ANC1BBU

Remote Annunciator

Installation Guide

Rev. 031424

More than just power.™

Installing Company: _____ Service Rep. Name: _____

Address: _____ Phone #: _____

Overview:

Altronix CommBatt, ANC1BBU Annunciator is designed to provide compliance with the requirements of UL 2524 for in-building 2 Way Emergency Radio Communication Systems.

It allows local and remote annunciation of various trouble conditions of BDA (Bi-Directional Amplifier) and BBU (Battery Backup Unit) and reporting those conditions to the FACP through the separate set of dry contacts, visual and audible indicators.

Specifications:

Agency Listings:

- **UL2524** Standard for In-Building 2-Way Emergency Radio Communication Enhancement Systems

Input:

- 12-24 VDC, 400mA input power.
- Input Fuse Rating: non field-replaceable 2A fuse.

Supervised Inputs:

- Nine (9) 10K EOL supervised inputs to connect to power supply and other equipment that require annunciation of trouble conditions:
  - AC Fail
  - Low Battery
  - Charger Fail
  - Component Fail
  - RF Emitter Failure
  - Donor Antenna Disconnect
  - Donor Antenna Malfunction.
  - RF Emitter Component Failure.

Relay Outputs (Dry NC contacts relays):

- Ten (10) Form "C" output contacts to connect to FACP and other monitoring equipment with convenient end of line resistor wiring terminals. Use to report trouble conditions to FACP or other equipment:
  - AC Fail
  - Low Battery
  - Charger Fail
  - Component Fail
  - RF Emitter Failure
  - Donor Antenna Disconnect
  - Donor Antenna Malfunction
  - FACP Reporting
  - Communication Failure

Visual Indicators (See LED Diagnostics Table):

- 9 bicolor visual indicators of trouble conditions visible through the observation window of the enclosure.

Enclosure Dimensions (H x W x D):

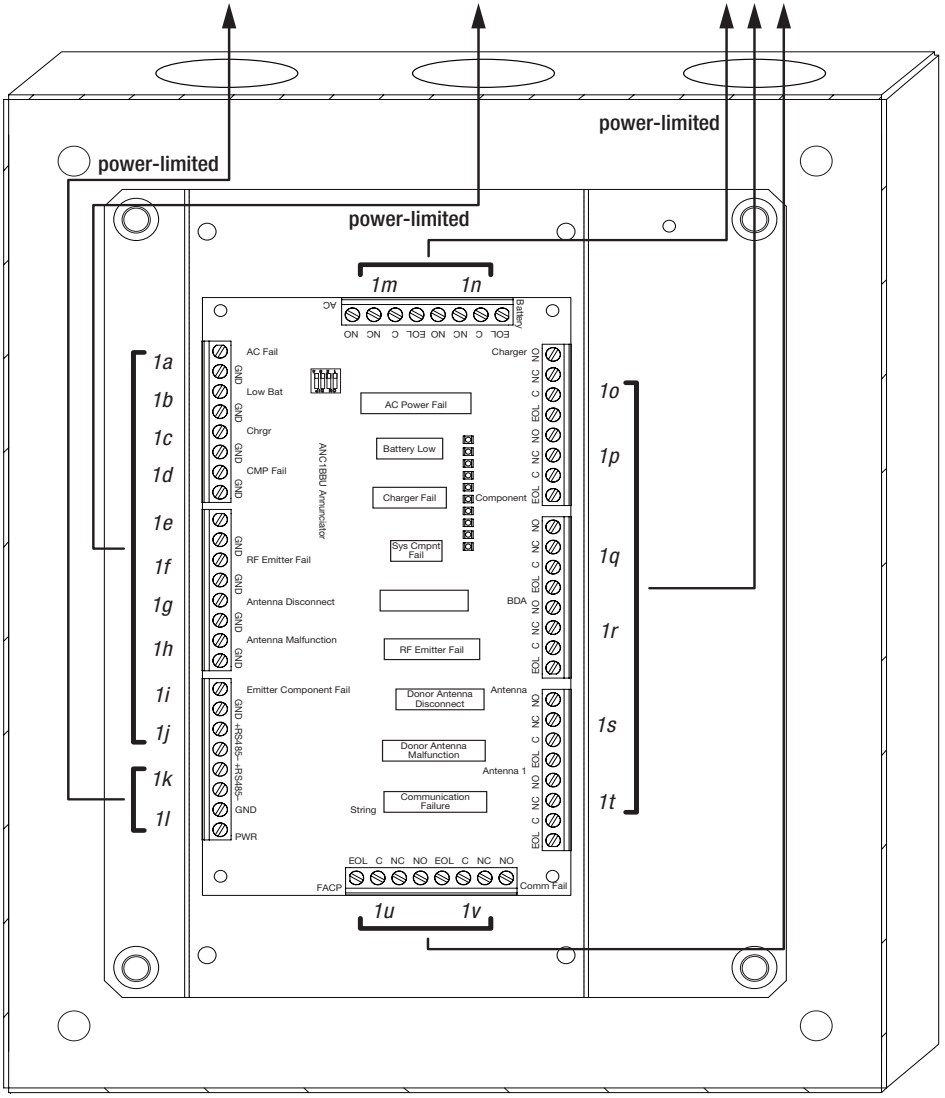
11.8" x 9.84" x 5.9" (300mm x 250mm x 150mm). NEMA4X stainless steel red color enclosure.

