



LEGACY SERIES 16 UNIVERSAL TEMPERATURE / PROCESS CONTROLLER

The Athena Legacy 16 is a 1/16 DIN panel mounted, auto-tuning controller that can be used for precise control of a single loop with two independent outputs. The controller accepts 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.

KEY FEATURES

- Field-Configurable Process, Deviation, or Latching or Non-Latching Alarms
- User-Selectable Ramp to Setpoint
- Autotuning, Heat or Cool
- NEMA 4X (IP65) Dust and Splash-Proof Front Panel
- On/Off Through Full PID Operation (P, PI, PD, PID)
- Adjustable Hysteresis and Heat/Cool SpreadDeadband
- Remote Setpoint Selection Options



- Dual Output/Dual Alarm Capabilities
- cUL, and CE Approvals
- Optional Process Variable Retransmission
- DIN Rail Option

ORDERING INFORMATION

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Input	Range	Code
"E" TC	0 to 1292° F	EF
"E" TC	-18 to 700° C	EC
"J" TC	0 to 1400° F	JF
"J" TC	0 to 750° C	JC
"K" TC	0 to 2460° F	KF
"K" TC	0 to 1349° C	KC
"N" TC	0 to 2370° F	NF
"N" TC	0 to 1300° C	NC
"R" TC	0 to 3200° F	RF
"R" TC	0 to 1750° C	RC
"S" TC	0 to 3200° F	SF
"S" TC	0 to 1750° C	SC
"T" TC	-200 to 600° F	TF
"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

Output 1 Code
0 = None
B = Relay, N.O.
E = 0 to 20 mA
F = 4 to 20 mA
(500 ohm max)
G = 4 to 20 mA
(800 ohm max)
P = Pulsed 20 Vdc or 35 mA
S = Pulsed 20 Vdc or 17 mA
T = Solid-State Relay
V = 0 to 5 Vdc
X = 0 to 10 Vdc
Y = Relay, N.C.

Output 2 Code
0 = None
B = Relay, N.O.
E = 0 to 20 mA
F = 4 to 20 mA
(500 ohm max)
G = 4 to 20 mA
(800 ohm max)
P = Pulsed 20 Vdc or 35 mA
S = Pulsed 20 Vdc or 17 mA
T = Solid-State Relay
V = 0 to 5 Vdc
X = 0 to 10 Vdc
Y = Relay, N.C.

Special Options
00 = None
Consult factory for available special options you may need for your application.

Standard Options	Code	Options
Code	Options	Digital Input w/Alarm
00 = None	40 = Switch Closed	
Alarms	41 = Switch Open	
10 = Dual SSR, N.O.	42 = 5 V Input	
20 = Dual Open Collector	45 = RS-485, No Switch	Communication RS-485 Modbus Protocol w/Contact/Digital Input
21 = Dual 24 Vdc	46 = Switch Closed	
22 = Dual SSR, N.C.	47 = Switch Open	
23 = Relay, N.O.	48 = 5 V Input	
Communications	50 = 10 Vdc	Transducer Excitation
30 = RS-232 (Athena+ Protocol)	51 = 12 Vdc	
Communication, RS-485 Athena+ Protocol w/Contact/Digital Input	52 = 15 Vdc	
31 = RS-485, No Switch	53 = 5 Vdc	
36 = Switch Closed	60 = 4 to 20 mA	Aux Output/PV Retransmit
37 = Switch Open	61 = 1 to 5 V	
38 = 5 V Input	62 = 0 to 20 mA	
	63 = 0 to 5 V	

TECHNICAL SPECIFICATIONS

OPERATING LIMITS

Ambient Temperature	32°F to 131°F (0°C to 55°C)
Relative Humidity	
Tolerance	90%, non-condensing
Power	100-250 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	1.0 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 sec

CONTROL CHARACTERISTICS

Setpoint Limits	Span of Sensor
Alarms	Adjustable for high/low; selectable for process or deviation
Rate	0 to 900 sec
Reset	0 to 2400 sec
Cycle Time	0=200ms; 0.2 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

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.
P	20 Vdc or 35 mA
S	20 Vdc or 17 mA
T	1 A, Solid-state relay

OUTPUTS (continued)

V	0 to 5 Vdc
X	0 to 10 Vdc
Y	5 A/3 A (120/240 Vac), normal closed relay

ALARM TYPE

10	Dual SSR: Alarm 1: 24-240 Vac, 1 A Alarm 2: 24 Vac Only
20	Dual Open collector, 24 V, 20 milliamps
21	Dual 24 V, 20 mA
22	Dual SSR: Alarm 1: NC, 24-240 Vac, 1 A Alarm 2: 24 Vac Only
23	5 A/3 A (120/240 Vac), mechanical relay

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	1.771" x 1.771" (45 mm x 45 mm)
Connections	Screw Terminals

Specifications subject to change without notice.

