

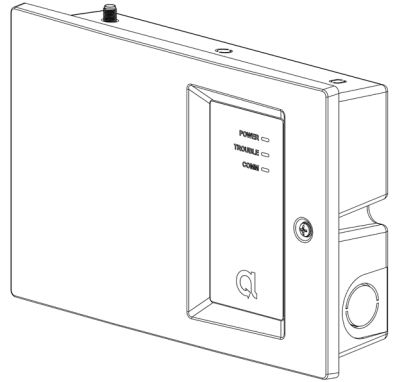


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**BAT-Fire** is a device that connects to an intrusion or fire alarm control panel (FACP) and provides central station alarm reporting.

### Features

- Supports 12V and 24V regulated FACP/burg panels
- Alarm capture via phone line interface or standard FACP/burg panel points
- Supports Contact ID (CID) reporting format
- Dual Path: Ethernet (primary) with Cellular (backup)
- Sole Path: Ethernet or Cellular
- Platform visibility through AlulaConnect™
- Trouble event detection and reporting
- Four programmable input/output ports
- At-a-glance system status via front-panel LEDs
- UL 864 10th edition commercial fire certification
- ULC-S559 commercial fire certification
- UL 1610 commercial burg certification
- ULC-S304 commercial burg certification (Security Level II installations)



### Operation

#### Phone line capture

BAT-Fire provides two PSTN interfaces for the FACP/burg panel's DACT phone line connections. BAT-Fire's DACT phone interface connection provides phone line voltage, dial tone, ringback tone and all required CID protocol signaling. The BAT-Fire receives CID events from the FACP/burg panel's DACT and then relays the CID events to the central station receiver.

#### Point capture

The BAT-Fire provides inputs that can be used to monitor an FACP's alarm, AC fail, and trouble points (dry contact outputs). In this topology BAT-Fire inputs will be connected to the FACP points (dry contact outputs). BAT-Fire will continually monitor the state of the FACP points (dry contact outputs). A state change on a BAT-Fire monitored FACP point (dry contact output) will be reported to the central station. (Refer to the Programming section describing how to set-up a BAT-Fire input for FACP point capture.)

**Note:** for UL 864 10th edition, this configuration may only be used for panels with one input zone. 9th edition and earlier permitted this method for multiple protection zones.

#### Central station communication

The BAT-Fire can be configured to provide dual path connectivity using Ethernet/broadband and cell or single path connectivity using either Ethernet/broadband or cell to Bosch Conettix D6100IPv6 receivers at the central station.

## Installation and Wiring

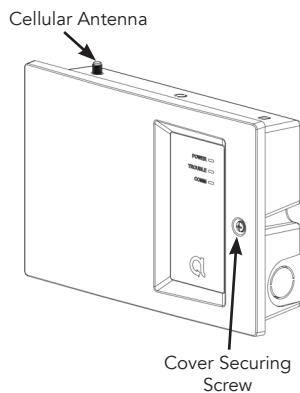
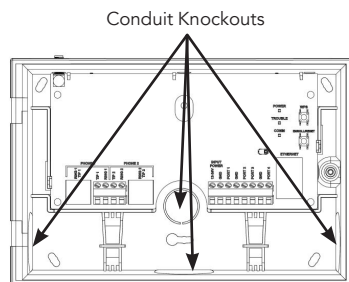
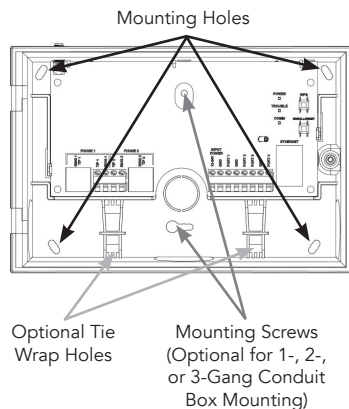
1. Set up an account in the AlulaConnect portal.
2. Mount the BAT-Fire using the guidelines listed below to meet UL 864, UL 1610, ULC-S559, and/or ULC-S304. Use the mounting holes on the back plate.
3. Install the cellular antenna.
4. Power down the FACP/burg panel.
5. Wire the BAT-Fire to the FACP/burg panel. (See wiring diagrams on the following pages.) All wiring must be performed in accordance with NFPA 70/72 or CSA C22.1 (Safety Standard for Electrical Installations, Canadian Electrical Code, Part I, Section 32).

