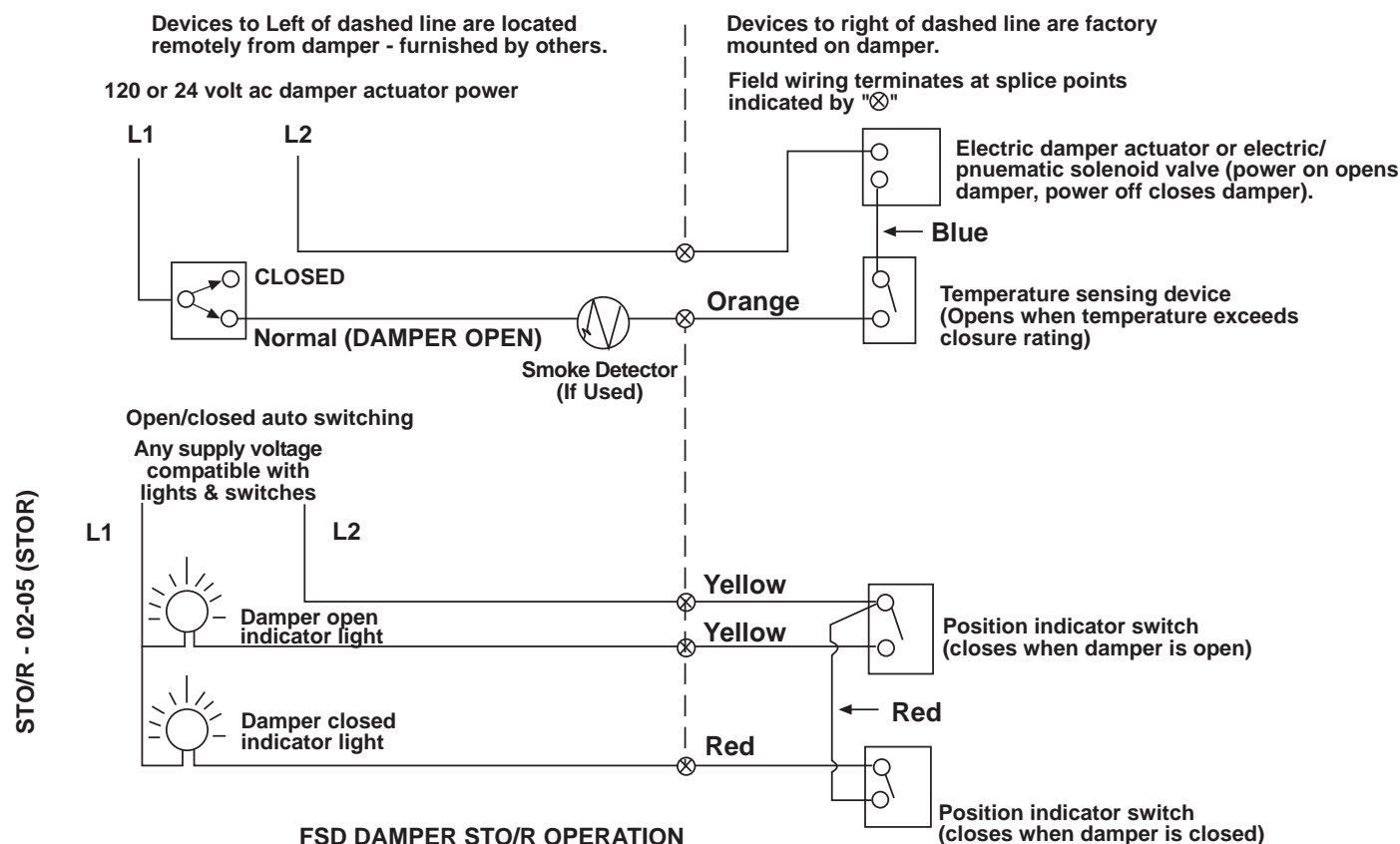# MODEL STO/R
(SINGLE THERMOSTAT OPERATOR RELEASE)
FOR COMBINATION FIRE / SMOKE DAMPERS AND MOTORIZED MULTI-BLADE FIRE DAMPERS

In today's life safety products markets, many building codes require fire dampers, smoke dampers and combination fire and smoke dampers to be inspected for proper operation. Many of these codes require that the damper be inspected and cycled every 6 months to a year depending on the local authority and the type of system in which it is installed. Usually fire dampers and combination fire and smoke dampers are supplied with a fusible link. The fusible link is a one time device and is generally limited to 165°F or 212°F. Once the link has experienced these elevated temperatures, it can no longer be used and must be replaced with an indentical link. Locating and acquiring the indentical fusible link can be troublesome and time consuming. NCA Manufacturing's STO/R option provides the ease of operating and resetting the damper in a matter of seconds without replacing the link. The

