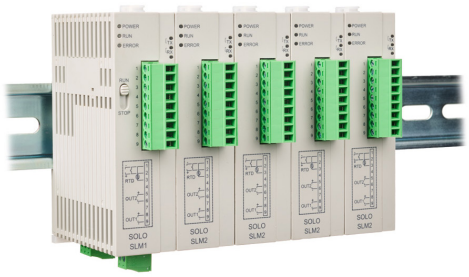
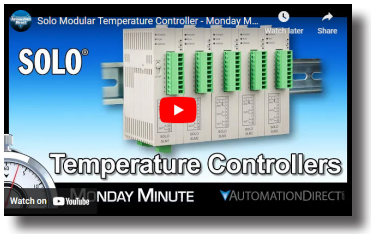
SOLO - SLM Series Modular Temperature Controllers



SLM1-C Model Shown

SLM2-V Model Shown



Click on the thumbnail or go to https://www.automationdirect.com/VID-PS-0028 for a short introductory video on the SOLO Modular Temperature Controllers.

SLM Series Overview

AutomationDirect's SOLO Modular single loop temperature controllers provide the means to assemble a compact, modular multi-loop temperature control system. Starting with a SOLO single loop temperature controller main module, up to seven additional SOLO single loop temperature controller extension modules can be easily connected to the main controller using the built-in extension ports for shared power and network communications.

All SOLO Modular temperature controller modules accept an input from numerous types of thermocouples or RTDs, as well as linear analog current, voltage or mV signals from temperature transmitters and provides two separate outputs. Depending on the controller model, available output types for Output 1 include either relay, voltage pulse, linear voltage, or linear current. Output 2 is a relay output. Configuring both outputs for control allows for both heating and cooling control or two stage heating control or two stage cooling control. Optionally one output can be configured for control of either a heating or cooling application and the other output an alarm or both outputs can be set to alarm independently. If the controller is equipped with either the linear voltage or linear current output, Output 1 can be configured for process variable retransmission. These versatile controllers can be configured to operate with PID with Auto Tuning, On/Off, Ramp/Soak, or Manual control modes, and twelve different alarm modes are available. SOLO Modular controllers mount on 35mm DIN rail, have removable terminal blocks, and are 24 VDC powered.

Configuration of SOLO Modular controllers is accomplished using free SL-SOFT SOLO configuration and monitoring software downloadable from AutomationDirect.com, or RS-485 digital communication using the Modbus protocol.

Features

- Easy to assemble DIN rail mounted compact modular multi-loop temperature control system
- Add up to seven SOLO extension controllers to each SOLO main controller for a total of eight temperature control loops
- Heating and/or Cooling applications with PID with Auto Tuning, On/Off, Ramp/Soak, or Manual control modes
- Thermocouple, RTD, mA, mV, or voltage inputs
- Output 1: Relay, Voltage Pulse, Linear Voltage, or Linear Current, depending on model (Control, Alarm, or Process Variable Retransmission for linear current or linear voltage modules)
- Output 2: Relay (Control or Alarm)
- RS-485 Modbus communication
- Configuration using free SL-SOFT configuration and monitoring software downloadable from AutomationDirect.com

SOLO - SLM Series Modular Temperature Controllers

Model	Module Type	Inputs	Output 1	Output 2	Operating Voltage	Communication	Weight (lbs)	Price
SLM1-C	Main	Current, voltage, thermocouple or RTD	4-20mA	3A SPST relay	24VDC	RS-485	0.27	$79.00
SLM1-L			0-10VDC				0.27	$79.00
SLM1-R			3A SPST relay				0.27	$79.00
SLM1-V			12 VDC pulse				0.27	$79.00
SLM2-C	Extension		4-20mA				0.27	$79.00
SLM2-L			0-10VDC				0.27	$79.00
SLM2-R			3A SPST relay				0.27	$79.00
SLM2-V			12 VDC pulse				0.27	$79.00

Insert

Scan or click the above QR code to be taken to the SLM Series Installation Instructions and User Guide

