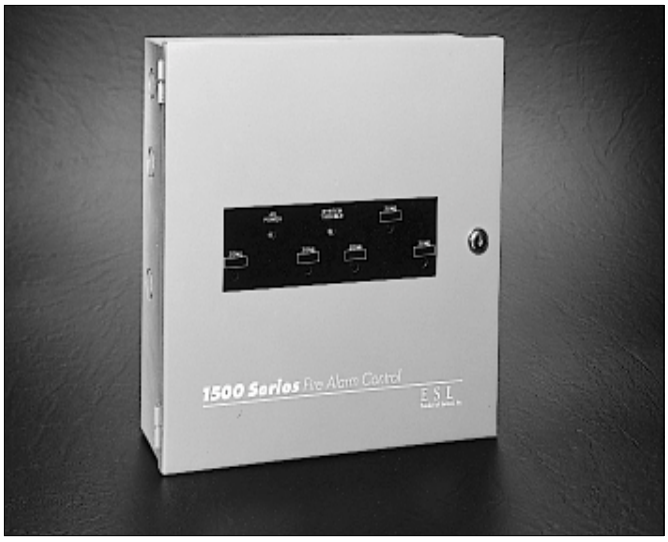
# E S L

P R O D U C T  I N F O R M A T I O N  B U L L E T I N




# 1500 SERIES

## Fire Alarm Control Panels

Model numbers:
1501, 1503, 1505

UL LISTED **CSFM MEA**

- Power limited per NEC article 760, Section C
- Modular design, 1, 3 & 5 zone models
- Class A or B standard
- One man walktest
- Alarm verification
- Approved for sprinkler supervision and waterflow
- Options:
  - Digital Alarm Communicator
  - City Masterbox Communicator
  - Remote Annunciators
  - Zone Relay Modules
  - Polarity Reversal Modules

**ESL 1500 Series Fire Alarm Control Panels** provide one (1501), three (1503) or five (1505) conventional initiating circuits and two alarm indicating circuits. All initiating and indicating circuits supervise conventional two- or four-wire, Class “A” or Class “B” wiring loops. All zone inputs and outputs are power limited.

The basic control panel, Model 1501, includes the system enclosure with removable door, and the Basic Master Board (BMB). The BMB provides all functions required for a single zone system including: an integral power supply (24 V DC), battery charger, battery supervision circuitry, AC brown-out circuitry, system control switches, operating and diagnostic indicators, one man walktest, alarm verification, and auxiliary alarm and system trouble dry relay contacts. The Models 1503 and 1505 include one or two dual Zone Expander Modules (1500-ZEM), respectively.

ESL 1500 Series Fire Alarm Control Panels are designed to meet “real” world installation and maintenance needs. To meet specific project requirements, a variety of optional modules are available. The cabinet (14" high and wide) includes: capacity for five initiating circuits, two indicating circuits, numerous option modules and standby batteries.

continued

## Applications

ESL 1500 Series Fire Alarm Control Panels are designed for use in commercial, industrial and institutional applications. The ESL 1500 Series is also suited for occupancies such as hotels, motels and dormitories. Pre-configured in one, three and five zone models, they provide unsurpassed features in their basic configuration. To meet special application needs, a range of options are available including a Digital Alarm Communicator (1500-DAC2).

## Installation

The 1500 Series may be surface mounted or semi-flush mounted using the optional trim kit (1500-TK). One housing suits all three models and provides adequate spacing for all standard and optional modules and standby battery requirements.

ESL 1500 Series Fire Alarm Control Panels should be installed in accordance with the ESL 1500 Series Installation Manual, included with the panels. Clear and concise wiring details are provided in the 1500 Series Installation Manual and on the label affixed to the housing door. All system wiring should be in accordance with the National Electrical Code (NFPA 70), state and local codes, and the Authority Having Jurisdiction (AHJ).

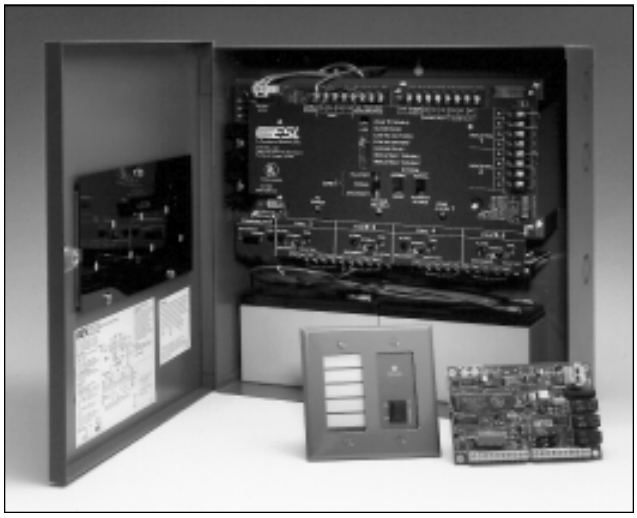
## Approvals

The ESL 1500 Series is Listed under Underwriters Laboratories, Inc. (UL) Standards 864, Control Panels for Fire Protective Signaling Systems. The ESL 1500 Series is also approved by California State Fire Marshal (Listing No, 7165-447:121); and New York City Department of Buildings Material and Equipment Acceptance (MEA) (Calendar #472-86-SA).

