

# SOLO Temperature Controllers

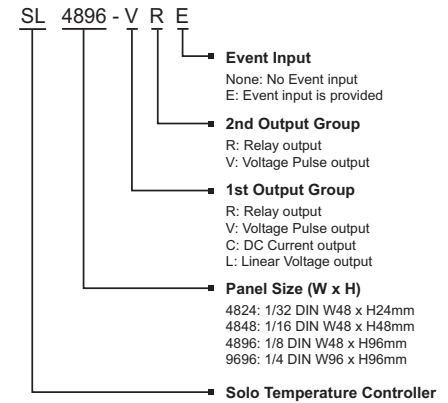
## Overview

AutomationDirect's SOLO is a single-loop dual-output temperature controller that can control both heating and cooling simultaneously. There are four types of control modes: PID, ON/OFF, Ramp/Soak and Manual. Depending upon the model of controller, the available outputs include relay, voltage pulse, current, and linear voltage. There are up to three alarm outputs available. (The SL4824 series supports only one alarm output.) Select from seventeen alarm types in the initial setting mode. Solo can accept various types of thermocouple, RTD, or analog inputs. SOLO has a built in RS-485 interface using Modbus slave (ASCII or RTU) communication protocol.

## Features

- 1/32 DIN, 1/16 DIN, 1/8 DIN, or 1/4 DIN panel size
- 2 line x 4 character 7-segment LED display for Process value (PV): Red color, and Set Point (SV): Green color
- Auto Tuning (AT) function with PID control
- Accepts eleven types of thermocouples, two types of Pt100 RTD temperature sensors, and DC mA, mV, and Volt signals
- Selectable between °F and °C
- 0°C to 50 °C operating temperature range
- Up to three alarm groups, each with seven teen available alarm types.
- Four possible control output options depending on model; Relay, Voltage Pulse, Current, and Linear Voltage.
- Baud rates up to 38.4K bps.
- Thermocouple and Platinum RTD sample rates at 400 ms per scan
- Analog sample rate at 150 ms per scan
- 64 levels of Ramp / Soak control
- Two optional Event Inputs available in 1/8 DIN and 1/4 DIN sizes
- UL, CUL, and CE agency approvals

## SOLO Controller Part Number Key



Specifications	
<b>Input Power Requirements</b>	100 to 240 VAC 50 / 60 Hz
<b>Operation Voltage Range</b>	85% to 110% of rated voltage
<b>Power Consumption</b>	5 VA Max
<b>Memory Protection</b>	EEPROM 4K bit, number of writes 100,000
<b>Control Mode</b>	PID, ON/OFF, Ramp / Soak control or Manual
<b>Input Accuracy</b>	Less than ± 2% full scale (except thermocouple R, S, & B types) Max ± 3° (thermocouple R, S, & B types)
<b>Vibration Resistance</b>	10 to 55 Hz, 10 m/s <sup>2</sup> for 10 min, each in X, Y and Z directions
<b>Shock Resistance</b>	Max. 300 m/s <sup>2</sup> , 3 times in each 3 axes, 6 directions
<b>Ambient Temperature Range</b>	32°F to 122°F (0°C to 50°C)
<b>Storage Temperature Range</b>	-4°F to 149°F (-20°C to 65°C)
<b>Altitude</b>	2000m or less
<b>Relative Humidity</b>	35% to 80% (non-condensing)
<b>RS-485 Communication</b>	Modbus slave ASCII / RTU protocol
<b>Transmission Speed</b>	2400, 4800, 9600, 19.2K, 38.4K bps
<b>IP Rating</b>	IP65: Complete protection against dust and low pressure spraying water from all directions. (inside suitable enclosure)
<b>Agency Approvals</b>	UL, CUL, CE (UL file number E311366)
<b>Input Types</b>	
• Thermocouple	K, J, T, E, N, R, S, B, L, U, TXK (400 ms per scan)
• Platinum RTD	3-wire Pt100, JPt100 (400 ms per scan)
• Analog	0-50 mV, 0-5V, 0-10V, 0-20 mA, 4-20 mA (150 ms per scan)
<b>Control Output Options</b>	
• Relay (R)	SPST Max load 250 VAC, 5A resistive load
• Voltage Pulse (V)	DC 14V Max, output current 40mA Max
• Current (C)	DC 4-20 mA output (Load resistance: Max 600 Ω)
• Linear Voltage (L)	DC 0-10V (Load resistance Min 1KΩ)

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## SOLO Temperature Controller Selection Guide

