RUSKIN®

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PRODUCT APPLICATION AND INSTALLATION INSTRUCTIONS

# DSDN (SYSTEM SENSOR 2151) NO FLOW DUCT SMOKE DETECTORS

## DEFINITION

The DSDN (No Flow Duct Smoke Detector) is designed for use with Ruskin UL555S classified smoke dampers. The device detects the presence of smoke in the airstream of ductwork in HVAC systems without a minimum operating velocity.

DSDN are factory mounted for "single point field power connection" to a standard Ruskin electronic fuse link (EFL) or optional firestat (TS150).

**The DSDN factory mounted with a smoke rated damper is intended to close the damper only. Consult Ruskin prior to ordering if DSDN is to be wired back to a UL listed fire alarm panel.**

## APPROVAL

Underwriter's Laboratories, Inc. does not have a separate Product Category for factory mounted smoke detectors. The smoke detector and the damper have been individually evaluated by their applicable UL standards.

The local authority having jurisdiction should be consulted prior to installation of the damper and smoke detector.

## APPLICATION

National and local safety standards and codes recognize the ability of air duct systems to transfer smoke, toxic gases and flame from area to area. Smoke can be a serious hazard to life safety unless blowers are shut down and dampers are actuated. **The primary purpose of duct smoke detection is to prevent injury, panic and property damage by reducing the spread of smoke.** Duct smoke detection can also serve to protect the air conditioning system itself from fire and smoke damage, and can be used to assist in equipment protection applications.

When presence of smoke in the duct is sensed, or when loss of power occurs the damper will fail close. **Consult NFPA90A, NFPA72 documents and local codes to determine where smoke detectors are required.**

## DAMPERS

The DSDN can be factory mounted on any of the following Ruskin combination fire/smoke and smoke dampers: FSD60, 60-II, 60-3, 60-V, 37, 36, 35, 34, SD60, 60-II, 37, 36, 35, 34.

## DSDN DESCRIPTION/SPECIFICATION

**Model:** System Sensor 2151

**Base:** B114LP - 120 VAC
B114LPBT - 24 VAC/DC

**Type:** Photoelectronic.

**Velocity:** 0 to 3,000 fpm.

**Dimensions (Dia.):** 6.1"

**Weight:** 3.6 oz. (104g)

**Operating Temperature Range:** 32°F to 120°F (0° to 49°C).

**Operating Humidity Range:** 10% to 93% Relative Humidity.

**Operating Voltages:** 24 VAC/VDC or 120 VAC operation.

**Contact Ratings:** Refer to information provided with detector.

**Latching Alarm:** Reset by momentary power interruption (not automatic.

CLASSIFIED C UL US

SEE COMPLETE MARKING ON PRODUCT

## LISTINGS OF DSDN

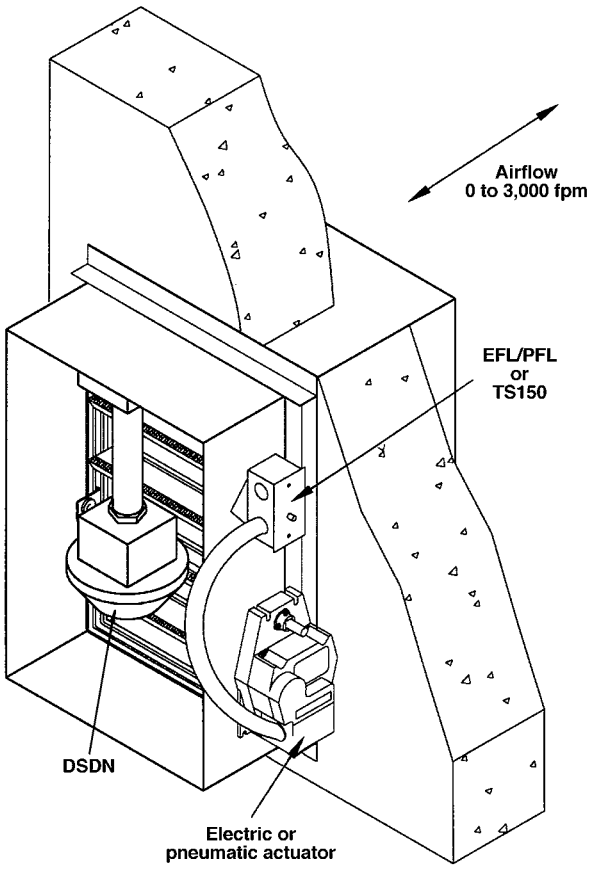
- UL Listed, file S911.
- CSFM Listing, 7272-1209:159.
- New York MEA-205-94-E
- Factory Mutual Approved, OX5A4.AY.

