Getting Started

Chapter
1

In this Chapter...

Manual Overview

Overview of this Publication

The SOLO Temperature Controller User Manual describes the installation, configuration, and methods of operation of the SOLO Temperature Controller.

Who Should Read This Manual

This manual contains important information for those who will install, maintain, and/or operate any of the SOLO Temperature Controllers.

Technical Support

By Telephone: 770-844-4200
(Mon.-Fri., 9:00 a.m.-6:00 p.m. E.T.)
On the Web: support.automationdirect.com

Our technical support group is glad to work with you in answering your questions. If you cannot find the solution to your particular application, or, if for any reason you need additional technical assistance, please call technical support at **770-844-4200**. We are available weekdays from 9:00 a.m. to 6:00 p.m. Eastern Time.

We also encourage you to visit our web site where you can find technical and non-technical information about our products and our company. Visit us at **www.automationdirect.com**.

Supplemental Manuals

If you are familiar with industrial control type devices, you may be able to get up and running with just the aide of the Quick Start Guide that is included with each SOLO Temperature Controller.

Special Symbols

When you see the "notepad" icon in the left-hand margin, the paragraph to its immediate right will be a special note.

When you see the "exclamation mark" icon in the left-hand margin, the paragraph to its immediate right will be a warning. This information could prevent injury, loss of property, or even death (in extreme cases).

SOLO Temperature Controller Introduction

General Description

The SOLO Temperature Controller 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, Manual, and Ramp / Soak control. Depending upon the particular model of controller, the available outputs include relay, voltage pulse, current, and linear voltage. There are up to three alarm outputs available to allow seventeen alarm types in the initial setting mode. SOLO can accept various types of thermocouple, RTD, or analog inputs, and has a built in RS-485 interface using Modbus slave (ASCII or RTU) communication protocol.

Other features include:

- 1/32, 1/16, 1/8 and 1/4 DIN panel sizes
- 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
- Selectable between °C and °F for thermocouple or RTD inputs
- 0 to 50 °C (32 to 122 °F) operating temperature range
- UL, CUL and CE agency approvals

Unpacking

After receiving the SOLO Temperature Controller, please check for the following:

- Make sure that the package includes the Controller, the mounting brackets and hardware, a 249 ohm resistor and the Quick Start Guide.
- Inspect the unit to insure it was not damaged during shipment.
- Make sure that the part number indicated on the serial number label corresponds with the part number of your order.

Mounting Brackets and Hardware

Temperature Controller (SL 9696 shown)

249 ohm resistor

Quick Start Guide

SOLO Temperature Controller User Manual
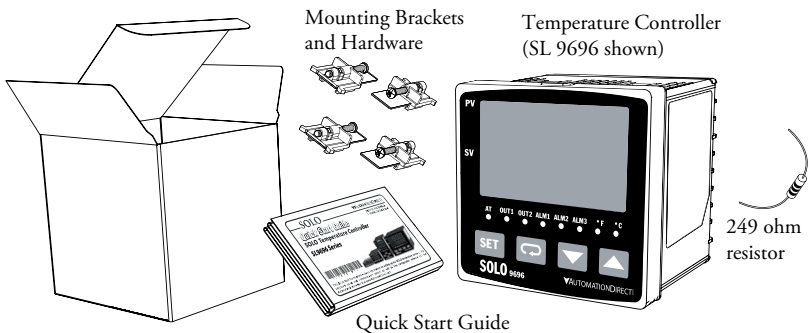
Serial Number Label Information:

SL4824 Series Serial Number Label

SOLO Model Number →
Input Specifications →
Bar Code →
Serial Number →

▼AUTOMATIONDIRECT™
Temperature Controller
MODEL:SL4824-CR   V1.00
INPUT: AC 100~240V 50/60 Hz under 5VA.
See Manual for wiring instructions

