4098-9756 ADDRESSABLE ANALOG 4-WIRE DUCT SENSOR MAPNET II/IDNet SLC WITH 24VDC RELAY

PRODUCT INFORMATION

FEATURES:

COMPACT AIR DUCT SENSOR HOUSING WITH CLEAR COVER TO MONITOR FOR THE PRESENCE OF SMOKE

INCLUDES FACTORY INSTALL TRUEALARM PHOTOELECTRIC SMOKE DETECTOR AND FEATURES:
- INDIVIDUAL SENSOR INFORMATION PROCESSED BY THE HOST CONTROL PANEL TO DETERMINE SENSOR STATUS
- DIGITAL TRANSMISSION OF ANALOG SENSOR VALUES VIA MAPNET II OR IDNET SLC 2-WIRE COMMUNICATIONS
- PROGRAMMABLE SENSITIVITY, CONSISTENT ACCURACY, ENVIRONMENTAL COMPENSATION, STATUS TESTING, AND MONITORING OF SENSOR DIRT ACCUMULATION

MODEL:
- DUCT SENSOR HOUSING WITH SUPERVISED OUTPUT FOR MULTIPLE REMOTE RELAYS, REQUIRES SEPARATE 24 VDC (RELAYS ARE UNDER PANEL CONTROL AND CAN BE ACTIVATED MANUALLY OR BY A SEPARATE ALARM/INPUT)

GENERAL FEATURES:
- UL LISTED TO STANDARD 268A
- CLEAR COVER ALLOWS VISUAL INSPECTION
- TEST PORTS PROVIDE FUNCTIONAL SMOKE TESTING ACCESS WITH COVER IN PLACE
- MOUNTS TO RECTANGULAR DUCTS OR ROUND DUCTS (MINIMUM SIZE 8" SQUARE OR 18" DIAMETER)
- MAGNETIC TEST FEATURE FOR ALARM INITIATION AT HOUSING
- OPTIONAL WEATHERPROOF ENCLOSURE IS AVAILABLE SEPARATELY (REFER TO DATA SHEET 54098-0032)

DIAGNOSTIC LEDS (ON INTERFACE BOARD):
- RED ALARM/TROUBLE LED FOR SENSOR STATUS AND COMMUNICATIONS POLLING DISPLAY
- YELLOW LED FOR OPEN OR SHORTED TROUBLE INDICATION OF SUPERVISED RELAY CONTROL

SAMPLING TUBES (ORDERED SEPARATELY):
- AVAILABLE IN MULTIPLE LENGTHS TO MATCH DUCT SIZE
- INSTALLED AND SERVICED WITH HOUSING IN PLACE

REMOTE MODULE OPTIONS (ORDERED SEPARATELY):
- RED STATUS/ALARM LED (2098-9808)
- TEST STATION WITH LED (2098-9806)
- RELAYS USED (4098-9843)

SPECIFICATIONS:

GENERAL SPECIFICATIONS	
AIR VELOCITY RANGE (LINEAR FT/MIN)	300 TO 4000 FT/min (91 TO 1220 m/min)
SENSOR SENSITIVITY RANGE	0.2% TO 3.7% PER FOOT OF OBSCURATION, SELECTABLE AT HOST CONTROL PANEL
UL LISTED TEMPERATURE RANGE	32° F TO 100° F (0° C TO 38° C)
OPERATING TEMPERATURE RANGE	32° F TO 122° F (0° C TO 50° C)
STORAGE TEMPERATURE RANGE	0° F TO 140° F (-18° C TO 60° C)
HUMIDITY RANGE	10% TO 93% RH, NON-CONDENSING
HOUSING COLOR	BLACK BASE WITH CLEAR COVER
WIRING CONNECTIONS	TERMINAL BLOCKS, 18 TO 12 AWG
REMOTE STATUS/ALARM LED AND TEST STATION WITH REMOTE STATUS/ALARM LED	
REMOTE ALARM LED CURRENT	1.2 mA, NO IMPACT TO ALARM CURRENT (2098-9808 OR 2098-9806)
TEST STATION KEYSWITCH CURRENT	3.3 mA, NO IMPACT TO ALARM CURRENT (2098-9806)
REMOTE ALARM LED AND TEST STATION DISTANCE	250 FT. (76m) MAXIMUM
ADDRESSABLE OPERATION	
DATA COMMUNICATIONS	MAPNETII OR IDNET SLC COMMUNICATION, AUTO-SELECT 1 ADDRESS PER HOUSING, PROVIDES OPERATING POWER TO MODEL 4098-9755.
MODEL 4098-9756 WITH SUPERVISED 24 VDC FROM FIRE ALARM POWER SUPPLY	MULTIPLE RELAY CONTROL, REQUIRES SEPARATE FUSED
INPUT VOLTAGE	17-32 VDC (24 VDC NOMINAL)
STANDBY CURRENT	3 mA @ 24 VDC
ALARM CURRENT	15 mA @ 24 VDC, ADD 15 mA ADDITIONAL FOR EACH 4098-9843 RELAY
4098-9843 RELAY OUTPUT RATINGS,	SINGLE FORM C
COIL CURRENT	15 mA @ 24 VDC UP TO 15 MAX. PER RELAY CONTROL OUTPUT
RELAY CONTACTS, RESISTIVE RATINGS	7 A @ 28 VDC & 120 VAC; 250 uA @ 5 VDC
LOCATION DISTANCE	500 FT. (152m) MAX. TO RELAY COILS, RELAY MUST BE WITHIN 3 FT. (1m) OF DEVICE BEING CONTROLLED PER NFPA 72, SECTION 3-9.2.1

