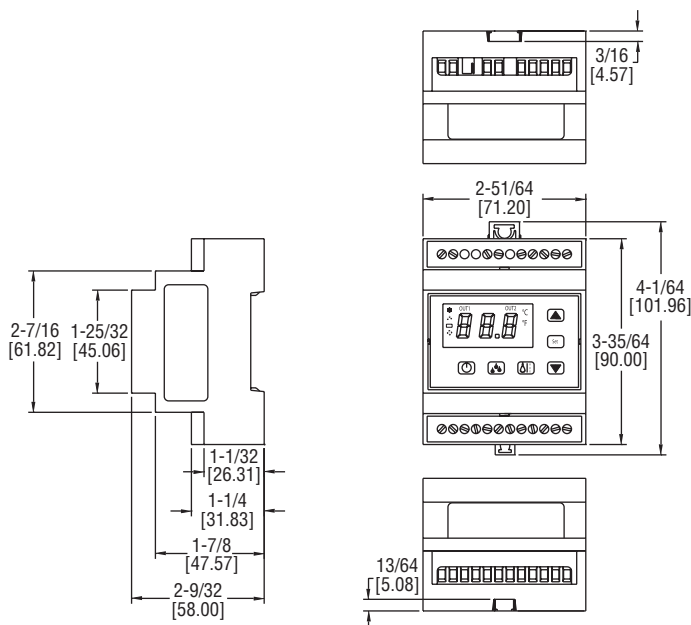




Series TSDIN-G DIN Rail Mount Temperature Switch

Specifications - Installation and Operating Instructions



The **Series TSDIN-G DIN Rail Mount Temperature Switch** is configured with three independent outputs. These independent outputs allow for setpoint and differential control in three separate processes by up to three independent temperature probes. The TSDIN series has the selectable engineering units and temperature probe types in order to eliminate the combination of parts that need to be stocked. For programming multiple units, the Model TS2-K configuration key can be used to quickly download parameter settings.

OPERATING INSTRUCTIONS

INSTALLATION

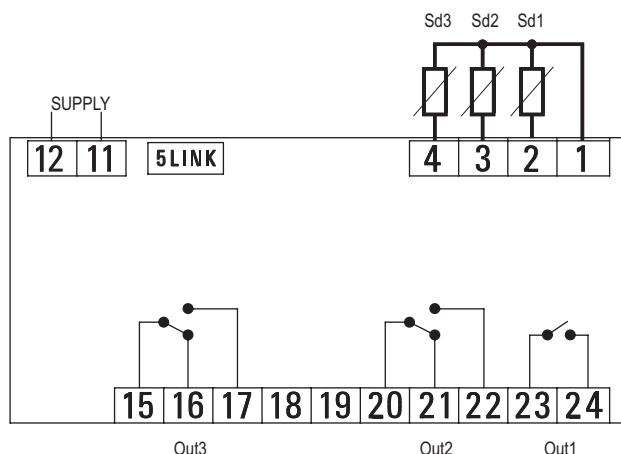
NOTICE Unit must be mounted away from vibration, impacts, water and corrosive gases.

- DIN rail mounting.
- Wiring diagram is displayed on top of the control.

WIRING

Avoid installing the temperature probe cables in close proximity to power cables. If the length of the probe cables is longer than 100 meters, a recalibration adjustment may be made using the P1, P2, and P3 parameters.

