



BOSCH
Invented for life

D273 Series Photoelectric Smoke and Smoke and Heat Detectors



- ▶ 12 VDC or 24 VDC input
- ▶ Designed for commercial or residential use
- ▶ Four-wire application
- ▶ Light-emitting diodes (LEDs) indicate the status of the chamber, power, and alarm
- ▶ Removable terminal block to simplify wiring connections
- ▶ Cable connection point for voltmeter sensitivity test
- ▶ Trim Plate TP280 for retrofit and remodeling purposes

The D273 Series includes the following detector models:

Model	Description
D273	Four-wire
D273ES*	Four-wire with sounder and end-of-line (EOL) relay
D273IS*	Four-wire with an isolated 135°F (57°C) heat sensor and sounder
D273TH	Four-wire with 135°F (57°C) heat sensor
D273THC	Four-wire with 135°F (57°C) heat sensor and auxiliary relay
D273THCS*	Four-wire with 135°F (57°C) heat sensor, auxiliary relay, and sounder
D273THE	Four-wire with 135°F (57°C) heat sensor and EOL relay
D273THR	Four-wire with 135°F (57°C) heat sensor and trouble relay
D273THS*	Four-wire with 135°F (57°C) heat sensor and sounder
D273THES*	Four-wire with 135°F (57°C) heat sensor, sounder, and EOL relay
D273THSR*	Four-wire with 135°F (57°C) heat sensor, sounder, and trouble relay

* Sounders produce 85 dB at 10 ft (3 m).

Each of the D273 Series Detector models is UL Listed and works with commercial fire protective signaling and household fire warning systems. Each model detects smoke particles produced during wood, paper, and fabric combustion.

System Overview

The D273 Series Detector models use an infrared (IR) LED light source and a silicon photodiode to measure light in a chamber. A fine screen covers the chamber to deter insects and reduce dust accumulation and nuisance alarms. During a fire, smoke particles reflect light onto the photodiode. When the photodiode measurements exceed the alarm threshold, the detector signals an alarm condition. After the alarm condition clears, interrupt power at the control panel to reset the detector. When a D132B Reversing Relay Module is used, the LED does not latch on alarm.

Functions

Chamber Calibration Tests

Check the sensitivity and calibration of any D273 Series Detector model using a visual check, a magnet test, or a voltage measurement test.

Visual check: When the detector's calibration is within the factory-listed range, the red alarm LED flashes once every 3.5 sec.

If the detector's calibration is out of range for more than 24 h, the red alarm LED flashes once a second.

Magnet test:

Hold a magnet horizontally against the detector for about 10 sec and observe the LED.

- If the detector is within the factory-listed calibration range, it goes into alarm and the Alarm LED latches on.
- If the detector is too sensitive, the LED rapidly flashes six times (once every half second) and the detector goes into alarm.
- If the detector is not sensitive enough, the LED slowly flashes four times, once every 6 seconds, and the detector goes into alarm.
- If the detector does not operate, it does not signal an alarm.

Voltage measurement test:

Use a D1005 Test Cable and a digital voltmeter to measure the voltage and compare the results with the factory-listed sensitivity range.

Certifications and Approvals

Listings and Approvals:	UROX: Smoke - Automatic Fire Detectors (UL268)
	UROX7: Smoke - Automatic Fire Detectors certified for Canada (S529)
	c-UL-us
	CSFM: 7272-1615: 134
	NYC/MEA: 274-93-E, Vol. VII

Installation/Configuration Notes

Use smoke detectors for detection circuits that protect people. Use heat detectors for circuits that protect property.

Compatible Products

The following products are compatible with the D273 Series detectors:

Category	Product ID	Product Description
Control Panels		The D273 Series Detector models are compatible with UL Listed four-wire control panels. Refer to the manufacturer's installation instructions to select the correct EOL resistor.
Modules	D132B	Reversing relay module

Loop Supervision

For loop supervision, install a Bosch Security Systems D275 Power Supervision Module and an EOL resistor after the last device on the loop.

Mounting

The detector has a mounting plate that attaches to a standard four-inch back box.

For commercial and industrial installations in accordance with NFPA 72, space each detector 30 ft (9.2 m) apart.

Wiring

The terminal block accepts up to 12 AWG (2.3 mm) wire. You can remove the terminal block from the detector for easier wiring. The terminal block snaps in and out of the detector.

Parts Included

Quant.	Component
1	Detector
1	Literature pack

Technical Specifications

Environmental Considerations

Relative Humidity:	Up to 93%, non-condensing
Operating and Storage Temperature:	+32°F to +120°F (0°C to +40°C)
Radio Frequency Interference (RFI) Immunity	No alarm or setup on critical frequencies in the range of 26 MHz to 950 MHz.

Mechanical Properties

Dimensions (Diameter x H):	5 in. x 2 in. (12.7 cm x 5.1 cm)
Material:	High impact, fire retardant ABS plastic

Power Requirements

Power-up Time:	22 sec maximum
RMS Ripple:	25% of DC input maximum
Voltage (stand-by):	10 VDC to 30 VDC

Current Draw (alarm) at 30 VDC

D273, D273TH:	18 mA maximum
D273THC:	33 mA maximum
D273THE, D273THR:	36 mA maximum
D273THS:	78 mA maximum
D273THCS:	90 mA maximum
D273ES, D273THES, D273THSR:	96 mA maximum
D273IS:	100 mA maximum

Current Draw (standby)

D273, D273TH, D273THC, D273THCS, D273THS:	0.1 mA maximum
D273IS:	0.14 mA maximum
D273ES, D273THE, D273THES, D273THSR:	15 mA
D273THR:	18 mA maximum

Ordering Information

D273 Four-Wire Smoke Detector	D273
D273ES Four-Wire Smoke Detector with EOL Relay and Sounder	D273ES
D273IS Four-Wire Smoke Detector with Isolated Heat Sensor and Sounder	D273IS
D273TH Four-Wire Smoke/Heat Detector	D273TH
D273THC Four-Wire Smoke/Heat Detector with Auxiliary Relay	D273THC
D273THCS Four-Wire Smoke/Heat Detector with Auxiliary Relay and Sounder	D273THCS

Ordering Information

D273THE Four-Wire Smoke/Heat Detector with EOL Relay	D273THE
D273THES Four-Wire Smoke/Heat Detector with EOL Relay and Sounder	D273THES
D273THR Four-Wire Smoke/Heat Detector with Trouble Relay	D273THR
D273THS Four-Wire Smoke/Heat Detector with Sounder	D273THS
D273THSR Four-Wire Smoke/Heat Detector with Sounder and Trouble Relay	D273THSR

Accessories

D275 Power Supervision Module	D275
D1005 Test Cable	D1005
DT-2 Detector Removal Tool	DT-2
TP280 Trim Plate	TP280

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