## ACCESSORIES

Annunciators, remote test and reset stations, sounders, strobes, etc. are available from the duct smoke detector manufacturer.

## MAINTENANCE AND SERVICE OF DUCT DETECTORS

Dust, dirt and other foreign matter can accumulate inside a detector and change its sensitivity. Detectors should be tested and maintained periodically. Routine maintenance should be performed at least once a year and more frequently in dirtier environments. Refer to NFPA90A, NFPA72 and detector manufacturer's instructions packaged with each detector for specific maintenance and testing information.

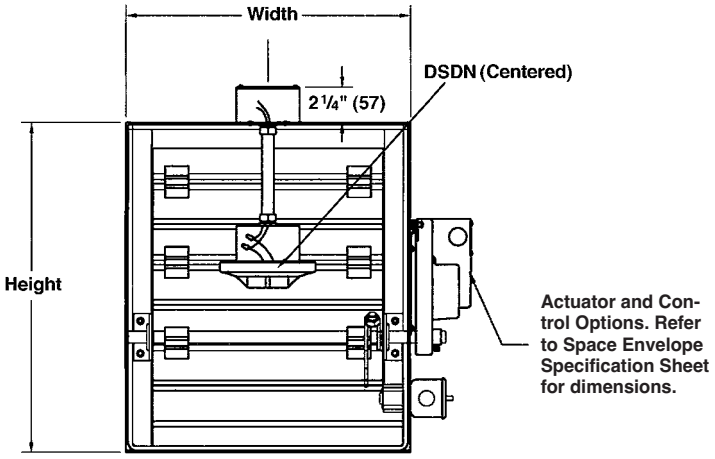



 ***ALL STATED SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE OR OBLIGATION.*** 

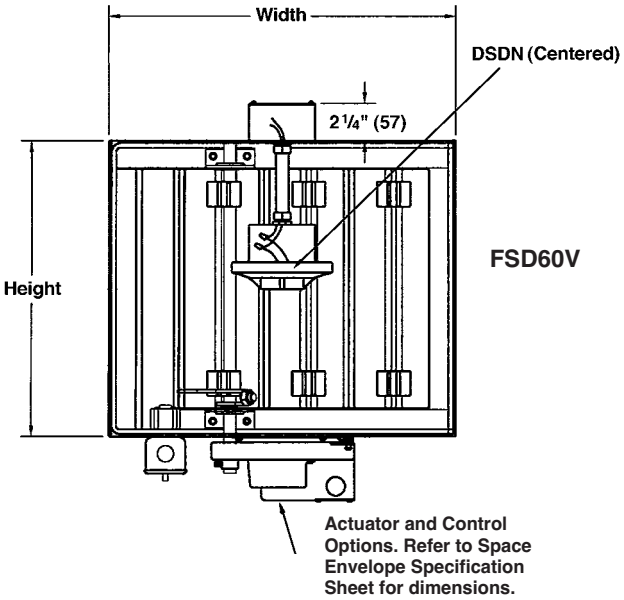
## FACTORY MOUNTING DETAILS

**NOTES:**

1) Consult Ruskin for minimum size for actuator in airstream.
2) Multiple detectors required for dampers larger than 36"w x 36"h (914 x 914). Consult Ruskin

