FIRE·LITE® ALARMS by Honeywell

HW-AV-LTE-M-FL

CLSS Pathway Pro

Installation and Operations Manual

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FIRE ALARM & EMERGENCY COMMUNICATION SYSTEM LIMITATIONS

While a life safety system may lower insurance rates, it is not a substitute for life and property insurance!

An automatic fire alarm system—typically made up of smoke detectors, heat detectors, manual pull stations, audible warning devices, and a fire alarm control panel (FACP) with remote notification capability—can provide early warning of a developing fire. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire.

An emergency communication system—typically made up of an automatic fire alarm system (as described above) and a life safety communication system that may include an autonomous control unit (ACU), local operating console (LOC), voice communication, and other various interoperable communication methods—can broadcast a mass notification message. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire or life safety event. The Manufacturer recommends that smoke and/or heat detectors be located throughout a protected premises following the recommendations of the current edition of the National Fire Protection Association Standard 72 (NFPA 72), 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. This document can be found at http://www.systemsensor.com/appguides/. 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 designed to provide early warning against fire, they do not guarantee warning or protection against fire. A fire alarm system may not provide timely or adequate warning, or simply may not function, for a variety 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, chimneys, even wet or humid areas 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, such as air conditioning vents.

• Smoke particles may be drawn into air returns before reaching the detector.

The amount of “smoke” present may be insufficient to alarm smoke detectors. Smoke detectors are designed to alarm at various levels of smoke density. If such 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 photoelectronic 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, neither 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 predetermined rate or reaches a predetermined level. Rate-of-rise heat detectors may be subject to reduced sensitivity over time. For this reason, the rate-ofrise feature of each detector should be tested at least once per year by a qualified fire protection specialist. 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 so located, a developing fire may damage the alarm system, compromising its ability to report a fire.

Audible warning devices such as bells, horns, strobes, speakers and displays 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:

• An emergency communication system may take priority over a fire alarm system in the event of a life safety emergency.

• Voice messaging systems must be designed to meet intelligibility requirements as defined by NFPA, local codes, and Authorities Having Jurisdiction (AHJ).

• Language and instructional requirements must be clearly disseminated on any local displays.

• 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 to or comprehend the meaning of the signal. Audible devices, such as horns and bells, can have different tonal patterns and frequencies. It is the property owner's responsibility to conduct fire drills and other training exercises 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 life safety 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.

Equipment used in the system may not be technically compatible with the control panel. It is essential to use only equipment listed for service with your control panel.

Alarm Signaling Communications:

• **IP connections** rely on available bandwidth, which could be limited if the network is shared by multiple users or if ISP policies impose restrictions on the amount of data transmitted. Service packages must be carefully chosen to ensure that alarm signals will always have available bandwidth. Outages by the ISP for maintenance and upgrades may also inhibit alarm signals. For added protection, a backup cellular connection is recommended.

• **Cellular connections** rely on a strong signal. Signal strength can be adversely affected by the network coverage of the cellular carrier, objects and structural barriers at the installation location. Utilize a cellular carrier that has reliable network coverage where the alarm system is installed. For added protection, utilize an external antenna to boost the signal.

• **Telephone lines** needed to transmit alarm signals from a premise to a central monitoring station may be out of service or temporarily disabled. For added protection against telephone line failure, backup alarm signaling connections are recommended.

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

INSTALLATION PRECAUTIONS

Adherence to the following will aid in problem-free installation with long-term reliability:

WARNING - Several different sources of power can be connected to the fire alarm control panel. Disconnect all sources of power before servicing. 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 manuals are read and understood.

CAUTION - System Re-acceptance Test after Software Changes:

To ensure proper system operation, this product must be tested in accordance with NFPA 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 operation at 0-49º C/32-120º F and at a relative humidity 93% ± 2% RH (non-condensing) at 32°C ± 2°C (90°F ± 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 its peripherals be installed in an environment with a normal room temperature of 15-27º C/60-80º F.

Verify that wire sizes are adequate for all initiating and indicating device loops. Most devices cannot tolerate more than a 10% 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 interference, proper grounding will reduce susceptibility. Overhead or outside 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, or 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. Usestatic suppressive packaging to protect electronic assemblies removed from the unit.

Units with a touchscreen display should be cleaned with a dry, clean, lint free/microfiber cloth. If additional cleaning is required, apply a small amount of Isopropyl alcohol to the cloth and wipe clean. Do not use detergents, solvents, or water for cleaning. Do not spray liquid directly onto the display.