Installation Instructions:

Wiring methods shall be in accordance with the National Electrical Code/NFPA 70/NFPA 72/ANSI, and with all local codes and authorities having jurisdiction. Product is intended for indoor use only.

1. Mount unit in the desired location. Mark and predrill holes in the wall to line up with mounting hardware; level and secure. Mark the position of the lower two holes. Drill the lower holes and install two fasteners. Install the two lower screws and make sure to tighten all screws *(Enclosure Dimensions, pg. 8)*. Secure enclosure to earth ground using ground stud inside.
2. Connect [Power +] and [Power –] terminals to 12-24VDC power source UL listed for the application (Altronix CommBatt1/CommBatt1F or similar). 400mA are required. Use [+ AUX –] terminals of CommBatt1/ CommBatt1F. Carefully observe polarity, damage may occur.
3. Connect Inputs to the equipment to be monitored, use 10K end of line resistor mounted at the equipment end for monitoring of integrity of the connections. Altronix CommBatt1/CommBatt1F power supply provides special terminals that allow easy mounting of EOL resistors. Connect BDA, Donor Antenna Fail and Donor Antenna Disconnect terminals to equipment to be monitored. Inputs not used must be terminated with 10K end of line resistors connected directly to specific input terminals. See *Terminal Identification, pg. 4.*
4. Connect relay outputs to the FACP or other monitoring equipment. If it is located not in the same enclosure, supervision must be provided. Use the end of line resistor recommended by the equipment that facilitates the supervision and connect those to terminals marked EOL. Connect the equipment to output relay terminals. See detailed instructions below.
5. Connect FACP contacts to Fire Alarm Control panel to provide trouble supervision.
6. Please ensure that the cover is secured with the provided lock.

Fig. 1 - **ANC1BBU Wiring Diagram**



Wiring:

For wiring entering and exiting the enclosure UL Listed/Recognized Type 4X/IP68 rated hardware is to be employed. See the drawing for recommended location of openings. Use appropriate tools recommended by the manufacturer to drill the enclosure. Make sure hole diameters correspond to those recommended by the specific hardware manufacturer. Follow hardware manufacturer's instructions in order to maintain Type 4/4X rating. Use 18-22 AWG wire for connections

ANC1BBU LED Diagnostics:

