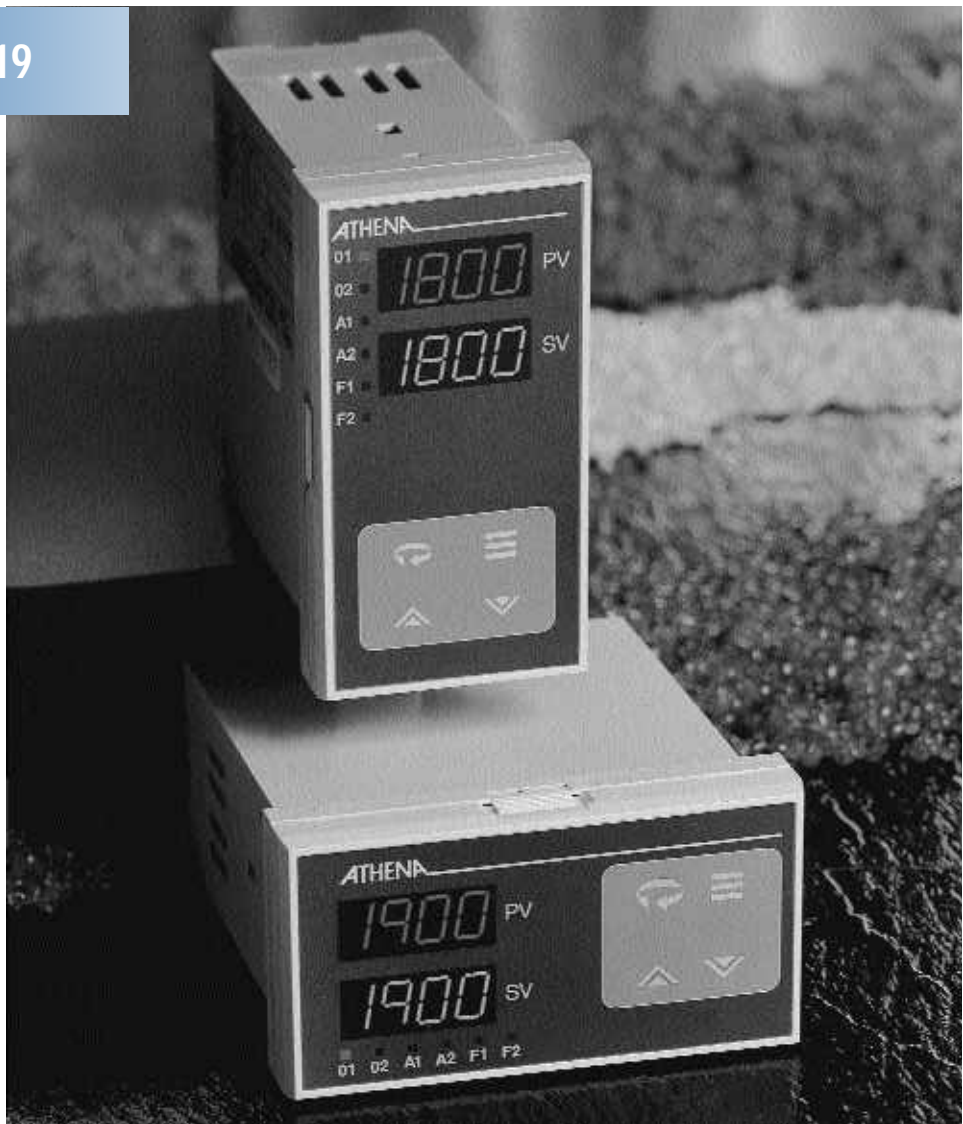


# SERIES 18 and 19

## 1/8 DIN Universal Process Controller

- Thermocouple, RTD, Voltage or Current Input
- 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 RS232/RS485 Communications
- Optional Process Variable Retransmission
- Remote Setpoint Select, Non-Linear Inputs, or Other Special Options
- May Be Ordered as a Limit Controller (Option ED)