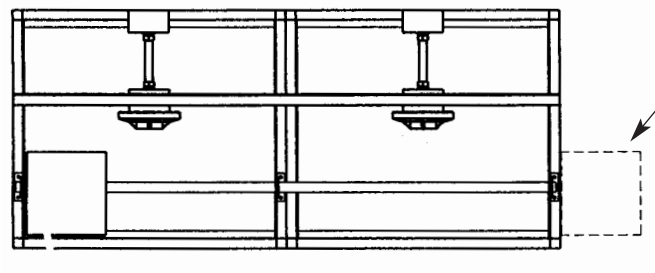



**All FSD's (except FSD60-V)**

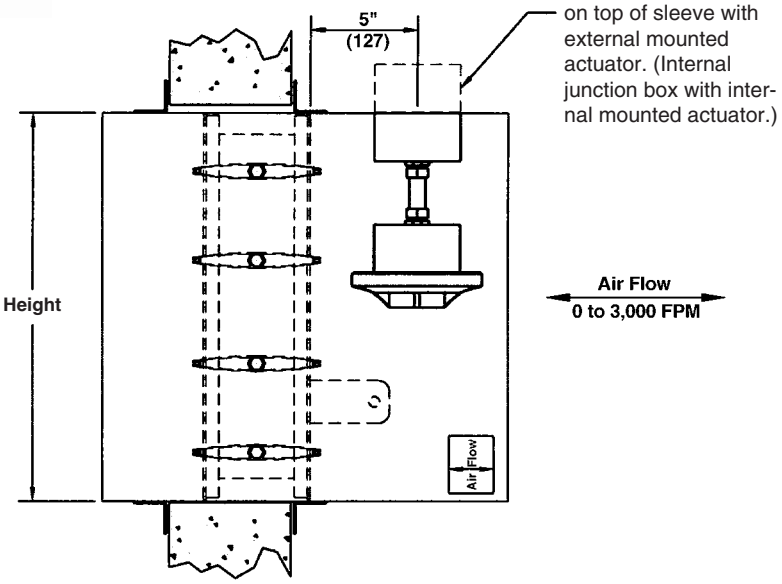



**FSD60V**

## TYPICAL INSTALLATION DETAILS FOR FSD with DSDN



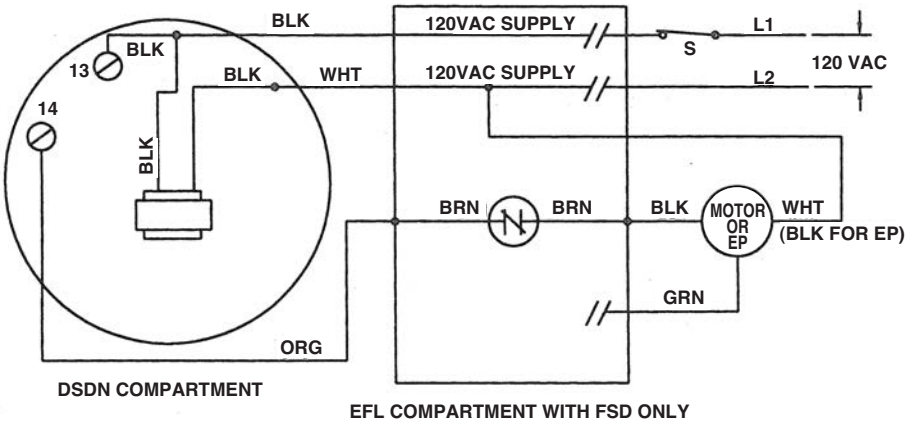

Multiple detectors required for dampers larger than 36” x 36”h (914 x 914).



