DA383-IS Addressable Combined Detector with Isolator EN54-5/7/17
DA383 Combined Detector
DA381-IS Optical Smoke Detector with Built-in Isolator
DA381 Optical Smoke Detector
DA382-IS Heat Detector with Built-in Isolator
DA382 Heat Detector

SPECIFICATIONS

Operating Voltage Range:	16 to 30 VDC
Standby Current:	<200µA @ 24 VDC (every 8 seconds with LED blink enabled)
Maximum Alarm Current :	<4 mA @ 24 VDC (Led on)
Operating Humidity Range:	10% to 93% Relative Humidity, Non-condensing
Heat Class:	Class A1
Smoke Sensitivity:	0,23 dB/m
Operating Temperature Range:	-10°C to 50°C
Built-in Isolator Type:	Simple Self Current Sensing (Annex A.3)
Built-in Isolator Standby C.:	<150 µA @ 24 VDC
Built-in Isolator Switch Current:	230-400mA (Iso_{min} – Iso_{max})
Built-in Isolator Reconnect C.:	3 – 13 mA (Isc_{min} – Isc_{max})
Built-in Isolator Leakage C.:	<18mA
Serial resistance:	1 Ohm max
Height:	50 mm (installed with base)
Diameter:	100 mm
Weight:	105 grams

GENERAL DESCRIPTION

The detector is plug-in type photoelectic smoke sensor and thermistor with addressable analog communications. The sensor transmits an analog representation of smoke density and heat rise over a communication line to a control panel. Inside MCU's EEPROM keep the sensor's address that can be set by a portable Address setting device PP1201 Device Programmer. The detector can be given 1-250 address id.

DA383-IS Model is the same detector with added Isolator built in to DA383. The built-in isolator enables part of the communications loop to continue operating when a short circuit occurs on it. The module will automatically restore the entire communications loop to the normal condition when the short circuit is removed.

By the device programmer or by the programme setting from the panel, the smoke perception part of the detector or the heat perception of the detector can be disabled. When the smoke side disabled at factory default, the detector will work as only heat detector and the model number will be DA382-IS with isolator. When the heat perception side disabled at factory default, the detector will work as only smoke detector and the model number will be DA381-IS with isolator.

In order to cancel the built-in isolator, R1 and R3 resistors must be shorted by a solder machine by a technician. DA381(Smoke Detector), DA382(Heat Detector) and DA383(Combined Detector) models

are built-in isolator bypassed (shorted) factory default models.

The principal function of the optical smoke detector is based upon smoke particles entering the smoke chamber causing distraction of infrared rays within the chamber. This activates the photoreceiver and DA383 enters a fire condition. The activation threshold of the optical smoke sensor part is factory set at a specific smoke concentration level. The heat detector side is Class A1 (EN54-5) heat detector.

Upon activation The DA383 illuminates two red indicator through light guides, situated on the detector head. The two indicators provide 360° visibility. The Leds can be reset and extinguished by momentarily removing the power source.

INSTALLATION

The combined detector consists of two main parts: a base and a detector head. The latter consists of a circuit board and an optimized smoke detection chamber. The detector head is fixed on the base by the means of bayonet joints. When the detector head is placed on the base, make sure that the bench mark stands about 20mm before the respective bench mark on the base; then rotate clockwise to fix. The bench marks should fully coincide. The contacting plates are fixed to the base. The connection between the incoming wires and the contact plates is made by the provided screw terminals.

WIRING

The wiring should be done as shown in figure 1. Proper wire gauges should be used. The installation wires should be color-coded to limit wiring mistakes and ease system troubleshooting. Improper connections will prevent a system from responding properly in the event of a fire. The Loop negative line must be connected common and the Loop positive line has to be pass through Terminal 1 and 4 of the detector for the built in Isolator be in operation. By this connection if any short in any side of the loop will be cut by isolator without direction dependent. This connection diagramme is preferred for DA383-IS Combined , DA381-IS Smoke and DA382-IS Heat detector on the loop for short circuit prevention.
DA383 Combined detector Terminal 1 and Terminal 4 are shorted inside, so the installer can connect any terminal 1 or 2 to the loop line.

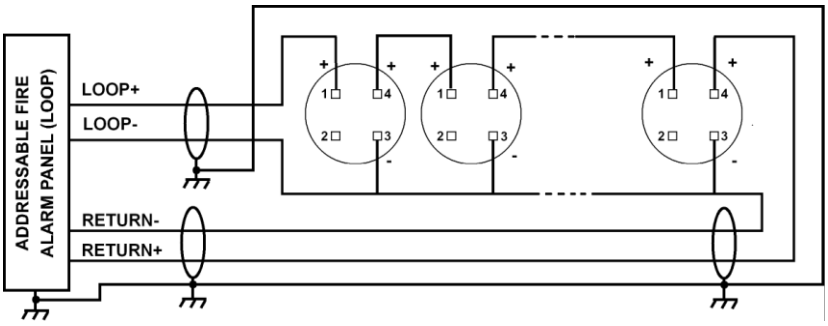

Figure 1- Wiring Connection for DA383-IS, DA381-IS and DA382-IS built in isolator detectors

Remove power from the communication line before installing sensors.
1. Wire the sensor base per the wiring diagram
2. Set the desired address by PP1201 Device Programmer portable address setting device.
3. Install the sensor into the sensor base. Push the sensor into the base while turning it clockwise to secure it in place.
4. After all sensors have been installed, apply power to the control unit and activate the communication line.
5. Test the sensor(s) as described in the TESTING section of this manual.
6. The Indicator connection has shown in figure 2.

