

ACMS8 Series Sub-Assembly Access Power Controllers

Installation Guide

Models Include:

ACMS8

- Eight (8) Fuse Protected Outputs

ACMS8CB

- Eight (8) PTC Protected Outputs

Overview:

Altronix ACMS8(CB) Access Power Controller's dual input design allows power to be steered from two (2) independent low voltage 12 or 24VDC power sources to eight (8) independently controlled fuse (ACMS8) or PTC (ACMS8CB) protected outputs. Power outputs of ACMS8(CB) can be converted to dry form "C" contacts. Outputs are activated by an open collector sink, normally open (NO), normally closed (NC) dry trigger input, or wet output from an Access Control System, Card Reader, Keypad, Push Button, PIR, etc. ACMS8(CB) will route power to a variety of access control hardware devices including Mag Locks, Electric Strikes, Magnetic Door Holders, etc. Outputs will operate in both Fail-Safe and/or Fail-Secure modes. 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 eight (8) outputs. The spade connectors allow you to daisy chain power to multiple ACMS8(CB) modules. This feature allows you to distribute the power over more outputs for larger systems.

Specifications:

Power Supply Input Options:

- Input 1 and Input 2 voltage range:
ACMS8: 5VDC to 24VDC, up to 10A each, 20A total input.
ACMS8CB: 5VDC to 24VDC up to 10A each, 16A total input.
- Eight (8) trigger inputs:
 - Normally open (NO) inputs.
 - Normally closed (NC) inputs.
 - Open collector sink inputs.
 - Wet Input (5VDC - 24VDC) with 10K resistor
 - Any combination of the above.

Outputs:

- ACMS8:** Fuse protected outputs rated @ 2.5A per output, non power-limited. Total output 20A max. Do not exceed the individual power supply ratings.
 - ACMS8CB:** PTC protected outputs rated @ 2A per output, Class 2 power-limited. Total output 16A max. Do not exceed the individual power supply ratings.
- Total output current should not exceed max. current rating of the power supplies employed on each input. See *Maximum Output of Altronix Power Supplies*.
- Eight (8) selectable independently controlled outputs or eight (8) independently controlled Form "C" relay outputs (see below for ratings):
 - Fail-Safe and/or Fail-Secure power outputs.
 - Form "C" relays rated @ 2.5A.
 - Auxiliary power outputs (unswitched).
 - Any combination of the above.
 - Individual outputs may be set to OFF position for servicing (output jumper set to middle position). Does not apply to Dry Contact applications.

Outputs (cont'd):

- Any of the eight (8) fuse/PTC protected power outputs are selectable to follow power Input 1 or Input 2. Output voltage of each output is the same as the input voltage of the input selected.
- Surge suppression.

Fire Alarm Disconnect:

- Fire Alarm disconnect (latching or non-latching) is individually selectable for any or all of the eight (8) outputs.
Fire Alarm disconnect input options:
 - Normally open [NO] or normally closed [NC] dry contact input. Polarity reversal input from FACP signaling circuit.
- FACP output relay [NC] contact or provides 10k resistance with [EOL JMP] intact.

Outputs Ratings:

- ACMS8:** Fuses are rated 2.5A each.
- ACMS8CB:** PTCs are rated 2A each.

Fuse Ratings:

- Main input fuses rated @ 10A/32V each.

LED Indicators:

- Red LEDs indicate outputs are triggered.
- Blue LED indicates FACP disconnect is triggered.
- Individual voltage LED indicates 12VDC (Green) or 24VDC (Red/Green).

Environmental:

- Operating temperature: 0°C to 49°C ambient.
- Humidity: 20 to 93%, non-condensing.

Mechanical:

- Board Dimensions (W x L x H approximate): 7.65" x 4.125" x 1.25" (194.3mm x 104.8mm x 31.8mm).
- Product weight (approx.): 0.7 lb. (0.32 kg).
- Shipping weight (approx.): 0.95 lb. (0.43 kg).

Installation Instructions:

Wiring methods shall be in accordance with the National Electrical Code NFPA 70/NFPA 72/ ANSI / Canadian Electrical Code / CAN/ULC-S524/ULC-S527/ULC-S537, and with all local codes and authorities having jurisdiction. Product is intended for indoor dry use only.

