

PID CONTROLLERS LT SERIES



The Axis family of microprocessor based controllers combine a high degree of functionality and reliability at a very low price, in 4 different formats : 1/16 DIN, 1/8 DIN, 1/ 4 DIN.

They are ideal controllers for regulating temperature in a variety of applications, including :

- ❖ Dryers.
- ❖ Semiconductor packaging /testing.
- ❖ Plastic processing.
- ❖ Packaging machinery.
- ❖ Painting and coating.
- ❖ Climatic chambers.

The Axis family satisfies low cost basic control requirements and also provides advanced features such as motor position control, phase angle power control and Setpoint programming Dual displays and Bargraph. Programmer functionality.

Two 4 digits displays and one LED bargraph to display the PV and SP.

Easy to configure. Two different configuration levels provide easy access to parameters.

A 4-digit security code prevents unauthorized changes. Parameters can be hidden to the user to prevent mis configuration of the unit.

Various Control algorithms.

- ❖ PID or ON/OFF control.
- ❖ Heat/Cool Algorithm.
- ❖ Motor Position control.
- ❖ Single phase or 3 phase control.
- ❖ 2 programs available, each of 8 segments. Programs can be linked to form a single 16 segments program.

Extended Alarm capability.

Up to 3 different alarm outputs per instrument, 17 different alarm modes available.

Universal Power supply.

Operates on any line voltage from 85Vac to 265Vac at 50/60Hz.

1. Specifications

⌘ Standard spec.

Model	LT 400	LT 600	LT 700	LT 800	LT 900		
Dimension	48X48mm	96X48mm	72X72mm	48X96mm	96X96mm		
Supply voltage	AC 85~265V , DC 15~50V (Option)					AC 85~265V	
Frequency	50 / 60 HZ						
Power consumption	approx 3VA	approx 4VA	approx 3VA	approx 4VA	approx 4VA	approx 4VA	approx 3VA
Input	Accuracy	0.2 % FS ± 1digit					
	Sample time	250ms					
	TC	K , J , R , S , B , E , N , T , W5Re/W26Re , PLII , U , L					
	RTD	PT100,JPT100,JPT50					
	mA dc	4~20mA ,0~20mA					
	mV / V dc	0~1V,0~5V,0~10V,1~5V,2~10V -10~10mV,0~10mV,0~20mV,0~50mV,10~50mV					
	Decimal point position	0000 , 000.0 , 00.00 , 0.000 Available for linear input (mA / mV / V)					
Output 1	Relay	SPST type	SPDT type	SPST type	SPDT type	SPDT type	SPDT type
		3A , 220V , electrical life:100,000 times or more (under rated load)					
	Voltage pulse	For SSR drive. ON : 24V , OFF : 0V , max load current : 20mA					
	mA dc	4~20mA, 0~20mA. Maximum load resistance:560 Ω					
Voltage dc	0~5V , 0~10V , 1~5V , 2~10V . Max load current:20mA						
Alarm 1	3A , 220V , electrical life:100,000 times or more (under rated load)						
Control algorithm	PID , PI , PD , P , ON / OFF(P=0) , FUZZY。						
PID range	P: 0.0 ~ 200.0 % , I: 0~3600s , D: 0~900s						
Isolation	Output terminals(control output , alarm , transmission) and input terminals are isolated separately						
Isolated resistance	10MΩ or more between input and case (ground) at DC 500 V 10MΩ or more between output and case (ground) at DC 500 V						
Dielectric strength	1000V AC for 1 minute between input terminal and case (ground) 1500V AC for 1 minute between output terminal and case (ground)						
Operating temperature	0~50°C						
Humidity range	20~90%RH						
Weight	150g	225g	225g	225g	300g	130g	80g
Display Height	PV:7mm SV:7mm	PV:7mm SV:7mm	PV:14mm SV:10mm	PV:7mm SV:7mm	PV:14mm SV:10mm	——	——

⌘ Optional Spec.

