

Two- and Four-Wire Conventional Smoke Detectors

700 Series

STANDARD FEATURES

- *FM Approved*
- *UL Listed*
- *CSFM Approved*
- *Self-diagnostic capability continually monitors operation*
- *Meets NFPA 72 sensitivity test requirements*
- *Head and terminal base design (base sold separately)*
- *Automatic drift compensation*
- *Field-replaceable optical chamber*
- *Low-profile design blends into the ceiling*
- *Advanced alarm verification feature reduces chance of nuisance alarms*
- *Extensive two-wire compatibility listings*
- *Compatible with most Kidde, Fenwal and Chemetron Conventional Control Panels (See compatibility chart in Datasheet No. K-70-100)*

DESCRIPTION

The 700 Series conventional photoelectric smoke detector is an interchangeable head and base detector with a light-scattering optical sensor that provides outstanding stability and excellent response to a wide range of fires.

A pulsed infrared LED light source and a high-speed photodiode sensing element are housed in an omnidirectional sensing chamber protected by an insect screen. For easy cleaning, the detector features a field-replaceable optical chamber (P/N 211).

Model 721UT photoelectric detectors include integral fixed temperature and rate-of-rise heat detectors. The 721UT provides remote alarm and trouble LED driver outputs.

The 700 Series smoke detectors were the industry's first conventional self-diagnostic detectors specifically designed for the demands of commercial and industrial environments. If the detector drifts out of its UL Listed sensitivity range or fails internal diagnostics, the alarm LED flashes once a second to indicate a trouble condition. This meets NFPA 72 field sensitivity testing requirements without the need for external meters.

Additional diagnostic information is activated by applying a magnet near the detector's integral reed switch. This initiates a self-diagnostic routine and provides visual indication of sensitivity level, or if service is required. The magnet test causes the LED to blink. The number of blink counts corresponds to a smoke detector sensitivity range.

And, if they become dirty over time, the 700 Series detectors automatically adjust the alarm threshold through built-in drift compensation. If the detector ever does need to be cleaned, the patented field replaceable optical chamber makes cleaning a snap.



ENGINEERING SPECIFICATIONS

The 700 Series photoelectric smoke detector is a low-profile, self-diagnostic, two-wire detector that monitors its own sensitivity and operational status. The detector meets NFPA 72 field sensitivity testing requirements without the need for external meters. Built-in drift compensation automatically adjust the sensitivity if the detector gets dirty. The 700 Series features an alarm verification feature to further reduce the chance of a nuisance alarm. Normal sensing occurs every 9 seconds. This rate doubles when a signal exceeding the alarm threshold value is sensed. Two additional successive signals above the threshold level initiate an alarm. The patented optical sensing chamber is field replaceable, allowing quick and easy cleaning and maintenance.

TECHNICAL SPECIFICATIONS

Electrical	
Voltage	8.5 - 33VDC, non polarity sensitive
Maximum ripple (peak to peak)	10% (vp - p)
Typical standby current (24V)	70µA
Typical alarm current (24V)	up to 60 mA max, if not limited by control panel
Photoelectric Sensitivity	2.85%, +0.37, -0.75%
Operating temperature	32°F to 100°F (0°C to 38°C)
Operating humidity range	0 to 95% Non-condensing
RFI immunity	20 V/m min; 0-1000 MHz
Remote LED output current	5 mA min, 8.5 mA max
Drift compensation adjustment	1.0% ft, max
Environmental	
Heat Sensor Ratings (721UT, 741UT)	Fixed 135°F/Rate of rise 15°F/min, > 105°F (8.3°C/min., >40.6°C)
Maximum wind velocity	300 ft/min
Field wiring size	12-18 AWG
Remote test input (721 UT)	100 ohm max
Reset voltage	2.5V max
Reset time	1 second max
UL two-wire compatibility identifier	S10A (711U, 721UT)

Note: Refer to Kidde Fire Systems Datasheet Number K-70-100 for smoke detector compatibility.

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Physical	
Color	White head and base
Detector head dimensions	4" D x 1.75" H (10cm x 4.44cm)
Base dimensions	701U, 702U: 6" D x 0.06" H (15.24 cm x 1.3 cm), 702E: 4" D x 0.06" H (10.16 cm x 1.3 cm)
Total height, (head and base)	1.98" (5 cm) H
Regulations	
Listing	UL 268, FM, CSFM

