ACM4 Series
Access Power Controllers

Installation Guide

Models Include:

ACM4

- Four (4) Fuse Protected Outputs

ACM4E

- Four (4) Fuse Protected Outputs w/Enclosure

ACM4CB

- Four (4) PTC Protected Outputs

ACM4CBE

- Four (4) PTC Protected Outputs w/Enclosure

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Rev. 082808

Overview:

These units convert one (1) 12 to 24 volt AC or DC input into four (4) independently controlled fused or PTC protected outputs. These power outputs can be converted to dry form "C" contacts (ACM4/ACM4E only). Outputs are activated by an open collector sink or normally open (NO) dry trigger input from an Access Control System, Card Reader, Keypad, Push Button, PIR, etc. The units will route power to a variety of access control hardware devices including Mag Locks, Electric Strikes, Magnetic Door Holders, etc. All interconnecting devices must be UL Listed. Outputs will operate in both Fail-Safe and/or Fail-Secure modes. Units are designed to be powered by one common power source which will provide power for both the board operation and locking devices, or two (2) totally independent power sources, one (1) providing power for board operation and the other for lock/accessory power. The FACP Interface enables Emergency Egress, Alarm Monitoring, or may be used to trigger other auxiliary devices. The fire alarm disconnect feature is individually selectable for any or all of the four (4) outputs.

Configuration Reference Chart:

Altronix Model Number	Number of Outputs	Fuse Protected Outputs	PTC Protected Outputs	Output Ratings (per output)	Class 2 Rated Power Limited Outputs	Enclosure	Agency Listings	UL Listings and File Numbers
ACM4	4	x	–	3 amp	-	*	UL Listed Sub-Assembly.	UL File # BP6714 UL Listed for Access Control System Units (UL 294). "Signal Equipment" Evaluated to CSA Standard C22.2 No.205-M1983
ACM4E	4	x	–	3 amp	-	x	UL Listed Accessory.	
ACM4CB	4	–	x	2 amp	x	*	UL Listed Sub-Assembly.	
ACM4CBE	4	–	x	2 amp	x	x	UL Listed Accessory.	

*Install in Altronix Power Supply/Chargers AL300ULX, AL400ULX and AL600ULX only. Total output current when ACM4/ACM4CB is utilized as a sub-assembly with power supply/chargers listed below *(see Total Output Chart, below)*.

Note: The total for all outputs combined is not to exceed 8 amp for ACM4CBE and 10 amp for ACM4E.

Total Output Chart:

Power Supply	12 volt DC Output	24 volt DC Output
AL300ULX	2.1 amp	2.3 amp
AL400ULX	2.8 amp	3.6 amp
AL600ULX	5.6 amp	5.8 amp

Note: ACM4/ACM4CB can only be utilized with the power supplies listed above.

Specifications:

- 12 to 24volt AC or DC operation (setting not required).
- Input Ratings (ACM4/ACM4CB only):
  - 12VDC @ .4 amp or 24VDC @ .2 amp.

  Input Ratings (ACM4E/ACM4CBE only):
  - 12VDC @ .4 amp or 24VDC @ .2 amp.
  - 12VAC @ .4 amp or 24VAC @ .3 amp.
- Power supply input options:
  a) One (1) common power input (board and lock power).
  b) Two (2) isolated power inputs (one (1) for board power and one (1) for lock/hardware power).
- Four (4) Access Control System trigger inputs:
  a) Four (4) normally open (NO) inputs.
  b) Four (4) open collector sink inputs.
  c) Any combination of the above.
- Four (4) independently controlled outputs:
  a) Four (4) Fail-Safe and/or Fail-Secure power outputs.
  b) Four (4) dry form "C" 5 amp rated relay outputs (ACM4/ACM4E only).
  c) Any combination of the above (ACM4/ACM4E only).
- Four (4) auxiliary power outputs (unswitched).