Model	LT 400	LT 600	LT 700	LT 800	LT 900		
Output 2	For heating and cooling control use. Relay , SSR , 4~20mA , 0~20mA , 0~5V , 0~10V , 1~5V , 2~10V						
Alarm 2	Available	Available	Available	Available	Available	Available	Not
	SPST type	SPDT type	SPST type	SPDT type	SPDT type	SPDT type	available
	3A , 220V , electrical life:100,000 times or more (under rated load)						
Alarm 3	Not available	Available	Available	Available	Available	Available	Not available
		SPST type	SPST type	SPST type	SPST type	SPST type	
	3A , 220V , electrical life:100,000 times or more (under rated load)						
Heater Break Alarm (HBA)	Display range of heater current : 0.0~99.9A , Accuracy : 1%FS						
	Included CT : SC-80-T (5.8mm dia , 0.0~80.0A) or SC-100-T (12mm dia , 0.0~99.9A)						
	Alarm relay : AL1						
Transmission	Available for PV or SV transmission						
	4~20mA , 0~20mA , 0~1V , 0~5V , 0~10V , 1~5V , 2~10V						
Remote SV	4~20mA , 0~20mA , 0~1V , 0~5V , 0~10V , 1~5V , 2~10V						
Communication	Protocol : MODBUS RTU , MODBUS ASCII , TAIE						
	RS232 , RS485 , TTL						
	Baud rate: 2400 , 4800 , 9600 , 19200 , 38400 bps.						
	Data bits : 8 , Stop bit : 1 or 2bit , Odd or Even parity.						
Water/Dust proof	IP65						

⌘ Special control output (OUT1)

Model	LT 400	LT 600	LT 700	LT 800	LT 900		
1φ zero crossing control(1φSSR)	Available	Not available	Available	Not available	Available	Not available	Not available
3φ zero crossing control(3φSSR)	Not available				Available	Not available	Not available
Motor valve control	Available						
1φ phase angle control(1φSCR)	Not available	Available				Available	Not available
3φ phase angle control(3φSCR)	Not available				Available	Not available	Not available

PROGRAMMABLE RAMP/SOAK

Model	PLT 400	PLT 600	PLT 700	PLT 800	PLT 900		
Programmable RAMP/SOAK	2 patterns with 8 segments each. The 2 patterns can be linked together as 16 segments use.						

PID Controller LT – ES SERIES



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A 4-digit security code prevents unauthorized changes. Parameters can be hidden to the user to prevent misconfiguration of the unit.

Various Control algorithms.

- ❖ PID or ON/OFF control.

Universal Power supply.

Operates on any line voltage from 85VAC TO 265VAC AT 50/60HZ.

1. Specifications

⌘ Standard spec.

Model	LT 400- ES	LT 600-ES	LT 700 - ES	LT 800 - ES		LT 900 - ES		
Dimension	48X48mm	96X48mm	72X72mm	48X96mm		96X96mm		
Supply voltage	AC 85~265V , DC 15~50V (Option)					AC 85~265V		
Frequency	50 / 60 HZ							
Power consumption	approx 3VA	approx 4VA	approx 3VA	approx 4VA	approx 4VA	approx 4VA	approx 4VA	approx 3VA
Output 1	Accuracy	0.2 % FS ± 1digit						
	Sample time	250ms						
	TC	K , J , R , S , B , E , N , T , W5Re/W26Re , PLII , U , L						
	RTD	PT100,JPT100,JPT50						
	Relay	SPST type	SPDT type	SPST type	SPDT type	SPDT type	SPDT type	SPDT type
	Voltage pulse	3A , 220V , electrical life:100,000 times or more (under rated load)						
	mA dc	For SSR drive. ON : 12 V , OFF : 0V , max load current : 20mA						
Alarm 1	4~20mA, Maximum load resistance:560 Ω							
Alarm 1	3A , 220V , electrical life:100,000 times or more (under rated load)							
Control algorithm	PID , PI , PD , P , ON / OFF(P=0) ,							
PID range	P: 0.0 ~ 200.0 % , I: 0~3600s , D: 0~900s							
Isolation	Output terminals(control output , alarm , transmission) and input terminals are isolated separately							
Isolated resistance	10MΩ or more between input and case (ground) at DC 500 V 10MΩ or more between output and case (ground) at DC 500 V							
Dielectric strength	1000V AC for 1 minute between input terminal and case (ground) 1500V AC for 1 minute between output terminal and case (ground)							
Operating Temp	0~50°C							
Humidity range	20~90%RH							
Weight	150g	225g	225g	225g	300g	130g		80g
Display Height	PV:7mm SV:7mm	PV:7mm SV:7mm	PV:14mm SV:10mm	PV:7mm SV:7mm	PV:14mm SV:10mm			—