LED	Decription
AC Power Fail	**Green:** AC power normal, **Red:** AC power failure or brownout.
Battery Low	**Green:** Battery normal. **Red:** Battery is missing or discharged below 30% capacity.
Charger Fail	**Green:** charger operates normally. **Red:** charger failure.
Sys Cmpnt Fail	**Green:** no critical component failure detected. **Red:** critical component failure.
RF Emitter Fail	**Green:** RF emitter operates nornally. **Red:** RF emitter failure.
Donor Antenna Disconnect	**Green:** donor antenna connected. **Red:** donor antenna disconnected.
Donor Antenna Malfunction	**Green:** donor antenna operates normally. **Red:** donor antenna failure.
Communication Failure	**Green:** RS485 normal. **Red:** RS485 lost.
Communication Mode	**Solid Green:** RS485 communication disabled, all local inputs enabled, **Blinking Green/Red:** RS485 communication enabled, firtst five local inputs disabled.

ANC1BBU Terminal Identification:

Inputs	
Terminal Legend	**Function/Description**
AC Fail Input *(Fig. 1a, pg. 3)*	AC Fail trouble input, 10K EOL supervised. To be connected to CommBatt1/CommBatt1F power supply AC Trouble output. Terminate with 10K resistor if not used.
Low Battery Input *(Fig. 1b, pg. 3)*	Battery Trouble input, 10K EOL supervised. To be connected to CommBatt1/CommBatt1F power supply Battery Trouble output. Terminate with 10K resistor if not used.
Charger Fail Input *(Fig. 1c, pg. 3)*	Charger Fail input, 10K EOL supervised. To be connected to CommBatt1/CommBatt1F power supply Charger Trouble output. Terminate with 10K resistor if not used.
Component Fail Input *(Fig. 1d, pg. 3)*	Component Fail input, 10K EOL supervised. To be connected to CommBatt1/CommBatt1F power supply Component Fail output. Terminate with 10K resistor if not used.
RF Emitter Fail Input *(Fig. 1f, pg. 3)*	Failure of RF emitter input, 10K EOL supervised. To be connected to the RF Emitter Fail output of BDA. Terminate with 10K resistor if not used.
Antenna Disconnect *(Fig. 1g, pg. 3)*	Donor antenna disconnect trouble input. To be connected to the Donor Antenna Disconnect of BDA. Terminate with 10K resistor if not used.
Antenna Malfunction *(Fig. 1h, pg. 3)*	Donor antenna malfunction trouble input. To be connected to the Donor Antenna Malfunction of BDA. Terminate with 10K resistor if not used.
Emitter Component Fail *(Fig. 1i, pg. 3)*	RF Emitter Critical Component Failure input. To be connected to RF emitter critical component failure output of BDA. Terminate with 10K resistor if not used
+ RS485 – *(Fig. 1j, pg. 3)*	RS485 communication link connection. If employed, it will override the signal coming form the local inputs related to operation of CommBatt1/CommBatt1F power supply (1-5). The other inputs remain active. Connect to [+ RS485 –] terminals of CommBatt1/CommBatt1F power supply
+ RS485 – *(Fig. 1k, pg. 3)*	Connections to the next ANC1BBU or 100 Ohm end termination resistor.
PWR GND *(Fig. 1l, pg. 3)*	Input power connections from AUX output of CommBatt1/CommBatt1F power supply or different power source. 12-24V 400mA. **Power:** positive, **GND:** negative

ANC1BBU Terminal Identification:

