


LW-401 Conventional Fire Alarm Panel

Features

- 4 Zones - Expandable to 8 Zones
- Microprocessor Based Control
- Factory Programmed - Field Configurable
- 2 Style Y Notification Appliance Circuits
- 3 Amps Notification and Auxiliary Power
- 24 and 60 Hour Battery Backup
- 8 Form "C" Relay Output Option
- 220/240 Vac, 50/60 HZ Power Supply Option
- Remote Serial Annunciator Option
- Sprinkler Supervisory Service
- Non-Silenceable Bell Service
- Alarm Verification by Zone
- One Person Test Feature
- Zone/Output Bypass Feature
- Subsequent Alarm and Trouble with 24 Hour Reminders
- Alarm, Trouble and Supervisory Last Event Records
-  UL, MEA & CSFM Listed

Introduction

The Faraday LW-401 is the next member in a family of products designed to provide cost effective, reliable life safety equipment to the fire alarm market. The microprocessor based fire alarm control panel is supplied with four conventional zones and is expandable to eight. It has many features required by today's demanding market such as field programmability, power limited circuits, one person test, remote annunciation and sufficient power to meet ADA requirements for signaling.

The LW-401 is designed to meet the varied fire alarm needs of small office buildings, apartment buildings, department stores, hotels, strip malls or anywhere a cost efficient, general purpose fire alarm control panel is required.

Description and Features

Initiating Circuits

The base LW-401 has four conventional, Style "B" (Class B) zones which any combination of 30 compatible smoke detectors can be combined on a zone. Any number of thermal detectors, manual stations or other compatible direct shorting devices may be connected to each zone. All of these initiating devices can be mixed on the same zone providing the total power requirement of the zone does not exceed 9 mA



Model LifeWatch-401

supervisory current. The LW-401 has the additional capacity to support detector accessories such as relays, remote alarm lamps and audible bases.

Initiating zones can be programmed for many functions. Alarm verification allows detector application in sensitive areas with or without manual stations mixed on the zone as allowed by code. Manual station operation shall not be delayed on verified zones. Generic zone function allows the NAC's in the LW-401 to follow the action of a master fire alarm panel in the facility.

Initiating zones can also be bypassed as required, for example, during construction on the premises.

The system is expanded through the model 16411B expander which has an additional four initiating circuits in addition to relays and open collector outputs. The system can alternately be expanded through the model 16412B expander module which has an additional four Class A (Style D) initiating circuits. The 16412B also converts the four initiating circuits and the two notification circuits on the main LW-401 to Style D (Class A) and Style Z (Class A) respectively.

Notification Appliance Circuits

The base LW-401 has two Style "Y" (Class B) Notification Appliance Circuits, each rated at 1.5 Amps. The total power output of the panel, between the two notification circuits and the auxiliary output, is limited to 3 Amps. The LW-401 notification circuits are power limited to reduce installation costs without the addition of any hardware.

Three (3) Amps is sufficient to provide power for many applications requiring appliances designed to ADA specifications. Notification Circuits can be programmed for various codes. These include temporal, march time, simplified zone code, and number of rounds. They can also be inhibited during test and programming functions. The two circuits can be individually programmed as non-silenceable. This steady operation can be used for strobes which must continue operation after audible devices are silenced.

Relays and Outputs

The base LW-401 has form "C" relays for general alarm and trouble rated at 1 Amp., 30 VDC. The model 16411B optional expander module has an additional four general purpose, programmable relays rated at 2 Amps., 30 VDC, plus four programmable open collector outputs.

Additionally, the model 16404B relay module provides eight general purpose, programmable relays rated at 2 Amps., 30 Vdc/120 Vac. All remote operations in the fire alarm system are controlled from the 16411B or the 16404B, both of which are installed within the LW-401 enclosure.

Visual and Audible Indicators

The LW-401 has visible LED annunciation by zone for alarm and trouble. Additionally, there is a system alarm LED and a system trouble LED. Supervisory zones utilize the zone trouble LED flashing in sync with a system supervisory LED to indicate an off normal situation.

Clustered with the system alarm, trouble and supervisory LEDs are also LEDs for AC power, bypass and test/program mode. A seven segment display reports a code for each system trouble and is also used during testing and programming functions. Trouble conditions are also annunciated by a piezoelectric sounder housed inside the LW-401.

Remote annunciation is accomplished through a serial connection with the model 16409B, eight zone LED annunciators. These units display alarm, supervisory and trouble conditions for 8 zones. A total of two modules can be attached to each system. The 16409B-0-3 comes with a black enclosure, the 16409B-0-4 with a white enclosure.

Auxiliary Power

The LW-401 contains a 1/2 Amp. auxiliary power circuit which is used to drive remote devices. The total power of the panel, between the auxiliary output and the two notification circuits, is 3 Amps.