## Panel Listings

| Type of Signalling System | Type of Alarm Service | Type of Signalling |
|---|---|---|
| Local (L) | A, M, WF & SS | NC |
| Central Station (CS) Protected Premises Unit | A, M, WF | Digital Alarm Communicator (DAC) |
| Auxilliary (A) | A, M and WF | NC |

A = Automatic Detection (smoke detectors, heat detectors, etc.)
DAC = Digital Alarm Communicator
M = Manual Fire Alarm Box (Pull Stations)
NC = Non-coded
SS = Sprinkler Supervisory
WF = Water Flow Alarm



*1500 Series Fire Alarm Control Panel with Remote Annunciator (1500-RA-5A) and Digital Alarm Communicator (1500-DAC2).*

## Basic Master Board

The Basic Master Board (BMB) provides all common system functions for alarm, supervisory and trouble monitoring including one man walktest, alarm verification, one initiating and two indicating circuits for 24 V DC signals. A 24 V DC power supply and battery charger provide 1.5 Amps of total system power. LED indicators are provided for: AC power, system trouble, zone alarm, zone trouble; supervisory, low/no AC, low/no battery, ground fault, and alarm indicating circuit trouble (1 and 2). Control switches for system reset, sounder silence and zone disable/walktest are also provided.

### Walk Test

The 1500-BMB provides a one man walktest feature. This feature allows one service person to perform a complete functional test of alarm initiating devices and the control panel without the necessity for manual reset of the control panel after each test. Alarm signals sound momentarily (providing the programmable signal silence option has not been selected); then the control panel automatically resets. Testing may be accomplished system wide or by individual zone. A walktest switch is provided for each zone.

### Alarm Verification

The 1500-BMB provides for selectable alarm verification. The alarm verification feature provides a system-wide verification of all automatic smoke detectors in accordance with UL Standards and is very effective in reducing nuisance alarms. Any (non-powered) contact-type initiating device (i.e., manual fire alarm station, etc.) will bypass the verification feature in less than 15 seconds. Should a second alarm occur

from a smoke detector (within 2.5 minutes), the verification will be cancelled and full panel alarm initiated. Smoke detectors and contact-type devices may be intermixed on a common circuit. When used with ESL smoke detectors, the response time of this circuit meets all California State Fire Marshal requirements.

## Electrical Supervision

Electrical supervision includes detection of a ground fault on any installation wiring conductor except incoming AC power and conductors connected to the common trouble and alarm relay contacts. In addition, an open in any alarm initiating circuit, remote annunciator circuit or local energy master box trip circuit will cause a trouble signal. Alarm indicating circuits are supervised for both opens and shorts. Loss or reduction (brown out) of AC power and loss of or low voltage battery power are also supervised.

## Features

The initiating circuits may be wired in Class “A” or “B” (Style “B” or “D”) configurations. Each zone features a supervised alarm output for remote annunciation and will operate with either two- or four-wire ESL smoke detectors. Zone 2 may be programmed to monitor normally-open contact-type sprinkler supervisory devices with distinct audible and visible indication. A separate “Supervisory” LED is provided on the 1500-BMB.

Alarm indicating circuits (2) may be wired in Class “A” or “B” (Style “Y” or “Z”) configurations and operate on a polarity reversing principle with compatible Listed 24 V DC signals.

Additionally, the BMB provides: resettable auxiliary power (24 V full wave rectified, unfiltered), auxiliary alarm and trouble relays, a remote drill test input and an integral event sounder, prioritized for distinct alarm, supervisory and trouble signals.

## Zone Expander Module

The dual Zone Expander Module (1500-ZEM) provides alarm and trouble indicators for two initiating zones with a disconnect/walktest switch for each. Each zone may be wired in Class “A” or “B” (Style “B” or “D”) configurations, and includes supervised remote alarm annunciation output. Compatible two-wire smoke detectors may be mixed on the same zone with contact-type initiating devices, including manual fire alarm stations, heat detectors, and alarm contacts of four-wire smoke detectors.

## System Options

**Digital Alarm Communicator Transmitter (1500-DAC2)**

The 1500-DAC2 is used for alarm, supervisory and trouble signaling via the public telephone network to a Central Station or Remote Station (per NFPA 72). The module communicates with a digital alarm communicator receiver (DACR) by means of eleven available transmission formats.

