

*Installation Guide
for*



*AL300ULM
Multi-Output Access Control
Power Supply Charger*



AL300ULM - Multi-Output Access Control Power Supply/Charger

Overview:

The AL300ULM multi-output access control power supply/charger is specifically designed for use with access control systems and accessories. The AL300ULM converts a 115 VAC / 60Hz input into five individually regulated 12VDC or 24VDC power limited outputs (see specifications). Each output will route power to a variety of access control hardware devices including Mag Locks, Electric Strikes, Magnetic Door Holders, etc. These outputs will operate in both fail-safe and fail-secure modes. Controlled trigger input is achieved through normally open (N.O.) or normally closed (N.C.) supervised input or the polarity reversal from an FACP (Fire Alarm Control Panel). A form "C" dry output relay enables HVAC Shutdown, Elevator Recall or may be used to trigger auxiliary devices.

Specifications:

- UL listed fire, burglar and access control power supply (UL1481, UL603, UL294)
- CSFM - California State Fire Marshal Approved.
- CSA Approved (Canada).
- MEA - NYC Department of Buildings Approved.
- NFPA 72 compliant.
- Class 2 rated.
- Input 115VAC / 60Hz, 1.45 amps.
- Field selectable 12VDC or 24VDC.
- 2.5 amps continuous supply current at 12VDC and 24VDC.
- Five (5) individual power limited outputs.
- Current limit is 2.5 amps @ 12VDC or 24VDC per output.
- Filtered and electronically regulated outputs.
- Maximum charge current .7 amp.
- Built-in charger for sealed lead acid or gel type batteries.
- Automatic switch over to stand-by battery when AC fails.
- Zero voltage drop when switching over to battery backup.
- Thermal and short circuit protection with auto reset.
- Short circuit and overload protection.
- DC output LED indicator.
- LEDs indicate condition of power outputs.
- Power & input trigger LED's.
- AC fail supervision (form "C" contact).
- DC output supervision (form "C" contact).
- Low battery supervision (form "C" contact).
- Fire Alarm Panel or Access Control System trigger inputs.
(N.O. or N.C. supervised trigger input and polarity reversal trigger input (4mA draw from FACP).
- Power fail supervision relay (form "C" contact rated 1amp @ 28VDC).
- Output relay energizes when unit is triggered (form "C" contact rated 1amp @ 28VDC).
- Power supply is complete with enclosure, cam lock, transformer and battery leads.
- Enclosure accommodates up to two (2) 12AH batteries.

Enclosure dimensions: 15.5"H x 12"W x 4.5"D



Voltage Output Settings:

Output	Switch Position
12VDC	SW1 CLOSED
24VDC	SW1 OPEN

Note: It is good operating practice to measure and verify output voltage before connecting devices to ensure proper operation of equipment.

3. Connect AC power (115VAC 50/60Hz to terminals marked [L, G, N] (*Fig. 1*). Use 18 AWG or larger for all power connections (Battery, DC output).

Use 22 AWG to 18 AWG for power limited circuits (AC Fail/Low Battery reporting).

Keep power limited wiring separate from non-power limited wiring (115VAC / 60Hz Input, Battery Wires). Minimum .25" spacing must be provided.

4. Connect fail-secure type locking hardware (e.g. door strikes and electronic dead bolts) positive leads to terminals marked [1 thru 5 POS (+) DC OUTPUT (ALARM)] (*Fig. 1 , pg. 3*) and the negative leads to terminals marked [NEG 1 thru NEG 5] (*Fig. 1 , pg. 3*).
5. Connect fail-safe type locking hardware (e.g. mag locks, door strikes and door holders) positive leads to terminals marked [6 thru 10 POS (+) DC OUTPUT (STAND-BY)](*Fig. 1 , pg. 3*) and negative leads to terminals marked [NEG 1 thru NEG 5] (*Fig. 1 , pg. 3*).
6. To trigger the AL300ULM from a FACP connect signaling circuit of FACP to inputs marked [NEG (-)] and [POS (+)] input (*Fig. 1 , pg. 3*). Polarity is shown in alarm condition.
For latching fire alarm interface (*Fig. 5, 6, 7, pg. 7*).

Note: A 2.2K EOL must be installed across terminals marked [TRIGGER] or MOM5 will remain in an alarm condition.

7. To trigger the AL300ULM using a supervised dry contact connect the 2.2K resistor in series for a N.C. trigger input and in parallel for N.O. trigger input (*Fig. 2 , pg. 6*).
8. Connect auxiliary devices triggered by the AL300ULM to the terminals marked [DRY OUTPUT N.O. & C] for normally open output or terminals marked [DRY OUTPUT N.C. & C] for normally closed output (*Fig. 1 , pg. 3*).

Note: This relay will energize when the AL300ULM is triggered.

9. For Access Control applications batteries are optional. When batteries are not used a loss of AC will result in the loss of output voltage. Batteries must be lead acid or gel type if used. Connect one (1) 12VDC battery to terminals marked [+ BAT -] (*Fig. 1 , pg. 3*) for 12VDC operation. Use two (2) 12VDC batteries connected in series for 24VDC operation. (Battery leads included).
10. Connect supervisory trouble reporting devices to outputs marked [AC FAIL, LOW BAT] (*Fig. 1 , pg. 3*) and [Power Fail] (*Fig. 1 , pg. 3*) supervisory relay outputs marked [N.C., C, N.O.]. Use 22 AWG to 18 AWG for AC Fail & Low Battery reporting.

