

ULCF3000PR

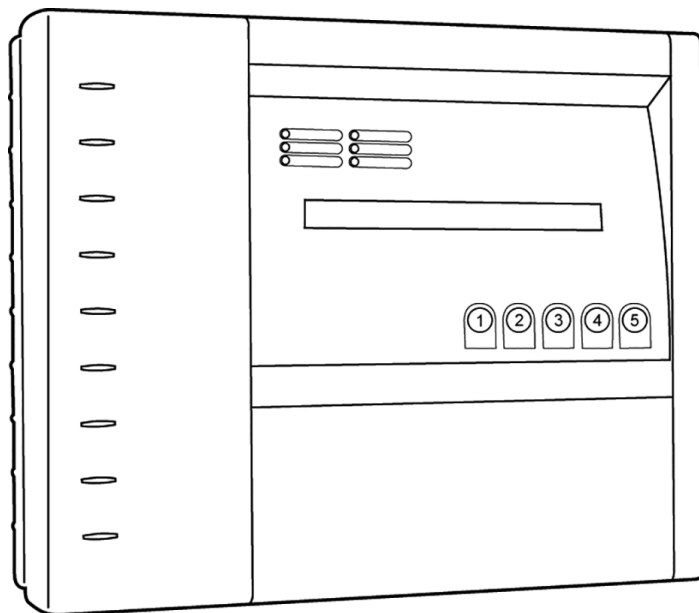
Installation and Operation Manual

SIGNALING



LISTED
FIRE ALARM
EQUIPMENT
4AC5

Conforms to
UL864 9th
Edition



EATON

Powering Business Worldwide

Contents

Contents

- 1. INTRODUCTION7**
 - 1.1 Insulation Precautions7
 - 1.2 General description11
 - 1.3 Facilities12
- 2. PANEL INSTALLATION13**
 - 2.1 General/Installation13
- 3. SYSTEM OPERATION17**
 - 3.1 Operational Flow Chart17
 - 3.2 Systems Controls - Loop Panel18
 - 3.3 Specification19

DOCUMENT UPDATE NOTES

S.No.	Release / Change Notes	Date
A	Eaton Update	November 2018

PROPRIETARY NOTICE

All data and information contained within this manual is of a proprietary nature. Do not reproduce, transcribe, store in a retrieval system or translate into any language, any part of this manual without the prior permission of 'EATON'. EATON reserves the right to make changes to product specification without notice or liability. Every care has been taken to ensure the accuracy of the information contained in this manual, but no liability can be accepted for any errors or omission.

DISCLAIMER OF WARRANTIES AND LIMITATION OF LIABILITY

The information, recommendations, descriptions and safety notations in this document are based on Eaton Corporation's ("Eaton") experience and judgment and may not cover all contingencies. If further information is required, an Eaton sales office should be consulted. Sale of the product shown in this literature is subject to the terms and conditions outlined in appropriate Eaton selling policies or other contractual agreement between Eaton and the purchaser.

THERE ARE NO UNDERSTANDINGS, AGREEMENTS, WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, OTHER THAN THOSE SPECIFICALLY SET OUT IN ANY EXISTING CONTRACT BETWEEN THE PARTIES. ANY SUCH CONTRACT STATES THE ENTIRE OBLIGATION OF EATON. THE CONTENTS OF THIS DOCUMENT SHALL NOT BECOME PART OF OR MODIFY ANY CONTRACT BETWEEN THE PARTIES.

In no event will Eaton be responsible to the purchaser or user in contract, in tort (including negligence), strict liability or other-wise for any special, indirect, incidental or consequential damage or loss whatsoever, including but not limited to damage or loss of use of equipment, plant or power system, cost of capital, loss of power, additional expenses in the use of existing power facilities, or claims against the purchaser or user by its customers resulting from the use of the information, recommendations and descriptions contained herein. The information contained in this manual is subject to change without notice.

Contents

SUPPORT SERVICES

The goal of Eaton is to ensure your greatest possible satisfaction with the operation of our products. We are dedicated to providing fast, friendly, and accurate assistance. That is why we offer you so many ways to get the support you need. Whether it is by phone, fax, or email, you can access Eaton's support information 24 hours a day, seven days a week. Our wide range of services is listed below. You should contact your local distributor for product pricing, availability, ordering, expediting and repairs.