The 1500-DAC2 provides local annunciation with provision for remote annunciation and audible indication of telephone line trouble and communication failure. The module has five alarm zones and one trouble zone.

**Local Energy Module (1500-LEM)**

The 1500-LEM is used for alarm notification via local energy-type city MASTERBOXES (NFPA 72). The module is equipped with a circuit disconnect switch and a dedicated circuit trouble LED which indicates an abnormal switch position, an open in the installation wiring between the control panel and MASTERBOX or the need to RESET the MASTERBOX.

**Zone Relay Module (1500-ZRM)**

The 1500-ZRM provides a Form “C” contact (3 A/30 V DC, 0.35 Power Factor) for each zone. Three models are available providing a relay for each initiating circuit, depending on the 1500 Series Panel selection.

## Remote Annunciators (1500-RA-5/1500-RA-5A)

The 1500-RA-5 and 1500-RA-5A Remote Alarm Annunciators feature red (alarm) and yellow (trouble) LED indicators; translucent plastic legend strips for zone identification; and a painted aluminum flush plate which resists moisture and corrosion.

Supervised remote alarm annunciation is standard to both models. Both models feature 5 alarm zones while the 1500-RA-5A also includes a trouble LED and sounder.

The plastic legend strips accommodate up to 20 typed characters, or 20 eight-point transfer letters per zone. The high-intensity LED indicators provide 100,000 hours of life and are clearly visible through the legend strip.

## Technical Information

### Environmental Conditions
Operating temperature ..... 0°C to 50°C (32°F to 120°F)

### Housing
Type ..... Steel with hinged/removable, locking door
Size ..... 14.0 in x 14.0 in. x 4.5 in.
..... (35.56 cm x 35.56 cm x 11.43 cm)
Finish ..... Red, sand textured, enamel

### Power
Input power ..... 120 V AC, 60 Hz, 56 V A
Standby power ..... 24 V DC
System power output ..... 24 V DC FWR, 1.5 A max.
Optional standby battery ..... 24 Volts
Battery charger rate ..... 700 mA max.
Battery charge voltage ..... 29 V max.

### Alarm Initiating Circuits
Number of circuits ..... One zone 1501
..... Three zone 1503
..... Five zone 1505
Type ..... Class A or B (style B or D) latched
End-of-line ..... 2.7 KΩ
Loop powered device current ..... 2.0 mA
Alarm current ..... 15 mA
Maximum current ..... 60 mA

### Alarm Initiating Circuits Cont.
Maximum circuit voltage ..... 15.8 V DC
Maximum ripple voltage ..... 500 mV AC
Maximum line resistance ..... 100 Ohms (identifier C01)
..... 50 Ohms (identifier C01A)

### Alarm Indicating Circuits
Reverse polarity type
Number of circuits (all models) ..... Two (2) Class A or B (Style Y or Z)
Maximum current per circuit ..... 1.0 Ampere
Maximum total current ..... 1.5 Amperes
Output voltage ..... 24 V DC, FWR
End-of-line ..... 2.7 KΩ

### Supplementary Alarm/Trouble Contacts
System trouble ..... 2.0 A @ 30 V DC resistive
System alarm ..... 2.0 A @ 30 V DC resistive

### Sounder Output
Alarm ..... Constant output
Trouble ..... 0.25 sec. on. 2.5 sec. off
Supervisory ..... 0.25 sec. on. 0.25 sec. off

### Remote Indicator
Voltage ..... 12 V DC
Current ..... 15 mA max.
Listings ..... UL 864, CSFM, MEA

### Ordering Information

| Model Number | Description |
|---|---|
| 1501 | Single zone control, complete (no batteries) |
| 1503 | Three zone control, complete (no batteries) |
| 1505 | Five zone control, complete (no batteries) |
| **Optional equipment** | |
| 1500-DAC2 | Digital alarm communicator transmitter |
| 1200-DPG | Programmer for 1500-DAC2 |
| 1500-LEM | Local energy master box trip module |
| 1500-RA-5 | Five zone supervised remote alarm annunciator |
| 1500-RA-5A | Five zone supervised remote alarm annunciator w/trouble indicator |
| 1500-TK | Semi-flush trim kit |
| 1500-ZRM-1 | Zone relay module (one zone requiring relay) |
| 1500-ZRM-3 | Zone relay module (two or three zones requiring relay) |
| 1500-ZRM-5 | Zone relay module (four or five zones requiring relay) |
| **Spare equipment** | |
| 1500-BMB | Basic master board |
| 1500-ZEM | Dual zone expander module |
| 1500-SH | System housing only |

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