- Output ratings:
  - Fuses are rated 3 amp each.
  - PTCs are rated 2.5 amp each.
- Main fuse is rated at 10 amp.
  Note: The total for all outputs combined is not to exceed 8 amp for ACM4CBE and 10 amp for ACM4E.
  (For Models ACM4/ACM4CB refer to the Total Output Chart on Page 2).
  Note: Operating temperature range should be 0 to +49°C.
- Red LEDs indicate outputs are triggered (relays energized).
- Fire Alarm disconnect (latching or non-latching) is individually selectable for any or all of the four (4) outputs.
  Fire Alarm disconnect input options:
  a) Normally open (NO) or normally closed (NC) dry contact input.
  b) Polarity reversal input from FACP signaling circuit.
- FACP output relay (form "C" contact rated @ 1 amp 28VDC not evaluated by UL).
- Green LED indicates when FACP disconnect is triggered.
- Removable terminal blocks facilitate ease of installation.

Board Dimensions (approximate): 5.125"L x 3.625"W x 1.25"H (ACM4 and ACM4CB).
Enclosure Dimensions (approximate): 8.5"H x 7.5"W x 3.5"D (ACM4E and ACM4CBE).

Installation Instructions:

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

1. For ACM4/ACM4CB sub-assembly boards, use stand-offs to mount only in AL300ULX, AL400ULX or AL600ULX enclosures *(Figs. 8-9, pg. 8)*. For ACM4E/ACM4CBE units, mount in desired location.
   The enclosure door for the ACM4E/ACM4CBE can be fastened by using either a cam lock or screws (both supplied). Mark and predrill holes in the wall to line up with the top two keyholes in the enclosure. Install three upper fasteners and screws in the wall with the screw heads protruding. Place the enclosure's upper keyholes over the two upper screws, level and secure. Mark the position of the lower three holes. Remove the enclosure. Drill the lower holes and install the two fasteners. Place the enclosure's upper keyholes over the two upper screws. Install the two lower screws and make sure to tighten all screws *(Enclosure Dimensions, pg. 7)*.
   Carefully review:

Typical Application Diagram	***(pg. 4)***	***Terminal Identification Table***	***(pg. 5)***
LED Diagnostics	***(pg. 5)***	***Hook-up Diagrams***	***(pg. 6)***

2. **Power supply input:**
   The units can be powered with one (1) Listed Access Control Power Supply which will provide power for both board operation and the locking devices or two (2) separate Listed Access Control Power Supplies, one (1) to provide power for the board operation and the other to provide power for the locking devices and/or access control hardware.
   Note: The input power can be either 12 to 24 volts AC or DC operation.
   Input Ratings (ACM4/ACM4CB only):
   - 12VDC @ .4 amp or 24VDC @ .2 amp.

   Input Ratings (ACM4E/ACM4CBE only):
   - 12VDC @ .4 amp or 24VDC @ .2 amp.
   - 12VAC @ .4 amp or 24VAC @ .3 amp.

   (a) Single power supply input:
   If the unit and the locking devices are to be powered using a single Listed Access Control Power Supply, connect the output (12 to 24 volts AC or DC) to the terminals marked [- Control +].
   (b) Dual power supply inputs *(Fig. 1, pg. 4)***:**
   When the use of two Listed Access Control Power Supplies is desired, jumpers J1 and J2 (located to the left of the power/control terminals) must be cut. Connect power for the unit to the terminals marked [- Control +] and connect power for the locking devices to the terminals marked [- Power +].
   Note: When using DC Listed Access Control Power Supplies polarity must be observed. When using AC Listed Access Control Power Supplies polarity need not be observed.
   Note: For UL compliance the power supplies must be UL Listed for Access Control Systems and accessories.
3. **Output options** *(Fig. 1, pg. 4)***:**
   The ACM4/ACM4E will provide either four (4) switched power outputs, four (4) dry form "C" outputs, or any combination of of both switched power and form "C" outputs, plus four (4) unswitched auxiliary power outputs.
   The ACM4CB/ACM4CBE will provide four (4) switched power outputs or four (4) unswitched auxiliary power outputs.
   (a) Switched Power outputs:
   Connect the negative (-) input of the device being powered to the terminal marked [COM]. For Fail-Safe operation

connect the positive (+) input of the device being powered to the terminal marked [NC]. For Fail-Secure operation connect the positive (+) input of the device being powered to the terminal marked [NO].

