

Description

The MIX-4010-DUCT is a feature-rich and addressable photoelectric smoke duct detector designed to detect smoke in the air duct system. It comes equipped with an intelligent smoke detector head (MIX-4010-D) that continuously checks air obscuration and reports it to the FACU by using the MGC MP Protocol.

The air velocity rating ranges from 300ft/min to 4,000 ft/min, which allows it to be used in a variety of settings. The MIX-4010-DUCT can also adjust to multiple mounting configurations using a flexible mounting bracket (ordered separately) making it simple and easy to install. It also comes with a test port that provides functional smoking testing access with cover in place.

To aid visual inspection, the MIX-4010-DUCT has a clear and transparent cover that allows visibility of different LED colors on the Smoke detector to identify alarms and troubles. It uses a one-pipe sampling tube which provides sampling and exhaust in the same tube; no need to cut multiple holes in the duct. Its sampling tubes have been designed to use dual outflows at optimal points of separation to detect smoke at very low duct air velocities, this is called Venturi effect. The device accommodates multiple sampling tube lengths, making it suitable for all duct widths. The duct smoke detector housing is designed to optimize air flow, ensuring accurate detection. When cleaning is required, the assembly comes apart easily and snaps back together in seconds.

The detector is addressed and programmed using the MIX-4090 hand-held device. Addresses can be selected from a range of 1 -240. The MIX-4010-DUCT is compatible with 4000N and 400 Series FACUs.

Features

- Smoke Detector head included.
- Air velocity rating from 300ft/min to 4,000 ft/min
- Clear cover allowing visual inspection.
- The Duct Smoke Detector housing is designed to optimize the air flow on the smoke detector.
- Venturi effect on sampling tubes allows smoke detection at very low duct air velocities.
- The unique installer friendly one-pipe design ensures correct operation for air sampling inflow and outflow.
- Multiple sampling tube options that fit on a wide range of duct widths
- Adjusts to multiple mounting configurations using a flexible mounting bracket.
- Simple and Easy installation
- Compatible with 4000N and 400 Series FACUs
- Sensor is easily addressed through the hand-held device programmer (MIX-4090)
- Relay contact option through the FACU
- Multi-function status LED indicators for Alarm and Trouble conditions.
- Remote LED indicator function
- Advanced customizable remote test function.
- Test port provides functional smoke testing access with cover in place.

Remote Test Function: Once the MIX-4010-DUCT is connected to a FACU, a correlation to a switch is configured for the duct smoke detector to be tested. This switch can be a remote or local input to the panel. The switch action must be correlated to the self-test operation of that specific MIX-4010-DUCT. When the correlated switch is activated, the MIX-4010-DUCT is commanded through the panel to enter its self-test mode. This self-test mode allows the user to set the detector into alarm remotely during the period the switch is activated, the detector LED and its remote LED will be activated. In this way, the tester can confirm that the MIX-4010-DUCT is fully functional.

Warning: This detector is not intended as a substitute for open area protection. MIX-4010-DUCT is for use only with model MIX-4010-D detector head.



Specifications

Normal Operating Voltage	15 to 30 VDC
Maximum Alarm Current (LED on)	3.2 mA (LED on)
Standby Current:	160 μ A (LED flashing)
Nominal Sensitivity range	1.52% ft – 2.05% ft
Duct Air velocity	300 – 4,000 ft/min
Operating Temperature Range	32°F to 100°F (0°C to 37.8°C)
Dimensions	279 mm x 165 mm x 83 mm (11" x 6.5" x 3.3")
Weight	0.84 kg (1.85 lb)
Wiring range on all terminals	24 to 12 AWG

Installation: For complete installation instructions refer to LT-6744 User Manual

Note: Do not mount MIX-4010-DUCT in locations where it could be affected by condensation, such as attics or outdoors. Install MIX 4010-DUCT in air duct systems with air velocities of 300 to 4000 feet per minute. Use a velocity meter (anemometer) to measure the air velocity in the duct. MIX-4010-DUCT can be installed in ducts with widths from 6 inches to 9 feet.

1. Determine Mounting location:

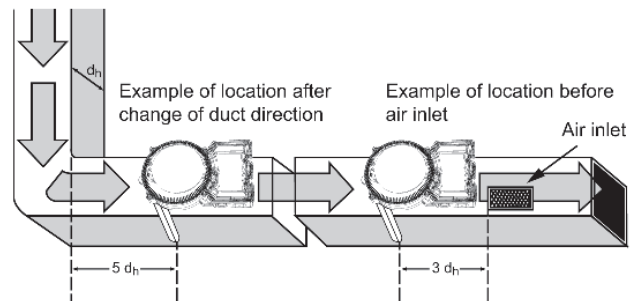
Install MIX-4010-DUCT pointing towards the direction of air flow as shown in figure 1. The MIX-4010-DUCT can be installed on any side of the duct.

