



48 x 48 x 84mm

**Features :**

- 4+4 Digits, (White+Green) LED display
- Capacitive touch keypad, short depth
- Universal input
- Universal output
- Retransmission analog output
- °C / °F Selectable
- Adaptive - Auto - Self tune PID / ON - OFF Control
- Heat cool PID
- Profile Controller upto 128 steps
- RS485 MODBUS RTU Communication (optional)
- IDM applicable

Certifications : **CE**, **IP65**

**Display specifications**

Digits	4+4 Digits, 7 segment LED dual display Height of Upper Display : 15.3mm White (process value), Height of Lower Display : 8.0mm Green (selectable)	
LED indications	1 : Main output 2 : Alarm output 3 : Alarm output	T : Tune M : Manual output A : Adaptive Tune

**Input specifications**

Inputs	Thermocouple (J, K, T, R, S, C, E, B, N, L, U, W, Platinel II), RTD (PT100) Signal inputs (-5 to 56mV, 0 to 10V, 0 to 20mA DC) (Programmable scale type)	
Resolution	1 / 0.1 for TC / RTD only 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 For R & S type TC inputs : 0.5% of F.S. ±2 (20 min of warm up time for TC inputs) 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 99sec, OFF	
Sampling time	200 ms	

**Output specifications**

<b>Control output</b>	
Contact rating	Relay 1 , Relay 2 : 7A@250VAC or 28VDC Life expectancy : 100000 cycles at maximum load rating Relay 3 : 10A@250VAC or 28VDC
SSR drive (Voltage pulse)	15V DC
Current	0-20mA DC, 4-20mA DC (loop impedance : 500Ω max.)
Voltage (optional)	0-5V DC, 0-10V DC (load resistance : 10KΩ min.)
<b>Retransmission</b>	
Current	0/4 to 20mA DC (loop impedance : 500Ω max)
Voltage (for PID500-U-0-1)	0 to 5/10V DC (load resistance : 10KΩ min.)
Update rate	100 msec

**Auxiliary supply specifications**

Supply voltage	90 to 270V AC / DC (50 / 60Hz)
Power consumption	5 VA max @ 230V AC

**Functional specifications**

Control action	1) Adaptive - Auto - Self tune PID 2) ON-OFF
Proportional band (P)	0.0 to 400.0°
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	-99.9 to 99.9°
<b>Heat cool PID</b>	
Control action	PID / ON-OFF
Cycle time	0.1 to 100 sec
Proportional gain	0.0 to 400.0°
Deadband	Programmable from setpoint low limit to setpoint high limit
<b>Alarms</b>	
Modes	Deviation high / low, Absolute high / low, Band, sensor break
Hysteresis	0.1 to 99.9°
<b>Profile</b>	
Number of profile programs	8
Number of steps in each program	16
Other profile parameters	Link profiles, Programmable repeat cycles, Power down resume/restart options, Deviation hold, Alarm at each step with configurable alarm duration.

**Optional specifications**

<b>SERIAL COMMUNICATION</b>	
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	115200, 57600, 38400, 9600, 4800, 2400, 1200 bits/sec.
Parity	Non, Odd, Even
Stop bits	1 or 2
Response time	100 ms (Max and independent of baud rate)

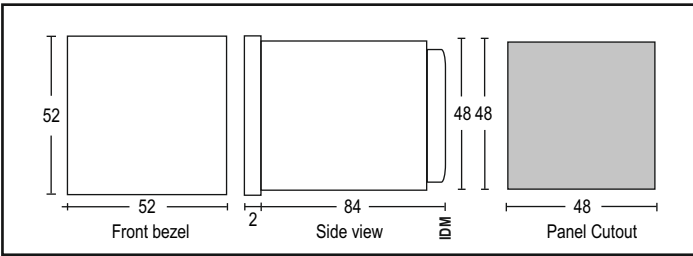
**Environmental specifications**

Temperature	Operating : 0 to 50°C (32 to 122°F) Storage : -20 to 75°C (-4 to 167°F)
Humidity (non - condensing)	85% RH