(b) Form "C" outputs (ACM4/ACM4E)**:**

When form "C" outputs are desired the corresponding output fuse (1-4) must be removed. Connect negative (-) of the power supply directly to the locking device. Connect the positive (+) of the power supply to the terminal marked [C]. For Fail-Safe operation connect the positive (+) of the device being powered to the terminal marked NC]. For Fail-Secure operation connect the positive (+) of the device being powered to the terminal marked [NO].

(c) Auxiliary Power outputs (unswitched):

Connect positive (+) input of the device being powered to the terminal marked [C] and the negative (-) of the device being powered to the terminal marked [COM]. Output can be used to provide power for card readers, keypads etc.

Note: When wiring for power-limited outputs utilize a knockout separate from the one used for non power-limited wiring.

4. **Input trigger options** *(Fig. 1, pg. 4)***:**

(a) Normally Open [NO] input trigger:

Inputs 1-4 are activated by normally open or open collector sink inputs.

Connect devices (card readers, keypads, request to exit buttons etc.) to terminals marked [IN] and [GND].

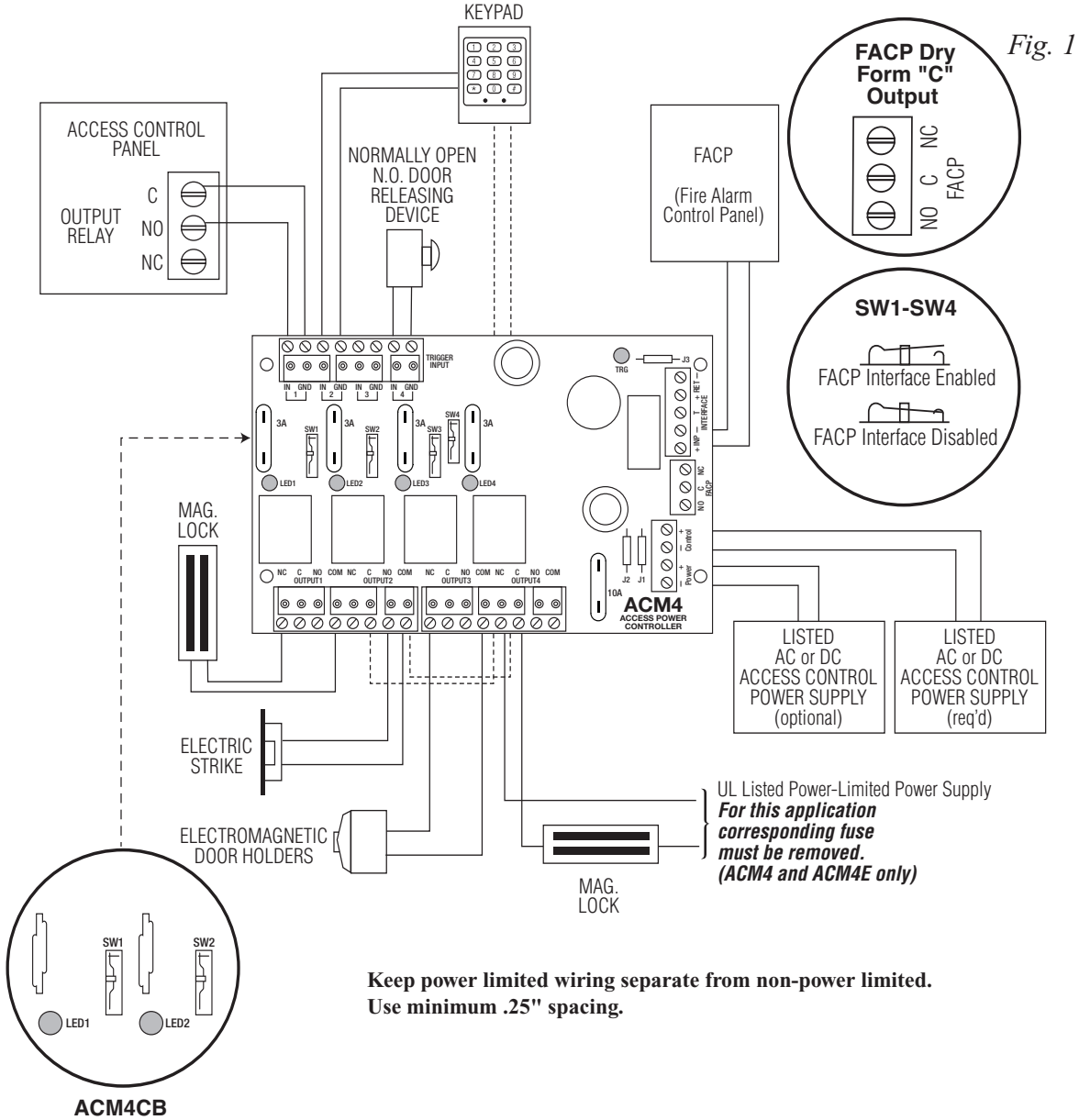
(b) Open Collector Sink inputs:

Connect the access control panel open collector output to the terminal marked [IN] and the common (negative) to the terminal marked [GND].

Typical Application Diagram:

Fig. 1a

Fig. 1



Keep power limited wiring separate from non-power limited.
Use minimum .25" spacing.

5. **Fire Alarm Interface options** *(Figs. 3 through 7, pg. 6)*:
   A normally closed [NC], normally open [NO] input or polarity reversal input from FACP signaling circuit will trigger selected outputs. To enable FACP Disconnect for an output open the corresponding switch [SW1-SW4]. To disable FACP disconnect for an output close the corresponding switch [SW1-SW4].
   (a) Normally Open [NO] input:
   For non-latching hook-up *(Fig. 4, pg. 6)*. For latching hook-up *(Fig. 5, pg. 6)*.
   (b) Normally Closed [NC] input:
   For non-latching hook-up *(Fig. 6, pg. 6)*. For latching hook-up *(Fig. 7, pg. 6)*.
   (c) FACP Signaling Circuit input trigger:
   Connect the positive (+) and negative (-) from the FACP signaling circuit output to the terminals marked [+ INP -]. Connect the FACP EOL to the terminals marked [+ RET -] (polarity is referenced in an alarm condition). Jumper J3 must be cut *(Fig. 3, pg. 6)*.
6. **FACP Dry form "C" output** *(Fig. 1a, pg. 4)*:
   Connect desired device to be triggered by the unit's dry contact output to the terminals marked [NO] and [C] FACP for normally open output or the terminals marked [NC] and [C] FACP for normally closed output.
7. **Installation of tamper switch (Not Included):**
   Mount UL Listed tamper switch (Sentrol model 3012 or equivalent) at the top of the enclosure. Slide the tamper switch bracket onto the edge of the enclosure approximately 2" from the right side.
   Connect tamper switch wiring to the Listed Access Control Panel input or the appropriate UL Listed reporting device, to activate alarm signal when the door of the enclosure is open.

Maintenance:

Unit should be tested at least once a year for the proper operation. Voltage on each output has to be tested for both trigger and non-trigger states and operation of FACP interface has to be simulated.

LED Diagnostics:

LED	ON	OFF
LED 1 - LED 4 (Red)	Output relay(s) energized.	Output relay(s) de-energized.
TRG (Green)	FACP input triggered (alarm condition).	FACP normal (non-alarm condition).