DUCT DETECTOR SELECTION CHART

DUCT SMOKE SENSOR HOUSING WITH PHOTOELECTRIC SENSOR		
MODEL	DESCRIPTION	COMPATIBILITY
4098-9756	DUCT HOUSING WITH SUPERVISED MULTIPLE RELAY CONTROL FOR UP TO 15, 4098-9843 RELAYS (ORDERED SEPARATELY), REQUIRES SEPARATE 24 VDC FIRE ALARM POWER AND RELAY END-OF-LINE RESISTOR	SIMPLEX FIRE ALARM CONTROL MODELS 4008, 4010, 4020, 4100, AND 4120.
REMOTE LED INDICATOR AND TEST STATION, SELECT ONE IF REQUIRED		
MODEL	DESCRIPTION	MOUNTING
2098-9808	RED LED STATUS INDICATOR	USE SINGLE GANG BOX, 3" H X 2" W X 2" D (76 mm X 51 mm X 51 mm)
2098-9806	TEST STATION WITH KEYSWITCH AND RED LED STATUS (TURNING SWITCH TO TEST INITIATES ALARM FOR SYSTEM TESTING	

2098-9808 REMOTE STATUS/ALARM INDICATOR

2098-9806 TEST STATION

WIRING NOTES:
1. DUCT SENSOR WIRING IS 12 TO 18 AWG.
2. MAXIMUM QUANTITY OF DEVICES PER CIRCUIT IS 127 FOR 4020, 4100+, OR 4120, AND 250 FOR THE 4010 PANEL
3. THE 2098-9806 AND 2098-9808 ARE POLARIZED, OBSERVE COLOR-CODED WIRING.
4. MAXIMUM WIRE LENGTH TO TEST TERMINALS AND REMOTE LED IS 250 FEET.

⚠ 4098-9843 PAM-SD RELAY (AIR PRODUCTS & CONTROL LIMITED) ARE RATED AT 7 AMPS 28 VDC/10 AMPS @ 115 VAC. MAXIMUM WIRE LENGTH TO PAM-SD RELAYS IS 500 FT. (15 PAM-SD RELAYS MAX.). WIRING FROM THE RELAY TO THE DEVICE IT IS CONTROLLING SHOULD BE NO MORE THAN 3 FT. (PER NFPA 72).

2098-9806 REMOTE ALARM INDICATOR/KEY SWITCH

PRODUCT INFORMATION

FEATURES:
- UL LISTED
- CALIFORNIA STATE FIRE MARSHAL LISTING NUMBERS: 2908-9806 ALARM INDICATOR 7300-0026:150
- MOUNTING: FLUSH
- FINISH: CHROME OR STAINLESS STEEL

SPECIFICATIONS:
- ALARM CURRENT: 2.8 mA
- DIMENSIONS OF BOX: 2 "W X 3"H X 2"D

DESCRIPTION:

2098-9806 REMOTE TEST STATION, PROVIDES A REMOTE RED ALARM LED STATUS INDICATOR AND A REMOTE TEST KEY ACTIVATED SWITCH MOUNTED ON A SINGLE GANG STAINLESS STEEL PLATE. THE LED WILL PULSE TO INDICATE NORMAL OPERATION OF THE DUCT DETECTOR AND WILL ENERGIZE CONTINUOUS WHEN IN ALARM OR IN TROUBLE. (THE EXACT STATUS OF THE SENSOR WILL BE DISPLAYED AT THE FIRE ALARM CONTROL PANEL.) TURNING THE TEST SWITCH TO "TEST" WILL INITIATE AN ALARM AND ALLOW THE RESULTING SYSTEM RESPONSES TO BE VERIFIED.

