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Control Panel For Addressable Automatic Fire Detection, Automated voice alarm, Public Address and Talkback System - 1 loop

Model-AL-FAPATBCP-101L

Features:

- ✓ Integrated fire, PA talkback on loop powered, environmental data communication.
- ✓ public address and talkback audio on two wire technology.
- ✓ Automated text to speech for voice alarm without use of pre recorded voice file.
- ✓ Interactive 7” inch display with touch screen control
- ✓ Real time indication on smoke and temperature on protected area.
- ✓ Digital audio communication without use of conventional audio amplifier.
- ✓ Automated Integrity check on wiring, individual devices each and every devices used in a system.
- ✓ Minimal hardware, to reduce failure rate, and plugin modules for easy service.
- ✓ Onsite configuration can be done directly through panel display.

Complied with

NBC 2016

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Overview:

This control panel serves as a centralized unit, providing a wide range of functionalities, as required to meet NBC 2016 including

The panel efficiently monitors all connected devices interrupting signals from input devices . Through a user friendly touch screen controlled display on the dashboard, it provides clear information and indication via speakers, facilitating appropriate actions. Notably, the control panels innovative design allows it to connect and to control all external devices, using just two wires for power and data signaling this ground-breaking feature significantly reduces cable requirements.

To enhance reliability, the control panel incorporates minimal electronic hardware, minimizing the chances of failure. Additionally, the electronic boards are plug-in type, ensuring easy replacement if needed.

A remarkable feature of the Airlight control panel is its automatic generation of voice alarms based on device and zone locations entered. This eliminates the need for prerecording and storing audio files, streamlining the system's efficiency

Regarding power supply, the control panel operates on 24 volts DC. It also includes a built-in 230 volts to 24 volts SMPS (Switched-Mode Power Supply) and a battery charger battery charger provision for batteries. Users have the flexibility to choose between the built-in power supply or connect it to an external 24-volt supply, as requirement .

Ensuring the safety of occupants during fires is vital, following the NBC 2016 - Part 4 - Annex D guidelines.

When a fire happens in a high-rise building, getting everyone out safely can be tough. But with a well-prepared plan and proper training, it can work better.

To meet these needs, these electronic and software-based integrated systems are really important:

Automatic Fire Detection And Manually Operated Fire Alarm Using Voice Alarm:

Manually operated electronic fire alarms: (MOEFA)If someone sees a fire, they can press a button to start a voice alarm. This is a message that says where the fire is.

Example of a voice alarm: "Attention please, fire alarm reported from automatic smoke detector of seventh floor electrical room, ." This helps both the people inside and the security or support personnel to rush to take appropriate action.

Automatic fire detection:

Besides the alarms people can trigger, there are also Automatic fire detectors that can sense smoke and heat. These detectors are put in places as required. They automatically activate voice alarms when they sense a fire.

Example of a voice alarm: "Attention please, fire alarm reported from automatic smoke detector of seventh floor electrical room, ." This helps both the people inside and the security or support personnel to rush to take appropriate action.

PA System

The control panel features an Interactive Touchscreen controlled TFT Display, designed to be user-friendly for clear indications, easy navigation, and controls. Users have the flexibility to choose between activating individual speakers, required speakers, speakers within specific zones, or all speakers, using the intuitive touch screen display.

Talkback System

A crucial component of this system is the Talkback speaker, which enhances the usability of the PA speaker system. Initiating a call from the Talkback speaker's call button or through the control panel's display, along with identification and location information, establishes two-way communication once acknowledged. Similarly, calls can be made from control panel to targeted talkback units for

communication. Furthermore, addressable voice call points and complementing addressable speakers can also serve as Talkback speakers.

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Automatic fire emergency lighting:

Fires can make the normal lights go off. So, having special lights along escape routes is important. These lights turn on automatically during fires. They make sure people can see where to go

Safety managers friendly feature for Fire drill system:

An Automated Fire Drill System is included in the control panel's capabilities. Regular fire drills are recommended to familiarize occupants, security personnel, and others with appropriate actions during fire emergencies. During these drills, the control panel supports specific area messages.

Typed messages entered into the zonal message box on the control display are automatically converted to speech. These messages can be played through speakers during both practice drills and actual emergencies. Updates can be made to the system as needed. Additionally, the automatic messaging can be overridden using the control panel's hand microphone.

Rescue personnel friendly for Evacuation system:

For an orderly evacuation during fire emergencies, an Automated Voice Evacuation System is in place. Evacuation messages based on fire zones can be typed into the zonal evacuation message box. These text messages are automatically transformed into voice messages and relayed through designated speakers during real fire evacuation processes. Similar to the fire drill system, changes are accommodated, and the automatic messaging can be overridden using the control panel's hand microphone.

Service Engineer friendly feature :

To ensure reliability, the control panel designed using minimal electronic components, thereby reducing the likelihood of failure . The control panel circuits are made in to modular construction.

These plug in modules helps service personnel to attend rectification processes by just replacing defective modules with in no time.

The control panel employing a digital process and signaling mechanism for audio communication and amplification instead of conventional bulky

AC amplifiers. The maximum signaling voltage is capped at 24 volts.

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Control panel for Addressable public address and Addressable Talkback speaker system :

This control panel has been specifically designed for addressing fire emergencies through a Public Address and Talkback speaker system. It aligns with the requirements set out in NBC 2016, including Addressable Public Address Systems, Addressable Talkback speaker systems, Addressable Fire drill systems, and Addressable voice evacuation systems.

User friendly configuration for initial setup and modifications as and when required:

Entire configuration can be done on front panel touchscreen display to set up the system. And modifications can also be done.
Or through Microsoft excel sheets can be done and uploaded / downloaded . No dongle, special PC , special software is required.

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Loop Power calculation and count of devices.

All the devices used in the system including PA speakers and Talkback speakers are loop powered. Calculating loop power for an addressable fire detection and speaker system is a crucial step. This process holds significance for systems integrating fire detection, voice alarms, and speaker functions. The setup consists of detectors, MCPs, and speakers, all operating on loop power. While detectors and MCPs draw minimal current, speakers demand higher current. Unlike earlier versions where devices were low current and allowed up to 127 connections per loop, the current scenario requires a different approach. Designing such a system hinges on two key considerations: the cumulative power consumption of connected devices and the total count of devices linked in a loop.

Power Supply for the System:

The Control Panel and devices operate on a 24-volt power supply. The control panel is designed to accommodate both external and built-in power supply options.

External Power Supply:

The control panel has a provision to directly connect a 24-volt external power supply. This supply can be sourced from the nearest fire alarm panel or any other compatible source. The objective is to reduce dependence,save space, and minimize costs.

Built-in Power Supply:

The control panel is also equipped with a built-in power supply unit capable of converting 230 volts AC supply to 24 volts DC. Additionally, it features

a built-in battery charger and ample space to accommodate two 12-volt batteries. Users can choose from various capacities ranging from 7 AH to 18 AH, depending on their power requirements.

This setup ensures uninterrupted power supply during emergencies and aids in system reliability.

Electrical Specification:

Primary Power	220V±10%AC
Standby Power	Control panel have build in charger also it as provision to accommodate 12v, 18Ah SMF Battery(2 No's)
No. of Loop	1
Total devices per loop	Each loop has addressable capability up to 127 nos. each loop is capable to connect and operate loop powered speaker devices. Speaker is high current device hence each loop can drive up to 2000mA based on power requirement; device count shall be limited accordingly.
Maximum Signal Loop Current	2000mA
Loop Resistance	40 ohms
Wiring	2core cable
Wiring Type	Class A/ Class B Style