HARRINGTON SIGNAL INC.
FIRE ALARM

DNR & DNRW

Intelligent Photo Duct Smoke Detector

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FM APPROVED

Description

The InnovairFlex DNR intelligent non-relay photoelectric duct smoke detector and DNRW watertight non-relay photoelectric duct smoke detector feature a pivoting housing that fits both square and rectangular footprints capable of mounting to a round or rectangular duct.

DHRW duct smoke detector, with NEMA 4 rating, is listed as a watertight enclosure providing protection against failing dirt, rain, and windblown dust, splashing and hose directed water, allowing operators to use the detector in the most extreme environments.

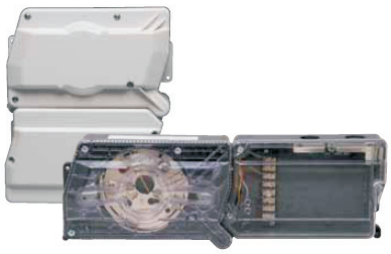
These units sense smoke in the most challenging conditions, operating in airflow speeds of 100 to 4000 ft per minute, temperature of -4°F to 158°F, and a humidity range of 0 to 95% (non-condensing).

An improved cover design isolates the sensor head from the low-flow feature for simple maintenance. A cover tamper feature was added to indicate a trouble signal for a removed or improperly installed sensor cover. The InnovairFlex housing provides a 3/4" conduit knockout and ample space to facilitate easy wiring and mounting of relay module.

The InnovairFlex duct smoke detector can be customized to meet local codes and specifications without additional wiring. The new InnovairFlex product line is compatible with all previous Innovair models, including remote test accessories.

Features

- Photoelectric, integrated low-flow technology
- Air velocity rating from 100 ft/min to 4000 ft/min (0.5m/s to 20.32m/sec)
- Versatile mounting options: square or rectangular configur-ation
- Broad ranges for operating temperature (-4°F to 158°F) and humidity (0 to 95% non-condensing)
- Patented sampling tube installs from front to back of the detector with no tools required
- New Cover tamper signal



- Increased wiring space with a newly added 3/4" conduit knockout
- Available space within housing to accommodate mounting of relay module
- Easily accessible code wheel on sensor head (*sold separately)
- Clear cover for convenient visual inspection
- UL 268A listed
- Remote testing capability
- Requires com line power only
- NEMA Type 4 UL listed for non-hazardous indoor and outdoor applications (DNRW only)
- UV Resistant, UL listed housing and cover material (DNRW only)

Ordering Information

Model Number	Part Number	Description
DNR	DNR	Intelligent Non-relay Photoelectric Low-flow Duct Smoke Detector
DNRW	DNRW	Watertight Intelligent Non-relay Photoelectric Low-flow Duct Smoke Detector
2251BR	349-1056	Photoelectric Smoke Head for Remote Test Capable Detector Head Option
DST1	DST1	Metal Sampling Tube Duct Width up to 1 ft (0.3 m)
DST1.5	DST1.5	Metal Sampling Tube Duct Widths 1 ft to 2 ft (0.3 to 0.6 m)
DST3	DST3	Metal Sampling Tube Duct Widths 2 ft to 4 ft (0.6 to 1.2 m)
DST5	DST5	Metal Sampling Tube Duct Widths 4 ft to 8 ft (1.2 to 2.4 m)
DST10	DST10	Metal Sampling Tube Duct Widths 8 ft to 12 ft (2.4 to 3.7 m)
DH100E-1	DH100E-1	Weatherproof Enclosure
ETX	ETX	Metal Exhaust Tube Duct Width 1 ft (0.3 m)
M02-04-00	M02-04-00	Test Magnet
P48-21-00	P48-21-00	End Cap for Metal Sampling Tube
RA100Z	RA100Z	Remote Annunciator Alarm LED
RTS151	RTS151	Remote Test Station
RTS151KEY	RTS151KEY	Remote Test Station with Key Lock
*2251B	349-1046	Photoelectric Smoke Head
M500R	349-1022	Relay Module, 2 form C
DCOIL	DCOIL	2-Wire Remote Test Coil required with RTS451/RTS451Key