Series	Part Number	Dimensions	Control Output 1	Control Output 2	Event Inputs*	Alarm Outputs	RS-485 Port
SL4824	SL4824-RR	W - 48mm H - 24mm D - 103mm (1/32 DIN)	Relay	Relay		Alarm or Output 2	
	SL4824-VR		Voltage Pulse				
	SL4824-CR		Current				
	SL4824-LR		Linear Voltage				
SL4848	SL4848-RR	W - 48mm H - 48mm D - 90mm (1/16 DIN)	Relay	Relay	N/A		
	SL4848-VR		Voltage Pulse				
	SL4848-CR		Current				
	SL4848-LR		Linear Voltage	Voltage Pulse			
	SL4848-VV		Voltage Pulse				
	SL4848-CV		Current				
	SL4824-LV		Linear Voltage				
SL4896	SL4896-RRE	W - 48mm H - 96mm D - 92mm (1/8 DIN)	Relay	Relay		Alarm 1 Alarm 2 Alarm 3 or Output 2	Yes
	SL4896-VRE		Voltage Pulse				
	SL4896-CRE		Current				
	SL4896-LRE		Linear Voltage				
SL9696	SL9696-RRE	W - 96mm H - 96mm D - 95mm (1/4 DIN)	Relay	Relay	Event 1 / Event 2		
	SL9696-VRE		Voltage Pulse				
	SL9696-CRE		Current				
	SL9696-LRE		Linear Voltage				
	SL9696-VVE		Voltage Pulse	Voltage Pulse			
	SL9696-CVE		Current				
	SL9696-LVE		Linear Voltage				

\*Notes: EVENT1 input is a normally open contact input that controls the output(s) of the controller. All controller outputs are disabled when the contact is closed.  
 EVENT2 input is a normally open contact input that switches the setting value between two different values based on the state of the EVENT2. If the contact is open the primary setting value is used for all parameters and outputs. If the contact is closed the secondary setting value is used for all parameters and outputs. Each temperature setting value has individual control parameters.

User Configurable Output Options	
Control Output 1	Control Output 2
Heating	(Alarm)
Cooling	(Alarm)
Heating	Cooling
Cooling	Heating

Mounting Clips			
Series	Part Number	Pkg. Qty.	
SL4824	SL-CLP-1	8	
SL4848	SL-CLP-2	20	
SL4896			
SL9696			

## Available Input Types

All SOLO temperature controllers support these input types.

Thermocouple Type and Temperature Range	
Input Temperature Sensor Type	Temperature Range
Thermocouple TXK type	-328 ~ 1472°F (-200 ~ 800°C)
Thermocouple U type	-328 ~ 932°F (-200 ~ 500°C)
Thermocouple L type	-328 ~ 1562°F (-200 ~ 850°C)
Thermocouple B type	212 ~ 3272°F (100 ~ 1800°C)
Thermocouple S type	32 ~ 3092°F (0 ~ 1700°C)
Thermocouple R type	32 ~ 3092°F (0 ~ 1700°C)
Thermocouple N type	-328 ~ 2372°F (-200 ~ 1300°C)
Thermocouple E type	32 ~ 1112°F (0 ~ 600°C)
Thermocouple T type	-328 ~ 752°F (-200 ~ 400°C)
Thermocouple J type	-148 ~ 2192°F (-100 ~ 1200°C)
Thermocouple K type	-328 ~ 2372°F (-200 ~ 1300°C)

RTD Type and Temperature Range	
Input Temperature Sensor Type	Temperature Range
Platinum Resistance (Pt100)	-328 ~ 1112°F (-200 ~ 600°C)
Platinum Resistance (JPt100)	-4 ~ 752°F (-20 ~ 400°C)

Voltage Input Type and Input Range	
Voltage Input Type	Engineering Range
0~50mV Analog Input	-999 ~ 9999
0V~10V Analog Input	-999 ~ 9999
0V~5V Analog Input	-999 ~ 9999

Current Input Type and Range	
Current Input Type	Engineering Range
4~20mA Analog Input	-999 ~ 9999
0~20mA Analog Input	-999 ~ 9999

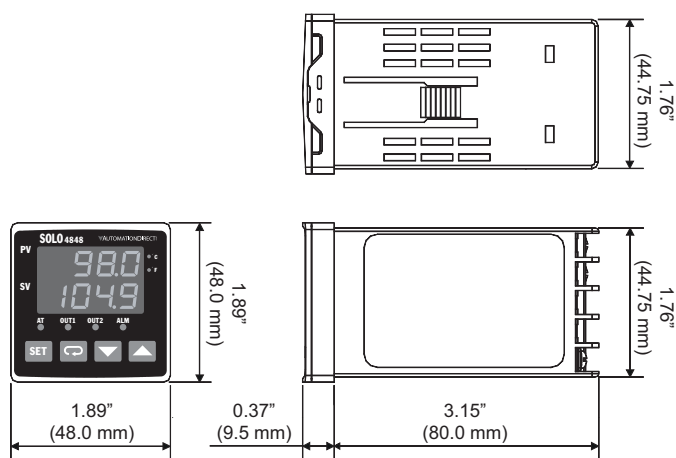
# SOLO Temperature Controller SL4848 Series



Output Specifications					
Part Number	Output #1	Output #2 / Alarm #3	Alarm #1	Alarm #2	
SL4848-RR	Relay	Relay	Relay	Relay	
SL4848-VR	Voltage Pulse	Relay	Relay	Relay	
SL4848-CR	Current	Relay	Relay	Relay	
SL4848-LR	Linear Voltage	Relay	Relay	Relay	
SL4848-VV	Voltage Pulse	Voltage Pulse	Relay	Relay	
SL4848-CV	Current	Voltage Pulse	Relay	Relay	
SL4848-LV	Linear Voltage	Voltage Pulse	Relay	Relay	

**Note:** A set of mounting clips and a 249 Ω resistor are included. Extra mounting clips are available (Part Number: SL-CLP-2, Qty: 20 per package)

## Dimensions



## Mounting Cutout and Spacing