Website

Use the Eaton website to find product information. You can also find information on local distributors or Eaton's sales offices.

www.eaton.com

EatonCare Customer Support Center

Call the EatonCare Support Center if you need assistance with placing an order, stock availability or proof of shipment, expediting an existing order, emergency shipments, product price information, returns other than warranty returns, and information on local distributors or sales offices.

Voice: 877-ETN-CARE (386-2273) (8:00 a.m. to 6:00 p.m. EST)

After-Hours Emergency: 800-543-7038 (6:00 p.m. to 8:00 a.m. EST)

Important Safety Information

Personnel who install, maintain or repair this equipment must read the safety information below before starting work.

Definitions and Symbols

WARNING

Indicates a potentially hazardous situation which, if not avoided, can result in serious injury or death.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, can result in minor to moderate injury, or serious damage to the product.

General Safety Precautions

NOTICE

The operating system of the control panel may be revised as a result of enhancements to the system software or hardware. Revisions to this manual will be issued and supplied on request and should be logged in the table supplied on the contents page.

CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF THE USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

This product must only be disposed of in accordance with the WEEE directive.



1. Introduction

This manual provides information on the installation and operation of the Eaton Fire Systems ULCF3000PR Passive repeater panel. Notice The operating system of the ULCF3000PR may be revised as a result of enhancements to the system software or hardware. For maintenance recommendations refer to the NFPA 72 National Fire Alarm Code, 2007.

1. Introduction

1.1 Fire Alarm System Limitations

An automatic fire alarm system – in general is made up of smoke detectors, heat detectors, manual pull stations, Call points, audible warning devices, and fire alarm control panels with remote notification capability, which can supply early warning of a developing fire. Such a system, on the other hand, is unable to assure protection against property damage or loss of life resulting from a fire.

The Manufacturer recommends that smoke and /or heat detectors must be positioned throughout a protected premise following the recommendations of the current edition of the National Fire Protection Association Standard 72 (NFPA72), manufacturer's recommendations, State and local codes, and the recommendations contained in the Guide for Proper Use of System Smoke Detectors, which is made available at no charge to all installing dealers. A study by the Federal Emergency Management Agency (an agency of the United States government) indicated that smoke detectors may not go off in as many as 35% of all fires. While fire alarm systems are intended to provide early warning against fire, they cannot promise warning or protection against fire. A fire alarm system may not provide timely or sufficient notice, or might not function, for a diversity of reasons.

Smoke detectors may not sense fire where smoke cannot reach the detectors such as in chimneys, in or behind walls, on roofs, or on the other side of closed doors. Smoke detectors also may not sense a fire on another level or floor of a building. A second-floor detector, for example, may not sense a first-floor or basement fire.

Particles of combustion or "smoke" from a developing fire may not reach the sensing chambers of smoke detectors because:-

- Barriers such as closed or partially closed doors, walls, or chimneys may inhibit particle or smoke flow.
- Smoke particles may become "cold," stratify, and not reach the ceiling or upper walls where detectors are located.
- Smoke particles may be blown away from detectors by air outlets.
- Smoke particles may be drawn into air returns before reaching the detector.

The amount of "smoke" present may be insufficient to alarm the smoke detectors. Smoke detectors are designed to alarm at various levels of smoke density. If such

1. Introduction

density levels are not created by a developing fire at the location of detectors, the detectors will not go into alarm.

Smoke detectors, even when working properly, have sensing limitations. Detectors that have photo electronic sensing chambers tend to detect smoldering fires better than flaming fires, which have little visible smoke. Detectors that have ionizing-type sensing chambers tend to detect fast –flaming fires better than smoldering fires. Because fires develop in different ways and are often unpredictable in their growth, both type of detector is necessarily best and a given type of detector may not provide adequate warning of a fire.

Smoke detectors cannot be expected to provide adequate warning of fires caused by arson, children playing with matches (especially in bedrooms), smoking in bed, and violent explosions (caused by escaping gas, improper storage of flammable materials, etc.).

Heat detectors do not sense particles of combustion and alarm only when heat on their sensors increases at a preset rate or reaches a predetermined level. Rate-of-rise heat detectors may be subject to reduced sensitivity overtime. For this reason, the rate-of-rise feature of each detector should be tested at least once per year by a qualified fire protection expert. Heat detectors are designed to protect property, not life.