1. Refer to Sub-Assembly Installation Instruction for mounting Rev. MS050913.

Carefully review:

Terminal Identification Table

(pg. 4)

Typical Application Diagram

(pg. 7)

LED Diagnostics

(pg. 4)

Hook-up Diagrams

(pg. 8-9)

2. Ensure all output jumpers [OUT1] - [OUT8] are placed in the OFF (center) position.
3. Connect low voltage DC power supplies to terminals marked [+ PWR1 -], [+ PWR2 -]
4. Set each output [OUT1] - [OUT8] to route power from power supply 1 or 2

(Fig. 1, pg. 3).

Note: Measure output voltage before connecting devices.

This helps avoiding potential damage.

5. Turn power off before connecting devices.
6. Output options: The ACMS8(CB) will provide up to eight (8) switched power outputs or eight (8) dry form "C" outputs, or any combination of both switched power and form "C" outputs, plus eight (8) unswitched auxiliary power outputs.

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].

Form "C" outputs:

When form "C" outputs are desired, the corresponding jumper (1-8) must be placed in the OFF position (Fig. 1, pg. 3). Alternatively, the corresponding output fuse (1-8) can be removed (ACMS8 only).

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].

Dry contacts rated @ 3A.

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.

7. Turn main power on after all devices are connected
8. Input Trigger options:

Note: If Fire Alarm disconnect is not used, connect a 10K ohm resistor to terminals marked [GND and EOL], plus connect a jumper to terminals marked [GND, RST].

Normally Open (NO) Input:

Slide input control logic DIP switch into the ON position for [Switch 1-8]

(Fig. 2, on right). Connect your wires to terminals marked

[+ INP1 -] to [+ INP8 -].

Normally Closed (NC) Input:

Slide input control logic DIP switch into the OFF position for [Switch 1-8]

(Fig. 2, on right). Connect your wires to terminals marked

[+ INP1 -] to [+ INP8 -].

Open Collector Sink Input:

Connect the open collector sink input to the terminal marked

[+ INP1 -] to [+ INP8 -].

Wet (Voltage) Input Configuration:

Carefully observing polarity, connect the voltage input trigger wires and the supplied 10K resistor to terminals marked [+ INP1 -] to [+ INP8 -].

If applying voltage to trigger input - set the corresponding INP Logic switch to the "OFF" position

If removing voltage to trigger input - set the corresponding INP Logic switch to the "ON" position.

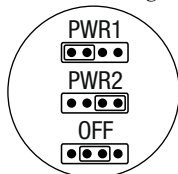


Fig. 1

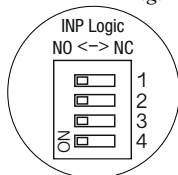


Fig. 2

9. Fire Alarm Interface options:

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 turn the corresponding DIP switch [SW1-SW8] ON.

To disable FACP disconnect for an output turn the corresponding DIP switch [SW1-SW8] OFF. Switch is located directly to the left of the Fire Alarm Interface Terminals.

Normally Open Input:

Wire your FACP relay and 10K resistor in parallel on terminals marked [GND] and [EOL].

Normally Closed Input:

Wire your FACP relay and 10K resistor in series on terminals marked [GND] and [EOL].

FACP Signaling Circuit input trigger:

Connect the positive (+) and negative (–) from the FACP signaling circuit output to the terminals marked [+ FACP –]. Connect the FACP EOL to the terminals marked [+ RET –] (polarity is referenced in an alarm condition).

Non-Latching Fire Alarm Disconnect:

Connect a jumper to the terminals marked [GND, RST].

Latching Fire Alarm Disconnect:

Connect a NO normally open reset switch to terminals marked [GND, RST].

10. FACP Dry NC output:

Connect desired device to be triggered by the unit's dry contact output to the terminals marked [NC] and [C].

When [EOL JMP] is kept intact, the output is of 0 Ohm resistance in a normal condition.

When [EOL JMP] is clipped, a 10k resistance will be passed to next device when in a normal condition.