WIRING DIAGRAM



SPECIFICATIONS	
Probe Range:	PTC: -58 to 302°F (-50 to 150°C); NTC: -58 to 230°F (-50 to 110°C); Pt 1000 ohm RTD -58°F to 302°F (-50 to 150°C).
Input:	PTC/NTC/Pt 1000 Ω RTD.
Output:	Output 1: SPST relay rated 16A @ 240 VAC resistive, 10 FLA, 60 LRA, 1HP @ 240 VAC inductive; Output 2: SPDT relay rated 8A @ 240 VAC resistive; Output 3: SPST relay rated 8A @ 240 VAC resistive; Output 4: SPDT relay rated 8A @ 240 VAC resistive; Output 5: SPST relay rated 16A @ 240 VAC resistive, 10 FLA, 60 LRA, 1HP @ 240 VAC inductive.
Control Type:	On/off.
Power Requirement:	115 VAC, 230 VAC, 12 VAC/VDC, 24 VAC/VDC (±10%) depending on model.
Power Consumption:	6 VA.
Accuracy:	Better than 1% of full-scale.
Display:	3-digits plus sign.
Resolution:	0.1°.
Memory Backup:	Non-volatile memory.
Temperature Limits:	Operating: 32 to 131°F (0 to 55°C); Storage: -4 to 158°F (-20 to 70°C).
Weight:	10.8 oz (306 g).
Agency Approvals:	CE, cURus.

PARAMETER LIST				
Parameter	Description	Units	Range	Factory Setting
St1	Set point for probe and output 1	Degrees	r4 to r5	3.0
St2	Set point for probe and output 2	Degrees	r4 to r5	3.0
St3	Set point for probe and output 3	Degrees	r4 to r5	3.0
r01	Differential or hysteresis for St1	Degrees	0.1 to 30	1.0
r02	Differential or hysteresis for St2	Degrees	0.1 to 30	1.0
r03	Differential or hysteresis for St3	Degrees	0.1 to 30	1.0
r4	Minimum value for set point	Degrees	-99.9 to r5	-50.0
r5	Maximum value for set point	Degrees	r4 to 302	150
c01	Direct or Inverse action for output 1	Range	dir /inu	inu
c02	Direct or Inverse action for output 2	Range	dir /inu	inu
c03	Direct or Inverse action for output 3	Range	dir /inu	inu
c11	Minimum output 1 stoppage time	Minutes	0.0 to 999	0.0
c12	Minimum output 2 stoppage time	Minutes	0.0 to 999	0.0
c13	Minimum output 3 stoppage time	Minutes	0.0 to 999	0.0
c21	Minimum output 1 On time	Minutes	0 to 999	0.0
c22	Minimum output 2 On time	Minutes	0 to 999	0.0
c23	Minimum output 3 On time	Minutes	0 to 999	0.0
c31	ON time of fault probe 1 cycle	Minutes	0 to 999	0.0
c32	ON time of fault probe 2 cycle	Minutes	0 to 999	0.0
c33	ON time of fault probe 3 cycle	Minutes	0 to 999	0.0
c41	Off time of fault probe 1 cycle	Minutes	0 to 999	0.0
c42	Off time of fault probe 1 cycle	Minutes	0 to 999	0.0
c43	Off time of fault probe 1 cycle	Minutes	0 to 999	0.0
P0	Temperature scale	Option	F/C	C
P11	Probe 1 Calibration	Degrees	-20.0 to 20.0	0.0
P12	Probe 2 Calibration	Degrees	-20.0 to 20.0	0.0
P13	Probe 3 Calibration	Degrees	-20.0 to 20.0	0.0
P2	Decimal point	Option	Yes/No	Yes
P31	Probe 1 present	Option	Yes/No	Yes
P32	Probe 2 present	Option	Yes/No	Yes
P33	Probe 3 present	Option	Yes/No	Yes
H2	Keypad protection	Option	Yes/No	No
H4	Serial communication address	Range	0 to 999	0
H5	Keypad code	Range	0 to 999	0
H6	Type of probe	Option	PTC/NTC/Pt1	Pt1

PARAMETER DESCRIPTION

St1 = Probe/Output 1 set point

Sets the Ambient Temperature set point between r1 and r2

St2 = Probe/Output 2 set point

Sets the Ambient Temperature set point between r1 and r2

St3 = Probe/Output 3 set point

Sets the Ambient Temperature set point between r1 and r2

r01, r02, r03 = Differential or hysteresis

Differential or hysteresis for set point (For d0 = re)

Ambient Temperature \geq Set+r0x : Output ON

Ambient Temperature \leq Set : Output OFF

Differential or hysteresis for set point (For d0 = in)