Terminal Identification Tables:

Terminal Legend	Function/Description
– Power +	12VDC to 24VDC input from UL Listed Access Control Power Supply.
– Control +	These terminals can be connected to a separate, UL Listed Access Control Power Supply to provideisolated operating power for the ACM4/ACM4E/ACM4CB/ACM4CBE (jumpers J1and J2 Must be removed).
TRIGGER INPUT 1 - INPUT 4 IN, GND	From normally open and/or open collector sink trigger inputs (request to exit buttons, exit pir's, etc.).
OUTPUT 1 - OUTPUT 4 NC, C, NO, COM	12 to 24 volts AC/DC trigger controlled outputs: Fail-Safe [NC positive (+) & COM Negative (-)], Fail-Secure [NO positive (+) & COM Negative (-)], Auxiliary output [C positive (+) & COM Negative (-)] (When using AC power supplies polarity need not be observed), NC, C, NO become form "C" 5 amp 24VAC/VDC rated dry outputs when fuses are removed (ACM4/ACM4E). Contacts shown in a non-triggered state.
FACP INTERFACE T, + INPUT –	Fire Alarm Interface trigger input from FACP. Trigger inputs can be normally open, normally closed from an FACP output circuit *(Fig. 3 through 7, pg. 6)*.
FACP INTERFACE NC, C, NO	Form "C" relay contact rated @ 1 amp 28VDC for alarm reporting. (This output has not been evaluated by UL).

Hook-up Diagrams:

Fig. 2 Optional hook-up using two (2) isolated power supply inputs:

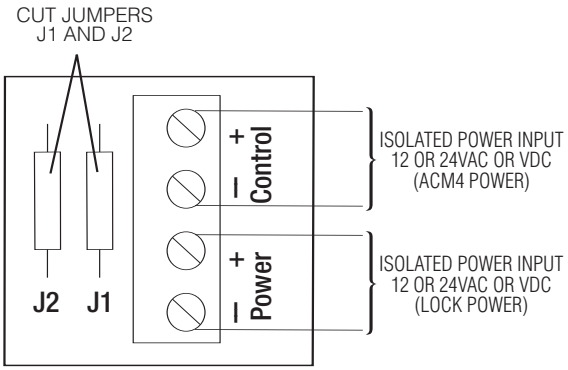


Fig. 3 Polarity reversal input from FACP signaling circuit output (polarity is referenced in alarm condition): (This output has not been evaluated by UL)

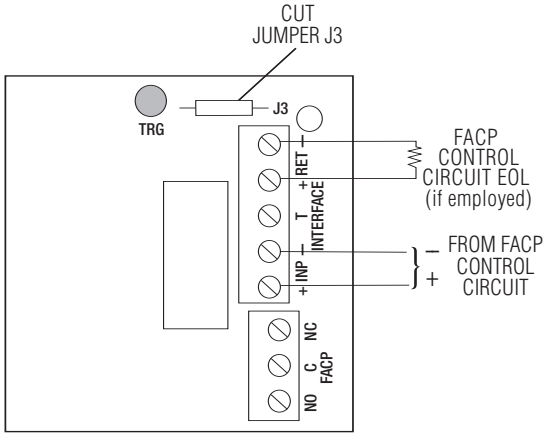


Fig. 4 Normally Open - Non-Latching FACP trigger input:

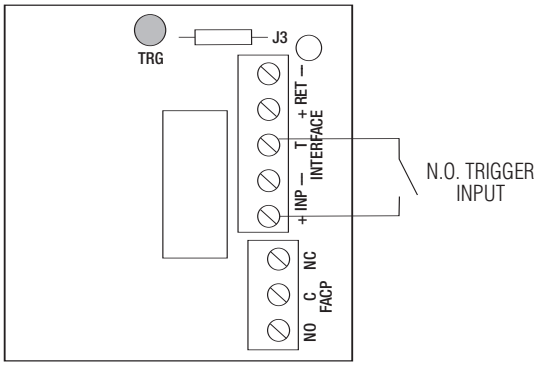


Fig. 5 Normally Open FACP Latching trigger input with reset:
(This output has not been evaluated by UL)