Power Supply/Battery Charger

The power supply accepts a 120 Vac/60 Hz input or, optionally, a 220/240 Vac 50 Hz input. On loss of AC power the system switches to battery operation and indicates such by flashing the AC power LED on the display. Battery capacities of 24 and 60 hours are available.

Manual Controls

The LW-401 display has four switches for acknowledging alarm, supervisory and trouble conditions; silencing notification appliance circuits; resetting the system; and for the drill function. These switches are also used when programming the control unit.

Field Programmability and Test Functions

The following functions are field programmable in the LW-401. These features are generally not programmed in the unit as received from the factory. Field programming is accomplished through the display and does not require the use of a computer or any proprietary tools.

Initiating Circuits

Alarm Verification by Zone, Zone Bypass, Supervisory Zone or Generic Zone when the LW-401 is to be used to provide remote notification appliance circuits.

(Note: The default mode is an alarm causing zone.)

Notification Appliance Circuits:

Non-silenceable, Simple Zone Coding, March Time, Temporal, Silence Inhibit, Cutoff Timers and Reminders.

(Note: The default mode is a steady signal.)

Outputs:

Bypass Outputs/Relays.

System Programming:

Zone to Output Matrix and Password Maintenance.

System tests features include the One Person Test feature, a Lamp Test and Search and Clear of the alarm, trouble and supervisory history buffer.

Engineer and Architect Specifications

The fire alarm control panel shall be a Faraday LW-401, shall utilize conventional zones, shall be micro-processor based and fully field programmable. The base panel shall include four initiating zones, relays

for general alarm and trouble and two power limited notification circuits capable of a total of 3 Amps of power.

The system shall be expandable via a model 16411B expander module which shall contain an additional four conventional zones, four general purpose relays and four general purpose open collector outputs.

The fire alarm system shall have the following features: subsequent alarm and trouble, one person test feature, brown out protection, 24 or 60 hour battery backup. It shall also have the following selectable features: supervisory zones, alarm verification by zone, non-latching zones, alarm,

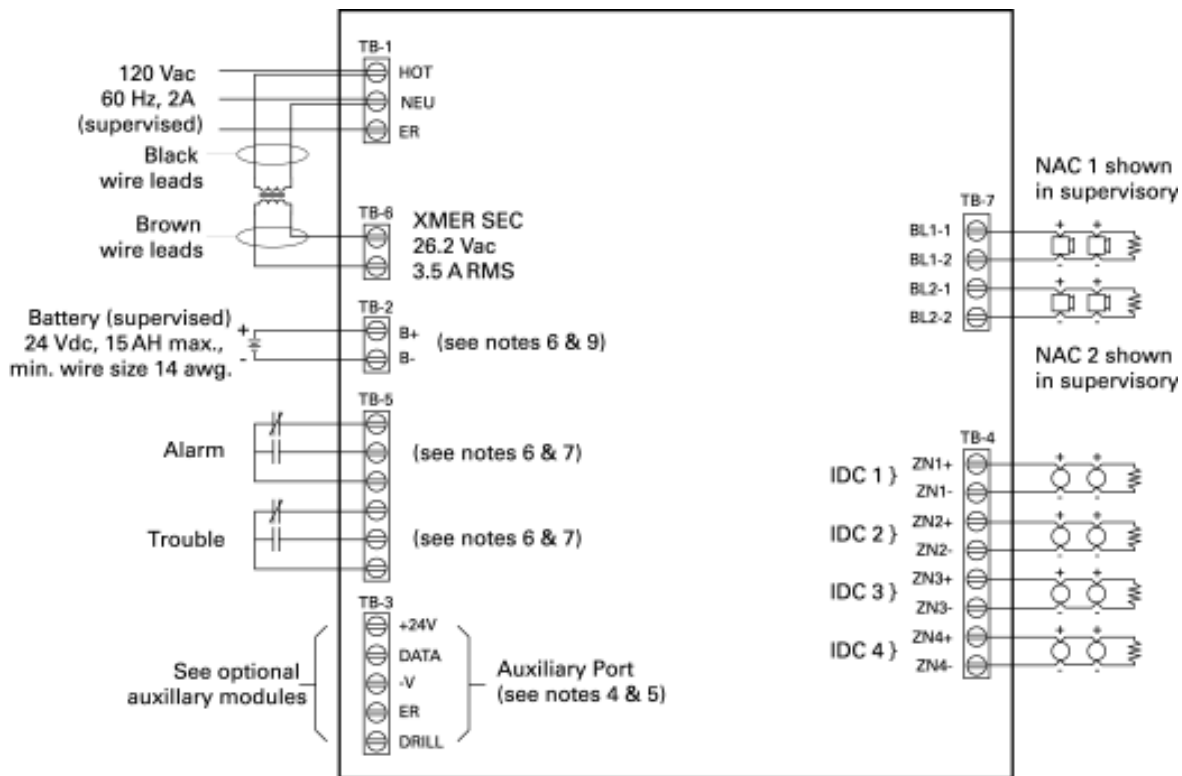
trouble and supervisory history, notification appliance circuit coding, alarm/trouble 24 hour reminder, and zone/output bypass.