# WIRING DIAGRAMS 120 VAC

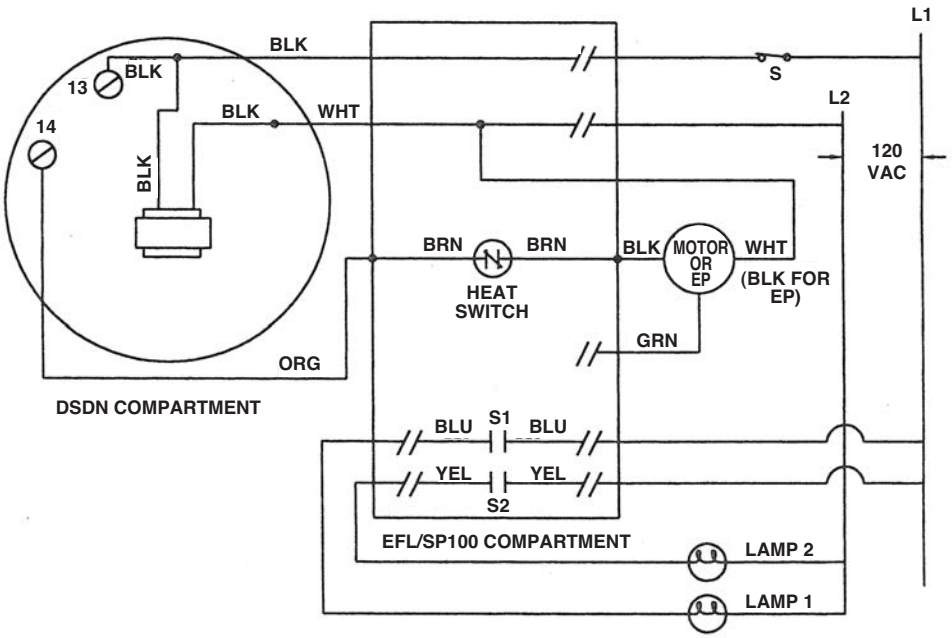
## DSDN FACTORY WIRED TO FSD WITH EFL

**Fire Smoke Damper (FSD) with Electric Fuse Link (EFL)**




## DSDN FACTORY WIRED TO FSD WITH EFL/SP-100

**Fire Smoke Damper (FSD) with Electric Fuse Link/SP-100 Switch**

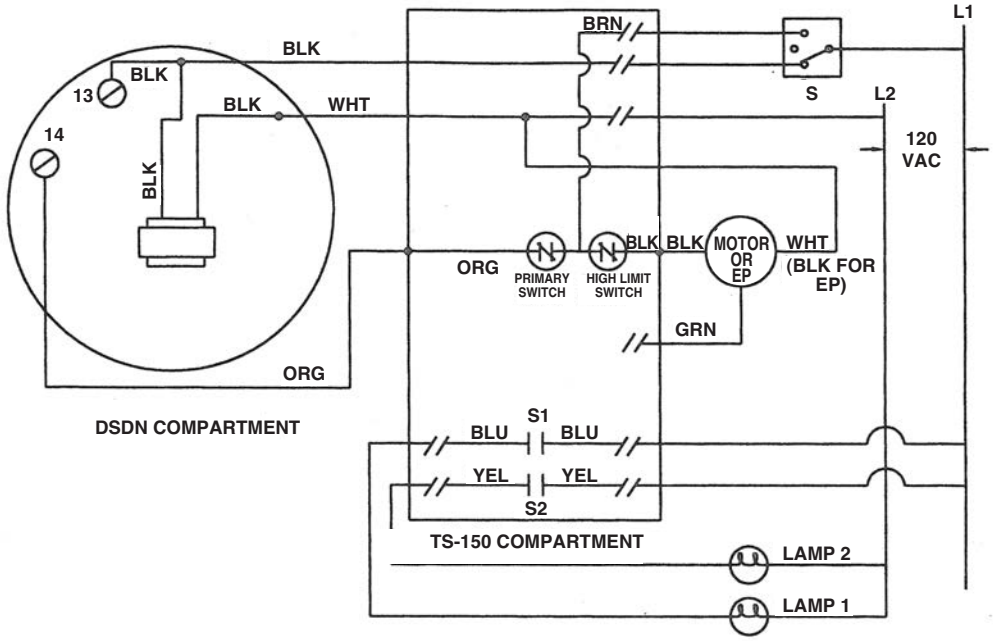



**NOTES**

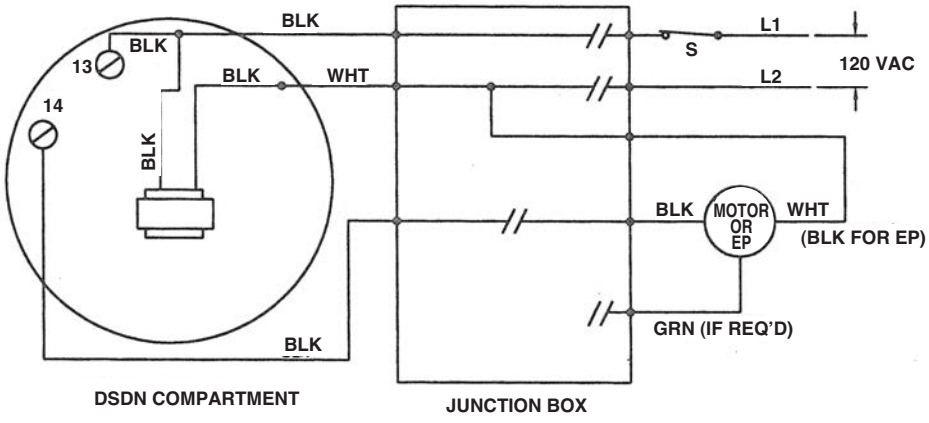
1. Not all screw terminals ∅ in the DSDN compartment are shown, for clarity.
2. Switch "S" by others.
3. These wiring diagrams apply to model with either photoelectric or ionization detector head.
4. // Indicated connections needed to be made in the field by qualified electrician.