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DESIGNED AND TESTED IN ACCORDANCE WITH UL-555 AND ULC-S112. MEETS ALL NFPA-90A REQUIREMENTS FOR FIRE DAMPERS.

is used in lieu of a conventional fusible link. It is a reusable/resettable heat responsive device that can only be reset after a visual inspection of the damper. **Dampers which allow remote resetting of the damper from a remote location are dangerous.** A remotely reset damper may not be fully functional and should be visually inspected. The STO/R is reset from the outside of the damper sleeve, therefore requiring a visual inspection of the damper. By depressing a button on the outside of the sleeve and inspector can verify if the damper is fully operational. The STO/R is a multi-use heat responsive device. It is wired in series with the smoke detector therefore it is user friendly in most applications. When the smoke detector interrupts the current to the damper, the STO/R will not hinder the closing of the damper. The STO/R package includes blade indicator switches which allow for remote notification of damper blade position, as a standard feature.

The STO/R option is available on all NCA Manufacturing FSD Model Combination Fire/Smoke Dampers and Motorized Multi-Blade Fire Dampers.

Devices to Left of dashed line are located remotely from damper - furnished by others.

120 or 24 volt ac damper actuator power

Devices to right of dashed line are factory mounted on damper.

Field wiring terminates at splice points indicated by "⊗"

Electric damper actuator or electric/pnuematic solenoid valve (power on opens damper, power off closes damper).

Blue

CLOSED

Normal (DAMPER OPEN)

Orange

Temperature sensing device (Opens when temperature exceeds closure rating)

Smoke Detector (If Used)

Open/closed auto switching

Any supply voltage compatible with lights & switches

Yellow
Yellow

Damper open indicator light

Position indicator switch (closes when damper is open)

Damper closed indicator light

Red

Red

Position indicator switch (closes when damper is closed)

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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.**
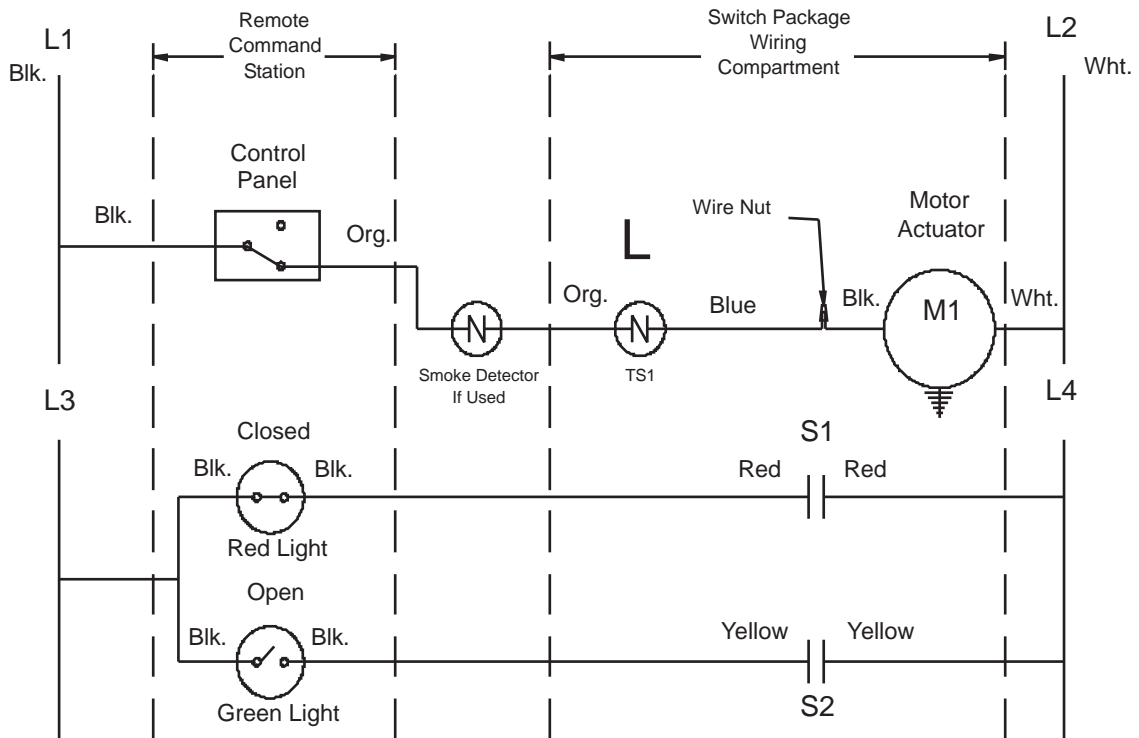
Manufacturer's Recommendations

