BAT-Fire™ Communicator

alula Connect Family

BAT-Fire, AT&T™ (BAT-FIRE-ATT)
BAT-Fire, Verizon™ (BAT-FIRE-VZ)

INSTALL GUIDE **I**

Scan QR for most up to date manual, features, and compatibility

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 FACPs
- Alarm capture via phone line interface or standard FACP 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)
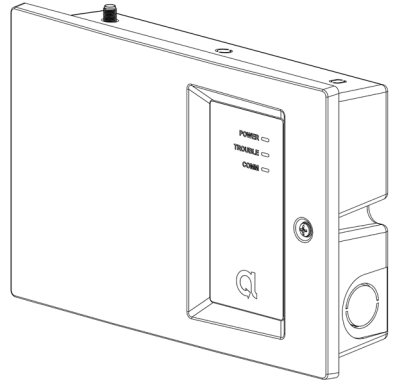
Operation

Phone line capture

BAT-Fire provides two PSTN interfaces for the FACP'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'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, supervision, and trouble points. In this topology BAT-Fire inputs will be connected to the FACP points. BAT-Fire will continually monitor the state of the FACP points. A state change on a BAT-Fire monitored FACP point 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.

Verify proper operation using your FACP installation manual.

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/NFPA or ULC-S559/ULC-S304. Use the mounting holes on the back plate.

