GREYSTONE
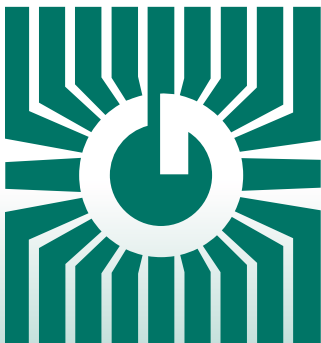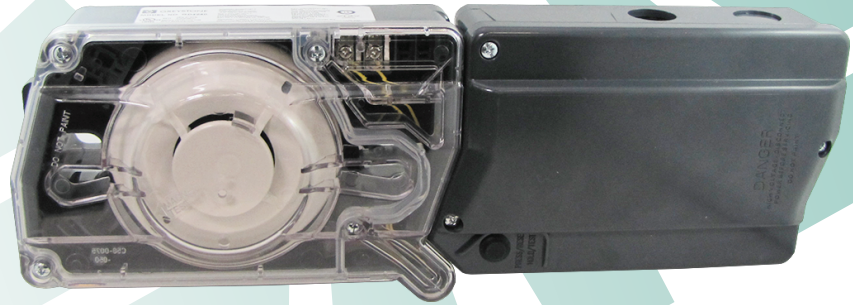## ENERGY SYSTEMS INC

Precision duct smoke detection

FEATURES:

- 4-Wire Photoelectric, integrated low-flow technology
- Low flow air velocity rating from 100 to 4000 FPM
- Plug-in sensor offers superb false alarm immunity and the latest sensor technology
- 24 VAC/DC or 120/240 VAC operation
- Two SPDT Form-C relay contacts
- Easy and quick mounting to round or rectangular ducts
- One easy-access Test/Reset button and improved LED status
- Patented sampling tube installs with no tools required
- cULus and FM Approved

Peace of mind through reliable smoke detectors

GREYSTONE HAS AN **ISO 9001** REGISTERED QUALITY SYSTEM

PRODUCT APPLICATION / DESCRIPTION:

The DSD Series, 4-wire photoelectric duct smoke detector features a pivoting housing that fits both square and rectangular footprints and mounts to round or rectangular ductwork. This unit senses smoke in the most challenging conditions, operating in airflow speeds of 100 to 4,000 feet per minute, temperatures of –20°C to 70°C (–4°F to 158°F), and a humidity range of 0 to 95% (non-condensing). A plug-in sensor head offers improved false alarm immunity and simple installation, testing, and maintenance. An improved cover design isolates the sensor head from the low-flow feature for simple maintenance.

The DSD housing provides ample wiring space, a ¾-inch conduit knockout, and built-in short circuit protection to prevent damage to sensitive components during installation. High contrast terminal designations make wiring easy. With its 2:1 sensor-to-power capability, the power board of the DSD may be used to monitor a second sensor, D4S, simultaneously (i.e., supply and return side). As many as 50 detectors can be interconnected. When one unit senses smoke, all interconnected detectors will switch their relays; only the detector sensing smoke will go into alarm, thus pinpointing the fire source.

All detectors must be used with a metal sampling tube, DST series.

PRODUCT SPECIFICATIONS:

Physical Specifications

Size:	(Rectangular Dimensions)	37 cm (14.38 in) Length; 12.74 cm (5 in) Width; 6.36 cm (2.5 in) Depth
	(Square Dimensions)	19.7 cm (7.75 in) Length; 22.9 cm (9 in) Width; 6.35 (2.5 in) Depth
Weight:		1.14 kg (2.5 lbs)
Operating Temperature Range:		–20° to 70°C (–4° to 158°F)
Storage Temperature Range:		–30° to 70°C (–22° to 158°F)
Operating Humidity Range:		0% to 95% relative humidity non-condensing
Air Duct Velocity:		0.5 to 20.32 m/sec (100 to 4000 ft/m)

Electrical Ratings	**DSD120/240**	**DSD120/240**	**DSD120**	**DSD240**
Power supply voltage:	20–29 VDC	24 VAC 50–60 Hz	120 VAC 50–60 Hz	240 VAC 50–60 Hz
Input capacitance:	270 µF max.	270 µF max.	N/A	N/A
Reset voltage:	3.0 VDC min.	2.0 VAC min.	10 VAC min.	20 VAC min.
Reset time: (by power down)	0.6 sec. max.	0.6 sec. max.	0.6 sec. max.	0.6 sec.
Power up time:	35 sec. max.	35 sec. max.	35 sec. max.	35 sec. max.
Alarm response time:	15 sec.	15 sec.	15 sec.	15 sec.
Sensitivity Test:	See detector label	See detector label	See detector label	See detector label