Ambient Temperature \leq Set-r0x : Output ON

Ambient Temperature \geq Set : Output OFF

c01 Cool/Heat for probe1

dir=Cool

inu=Heat

c02 Cool/Heat for probe2

dir=Cool

inu=Heat

c03 Cool/Heat for probe3

dir=Cool

inu=Heat

c11 = Minimum stop time for output 1

c12 = Minimum stop time for output 2

c13 = Minimum stop time for output 3

Minimum time since output 1 is OFF until it can be ON again

c21 = Minimum On time for output 1

c22 = Minimum On time for output 2

c23 = Minimum On time for output 3

Minimum time since output 1 is ON until it can be OFF again

c31 = During Probe 1 error, time that output 1 is engaged.

c32 = During Probe 2 error, time that output 2 is engaged.

c33 = During Probe 3 error, time that output 3 is engaged.

c41 = During Probe 1 error, time that output 1 is disengaged.

c42 = During Probe 2 error, time that output 2 is disengaged.

c43 = During Probe 3 error, time that output 3 is disengaged.

P0 = Selection of Engineering Unit (°C or °F)

P11 = Probe 1 calibration

Ambient Probe 1 Calibration Adjustment.

P12 = Probe 2 calibration

Ambient Probe 2 Calibration Adjustment.

P13 = Probe 3 calibration

Ambient Probe 3 Calibration Adjustment.

P2 = Decimal point Present

P21 = Probe 1 present.

P22 = Probe 2 present.

P23 = Probe 3 present.

H2 = Keypad Password Protected

Yes =Keypad protected. Prevents modification of set point values.

No = Keypad not protected.

H4 = Address for serial communication.






H5 = Input code to Parameters

This code is set to 00 from factory.



H6 = Input Probe Types: PTC, NTC, or PT1(PT1000 RTD)

FRONT PANEL OPERATION


Parameter programming

- Press and hold **Set** for 30 seconds or until 00 appears blinking.
- Press **Set** key to enter parameter list.
- With  and  go to the desired parameter on the list of parameters.
- Press **Set** to see the current set value.
- Press either  or  to set the desired new value.
- Press **Set** to confirm it and exit to the parameter list.
- Press **Set** +  to quit programming or wait 1 minute (keypad timeout).




To reset to factory parameters

The factory parameters can be programmed to the factory default by turning off the controller, and turning it on again, while the  +  buttons are pressed. The PRO message will show after cycling power.

Show Probe Values

Pressing **Set** +  to show probe and value, press again to see additional probes connected.

LED Indicators

-  Indicates that relay 1 is energized.
- OUT2** Indicates that relay 2 is energized.
-  Indicates that relay 3 is energized.
-  Indicates an error or alarm or error condition.

Display Messages

In normal operation the probe temperature will be displayed. The display blinks when waiting for a parameter to be saved or when there is an error saving a parameter to memory. The following messages can also appear:

Err	Memory Reading Error
ERP1, ERP2, ERP3	Probe Error (check wiring or replace probe)
ALH1	High Temperature Alarm for Setpoint 1
AL1	Low Temperature Alarm for Setpoint 1
ALH2	High Temperature Alarm for Setpoint 2
AL2	Low Temperature Alarm for Setpoint 2
ALH3	High Temperature Alarm for Setpoint 3
AL3	Low Temperature Alarm for Setpoint 3
ooo	Open Probe Error
---	Short Circuited Probe Error

Slink Communication

The communication connector can be used with the TS2-K to read or write the parameter configuration to the Series TSDIN. The connector can also be used with a TS485 module to communicate with a computer or other device.

MAINTENANCE

After final installation of the Series TSDIN Rail Mount Temperature Switch, no routine maintenance is required. Clean the surface of the display with a soft and damp cloth. Never use abrasive detergents, petrol, alcohol or solvents. A periodic check of the system calibration is recommended. The Series TSDIN is not field serviceable and should be returned if repair is needed (field repair should not be attempted and may void warranty). Be sure to include a brief description of the problem plus any relevant application notes. Contact customer service to receive a return goods authorization number before shipping.