Note: To gain maximum air sampling coverage in rectangular ducts, install the MIX-4010-DUCT on the shortest side. MGC recommends that the MIX-4010-DUCT is mounted at 3 times the duct diameter before a damper, filter or change of the duct direction, and 5 times the diameter after these devices. See figure 2.

FIGURE 1: Install the detector pointing towards the air flow direction



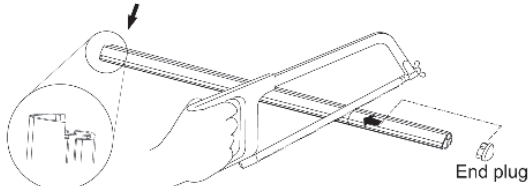
FIGURE 2: Examples of placement



2. Mount the Detector on the duct:

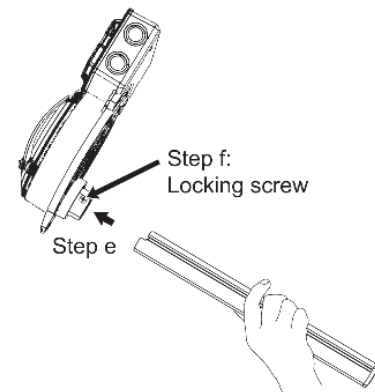
- If you are not using a mounting bracket, drill a 1 1/2" (38mm) hole where the detector is to be mounted.
- If you are using the mounting bracket DUCT-MB, drill a 2" (51mm) hole where the detector is to be mounted.
- Measure the diameter of the duct. The sampling tube should penetrate approximately 90% of the width of the duct. See table 1.
- If needed, shorten the sampling tube and insert the end plug. See figure 3.

FIGURE 3: Shorten the sampling tube
Do NOT cut this end!



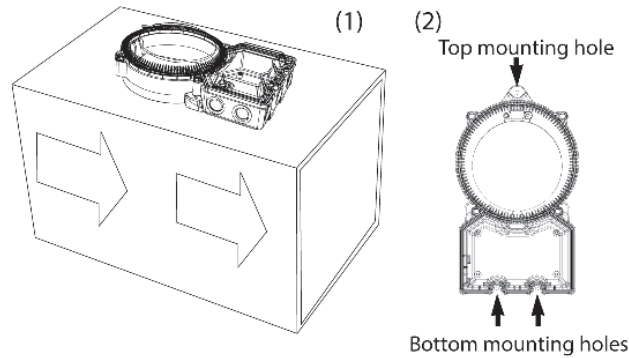
- Insert the sampling tube in the bottom of the MIX-4010-DUCT. See figure 4.
- Secure the sampling tube by fastening the locking screw.

FIGURE 4: Insert the sampling tube



- g) Insert the sampling tube in the duct (figure 6-1) and secure the MIX-4010-DUCT to the duct using the three provided metal screws.

FIGURE 6: Secure the duct detector to the duct



3. Installation of sampling tube longer than 2 feet

When the duct diameter is greater than 2 feet (0.6m), the sampling tube should penetrate the whole duct.

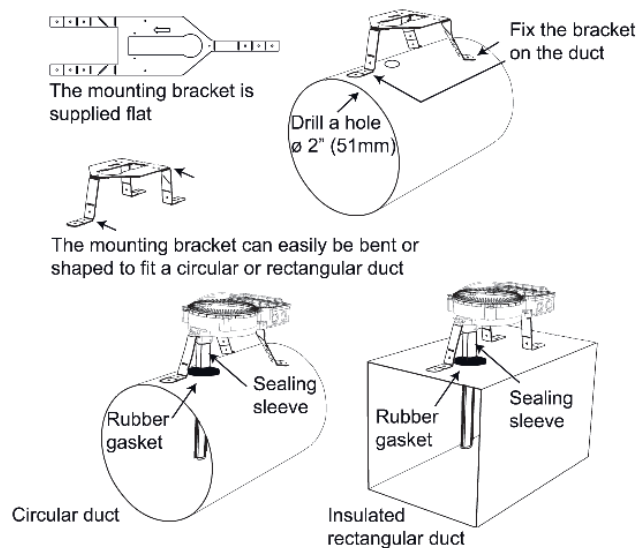
- Drill a 2" (51mm) hole in the side of the duct opposite the detector.
- Place the rubber gasket DUCT-RG (included with DUCT-ST5) in the hole.
- Place the plastic end plug (included with DUCT-ST5) on the end of the sampling tube as shown in figure 8.