3. Install the cellular antenna.

4. Power down the FACP.

5. Wire the BAT-Fire to the FACP. (See wiring diagrams on the following pages.) All wiring must be performed in accordance with NFPA 70/72 or CSA C 2.1 (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 827/UL 681/NFPA or ULC-S559/ ULC-S524/ULC-S561/ULC-S301/302, ensure the following:

   • BAT-Fire must be installed in accordance with UL 864/ NFPA 70/72 or ULC-S559/ULC-S524/ULC-S561.
   • BAT-Fire must be mounted in the same room as the FACP.
   • All wiring between BAT-Fire and FACP 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 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 programming, verify proper operation and reporting of all event codes using your FACP installation manual. Burglary installs must have cover tamper enabled and must be tested yearly.
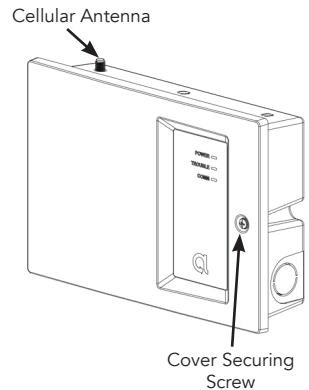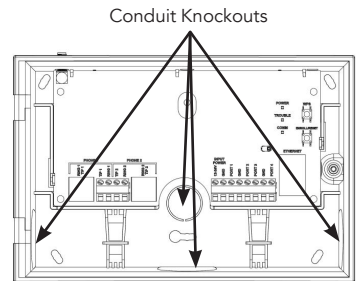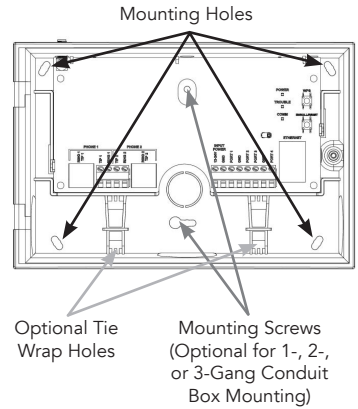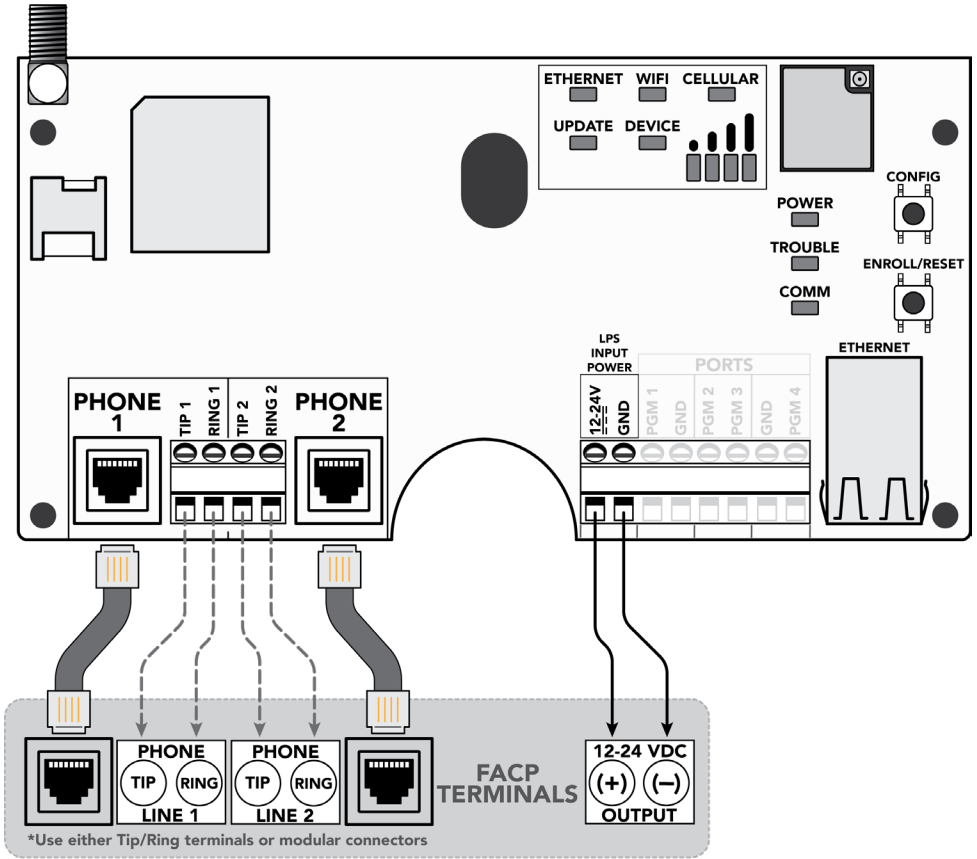