IMPORTANT

Smoke detectors must be installed in the same room as the control panel and in rooms used by the system for the connection of alarm transmission wiring, communications, signaling, and/or power. If detectors are not located, a developing fire may damage the alarm system, crippling its ability to report a fire.

Audible warning devices such as bells may not alert people if these devices are located on the other side of closed or partly open doors or are located on another floor of a building. Any warning device may fail to alert people with a disability or those who have recently consumed drugs, alcohol or medication.

Please note that: Strobes can, under certain circumstances, cause seizures in people with conditions such as epilepsy.

Studies have shown that certain people, even when they hear a fire alarm signal, do not respond or comprehend the meaning of the signal. It is the property owner's responsibility to conduct fire drills and other training exercise to make people aware of fire alarm signals and instruct them on the proper reaction to alarm signals.

In rare instances, the sounding of a warning device can cause temporary or permanent hearing loss.

A fire alarm system will not operate without any electrical power. If AC power fails, the system will operate from standby batteries only for a specified time and only if the batteries have been properly maintained and replaced regularly.

1. Introduction

Equipment used in the system may not be technically compatible with the control. It is essential to use only equipment listed for service with your control panel. Telephone lines needed to transmit alarm signals from a premise to a central monitoring station may be out of service or temporarily Supervisory. For added protection against telephone line failure, backup radio transmission systems are recommended.

The most common cause of fire alarm malfunction is insufficient maintenance. To keep the entire fire alarm system in excellent working order, ongoing maintenance is required as the manufacturer's recommendations, and UL and NFPA standards. At a minimum, the requirements of NFPA 70, 72 shall be followed. Environments with large amounts of dust, dirt or high air velocity require more frequent maintenance. A maintenance agreement should be arranged through the local manufacturer's representative. Maintenance should be scheduled monthly or as required by National and /or local fire codes and should be performed by authorized professional fire alarm installers only. Adequate written records of all inspections should be kept.

Installation Precautions

WARNING

Several different sources of power can be connected to the fire alarm control panel. Disconnect all sources of power before servicing the Control unit and associated equipment may be damaged by removing and/or inserting cards, modules or interconnecting cables while the unit is energized. Do not attempt to install, service, or operate this unit until this manual is read and understood fully.

CAUTION

System Reacceptance Test after Software Changes. To ensure proper system operation, this product must be tested in accordance with NFPA 70, 72 after any programming operation or change in site -specific software. Re-acceptance testing is required after any change, addition or deletion of system components, or after any modification, repair or adjustment to system hardware or wiring. All components, circuits, system operations, or software functions known to be affected by a change must be 100% tested.

In addition, to ensure that other operations are not inadvertently affected, at least 10% of initiating devices that are not directly affected by the change, up to a maximum of 50 devices, must also be tested and proper system operation verified.

This system meets NFPA requirements for indoor dry operation at 0-49° C/32-120° F and at a relative humidity of 93 ±2% RH (non-condensing) at 32 ±2° C/ 90 ±3° F. However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and all peripherals be installed in an environment with a nominal room temperature of 15-27°C/60-80° F.

1. Introduction

Verify that wire sizes are adequate for all initiating and indicating device loops. Refer to manual Specifications section for maximum allowable I.R. drop from the specified device voltage.

Like all solid state electronic devices, this system may operate erratically or can be damaged when subjected to lightning-induced transients. Although no system is completely immune from lightning transients and interferences, proper grounding will reduce susceptibility. Overhead or out-side aerial wiring is not recommended, due to an increased susceptibility to nearby lightning strikes. Consult with the Technical Services Department if any problems are anticipated or encountered.

Disconnect AC power and batteries prior to removing or inserting circuit boards. Failure to do so can damage circuits.

Remove all electronic assemblies prior to any drilling, filing, reaming, or punching of the enclosure. When possible, make all cable entries from the sides or rear. Before making modifications, verify that they will not interfere with battery, transformer, and printed circuit board location.

Do not tighten screw terminals more than 9 in-lbs. Over-tightening may damage threads, resulting in reduced terminal contact pressure and difficulty with screw terminal removal.

This system contains static-sensitive components. Always ground yourself with a proper wrist strap before handling any circuits so that static charges are removed from the body. Use static-suppressive packaging to protect electronic assemblies removed from the unit.

Follow the instructions in the installation, operating, and programming manuals. These instructions must be followed to avoid damage to the control panel and associated equipment. FACP operation and reliability depend upon proper installation by authorized personnel.

