          | 400                   | 1820       | 400                                     | 1820       | ± 3.0                      | ± 5.0                         |
| Linear (0-50mV, 0~20mA, 4~20mA) | -1999                 | 9999       | -1999                                   | 9999       | ± 5.0 EU                   | ± 20.0 EU                     |

**Table 2**

| Sensor/Input   | Range Limits (°C, EU) |            | Range Limit in which Accuracy Specified |            | Accuracy at 30°C (°C / EU) | Worst case Accuracy (°C / EU) |
|--|-----------------------|------------|---|------------|----------------------------|-------------------------------|
|  | Low Scale             | High Scale | Low Scale                               | High Scale |                            |                               |
| <b>Input Group 2</b>                                 |                       |            |   |            |                            |                               |
| CU53   | 0                     | 180        | 0                                       | 180        | ± 0.3                      | ± 0.5                         |
| Linear (4~20mA) with square root                     | 0                     | 9999       | 0                                       | 9999       | ± 10.0 EU                  | ± 40.0 EU                     |
| Linear (0~10mV, 0~100mV, 0~200mV, 0~1V, 0~5V, 0~10V) | -1999                 | 9999       | -1999                                   | 9999       | ± 5.0 EU                   | ± 20.0 EU                     |

S

**Ordering Information**

| Order Code |   |
|------------|---|
| 2010       | A |

| A  | Configuration |       |       |               |
|----|---------------|-------|-------|---------------|
|    | No. of Inputs | Relay | RS485 | 4~20mA Output |
| 00 | 1             | 0     | 0     | 0             |
| 01 | 1             | 0     | 0     | 1             |
| 02 | 1             | 0     | 0     | 2             |
| 03 | 1             | 0     | 1     | 0             |
| 04 | 1             | 2     | 0     | 0             |
| 05 | 1             | 2     | 0     | 1             |
| 06 | 2             | 4     | 0     | 0             |
| 07 | 2             | 0     | 0     | 0             |
| 08 | 2             | 0     | 0     | 2             |
| 09 | 2             | 2     | 0     | 2             |
| 10 | 2             | 4     | 0     | 0             |
| 11 | 2             | 4     | 0     | 2             |
| 12 | 2             | 4     | 1     | 0             |

**Ordering Options**

The following ordering options are available on request.

| S.N. | Options  | Details      |
|------|--|--------------|
| 1.   | Input Type                                     | Group 2      |
| 2.   | Output Type                                    | SSR External |
| 3.   | Analog Output                                  | 0~10VDC      |
| 4.   | Supply Voltage                                 | 12~30VDC     |
| 5.   | High Amb. Temp. Rating For RTD & Linear Inputs | 65°C         |

**Connection Diagram**