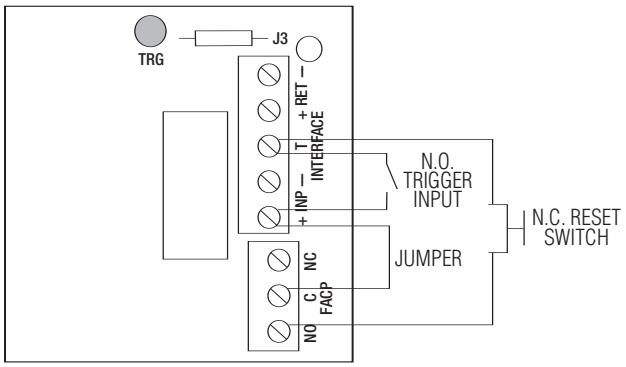


Fig. 6 Normally Closed - Non-Latching FACP trigger input:

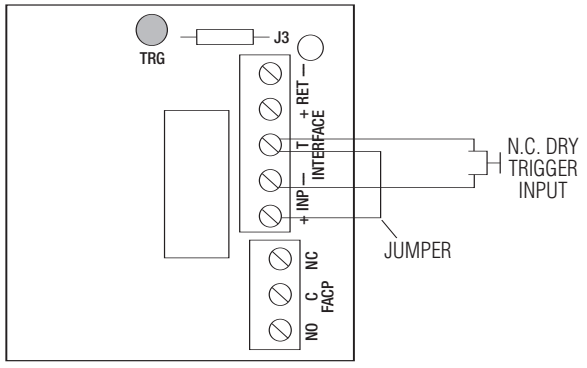
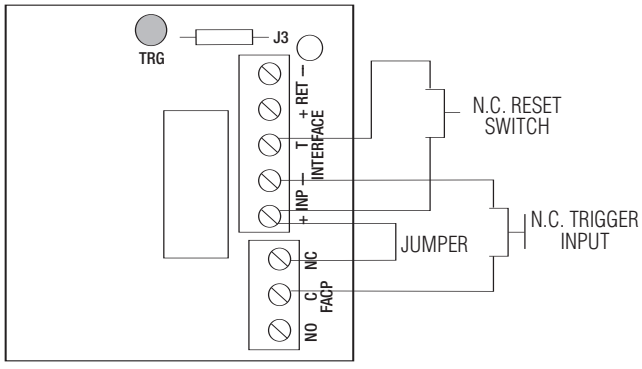


Fig. 7 Normally Closed - Latching FACP trigger input with reset:
(This output has not been evaluated by UL)