**Note:** 1/2" conduit should be used. Only one conduit knockout is to be used for wiring. Multi-conductor wire connections should follow best practices using pigtail or crimp connectors.

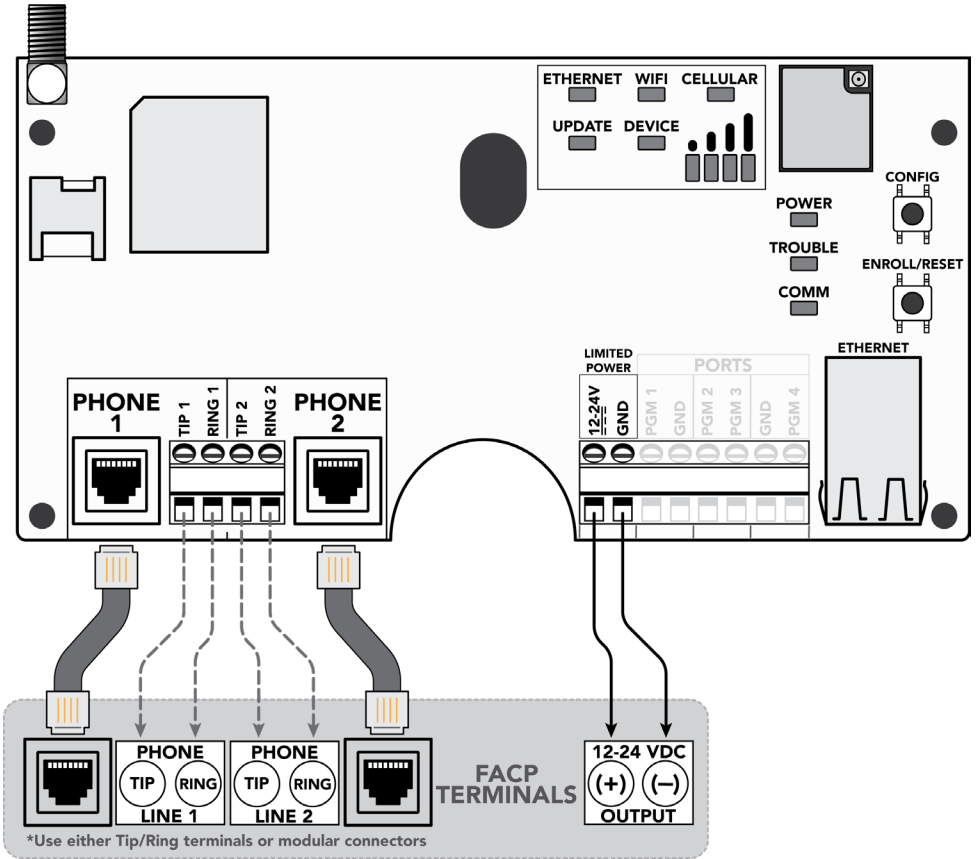
To meet UL 864, UL 1610, ULC-S559, and/or ULC-S304, ensure the following:

- BAT-Fire must be installed in accordance with applicable standards: UL 827, UL 681, NFPA 70/72, ULC-S524, ULC-S561, and/or ULC-S301/302.
- BAT-Fire must be mounted in the same room as the FACP/burg panel.
- All wiring between BAT-Fire and FACP/burg panel is max 20 ft for UL 864 and max 18 m for ULC-S559. These wire length guidelines must be used for both burg and fire installations.
- Run all wiring between BAT-Fire and FACP/burg panel through non-rigid metallic conduit (Canada) and non-rigid conduit (US).
- All equipment used for the IP connection (such as the router, hub, modem, etc.) shall be UL/c-UL listed, and be provided with 24 hour standby power.

6. For dual or sole path Ethernet, plug in the Ethernet cable.
7. Power up the system. After 1-2 minutes, verify the Ethernet and Cellular LEDs. For Ethernet installs, the ETHERNET LED should be on. For cellular installs, the CELLULAR LED should be on, or displaying a short blink sequence (dual path mode). Verify a minimum of two signal bar LEDs are displayed. (See Operation and Indicator Overview section for signal strength.)
8. Physical installation is complete.
9. Press the Config button on the BAT-Fire for 2 seconds to enable programming. Program the BAT-Fire via AlulaConnect (see Programming section).
10. Close the cover. Confirm POWER, TROUBLE, and COMM LEDs are green.
11. After installing BAT-Fire, or modifying any FACP/burg panel programming, verify proper operation and reporting of all event codes using your FACP/burg panel installation manual. Burglary installs must have cover tamper enabled and must be tested yearly.

