



**PHOTOELECTRONIC
SMOKE DETECTORS FOR
SYSTEMS APPLICATIONS**

MODEL

2800



BRK ELECTRONICS *World's Largest Manufacturer of Smoke Detectors*



2800 Series 2-Wire Systems Detectors

- **Compact, Stylish Design**
- **Geometrically Optimized Photoelectronic Sensing Chamber**
- **Designed for Direct Surface or Electrical Box Mounting**
- **Unique New Optical Sensing Chamber**
 - Superior Signal-to-Noise Ratio (2.0)
 - Stable Photoelectronic Operation
 - 2.3% Nominal Sensitivity
 - Built-in Signal Processing
- **10–29VDC Operating Range**
- **Twist-on Mounting Bracket with Tamper Option for Easy Installation**
- **Built-in Thermal Available**
- **Convenient Terminal Strip Wiring**
- **Built-in Test Capability**
- **Visual Alarm Indication**
- **Remote LED Option**
- **Low Standby Current**
- **Listed to UL 268**
- **Insect Screening**

BRK's new 2800 Series detectors are designed to be more responsive than conventional detectors to a broader range of fires and at the same time offer maximum stability. They're compact, attractive and easy to install.

These detectors operate on the light scattering principle and feature a unique photo-optic sensing chamber that provides good smoke entry while minimizing the effects of ambient light. The chamber has carefully designed geometry which maximizes signal strength and signal-to-noise ratio (2.0 nominal). It is more responsive to fast flaming fires (the most difficult for photoelectronic detectors) than the chambers used in most competitive

units. It can, therefore, be set less sensitive and further from the threshold of alarm than the chambers of most competitive detectors. This combination of high signal-to-noise ratio and stable sensitivity setting gives 2800 Series detectors remarkable stability over a wide range of environmental conditions. The detectors also have a custom integrated circuit that uses signal processing for alarm verification. In standby mode the 2800 Series infrared LED is designed to pulse once every eight seconds, but, when smoke is detected, this sampling rate accelerates to once per second. Three successive positive samplings are required before detectors can alarm, and this significantly increases its immunity to nuisance alarms.

BRK's new 2800 Series Detectors are more responsive than competitive units to a broader range of fires!



Unique new photo optic chamber features high signal-to-noise ratio for remarkable stability.

2800 Series detectors are designed for systems use with UL cross-listed control panels having 2 wire initiating device loops. Two models are available — the 2800 and the 2800TH which has a built-in 135° heat detector. Both versions operate between 10–29 VDC and draw only 100 microamps (typical) during normal operation. The sensitivity of the detectors is preset at the factory and does not require adjustment in the field. A solid state voltage regulator maintains detector sensitivity over a wide range of input voltages. Testing capability is incorporated in the detector which permits quick and easy testing without sophisticated test equipment. A visual indication of an alarm

is given by an LED on the detector cover. This visible alarm signal may be removed by using BRK's Remote Alarm Lamp assembly.

Easy to install, clean and maintain, these detectors are designed for direct surface mounting or for mounting to most boxes up to 4" octagonal. Twist-on mounting bracket with tamperproof option included. The units also feature convenient terminal strip wiring. For installation and maintenance instructions, see the 156-155-XX Manual. For location and placement of detectors, see BRK's 156-210-XX "Applications Manual for System Smoke Detectors."

2800 Series 2 Wire Photoelectronic Smoke Detectors

Specifications	2800	2800TH
Control Panel Applications	2-wire	2-wire
Built-in Thermal	No	135° Fixed
Visual LED Local Alarm	X	X
Remote LED Annunciator Capability	X	X
Operating Voltage Range:	10-29VDC Avg.	10-29VDC Avg.
Current Limits:		
a) Standby (typ.)	100µA@24V	100µA@24V
b) Alarm Current (typ.)	See Note	See Note
c) Alarm Current (max.)	See Note	See Note
Alarm Signal:	Shunt on power leads	Shunt on power leads

NOTE: Two-wire control panels must limit current to 300mA or less.

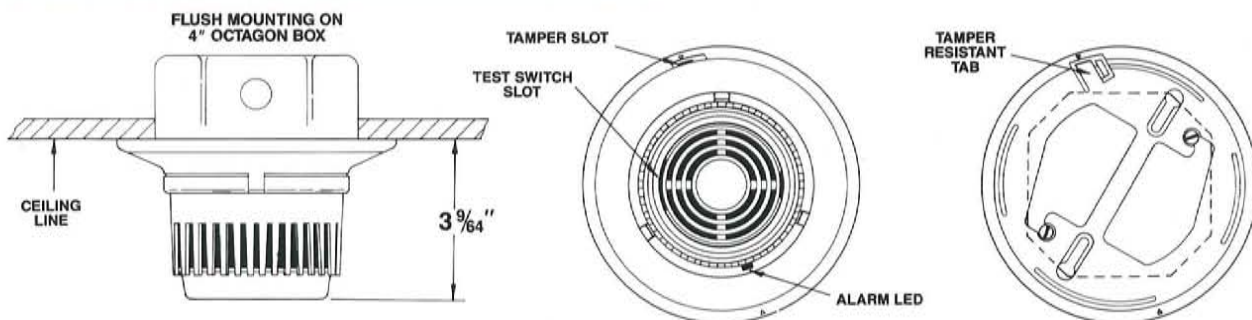
Architectural/Engineering Specifications

The detector shall be of the photoelectronic type. Its sensor shall have a nominal sensitivity of 2.3% as measured in a UL smoke box, and a signal-to-noise ratio of 2.0 nominal. It shall be possible to perform a functional test on the detector without the need of generating smoke. The test method shall be capable of testing sensitivity of 1% and 3% smoke in the chamber and test all detector functions.

The detector shall incorporate a solid state voltage regulator which can maintain detection sensitivity over an input voltage range of 10–29 VDC. Current limiting shall protect the detector against power surges and noise protection shall be provided so the detector can be wired without conduit where codes allow. Standby current shall be 100 µamps typical.

The detector shall have a mounting bracket that allows for direct surface mounting or mounting to a 4" octagon box. The bracket shall have a tamper proof option.

A visual indication of an alarm shall be provided by a latching light emitting diode (LED) on the detector which may be seen at ground level. The visible alarm signal shall be capable of remote LED annunciation.



How to Order — 2800 — Photoelectronic Detector, 2 Wire, Surface Mount. (Mounting bracket included.)
 2800TH — Photoelectronic Detector with built-in 135° Fixed Temperature Thermal, 2 Wire, Surface Mount. (Mounting Bracket included)
 156-210-XX — Applications Manual for System Smoke Detectors.
 669-00 — Remote Alarm Lamp (LED) Assembly with Rectangular Mounting Plate.

Distributed by:

BRK ELECTRONICS
System Sensor Division
 780 McClure Road
 Aurora, Illinois 60504