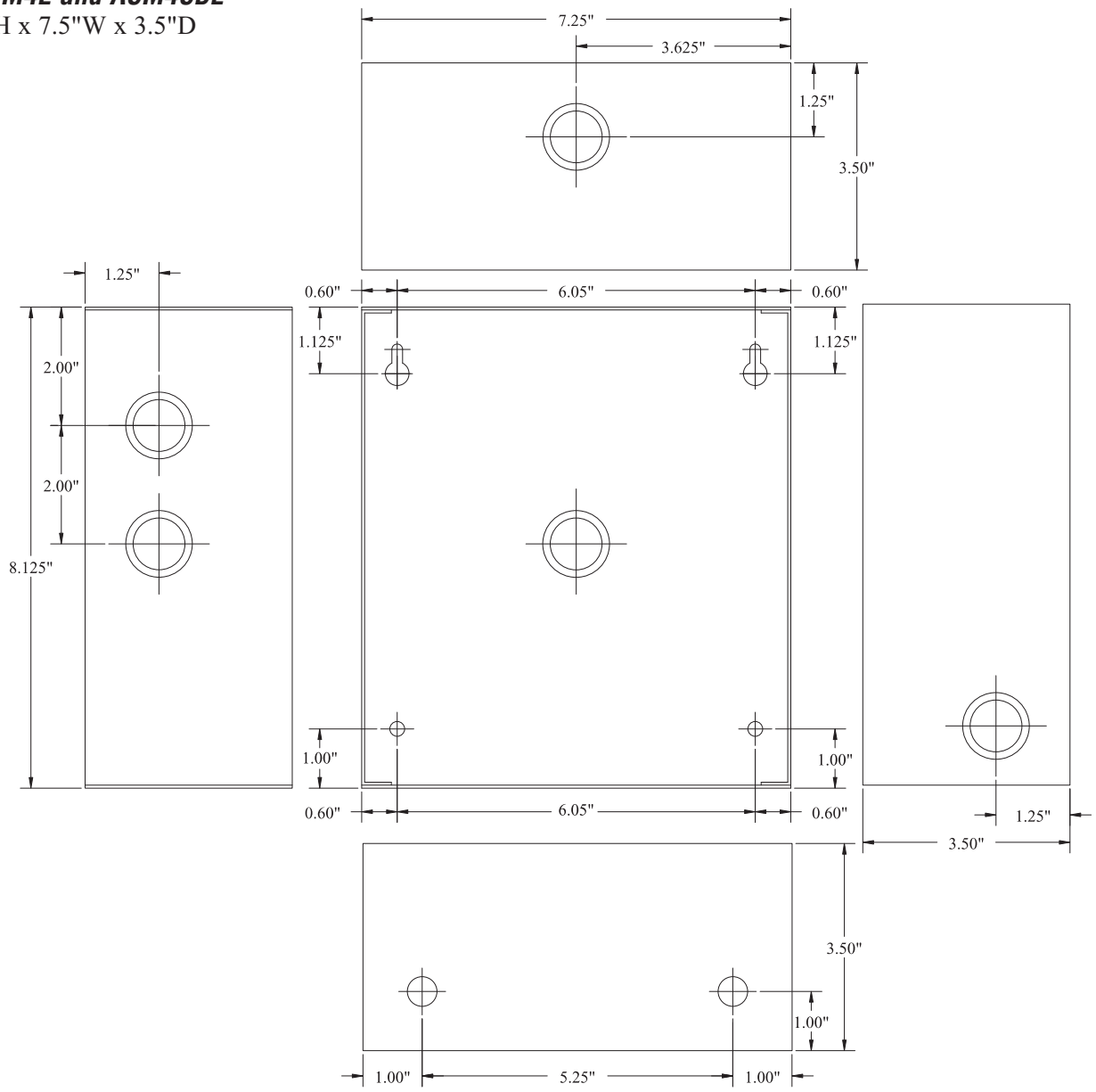


Note: Keep power limited wiring separate from non-power limited. Use minimum .25" spacing.

Enclosure Dimensions:

• *ACM4E and ACM4CBE*

8.5"H x 7.5"W x 3.5"D



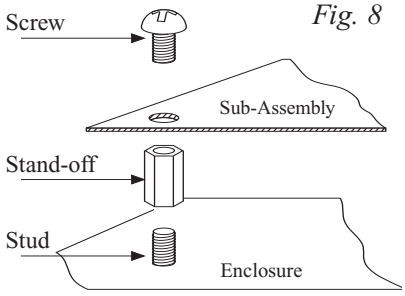
UL Listed Sub-Assembly Installation Instructions:

The following Altronix sub-assembly modules may be field installed in the AL300ULX(R), AL600ULX(R), AL400ULX(R) power supply/chargers: ACM4 or ACM4CB

1. Disconnect power before proceeding with sub-assembly installation.
2. Fasten stand-offs (supplied) to the corresponding studs in the enclosure.
3. Align mounting holes of sub-assembly with stand-offs *(Fig. 8, pg. 8)*.
   Refer below for the location and position for placement of sub-assembly.
4. Fasten sub-assembly to enclosure using the four (4) screws (supplied) *(Fig. 9, pg. 8)*.
5. Connect red and black power leads of CM type jacketed wire (supplied), as shown below:

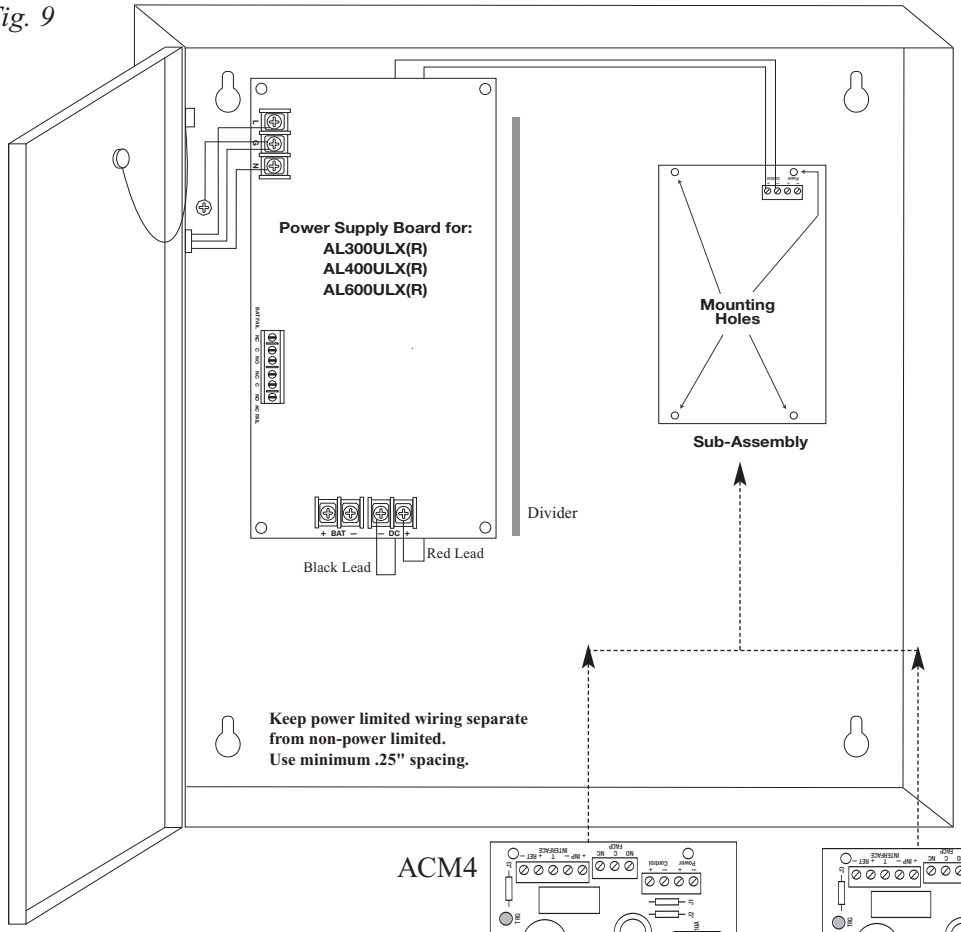
Power Leads (provided)	Terminals: Power Supply Output	Terminals: Sub-Assembly Input
Red Lead	DC +	Control +
Black Lead	DC –	Control –

Fig. 8

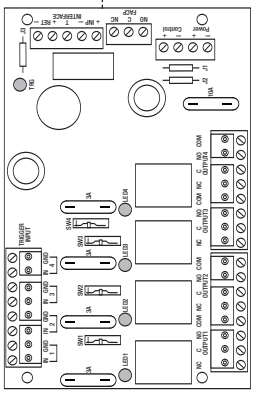


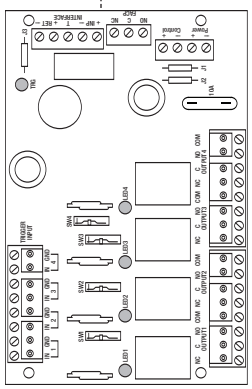
Enclosure Dimensions:
13.5”H x 13”W x 3.25”D

Fig. 9



ACM4





ACM4CB

Mounting Position for
UL Listed Sub-Assembly Installation.

Altronix is not responsible for any typographical errors.

Altronix Corp.
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