1. Introduction

1.2 General description

The **ULCF3000PR** - Passive Analogue Repeater Panels, provide a cost effective, system information display which can be programmed to be either fully passive (display only) or semi passive (restricted system control).

If Loop connected the panel will display system information text of the connected panel and will provide a fire indication, with panel number, of any connected network panel that has fire activation.

This panel requires system programming for local text information.

This panel does not require system programming.

The panels are suitable for either surface or semi-recessed mounting.

The panel has a main 2x40, backlit, Liquid Crystal Display (LCD), display providing system status information and menu driven, system control as well as 6 supervisory LED's:-

- POWER ON
- ALARM
- TROUBLE
- SUPERVISORY
- TEST IN PROGRESS
- SCROLL

The panel also has five control buttons:-

- SCROLL UP
- ENTER PASSCODE
- ENTER MUTE BUZZER
- SCROLL DOWN

When loop mounted the repeater panel is connected directly to one of the panel loops and is soft addressed on initial system power up. As with all Menvier analogue systems loop mounted equipment, the repeater panel has integral short circuit isolators, to maintain system integrity should a short circuit fault occur on the system wiring.

1.3 Facilities

The panels have an integral battery and charger, providing 24 hour standby and therefore will require a 230V ac supply connection. It is recommended that an unswitched, fused spur is provided adjacent to the intended repeater panel position.

Main Display

The repeater panel has a 2 line x 40 character LCD which in normal conditions shows 'System Healthy' and is not back lit. Under Alarm, Trouble or Pre Alarm conditions system information will be displayed and the LCD will be illuminated. To illuminate the LCD under normal conditions press any panel button.

LED Indicators

Power LED: On - system ac/dc supply healthy Off - system supply failure

Alarm LED: On - Indicates system Alarm activation
Flashing - Manual evacuation activated

Trouble LED: Indicates internal/external system Trouble

Supervisory LED: Indicates loop device disabled

Test in progress LED: Indicates one man walk test in progress

Scroll LED: Flashes when there is more than one current event

Control buttons

Scroll down: Scrolls display down through current Alarm/pre-alarm/Trouble activations

Enter passcode: Allows access to system end user and engineering controls

Enter: access individual menu items

Mute buzzer: silences internal buzzer

Scroll up: Scrolls display up through current Alarm/pre-alarm/Trouble activations

2. Panel Installation

2. Panel Installation

2.1 General/Installation

Panel Mounting

General

As with all electrical equipment the **ULCF3000PR** panels should be installed in a clean, dry, well ventilated area, away from direct sunlight. The unit is designed to operate in temperatures between 0° and 49°C, temperatures outside these parameters should be avoided. The panel should be located away from any potential hazard, in a position where it is readily accessible to both the fire services and authorised users, ideally on the perimeter of the building near a designated entrance point.

The panel is provided with a drill template to aid wall mounting, it is recommended that this is used as it will ensure that possible damage to the panel, whilst fixing, will be minimised and also brick dust will be prevented from contaminating the panel and system circuit boards.

Installation

Using the template provided, mark the four mounting screw positions, drill and plug the wall. Fix the top two screws ready for mounting the panel. Remove the repeater panel from its protective box and remove front cover by lowering the front panel flap and unscrewing the two Philips head screws. This gives access to the battery compartment and the front panel holding screw, remove battery and the remaining fixing screw, the front panel will fold down to give access to the back box and circuit board. Locate the back box on the top two screws, locate the remaining two screws (battery enclosure) and tighten, ensure the back box is securely fitted to the wall and has not been twisted by over tightening the retaining screws.

Remove required number of cable entry covers at top of housing and fit the loop cables and mains supply cables in the required position together with suitable termination glands. If panel connection is via rear cable entry, cables must be positioned prior to mounting the panel on the wall.