Any initiating device circuit shall have the capability of being mapped to any optional output via the system programming function.

The fire alarm control panel shall be UL listed and meet the requirements of NFPA 72 for local fire alarm control for automatic or manual service, and for sprinkler supervisory and waterflow service.

It shall meet NFPA 72 requirements for central station service when connected to the model DC-100 or DC-101 digital fire communicator.

Wiring Diagram



Notes:

- All field wiring must be in accordance with NFPA 70, article 760.
- Make no wiring connections while the system is powered.
- Alarm relay contacts are shown de-energized and Trouble relay contacts are shown energized.
- Auxiliary output rated 0.5 amps at +24 Vdc filtered. maximum line impedance of 5 ohms.
- Combined current output for NAC1, NAC2 and auxiliary outputs is limited to 3.0 amps.
- Equipment connected to these terminals must be located within the same room.
- Refer to the LW-401 Operation, Installation, and Maintenance Manual, for further details.
- No t-tapping allowed.
- Connect standby batteries only to terminals B+ and B-. The batteries may be installed in either the bottom of the cabinet or in a UL listed battery enclosure.
- In all cases the Faraday model number is the compatibility identifier, including the control panel, module (s), and all compatible initiating devices.
- When using the 16405B module, not suitable for remote station protected premises service where separate transmission circuits are required for fire, supervisory, and trouble signals.
- All power limited wiring requires separation from non-power limited wiring.

Technical Specifications

Operating Temperature:

32-120°F (0-49°C)

Humidity:

85% @ 86°F (30°C) up to 24 hrs.

Primary Input Voltage:

LW-401R: 120 Vac, 60 Hz nominal

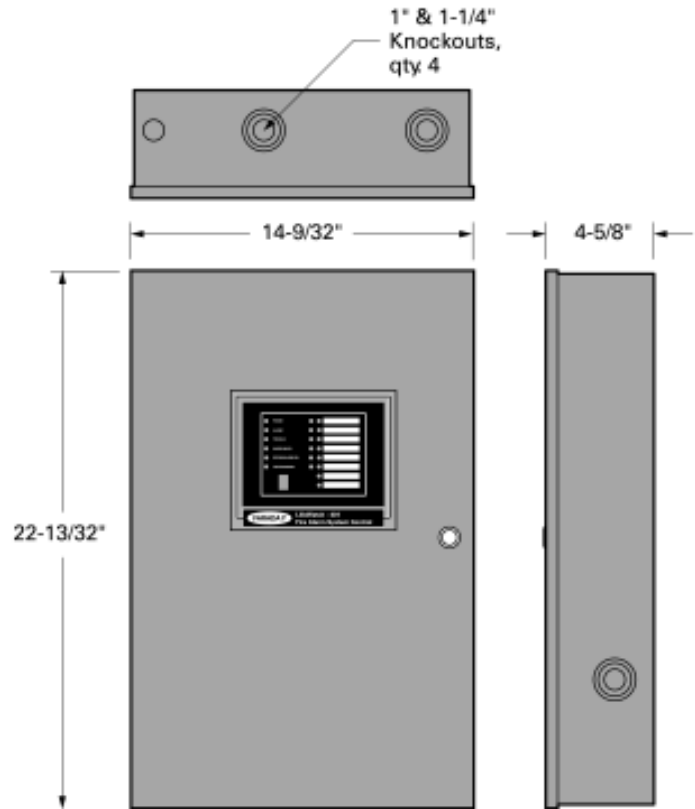
LW-401IR: 220/240 Vac, 50 Hz nominal

Shipping Weight:

LW-401R, 30 lbs. approx.

LW-401IR, 30 lbs. approx.

Dimensions



Ordering Information

Model	Description	Part No.
16420-0-14-120	Surface mount, 4 zone class "B" (style B), 120 Vac, red	599-699580FA
16420-0-14-240	Surface mount, 4 zone class "B" (style B), 240 Vac, red	599-699581FA
Accessories		
16411B	4-zone expander module	500-696006FA
16412B	Class "A" expander module	500-696007FA
16404B	8 output relay module	500-692972FA
16405B	Municipal tie/leased line module	500-093285FA
16413B	Battery volt/amp meter module	500-696008FA
16418B-0-14	Semi-flush trim kit, red	500-699660FA
16419B-0-3	Deadfront adapter plate, black	500-699662FA
16409B-0-4	8-zone LED remote annunciator, white	500-693317FA
16409B-0-3	8-zone LED remote annunciator, black	500-693062FA



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