ORDERING INFORMATION

711U	Smoke detector head only, photoelectric, two-wire
721UT	Smoke detector head only, photoelectric, two-wire w/integral heat detector, output for remote LED
741UT	Smoke detector head only, photoelectric, four-wire, w/integral heat detector, alarm relay (N.O.) output and output for remote LED
701U	Smoke detector base, 3 terminals, 6 in. dia.
702U	Smoke detector base, 6 terminals, 6 in. dia.
204-12/24VG	End-of-Line, power supervision relay for four-wire applications
211-10PKG	Replacement optical chamber for smoke detectors, set of 10
06-117883-001	Test magnet
SM200-12PKG	Canned smoke for functional testing of smoke detectors
706U1A	Remote LED indicator for 721UT or 741UT
706U2A	Remote LED indicator and keyed remote for 721UT or 741UT
706U3A	Remote LED indicator, keyed remote and reset for 721UT or 741UT

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Subject: NEW Conventional Smoke and Duct Detectors

**Backwards compatible, Competitively Priced
Compatible with current and legacy Conventional Control Units**

**IMPORTANT NEW PRODUCT INFORMATION –
PLEASE IMMEDIATELY SHARE WITH SALES, DESIGN & PURCHASING**

We are pleased to announce the availability of new lower priced Conventional Detectors – the field proven ESL 700 series Smoke and the EST SuperDuct Detectors. These new detectors provide reliable, cost effective detection solutions that are well suited for suppression applications.

These new products will be replacing the existing PSD-7157 and CPD-7054 series Conventional Smoke Detectors, as well as the DH-60 Conventional Duct Detectors, with price decreases of approximately 25% and 40% respectively.

We are confident that the combination of the competitively priced Conventional Detectors along with Kidde Fire System's best-in-class suppression focused Conventional Control Unit platform, will give you the ability to drive sustained growth for your business.



**ESL 700 Series Conventional
Smoke Detectors**



**EST SuperDuct Conventional
Duct Detectors**

ESL 700 Series Conventional Smoke Detectors

NEW Conventional Smoke Detectors and Bases	
711U	2-Wire Photoelectric Smoke Detector Photoelectric head only. Uses base 701U or 702U, sold separately. UL, FM listed
721UT	2-Wire Photoelectric Smoke Detector with integrated rate of rise heat detector, output for remote LED and remote test, detector head only. Uses base 702U, sold separately. UL, FM listed
741UT	4-Wire Photoelectric Smoke Detector with integrated rate of rise heat detector, alarm relay (N.O) output and output for remote LED. Uses base 702U sold separately. UL, FM listed
701U	Smoke detector base for 711U smoke detectors, 3 terminals 6 inch diameter. UL, FM listed
702U	Smoke detector base for 700 series smoke detectors, 6 terminals 6 inch diameter. UL, FM listed

EST Conventional SuperDuct Detectors

NEW Conventional Duct Detectors and Accessories	
SD-2W	2-Wire Conventional Super Duct Photoelectric Detector. UL, ULC, FM listed.
ESD-4WJ	4-Wire Conventional Super Duct Photoelectric Detector. UL, ULC, FM listed.

For standalone conventional thermal detectors, continue to use the existing THD-7052 and THD-7053 detectors and bases.

Smoke Detector Compatibility

The new Two-Wire Conventional Detectors (models 711U, 721UT and SD-2W) are listed compatible with the following Control Units:

Current Control Units	Legacy Control Units
Kidde AEGIS™	Kidde Scorpio
Fenwal 732™	Kidde Gemini II
Chemetron XLT™	Fenwal 2320
Chemetron XLT-1p™	Fenwal 3220
	Chemetron Micro1-EV

In addition, you will be pleased to learn that the new detectors series can be inter-mixed with the legacy PSD-7157 and CPD-7054 detectors on the same initiating device circuit – thus legacy detectors can be replaced individually if the need should arise. As a result of differences in the quantity of detectors supported per initiating circuit please consult Compatibility Document K-70-100 (attached) for information related to the new detectors and Compatibility Document F-70-63 for the legacy detectors.



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Product Availability – New Products

The new Conventional Detectors are available for immediate shipment.

We request that any new installations be quoted with the new ESL 700 series and EST SuperDuct detectors.

Product Availability – Legacy Photoelectric Smoke and Duct Detectors

Effective October 1, 2015, the legacy conventional detectors will be available for spare parts and replacement requirements only. In order to maximize the number of available detectors and accessories for service / replacement needs, we request that orders for the legacy detectors / accessories be limited to:

- Detector replacements where the new detectors are not compatible with the Conventional Control unit (see Compatibility guide K-70-100 for the new detectors and F-70-63 for the legacy detectors).
- Installations for Two-Wire Conventional Detectors requiring ULC listings (this applies to detectors 711U, 721UT and 741UT). Note: The EST SuperDuct detectors (models SD-2W and ESD-4WJ) are ULC listed.
- Other reasons where installation of new detectors is not practical

Based on this reduced usage rate for the legacy detectors/accessories, we expect that service replacements for the legacy Conventional Detector products should be available for a few years. Once depleted, the legacy detectors will be withdrawn without further notice.