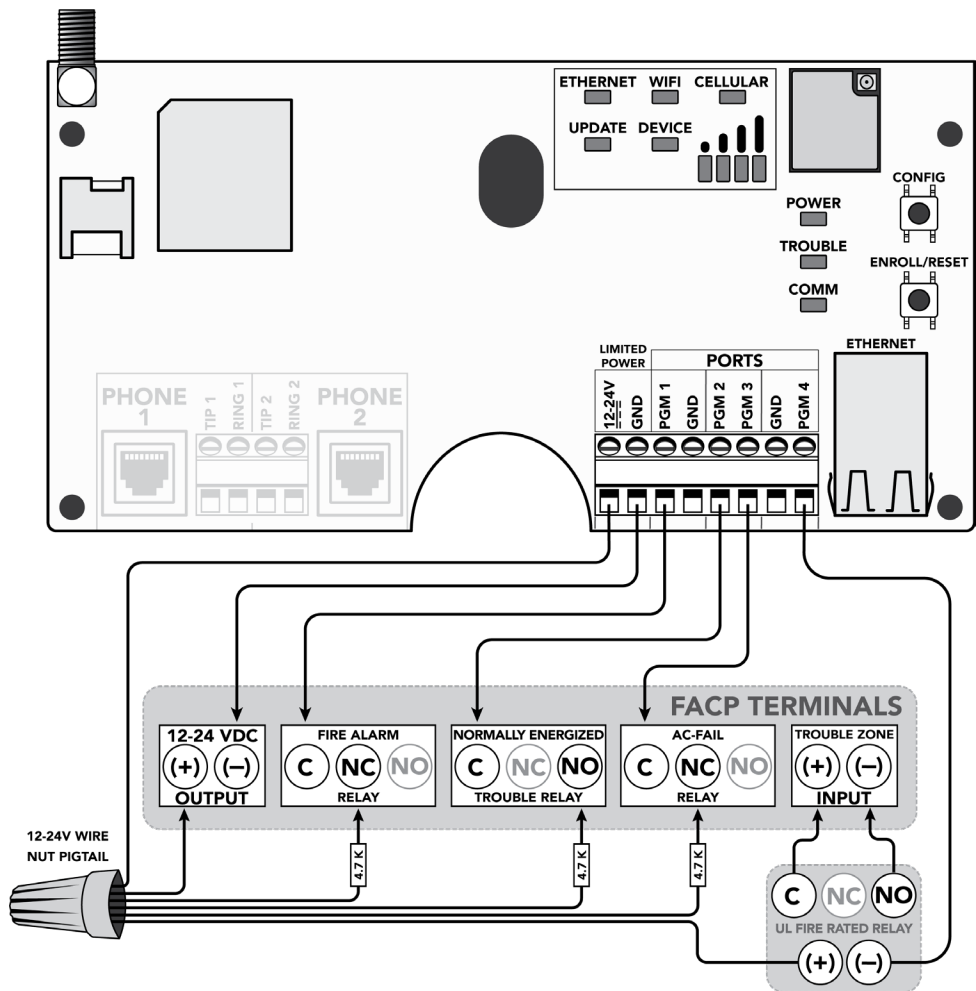


**Figure 1. Phone Line Capture Wiring**



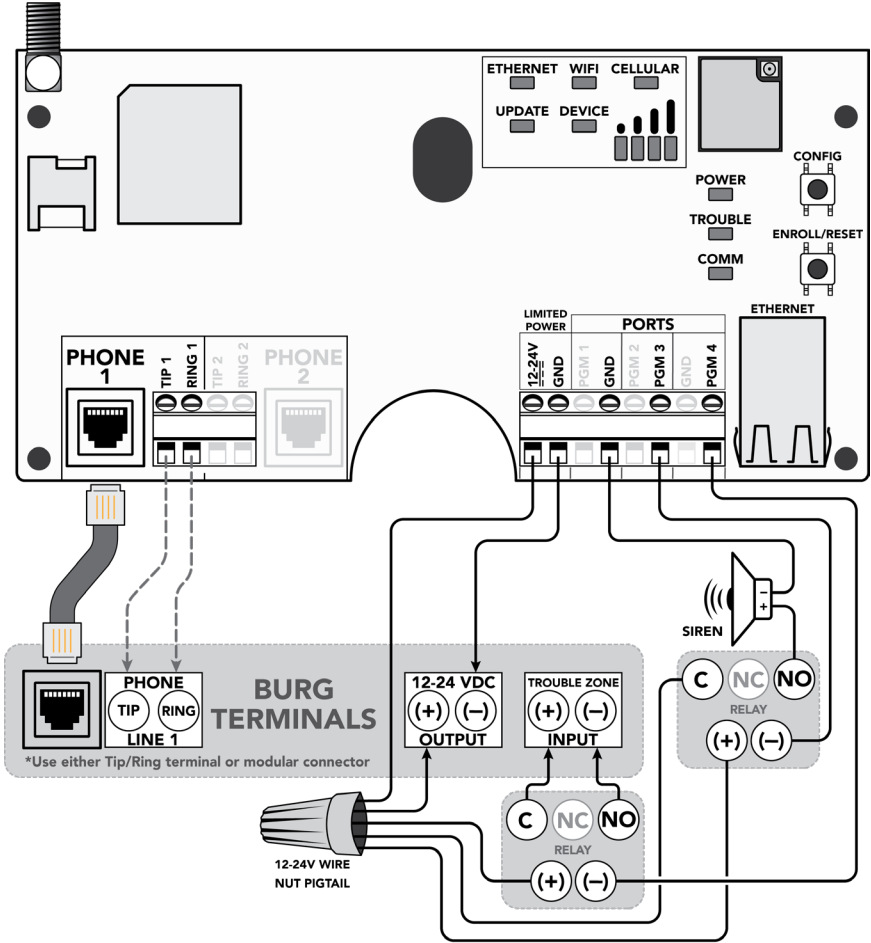
- Both Phone line 1 and 2 must be connected to the FACP/burg panel. The FACP/burg panel must be configured to supervise the phone lines.
- Most FACPs/burg panels can be supported for event reporting as long as it provides Tip & Ring connection and transmits events in Contact ID format.
- Warning: do not connect telephone company lines to the BAT-Fire. Attention: ne connectez pas les lignes de votre compagnie téléphonique au BAT-Fire.
- It is recommended to use separate cables for Tip & Ring 1 and Tip & Ring 2.
- Failures and Troubles are communicated to FACP/burg panel via the BAT-Fire dropping voltage to Phone 2. Refer to Programming section on how to configure Phone 2 trouble triggers.
- Stranded wire gauge range: 24-14AWG.
- If FACP/burg panel has one phone line, PGM4 should be wired as the trouble indicator (see Figure 2). This configuration is common in commercial burg applications.

**Figure 2. Point Capture Wiring**



- Refer to Programming section on how to configure BAT-Fire's PGM1, PGM2, and PGM3 for FACP panel point capture and PGM4 as a trouble trigger. PGM4 is an open-collector output.
- This figure shows one possible configuration between BAT-Fire and the FACP/burg panel. A relay may not be required. Refer to your FACP/burg panel installation manual. If a relay is required, use a UL 864 or ULC-S527 listed relay (i.e. Fire-Lite® PAM-2 by Honeywell® relay).
- The panel must support the relay contacts as indicated above (NC for alarm and AC-FAIL and NO for Trouble) and battery calculation shall consider the additional current draw into the PGM's during the Normal Standby state.
- Use 4.7k ohm 1/4 Watt minimum resistors (not included).
- PGM ports are not supervised.
- Only panels without supervisory signaling can use this setup.
- For UL 864 10th edition, this configuration may only be used for panels with one input zone. 9th edition and earlier permitted this method for multiple protection zones.
- PGM1, PGM2, and PGM3 are not to be used as alarm and trouble inputs in commercial burg applications.