Manual

Scan or click the above QR code to be taken to the SLM Series User Manual

SOLO - SLM Series Modular Temperature Controllers

Specifications	
Operating Voltage	21.6 to 26.4 VDC
Power Consumption	Rated 24 VDC, Max. 24 W combined, 3W + 3W x number of SLM2 controllers (Max. 7)
Input Sensors	Thermocouple: K, J, T, E, N, R, S, B, L, U, TXK Platinum RTD: Pt100, JPt100 Linear DC input: 0 ~ 5V, 0 ~ 10V, 0 ~ 20mA, 4 ~ 20mA, 0 ~ 50mV
Input Accuracy	Thermocouples: ±0.3% full scale RTD: ±0.2% full scale Analog input: ±0.3% full scale ± 1 digit
Sampling Rate	Analog input: 0.15 sec. Thermocouple or platinum RTD: 0.4 sec.
Control Method	PID, ON/OFF, Ramp / Soak control or Manual
Output Types	Relay: SPST, Max. load 250 VAC / 30VDC, 3A resistive load Voltage pulse: 12VDC, Max. output current: 40mA Current: DC 4 ~ 20mA (Load resistance: < 500Ω) Analog voltage: 0 ~ 10V (Load resistance: > 1,000Ω)
Output Function	Control output, alarm output, retransmission output Retransmission output is available only when output 1 is linear voltage or current output.
Alarm	12 alarm modes
Communication	RS-485 communication, 2,400 bps ~ 38,400 bps
Communication Protocol	Modbus protocol, ASCII/RTU format
Vibration Resistance	10 ~ 55Hz, 10m/s² for 10mins, each in X, Y and Z direction
Shock Resistance	Max. 300m/s², 3 times in each 3 axes, 6 directions
Ambient Temperature	0 to 50°C (32 to 122°F)
Storage Temperature	-20 to +65°C (-4 to 149°F)
Altitude	2,000m or less
Ambient Humidity	35% ~ 85% RH (non-condensing)
Pollution Degree	2

Available Input Types

SOLO Modular temperature controllers support these input types.

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

RTD Type and Range	
Input Temperature Sensor Type	***Temperature Range***
Platinum Resistance (Pt100)	-328 to 1112°F (-200 to 600°C)
Platinum Resistance (JPt100)	-4 to 752°F (-20 to 400°C)
Note: Default setting: Pt100 input.	

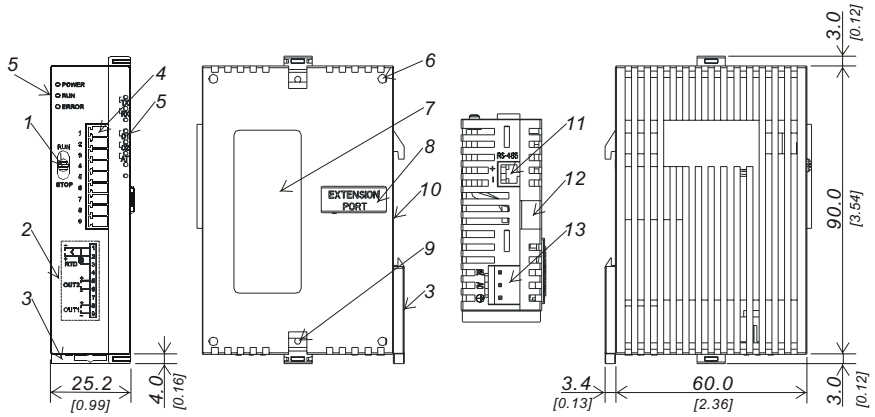
Voltage Input Type and Input Range	
Voltage Input Type	***Engineering Range***
0~50mV Analog Input	-999 to 9999
0V~10V Analog Input	-999 to 9999
0V~5V Analog Input	-999 to 9999

Current Input Type and Range*	
Current Input Type	***Engineering Range***
4~20mA Analog Input	-999 to 9999
0~20mA Analog Input	-999 to 9999
****Install the supplied 249 ohm resistor between terminal #1 and #2 for linear current inputs.***	

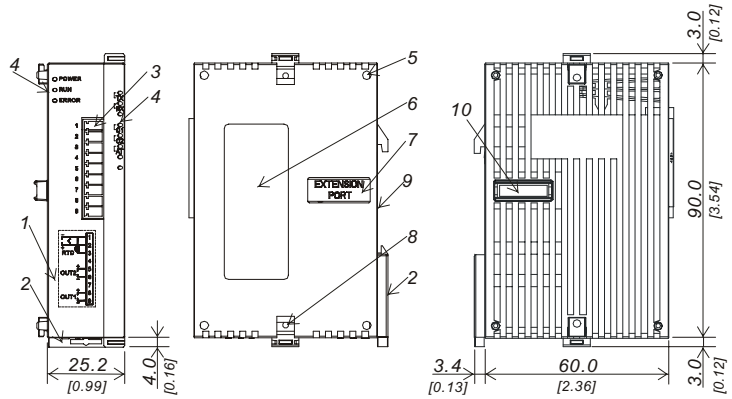
SOLO - SLM Series Modular Temperature Controllers

Dimensions

mm [inches]



SLM1



SLM2

Feature	SLM1	SLM2
1	RUN/STOP switch	Wiring and Model name
2	Wiring and Model name	DIN rail clip
3	DIN rail clip	I/O terminals
4	I/O terminals	LED indicators
5	LED indicators	Mounting hole
6	Mounting hole	Specification label
7	Specification label	Extension port
8	Extension port	Extension clip
9	Extension clip	DIN rail
10	DIN rail	Extension port
11	RS-485 communication port	N/A
12	Extension clip	N/A
13	DC power input	N/A

Wiring

Input and Outputs (SLM1 & SLM2 Front Terminals)