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.

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FCC REQUIREMENTS

Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual may cause interference to radio communications. It has been tested and found to comply with the limits for Class A computing devices pursuant to Subpart B of Part 15 of FCC Rules, which is designed to provide reasonable protection against such interference when devices are operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user will be required to correct the interference at his or her own expense.

Canadian Requirements

This digital apparatus does not exceed the Class A limits for radiation noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le present appareil numerique n'emet pas de bruits radioelectriques depassant les limites applicables aux appareils numeriques de la classe A prescrites dans le Reglement sur le brouillage radioelectrique edicte par le ministere des Communications du Canada

SOFTWARE DOWNLOADS

In order to supply the latest features and functionality in fire alarm and life safety technology to our customers, we make frequent upgrades to the embedded software in our products. To ensure that you are installing and programming the latest features, we strongly recommend that you download the most current version of software for each product prior to commissioning any system.

Contact Technical Support with any questions about software and the appropriate version for a specific application.

DOCUMENTATION FEEDBACK

Your feedback helps us keep our documentation up-to-date and accurate. If you have any comments or suggestions about our online

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Please include the following information:

- Product name and version number (if applicable)
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- Topic Title (for online Help)
- Page number (for printed manual)
- Brief description of content you think should be improved or corrected
- Your suggestion for how to correct/improve documentation

Send email messages to:

FireSystems.TechPubs@honeywell.com

Please note this email address is for documentation feedback only. If you have any technical issues, please contact Technical Services.

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SECTION 1: ABOUT THIS DOCUMENT

This document was prepared and wholly owned by Honeywell. It is intended to provide trained personnel with the installation of the HW-AV-LTE-M-FL. Honeywell reserve the right to edit and revise this manual without notice.

1.1 AGENCY LISTINGS AND APPROVALS

These listings and approvals apply only to the module specified in this document. In some cases, listing may be in progress.

• FCC Statement

This equipment complies with FCC rules Part 15, FCC registration No. RI7ME310G1WW and operation is subject to the following conditions:

01. This device may not cause harmful interference, and
02. This device must accept any interference received.

• Conforms to following UL standards:
- UL864 – Control Units and Accessories for Fire Alarm Systems

1.2 SAFETY INSTRUCTIONS

• This unit must be checked by a qualified technician once a year.
• The HW-AV-LTE-M-FL device contains a radio transceiver operating over LTE CAT-M1 band.
• Do not use the Device with medical devices, in places or where it could interfere with other devices and cause any potential danger.
• Do not expose the Device to high humidity, chemical environment, or mechanical impacts.
• Do not use the Device in hazardous environment. Do not store or install the Device in overheated, dusty, wet or overcooled places.
• The Device should be mounted in areas with restricted access. Any system repairs must be done only by qualified, safety aware personnel. Do not disassemble or refit the Device. Do not attempt to personally repair it.
• Mains power must be disconnected before any installation starts. The device installation or maintenance must not be done during stormy conditions.
• The device must be powered by 24VDC power supply.
• Blown fuses or any other components of the Device must not be replaced by the user.
• Keep the Device dry. Any liquid, i.e., rain, moisture, may destroy or damage the internal circuitry.
• Handle carefully. Do not shake it violently.
• Do not clean it with chemicals or detergent.
• Please read the user manual carefully before installing or operating on the Device. Otherwise, it may not work properly or be damaged.

SECTION 2: PRODUCT DESCRIPTION

HW-AV-LTE-M-FL includes:

• HW-AV-LTE-M

• EXT-HW-485 extension board

• GSM Antenna with 3 feet cable

• Mounting Plate

• Antenna mounting bracket

The HW-AV-LTE-M-FL is a digital cellular communicator. It represents the latest communication technology for the security industry. The communicator is equipped with dual-SIM. In the US one of the SIM cards supports AT&T and the other supports Verizon.

This communication solution is a complete communication platform for data transfer from alarm systems at remote sites to Central Monitoring Stations (CMS). The platform allows bi-directional data transmission by using LTE CAT-M1 network and LAN.

Figure 2-1: HW-AV-LTE-M-FL CLSS Pathway Pro

2.1 MAIN FEATURES

• Serial Interface for the Listed Firelite Addressable FACP

• Exceptional Redundancy – Dual-SIM device

• High reliability due to multiple transmission channels (LTE CAT-M1/LAN) and redundant servers

• Web-based software and a smartphone app for device configuration and diagnostics

• End-user smartphone app – supports push and email notifications.