All moving parts of the damper must be inspected and cycled at intervals not greater than every six months and in accordance with the latest edition of NFPA 90A, 92A, local codes and the actuator manufacturer. In addition, fuse links shall be removed and inspected for corrosion. Dry lubricants are recommended.

STO/R Wiring Details

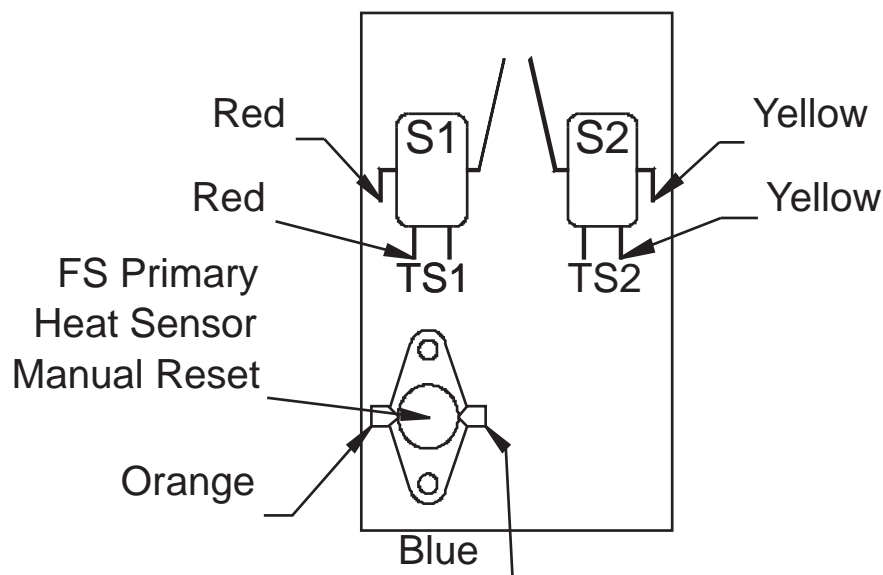L1

Remote
Command
Station

Switch Package
Wiring
Compartment

L2

Blk.

Wht.

Control
Panel

Blk.

Org.

Motor
Actuator

Wire Nut

L

Org.

Blue

Blk.

M1

Wht.

N

N

Smoke Detector
If Used

TS1

L3

L4

Closed

S1

Blk.

Blk.

Red

Red

Red Light

Open

Blk.

Blk.