Connect the loop cables as per diagram 3

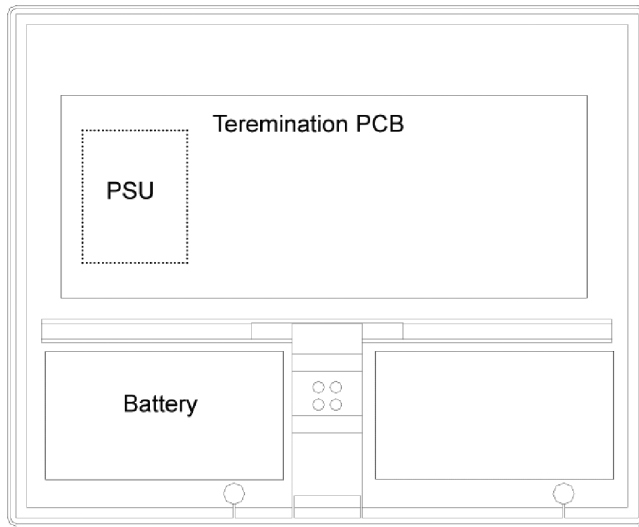
Ensuring the mains supply is isolated and spur unit has had the fuse removed, connect the 230V ac supply wiring.

Replace the front panel and use a protective cover to prevent dust ingress or panel damage prior to system commissioning.

2. Panel Installation

Panel Layout

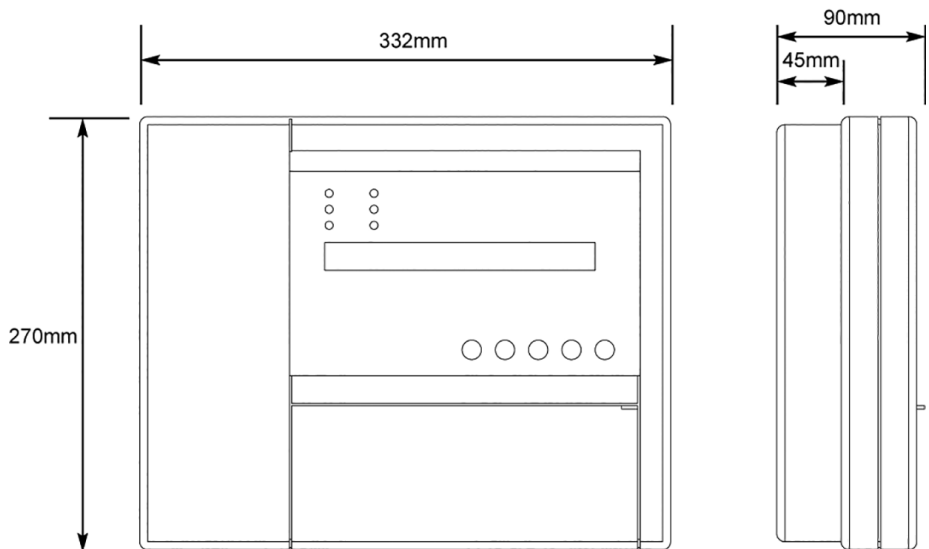
Dia. 1



*Display PCB's mounted on Front Panel

Dimensions

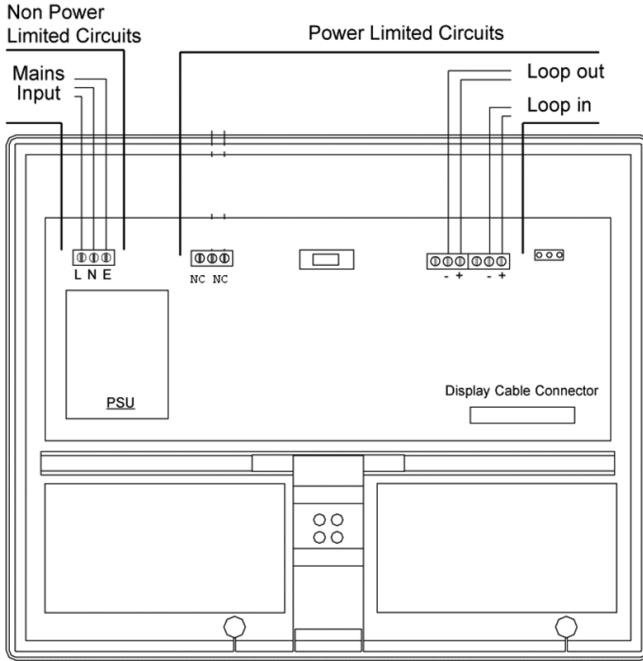
Dia. 2



2. Panel Installation

Wiring Diagrams

Dia. 3



Installing Cabling

Once the backbox is mounted the next stage is to install the power and loop cables and fit the glands.

Connecting the AC Power and earth connection

WARNING

To reduce the risk of electrical shock, make sure that all power has been turned off or disconnected prior to attempting to connect power to the Power Supply.