Mounting Holes

Optional Tie Wrap Holes

Mounting Screws (Optional for 1-, 2-, or 3-Gang Conduit Box Mounting)

Conduit Knockouts

Cellular Antenna

Cover Securing Screw

Figure 1. Phone Line Capture Wiring

- Both Phone line 1 and 2 must be connected to the FACP. The FACP may be configured to supervise the phone lines.

- Most FACPs can be supported for event reporting as long as it provides Tip & Ring connection and transmits events in Contact ID format.

- Do not connect telephone company lines to the BAT-Fire's phone line connections.

- It is recommended to use separate wiring for each Tip & Ring connection.

- Failures and Troubles are communicated to FACP 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.

Figure 2. Point Capture Wiring
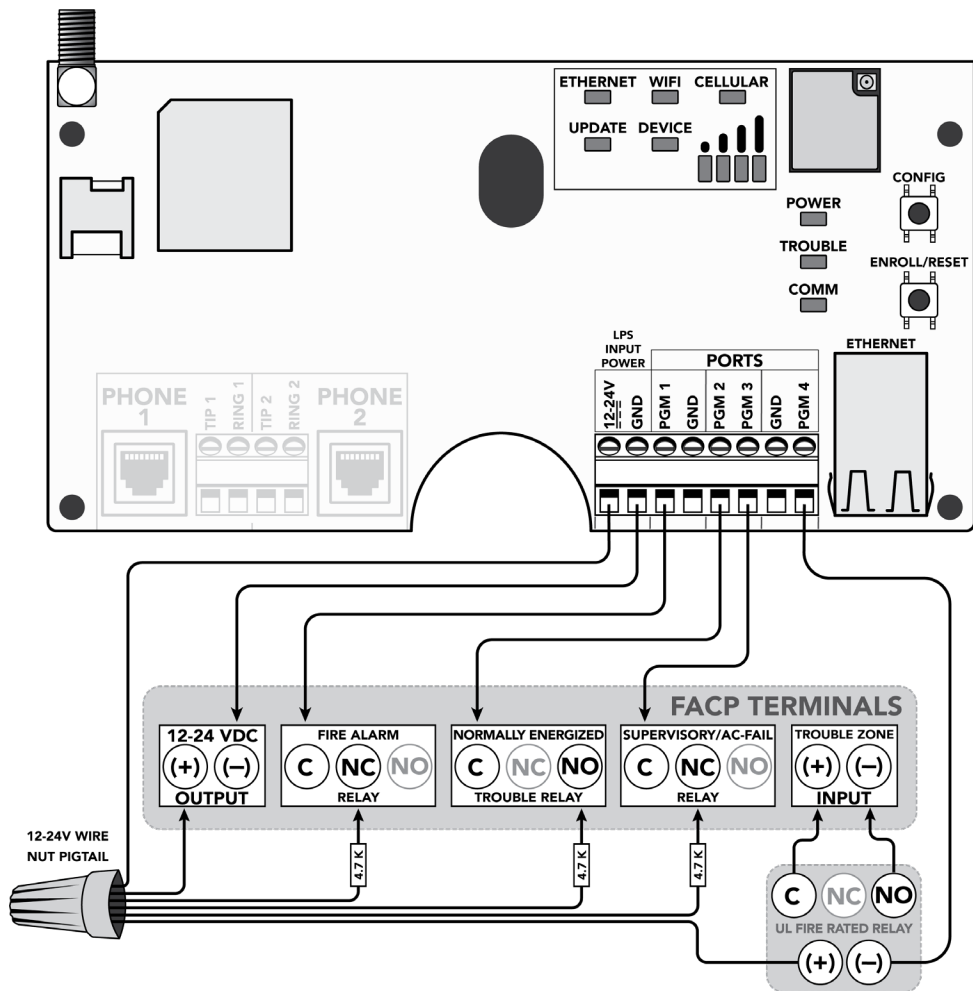
- Refer to Programming section on how to configure BAT-Fire's PGM1, PGM2, and PGM3 for FACP point capture.

- Refer to Programming section on how to configure BAT-Fire's PGM4 as a trouble trigger. PGM4 is an open-collector output.

- This figure shows one possible configuration between BAT-Fire and the FACP. A relay may not be required. Refer to your FACP installation manual. If a relay is required, use a UL 864 or ULC-S527 listed relay.

- Use 4.7k ohm 1/4 Watt minimum resistors (not included).

- PGM ports are not supervised.

- 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.

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. 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 Safety: 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.						
Programmable Parameter	Situation	Possible Settings	Default Settings	UL 864 Permitted Settings	UL 1610 Permitted Settings	Notes
Supervision Preference (Comm Trouble Supervision)	IP with Cell Backup	1 min - 6 hours	6 hours	6 hours or shorter	Primary: 200 seconds Backup: 6 hours	If the primary path fails, system supervises secondary path at the primary interval.
	Sole Path IP	1 min - 6 hours	1 hour	1 hour or shorter	200 seconds	Turn off cellular supervision Turn off virtual interface supervision for both primary and backup cellular
	Sole Path Cell	1 min - 6 hours	1 hour	1 hour or shorter	200 seconds	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	Cover Tamper CS Fail CS Trouble	Cover Tamper CS Fail	Cover Tamper CS Fail	Figure 1: 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	Cover Tamper CS Fail	Cover Tamper CS Fail	Figure 2: BAT-Fire PGM4 Output (Any Enabled Trouble) connected to FACP 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.
• 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 FACPs protecting only a single zone; the 9th edition permits point capture for multi-zone FACPs.

