

C-Series 16C Universal Temperature / Process Controller

The Athena 16C 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 field-configurable as direct acting, reverse acting or alarm. RS-232 or RS-485 communications interfaces are available, and two digital LED displays provide visual indication of various controller functions.

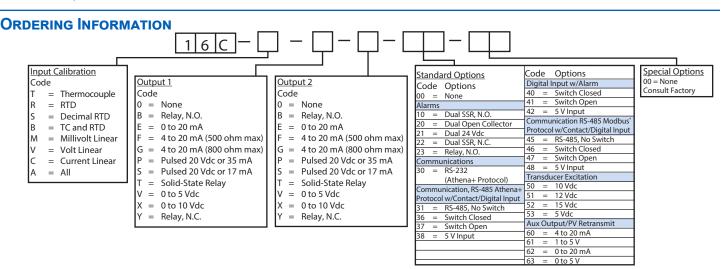
KEY FEATURES

- Field-Configurable Universal Inputs
- User-Selectable Ramp to Setpoint
- 8-Level Ramp/Soak Control
- Bumpless Auto/Manual Transfer
- NEMA 4X (IP65) Dust and Splash-Proof Front Panel
- Decimal Display in 0.1° for Measured Temperatures Under 1000° F or °C
- On/Off Through Full PID Operation (P, PI, PD, PID)
- Adjustable Hysteresis and Deadband
- Outputs Configurable as Alarms
- Field-Configurable Process or Deviation Alarms; Latching or Non-Latching; Band and Inverse Band
- Dual Output/Dual Alarm Capabilities
- UL, cUL, and CE Approvals
- Options Include Multi-Function Contact/Digital Input, Transducer Excitation, and Auxiliary Output
- Special and Custom Options Available
- A DIN Rail Option



RANGE INFORMATION

Input	Range
"B"	32°F to 3308°F (0°C to 1820°C)
"C"	32°F to 4199°F (0°C to 2315°C)
"E"	-238°F to 1832°F (-150°C to 1000°C)
"J"	-328°F to 1400°F (-200°C to 760°C)
"K"	-454°F to 2462°F (-270°C to 1354°C)
"N"	-450°F to 2372°F (-268°C to 1300°C)
"NNM""	32°F to 2570°F (0°C to 1410°C)
Millivolt Linear (Scalable)	0 to 50mV / 10 to 50mV / 0 to 10mV / 0 to 50mV / 0 to 100mV
"R"	-58°F to 3214°F (-50°C to 1768°C)
"S"	-58°F to 3214°F (-50°C to 1768°C)
"T"	-454°F to 2250°F (-270°C to 1232°C)
Platinel II	-148°F to 2250°F (-100°C to 1232°C)
100 ohm RTD	-328°F to 1562°F (-200°C to 850°C)
100 ohm RTD (decimal)	-328°F to 707°F (-200°C to 375°C)
Current Linear (scalable)	4 to 20mA, 0 to 20mA
Volt Linear (scalable)	0 to 1V / 0 to 5V / 0 to 10V / 0 to 5V



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 $\pm 0.20\%$ of full scale ($\pm 0.10\%$ typical), ± 1 digit

Setpoint Resolution 1.0 count / 0.1 count

 $\begin{tabular}{ll} Repeatability & $\pm 1.0 \ count \\ Temperature Stability & 5 \ \mu V/^{\circ}C \ (maximum) \\ TC \ Cold-End \ Tracking & 0.05^{\circ}C/^{\circ}C \ ambient \\ Noise \ Rejection & 100 \ dB \ common \ mode \\ \end{tabular}$

70 dB series mode 10 Hz (100 ms)

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
Proportional Band 2 to span of sensor
Integral 0 to 9600 sec
Derivative 0 to 2400 sec
Cycle Time 0.2 to 120 sec
Control Hysteresis 1 to span of sensor

Dead Band

(Output 1 & 2) Range of Sensor Ramp to Setpoint 1 to 9999 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

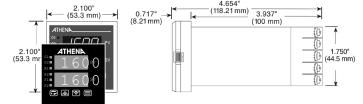
Process Value: Orange Setpoint Value: Green

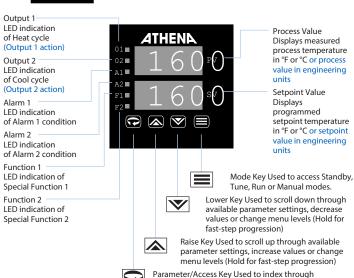
Numeric Range -1999 to 9999 Front-Panel Rating NEMA 4X (IP65)

Front-Panel Cutout 1.771" x 1.771" (45 mm x 45 mm)

Connections Screw Terminals

Specifications subject to change without notice.





parameters or to access Menu Levels



Athena Controls, Inc. 5145 Campus Drive, Plymouth Meeting, PA 19462 -1129 USA Toll Free: 1.800.782.6776; T: 1.610.828.2490 F: 1.610.828.7084; Email: mktg@athenacontrols.com