Note: Make sure that AC main circuit breaker is off before wiring any connection between mains and control panel

The primary power needed for the Eaton Addressable Repeater Panel is 120VAC 60hz or 240VAC 60Hz.

2. Panel Installation

1. Enter Power Cable into Cabinet knock out hole.
2. Attach the brown (live) wire from the source to terminal "Line" (USA use color black wire).
3. Attach the blue (neutral) wire from the source to the "Neutral" terminal (USA use color white wire).
4. Attach the ground wire from the source to the "GD" terminal block (USA use color green wire).

Cable Anchorage

The mains cable must be fixed securely with a 20mm cable gland. Remove a suitably located knockout feed the cable through the gland and bolt the gland to the Backbox as shown. Secure the cable to the side of the box using the cable clip provided.

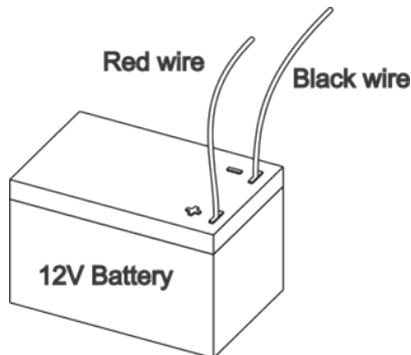
Connect wiring from AC mains to TB1 on the PCBA2180 being careful to observe proper connections in the figure below.

Note: Apply the AC Power BEFORE connecting the batteries to the Panel!

Note: Apply AC power to panel after the system is completely installed and visually checked.

Battery Installation

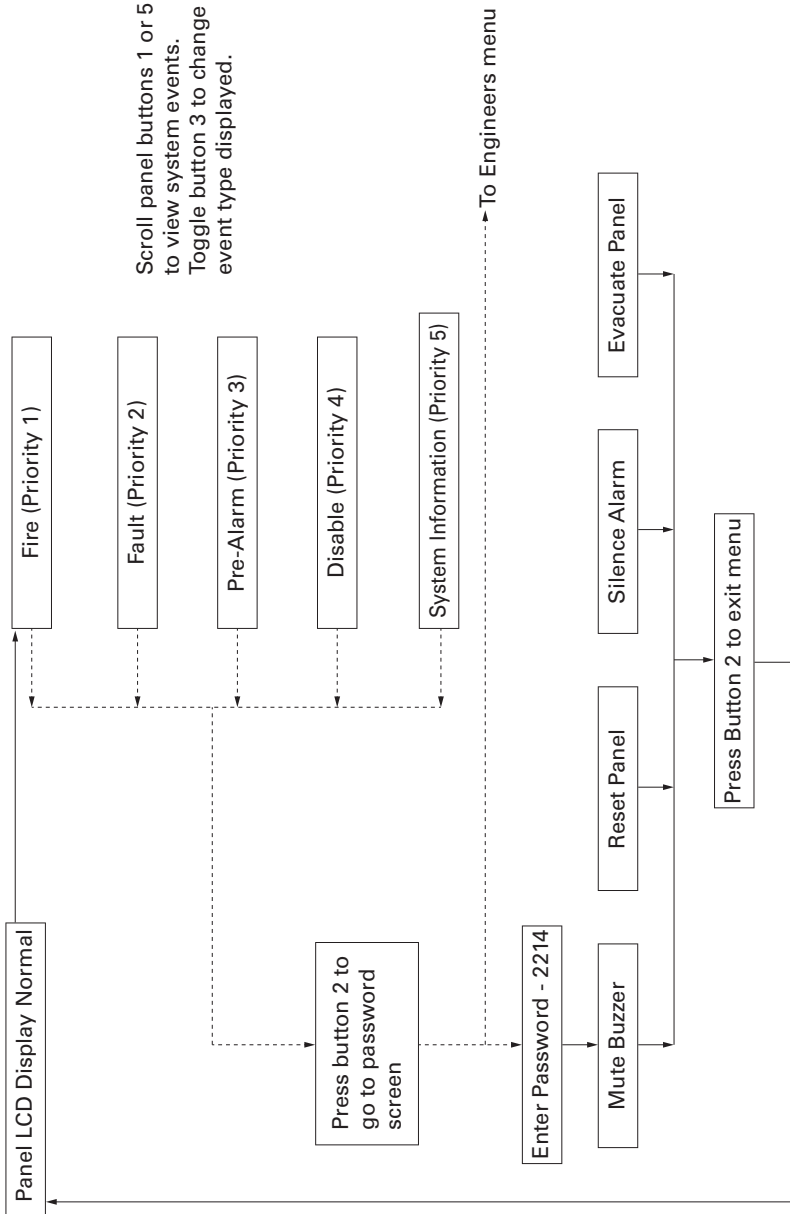
The battery is placed at the bottom of the enclosure. The ULCF3000PR is fully protected if the batteries are connected in the opposite direction the battery fault yellow led will show steady in such a condition.