Current Requirements: (Using No Accessories)

Max. standby current:	21 mA @ 24VDC	65 mA RMS @ 24VAC 60Hz	20 mA RMS @ 120VAC 60Hz	10 mA RMS @ 240VAC 60Hz
Max. alarm current:	65 mA @ 24VDC	135 mA RMS @ 24VAC 60Hz	35 mA RMS @ 120VAC 60Hz	18 mA RMS @ 240VAC 60Hz

Contact Ratings

Alarm initiation contacts: (SPST)   2.0A @ 30 VDC (resistive)
Alarm auxiliary contacts: (SPDT)   10A @ 30 VDC (resistive); 10A @ 250 VAC (resistive); ½ HP @ 240 VAC ; ¼ HP @ 120 VAC
Note: Alarm auxiliary contacts shall not be connected to initiating circuits of control panels. Use the alarm initiation contact for this purpose.
Supervisory contacts: (SPST)   2.0A @ 30 VDC (resistive); 2.0A @ 125 VAC (resistive)

PRODUCT ORDERING INFORMATION

MODEL	Product Description
DSD	Duct Smoke Detector, Photoelectric

CODE	Power Supply
120	120 Vac, 24 Vac/Vdc
240	240 Vac, 24 Vac/Vdc

DSD	120

Greystone Energy Systems, Inc. reserves the right to make design modifications without prior notice.

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ACCESSORIES

PRODUCT ORDERING INFORMATION - DUCT SAMPLING TUBES

MODEL	Product Description
DST-	Metal duct sampling tube for DSD Series

CODE	Duct Size
1.0	Duct widths up to 305mm (12")
1.5	Duct widths between 305mm - 610mm (12" - 24")
3.0	Duct widths between 610mm - 1200mm (24" - 48")
5.0	Duct widths between 1200mm - 2400mm (48" - 96")
10.0	Duct widths between 2400mm - 3700mm (96" - 144")

DST	-	1.0

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WIRING:
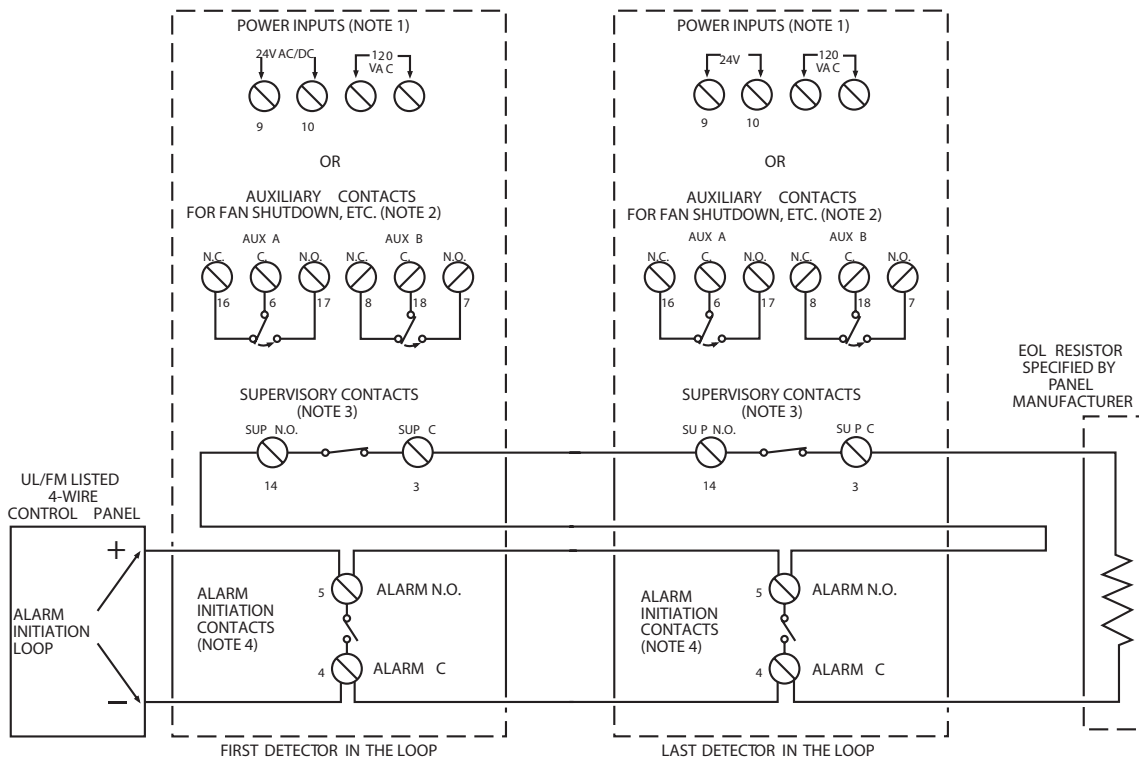
NOTE 1: 24V Power Inputs accept a non-polarized 24VDC or 24VAC 50-60Hz. 120VAC Power Inputs accept only 120VAC 50-60Hz. Connect power source to appropriate terminals of each detector. See specifications for additional power supply information.
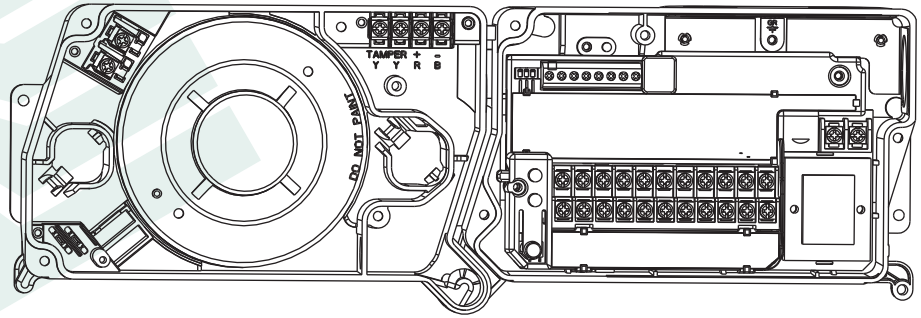
NOTE 2: Auxiliary contacts shown in standby position. Contacts switch during alarm as indicated by arrows. Auxiliary contacts are not to be used for connection to the control panel. See specifications for contact ratings.

