

Legacy Series 18 and 19 Universal Temperature/Process Controller



The Athena Legacy 18 and 19 Controllers are available as 1/8 DIN (18) vertical or 1/8 DIN (19) horizontal models. Both panel mounted, auto-tuning controllers can be used for precise control of a single loop with two independent outputs. The controllers accept thermocouple, RTD, voltage, or current input. RS-232 or RS-485 communications are available, and two digital LED displays provide visual indication of various controller functions.

- ▲ Switch-Selectable Inputs
- ▲ User-Selectable Ramp to Setpoint
- ▲ Auto-Tuning, Heat or Cool
- ▲ Dual Output/Dual Alarm Capabilities
- ▲ On/Off Through Full PID Operation (P,PI,PD,PID)
- ▲ NEMA 4X (IP65) Dust and Splash-Proof Front Panel
- ▲ Bumpless Auto/Manual Transfer
- ▲ Adjustable Hysteresis & Heat/Cool Spread
- ▲ Field-Configurable Process, Deviation, or Latching Alarms
- ▲ Optional Process Variable Retransmission
- ▲ Remote Setpoint Select, Non-Linear Inputs, or Other Special Options
- ▲ cUL and CE Approvals



Ordering Information

1 8		1 9																	
Input		Range		Code		Output 1 Code		Output 2 Code		Alarm 1 Code		Alarm 2 Code		Communications Code Athena+		Option 1 Code		Option 2 Code	
"E" TC		0 to 1292° F		EF		0 = None		0 = None		0 = None		0 = None		0 = None		00 = None		0 = None	
"E" TC		-18 to 700° C		EC		B = Relay, N.O.		B = Relay, N.O.		B = Relay, N.O.		B = Relay, N.O.		A = RS-232 Athena+		Heater Break Alarm (Requires Current Transformer)		Transducer Excitation	
"J" TC		0 to 1400° F		JF		C = Relay, N.O., without snubber		C = Relay, N.O., without snubber		S = 24 V		S = 24 V		B = RS-485 Athena+		HA = 5 to 60 A		1 = 10 Vdc	
"J" TC		0 to 750° C		JC		D = 0 to 7 mA		D = 0 to 7 mA		T = Solid-State Relay		T = Solid-State Relay				Aux Output/PV Retransmit		2 = 12 Vdc	
"K" TC		0 to 2460° F		KF		E = 0 to 20 mA (500 ohm max)		E = 0 to 20 mA (500 ohm max)								PA = 4 to 20 mA		3 = 15 Vdc	
"K" TC		0 to 1349° C		KC		F = 4 to 20 mA (800 ohm max)		F = 4 to 20 mA (800 ohm max)								PB = 1 to 5 V		4 = 5 Vdc	
Platinel® II		0 to 2372° F		LF		G = 4 to 20 mA (800 ohm max)		G = 4 to 20 mA (800 ohm max)								PC = 0 to 20 mA			
Platinel II		-18 to 1300° C		LC		P = Pulsed 20 Vdc or 35 mA		P = Pulsed 20 Vdc or 35 mA								PD = 0 to 5 V			
"N" TC		0 to 2370° F		NF		S = Pulsed 20 Vdc or 17 mA		S = Pulsed 20 Vdc or 17 mA								Remote Analog Setpoint			
"N" TC		0 to 1300° C		NC		T = Solid-State Relay		T = Solid-State Relay								SA = 0 to 5 Vdc w/ switch			
"R" TC		0 to 3200° F		RF		V = 0 to 5 Vdc		V = 0 to 5 Vdc								SB = 1 to 5 Vdc w/ switch			
"R" TC		0 to 1750° C		RC		X = 0 to 10 Vdc		X = 0 to 10 Vdc								SC = 0 to 20 mA w/ switch			
"S" TC		0 to 3200° F		SF		Y = Relay, N.C.		Y = Relay, N.C.								SD = 4 to 20 mA w/ switch			
"S" TC		0 to 1750° C		SC												SE = Switch only			
"T" TC		-200 to 600° F		TF												SF = 0 to 10 Vdc w/ switch			
"T" TC		-100 to 300° C		TC															
100 ohm RTD		-328 to 1562° F		PF															
100 ohm RTD		-200 to 850° C		PC															
100 ohm RTD		-199.0 to 450.0° F		DF															
100 ohm RTD		-100.0 to 225.0° C		DC															
1000 ohm RTD		-328 to 1562° F		XF															
1000 ohm RTD		-200 to 850° C		XC															
1000 ohm RTD		-199.0 to 450.0° F		ZF															
1000 ohm RTD		-100.0 to 225.0° C		ZC															
1 to 5 V		Scaleable		L1															
0 to 5 V		Scaleable		L4															
10 to 50 mV		Scaleable		L2															
0 to 50 mV		Scaleable		L5															
4 to 20 mA*		Scaleable		L3															
0 to 20 mA*		Scaleable		L6															
0 to 10 Vdc		Scaleable		L7															
2 to 10 Vdc		Scaleable		L8															
0 to 1 Vdc		Scaleable		L9															