**Figure 3. Single Phone Line Burglary Wiring**



- For UL 1610 installations, refer to Programming section on how to configure BAT-Fire’s PGM3 as a ringback trigger. A UL-approved siren such as Honeywell Model 747 must be used for ringback. The ringback feature on the control panel must be disabled.
- For UL 1610 partitioned installations, all partitions must be in the same building and under the same management. Install the ringback siren where it can be heard by all partitions.

**Trouble Conditions**

The following trouble conditions can be communicated by BAT-Fire to the FACP/burg panel:

Trouble	Indication
Cover Tamper	Cover is opened
Power Fail	Input voltage has fallen below 9V
Cell Fail	Cellular communication has a performance failure (i.e. intermittent communication, not operational)
Ethernet Fail	Ethernet communication has a performance failure (i.e. intermittent communication, not operational)
CS Trouble	Backup communication path to the central station is not operational
CS Fail	Signal transmission to the central station is not operational

# Programming

## Programming via AlulaConnect

**Table 1: PARAMETERS FOR UL 864 & UL 1610 COMPLIANCE (USA)**

**NOTICE TO INSTALLERS, AUTHORITIES HAVING JURISDICTION, AND OTHER INVOLVED PARTIES:**

This product incorporates field-programmable software. All features/options described below are permitted in UL 864/UL 1610. In order to comply with the requirements in the Standard for Control Units and Accessories for Fire Alarm Systems, UL 864, and/or Standard for Central-Station Burglar-Alarm Units, UL 1610, certain programming features or options must be limited to permitted settings or not used at all as indicated below.

Program Feature or Option	Situation	Possible Settings	Default Settings	UL 864 Required Settings	UL 1610 Required Settings	Notes
Supervision Preference (Comm Trouble Supervision)	IP with Cell Backup	60 seconds - 6 hours	6 hours	6 hours or shorter	Primary: 200 seconds or shorter Backup: 6 hours	For UL 1610, if the primary path fails, system supervises secondary path at the primary interval.
	Sole Path IP	60 seconds - 6 hours	1 hour	1 hour or shorter	200 seconds or shorter	Turn off cellular supervision Turn off virtual interface supervision for both primary and backup cellular
	Sole Path Cell	60 seconds - 6 hours	1 hour	1 hour or shorter	200 seconds or shorter	Turn off Ethernet supervision Turn off virtual interface supervision for both primary and backup Ethernet
Remote Programming*	On-site or Remote	Enabled or Disabled	Disabled	Disabled	Enabled or Disabled	If Disabled, Installer must press Config button onsite
Phone 2 Trouble Trigger	If using Phone Line capture (Figure 1)	Power Fail Cover Tamper Cell Fail Ethernet Fail CS Fail CS Trouble	CS Fail	CS Fail**	Cover Tamper** CS Fail	<u>Figure 1:</u> Any Enabled Trouble: BAT-Fire drops Phone 2 line voltage
PGM4 Port Trouble Trigger	If using Point Capture (Figure 2)	Power Fail Cover Tamper Cell Fail Ethernet Fail CS Fail CS Trouble	CS Fail	CS Fail**	Cover Tamper** CS Fail	<u>Figure 2:</u> BAT-Fire PGM4 Output (Any Enabled Trouble) connected to FACP/burg panel Trouble Input

\* If Remote Programming is disabled, updates to site-specific parameters and BAT-Fire firmware are only permitted when the Config button on the BAT-Fire is pressed for 2 seconds.

\*\* These trouble triggers are required to meet the UL864 and UL1610 standards. However, all other trouble triggers listed in the Possible Settings column are permitted.

- If Commercial Burg is selected, the more restrictive of the Fire and Burg timings will be used.
- Earlier editions of NFPA require supervision settings of 5 minutes.
- UL 864 10th edition permits the point capture configuration for FACP/burg panels protecting only a single zone; the 9th edition permits point capture for multi-zone FACP/burg panels.
- UL1610 requires 128 bit encryption or better. For active communications, the encryption shall be enabled at all times.