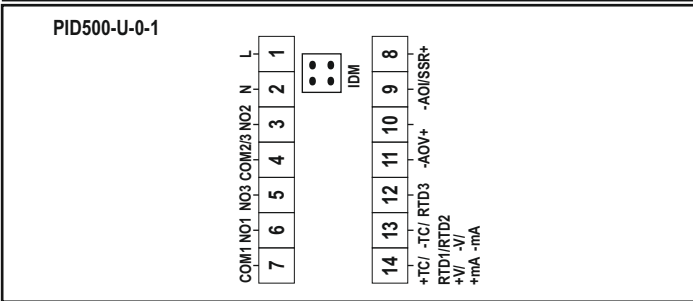
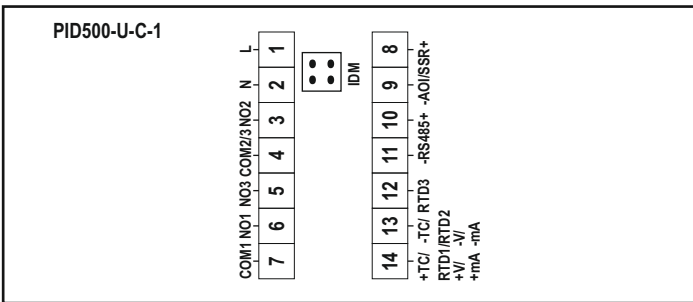
### Mechanical specifications

Mounting	Panel mount
Weight	101 gms

### Dimensions (All are in mm)



### Terminal connections



### Accessories ( Optional )

Standard SELEC accessories that can be used with this product.

- Adapter plate
- 1) AP7248 : Plastic adapter plate, used to mount 1 / 16 DIN (cutout size 48 x 48) Instrument into existing (72 x 72) cutout size.
  - 2) AP9648 : Plastic adapter plate, used to mount 1 / 16 DIN (cutout size 48 x 48) Instrument into existing (96 x 96) cutout size.
  - 3) AP4896-4848-G-C : Plastic adapter plate, used to mount 1 / 16 DIN (cutout size 48 x 48) Instrument into existing (48 x 96) cutout size.

### Mounting accessories (Supplied with units)

48 X 48 Collar clamp	ACL4802
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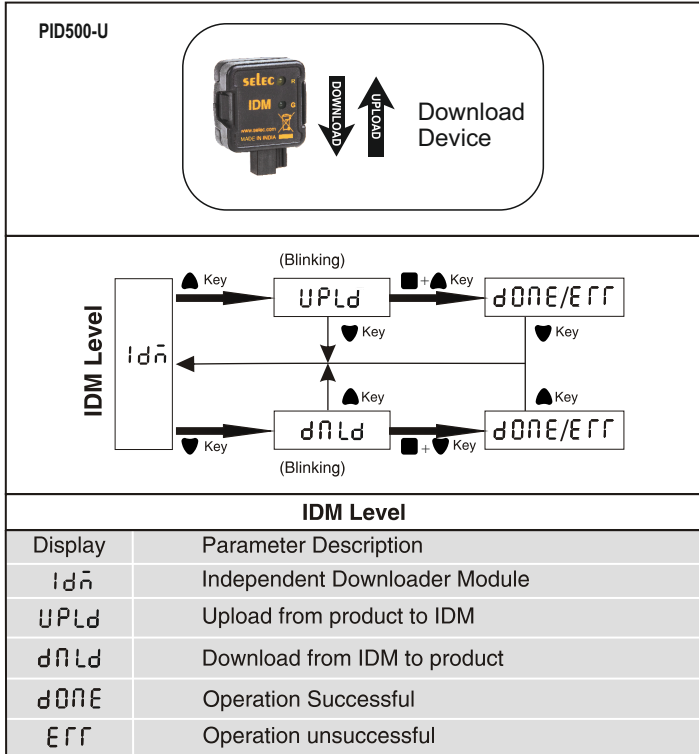
### Compliance

Applicable EMI / EMC standards		
Product standard : IEC 61326-1		
Category		Standards compliance
ESD immunity	IEC 61000-4-2	Contact discharge - Level II Air discharge - Level III
Surge immunity	IEC 61000-4-5	+/- 2 kV common mode
Radiated susceptibility	IEC 61000-4-3	Level III, 80 to 1000MHz Level II, 1.4GHz to 2GHz Level I, 2GHz to 2.7GHz
Conducted susceptibility	IEC 61000-4-6	Power Line - 10 Vrms Data Line - 3 Vrms
Power frequency magnetic field	IEC 61000-4-8	Level III
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) <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

### Input sensor ranges (For TC / RTD inputs)

Sensor type	Resolution	Ranges	
		1	0.1
PT100	°C	-150 to 850	-150 to 850
	°F	-238 to 1562	-199 to 999
J	°C	-199 to 750	-199 to 750
	°F	-328 to 1382	-199 to 999
K	°C	-199 to 1350	-199 to 999
	°F	-328 to 2462	-199 to 999
T	°C	-199 to 400	-199 to 400
	°F	-328 to 750	-199 to 750
R & S	°C	0 to 1750	N/A
	°F	32 to 3182	N/A

Independent Downloader Module (IDM)



Ordering information

Product code	Output	Communication (RS485)	Supply voltage	Certification
PID500-U-0-1	Universal	---	90 - 270V AC / DC	CE
PID500-U-C-1	Universal	YES	90 - 270V AC / DC	CE