



48 x 48mm

**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 :

**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, Platine 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)

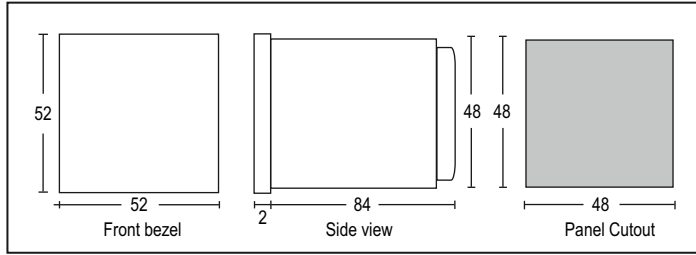
**Environmental specifications**

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

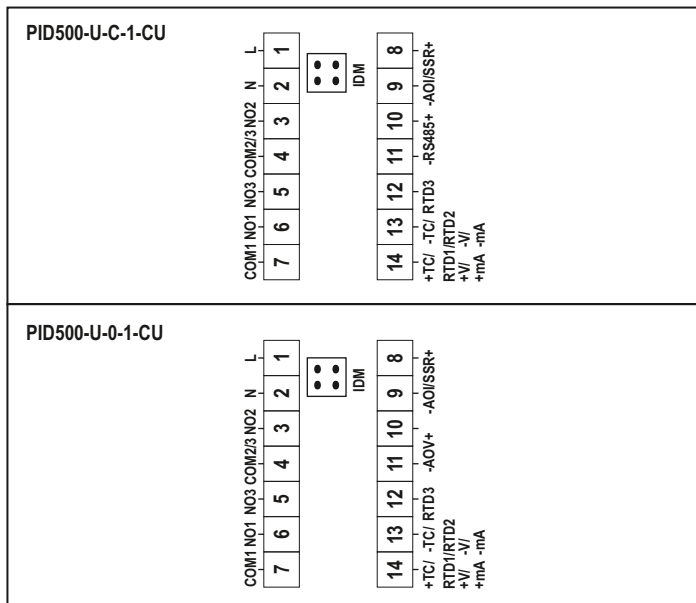
**Mechanical specifications**

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

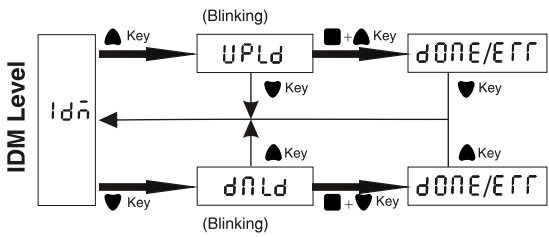
**Input sensor ranges (For TC / RTD inputs)**

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)

PID500-U





IDM Level	
Display	Parameter Description
idn	Independent Downloader Module
UPLd	Upload from product to IDM
dNld	Download from IDM to product
dONE	Operation Successful
ERR	Operation unsuccessful

Ordering information

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