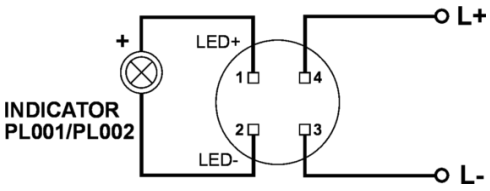

Figure-2 Led Indicator Connection

TESTING

Before testing, notify the proper authorities that the system is undergoing maintenance, and will temporarily be out of service. Disable the system to prevent unwanted alarms.
All sensors must be tested after installation and periodically thereafter.

The heat sensor can be tested in the following ways:
Direct Heat Method (Hair dryer of 1000 – 1500 watts)
1. From the side of the detector, direct the heat toward the sensor. Hold the heat source about 15cm away to prevent damage to the cover during testing.
2. The LEDs on the detector should light when the temperature at the detector reaches the alarm set point. If the LEDs fail to light, check the power to the detector and the wiring in the detector base.
3. Reset the detector at the system control panel.
Detectors that fail these tests should be cleaned as described under Maintenance and retested. If the detectors still fail these tests they should be returned for repair.

Smoke Entry test: Aerosol Generator OR Canned Aerosol Test.
An aerosol generator can be used for smoke entry testing. Set the generator to represent 4%/ft to 5%/ft obscuration as described aerosol generator manual. Using the bowl shaped applicator, apply aerosol until the panel alarms. Additionally, canned aerosol simulated smoke (canned smoke agent) may be used for smoke entry testing of the smoke detector. When used properly, the canned smoke agent will cause the smoke detector to go into alarm. Refer to the manufacturer's published instructions for proper use of the canned smoke agent.
A sensor that fails any of these tests should be cleaned as described under CLEANING, and retested. If the sensor fails after cleaning, it must be replaced.
When testing is complete, restore the system to normal operation and notify the proper authorities that the system is back in operation.
Before removing the detector, notify the proper authorities that the smoke detector system is undergoing maintenance and will be temporarily out of service. Disable the zone or system undergoing maintenance to prevent unwanted alarms.
1. Remove the sensor to be cleaned from the system.
2. Remove the sensor cover by pressing firmly on each of the four removal tabs that hold the cover in place.
3. Vacuum the screen carefully without removing it. If further cleaning is required continue with Step 4, otherwise skip to Step 7.
4. Remove the chamber cover/screen assembly by pulling it straight out.
5. Use a vacuum cleaner or compressed air to remove dust and debris from the sensing chamber.

6. Reinstall the chamber cover/screen assembly by sliding the edge over the sensing chamber. Replace the cover using the LEDs to align the cover and then gently pushing it until it locks into place.
7. Reinstall the detector.
8. Test the detector as described in Testing.
9. Reconnect disabled circuits.
10. Notify the proper authorities that the system is back on line.

MAINTENANCE

NOTE: Before cleaning notify the proper authorities that the system is undergoing maintenance, and therefore the system will temporarily be out of service. Disable the loop or system undergoing maintenance to prevent unwanted alarms.
It is recommended that the sensor be removed from its mounting base for easier cleaning and that sensors be cleaned at least once a year. Use a vacuum cleaner to remove dust from the sensing chamber.

TWO-YEAR LIMITED WARRANTY

We warrant its enclosed module to be free from defects in materials and workmanship under normal use and service for a period of two years from date of manufacture. We make no other express warranty for this module. No agent, representative, dealer, or employee of the Company has the authority to increase or alter the obligations or limitations of this Warranty. The Company's obligation of this Warranty shall be limited to the repair or replacement of any part of the module which is found to be defective in materials or workmanship under normal use and service during the two year period commencing with the date of manufacture. After calling Redban technical support number for a Return Authorization number, send defective units postage prepaid to Redban local representative office. Please include a note describing the malfunction and suspected cause of failure. The Company shall not be obligated to repair or replace units which are found to be defective because of damage, unreasonable use, modifications, or alterations occurring after the date of manufacture. In no case shall the Company be liable for any consequential or incidental damages for breach of this or any other Warranty, expressed or implied whatsoever, even if the loss or damage is caused by the Company's negligence or fault. This Warranty gives you specific legal rights.