WIRING:
- MINIMUM 18 AWG OR TO LOCAL CODE.
- CONDUCTORS MUST TEST FREE OF ALL GROUNDS.
- REMOTE ALARM LED IS POLARIZED, OBSERVE COLOR CODED WIRING.
- ONE INDICATOR MAY BE INSTALLED PER DETECTOR.

FLUSH MOUNTING

4090-9001 IDNET SLC, SUPERVISED ADDRESSABLE INPUT MODULE (AIM)

PRODUCT INFORMATION

FEATURES:
- UL LISTED
- ADDRESSABLE COMMUNICATIONS SUPPLY BOTH DATA AND POWER TO PROVIDE:
  - SUPERVISED STYLE B MONITORING OF NORMALLY OPEN DRY CONTACTS.
  - COMMUNICATIONS WIRING USING ONE TWISTED, SHIELDED WIRE PAIR.
- COMPATIBLE WITH SIMPLEX ADDRESSABLE FIRE ALARM CONTROL PANELS.
- COMPACT, SEALED CONSTRUCTION:
  - ALLOWS MOUNTING IN A SINGLE GANG BOX
  - REDUCES DUST INFILTRATION
- PROVIDES CURRENT LIMITED MONITORING
  - TO MONITOR TAMPER SWITCH (SUPERVISORY) AND WATER FLOW SWITCH (ALARM) ON SAME CIRCUIT
  - REQUIRES ONLY ONE ADDRESSABLE POINT
- SELECTABLE LATCHING OPERATION
  - MONITORS MOMENTARY CONTACT CLOSURES SUCH AS RATE-OF RISE HEAT DETECTORS

SPECIFICATIONS:
- WIRE CONNECTIONS: SCREW TERMINALS FOR IN/OUT WIRING FOR WIRE FROM #18 TO #14 AWG.
- DIMENSIONS: 1 9/16" X 1 3/4" X 1 1/4"
- TEMPERATURE RANGE: 32° F TO 158° F (0° C TO 70° C)
- HUMIDITY: UP TO 93% RH AT 100° F
- SUPERVISION RESISTOR: 6.8kΩ 1/2W, (SUPPLIED) SIMPLEX PART NO. 733-886
- RESISTOR FOR CURRENT LIMITED OPERATION: 4.7kΩ 1/2W, WITH A 1.8kΩ 1/2W
- INPUT REQUIREMENTS: NORMALLY OPEN, DRY CONTACTS
- HOUSING MATERIAL: BLACK THERMOPLASTIC

DESCRIPTION:

THE 4090-9001 IS AN ADDRESSABLE INPUT MODULE (AIM) WITH POWER AND COMMUNICATIONS SUPPLIED BY A TWO WIRE ADDRESSABLE CIRCUIT. IT PROVIDES LOCATION SPECIFIC ADDRESSABILITY TO A SINGLE INITIATING DEVICE (SUCH AS SINGLE STATION SMOKE DETECTOR ALARM CONTACTS OR HEAT DETECTOR CONTACTS) OR MULTIPLE DEVICES AT THE SAME LOCATION BY MONITORING NORMALLY OPEN, DRY CONTACTS AND THE WIRING TO AN END-OF-LINE RESISTOR. CLOSURE OF THE MONITORED CONTACTS INITIATES AN ALARM OR OTHER RESPONSE AS PROGRAMMED AT THE FIRE ALARM CONTROL PANEL. AN OPEN IN THE MONITORED CIRCUIT WIRING WILL CAUSE A TROUBLE TO BE REPORTED.
IF THE INITIATING DEVICE CONTACTS ARE MOMENTARY, SUCH AS FROM A RATE-OF-RISE HEAT DETECTOR, ENABLING THE LATCH FEATURE WILL MAINTAIN THE ALARM CONDITION UNTIL THE SYSTEM IS RESET. FOR APPLICATIONS WHERE THE CONTACT CLOSURE LATCHES, OR IF ITS CONDITION NEEDS TO BE TRACKED AT THE CONTROL PANEL NON-LATCHING OPERATION MAY BE ENABLED.

