



48 x 48mm

### Features :

- ▶ 4+4 Digits, 7 Segment LED dual display
- ▶ Universal input
- ▶ ON - OFF/ PID control
- ▶ °C/°F selectable
- ▶ Heat cool PID
- ▶ Ramp soak
- ▶ Soft start
- ▶ RS485 Communication MODBUS RTU Protocol
- ▶ Retransmission analog output

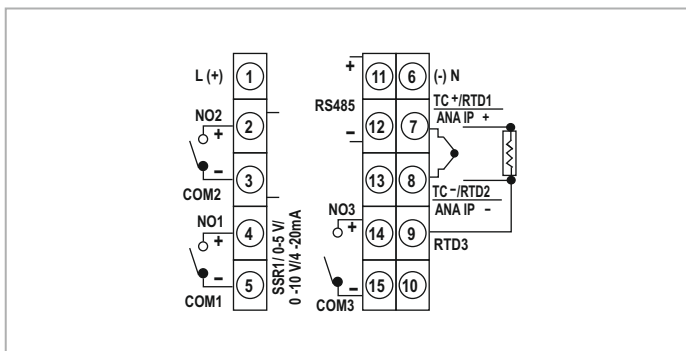
Certifications :

## Technical specifications

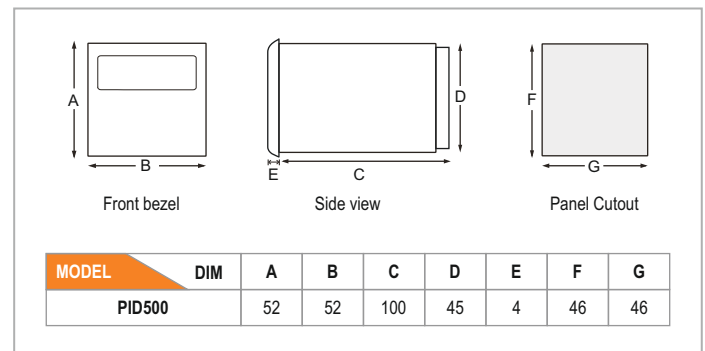
| Display specifications      |   |
|-----------------------------|---|
| Display                     | 4+4 digits 7 Segment LED dual display   |
| Height of display           | Upper display: 10mm, Lower display: 7mm   |
| LED indication              | 1: Main output ; 2, 3: Alarm output ; M: Manual output ; T: Tune  |
| Input specifications        |   |
| Inputs                      | Thermocouple (J, K, T, R, S, C, E, B, N, L, U, W, Platinel II), RTD (PT100)<br>Signal inputs (-5 to 56mV, 0 to 10V, 0 to 20mA DC) (Programmable scale type)   |
| Resolution                  | 1/ 0.1 for TC/ RTD only (fixed 1° resolution for R & S type TC)<br>Decimal point position selectable : 1/ 0.1/ 0.01/ 0.001 for analog input   |
| 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       |   |
| Control output (Optional)   | 1   |
| Contact rating (SPST)       | 5A @ 230 VAC/ 30 VDC, resistive   |
| SSR drive (Voltage pulse)   | 12 VDC, 20 mA   |
| Current                     | 4 to 20mA DC (loop impedance: 500Ω max)   |
| Voltage                     | 0 to 10 VDC (load resistance: 10KΩ min)   |
| Auxiliary output (Optional) | 2   |
| Contact rating (SPST)       | 5A @ 230 VAC / 30 VDC   |
| SSR drive                   | 12 VDC, 20 mA   |
| Retransmission              |   |
| Current                     | 4 to 20mA DC (loop impedance : 500Ω max)  |
| Voltage                     | 0 to 10 VDC (load resistance : 10KΩ min)  |
| Update rate                 | 100 msec  |
| Functional specifications   |   |
| Control action              | 1) PID Control 2) ON-OFF control  |
| 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°  |
| Ramp rate                       | 1 to 9999°/ hr  |
| Soak time                       | 0 to 1440 min   |
| Soft start time                 | 0 to 999 min  |
| Auxiliary supply specifications |   |
| Supply voltage                  | 90 to 270 VAC/ DC (50/ 60Hz)  |
| Power consumption               | 5 VA max @ 230 VAC  |
| 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                          | 105 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           | 500 m maximum   |
| Transmission speed              | 9600, 4800, 2400, 1200, 600, 300 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                       |               | Standards 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       | Class A (150KHz to 30MHz)  |
| Radiated Emission              | CISPR-11       | Class A (30MHz to 1GHz)  |
| Electrical Fast Transient      | IEC 61000-4-4  | Level III  |

## Ordering information

| Product code        | Output 1     | Output 2   | Output 3   | Comm. (RS485) | Supply voltage    | Certification |
|---------------------|--------------|------------|------------|---------------|-------------------|---------------|
| PID500-2-0-04       | 4-20mA       | RELAY (5A) | RELAY (5A) | YES           | 90 to 270 VAC/ DC | ---           |
| PID500-2-0-04 V2-CE | 4-20mA       | RELAY (5A) | RELAY (5A) | YES           | 90 to 270 VAC/ DC | CE            |
| PID500-3-0-00       | 0 - 10V      | RELAY (5A) | ---        | ---           | 90 to 270 VAC/ DC | ---           |
| PID500-3-0-00 V2-CE | 0 - 10V      | RELAY (5A) | ---        | ---           | 90 to 270 VAC/ DC | CE            |
| PID500-0-0-01 V2-CE | RELAY (5A)   | RELAY (5A) | RELAY (5A) | ---           | 90 to 270 VAC/ DC | CE            |
| PID500-0-0-01       | RELAY (5A)   | RELAY (5A) | RELAY (5A) | ---           | 90 to 270 VAC/ DC | ---           |
| PID500-0-0-04       | RELAY (5A)   | RELAY (5A) | RELAY (5A) | YES           | 90 to 270 VAC/ DC | ---           |
| PID500-0-0-04 V2-CE | RELAY (5A)   | RELAY (5A) | RELAY (5A) | YES           | 90 to 270 VAC/ DC | CE            |
| PID500-2-0-01       | 4-20mA       | RELAY (5A) | RELAY (5A) | ---           | 90 to 270 VAC/ DC | ---           |
| PID500-2-0-01 V2-CE | 4-20mA       | RELAY (5A) | RELAY (5A) | ---           | 90 to 270 VAC/ DC | CE            |
| PID500-1-0-01       | SSR (12V DC) | RELAY (5A) | RELAY (5A) | ---           | 90 to 270 VAC/ DC | ---           |
| PID500-1-0-01 V2-CE | SSR (12V DC) | RELAY (5A) | RELAY (5A) | ---           | 90 to 270 VAC/ DC | CE            |
| PID500-1-0-00       | SSR (12V DC) | RELAY (5A) | ---        | ---           | 90 to 270 VAC/ DC | ---           |
| PID500-1-0-00 V2-CE | SSR (12V DC) | RELAY (5A) | ---        | ---           | 90 to 270 VAC/ DC | CE            |