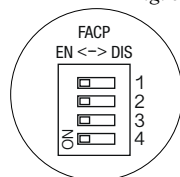


Fig. 3

LED Diagnostics:

ACMS8 and ACMS8CB Access Power Controller

LED	ON	OFF
LED 1- LED 8 (Red)	Output relay(s) de-energized.	Output relay(s) energized.
FACP	FACP input triggered (alarm condition).	FACP normal (non-alarm condition).
Green Output 1-8	12VDC	—
Red/Green Output 1-8	24VDC	—

Terminal Identification Table:

ACMS8 and ACMS8CB Access Power Controller

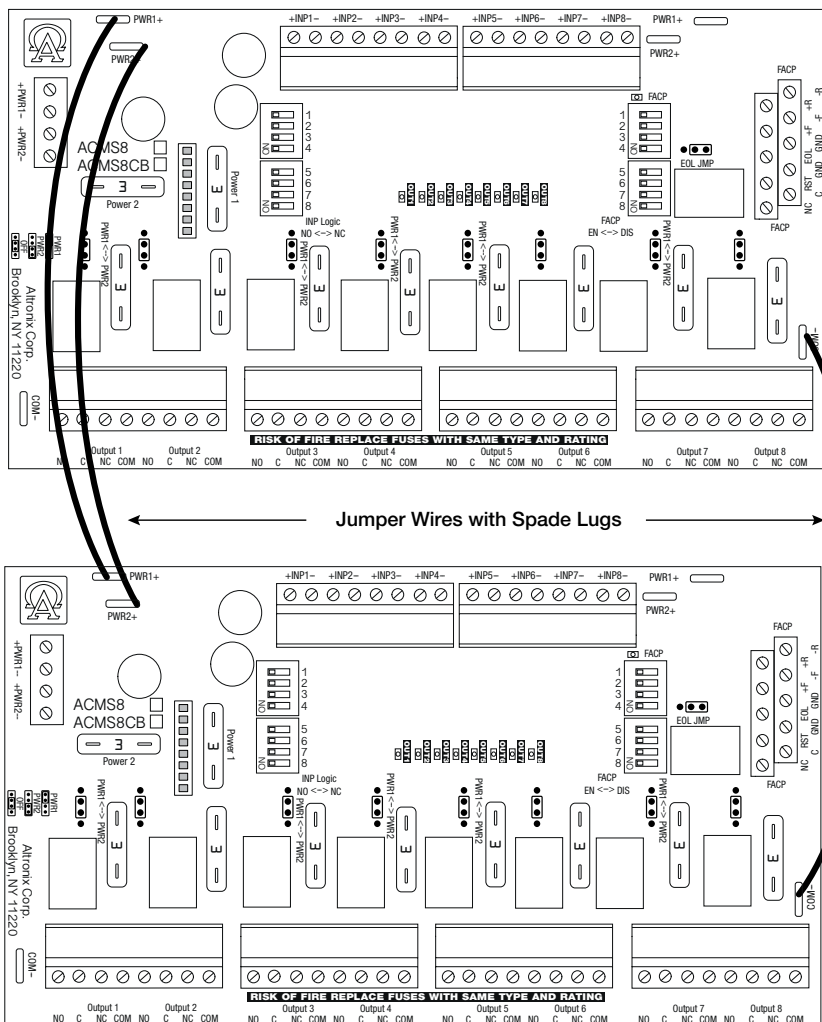
Terminal Legend	Function/Description
+ PWR1 –	5-24VDC input from Power Supply.
+ PWR2 –	5-24VDC input from Power Supply.
+ INP1 – through + INP8 –	Eight (8) independently controlled Normally Open (NO), Normally Closed (NC), Open Collector Sink or Wet Input Triggers.
C, NC	FACP Dry NC output. With EOL JMP intact, will provide 10k resistance in a normal condition.
GND, RST	FACP interface latching or non-latching
GND, EOL	EOL Supervised FACP Input terminals
– F, + F, – R, + R	FACP Signaling Circuit Input and Return terminals
Output 1 through Output 8 NO, C, NC, COM	Eight (8) selectable 5VDC-24VDC independently controlled outputs [Fail-Safe (NC) or Fail-Secure (NO)] and eight (8) independently controlled Form “C” Relay outputs. Fuses are rated 2.5A each (ACMS8). PTCs are rated 2A each (ACMS8CB).

Daisy Chaining Two (2) ACMS8(CB) Dual Output Access Power Controllers:

Use 18 AWG or larger UL Listed wire equipped with 1/4" UL Recognized quick connect terminals rated for proper voltage/current for all jumper connections.