2.2 SPECIFICATIONS

Table 2.1 Specifications

Characteristics	Technical Specifications
Supply Voltage	24V – Powered directly from the ribbon cable of the Fire Alarm Control Panel;
Consumption	Standby: 80mA Transmission: 85mA
Frequency	LTE CAT-M1 700/850/1700/1900/2100 MHz
GSM Providers	AT&T, Verizon, or other available networks in the area
Dimensions	2.48” x 3.54” x 1.26” (63 mm x 90 mm x 33 mm)
Weight	2.56 oz (73 grams) without antenna
Operating temperature	0°C to 49°C (32°F to 120°F)
Humidity	0 to 85% relative humidity, non-condensing

SECTION 3: MOUNTING AND WIRING THE COMMUNICATOR FOR LISTED HONEYWELL FIRELITE ADDRESSABLE FACP

- Recommended location and wiring methods must be in accordance with the National Electrical code, ANSI/NFPA 70.
- Installation must be in accordance with the National Fire Alarm and Signaling Code, NFPA 72.
- The communicator must be connected to a UL Listed compatible panel with power limited circuits.
- The communicator must be powered by a regulated UL Listed UOJZ control panel or power supply.
- The HW-AV-LTE-M-FL is designed for a serial connection with the Listed Firelite Addressable FACPs
- The wiring should be done only when the panel is powered down.
- For Dry/Indoor use only.

3.1 WIRING THE COMMUNICATOR

The communicator must be connected to J6 on the panel with a 10-pin ribbon cable (not included in the HW-AV-LTE- M-FL).