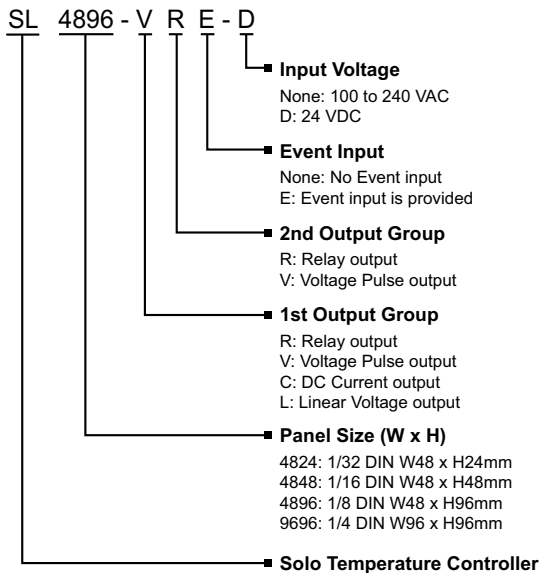SL42CR00T7150001

c(UL)us
LISTED
13RW
OPEN TYPE
PROCESS CONTROL
EQUIPMENT
MADE IN TAIWAN

CE
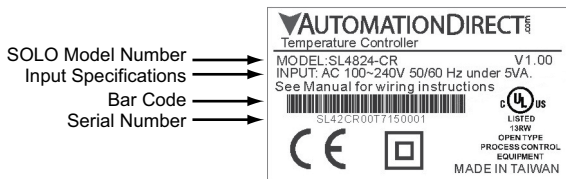
SL4848, SL4896, and SL9696 Series Serial Number Label

SOLO Model Number →
Input Specifications →

Bar Code →
Serial Number →

MODEL:SL4896-CRE   V1.00
INPUT: AC 100~240V 50/60 Hz 5VA
See Manual for wiring instructions

SL49CRE0T715001   MADE IN TAIWAN

Model Number Explanation

SL 4896 - V R E - D

Input Voltage

None: 100 to 240 VAC
D: 24 VDC

Event Input

None: No Event input
E: Event input is provided

2nd Output Group

R: Relay output
V: Voltage Pulse output

1st Output Group

R: Relay output
V: Voltage Pulse output
C: DC Current output
L: Linear Voltage output

Panel Size (W x H)

4824: 1/32 DIN W48 x H24mm
4848: 1/16 DIN W48 x H48mm
4896: 1/8 DIN W48 x H96mm
9696: 1/4 DIN W96 x H96mm

Solo Temperature Controller

SOLO Temperature Controller Specifications

Specifications	
Input Power Requirements	100 to 240 VAC 50 / 60 Hz or 24 VDC
Operation Voltage Range	85 to 264 VAC or 21.6 to 26.4 VDC
Power Consumption	5 VA Max
Memory Protection	EEPROM 4K bit, number of writes 100,000
Control Mode	PID, ON/OFF, Ramp / Soak control or Manual
Input Accuracy	Less than ± 0.2% full scale (except thermocouple R, S, & B types) Max ± 3° (thermocouple R, S, & B types)
Vibration Resistance	10 to 55 Hz, 10 m/s2 for 10 min, each in X, Y and Z directions
Shock Resistance	Max. 300 m/s2, 3 times in each 3 axes, 6 directions
Ambient Temperature Range	32°F to 122°F (0°C to 50°C)
Storage Temperature Range	-4°F to 149°F (-20°C to 65°C)
Altitude	2000m or less
Relative Humidity	35% to 80% (non-condensing)
RS-485 Communication	Modbus slave ASCII / RTU protocol
Transmission Speed	2400, 4800, 9600, 19.2K, 38.4K bps
IP Rating	IP65: Complete protection against dust and low pressure spraying water from all directions. (inside suitable enclosure)
Agency Approvals	UL, CUL, CE (UL file number E311366)
Pollution Degree	Degree 2 - Normally, only non-conductive pollution occurs. Temporary conductivity caused by condensation is to be expected
Input Types	
• Thermocouple*	K, J, T, E, N, R, S, B, L, U, TXK
• Platinum RTD	3-wire Pt100, JPt100
• Analog	0-50 mV, 0-5V, 0-10V, 0-20 mA, 4-20 mA (sinking) (Current input requires the installation of the supplied 249 Ω resistor)
Input Sampling Rates	
• Thermocouple	400 ms / per scan
• Platinum RTD	400 ms / per scan
• Analog	150 ms / per scan
Control Output Options	
• Relay (R)	SL4824: SPST max. resistive load 3A @ 250 VAC SL4848: SPST max. resistive load 5A @ 250 VAC SL4896, SL9696: SPDT max. resistive load 5A @ 250 VAC SL4824: SPST max. resistive load 3A @ 30 VDC SL4848: SPST max. resistive load 5A @ 30 VDC SL4896, SL9696: SPDT max. resistive load 5A @ 30 VDC
• Voltage Pulse (V)	DC 14V Max, output current 40mA Max
• Current (C)	DC 4-20 mA output (sourcing) (Load resistance: Max 600 Ω)
• Linear Voltage (L)	DC 0-10V (Load resistance Min 1KΩ)
Note: Use only ungrounded thermocouples.	