



## 700 SERIES

### SELF-DIAGNOSTIC PHOTOELECTRIC AND IONIZATION SMOKE DETECTORS

Photoelectric Models: 711U, 711UT, 721UT, 731U, 741UT  
 Ionization Models: 712U, 732U  
 Bases: 701U, 702E, 702U, 702RE, 702RU



California State Fire Marshal Approved  
 MEA (New York City)

The **ESL photoelectric smoke detector** is a side mounted, 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 which is protected by an insect screen. The chamber is not affected by ambient light. For easy cleaning, the chamber unsnaps and is field-replaceable.

The Model 711UT, 721UT and 741UT photoelectric smoke rate-of-rise heat detectors include fast response algorithms for a quick response to both flaming and smoldering fires. As soon as the heat sensor detects a rapid rise in temperature, the sensitivity of the photoelectric sensor increases.

The **ESL ionization smoke detector** is a single source, dual-chamber detector that provides excellent response to both visible and invisible combustion particles from all types of fires. The detector is exceptionally stable in all environments, including high altitudes and wind gusts. It also features an insect screen to protect further against nuisance alarms.

ESL 700 Series smoke detectors are 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 trouble. This meets NFPA 72 field sensitivity testing requirements without the need for external meters.

And, as they get dirty, the 700 Series detectors automatically adjust the alarm threshold through built-in drift compensation.

- **Intelligent, self-diagnostic**
- **Built-in drift compensation**
- **Photoelectric model has a field-replaceable optical chamber**
- **Low-profile design**
- **Advanced false alarm immunity**
- **Interchangeable head and base design**
- **Widest two-wire compatibility listings**

# 700 Series ESL Smoke Detectors

## Architectural and engineering specifications

### Photoelectric

The photoelectric smoke detector shall be an ESL 700 Series photoelectric smoke detector, a low-profile, self-diagnostic, two-wire or four-wire detector that monitors its own sensitivity and operational status. The detector shall meet NFPA 72 field sensitivity testing requirements without the need for external meters. Built-in drift compensation shall automatically adjust the sensitivity as the detector gets dirty. Normal sensing shall occur every 9 seconds. This rate shall double when a signal exceeding the alarm threshold value is sensed. Two additional successive signals above the threshold level shall initiate an alarm.

The proprietary optical sensing chamber shall be field replaceable, allowing quick and easy cleaning and maintenance.

A manually operated switch between terminals 1 and 2 shall establish continuity across the alarm initiating circuit at initial installation. The switch shall automatically open when a detector head is plugged in. If a detector head is removed from service, the switch shall be reset using a small screwdriver, thus re-establishing circuit continuity.

### Ionization

The ionization smoke detector shall be the ESL 700 Series ionization smoke detector, a low-profile, self-diagnostic, two-wire or four-wire detector that monitors its own sensitivity and operational status. The detector shall meet NFPA 72 field sensitivity testing requirements without the need for external meters. Normal sensing shall occur every 3 seconds. This rate shall double when a signal exceeding the alarm threshold value is sensed. Two additional successive signals above the threshold shall initiate the alarm.

Built-in drift compensation shall automatically adjust the sensitivity as the detector gets dirty.

A manually operated switch between terminals 1 and 2 shall establish continuity across the alarm initiating circuit at initial installation. The switch shall automatically open when a detector head is plugged in. If a detector head is removed from service, the switch shall be reset using a small screwdriver, thus re-establishing circuit continuity.

See installation instructions for information about correct installation and maintenance.