**Table 2: PARAMETERS FOR ULC-S559 & ULC-S304 COMPLIANCE (CANADA)**

**NOTICE TO INSTALLERS, AUTHORITIES HAVING JURISDICTION, AND OTHER INVOLVED PARTIES:**

**This product incorporates field-programmable software. All features/options described below are permitted in ULC-S559/ULC-S304. In order to comply with the requirements in the Standard for Equipment for Fire Signal Receiving Centres and Systems, ULC-S559-13-R2018 and/or the Standard for Control Units, Accessories and Receiving Equipment for Intrusion Alarm Systems, ULC-S304:2016-REV1, certain programming features or options must be limited to permitted settings or not used at all as indicated below.**

Program Feature or Option	Situation	Possible Settings	Default Settings	ULC-S559 Required Settings	ULC-S304 Required Settings	Notes
Supervision Preference (Comm Trouble Supervision)	IP with Cell Backup	60 seconds - 6 hours	6 hours	Primary: 180 seconds or shorter Backup: 6 hours	Primary: 180 seconds or shorter Backup: 6 hours	For ULC-S559, if primary path fails, system supervises secondary path at the primary interval.
	Sole Path IP	60 seconds - 6 hours	1 hour	180 seconds or shorter	180 seconds or shorter	Turn off cellular supervision Turn off virtual interface supervision for both primary and backup cellular
	Sole Path Cell	60 seconds - 6 hours	1 hour	180 seconds or shorter	180 seconds or shorter	Turn off Ethernet supervision Turn off virtual interface supervision for both primary and backup Ethernet
Remote Programming*	On-site or Remote	Enabled or Disabled	Disabled	Enabled or Disabled	Enabled or Disabled	If Disabled, installer must press Config button onsite
Phone 2 Trouble Trigger	If using Phone Line capture (Figure 1)	Power Fail Cover Tamper Cell Fail Ethernet Fail CS Fail CS Trouble	CS Fail	CS Fail**	Cover Tamper** CS Fail	<u>Figure 1:</u> Any Enabled Trouble: BAT-Fire drops Phone 2 line voltage
PGM4 Port Trouble Trigger	If using Point Capture (Figure 2)	Power Fail Cover Tamper Cell Fail Ethernet Fail CS Fail CS Trouble	CS Fail	CS Fail**	Cover Tamper** CS Fail	<u>Figure 2:</u> BAT-Fire PGM4 Output (Any Enabled Trouble) connected to FACP/burg panel Trouble Input

\* If Remote Programming is disabled, updates to site-specific parameters and BAT-Fire firmware are only permitted when the Config button on the BAT-Fire is pressed for 2 seconds.  
 \*\* These trouble triggers are required to meet the UL864 and UL1610 standards. However, all other trouble triggers listed in the Possible Settings column are permitted.  
 • If Commercial Burg is selected, the more restrictive of the Fire and Burg timings will be used.  
 • ULC-S304 and ULC-S559 require 128 bit encryption or better. For active communications, the encryption shall be enabled at all times.

## Programming via AlulaConnect (cont.)

### ***Programming BAT-Fire Phone 2 trouble triggers***

- Select "Edit" to the right of Phone 2
- Check all desired Phone 2 triggers
  - Power Fail
  - Cover Tamper
  - Cell Fail
  - Ethernet Fail
  - Central Station Fail
  - Central Station Trouble
- Select "Save"

### ***Programming BAT-Fire PGMx port for FACP/burg panel point capture***

- Select "Edit" on the desired input port
- Select "Configure as Input"
- Enter required configuration input data
  - Sensor Type
  - Report Code
  - Zone Number
  - Input Name
- Select "Save"

### ***Programming BAT-Fire PGM4 port as trouble trigger***

- Select "Edit" on the desired output port
- Select "Configure as Output"
- Name output as desired
- Check all desired trouble triggers
  - Power Fail
  - Cover Tamper
  - Cell Fail
  - Ethernet Fail
  - Central Station Fail
  - Central Station Trouble
- Select "Save"

### ***Programming BAT-Fire central station receiver(s)***

- Select primary and backup (optional) receivers
- Adjust Supervision Interval based on wiring mode
  - 6 hours (default) complies with UL 864 10th edition requirement for dual path communications
  - For specific AHJ guidance, sole path mode, ULC-S559 or ULC-S304 compliance, refer to Table 1 for Supervision Interval settings
- Select "Save"

### ***Programming BAT-Fire PGM3 port as ringback trigger***

- Select "Edit" on the desired output port
- Select "Configure as Output"
- Name output as desired
- Check the UL Ringback trigger
- Select "Save"



## Operation and Indicator Overview

**Events are reported** to the central station receivers and the Alula platform event system. All events use Contact ID reporting codes.