Yellow

Yellow

Green Light

S2

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

Red

S1

S2

Yellow

Red

Yellow
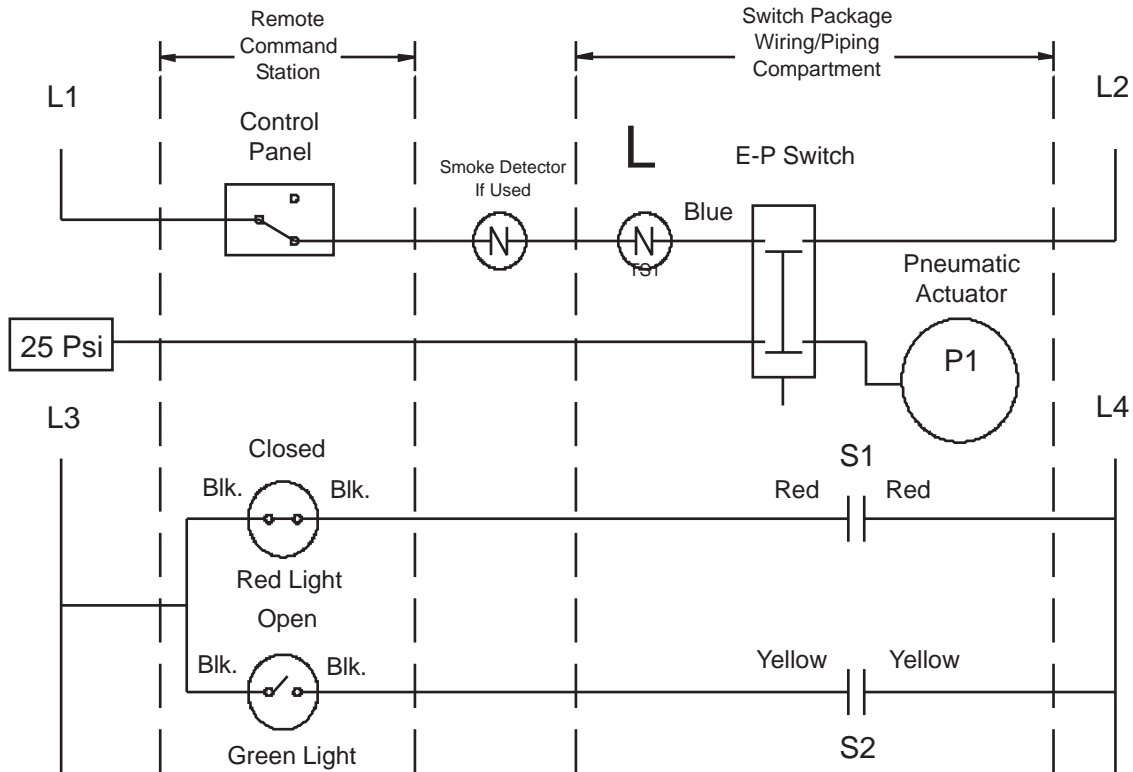
FS Primary
Heat Sensor
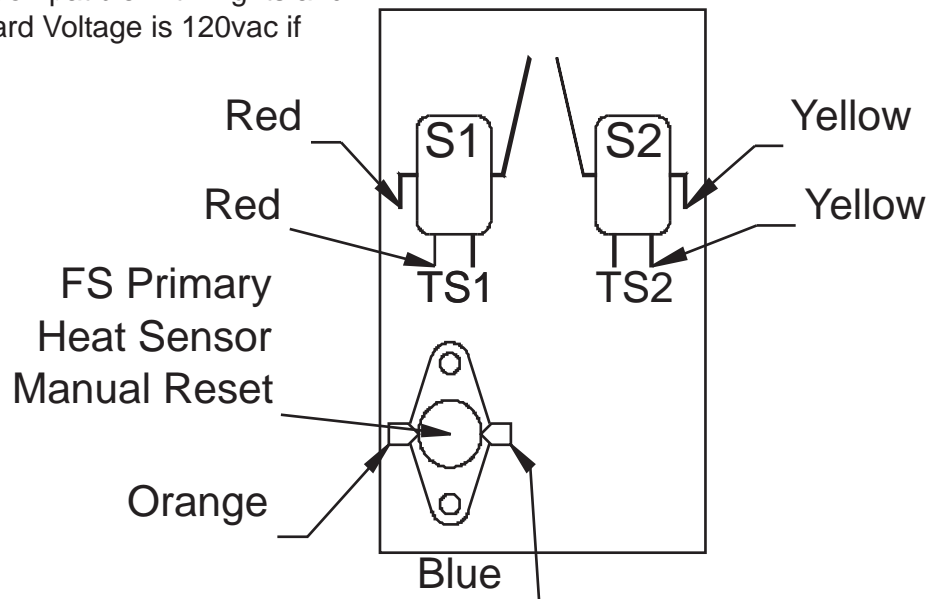Manual Reset

TS1

TS2

Orange

Blue

STO/R - 02-05 (STOR)

MODEL STO/R
(SINGLE THERMOSTAT OPERATOR RELEASE)
FOR COMBINATION FIRE / SMOKE DAMPERS AND
MOTORIZED MULTI-BLADE FIRE DAMPERS

Pneumatic Actuator with an E-P Switch Controlled

Remote Command Station

Switch Package Wiring/Piping Compartment

L1

Control Panel

Smoke Detector If Used

L

E-P Switch

Blue

L2

Pneumatic Actuator

25 Psi

P1

L3

L4

Closed

S1

Blk.   Blk.

Red   Red

Red Light

Open

Blk.   Blk.