1. Connect first ACMS8(CB) board's spade lug marked [PWR1 +] to the second ACMS8(CB) board's spade lug marked [PWR1 +].
2. Connect first ACMS8(CB) board's spade lug marked [COM -] to the second ACMS8(CB) board's spade lug marked [COM -].
3. Connect first ACMS8(CB) board's spade lug marked [PWR2 +] to the second ACMS8(CB) board's spade lug marked [PWR2 +].

Fig. 4



Maximum Output of Altronix Power Supplies:

UL Listed or Recognized Power Supply	Output Voltage	Max. Output Current
AL400ULXB2	12VDC or 24VDC	12VDC @ 4A or 24VDC @ 3A
AL600ULXB	12VDC or 24VDC	6A
AL1012ULXB	12VDC	10A
AL1024ULXB2	24VDC	10A
eFlow4NB	12VDC or 24VDC	4A
eFlow6NB	12VDC or 24VDC	6A
eFlow102NB	12VDC	10A
eFlow104NB	24VDC	10A
VR6	5VDC or 12VDC	6A

VR6 - Voltage Regulator

Overview:

VR6 voltage regulator converts a 24VDC input into a regulated 5VDC or 12VDC output. It is specifically designed to work with ACMS8(CB) by allowing to mount the Access Power Controller directly on top of VR6 to save enclosure space and simplify connections. Refer to VR6 Installation Guide Rev. 050517.

Specifications:

Power Input / Output:

- Input: 24VDC @ 1.75A – Output: 5VDC @ 6A.
- Input: 24VDC @ 3.5A – Output: 12VDC @ 6A.

Output:

- 5VDC or 12VDC regulated output.
- Output rating 6A max.
- Surge suppression.

LED Indicators:

- Input and output LEDs.

Electrical:

- Operating temperature: 0°C to 49°C ambient.
- Humidity: 20 to 93%, non-condensing.

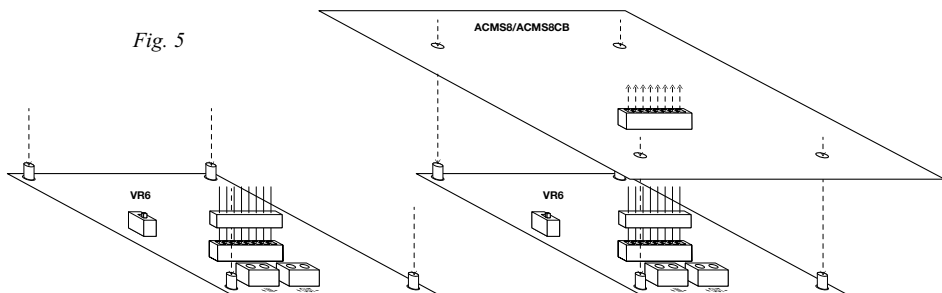
Mechanical:

- Product weight (approx.): 0.4 lb. (0.18 kg).
- Shipping weight (approx.): 0.5 lb. (0.23 kg).

Connecting ACMS8(CB) to VR6:

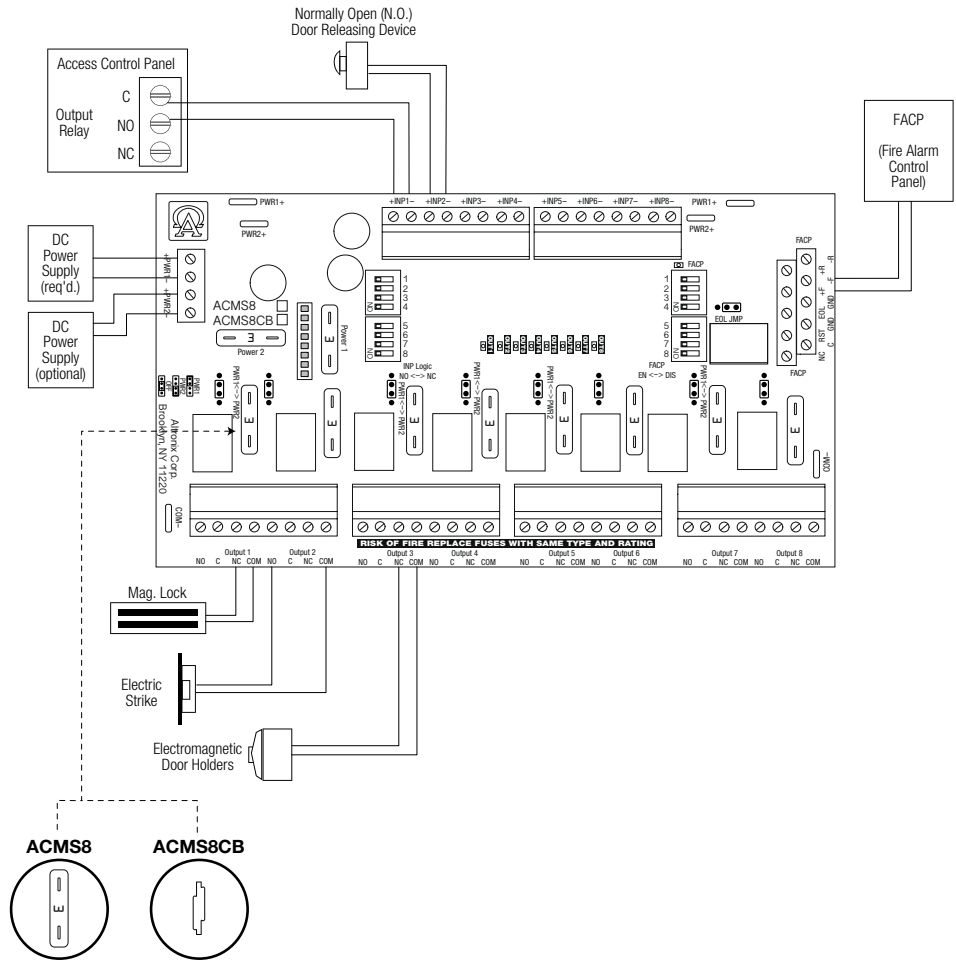
1. Mount VR6 in the desired location/enclosure.
2. Plug-in male 8-pin connector to female 8-pin receptacle on VR6 board.
3. Fasten standoffs. Use metal standoff over mounting hole with star pattern.
4. Align 8-pin male connector with female receptacle of ACMS8(CB), then mount.
5. Connect 24VDC power supply to terminal marked [+ PWR1 –] of ACMS8(CB). Thus Input 1 of ACMS8(CB) is 24VDC from power supply and Input 2 is determined by VR6's settings (5VDC or 12VDC).
6. Complete steps 4-10 (pgs. 3-4).

Fig. 5



Typical Application Diagram:

Fig. 6



Hook-Up Diagrams:

Fig. 7 - Daisy-chaining one or more ACMS8 units.

EOL Jumper [EOL JMP] should be installed in the EOL position. **Non-Latching.**

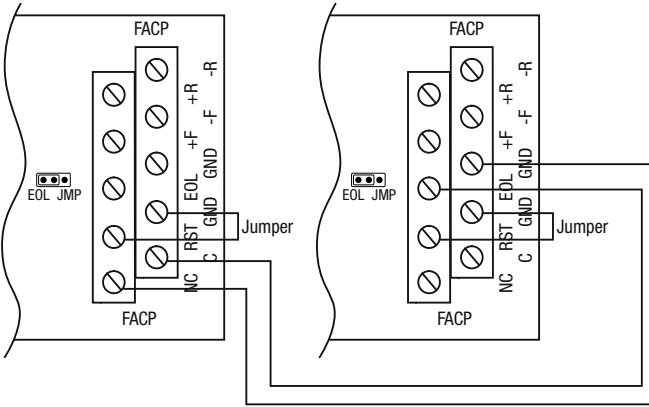


Fig. 8 - Daisy-chaining one or more ACMS8 units.

EOL Jumper [EOL JMP] should be installed in the EOL position. **Latching Single Reset.**