**To enter programming** press the Config button on the BAT-Fire for 2 seconds.

- With the BAT-Fire cover open, it will remain in programming mode for 2 hours.
- Close the cover. Programming mode will exit in 3 minutes.

### Enroll/Reset button

- Hold for 5 seconds to reset the BAT-Fire
- Hold for 30 seconds to factory default the BAT-Fire

\* All LEDs flash on then off at 5 seconds and again at 30 seconds when the Enroll/Reset button is held down. This indicates that the button has been pressed for a sufficient amount of time.

### LED indicators

LED	Indication
Power	Pulses when power is present
Trouble	<b>Green</b> - system ok <b>Yellow</b> - input voltage < 8V, or - cell connection has failed, or - Ethernet connection has failed, or - cover is open
Comm	<b>Green</b> - central station receiver(s) all ok <b>Yellow</b> - central station receiver(s) trouble <b>Off</b> - all central station receiver(s) have failed
Ethernet	<b>Off</b> - interface not used <b>Flashing</b> - attempting connection using this interface <b>On</b> - connected using this interface
Wi-Fi	Unused
Cellular	<b>Off</b> - cell is not registered <b>Flashing</b> - last connection test failed <b>On</b> - connected using this interface <b>Short blink</b> - connected via Ethernet, last cell connection test successful
Update	<b>Off</b> - firmware update available <b>Flashing</b> - firmware update is in progress <b>On</b> - firmware is up to date
Device	Unused

**Cellular signal bar** LEDs indicate the quality of the cellular connection. A minimum of two signal bar LEDs is recommended.

Number of Signal Bar LEDs Lit	Cellular Signal Strength
0	<b>Bad</b>
1	<b>Marginal</b>
2	<b>Acceptable</b>
3	<b>Good</b>
4	<b>Best</b>

BAT-Fire will relay any signal sent from the panel it is connected to. Additionally, the following signals can be generated from the BAT-Fire directly.

<i>Signal</i>	<i>Report Code</i>	<i>Device - Zone/User</i>
<b>Peripheral Tamper (Cover Tamper)</b>	341	0
<b>Comm Test Trouble</b>	350	800 - 803
<b>Manual Comm Test</b>	601	800 - 803
<b>Auto Comm Test</b>	602	800 - 803
<b>Optionally generated point capture event</b>	Programmable	Programmable Zone Number

## Pro Tips

- The BAT-Fire is a commercial life safety communicator and requires a reliable and consistent cellular connection. Always follow best installation practices regarding mounting location and location of antenna to achieve and maintain the highest possible signal level. The signal bar indicators are engineered to ensure a durable, trouble-free installation.
- Cellular antennas need to be in free air to communicate. Cellular antennas should not be mounted inside a metal enclosure.
- Cellular antenna options for enhanced performance:
  - Indoor:
    - o Taoglas™ TG.30.8113
  - Outdoor:
    - o Taoglas OMB.6912.03F21

## Troubleshooting

<i>Symptom</i>	<i>Troubleshooting Steps</i>
<b>Ethernet LED Off</b>	<ol style="list-style-type: none"> <li>1. Confirm cable connected.</li> <li>2. Ensure router is powered.</li> <li>3. Ensure UDP ports 1234 and 1235 are open in router/modem settings.</li> <li>4. Ensure account is properly configured.</li> </ol>
<b>Cellular LED Off</b>	<ol style="list-style-type: none"> <li>1. Verify sufficient signal strength for cellular (see cellular signal bar table in Operation and Indicator Overview section).</li> <li>2. Ensure account is properly configured.</li> </ol>
<b>Comms LED Yellow</b>	<ol style="list-style-type: none"> <li>1. Verify the reporting path and ensure the receiver is properly configured.</li> <li>2. Contact Alula for further technical support.</li> </ol>
<b>No Alarm CS Reports</b>	<ol style="list-style-type: none"> <li>1. Ensure FACP/burg panel wiring is correct.</li> <li>2. Ensure the FACP/burg panel is configured properly.           <ul style="list-style-type: none"> <li>• If telco reporting, ensure FACP/burg panel is set-up for CID reporting.</li> <li>• If point capture reporting, ensure FACP/burg panel is set-up to trip appropriate relays.</li> </ul> </li> <li>3. Ensure account is properly configured for event relay.</li> <li>4. Contact Alula for further technical support.</li> </ol>
<b>Poor Cellular Signal Strength</b>	<ol style="list-style-type: none"> <li>1. Ensure antenna is securely threaded onto the BAT-Fire antenna connector.</li> <li>2. Reposition the unit (move or rotate).</li> <li>3. Move the unit/antenna higher in the building.</li> <li>4. Move the unit/antenna away from metal objects (appliances, ducts, stucco walls, mirrors).</li> <li>5. Move the unit/antenna closer to a window.</li> <li>6. Install one of the higher performance antenna options (see Pro Tips section).</li> </ol>

