D285DH

Fire Systems

EN

Installation Instructions

Photoelectric Duct Smoke Detector

BOSCH

FCC Notice

The D285DH Photoelectric Duct Smoke Detector complies with Part 15 of the Federal Communication Commission (FCC) Rules. Operation is subject to the following conditions:

- The detector might not cause harmful interference.
- The detector must accept any interference received, including interference that can cause undesirable operation.

Changes or modifications not expressly approved by Bosch can void the user's authority to operate the D285DH detector.

1.0 Introduction

The D285DH is a UL Listed detector designed for use with commercial fire protective signaling systems and household fire warning systems. Refer to the National Fire Alarm Code (NFPA 72).

When properly installed using the D285 Series Dectectors, tamper protection is provided by the positive power line in/out wiring. This causes the control to initiate a trouble signal when a detector is removed from its base. The master control provides two-wire system supervision. An end-of-line (EOL) resistor, specified by the control manufacturer, provides four-wire supervision.

2.0 Specifications

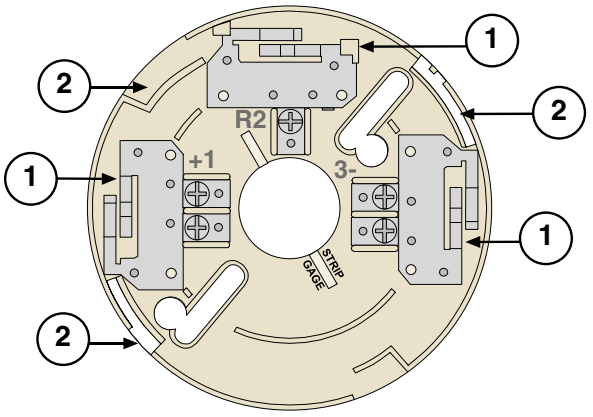
Table 1: Specifications

Description	Only requires a base. "B" is the UL compatibility identifier. Refer to the *Two-Wire Smoke Detector Compatibility Technical Service Note* (P/N: 31866) to determine the identifier used with the D340 Series Duct Housing.
Operating Temperature	+32°F to +100°F (0°C to +38°C) 0 to 95% relative humidity (non-condensing)
Voltage and Current	Refer to the *D340 Duct Detector Installation Instructions* (P/N: 48188) and the *D341/D342 Duct Detector Installation Instructions* (P/N: 48196) for voltage and current.
Power-up Time	22 sec maximum
Compatible Control Panels	**Two-wire:** Refer to the *Two-Wire Smoke Detector Compatibility Technical Service Note* (P/N: 31866). **Note: Bosch makes no claim written, oral, or implied the D285DH works with any two-wire control panels except those specified in the *Two-Wire Smoke Detector Compatibility Technical Service Note* (P/N: 31866).** **Four-wire:** Compatible with all UL Listed four-wire control panels. Refer to the manufacturer's installation instructions for proper EOL resistor selection.

3.0 Mounting

1. Before mounting, remove the dust cover from the detector.
2. Mount the duct housing according to the manufacturer's instructions.
3. Mount the detector on the base by turning it clockwise until it clicks into place (*Figure 1*).

Figure 1: Mounting the Base



1 - Base contacts (three sets)

2 - Start the detector contacts at these three places and rotate the base clockwise.

The D285DH is keyed. Do not force a detector onto its base.

4.0 Testing

1. Check the wiring from the control panel to the last head on each run for proper polarity and continuity.

   Ensure each run terminates with an EOL resistor as specified by the control panel manufacturer.
2. Apply power to the system. Check for alarms and troubles.
   a. Note which detectors are in alarm (if any) and shut down the system.
   b. Remove these detectors from their bases and recheck the bases for proper wiring. If the problems persist, replace the affected detectors or swap them with known good units. This determines if the problem is caused by the detector or the base.
   c. In a system alarm with no detector alarms, remove all detectors and check the wiring at each base. Pay close attention to the wiring of each EOL resistor.
3. When the system is free of alarms, check each detector to ensure the red LED head indicator flashes approximately every 4 sec. This verifies the detector is receiving power and operating properly.
4. Test each detector to ensure it will cause a control panel alarm. This is the only way to ensure proper operation. Alarm the detector in on of the following methods:
   a. If the duct housing cover is in position, place a magnet horizontally against the recess in the cover to activate an internal reed switch.
   b. With duct housing cover removed, use a UL Listed aerosol smoke detector tester, such as the Home Safeguard Industries' 25S to simulate an alarm. Follow the aerosol smoke detector tester manufacturer's instructions.

When a detector alarms, the red LED head indicator activates and latches in the ON position. Clear the alarm before proceeding to the next detector.

5. Check the overall alarm loop loading by measuring the voltage across each EOL resistor. The voltage should equal or exceed the minimum specified by the control panel's manufacturer.

5.0 Maintenance

Notify all concerned parties before any fire alarm system maintenance or testing and again after test completion.

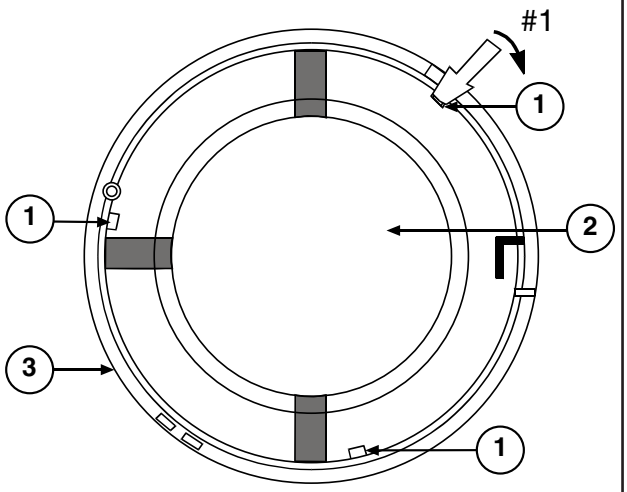
At least once a year clean the detector and base using a vacuum or clean/dry compressed air paying particular attention to the screens. In dusty areas or areas of heavy insect concentration, cleaning might be required more often.

