

Model F1C (Single-Zone) and F3C (Tri-Zone) DIN Rail Universal Temperature/Process Controls

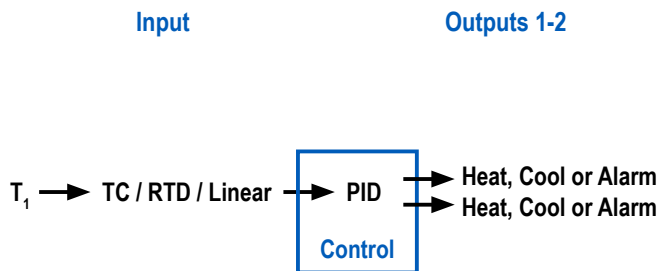
The Athena F1C and F3C are DIN rail mounted, auto-tuning controls that can be used for precise control of processes. The control outputs can be configured as direct-acting, reverse-acting or alarm. A bidirectional RS-485 communications interface is standard. Discrete status LED displays are provided for system status.

- ▲ 1 or 3 zones of control featuring C Series control capabilities and Athena algorithms
- ▲ DIN rail mounted enclosures stackable to required number of zones
- ▲ Each independently powered 24Vdc control can integrate with your HMI using Modbus RTU

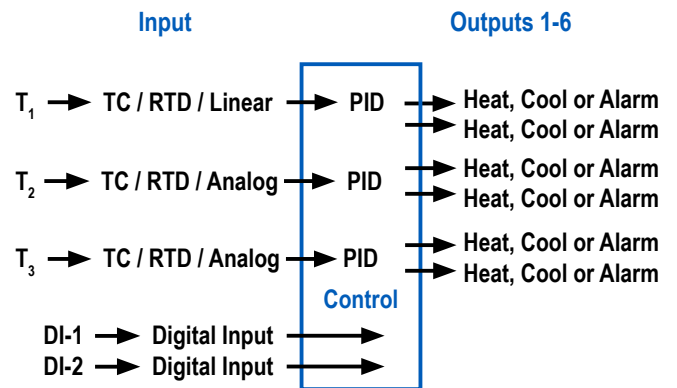


- ▲ Requires an HMI, Athena's multicom or other Modbus RTU software to load I/O parameters
- ▲ Foundation Series DIN rail mounted accessory modules can be added for additional configurations
- ▲ Isolated RS-485 Modbus RTU protocol
- ▲ Accepts RTD (2 or 3 wire), thermocouples and linear inputs
- ▲ Agency Approvals: cETLus, CE and FCC, CE Class A EMI compliance

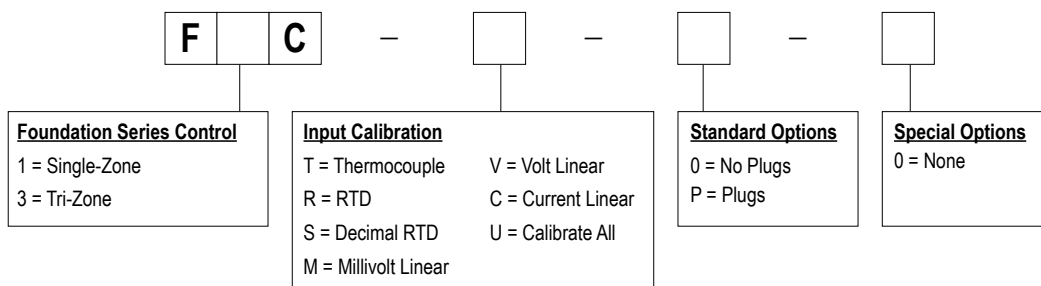
F1C Temperature Control Application



F3C Temperature Control Application



Ordering Information



Technical Specifications

Technical Operating Limits

Ambient Temperature	32 deg F to 122 deg F (0 deg C to 50 deg C)
Relative Humidity	90% non-condensing
Power	24Vdc, +10/-15%
	F1C External fuse required 2.25A for 24Vdc input power
	F3C External fuse required 3A for 24Vdc input power

Performance

Accuracy	± 0.20% of full scale, ± 1 digit
Setpoint resolution	1 count / 0.1 count
Repeatability	± 1 count
Temperature Stability	5 μ V/°C (maximum)
TC Cold End Tracking	0.05°C/°C ambient
Noise Rejection	100 dB common mode
Process Sampling	126 ms X number of active zones +1

Control Characteristics

Proportional Band	2 to span of sensor
Integral	0 to 9600 seconds
Derivative	0 to 2400 seconds
Cycle Time	0-200 ms; 1 to 120 seconds
Control Hysteresis	1 to span of sensor
Autotune	Operator Initiated
Manual Control	Operator Initiated

Input Specifications

Thermocouple	B, C, E, J, K, N, NNM, R, S, T Platinel II. Maximum lead resistance 100 ohms for rated accuracy grounded or ungrounded
RTD	2 & 3 wire 100 ohm RTD 100 ohms at 0 deg C (DIN curve standard 0.00385) Option: 1000 ohm RTD (consult factory)
Linear	0-10mV, 0-50mV, 10-50mV, 0-100mV 0-1V, 0-5V, 1-5V, 0-10V 0-20mA, 4-20mA
Digital Inputs (F3C only)	Dry contacts, Isolated 5V source AC or DC Frequency Inputs

Output Specifications

F1C	2 Outputs, 24Vdc sourcing, 1A Max configurable as Heat, Cool or Alarm
F3C	6 Outputs, 24Vdc sourcing, 3A Max configurable as Heat, Cool or Alarm

Note: Each output must be protected from overload by a 1A fast-blow external fuse.

Mechanical Characteristics

Dimensions	
F1C	3.9"H x 0.70"W x 4.39"D
F3C	3.9"H x 1.39"W x 4.39"D
Connections	Mating Plugs with screw terminals
Mounting	DIN Rail

F1C Terminal Identification

Terminal #	
1	24Vdc Gnd
2	24Vdc Gnd
3	+ 24Vdc
4	Output 2
5	GND
6	Output 1
7	"A" RS485
8	"Gnd" RS485
9	"B" RS485
10	RTD EXT
11	TC+
12	TC-



F3C Terminal Identification

Terminal #	Terminal #
1	24Vdc Gnd
2	24Vdc Gnd
3	+ 24Vdc
4	RTD EXT
5	TC+
6	TC-
7	"B" RS485
8	"Gnd" RS485
9	"A" RS485
10	RTD EXT
11	TC+
12	TC-
13	Output 1
14	Output 2
15	Output 3
16	RTD EXT
17	TC+
18	TC-
19	Output 4
20	Output 5
21	Output 6
22	DI-1(+)
23	DI-2(+)
24	DI (-)



Athena Controls, Inc.
 5145 Campus Drive • Plymouth Meeting, PA 19462-1129 USA
 Toll-Free: 1.800.782.6776 • Tel: 610.828.2490
 Fax: 610.828.7084 • Email: sales@athenacontrols.com
www.athenacontrols.com

Foundation Series