Outputs	
Terminal Legend	**Function/Description**
AC Fail EOL C NC NO *(Fig. 1m, pg. 3)*	Form"C" relay output. 1A/28V, 0.6 power factor. Relay is normally energized. Reports AC failure to FACP
Batt Fail EOL C NC NO *(Fig. 1n, pg. 3)*	Form"C" relay output. 1A/28V, 0.6 power factor. Relay is normally energized. Reports Battery failure to FACP
Charger EOL C NC NO *(Fig. 1o, pg. 3)*	Form"C" relay output. 1A/28V, 0.6 power factor. Relay is normally energized. Reports Charger failure to FACP.
Component EOL C NC NO *(Fig. 1p, pg. 3)*	Form"C" relay output. 1A/28V, 0.6 power factor. Relay is normally energized. Reports Critical component failure to FACP.
BDA EOL C NC NO *(Fig. 1r, pg. 3)*	Form"C" relay output. 1A/28V, 0.6 power factor. Relay is normally energized. Reports RF emitting device failure to FACP.
Antenna EOL C NC NO *(Fig. 1s, pg. 3)*	Form"C" relay output. 1A/28V, 0.6 power factor. Relay is normally energized. Reports donor antenna disconnect to FACP.
Antenna 1 EOL C NC NO *(Fig. 1t, pg. 3)*	Form"C" relay output. 1A/28V, 0.6 power factor. Relay is normally energized. Reports donor antenna malfunction to FACP
Communication Failure EOL C NC NO *(Fig. 1v, pg. 3)*	Form"C" relay output. 1A/28V, 0.6 power factor. Relay is normally energized. Reports RS485 failure or registered device disconnect to FACP.
FACP EOL C NC NO *(Fig. 1u, pg. 3)*	Form"C" relay output. 1A/28V, 0.6 power factor. Relay is normally energized. Reports all abovementioned troubles to FACP.

Altronix CommBatt Annunciator Connections to the CommBatt Power Supply:

See CommBatt Power Supply Installation Guide Doc. No. IICommBatt1(F) for more information.

Use [AUX +/–] terminals of CommBatt1/CommBatt1F power supply to connect to power terminals of ANC1BBU. Any other 12-24V UL listed UL864, UL1481 or UL2524 compliant power source can be used. 400mA current rating minimum is required.

Method 1. Hard Wiring of ANC1BBU to CommBatt1/CommBatt1F1:

1. Use 10K EOL resistor Altronix model number ALEOL10.
2. Connect EOLs between [EOL] and corresponding [C] terminals of reporting outputs of CommBatt1/CommBatt1F.
3. Connect trouble inputs of ANC1BBU to "NC" and "NO" terminals.
   Unused inputs are to be terminated with 10K EOL.
   Trouble condition inputs and outputs have to be matched for proper operation.

Method 2. Using RS485 Link:

Up to 7 ANC1BBUs can be connected to one CommBatt1/CommBatt1F.
Total length of connecting wires should not exceed 1500 Ft. Use 18AWG twisted pair.

1. Connect [+ RS485 –] of CommBatt1/CommBatt1F to [+ RS485 –] of ANC1BBU, connect next ANC1BBU to the second set of [+ RS485 –] terminals. On the last ANC1BBU connect termination resistor to the second set of [+ RS485 –] terminals.
2. Set address: Each ANC1BBU has to have unique address from 1 to 7, set by the DIP switches 1, 2 and 3 on the ANC1BBU boards. Follow the chart below to determine DIP switch positions
   Address 1 (One) has to be present for proper operation. If only 1 ANC1BBU is employed, it has to have address 1.
3. Power up the system. Turn DIP switch 4 "on" for 30 seconds to record existing system configuration.
   If one of the connected ANC1BBUs fails after the configuration has been fixed, the trouble condition will be reported to FACP by CommBatt1/CommBatt1F and all other ANC1BBU units still connected.

DIP Switch 1-3 Address Setting Chart:

