



48 x 48mm

### Features :

- ▶ 4+4 Digits, (White + Green) LED display
- ▶ Capacitive touch keypad, Short depth
- ▶ Universal input / output
- ▶ Retransmission analog output
- ▶ Adaptive - Auto - Self tune PID / ON - OFF Control
- ▶ Heat cool PID
- ▶ Profile controller up to 128 steps
- ▶ RS485 MODBUS RTU communication (optional)
- ▶ IDM applicable

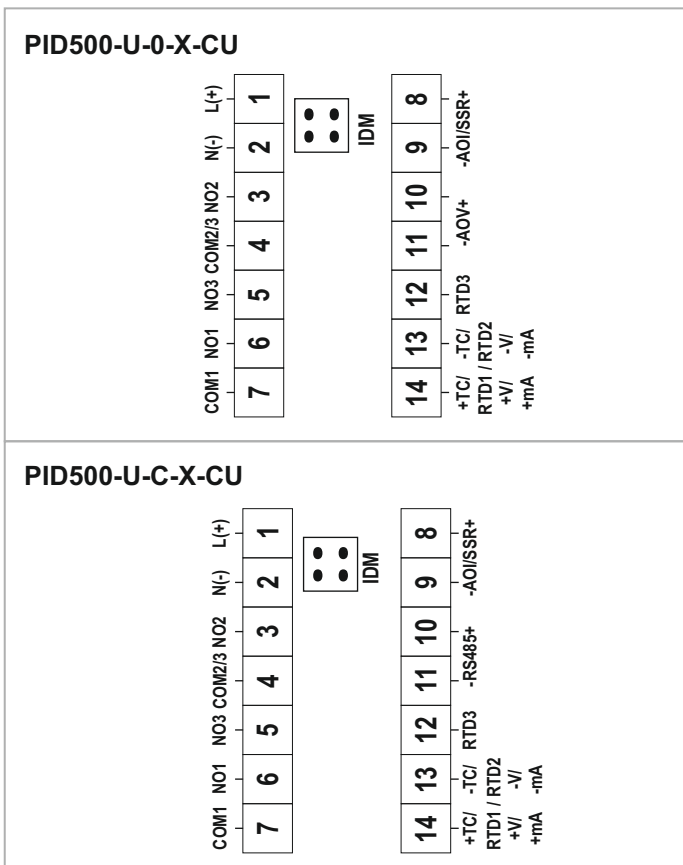
Certifications :    , IP65

### Technical specifications

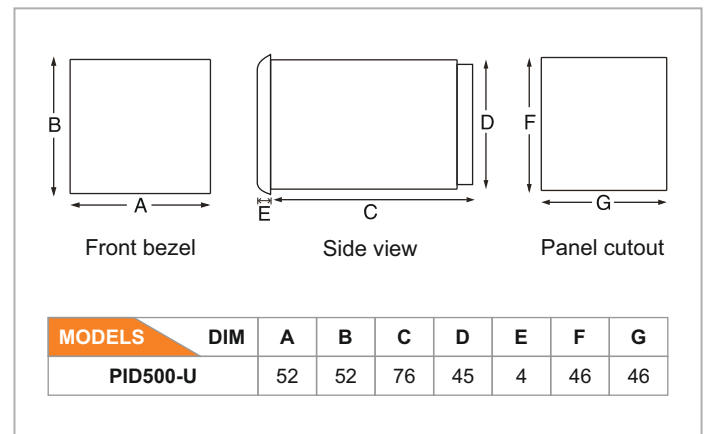
| Display specifications              |   |
|-------------------------------------|---|
| Display                             | 4+4 digits, 7 segment LED dual display  |
| Height of display                   | Upper display : 15.3mm (white), Lower display : 8mm (green)   |
| LED indication                      | 1 : Main output      T : Tune<br>2 : Alarm output    M : Manual output<br>3 : Alarm output    A : Adaptive tune   |
| Input specifications                |   |
| Contact rating                      | Thermocouple (J, K, T, R, S, C, E, B, N, L, U, W, Platine II), RTD (PT100)  |
| Signal input                        | - 5 to 56mV, 0 to 10V, 0 to 20mA DC (programmable scale type)   |
| Accuracy / Resolution               |   |
| Resolution (decimal point position) | 1/ 0.1 for TC/ RTD ; 1/ 0.1/ 0.01/ 0.001 for analog input   |
| Signal input                        | - 5 to 56mV, 0 to 10V, 0 to 20mA DC (programmable scale type)   |
| Indication accuracy                 | For TC inputs : 0.25% of F.S. ±1;<br>For R & S type TC inputs : 0.5% of F. S. ±2 (20 min of warm up time for TC inputs);<br>For RTD input : 0.1% of F. S. ±1; For analog input : ±0.5%, ±1 digit (F. S. = Full scale) |
| Temperature unit                    | °C / °F selectable  |
| Input filter (FTC)                  | 1 to 99 sec, OFF  |
| Sampling time                       | 200 ms  |
| Output specifications               |   |
| Contact rating                      | Relay 1, Relay 2: 7A@250 VAC or 30 VDC; Life expectancy: 100000 cycles at maximum load rating<br>Relay 3: 10A@277 VAC or 28 VDC   |
| SSR drive (voltage pulse)           | 15 VDC  |
| Current                             | 0-20mA DC, 4-20mA DC (Loop impedance: 500Ω max)   |
| Voltage (optional)                  | 0-5 VDC, 0-10 VDC (Load resistance: 10KΩ min)   |
| Retransmission                      |   |
| Current                             | 0/ 4 to 20mA DC (loop impedance : 500Ω max)   |
| Voltage (for PID500-U-0-1)          | 0 to 5/ 10 VDC (load resistance : 10KΩ min)   |
| Update rate                         | 100 ms  |
| Functional specifications           |   |
| Control action                      | 1 : Adaptive - Auto - Self tune PID, 2 : ON-OFF   |
| Proportional band (P)               | 0.0 to 400.0 °C   |
| Integral time (I)                   | 0 to 3600 sec   |
| Derivative time (D)                 | 0 to 200 sec  |
| Cycle time                          | 0.1 to 100.0 sec  |
| Hysteresis width                    | 0.1 to 99.9°  |
| Manual reset value                  | - 19.9 to 19.9°   |
| Heat-cool                           |   |
| Control action                      | PID/ ON-OFF   |
| Proportional band-cool              | 0.0 to 400.0°   |
| Cycle time-cool                     | 0.1 to 100 sec  |
| Dead band                           | Programmable from set point low limit to set point high limit.  |