**Glossary**

<b>Capture</b>	Sensing a status or condition
<b>DACT</b>	Digital Alarm Communicator Transmitter that reports on phone lines
<b>FACP</b>	Fire Alarm Control Panel
<b>I/O Port</b>	A programmable input or output on BAT-Fire, named PGM1-PGM4
<b>Line</b>	A phone line, used for reporting alarm data
<b>Phone Line Capture</b>	The operation of the BAT-Fire connecting to the FACP/burg panel phone ports and emulating the central station
<b>LPS</b>	Limited Power Source
<b>NFPA</b>	National Fire Protection Association
<b>Open Collector</b>	An output that, when engaged, shunts current to ground
<b>Point</b>	A single FACP/burg panel output that is either on or off
<b>Point Capture</b>	The operation mode of BAT-Fire connected to the FACP/burg panel output(s) and sensing a trouble or alarm condition. Additionally, the operation of the FACP/burg panel connected to a BAT-Fire output and sensing a trouble or communication condition
<b>PSTN</b>	Public Switched Telephone Network, aka POTS - Plain Old Telephone Service
<b>Relay</b>	An electrically operated switch that isolates the control signal (i.e. FACP/burg panel output) from the switched circuit (i.e. BAT-Fire input)
<b>Trigger</b>	An event that causes a BAT-Fire output to change state

# Specifications

Physical	
Housing Dimensions	8.6 x 5.8 x 2.2 inches [21.8 x 14.6 x 5.5 cm]
Weight	13.2 ounces [375 g]
Mounting Fasteners	#6 screws and wall anchors [included]
Pilot Hole for Screw into Wood	Ø 1/8in [3mm]
Pilot Hole for Wall Anchor	Ø 3/16in [4.7mm]
Cover Securing Screw	#6 screw [included]
Antenna	External [included]
Wire Gauge Range	24-14AWG
Device Specification	
Reported Indications	Cover Tamper
Current Draw	154mA [Standby] 207mA [Max] @ 12VDC 109mA [Standby] 161mA [Max] @ 24VDC
Compatible Input Voltage Range	10-28VDC Limited Power
Programmable Output Current Maximum	Will shunt up to 75 mA into ground
Environmental	
Operating Temperature	32°F to 120°F [0°C to 48.9°C]
Maximum Humidity	93% non-condensing relative humidity
Models	
BAT-FIRE-ATT	BAT-Fire, AT&T
BAT-FIRE-VZ	BAT-Fire, Verizon
	<b>Note:</b> the only difference between the models is the cellular carrier.
Certification	
Safety Standards	UL 864 10th edition, ULC-S559, UL 1610, ULC-S304
Radio	FCC, IC
Cellular	AT&T, Verizon
California State Fire Marshal	
NY Fire Marshal	



Specifications subject to change without notice

## FCC NOTICE

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference that may be received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by Alula could void the user's authority to operate this equipment.

### RF Exposure:

To satisfy FCC RF Exposure requirements for mobile and base station transmission devices, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during operation. To ensure compliance, operation at closer than this distance is not recommended.

### Cellular

FCC ID: XMR2020BG95M1

## ISED NOTICE

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference.
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil contient des émetteurs/récepteurs exempts de licence qui sont conformes aux RSS exempts de licence d'Innovation, Sciences et Développement économique Canada. L'exploitation est autorisée aux deux conditions suivantes:

- (1) L'appareil ne doit pas produire de brouillage.
- (2) L'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

### Cellular

IC: 10224A-2020BG95M1

This Class B digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

## TRADEMARKS

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