The STO/R (Operator Release with Switch) is a bi-metal electric temperature sensor that replaces the “traditional” fusible links used on fire dampers as well as supplied with a set of single pole, single throw switches to indicate if the damper is open or closed. The electric thermostat is a more functional and up-to-date version of a fuse link and will interrupt power to the electric actuator used on a combination fire/smoke or multi-blade fire damper which will allow the actuator’s internal springs to close the damper. The addition of a switch package will also allow the damper to “communicate” its position (open or closed) to such external devices as a Building Automation System (BAS), Remote Monitoring Panel, Remote Control Box (NCA Model RCB) or any other device that needs feedback of the damper’s position.

The STO/R is also capable of being manually reset if the temperature within the duct has decreased below the sensor’s set point or if the STO/R was accidentally tripped during testing/installation. NOTE: A visual inspection of the damper and its components (including the STO/R) should be carefully inspected if tripped by a fire as conditions may have damaged imperative parts.

The STO/R is available on all Combination Fire/Smoke Damper models (FSD) and motorized Multi-Blade Fire Dampers (FD(D)-MB).

NOTE: The below details do not apply to wiring of the Seimens GND Series Actuators. Please refer to pages 3 and 4 of this document for those specific wiring diagrams.

FSD Damper STO/R Operation
Switch is in Normal (Damper Open) Position: Damper motor is energized until thermostat senses temperature above initial closure rating. Above temperature closure rating, the damper motor is de-energized and damper closes.

Smoke Detector (if used) wired in series with temperature sensitive device.

Switch in Closed Position damper motor is de-energized and damper is closed.

Detailed wiring diagrams including terminal designation and/or wire color coding furnished with each shipment.

Indicator Switch Electrical Limitations
- 10 Amperes, 1/4 HP, 120 or 240 Volts A.C.
- 5 Ampere, 125 Volts D.C.
- .25 Ampere, 250 Volts D.C.
- 5 Amperes, 120 Volts (Lamp Load)
- 15 Amperes, 24 Volts D.C.
STO/R Wiring Details

Dampers with Siemens GND Actuators, see page 3 and 4 of this document.

L1 Blk. L2 Wht.

Remote Command Station Switch Package Wiring Compartment

Control Panel

L3 Blk. L4 Blk.

Closed Red Light

Open Green Light


L3, L4 is a Supply Voltage Compatible with Lights & Switches. Standard Voltage is Same as Actuator Ordered.

Red Light

Open

Green Light

Red

Blk. Blk.

L3, L4 is a Supply Voltage Compatible with Lights & Switches. Standard Voltage is Same as Actuator Ordered.
The Thermostat is wired to the actuator via a low voltage (24 vac) connection. In most cases codes do not require this wiring to be incased. Check with your local codes to see if low voltage wires requires conduit.

### AUXILIARY SWITCHES

<table>
<thead>
<tr>
<th>Switch Makes</th>
<th>Wire Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closed</td>
<td>&lt;5°</td>
</tr>
<tr>
<td>Open</td>
<td>&gt;85°</td>
</tr>
</tbody>
</table>

**Note:** Both sets of auxiliary switch contacts are open when actuator is between 5 degrees and 85 degrees.

### Ratings:
- 250 vac - 10 amps
- Motor Load - 3 amps
- Max. Temperature - 350° F (177° C)
Reset Button

Housing
(Outside Ductwork)

Reset Button

Housing
(Outside Ductwork)

24 vac connection to Heat Response Device. Must be plugged in for actuator to operate. (2 Wires)

Heat Response Device
(Inside Ductwork)

24 vac connection to Heat Response Device. Must be plugged in for actuator to operate. (2 Wires)

3-Wires Power Supply
(See Voltage pg. 3)

4-Wires Auxiliary Switches
Gray & Yellow

4-Wires Auxiliary Switches
Gray & Yellow

3-Wires Power Supply
(See Voltage pg. 3)

Actuator is rated for internal or external mounting.

Actuator is rated for internal or external mounting.

Plug must be clipped in for actuator to operate.

Plug must be clipped in for actuator to operate.
Pneumatic Actuator with an E-P Switch Controlled

L1, L2 is the E-P Switch Supply Voltage desired (120vac or 24vac). L3, L4 is a Supply Voltage Compatible with Lights and Switches. Standard Voltage is 120vac if not Specified.
Pneumatic Actuator with a PFV Option

L1
Remote Command Station

L2
Switch Package Wiring/Piping Compartment

L3
E-P Switch

L4
Smoke Detector If Used

Pneumatic Actuator

25 Psi

Flow Restrictor

PFV

P1

S1
Red Light

S2
Yellow Light

L3, L4 is a Supply Voltage Compatible with Lights and Switches. Standard Voltage is 120vac if not Specified.