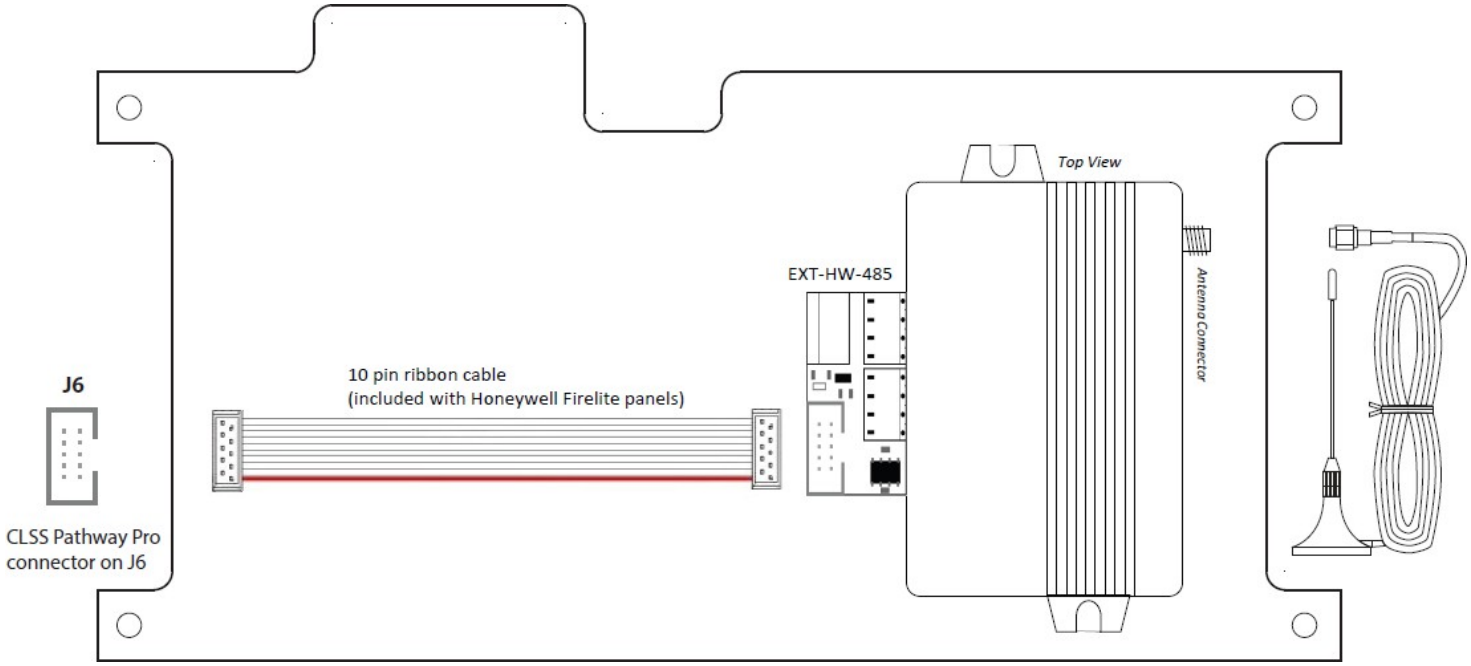


Figure 3-1: Wiring Diagram for Listed Firelite FACPs

3.1.1 10 PIN RIBBON CABLE (INCLUDED WITH LISTED HONEYWELL FIRELITE SERIES)

Vendor is to mark the cable with the following: vendor identification (logo/lettering), part number, current revision, and date of manufacture.

- Cable:
    - 10 conductors
    - Pitch: 1.27 mm
    - #28 Gauge (7/36TC*)

    **7/36TC meaning: Each wire in the cable is made up of 7 strands of 36-gauge tinned copper (TC) wire.*

- Connector:

    - Connector Pins: 2x5
    - Pitch: 2.54 mm
    - Rated current: 1 A

3.2 MOUNTING TO THE LISTED FIRE ALARM PANELS

01. Mount the communicator board onto the alarm panel.
02. Tighten the screws to secure the board.
03. Mount and connect the antenna by following the instructions in 3.3 Mounting the Antenna.