## Ordering Information

18 or 19

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
Platinel® II	0 to 2372° F	LF
Platinel® II	-18 to 1300° C	LC
"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, 5A/3A
F = 4 to 20 mA
G = High Impedance 'F'
S = Pulsed 20 Vdc
T = Solid-State Relay, 1 A
Y = N.C. Relay

Output 2 Code
0 = None
B = Relay, 5A/3A
F = 4 to 20 mA
G = High Impedance 'F'
S = Pulsed 20 Vdc
T = Solid-State Relay, 1 A
Y = N.C. Relay

Alarm 1 Code
0 = None
B = Relay
S = 24 V
T = SSR

Alarm 2 Code
0 = None
B = Relay
S = 24 V
T = SSR

Communications Code
0 = None
A = RS-232
B = RS-485
C = SPI RS-485

Option 1 Code
00 = None
<b>Auxiliary Output</b>
PA = 4 to 20 mA
PB = 1 to 5 V
PC = 0 to 20 mA
PD = 0 to 5 V
<b>Remote Analog Setpoint</b>
SA = 0 to 5 V w/ switch
SB = 1 to 5 V w/ switch
SC = 0 to 20 mA w/ switch
SD = 4 to 20 mA w/ switch
SE = Switch only
SF = 1 to 10 Vdc w/ switch

Option 2 Code
<b>Transducer Excitation</b>
1 = 10 Vdc
2 = 12 Vdc
3 = 15 Vdc
4 = 5 Vdc

Special Options
ED = Limit Controller (Other options, consult factory)



## SPECIFICATIONS

### OPERATING LIMITS

Line Voltage	100 to 250 V, 50/60 Hz 125 to 300 Vdc
Power Consumption	Less than 6 VA (instrument)
Temperature	32° to 131°F (0° to 55°C)
Humidity	90% R.H. maximum, non-condensing

### PERFORMANCE

Accuracy	±0.2% of FS, ± one 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	Common mode > 100 dB Series mode > 70 dB
Process Sampling	10 Hz (100 ms)
Linear Input:	L1 to L7 (Refer to Ordering Codes)
Engineering Units	Scalable, -1999 to 9999
Digital Filtering	0.1, 1.0, or 10 sec
Decimal Position	Selectable, none or (0.00), (0,0)

### CONTROL CHARACTERISTICS

Setpoint Limits	Limited to configured range of TC and RTD
Alarms	Adjustable for high/low; selectable process or deviation
Rate	0 to 900 sec
Reset	0 to 3600 sec
Cycle Time	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 minutes
Autotune	Operator-initiated from front panel
Manual Control	Operator-initiated from front panel

### INPUTS

Thermocouple	E, K, J, N, R, T, S, Platinel® II
rated accuracy	Maximum lead resistance, 100 ohms for
RTD	Platinum, 3-wire, 100 ohms at 0°C, DIN curve standard (0.00385); 1000 ohms
Linear	Current and voltage (refer to ordering code)

### OUTPUTS

#1 reverse-acting (heating)	
#2 direct-acting (cooling)	
B	Relay 5 A @ 120 Vac, 3 A @ 240 Vac
F	4-20 mA, 500 ohms max.

S	20 Vdc pulsed
T	Solid-state relay, 1 A
Alarms	Optically isolated triac, rated 1 A, 120/240 Vac @ 25°C DC - 20 mA sink or 24 V supply (switch AC only) or 3 A/5 A, 120/240 Vac (switch AC or DC)

### MECHANICAL CHARACTERISTICS

Display	Dual, 4-digit, 9.2 mm Process: orange Menu/parameter: green
Front Panel Rating	NEMA 4X (IP65)
Connections	Input and output via barrier strip, with locking terminals
Contacts	Twin bifurcated, double-wipe

Specifications subject to change without notice.

