D273 Photoelectric Smoke and Smoke and Heat Detectors

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BOSCH
Invented for life

► 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

The D273 Family includes the following detector models:

Model	Description
D273	Four-wire
D273IS[1]	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[1]	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[2]	Four-wire with 135°F (57°C) heat sensor and trouble relay
D273THS[1]	Four-wire with 135°F (57°C) heat sensor and sounder
D273THES[1]	Four-wire with 135°F (57°C) heat sensor, sounder, and EOL relay

[1] Sounders produce 85 dB at 10 ft (3 m).

[2] The trouble relay indicates both Dirty Smoke Chamber and/or Power Loss conditions.

Each of the 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

These 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 of these detectors using a visual check, a magnet test, or a voltage measurement test. Refer to the *D263/D273 Families Installation Guide* 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	see our website
	NYC-MEA	274-93-E, Vol. VII
	MSFM	
Hong Kong	HKFSD	J-005/C/023

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 Family detectors:

Category	Product ID	Product Description
Control Panels		These 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 (ISO 2.5 mm^2) 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 – Installation Manual, Technical Service Note on installation

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
D273THES:	96 mA maximum
D273IS:	100 mA maximum

Current Draw (standby)

D273, D273TH, D27THC, D273THCS, D273THS:	0.1 mA maximum
D273IS:	15 mA
D273THE, D273THES:	15 mA
D273THR:	18 mA maximum

Ordering information

D273 Four-Wire Smoke Detector
Four-wire smoke detector.
Order number **D273**

D273IS Four-Wire Smoke Detector with Isolated Heat Sensor and Sounder
Four-wire smoke detector with an isolated 135°F (57°C) heat sensor and a sounder.
Order number **D273IS**

D273TH Four-Wire Smoke/Heat Detector
Four-wire smoke detector with a 135°F (57°C) heat sensor.
Order number **D273TH**

D273THC Four-Wire Smoke/Heat Detector with Auxiliary Relay
Four-wire smoke detector with an isolated 135°F (57°C) heat sensor and an auxiliary relay.
Order number **D273THC**

D273THCS Four-Wire Smoke/Heat Detector with Auxiliary Relay and Sounder
Four-wire smoke detector with a 135°F (57°C) heat sensor, an auxiliary relay, and a sounder.
Order number **D273THCS**

D273THE Four-Wire Smoke/Heat Detector with EOL Relay
Four-wire smoke detector with a 135°F (57°C) heat detector and an EOL relay.
Order number **D273THE**

D273THES Four-Wire Smoke/Heat Detector with EOL Relay and Sounder
Four-wire smoke detector with a 135°F (57°C) heat sensor, a sounder, and an EOL relay.
Order number **D273THES**

D273THR Four-Wire Smoke/Heat Detector with Trouble Relay
Four-wire smoke detector with a 135°F (57°C) heat sensor and a trouble relay.
Order number **D273THR**

D273THS Four-Wire Smoke/Heat Detector with Sounder
Four-wire smoke detector with a 135°F (57°C) heat sensor and a sounder.
Order number **D273THS**

Accessories

D275 Power Supervision Module
Line supervision device for four-wire fire detection circuits
Order number **D275**

D1005 Test Cable
Connects a digital voltmeter to the detector's calibration pin for verifying that the detector is within its calibration range
Order number **D1005**

DT-2 Detector Removal Tool
Use the DT-2 to remove, replace, or test the detector head
Order number **DT-2**

TP280 Trim Plate
For retrofit and remodeling purposes; 16.2 cm (6 in.) diameter
Order number **TP280**