WIRING NOTES:
1. ALL WIRING TO COMPLY WITH LOCAL CODE.
2. CONDUCTORS MUST TEST FREE OF ALL GROUNDS.
3. ONLY N.O. DRY CONTACTS ARE ALLOWED.
4. MAXIMUM WIRE LENGTH (NO. 18 AWG) IS 400 FT. W/2081-9044 OVER VOLTAGE PROTECTORS OR 400 FT. W/O PROTECTORS.
5. A MAXIMUM QUANTITY OF DEVICES PER CIRCUIT: CONTROL PANEL MODULE DEPENDENT
6. IF SHIELD IS PRESENT, CONNECT TO THE OUTGOING IDNet SHIELD TO PROVIDE A CONTINUOUS SHIELD OVER THE LENGTH OF THE IDNet CHANNEL. METHOD OF SPLICE DETERMINED BY AHJ.
7. REFER TO INSTALLATION INSTRUCTIONS 574-331.
8. MAXIMUM ALLOWABLE LINE RUN FROM THE F.A.C.P. TO THE FARTHEST DEVICE, NOT TO EXCEED 2500 FEET.
9. MAXIMUM TOTAL WIRE (INCLUDING ALL T-TAPS) FROM THE FIRE ALARM CONTROL PANEL
10. FOR STYLE 6 CIRCUIT WIRING IT IS RECOMMENDED THAT THE PRIMARY ① AND THE BACK-UP ② LINES BE IN SEPARATE WIRE RUNS AND IN COMPLIANCE WITH LOCAL REQUIREMENTS.
11. REFER TO FIELD WIRING DIAGRAM 842-073

T-SENSING OPERATION:
- SUPERVISED INPUT:
  - 4090-9001 AIM WITH T-SENSE CAPABILITY HAS A SUPERVISED INPUT THAT MONITORS FOR CONTINUITY TO AN END-OF-LINE RESISTOR AND CAN DIFFERENTIATE BETWEEN A SHORT CIRCUIT CONTACT CLOSURE AND A CURRENT LIMITED CONTACT CLOSURE.
- FOUR STATE OPERATION:
  - NORMAL IS WHEN ALL CONTACTS ARE OPEN AND THERE IS CONTINUITY TO THE END-OF-LINE RESISTOR.
  - OPEN IS WHEN CONTINUITY DOES NOT EXIST TO THE END-OF-LINE RESISTOR, CAUSING A TROUBLE CONDITION.
  - SHORT, INDICATES THAT A CONTACT HAS CLOSED THAT IS DIRECTLY CONNECTED TO THE INPUT CIRCUIT.
  - CURRENT LIMITED INDICATES THAT A CONTACT HAS CLOSED BEYOND A SERIES CONNECTED CURRENT LIMITING RESISTOR. THIS OPERATION ALLOWS DIFFERENTIATION BETWEEN TWO DIFFERENT CONTACT733-886 TYPES DUE TO THEIR WIRING LOCATION, AND REPORTING AS A SINGLE IDNET ADDRESSABLE POINT TO A 4100U FIRE ALARM CONTROL PANEL.

4090-9002 IDNet SLC, INDIVIDUAL ADDRESSABLE OUTPUT MODULE RELAY (AOM)

PRODUCT INFORMATION

FEATURES:
- UL LISTED
- A SINGLE ADDRESSABLE POINT BOTH CONTROLS A 2A FORM "C" CONTACT AND TRACKS ITS STATUS
- COMPATIBLE WITH SIMPLEX MODEL 4010 AND 4100 ADDRESSABLE FIRE ALARM CONTROL PANEL
- LATCHING RELAY DESIGN ALLOWS DATA AND POWER TO BE BOTH SUPPLIED BY IDNet COMMUNICATIONS
- COMPACT, SEALED CONSTRUCTION:
  - SCREW TERMINALS FOR WIRING CONNECTIONS
  - REDUCES DUST INFILTRATION

SPECIFICATIONS:
- RELAY IAM POWER: SUPPLIED BY IDNet COMMUNICATIONS
- RELAY IAM CONTACTS (FORM "C", SPDT)
- POWER LIMITED RATING: 2A @ 24VDC, TRANSIENT SUPPRESSED LOADS, 1A @ 24VDC FOR INDUCTIVE LOADS
- NON POWER LIMITED RATING: 1/2A @ 24VAC, TRANSIENT SUPPRESSED LOADS, 1A @ 24 VDC FOR INDUCTIVE LOADS
- WIRE CONNECTIONS: SCREW TERMINALS FOR IN/OUT WIRING, #18 TO #14 AWG WIRE
- COMPATIBLE WITH SIMPLEX 2081-9044 OVER VOLTAGE PROTECTORS
- DIMENSIONS: 4 1/8"H x 4 1/8"W x 1 3/8"D (105mm x 105mm x 35mm)
- HOUSING MATERIAL: BLACK THERMOPLASTIC
- MOUNTING PLATE MATERIAL: SHEET METAL, GALVANIZED
- TEMPERATURE RANGE: 32° F TO 120° F (0° C TO 49° C) INTENDED FOR INDOOR OPERATION
- HUMIDITY RANGE UP TO 93% RH AT 100° F (38° C)

