

D296 Smoke detector, long-range beam 24V

www.boschsecurity.com



BOSCH
Invented for life



- ▶ Operates over distances between 30 ft (9 m) and 350 ft (107 m)
- ▶ Six levels of switch-selectable sensitivity
- ▶ Built-in alignment sights and tamper protection
- ▶ Automatic range adjustment, signal synchronization, and contamination adjustment
- ▶ Remote indicator plate annunciates detector status and provides test points for voltage monitoring

The D296 Long-range beam smoke detector (24V) is used in clear open structures such as arenas, atriums, auditoriums, ballrooms, churches, factories, museums, and warehouses. Each detector consists of a transmitter, a receiver, and a remote indicator plate. Because the transmitter and receiver typically mount on the ceiling or high on walls or columns, they provide an effective and unobtrusive means of supervising public areas for fire protection.

The D344-RL Remote indicator plate, included with the detector, provides a convenient means of verifying detector status. Install it anywhere within 500 ft (152 m) of the beam receiver (when using 18 AWG [ISO 0.75 mm²] wire). The indicator plate has three LEDs to indicate normal, trouble, and alarm conditions, and test points to monitor the detector circuit.

Functions

Aim Mode

When the cover is removed from the receiver, the receiver goes into aim mode. When the cover is removed from the transmitter, the transmitter stops

transmitting. Pressing the Aim Mode button on the transmitter allows transmission while the cover is off. For fine tuning which requires a measurable voltage at the receiver, the covers must be off and transmission is necessary.

Alarm Operation

The transmitter emits a pulsed infrared beam. The receiver measures the intensity of the beam over a period of time and compares this data with an alarm threshold. Select one of six levels of sensitivity for the alarm threshold through a switch on the receiver. If the receiver senses signal strength below the preset alarm threshold in excess of the alarm period it signals an alarm.

Signal Loss Compensation

The receiver automatically compensates for the gradual loss of signal due to dust and dirt build-up on the cover. The receiver measures the intensity of the pulsed infrared beam emitted by the transmitter over a period of time and compares this data with a preset trouble threshold. When 50% of the signal is lost or the signal gains 20%, the receiver sends a trouble signal to the control panel.

When the dust and dirt build-up is cleaned or the blockage is removed, the detector automatically resets.

Tamper Detection

If the covers to the transmitter or receiver are removed, the detector sends a trouble signal to the control panel.

Trouble Detection

The receiver measures the intensity of the pulsed infrared beam emitted by the transmitter over a period of time and compares this data with a preset trouble threshold. When 90% or more of the signal is lost for more than 20 seconds, as might happen if an object blocked the beam, the receiver sends a trouble signal to the control panel.

Certifications and approvals

Region	Regulatory compliance/quality marks	
Russia	GOST	СЕРТИФИКАТ СООТВЕТСТВИЯ
USA	UL	UL 268, Smoke Detectors for Fire Alarm Systems
	FM	see the FM Approval Guide
	CSFM	see www.boschsecurity.com (the Bosch website)
Canada	ULC	CAN/ULC-S529, Smoke Detectors for Fire Alarm Systems
Hong Kong	HKFSD	J-005/C/024

Installation/configuration notes

Mounting Considerations

The transmitter and receiver mount on standard 3.5-inch or 4-inch square or octagonal back boxes or European Beza boxes. The indicator plate mounts on a standard single-gang back box.

The distance between the transmitter and receiver can range from 30 ft (9 m) to 350 ft (107 m). When using 18 AWG (ISO 0.75 mm²) wire within conduit, the indicator plate must be within 500 ft (152 m) of the receiver.

Mount the detectors directly to the ceiling or to side walls. Do not mount the units so that the beam runs closer than 4 in. (10.2 cm) to the intersection of the wall and the ceiling. Otherwise, place and space the detectors according to NFPA 72.

Notice

The beam path should be clear of moving objects. Avoid areas subject to normal smoke concentrations such as kitchens and garages. Do not install units where normal ambient temperatures are below -22°F (-30°C) or above +130°F (+54°C).

Lateral Spacing Between Systems

For adequate coverage, the lateral spacing between adjacent detector systems must not exceed 60 ft (18 m).

Wiring

System wire terminals accept 18 AWG to 12 AWG (ISO 0.75 mm² to 4 mm²) solid wires.

Parts included

Quant.	Component
1	D296 Transmitter
1	D296 Receiver
1	D344-RL Remote indicator plate
1	D308 Field test kit
1	D1005 Test cable
1	Hardware pack
1	Literature pack

Technical specifications

Electrical

D296

Current (alarm):	Receiver: 60 mA, Transmitter: 20 mA
Current (standby):	Receiver: 45 mA, Transmitter: 20 mA
Voltage (operating):	18 VDC to 32 VDC

D344-RL and D344-RT

Current (alarm):	20 mA at 24 VDC
Current (standby):	10 mA at 24 VDC
Voltage (operating):	10 VDC to 32 VDC

Environmental

Relative Humidity:	0% to 95%, non-condensing
Temperature (ambient):	-22°F to +130°F (-30°C to +54°C) For UL Listed installations, +32°F to +130°F (0°C to +54°C)

Mechanical

Dimensions (H x W x D):	7 in. x 5.5 in. x 5.5 in. (17.8 cm x 14 cm x 14 cm)
Transmission Range:	30 ft (9 m) to 350 ft (107 m)

Ordering information

D296 Smoke detector, long-range beam 24V

The D296 provides an effective and unobtrusive means of supervising public areas for fire protection. It consists of a transmitter and a receiver that typically mount on the ceiling or high on walls or columns and a remote indicator plate that mounts at eye level.

Order number **D296**

Accessories

D344-RL Remote indicator plate

Used with the D340 Series Duct Smoke Detector Housings

Order number **D344-RL**

D344-RT Remote test/indicator plate, 24V

Used with the D340 Series Duct Smoke Detector Housings

Order number **D344-RT**

D308 Field test kit for D296/D297

Allows testing the calibration of the D296 and D297 beam smoke detectors

Order number **D308**

D1005 Test cable 3ft

Connects a digital voltmeter to the detector's calibration pin for verifying that the detector is within its calibration range

Order number **D1005**

Represented by:

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

Germany:
Bosch Sicherheitssysteme GmbH
Robert-Bosch-Ring 5
85630 Grasbrunn
Germany
www.boschsecurity.com

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

Asia-Pacific:
Robert Bosch (SEA) Pte Ltd, Security Systems
11 Bishan Street 21
Singapore 573943
Phone: +65 6571 2808
Fax: +65 6571 2699
apr.securitysystems@bosch.com
www.boschsecurity.asia