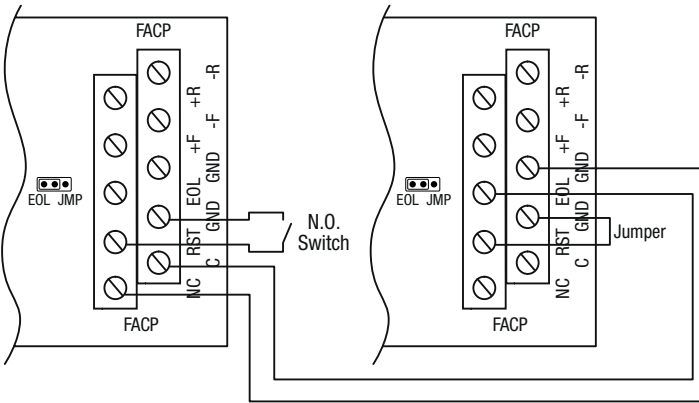
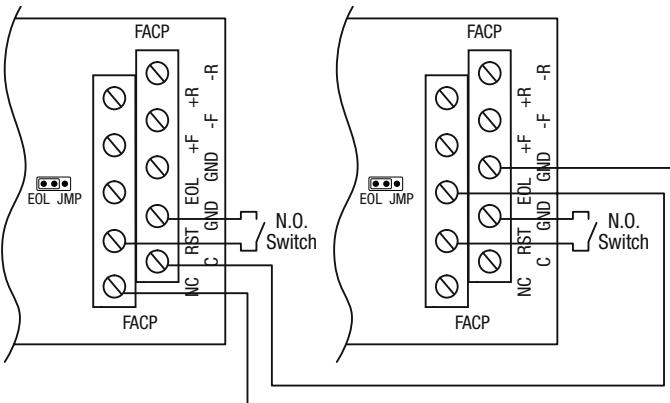


Fig. 9 - Daisy chaining one or more ACMS8 units.

EOL Jumper [EOL JMP] should be installed in the EOL position. **Latching Individual Reset.**



Hook-Up Diagrams:

Fig. 10 - Polarity reversal input from FACP signaling circuit output (polarity is referenced in alarm condition).
Non-Latching.

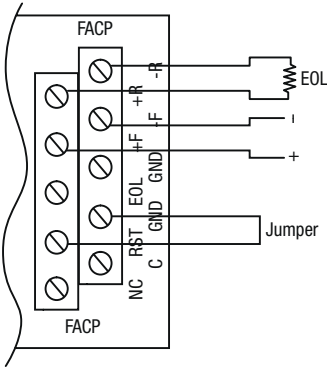


Fig. 11 - Polarity reversal input from FACP signaling circuit output (polarity is referenced in alarm condition).
Latching.

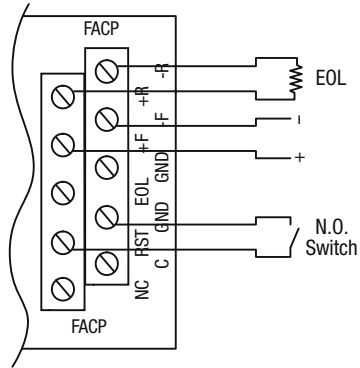


Fig. 12 - Normally Closed trigger input
(Non-Latching).

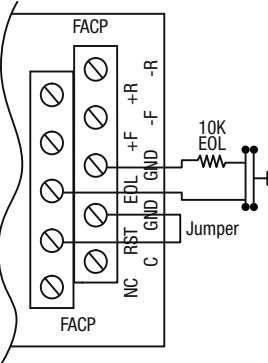


Fig. 13 - Normally Closed trigger input
(Latching).

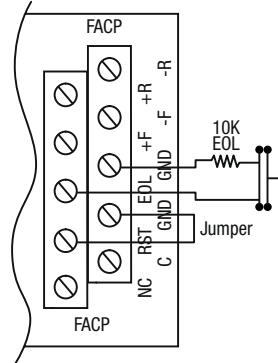


Fig. 14 - Normally Open trigger input
(Non-Latching).

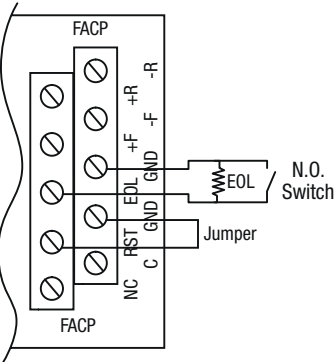
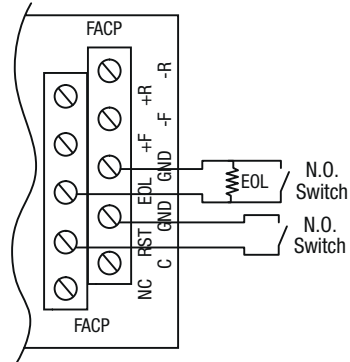


Fig. 15 - Normally Open trigger input
(Latching).



Notes:

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Altronix is not responsible for any typographical errors.

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