Precision PID Controller

PID535P



48 x 48mm

Features:

- 4+4 Digits, (Red / White + Orange) LED display
- Capacitive touch keypad, Multicolor PV display (Red / White)
- Universal input / output
- Retransmission analog output
- Adaptive - Auto - Self tune PID / ON - OFF Control
- Heat cool PID
- 24V DC, 30mA inbuilt sensor supply
- Profile Controller up to 160 steps
- Horizontal bar graph with 10 levels
- RS485 MODBUS RTU Communication
- IDM applicable

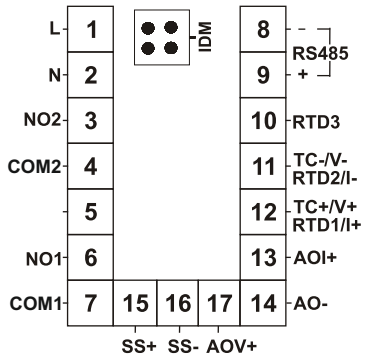
Certifications: CE, IP65

Technical specifications

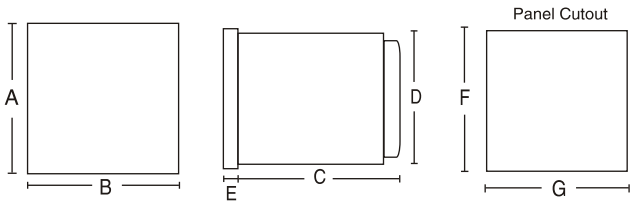
Display specifications	
Display	4+4 digits 7 Segment LED dual display
Height of display	Upper display : 12.93mm (White/Red), Lower display : 8mm (Orange)
LED indication	1 : Main output AT : Auto tune 2 : Alarm output M : Manual output 3 : Alarm output ADT : Adaptive tune
Input specifications	
Inputs	Thermocouple (J, K, T, R, S, C, E, B, N, L, U, W, Platinel II), RTD (PT100, PT1000)
Resolution (decimal point position)	1/0.1 for TC/RTD; 1 / 0.1 / 0.01 / 0.001 for analog input
Signal input	-5 to 90mV, 0 to 10V, 0 to 20mA DC (programmable scale type)
Indication accuracy	For TC inputs: 0.1% of span at 25 °C For R & S type inputs: 0.25% of span at 25 °C For RTD input: 0.1% at 25 °C; For Analog input : 0.1% at 25°C (F. S. = Full scale)
Temperature unit	°C / °F selectable
Input filter (FTC)	1 to 99 sec, OFF
Sampling time	50ms
Output specifications	
Contact rating	Relay 1, Relay 2 : 5A@250V AC / 30V DC; Life expectancy : 100000 cycles at maximum load rating
SSR drive (Voltage pulse)	18V DC
Sensor supply	24V DC, 30mA
Current	0-20mA DC, 4-20mA DC (maximum output load resistance: 500E)
Voltage	0-5V DC, 0-10V DC (minimum output load resistance: 10KΩ)
Retransmission	
Current	0 / 4-20 mA (maximum output load resistance: 500E)
Voltage	0-5V DC, 0-10V DC (Minimum output load resistance:- 10KΩ)
Update rate	100m sec
Functional specifications	
Control action	1: Adaptive - Auto - Self tune PID, 2 : ON-OFF
Proportional band (P)	0.0 °C 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	0.1 °C to 99.9 °C
Manual reset value	-99.9 to 99.9 (for 0.1 °C resolution), -999 to 999 (for 1 °C)

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
Settings for alarm output	
Modes	Deviation high, Deviation low, Band, Full scale high, Full scale high, Sensor break
Hysteresis	0.1 °C to 99.9 °C
No. of profile program	10
No. 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
Auxiliary supply specifications	
Supply voltage	90 to 270V AC/DC (50/60 Hz)
Power consumption	6 VA max
Environment specifications	
Temperature	Operating: 0 °C to 50 °C ; Storage: -20 °C to 75 °C
Humidity (non-condensing)	85% RH
Mechanical specifications	
Mounting	Panel
Weight	140 gm
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, 19200, 9600, 4800, 2400, 1200 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)



MODEL / DIM	A	B	C	D	E	F	G
PID535P	52	52	84	45	4	46	46

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, +/- 1 kV differential 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	Level II
Voltage dips and interruptions	IEC 61000-4-11	**Dips** : 0% residual voltage / 1 cycle (Criteria B), 40% residual voltage / 10 cycles 50Hz / 12 cycles 60Hz (Criteria C)70% residual voltage / 25 cycles50Hz / 30 cycles 60Hz (Criteria C) **Interruptions** : 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
PID535-P-C-1	Universal	90 - 270V AC/DC	Yes	CE