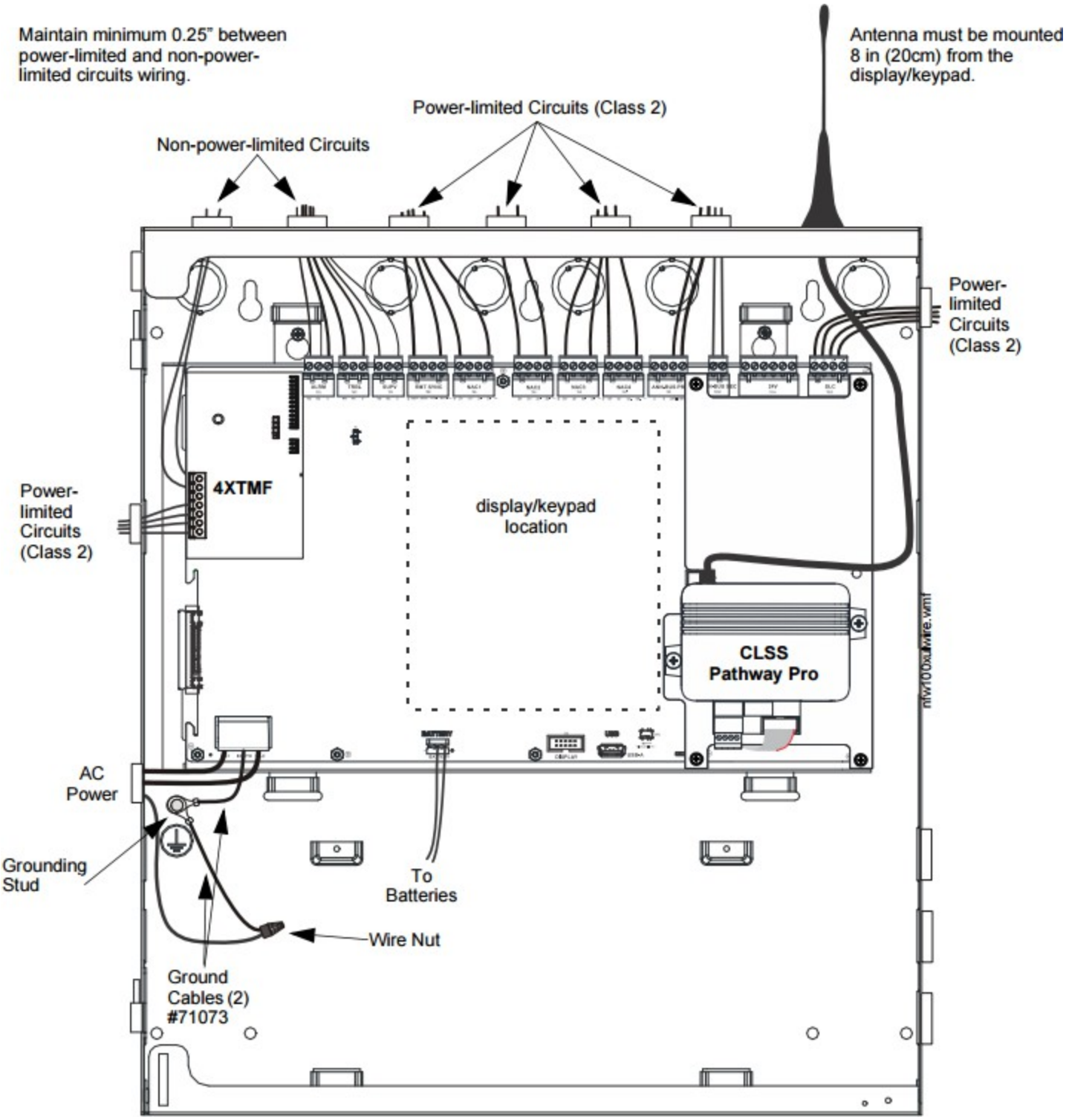


Figure 3-2: Mounting HW-AV-LTE-M-FL to the Listed Fire Alarm Panel

3.3 MOUNTING THE ANTENNA

01. Route the antenna outside of the enclosure.
02. Attach the antenna to the top wall of the enclosure.
03. Secure the antenna by tightening the nuts from below, as shown in Figure 3-3: Antenna and antenna bracket
04. Attach and screw the antenna connector to the communicator.