Physical Specifications

Size: (Rectangular Dimensions)	14.38 in (37 cm) Length; 5 in (12.7 cm) Width; 2.5 in (6.36 cm) Depth
(Square Dimensions)	7.75 in (19.7 cm) Length; 9 in (22.9 cm) Width; 2.5 in (6.35 cm) Depth
Weight:	1.6 lbs. (0.73 kg)
Environmental Rating:	NEMA4 (DNRW only)
Operating Temperature Range:	-4° to 158°F (-20°C to 70°C)
Storage Temperature Range:	-22° to 158°F (-30°C to 70°C)
Operating Humidity Range:	0% to 95% relative humidity non-condensing
Air Duct Velocity:	100 to 4000 ft/min (0.5 m/sec to 20.32 m/sec)
DCOIL (if needed):	17.5 - 26.4 VDC, 95 mA max

Electrical Ratings

Please see detector head installation manual for electrical specifications

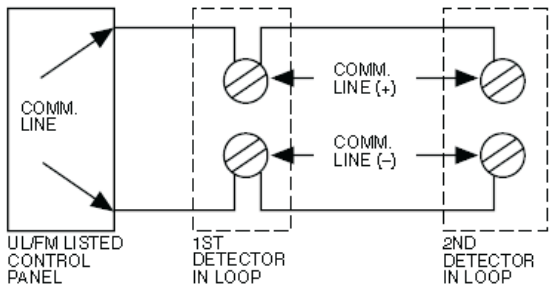
Accessory Current Loads at 24 VDC

Device	Standby	Alarm
RA100Z	0 mA	12 mA Max
RTS151/RTS151KEY	0 mA	12 mA Max

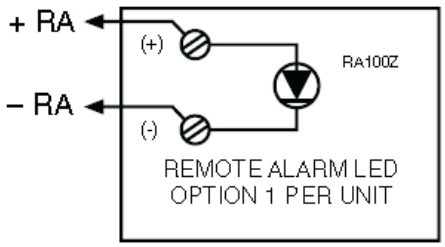
Wiring for Intelligent Non-Relay Duct Smoke Detector

System wiring diagram for DNR:

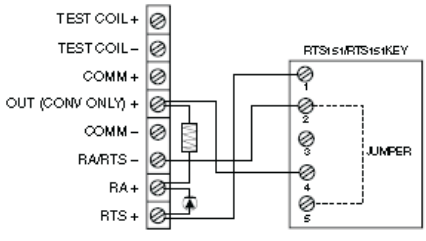
System wiring diagram for DNR:



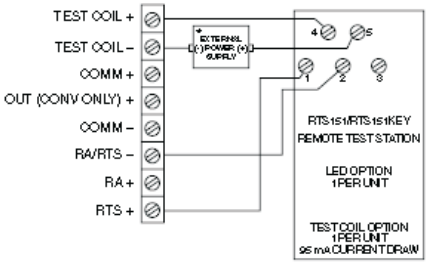
DNR to RA100Z:



DNR to RTS151/RTS151KEY with "R" Remote Test Capable Detector Head Option:



DNR to RTS151/RTS151KEY with DCOIL Option*:



Important Notes:

•The use of either RTS151 or RTS151KEY requires the installation of an accessory coil, DCOIL, sold separately. Please refer to the DNR or DNRW installation manual for more information.

•The RTS151/RTS151KEY test coil circuit requires an external 24 VDC power supply which must be UL listed.

NOTICE: The information contained in this document is intended only as a summary and is subject to change without notice. The devices described in this document have specific instruction sheets which cover various technical, limitation and liability information. Copies of these instruction sheets and the General Product Warning and Limitations Document, which also contains important information are provided with the product and are available from Harrington Signal Inc. Fire Alarm. Information contained in these documents should be consulted before specifying or using the product. For further information or assistance concerning particular problems contact Harrington Signal Inc. Harrington Signal Inc. Fire Alarm reserves the right to change specifications without notice Quality manufactured for Harrington Signal Inc. by System Sensor..