Technology that saves lives

Two- and Four-Wire Head & Terminal Base Smoke Detectors
700 Series

Overview

Kidde brand conventional photoelectric smoke detectors include an interchangeable head and base, with a light-scattering optical sensor. They provide 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.

Model 721UT photoelectric detectors include integral fixed temperature and rate-of-rise heat detectors. The 721UT provides remote alarm and trouble LED driver outputs. Also available is the 713-5U electronic heat detector head for areas too dusty for smoke detection.

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.

Standard Features

- 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 nuisance alarm immunity
- Continuity switch in base to ease installation
- Extensive two-wire compatibility listings

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.

A manually operated switch between terminals 1 and 2 establishes continuity across the alarm initiating circuit at initial installation of the base simplifying testing without the smoke head in place. The switch automatically opens when a detector head is plugged in.
## 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, – 1.00%
- **Operating temperature**: 32°F to 120°F (0°C to 49°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
- **Compatibility**: Heads: 711U; Bases 701U, 702U

### Environmental
- **Heat Sensor Ratings** (721UT, 741UT, 713-5U): Fixed 135°F / Rate of rise 15°F/min., >105°F (8.3°C/min., >40.6°C)
- **Maximum wind velocity**: 300 ft/min or
- **Field wiring size**: 12-18 AWG
- **Remote test input (721UT)**: 100 ohm max
- **Reset voltage**: 2.5V max
- **Reset time**: 1 second max
- **UL two-wire compatibility identifier**: S10A (711U, 721UT, 713-5U), S11A (731U)

### Physical
- **Color**: White head and base
- **Detector head dimensions**: 4” Ø x 1.75” H (10cm x 4.44cm)
- **Base dimensions**: 701U, 702U: 6” Ø x .06” H (15.24 cm x 1.3 cm)
- **Total height, (head and base)**: 1.98” (5 cm) H

### Regulations
- **Listing**: UL 268, FM, CSFM, MEA approved

## Ordering Information

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
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<tbody>
<tr>
<td>711U</td>
<td>Smoke detector head only, photoelectric, two-wire</td>
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<tr>
<td>721UT</td>
<td>Smoke detector head only, photoelectric, two-wire w/integral heat, output for remote LED</td>
</tr>
<tr>
<td>731U</td>
<td>Smoke detector head only, photoelectric, two-wire, use 702RU base for aux. relay functionality</td>
</tr>
<tr>
<td>741U</td>
<td>Smoke detector head only, photoelectric, four-wire</td>
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<tr>
<td>701U</td>
<td>Smoke detector base, 3 terminals, 6&quot; dia.</td>
</tr>
<tr>
<td>702U</td>
<td>Smoke detector base, 6 terminals, 6&quot; dia.</td>
</tr>
<tr>
<td>702RU</td>
<td>Smoke detector base, 6 terminals, aux. relay, 6&quot; dia.</td>
</tr>
</tbody>
</table>

### Compatibility
- **Heads**: 711U, 731U, 741U
- **Bases**: 701U, 702U, 702RU, 713-5U, 701U

**Note**: Bases sold separately