Optional Spec.

Model	LT 400 - ES	LT 600 - ES	LT 700 - ES	LT 800 - ES	LT 900 - ES
Alarm 1	Available	Available	Available	Available	Available
	SPST type	SPDT type	SPST type	SPDT type	SPDT type
	3A , 220V , electrical life:100,000 times or more (under rated load)				
Water/Dust proof	IP65				

PID CONTROLLERS - AX SERIES

- Low cost, Effective, Easy to use PID Temperature Controller
- 3-Digit Dual Row display (3-Digit for PV & 3-Digit for SV)
- Selectable sensor input (T/C : K,T,E,J,N & RTD) from keyboard
- Programmable Lower & Upper set point limits
- Programmable control action ON-OFF/PID control
- Selectable heat/cool logic in ON-OFF control mode
- Four different alarm modes (Low/High/Band/Deviation)
- Alarm latch / Alarm inhibit function
- Program lock function (to prevent unauthorized tampering)
- Universal supply voltage ranges from 90 to 270 VAC
- Available in 4 Standard DIN sizes



Specification

Series		AX -4
Display	Type	7 segment LED
	No. of Digits	3 Digits, Dual Row
	LED Indication	Output Status
Input Specification		
Measurement	Input	Thermocouple : K,T,E,J,N RTD : Pt - 100
	Indication Accuracy	0.3% FS
	Resolution	0.1°C (Up to 99.9°C) OR 1°C
	Units	Centigrade (C) / Fahrenheit (F)
Output Specification		
Set Points	SP Range Limit	K : 0 to 999 °C T : 0 to 400 °C E : 0 to 999 °C J : 0 to 999 °C N : 0 to 999 °C RTD : 0 to 800 °C
Output	Relay / SSR Drive /4-20 mA	To be Specified (Factory Set)
	Relay Contact Rating	3 A @ 250 VAC/30 VDC resistive
	SSR Drive	9 VDC @ 30 mA
	Output Type	4-20 mA(Maximum Load 300 ohms)
Alarm	No of Alarm	1 or 2

	Alarm Modes	Low/High/Band/Deviation
	Output type	Relay(3 Amp @230 VAC)
Functional Specification		
Control Parameter	Algorithm	PID With Fuzzy Logic
	Control Action	Direct or Reverse (Programmable)
	Control Mode	PID Or ON-OFF (Programmable)
	Proportional Band	0 to 999 °C
	Integral time	0 to 999 Sec
	Derivative time	0 to 999 Sec
	Cycle Time	0.5 to 300 Sec'
	Hysteresis	0 to 200 °C
General Specification		
Supply Voltage		90 - 270 VAC/DC
Temperature	Operating	0 - 50°C
	Storage	-20° to 75°C
Humidity (Non-condensing)		95 % RH

MODEL No.	Dimensions [mm]	Weight [Gms.]
AXIS AX 4- 101	48 x 48 x 82	170
AXIS AX 7 -101	72 x 72 x 82	250
AXIS AX9- 101	96 x 96 x 82	300
AXIS AX8 -101	96 x 48 x 82	220