## WIRING DIAGRAMS 120 VAC

### DSDN FACTORY WIRED TO FSD WITH TS-150

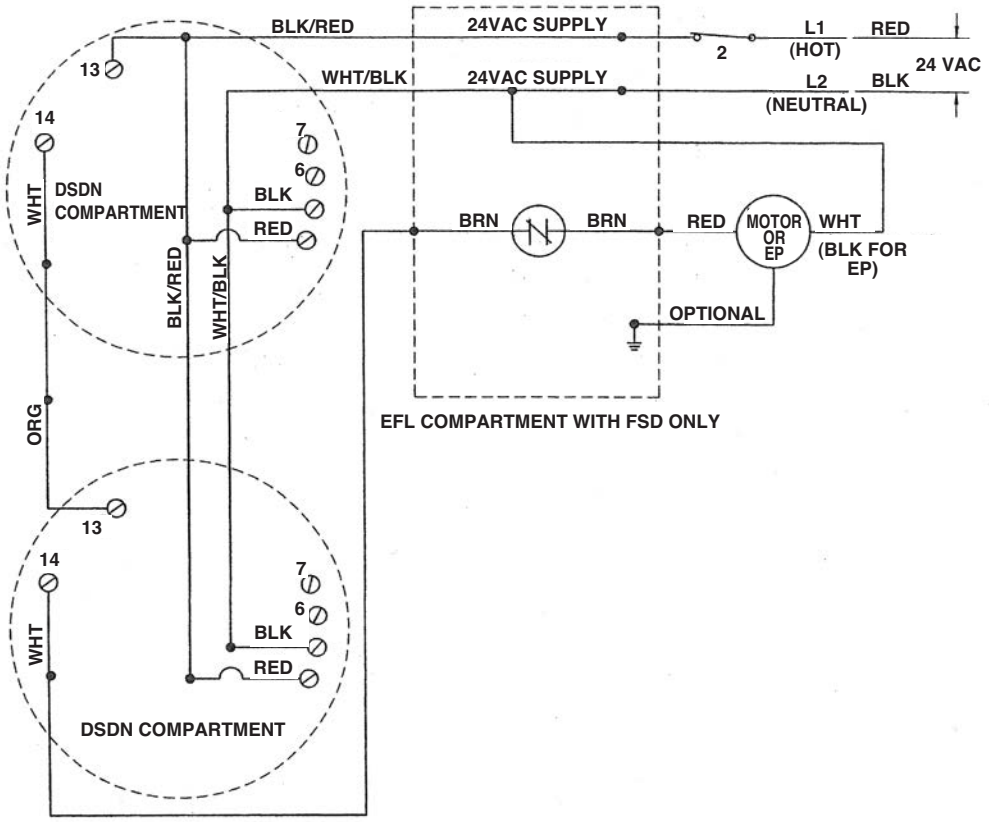



### DSDN FACTORY WIRED TO SMOKE DAMPER

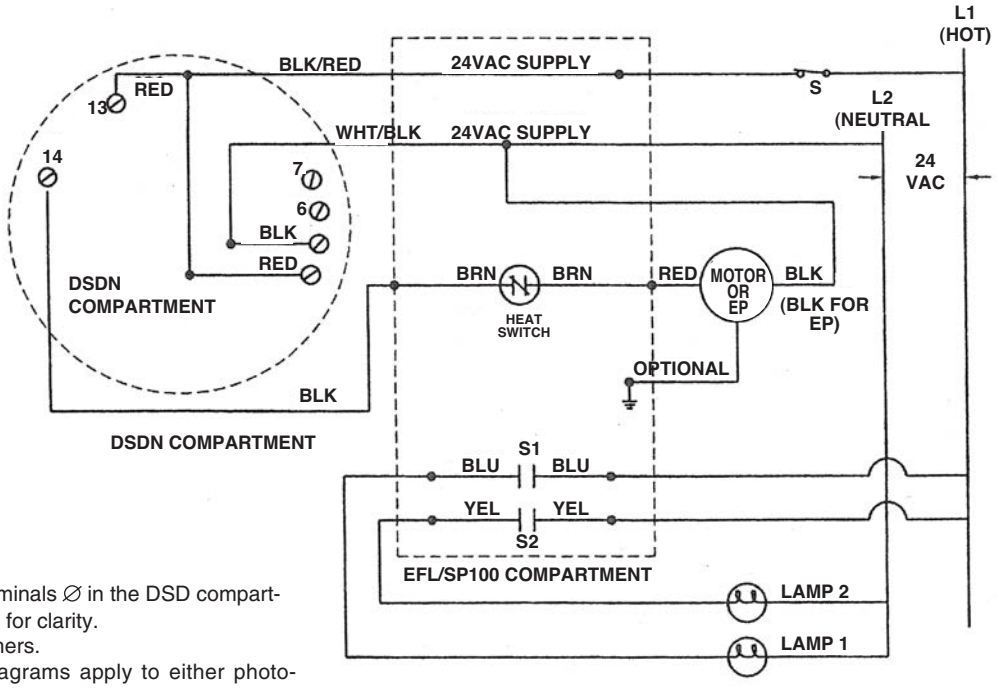


## WIRING DIAGRAMS 24 VAC/DC

### DSDN FACTORY WIRED TO FSD WITH EFL




### DSDN