Address	DIP 1	DIP 2	DIP 3
1	ON	OFF	OFF
2	OFF	ON	OFF
3	ON	ON	OFF
4	OFF	OFF	ON
5	ON	OFF	ON
6	OFF	ON	ON
7	ON	ON	ON

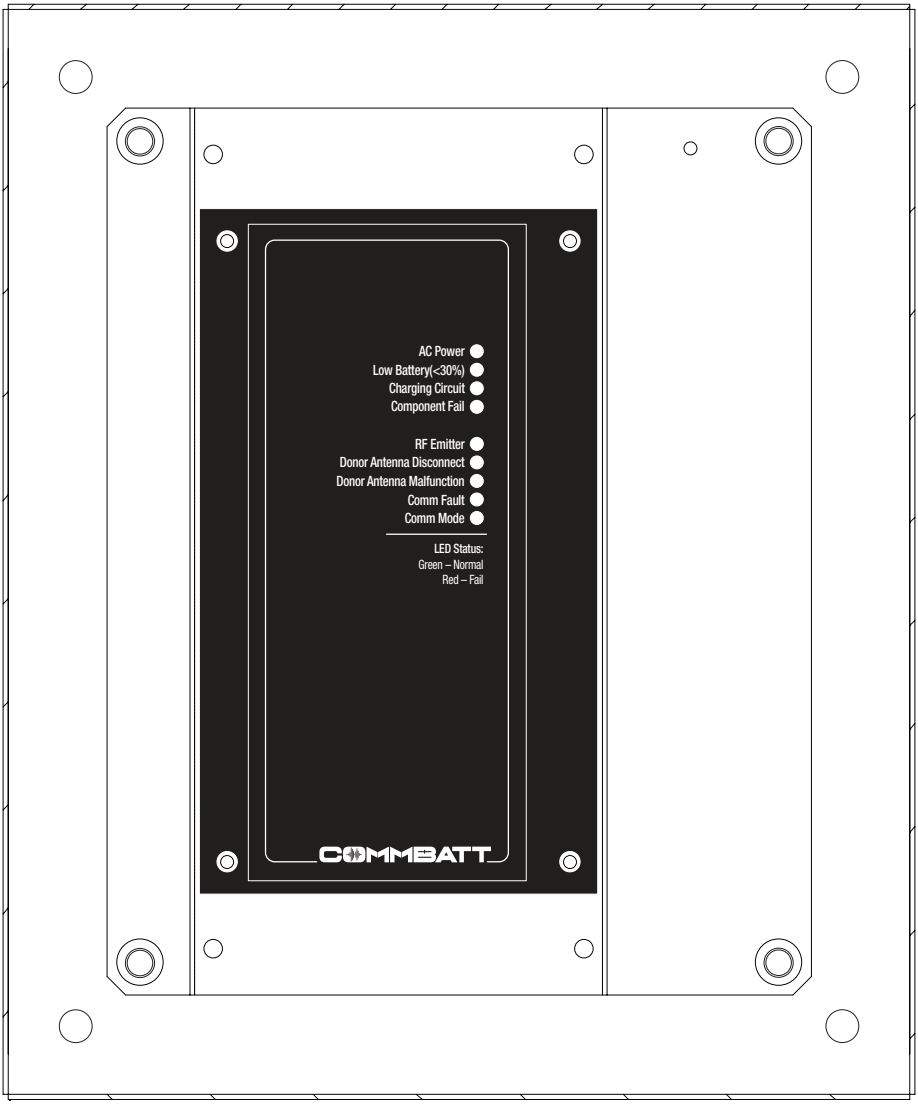
Audible Trouble Condition Annunciation:

ANC1BBU will provide audible signal upon detecting any trouble condition.
The audible signal will continue as long as the trouble presists and will stop when all trouble conditions clear.

Dry Form "C" Relay Contacts Reporting:

Dry Form"C" relay contacts are used to report individual trouble conditions to FACP. Use FACP EOL to connect between [EOL] and [C] terminals of corresponding outputs. Connect wiring from FACP to [NO] and [NC] terminals. Connection does not need to be supervised if the connection is within 20 feet and the conduit is used for wiring. Dry contacts C, NO, NC can be employed for those connections.
FACP relay reports all trouble conditions. It has to be connected to FACP to meet UL requirements.
Individual trouble condition reporting is optional.

Fig. 3 - **ANC1BBU**



Enclosure Dimensions (H x W x D approximate)**:**

11.8" x 9.84" x 5.9" (300mm x 250mm x 150mm)