



Digital Seal & Temp-Stat Relay

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STR



Surface Mount Case
(on the sub-panel)

1-Input or 2-Input

5K to 200K Ω Seal Adjustments

Options:

- NC Seal Float Input
- PTC Over-Temp Input

Independent Relays

Manual or Automatic Reset



Purpose

The STR monitors the seal and embedded temperature sensors on submersible pump motors to detect failure in the seal or an over temperature condition. If the resistance in the seal area goes lower than the set point or the temp-stat opens, individual relay outputs will be energized, one for a seal failure and one for a temp-stat failure.

Operation

2-Input Operation

To monitor the seal for a leakage, low voltage is applied to the seal sensor. If the resistance sensed falls below the adjustable trip point, the seal fault output relay will be energized. High resistance is considered "good".

To monitor the temp-stat, low voltage is applied to the normally closed contact. If the contact opens, the temperature fault output relay will be energized. A normally closed input is considered "good."

1-Input Operation

An alternate input option is also built into the STR. With the 1-input option selected, if the resistance falls in between 330Ω and 1,500Ω, both the seal and temp-stat are considered "good". If the input resistance falls below 330Ω, a seal fault is indicated and the seal fault output relay will be energized. If the input resistance goes above 1,500Ω, a high temperature fault is indicated and the temperature fault output relay will be energized.

General Operational Specifications

Faults:	Seal Failure Over Temperature
Set-Up:	Membrane Buttons & Digital Display <ul style="list-style-type: none">• 1-Input or 2-Input operation• Resistance on the 2-input operation from 5KΩ to 200KΩ• Manual or Automatic reset after a fault has been corrected• PTC for temp-stat• Reverse operation of seal fault output contacts
Screens:	Manufacture Name & Firmware Version Status Screen: <ul style="list-style-type: none">• Indicates Seal Condition & Resistance sensed• Indicates Temp-Stat Condition Input and Seal Resistance Screen: <ul style="list-style-type: none">• 1-Input Operation (Scroll to top of screen) (No resistance is selectable, trip points are fixed.)• 2-Input Operation (Scroll up or down to select the seal trip resistance.) Temp-Stat Input <ul style="list-style-type: none">• Normally closed contact• PTC Seal Output <ul style="list-style-type: none">• On = Bad* On = Good Manual or Automatic Reset

Default Set-Up

Operation:	2-input
Seal:	100KΩ
Temp:	Normally Closed Contact
Reset:	Manual

Custom Set-Up

The STR uses the 4 membrane buttons to allow the customer to change the set-up criteria. The following listings show the arrangement and selections available by moving through the menu choices. The membrane buttons allow for movement right or left with wrap around to selection criteria and up and down within a selection for specific parameters.

You can select the set-up parameters with only the supply voltage connected.

Example:

- You would like to change the seal fault resistance from 100KΩ to 50KΩ. Use the right arrow to scroll to the resistance screen. Use the down arrow to scroll down to 50KΩ. By moving back to the status screen or waiting 10 seconds, the new 50KΩ set-up will be stored and return you to the status screen.
- You would like to change the reset from Manual to Automatic. Use the right arrow to scroll to the reset screen. Use the up/down arrow to scroll to Automatic. By moving back to the status screen or waiting 10 seconds, the STR will now have automatic reset and return you to the status screen.
- You would like to change the operation from 2-Input to 1-Input operation. Use the right arrow to scroll to the resistance screen. Use the up arrow to scroll to the top of the resistance screen where it will say "1-Input". By moving back to the status screen or waiting 10 seconds, the STR will now have 1-Input operation and return you to the status screen. With the 1-Input option, the seal resistance parameters are fixed.

Screens

Manufacturer's Screen	R-K ELECTRONICS STR v0.0.00
Status Screen	SEAL 100K GOOD TEMP GOOD
with PTC	SEAL 100K GOOD TEMP 180 GOOD
	<i>If seal resistance exceeds 9,999KΩ, the display will show "HIGH"</i>
Operation & Resistance Screen	1-INPUT (at the top of the screen) 2-INPUT: 5K, 10K, 20K, 30K, 35K, 40K, 45K, 50K, 55K, 60K, 65K, 70K, 75K, 80K, 85K, 90K, 100K, 105K, 110K, 115K, 120K, 130K, 135K, 140K, 145K, 150K, 155K, 160K, 165K, 170K, 175K, 180K, 185K, 190K, 200K
T-Stat Input	NC Contact PTC Resistance
Seal Output Option	ON = Good (Output relay energized when seal is good.) ON = Bad (Output relay energized when there is a seal fault.)
Reset Options Screen	AUTOMATIC MANUAL
Fault Screen	SEAL 20K BAD SEAL 100K GOOD TEMP GOOD TEMP BAD

Specifications

Supply Voltage:	12VDC & 24VDC, 24VAC, 120VAC & 240VAC	
Part Number:	<i>Tabs:</i>	<i>Pluggable Blocks:</i>
12 VDC:	STR-12D-T	STR-12D-B
24 VDC:	STR-24D-T	STR-24D-B
24 VAC:	STR-24A-T	STR-24A-B
120 VAC:	STR-120A-T	STR-120A-B
240 VAC:	STR-240A-T	STR-240A-B

Inputs: 5VDC @ 2mA

2-Input:

Seal: Adjustable 5K Ω to 200K Ω , +5K Ω Hysteresis
Temp-Stat: 1NC Contact, Good condition

1-Input: Resistance trip points fixed at 330 Ω & 1,500 Ω

Seal Fault: <330 Ω

Temp-Stat Fault: >1,500 Ω

Contact Ratings: (2) SPDT @ 60°C Max

10A @ 120VAC, 60°C Max, Resistive

6A @ 277VAC, 60°C Max, Resistive

1/8HP @ 120/277VAC, 60°C Max

5A @ 30VDC, 60°C Max, Resistive

C150, C300 Pilot Duty, 1NO Only

Adjustments: (4) Membrane Buttons

Display: 16 Character, 2-line display, with back light

Mounting: Surface Mounting: (2) Mounting Holes

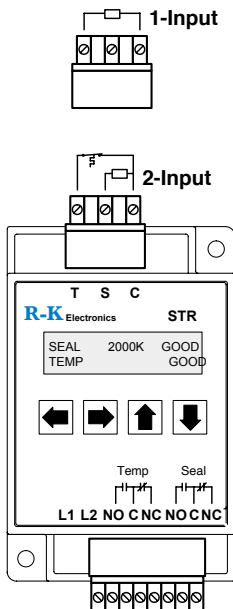
Termination: Push-On Tabs: 1/4" Tabs, 3 Sense, 8 Control

Terminals: Pluggable Terminal Blocks

Packaging: Approx. 3"Wx3.5"Lx2"H

Dust Cover & Epoxy Fill

Connections



Dimensions

