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# 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 <sup>1</sup>	Four-wire with sounder and end-of-line (EOL) relay
D273IS <sup>1</sup>	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 <sup>1</sup>	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 <sup>2</sup>	Four-wire with 135°F (57°C) heat sensor and trouble relay
D273THS <sup>1</sup>	Four-wire with 135°F (57°C) heat sensor and sounder
D273THES <sup>1</sup>	Four-wire with 135°F (57°C) heat sensor, sounder, and EOL relay
D273THSR <sup>1,2</sup>	Four-wire with 135°F (57°C) heat sensor, sounder, and trouble relay

<sup>1</sup> Sounders produce 85 dB at 10 ft (3 m).

<sup>2</sup> The trouble relay indicates both Dirty Smoke Chamber and/or Power Loss conditions.

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. Refer to the *D263/D273 Series Installation Guide* (P/N: 31341) for specific instructions to perform these sensitivity tests.

## Certifications and Approvals

Region	Certification	
USA	UL	UROX: Smoke - Automatic Fire Detectors (UL268 and A), UROX7: Smoke - Automatic Fire Detectors Certified for Canada (cULus)
	CSFM	7272-1615: 134
	NYC-MEA	274-93-E, Vol. VII
	MSFM	
Hong Kong	HKFSD	D273ES, D273IS, D273THC, D273THCS, D273THE, D273THES, D273R, D273S, and D273THSR only

## 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**

<b>D273 Four-Wire Smoke Detector</b> Four-wire smoke detector.	<b>D273</b>
<b>D273ES Four-Wire Smoke Detector with EOL Relay and Sounder</b> Four-wire smoke detector with a sounder and an EOL relay.	<b>D273ES</b>
<b>D273IS Four-Wire Smoke Detector with Isolated Heat Sensor and Sounder</b> Four-wire smoke detector with an isolated 135°F (57°C) heat sensor and a sounder.	<b>D273IS</b>
<b>D273TH Four-Wire Smoke/Heat Detector</b> Four-wire smoke detector with a 135°F (57°C) heat sensor.	<b>D273TH</b>
<b>D273THC Four-Wire Smoke/Heat Detector with Auxiliary Relay</b> Four-wire smoke detector with an isolated 135°F (57°C) heat sensor and an auxiliary relay.	<b>D273THC</b>
<b>D273THCS Four-Wire Smoke/Heat Detector with Auxiliary Relay and Sounder</b> Four-wire smoke detector with a 135°F (57°C) heat sensor, an auxiliary relay, and a sounder.	<b>D273THCS</b>
<b>D273THE Four-Wire Smoke/Heat Detector with EOL Relay</b> Four-wire smoke detector with a 135°F (57°C) heat detector and an EOL relay.	<b>D273THE</b>
<b>D273THES Four-Wire Smoke/Heat Detector with EOL Relay and Sounder</b> Four-wire smoke detector with a 135°F (57°C) heat sensor, a sounder, and an EOL relay.	<b>D273THES</b>
<b>D273THR Four-Wire Smoke/Heat Detector with Trouble Relay</b> Four-wire smoke detector with a 135°F (57°C) heat sensor and a trouble relay.	<b>D273THR</b>
<b>D273THS Four-Wire Smoke/Heat Detector with Sounder</b> Four-wire smoke detector with a 135°F (57°C) heat sensor and a sounder.	<b>D273THS</b>
<b>D273THSR Four-Wire Smoke/Heat Detector with Sounder and Trouble Relay</b> Four-wire smoke detector with a 135°F (57°C) heat sensor, a sounder, and a trouble relay.	<b>D273THSR</b>

**Accessories**

<b>D275 Power Supervision Module</b> Line supervision device for four-wire fire detection circuits	<b>D275</b>
<b>D1005 Test Cable</b> Connects a digital voltmeter to the detector's calibration pin for verifying that the detector is within its calibration range	<b>D1005</b>
<b>DT-2 Detector Removal Tool</b> Use the DT-2 to remove, replace, or test the detector head	<b>DT-2</b>

**Ordering Information**

<b>TP280 Trim Plate</b> For retrofit and remodeling purposes; 16.2 cm (6 in.) diameter	<b>TP280</b>
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**Americas:**

Bosch Security Systems, Inc.  
130 Perinton Parkway  
Fairport, New York, 14450, USA  
Phone: +1 800 289 0096  
Fax: +1 585 223 9180  
security.sales@us.bosch.com  
www.boschsecurity.us

**Europe, Middle East, Africa:**

Bosch Security Systems B.V.  
P.O. Box 80002  
5600 JB Eindhoven, The Netherlands  
Phone: +31 40 2577 284  
Fax: +31 40 2577 330  
emea.securitysystems@bosch.com  
www.boschsecurity.com

**Asia-Pacific:**

Robert Bosch (SEA) Pte Ltd, Security Systems  
11 Bishan Street 21  
Singapore 573943  
Phone: +65 6258 5511  
Fax: +65 6571 2698  
apr.securitysystems@bosch.com  
www.boschsecurity.com

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