

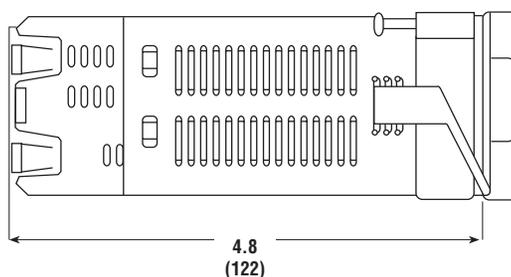


1604 1/16 DIN Temperature Controller

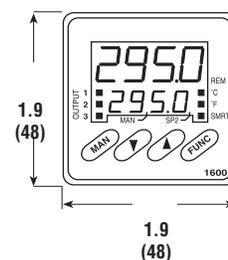
- Dual 4-Digit Display of Process and Setpoint
- Heat, Cool or Heat/Cool PID Control
- Three Outputs
- Heater Breakdown Current Monitoring Alarm
- Universal Inputs: TC, RTD, Voltage and Current
- SMART Self-Tuning with Fuzzy Logic
- Soft-Start Power Limiting on Power-Up
- NEMA 4X Faceplate
- Two Independent Setpoints (Run Idle) Switched by Dry Contact Input
- RS-485 Digital Communications with ChromaSoft® SpecView™ Software Capability



Dimensions



Side View



Front View

All Dimensions in Inches (mm)

Description

The 1604 controller has all of the advanced control features of the 1601 and 1603 controllers, plus more. The dual display provides process and setpoint indication with 0.1 degree resolution. The optional third output

may be used as a heater break down indication alarm. RS-485 Digital Communications and ChromaSoft® SpecView™ compatibility expand the applications and networking possibilities.

Features

- Heat/Cool Control Features Selection of Cooling Medium and Overlap
- Auto/Manual Control
- Independent Programmable Ramp on Setpoint Change
- Heater Breakdown Alarm/Current Monitoring Alarm is activated when load current reaches excessively low or high values, indicating an open load, disconnected wire or welded contact.
- Prevents damage to sensitive processes and equipment
- Displays load current without separate ammeter

Control Modes	Field Selectable	On/Off PID SMART (Autotune)
	Manual	Bumpless, Balanceless transfer with Proportional Control
Heat/Cool	Relative Gain	0.20-1, select air, oil or water
Outputs	Output #1	One (1) Heat or Cool Output Relay NO. SPDT contact, 3 Amps at 250 Vac (resistive) SSR Drive Transistor output of 24 Vdc max at 1mA, 14 Vdc ± 20% at 20mA
	Output #2	One Alarm Output or Vdc Cool Output Relay NO. SPST contact, 2 Amps at 250 Vac (resistive)
	Output #3	Alarm Output One (1) SPST relay, 2 Amps at 250 Vac (resistive load)
Alarm Features	Functions	Field Selectable Process, Deviation, Band or Heater Breakdown Alarm
	Types	Normally Energized/Normally De-energized Inhibit on Power-Up and Setpoint Changes Latching/Non-latching (Manual/Automatic Reset)

SINGLE CHANNEL

1604 1/16 DIN Temperature Controller (cont'd.)

Input Specifications

Sensor Type		Range* °F	°C	
Thermocouple	J	-150 to +1830	-100 to +1000	
			-100.0 to +400.0	
	K	-150 to +2500	-100 to +1370	
			-100.0 to +400.0	
	L	0-1650	0-900	
			-100.0 to +400.0	
RTD	N	-150 to +2550	-100 to +1400	
	R	0-3200	0-1760	
	S	0-3200	0-1760	
	T *	-330 to +750	-199.9 to +400.0	
		-330 to +1470	-200 to +800	
		-199.9 to +400.0	-199.9 to +400.0	
Current Voltage		0-20 mA or 4-20mA dc 0-5, 1-5, 0-10, or 2-10 Vdc, 0-60 or 12-60 mVdc		Range and decimal points programmable, -1999 to 4000

*1604 with Digital Communications does not have negative sensor range or T Thermocouple input.

Digital Communications RS-485 multi-drop, Isolated, CPIO, ASCII Line Mode, Modbus and J-BUS protocol selection

Instrument Power 100-240 Vac, +10%, -15%, 50-60 Hz, 24 Vac or Vdc

Operating Environment 30-120°F (0-50°C) ambient with less than 85% relative humidity

Ordering Information

Complete the Model Number using the Matrix provided.

In Stock:

Model	PCN
1604-11030	306270
1604-61030	306288
1604-11130	306296
1604-61130	306309
1604-11230	306317
1604-61230	306325
1604-11330	306499
1604-61430	306341

Model 1/16 DIN Temperature Controller

1604 SMART Self-Tuning, 2 Outputs (Heat/Cool or Control/Alarm), Dual 4-Digit Display of Process and Setpoint, Field Selectable Universal Thermocouple, RTD, Voltage or Current Inputs, Auto-Manual Control, Programmable Alarms, 0.1 Degree Display Resolution, IEC 801-4 Noise Immunity, Optional Heater Break Alarm/Current Transformer Input, NEMA 4X Splashproof Faceplate, Optional RS-485 Digital Communications, Compatible with ChromaSoft® Remote Operator Interface Software

Code Output 1 - Heat or Cool

1 Relay, 3 Amps at 240 Vac
6 SSR Drive, 14 Vdc at 20mA

Code Output 2 - Cool or Alarm

1 Relay, 2 Amps at 240 Vac

Code Options

0 None
1 Output #3, 2 Amps at 250 Vac (Resistive Load)
2* Heater Break Down Input and Output #3
3 RS-485 Digital Communications and Output #3
4* RS-485 Digital Communications, Heater Break Down Input and Output #3

Code Power Supply

3 100/240 Vac
5 24 Vac/Vdc

Code

0 Add to complete model number

1604 - 1 1 0 3 0 Typical Model Number

Accessories

*Controllers with the Heater Break Down option, model 1604-xx2xx and 1604-xx4xx require a Current Transformer to monitor the load current controlled by the 1604 controller. Specify one of the four Current Transformers listed below when ordering a controller with the Heater Break Down option.

	Part No.	PCN
Current Transformer, for 0.0-10.0 Amp Load Current	0149-01340	306480
Current Transformer, for 0-25 Amp Load Current	0149-01341	306350
Current Transformer, for 0-50 Amp Load Current	0149-01342	306368
Snubber	0149-01305	314448