## Specifications

### Product Data

Voltage ..... 8.5 — 33VDC, non polarity sensitive  
Maximum ripple (peak to peak) ..... 10% ( $V_p - p$ )  
Typical average standby current (24V) ..... 70 $\mu$ A  
Typical alarm current (24V) ..... up to 60 mA max, if not limited by control panel

Relay contacts ..... 2A @ 30VDC, 1A @ 120 VAC  
Sensitivity

Photoelectric ..... 2.85%, + 0.37, - 1.00%  
Ionization ..... 1.4%, + 0.10, - 0.5%

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 minimum; 0-1000 MHz

Remote LED output current ..... 5 mA min, 8.5 mA max

Drift compensation adjustment (Photoelec. only) 1.0%/ft. max

Maximum altitude (Ionization) ..... 15,000 ft. above sea level

Maximum altitude (Photoelectric) ..... NA

Heat Sensor Ratings (721UT, 731UT, 741UT) ... Fixed 135°F/  
Rate of rise 15°

Maximum wind velocity (Ionization) ..... 300 ft/min or  
2000 ft/min wind gusts

Maximum wind velocity (Photoelectric) ..... 300 ft/min

Field wiring size ..... 12-24 AWG

Remote test input (721UT) ..... 100 ohm max

Reset voltage ..... 2.5V max

Reset time ..... 1 second max

UL two-wire compatibility identifier ..... S10A for all models  
S11A for 731U & 732U, S00 for all bases

Color ..... White head and base

Detector head dimensions ..... 4" (10 cm) diameter;  
1.75" (4.44 cm) height

Detector packaging ..... 10 detectors per carton

Base packaging ..... 10 bases per carton

### Base dimensions

702E ..... 4" (10 cm) diameter, 0.6" (1.3 cm) height

701U, 702U ..... 6" (15 cm) diameter, 0.6" (1.3 cm) height

Total height, head and base together ..... 1.98 (5 cm) height

Listing ..... UL 268

# 700 Series ESL Smoke Detectors

## Ordering Information

See ESL's Compatibility Index to verify compatibility control.

Model No	Description
711U	2-wire photoelectric smoke detector
711UT	2-wire photoelectric smoke detector, with heat detector and fast response algorithms
712U	2-wire ionization smoke detector
721UT	2-wire photoelectric smoke detector, with rate of rise, fast response heat detector, with remote test input and remote alarm/trouble LED output
731U-10pk	2-wire photoelectric smoke detector, with auxiliary relay (N.C./N.O.) outputs, UL listed for releasing service; <i>available only as a 10 pack</i>
732U	2-wire ionization smoke detector, with auxiliary relay (N.C./N.O.) outputs, UL listed for releasing service
741U	4-wire photoelectric smoke detector, with heat detector and fast response algorithms, and alarm relay (N.O.) output and remote alarm/trouble LED output
<b>Bases</b>	
701U	6" (15 cm) base, 3 terminal connectors for 711U head
701U-10pk	10 pack of 6" (15 cm) base, 3 terminal connectors for 711U head
702U	Universal 6" (15 cm) base, with 6 terminal connectors
702E-10pk	Universal 4" (10 cm) base, with 6 terminal connectors; <i>available only as a 10 pack</i>
702RU	6" (15 cm) base, 6 terminal connectors for 731U relay type head
702RE	4" (10 cm) base, 6 terminal connectors for 731U relay type head
<b>Accessories</b>	
204-12/24V	End of line, power supervision relay for 4-wire applications
SM-200	Smoke! in a can® (canned smoke) for functional testing
211	Replacement optical block cover for all photoelectric models (set of 10)
213	Replacement screen for ion chamber
<b>Remote Indicators</b>	
706U1A	Remote Indicator with alarm/power LED, UL listed
706U2A	Remote Indicator with alarm/power LED and test switch, UL listed
706U3A	Remote Indicator with alarm/power LED, test switch and reset switch, UL listed

# 700 Series ESL Smoke Detectors



**SECURITY & LIFE SAFETY GROUP**

CADDX | ESL | GBC | ITI | SENTROL

**ESL** 12345 SW Leveton Dr. Tualatin, OR 97062  
**PH** 503.692.4052 **FX** 503.691.7566 [www.interlogixinc.com](http://www.interlogixinc.com)  
**USA & Canada:** 800.547.2556  
**Technical Service:** 800.648.7424  
**FaxBack:** 800.483.2495

©2000 Interlogix, Inc.

Interlogix reserves the right to change specifications without notice.  
CleanMe and Smoke! in a can are registered trademarks of Interlogix, Inc.  
SafeAir is a trademark of Interlogix, Inc.