To clean the detectors:

1. Remove the duct housing cover.
2. Remove the detector from its base.
3. Clean both the base and cover with a clean cloth and common window cleaner.
4. Remove the detector's cover.

   Use a thin, flathead screwdriver to pry the chassis from the cover. Then insert the screwdriver into the cover slots and pry up (refer to *Item 1* in *Figure 2*).

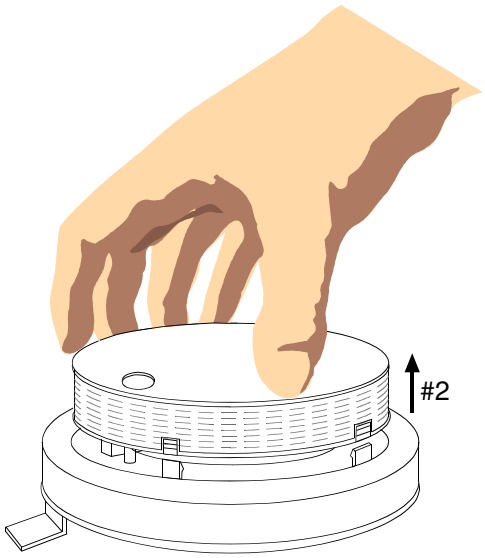
Figure 2: Removing the Detector's Cover



1 - Cover slots (3)
2 - Detector chassis
3 - Cover

5. Gently pry the cover tab away from the chamber cover. Then pull the chamber cover up and away from the chamber (refer to *Item 2* in *Figure 3*).

Figure 3: Removing the Detector Chamber Cover



6. Remove dust and debris from the chassis area using clean, dry compressed air or a vacuum.
7. Replace the chamber to ensure the hole for the LED is properly aligned over the LED.

   Align by placing the chamber parallel to the chassis and gently snapping the locking tabs into place.
8. Replace the detector's cover carefully lining up the holes for the LED and thermistor.
9. Return the detector to its base.
10. Place duct housing cover on the detector.

After cleaning, test the detector for proper calibration using one of the tests described in *Section 6.0 Periodic Tests* on page 5.

Do not paint the detector. Paint or other foreign matter covering the screen can prohibit or retard smoke from entering the detector.

6.0 Periodic Testing

Calibration is very important in determining the detector's continued operation. Depending on local regulations, the frequency of calibration testing might be required more than once a year. NFPA Standard 72 recommends a calibration test at installation and every other year thereafter. Perform functional testing annually.

Notify all concerned parties before any fire alarm system maintenance or testing and again after test completion.

To meet NFPA 72 requirements, check calibration using any of the tests described in *Section 6.1 Visual Check* through *Section 6.3 Voltage Measurement Test*. These tests confirm whether or not the detector is within its factory-marked calibration range.

6.1 Visual Check

The D285DH includes the Chamber Check Automatic Trouble Indication, allowing it to automatically indicate if its calibration is out of the factory-listed range. Visually inspecting the D285DH and checking the LED flash rate meets the NFPA guidelines for sensitivity testing.

If the calibration is out of range for more than 24 h, the D285DH alarm LED flashes once per second. The LED flashes once every 4 sec when the detector is operating normally.

Visually check all detectors before resetting the power. Disconnecting the power erases this indication. If the detector was reset within the last 24 h, or you are unsure of the last reset time, perform the Magnet Test or Voltage Measurement Test to confirm sensitivity.

6.2 Magnet Test

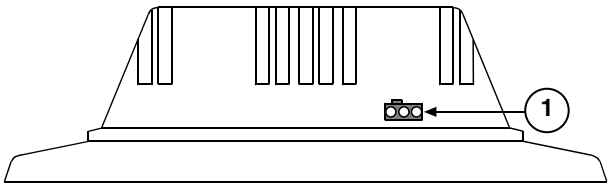
Place a magnet horizontally against the recess in the duct housing cover and observe the LED.

- If the detector is within the factory-marked calibration range, it goes into alarm and the Alarm LED latches ON.
- If the detector is too sensitive, the LED on the head flashes six times rapidly (once every 1/2 sec). Then the detector goes into alarm.
- If the detector is not sensitive enough, the LED on the head flashes four times slowly (once every 2 sec). Then the detector goes into alarm.
- If the detector is not operational, it does not signal an alarm.

6.3 Voltage Measurement Test

1. Plug a D1005 Test Cable (optional) into the calibration voltage pins (*Figure 4*).

Figure 4: Calibration Voltage Pins



1 - Calibration voltage pins

2. Connect a digital voltmeter to the D1005 Test Cable.
3. Connect the meter's negative terminal to the D1005's black wire and connect the meter's positive terminal to the test cable's red wire. The white wire of the D1005 is not used.
4. If a D344-RT or D344-RL is installed, use voltage monitor jacks. The voltage measured by the voltmeter equals 1/2 the detector's sensitivity (in %/ft obscuration).

   Multiply the voltage by 2. The result should be within the factory-marked calibration range that is printed on the label attached to the bottom of the detector.
5. If the detector is outside of the factory marked calibration range, remove it and clean it as described in *Section 5.0 Maintenance* on page 4.
6. Recheck the calibration voltage measurement.
7. If the detector remains outside the factory-marked calibration range after cleaning, return it to Bosch for re-calibration.

Notes

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