| Settings for alarm output        |   |
|----------------------------------|---|
| Modes                            | Deviation high / low, Absolute high / low, Band, Sensor break   |
| Hysteresis                       | 0.1 to 99.9°  |
| No. of profile program           | 8   |
| No. of steps in each program     | 16  |
| Program other profile parameters | Link profiles, Programmable repeat cycles, Power down resume / restart options, Deviation hold, Alarm at each step with configurable alarm duration |
| Auxiliary supply specifications  |   |
| Supply voltage                   | 90 to 270V AC / DC (50/60Hz), 24V AC / DC (optional)  |
| Power consumption                | 6VA max @230V AC  |
| Environment specifications       |   |
| Temperature                      | Operating : 0 °C to 50 °C (32 to 122 °F); Storage : 20 °C to 75 °C (- 4 to 167 °F)  |
| Humidity (non - condensing)      | 85% RH  |
| Mechanical specifications        |   |
| Mounting                         | Panel   |
| Weight                           | 101 gms   |
| Optional specifications          |   |
| Serial communication             |   |
| Interface standard               | RS485   |
| Communication address            | 1 to 99, Maximum of 32 units per line   |
| Transmission mode                | Half duplex   |
| Transmission protocol            | MODBUS RTU  |
| Transmission distance            | 500m maximum  |
| Transmission speed               | 115200, 57600, 38400, 9600, 4800, 2400 bits/ sec  |
| Parity                           | None, Odd, Even   |
| Stop bits                        | 1 or 2  |
| Response time                    | 100 ms (max and independent of baud rate)   |

## Terminal connections



## Dimensions (All are in mm)





## Compliance

| Applicable EMI / EMC Standards |               |   |
|--------------------------------|---------------|---|
| Product standard : IEC 61326-1 |               |   |
| Category                       |               | Standard compliance   |
| ESD Immunity                   | IEC 61000-4-2 | Level III   |
| Surge Immunity                 | IEC 61000-4-5 | +/- 2 kV common mode,<br>+/- 1 kV differential mode                             |
| Radiated susceptibility        | IEC 61000-4-3 | Level III, 80 to 1000MHz<br>Level II, 1.4GHz to 2GHz<br>Level I, 2GHz to 2.7GHz |
| Conducted susceptibility       | IEC 61000-4-6 | Level II  |

| Applicable EMI / EMC Standards |                |  |
|--------------------------------|----------------|--|
| Product Standard : IEC 61326-1 |                |  |
| Category                       |                | Standards Compliance   |
| Voltage dips and interruptions | IEC 61000-4-11 | <b>Dips</b> : 0% residual voltage / 1 cycle (Criteria B), 40% residual voltage / 10 cycles 50Hz / 12 cycles 60Hz (Criteria C) 70% residual voltage / 25 cycles 50Hz / 30 cycles 60Hz (Criteria C)<br><b>Interruptions</b> : 0% residual voltage / 250 cycles 50Hz / 300 cycles 60Hz (Criteria C) |
| Conducted emission             | CISPR-11       |  |
| Radiated emission              | CISPR-11       |  |
| Electrical fast transient      | IEC 61000-4-4  | Level III  |

## Ordering information

| Product code    | Input     | Supply voltage    | Communication (RS485) | Certification   |
|-----------------|-----------|-------------------|-----------------------|---|
| PID500-U-0-1-CU | Universal | 90 - 270 VAC / DC | - - -                 | CE c  us |
| PID500-U-C-1-CU | Universal | 90 - 270 VAC / DC | YES                   | CE c  us |