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. 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.						
Programmable Parameter	**Situation**	**Possible Settings**	**Default Settings**	**ULC-S559 Permitted Settings**	**ULC-S304 Permitted Settings**	**Notes**
Supervision Preference (Comm Trouble Supervision)	IP with Cell Backup	1 min - 6 hours	6 hours	Primary: 3 minutes or shorter Backup: 6 hours	Primary: 180 seconds Backup: 180 seconds	For ULC-S559, if primary path fails, system supervises secondary path at the primary interval.
	Sole Path IP	1 min - 6 hours	1 hour	3 minutes or shorter	180 seconds	Turn off cellular supervision Turn off virtual interface supervision for both primary and backup cellular
	Sole Path Cell	1 min - 6 hours	1 hour	3 minutes or shorter	180 seconds	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	Cover Tamper CS Fail CS Trouble	Cover Tamper CS Fail	Cover Tamper CS Fail	Figure 1: 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	Cover Tamper CS Fail	Cover Tamper CS Fail	Figure 2: BAT-Fire PGM4 Output (Any Enabled Trouble) connected to FACP 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.
- If Commercial Burg is selected, the more restrictive of the Fire and Burg timings will be used.
- ULC-S304 requires 128 bit encryption or better. For active communications, the encryption shall be enabled at all times.

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 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, or ULC-S559 compliance, refer to Table 1 for Supervision Interval settings
- 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 1 hour.
- Close the cover. Programming mode will exit in 90 seconds.

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	**Green** - system ok
	Yellow - input voltage < 8V, or
	    - cell connection has failed, or
	    - Ethernet connection has failed, or
	    - cover is open

Comm	**Green** - central station receiver(s) all ok **Yellow** - central station receiver(s) trouble **Off** - all central station receiver(s) have failed
Ethernet	**Off** - interface not used **Flashing** - attempting connection using this interface **On** - connected using this interface
Wi-Fi	Unused
Cellular	**Off** - cell is not registered **Flashing** - last connection test failed **On** - connected using this interface **Short blink** - connected via Ethernet, last cell connection test successful
Update	**Off** - firmware update available **Flashing** - firmware update is in progress **On** - 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	*Bad*
1	*Marginal*
2	*Acceptable*
3	*Good*
4	*Best*

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.

Signal	Report Code	Device - Zone/User
Peripheral Tamper (Cover Tamper)	341	0
Comm Test Trouble	350	800 - 803
Manual Comm Test	601	800 - 803
Auto Comm Test	602	800 - 803
Optionally generated point capture event	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:
  - Taoglas™ TG.30.8113

  Outdoor:
  - Taoglas OMB.6912.03F21

Troubleshooting

Symptom	Troubleshooting Steps
Ethernet LED Off	1. Confirm cable connected. 2. Ensure router is powered. 3. Ensure UDP ports 1234 and 1235 are open in router/modem settings. 4. Ensure account is properly configured.
Cellular LED Off	1. Verify sufficient signal strength for cellular (see cellular signal bar table in Operation and Indicator Overview section). 2. Ensure account is properly configured.
Comms LED Yellow	1. Verify the reporting path and ensure the receiver is properly configured. 2. Contact Alula for further technical support.

No Alarm CS Reports	1. Ensure FACP wiring is correct.
	2. Ensure the FACP is configured properly.
	   • If telco reporting, ensure FACP is set-up for CID reporting.
	   • If point capture reporting, ensure FACP is set-up to trip appropriate relays.
	3. Ensure account is properly configured for event relay.
	4. Contact Alula for further technical support.

Poor Cellular Signal Strength	1. Ensure antenna is securely threaded onto the BAT-Fire antenna connector. 2. Reposition the unit (move or rotate). 3. Move the unit/antenna higher in the building. 4. Move the unit/antenna away from metal objects (appliances, ducts, stucco walls, mirrors). 5. Move the unit/antenna closer to a window. 6. Install one of the higher performance antenna options (see Pro Tips section).

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

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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	185mA [Nominal] @ 12VDC, 100mA [Nominal] @ 24VDC
Compatible Input Voltage Range	10-28VDC
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
	Note: 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