DESCRIPTION:

IDNet SLC RELAY MODULES ALLOW THE SIMPLEX FIRE ALARM CONTROL PANEL TO CONTROL A REMOTELY LOCATED FORM "C" CONTACT USING IDNet ADDRESSABLE COMMUNICATIONS FOR BOTH DATA AND POWER. TYPICAL APPLICATIONS WOULD BE FOR SWITCHING LOCAL POWER FOR CONTROL FUNCTIONS SUCH AS ELEVATOR CAPTURE, OR CONTROL OF HVAC COMPONENTS, PRESSURIZATION FANS, DAMPERS, ETC. RELAY STATUS IS ALSO COMMUNICATED REQUIRING ONLY ONE DEVICE ADDRESS.

WIRING NOTES:
1. IDNet LINES ARE TO BE #18 AWG TWISTED PAIR (CONSULT SG SALES ENGINEERING FOR EXCEPTIONS).
2. MAXIMUM ALLOWABLE LINE RUN, FROM THE F.A.C.P. TO THE FARTHEST DEVICE, NOT TO EXCEED 2500 FEET.
3. MAXIMUM QUANTITY OF DEVICES PER CIRCUIT: CONTROL PANEL MODULE DEPENDENT
4. CONTRACTOR WIRING TO RELAY CONTACTS IS UNSUPERVISED. USE #14 AWG WIRE TO LOCAL CODE.
5. RELAY CONTACTS RATED 2A, 24VDC (1A FOR INDUCTIVE LOAD) RELAY CONTACTS RATED 0.5A 120VAC (NON POWER LIMITED) FOR POWER-LIMITED OPERATION, POWER MUST BE PROVIDED FROM FACP OR POWER-LIMITED POWER SUPPLY LISTED FOR FIRE PROTECTIVE SIGNALING USE.
6. SEE INSTALLATION INSTRUCTIONS 574-184.
7. IF SHIELD IS PRESENT, CONNECT TO THE OUTGOING IDNet SHIELD TO PROVIDE A CONTINUOUS SHIELD OVER THE LENGTH OF THE IDNet CHANNEL. METHOD OF SPLICE DETERMINED BY AHJ.
8. WHEN CONNECTED TO A NON POWER-LIMITED SOURCE, THE WIRING MUST MAINTAIN A MINIMUM 1/4 INCH SEPARATION FROM IDNet WIRING.
9. WHEN USED WITH NON POWER-LIMITED SOURCE, THE "POWER LIMITED WIRING" INDICATION ON THE DEVICE LABEL MUST BE OBLITERATED.
10. WHEN BOTH POWER-LIMITED AND NON POWER-LIMITED SOURCES ARE PRESENT, USE TYPE FPL, FPLR OR FPLP POWER LIMITED CABLE FOR POWER-LIMITED CIRCUITS.
11. MAXIMUM TOTAL WIRE (INCLUDING ALL T-TAPS) ON CIRCUIT, FROM THE F.A.C.P. NOT TO EXCEED 10,000 FEET OR .58uF. (CLASS B ONLY)
12. REFER TO FIELD WIRING DIAGRAM 842-073

ISSUE LOG:

MARK	DATE	CAD	CHK	DESCRIPTION
1	5-28-14	JD	KG	REVISED PER ENGINEERS COMMENTS & ADDED AOR SYSTEM

Revisions shown with ⚠ symbol

DRAWN BY:	JD
CHECKED BY:	IG
ISSUE DATE:	4/24/14
JOB #:	977465501
PROJECT #:	147:PRE-BOOKED

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SYSTEM: FIRE ALARM SYSTEM

SHEET: WIRING TYPICALS

FA-702

PRESS HOTEL
119 EXCHANGE ST
PORTLAND, ME

tyco Simplex Safer. Smarter. Tyco.™
DISTRICT - 147
20 THOMAS DRIVE
WESTBROOK, ME 04092
SERVICE: 207-842-6440
PHONE: 20
FAX: 20

Reviewed for Code Compliance
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Date: 04/03/15

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