The sampling tube must not protrude more than 1 3/16" (30mm) through the duct wall.

4. Mounting bracket for circular or insulated rectangular ducts:

The mounting bracket can be used on ducts with diameters as small as 4" (100mm). The mounting bracket is supplied with rubber gasket and sealing sleeve.

FIGURE 9: Mounting Bracket



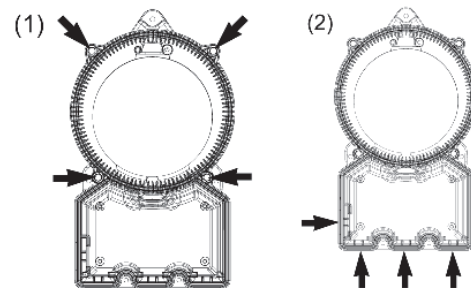
5. Field Wiring

See specifications for the wiring gauge. Seek guidance from the compatible control panel instructions for wiring requirements for the SLC (signaling line circuit).

6. Conduit entries and wiring

- Disconnect the loop power.
- Remove the four screws and the enclosure cover. See figure 10-1

FIGURE 10: Screws securing the cover and cable openings



The MIX-4010-DUCT has one cable opening and provision for 3 more. See figure 10-2.

- Remove one of the three round knockouts and insert a cable gland if you need more than one opening. If you do not use a cable opening, close it properly.
- Connect the cables according to the wiring shown in figure 11 and figure 12.
- Secure the cover on the enclosure with the four screws.

FIGURE 11: Detector wiring

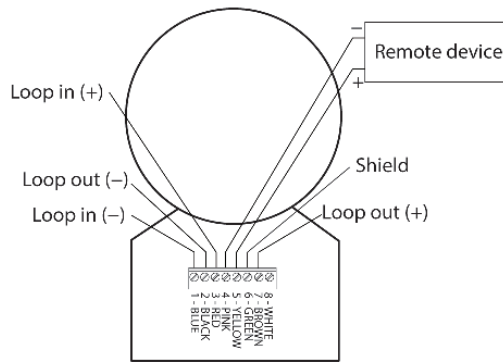
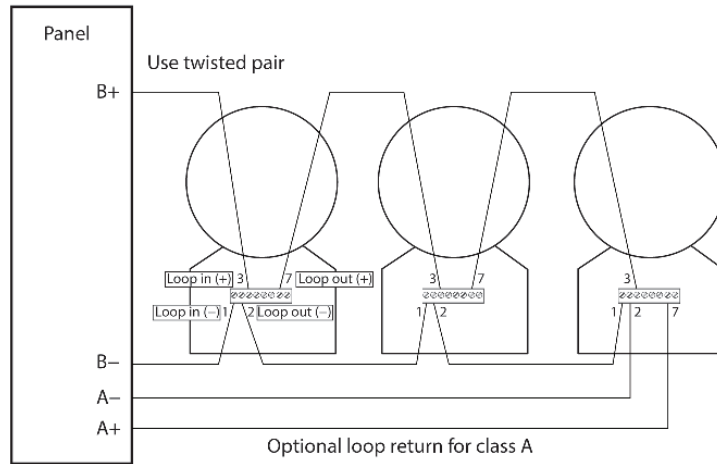


FIGURE 12: Loop wiring



Ordering Information

Model	Description
MIX-4010-DUCT	4000 Series Intelligent Photoelectric Duct Smoke Detector UL, ULC (Includes detector head)
DUCT-ST1	Sampling Tube width up to 1ft (0.3 m) for MIX-4010-DUCT
DUCT-ST2	Sampling Tube widths 1ft to 2 ft (0.6m) for MIX-4010-DUCT
DUCT-ST5	Sampling Tube widths 2ft to 5 ft (1.5 m) for MIX-4010-DUCT
DUCT-EXTEND	Sampling Tube Extension (3.5 ft) for MIX-4010-DUCT
DUCT-MB	Mounting bracket for MIX-4010-DUCT
DUCT-RG	Rubber gasket for MIX-4010-DUCT (Pack of 10 units)
MIX-4010-D	4000 Series Non-Isolated Photoelectric Duct Detector Sensor head (Sold for replacement only)
MIX-4090	4000 Series Addressable Programmer



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