Legacy Series 18 and 19 Universal Temperature/Process Controller

Technical Specifications

Operating Limits

Ambient Temperature	32°F to 131°F (0°C to 55°C)
Relative Humidity	
Tolerance	90% non-condensing
Line Voltage	100 to 250 Vac 125 to 300 Vdc 24 Vac/dc optional
Power Consumption	Less than 6 VA (instrument)

Performance

Accuracy	±0.20 % of full scale, (± 0.10% typical), ± 1 digit
Setpoint Resolution	1 count/0.1 count
Repeatability	±1.0 count
Temperature	
Stability	5 mV/°C (maximum)
TC Cold	
End Tracking	0.05°C/°C ambient
Noise Rejection	100 dB common mode 70 dB series mode
Process Sampling	10 Hz (100 ms)
Digital Filtering	Adjustable 0.1 to 10

Control Characteristics

Setpoint Limits	Span of Sensor
Alarms	Adjustable for high/low, selectable process or deviation
Rate	0 to 900 sec
Reset	0 to 2400 sec
Cycle Time	0 = 200 ms; 1 to 120 sec
Gain	0 to 400
Gain Ratio	0 to 2.0 (in 0.1 increments)
Control Hysteresis	1 to 100 (on/off configuration)
Spread (Output 2)	0 to 100 (above setpoint)
Ramp to Setpoint	1 to 100 min
Auto-Tune	Operator initiated from front panel
Manual Control	Operator initiated from front panel

Inputs

Thermocouple	B, C, E, J, K, N, NNM, R, S, T, Platinel II Maximum lead resistance, 100 ohms for rated accuracy
RTD	Platinum 2- and 3-wire, 100 ohms at 0°C, (DIN curve standard 0.00385)
Linear	0-50 mV/10-50 mV, 0-20 mA/4-20 mA, 0-10 mV/0-50 mV, 0-100 mV, 0-1 V/0-5 V, 0-10 V, 1-5 V

Outputs

Output #1 Reverse Acting (heating)	
Output #2 Direct Acting (cooling)	
B	5 A /3 A (120/240 Vac), normally open
E	0 - 20 mA
F	4-20 mA, full output to load 500 ohm impedance max.
G	4-20 mA, full output to load 800 ohm impedance max.

Outputs

P	20 Vdc or 35 mA
S	20 Vdc or 17 mA
T	1 A , Solid-state relay
V	0 to 5 Vdc
X	0 to 10 Vdc
Y	1 A , normally closed relay

Alarm Outputs

B	5 A /3 A (120/240 Vac), mechanical relay
S	24 V, 20 mA
T	SSR, NC, 24-240 Vac

Mechanical Characteristics

Display	Dual, 4-digit 0.36" (9.2 mm) LED Display Process Value: Orange Setpoint Value: Green
Numeric Range	-1999 to 9999
Front Panel Rating	NEMA 4X, (IP65)
Front Panel Cutout	3.622" x 1.771" (92 mm x 45 mm)
Connections	Screw Terminals

Specifications subject to change without notice.