Yellow   Yellow

Green Light

S2

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.
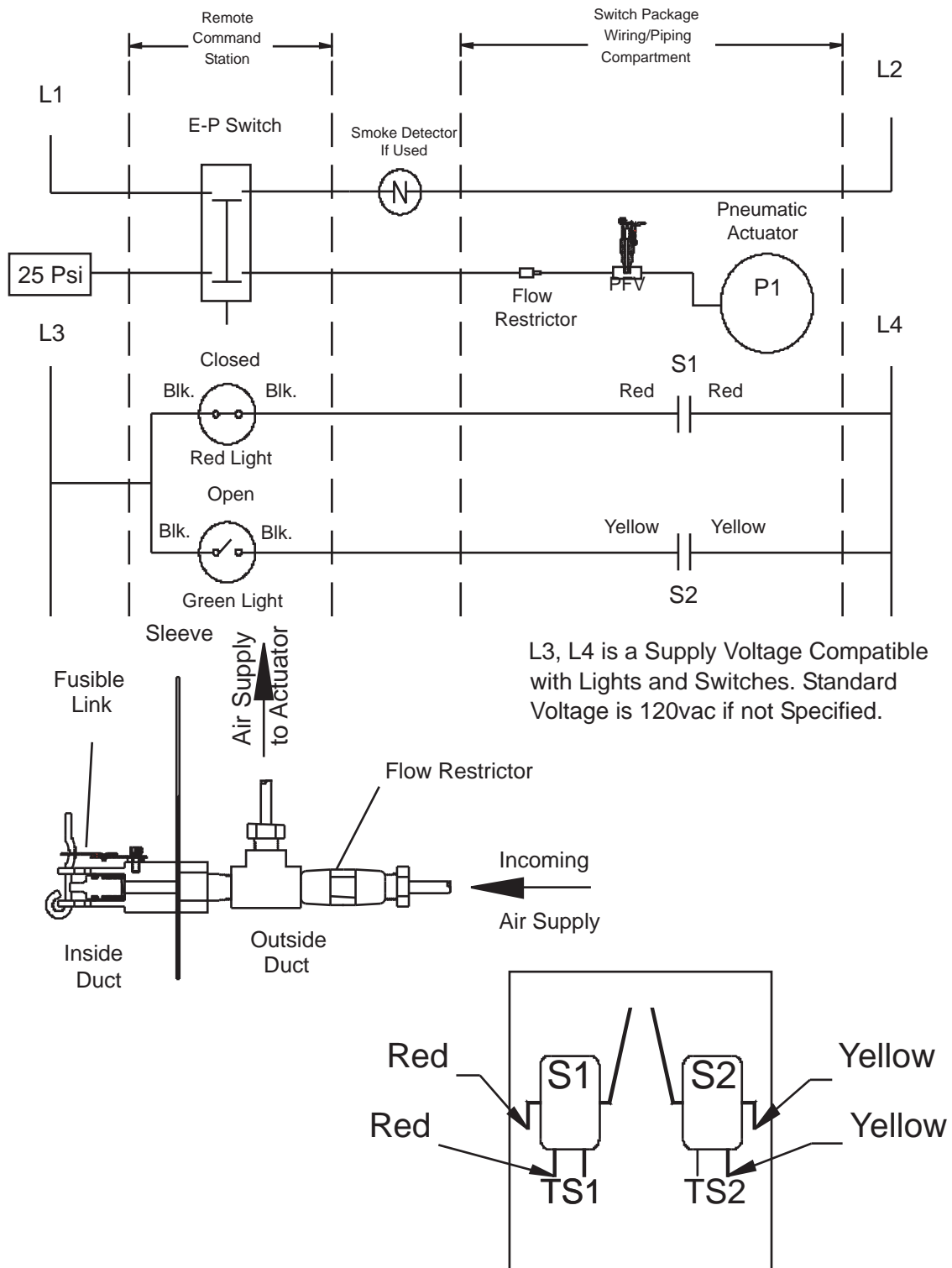
Red

S1

Yellow

Red

S2

Yellow

FS Primary
Heat Sensor
Manual Reset

TS1

TS2

Orange

Blue

MODEL STO/R
(SINGLE THERMOSTAT OPERATOR RELEASE)
FOR COMBINATION FIRE / SMOKE DAMPERS AND
MOTORIZED MULTI-BLADE FIRE DAMPERS

Pneumatic Actuator with a PFV Option

Remote Command Station

Switch Package Wiring/Piping Compartment

L1

L2

E-P Switch

Smoke Detector If Used

N

Pneumatic Actuator

25 Psi

PFV

P1

Flow Restrictor

L3

L4

Closed

S1

Blk.   Blk.

Red   Red

Red Light

Open

Blk.   Blk.

Yellow   Yellow

Green Light

S2

Sleeve

Air Supply to Actuator

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

Fusible Link

Flow Restrictor

Incoming

Air Supply

Inside Duct

Outside Duct

Red

S1

S2

Yellow

Red

TS1

TS2

Yellow

Yellow

STO/R - 02-05 (STOR)