

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
Auxiliary Output
PA = 4 to 20 mA
PB = 1 to 5 V
PC = 0 to 20 mA
PD = 0 to 5 V
Remote Analog Setpoint
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
Transducer Excitation
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.