NOTE 3: Supervisory contacts shown in standby position. Open contacts indicate a trouble condition to the panel. See specifications for contact ratings.
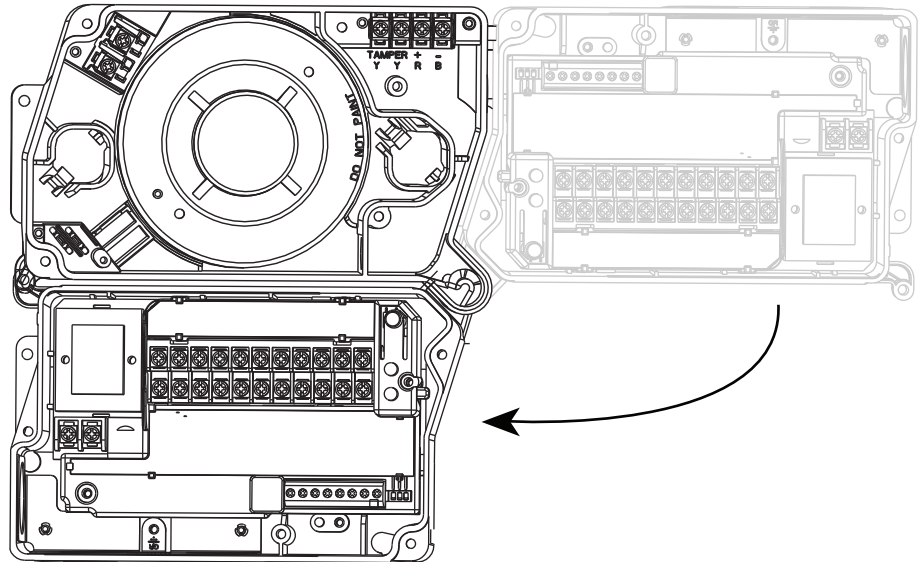
NOTE 4: Alarm Initiation contacts shown in standby position. Closed contacts indicate an alarm condition to the panel. See specifications for contact ratings.

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MOUNTING CONFIGURATIONS

Rectangular

Square

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Greystone Energy Systems Inc. is one of North America's largest ISO registered manufacturers of HVAC/R sensors and transmitters for Building Automation Management Systems. We have conscientiously established a worldwide reputation as an industry leader by maintaining leading-edge design technology, prompt technical support, and a commitment to on-time deliveries. We take pride in our Quality Management System which is ISO 9001 certified, assuring our customers of consistent product reliability.

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