3. System Operation

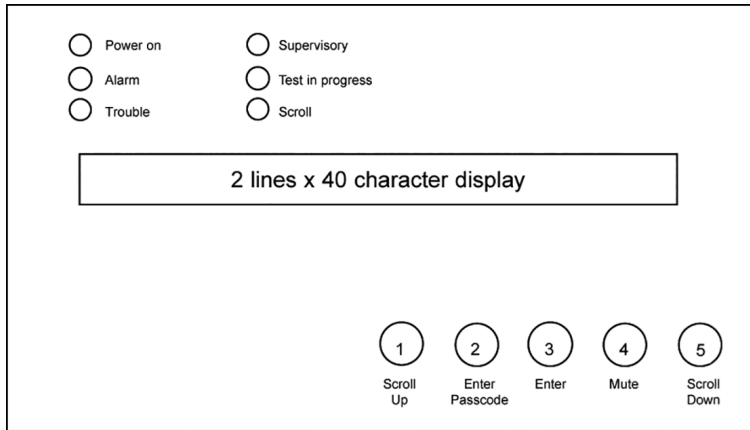
3. System Operation

3.1 Operational Flow Chart



3.2 Systems Controls - Loop Panel

ULCF3000PR and ULCF3000PR/NC Front Panel Display



The ULCF3000PR repeater panel provides local panel information and limited control via a comprehensive, menu driven 2x40 character LCD.

It will display local panel:-

- Alarm Activations (Priority 1)
- Troubles (Priority 2)
- Pre-Alarms (Priority 3)
- Supervisory (Priority 4)
- General System Information (Priority 5)

On panel activation the related LED will illuminate and the LCD will indicate:-

- Event Type - ALARM, TROUBLE, PRE-ALARM, SUPERVISORY, INFO
- Location Text (local panel only)
- Number of current activations
- Address number
- Panel Number
- Zone number
- Loop number
- Device type

3. System Operation

Note: Under non event conditions, the repeater panel display remains unlit.

To activate the display backlight, press any control button. To scroll through displayed events press buttons 1 (up) and 5 (down)

To change event type displayed toggle button 3

3.3 Specification

Compatibility	With UL Addressable Panels	
Standards	UL864 9th Edition	
Display	2x40 Character LCD (black on green)	
System Indicators	Power on, Alarm, Trouble, Test, Supervisory, Scroll LED's	
Colour	Light grey or Graphite (at an additional)	
Mains Input, Supervised	Voltage	120/240 AC 60Hz
	Current	35mA
SLC Field Wiring	Current	0.354 mA
	Wiring Gauge	12 max AWG
	Wiring Class	Class A Style 7
	Ground Fault	0.1 Ohm
	Supervisory, Power Limited	Yes
	Max Line Impedance	50Ω
Batteries	1x12vdc, 3.2Ah, 0.1 derating factor	
Battery Charge Current	0.4 Amp	
Standby period	24 hours + 30min. alarm	
Humidity (Non Condensing)	0 - 93 %RH	
Operating Temp	0 to +49 degree C	
Mechanical	PC/ABS, UL94 5VA rating	
Weight	3.6Kg, incl batteries	
Dimensions	270(h)x332(w)x90(d)mm	
IP Rating	IP30 - for indoor applications	
Cable Entry	12x20mm knockouts top of backbox	
Download Comms	RS232 port	

Up to 20 repeater panels can be connected to a loop (subject to loop loading calculation)



Powering Business Worldwide

Eaton Electrical Systems Ltd.

Wheatley Hall Road
Doncaster
South Yorkshire
DN2 4NB

Eaton

EMEA Headquarters
Route de la Longeraie 7
1110 Morges, Switzerland
Eaton.eu

© 2018 Eaton
All Rights Reserved
Publication No. 25-16299-A
November 2018

Eaton is a registered trademark.

All trademarks are property
of their respective owners.