FACTORY WIRED TO FSD WITH EFL1SP-100




**NOTES**

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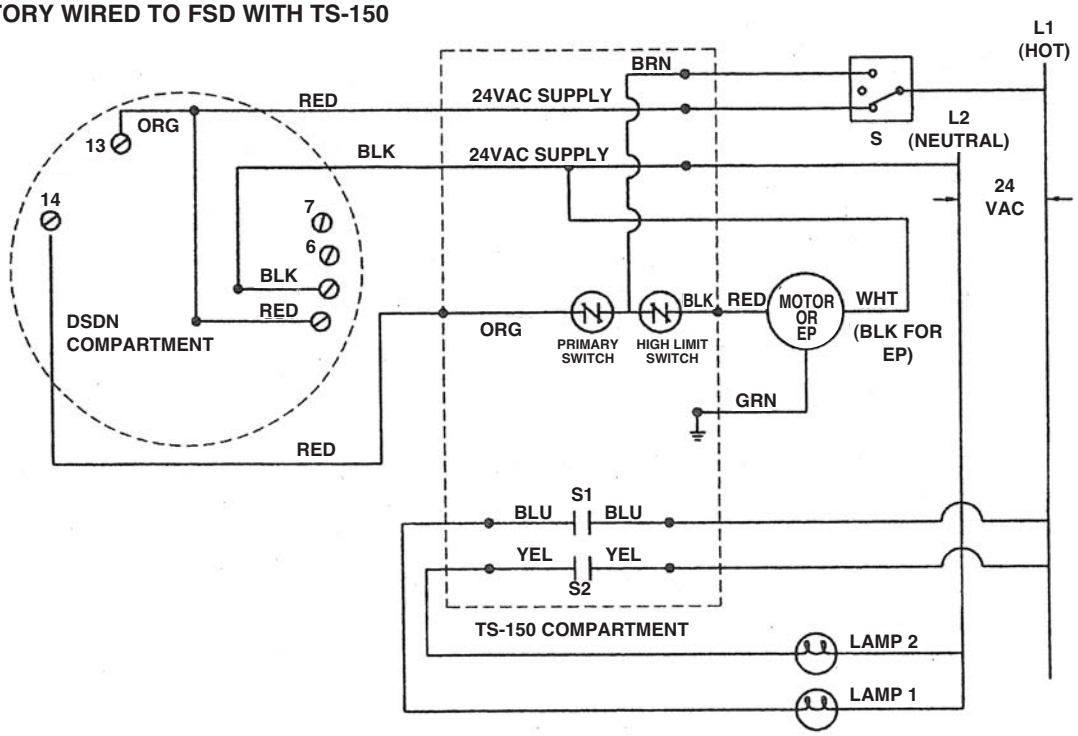
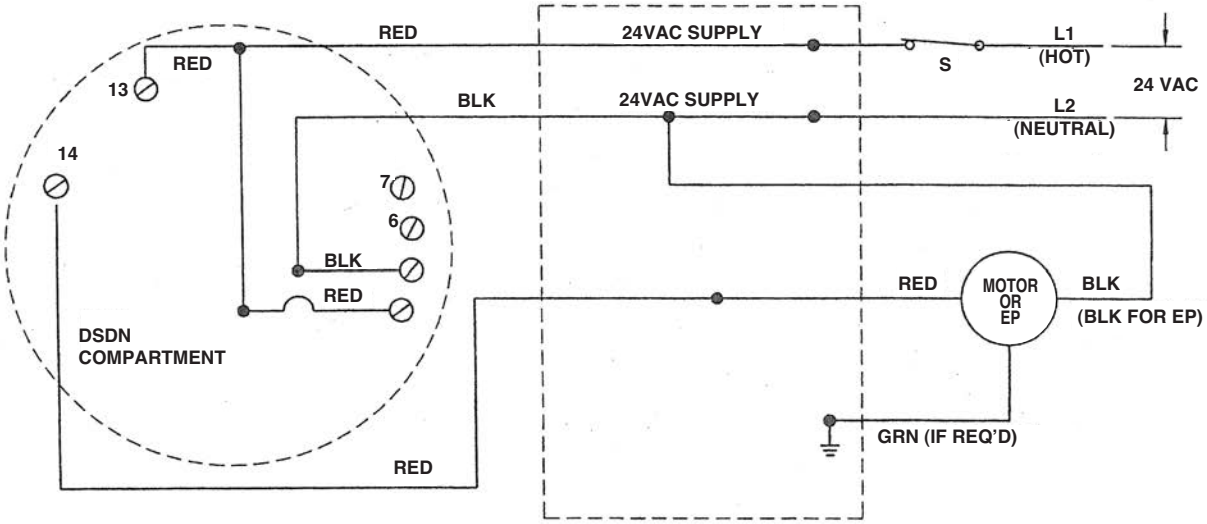
2. Switch "S" by others.
3. These wiring diagrams apply to either photoelectric or ionization detector head.
4. ◦ Indicated connections needed to be made in the field by qualified electrician.

## WIRING DIAGRAMS 24 VAC/DC

### DSDN FACTORY WIRED TO FSD WITH TS-150




### DSDN FACTORY WIRED TO SMOKE DAMPER

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