


**BOSCH**

Invented for life

# D285DH Photoelectric Duct Smoke Detector Head (12 VDC or 24 VDC)



- ▶ **Commercial or residential applications**
- ▶ **Two-wire or four-wire application, depending on base**
- ▶ **Chamber Check rapid-flash LED Automatic Trouble Indication reports contaminated chamber**
- ▶ **Flashing LED power indicator**
- ▶ **Steady-On LED alarm indicator**
- ▶ **Modular design**

The D285DH duct detector head detects the large smoke particles which typically result from wood, paper, and fabric combustion.

The detector is part of a two component system: the duct detector housing and the duct detector head. The housing is permanently attached on the duct. The interchangeable duct detector head quickly detaches for replacement and cleaning without affecting circuit wiring. The D285DH duct detector head attaches to the following duct detector housings:

- D340 Two-wire Duct Detector Housing (12 VDC or 24 VDC)
- D341 Four-wire Duct Detector Housing (24 VDC or 120 VAC)
- D342 Four-wire Duct Detector Housing (24 VDC or 220/240 VAC)

## Functions

### Detection chamber operation

The D285DH smoke detector uses an infrared (IR) LED light source and a silicon photodiode to measure light in a chamber. In normal conditions the light is absorbed in the chamber. The presence of a significant number of particulates allows the light to reflect to the photodiode. After three consecutive measurements exceeding the

basic level, the unit signals an alarm condition. The detector can be reset from the panel, after an alarm condition is cleared, by interrupting power.

The detection chamber, designed for reliable smoke entry characteristics, is protected by a micro-fine insect screen to reduce dust accumulation and insect penetration and minimize nuisance alarms.

### Chamber Check Feature

To further reduce nuisance alarms, the D285DH head checks its calibration. This Chamber Check feature is automatic. If the head is out of calibration for a period exceeding 24 hours, the Trouble-Alarm LED flashes once per second, three times the normal rate.

### Testing

#### Internal diagnostic test

This head has a moisture-proof reed switch that reacts to an external magnet for testing. The magnet test simulates a 4% to 6% smoke obscuration, which places the detector in an alarm condition. This test results in specific LED and alarm circuit responses indicating the:

- Detector is within calibration standards
- Detector settings are outside sensitivity standards
- Detector is not operational

This test is especially useful in environmentally unstable or unclean areas.

#### Sensitivity voltage test

This detector head has a socket that accepts the D1005 Test Cable. The D1005 connects to the detector head and allows a voltmeter to read the sensitivity of the device.

**LEDs**

The D285DH has a built-in LED that flashes to indicate the device is powered. The LED latches on steady in an alarm condition.

**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 7272-1615:0134 SMOKE DETECTOR-SYSTEM TYPE-PHOTOELECTRIC
	MSFM
Hong Kong	HKFSD

**Installation/Configuration Notes**

**Installation**

The D285DH duct detector head is part of a compound device. The duct detector housing installs on the duct and contains all the wiring. The duct detector head attaches to the base by aligning the head with the base and turning it clockwise. No tools are required for installation other than a screwdriver to tighten the optional tamper screw.

**Wiring**

The terminal block on the duct housing accepts up to 12 AWG (2.3 mm) wire.

**Technical Specifications**

**Environmental Considerations**

Relative Humidity:	Up to 93%, non-condensing
Temperature (operating):	+32°F to +100°F (0°C to +38°C)
Radio Frequency Interference (RFI) Immunity:	No alarm or setup on critical frequencies in the range from 26 MHz to 950 MHz at field strengths less than 50 V/m

**Mechanical Properties**

Color:	Bone white
Dimensions (diameter x D):	4 in. x 1.25 in. (10.2 cm x 3.2 cm)

**Power Requirements**

RMS Ripple (maximum):	25% of DC input
Voltage (input):	Two-wire: 8.5 VDC to 33 VDC Four-wire: 10 VDC to 30 VDC
<b>Current</b>	
Alarm:	Two-wire: depends on control panel which must limit the alarm current to 100 mA maximum Four-wire: depends on detector base; refer to pertinent base specifications
Standby:	Two-wire: 0.08 mA at 12 VDC; 0.09 mA at 24 VDC Four-wire: 24 mA at 12 VDC or 24 VDC

**Ordering Information**

D285DH Photoelectric Duct Smoke Detector Head (12 VDC or 24 VDC)	D285DH
Detects the large smoke particles which typically result from wood, paper, and fabric combustion	

**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.asia

**Represented by**