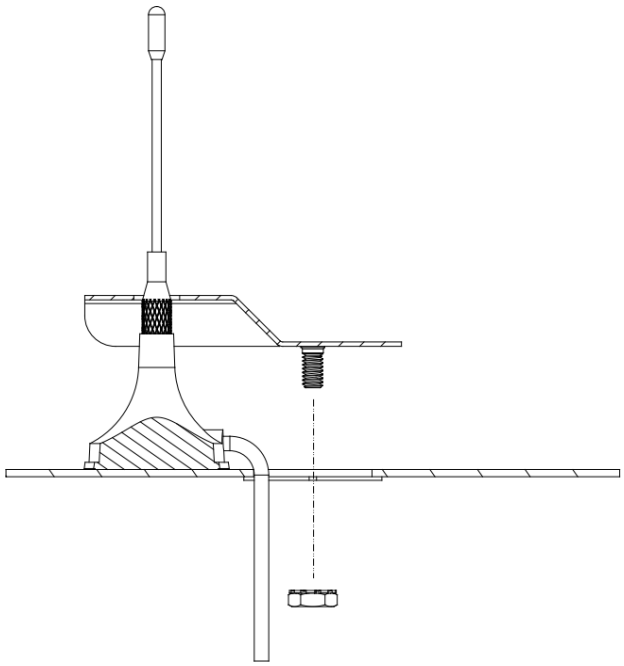


Figure 3-3: Antenna and antenna bracket

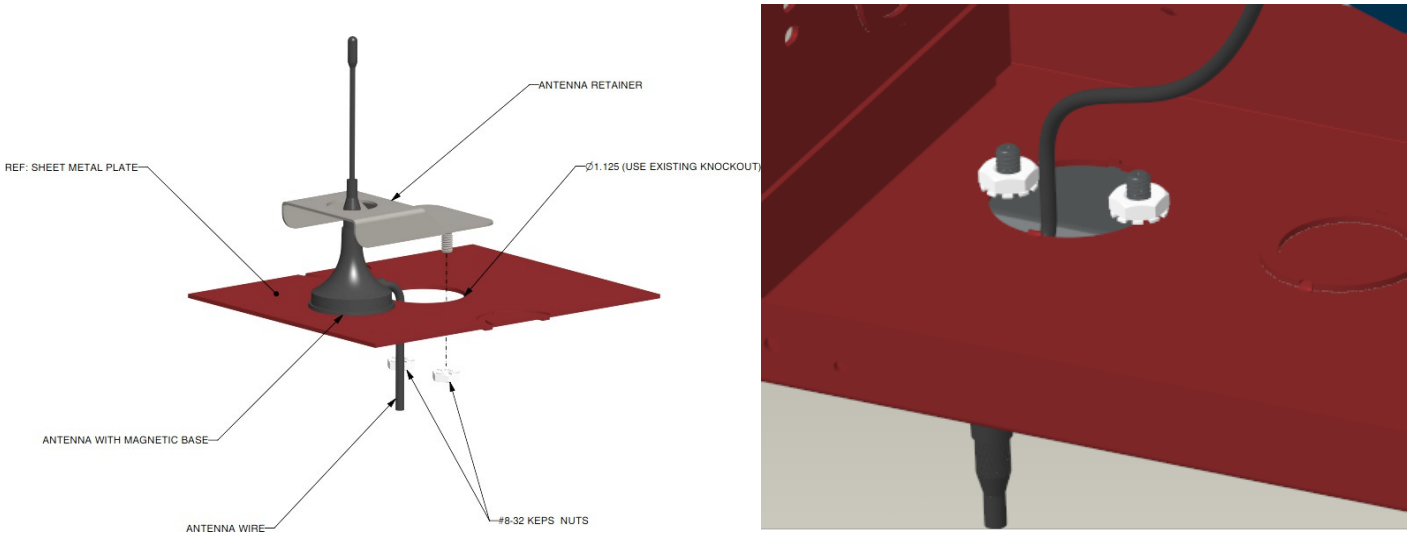


Figure 3-4: 3D image of the antenna and the bracket

3.4 PROGRAMMING THE ALARM PANEL

01. Press the “Menu” button on the mainboard. The “ESC” button is for going back to a previous menu and exit programming mode.

02. Press 2 to select Programming Mode and a screen will prompt for a password.

03. Enter 00000000

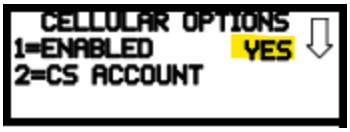
04. Press the arrow keys until you find “Communicator”, which is on screen 3. Press 2 to enter that section.

05. Each press of the 1 key will toggle between “Installed Yes”, and “Installed No”. The configuration must be “Installed Yes”.

06. Go to Communicator Screen #2 and press 1.

07. Select 3 for Cellular from the Comm Path Screen.

08. Each press of the 1 key will cause the display to toggle between “Installed Yes” and “Installed No”.
The configuration must be “Installed Yes”.



3.5 COMMUNICATOR LED INDICATIONS

LED Status	Indication	Action
The LED is Off	The unit is not connected to the panel. The power from the panel is out. The unit is damaged	Verify the wiring, refer to the wiring diagram. Measure the AUX output of the panel. Replace the unit
Slow flashing	Trying to establish connection. There is no signal available	Reposition the antenna
Constantly On, blinking every 5 secs	Connection established at low signal level	Reposition the antenna
Constantly On	Connection established at good signal level	
Fast Flashing	Transferring data	

If the device is connected to a local area network with DHCP enabled, it will automatically get a dynamic IP address. External IP address or router port redirections are NOT needed. If static IP is required refer to M2M Services Administrative platform section “LAN Settings”.

3.6 RJ45 CONNECTOR LED INDICATIONS

Yellow LED RJ45 Connector	Indication	Action
The LED is Off	The LAN cable is not plugged into the communicator	Verify the wiring, refer to the wiring diagram. Measure the AUX output of the panel Replace the unit
The LED is Constantly On	Connection established	

Green LED RJ45 Connector	Indication	Action
The LED is Off	The router is not providing an IP via DHCP. The device is configured with static IP that is already in use in the network. There is no internet access.	If using DHCP, check your DHCP server settings. If using static IP, make sure that the IP is not already in use. Check if you have access to the internet using another device in the same network. Check your router settings.
The LED is Blinking	Transferring data	
The LED is Constantly On	Cable and communication with the router as OK	

If the signal is low, reposition the antenna and try again to find a better signal. To be verified by the installer.

MANUFACTURER WARRANTIES AND LIMITATION OF LIABILITY

Manufacturer Warranties. Subject to the limitations set forth herein, Manufacturer warrants that the Products manufactured by it in its Northford, Connecticut facility and sold by it to its authorized Distributors shall be free, under normal use and service, from defects in material and workmanship for a period of thirty six months (36) months from the date of manufacture (effective Jan. 1, 2009). The Products manufactured and sold by Manufacturer are date stamped at the time of production. Manufacturer does not warrant Products that are not manufactured by it in its Northford, Connecticut facility but assigns to its Distributor, to the extent possible, any warranty offered by the manufacturer of such product. This warranty shall be void if a Product is altered, serviced or repaired by anyone other than Manufacturer or its authorized Distributors. This warranty shall also be void if there is a failure to maintain the Products and the systems in which they operate in proper working conditions.

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