Maintenance:

Unit should be tested at least once a year for the proper operation as follows:

Output Voltage Test: Under normal load conditions, the DC output voltage should be checked for proper voltage level (see power supply output specifications table).

Battery Test: Under normal load conditions check that the battery is fully charged, check specified voltage at the battery terminals and at the board terminals marked [- BAT +] to insure that there is no break in the battery connection wires.

Note: Maximum charge current under discharge is .7 amps.

Note: Expected battery life is 5 years, however it is recommended changing batteries in 4 years or less if necessary.

LED Diagnostics:

Red (DC)	Green (AC)	Power Supply Status
ON	ON	Normal operating condition
ON	OFF	Loss of AC, Stand-by battery supplying water
OFF	ON	No DC output
OFF	OFF	Loss of AC. Discharged or missing stand-by battery. No DC output.

MOM5 - Output Module

LED	ON	OFF
Power (Green)	Normal operation.	Power failure.
Trigger (Green)	Input is triggered (alarm condition).	No input trigger (non-alarm condition).
Outputs (Red)	Output tripped due to a short circuit or overload condition.	Normal operation.

Terminal Identification:**AL300ULXB - Power Supply**

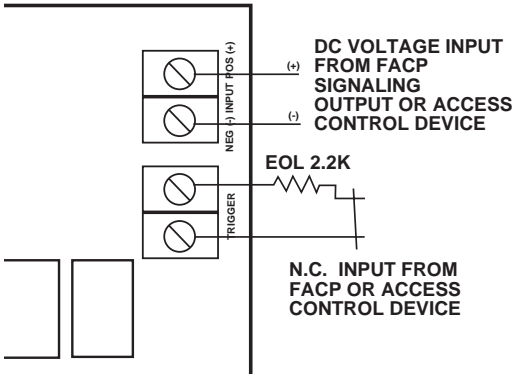
Terminal Legend	Function/Description
L, G, N	Connect 115VAC to these terminals: L to Hot, N to Neutral, G to ground.
+ DC -	12VDC @ 2.5 amps total continuous output (supplies power to MOM5). 24VDC @ 2.5 amps total continuous output (supplies power to MOM5).
AC FAIL C, N.C., N.O.	Used to report loss of AC (e.g. connect to audible device or alarm panel). Relay normally energized when AC power is present. Contact rating 1 amp @ 28VDC. AC Fail condition will report approximately one (1) minute after loss of AC. To delay report for 6 hours cut jumper J1 on the Power Supply Board (AC trouble output delay option). If this mode is selected the Power Supply Board must be reset by removing all power to it for 30 seconds.
LOW BAT N.O., N.C., C	Used to report low battery condition, no battery presence, (e.g. connect to alarm panel). Relay normally energized when battery power is present. Contact rating 1 amp @ 28VDC. Low battery condition will report at approximately 21VDC (24VDC output setting) or approximately 10.5VDC (12VDC output setting). Battery presence detection will report approximately 5 minutes after battery remains undetected (missing or removed).
- BAT +	Stand-by battery connections. Maximum charge rate is .7 amps.

MOM5 - Output Module

Terminal Legend	Function/Description
- DC INPUT +	12 or 24VDC from power supply.
TRIGGER	Dry normally open (N.O.) or normally closed (N.C.) supervised (2.2K EOL resistor) input trigger. A short or open circuit will transfer power from terminals marked [POS. (+) DC OUTPUT (STAND-BY)] to terminals marked [POS (+) DC OUTPUT (ALARM)].
- INPUT +	Wet (5-30VDC) input trigger. Applying voltage to these terminals in the polarity shown will transfer power from terminals marked [POS. (+) DC OUTPUT (STAND-BY)] to terminals marked [POS (+) DC OUTPUT (ALARM)] (e.g. fire alarm control panel indications circuit)..
NEG 1 THRU NEG 5	Supplies constant negative (-) voltage.
POS (+) DC OUTPUT (ALARM) 1-5	Supplies positive (+) voltage when dry trigger input or fire alarm wet trigger input is applied.
POS (+) DC OUTPUT (STAND-BY) 6-10	Supplies positive (+) voltage in normal condition. Power is removed when dry trigger input or fire alarm wet trigger input is applied.
N.C., C., N.O. DRY OUTPUT	When the MOM5 is triggered the C and N.O. terminals will close and the C and N.C. terminals will open. This output is used to trigger auxiliary devices. (e.g. HVAC Shutdown, Elevator Recall etc.)
N.C., C, N.O. POWER FAIL	Form "C" contacts used for reporting no voltage is present at [- DC input +] terminals. Under normal conditions, terminals N.O. and C are open, N.C. and C are closed. A loss of power causes N.O. and C to close and N.C. and C to open.

Typical Application Diagrams:

Fig. 2 AL300ULM module shown with wet and/or dry normally closed trigger inputs (**Non-Latching**):



AL300ULM module shown with wet and/or dry normally open trigger inputs (**Non-Latching**):

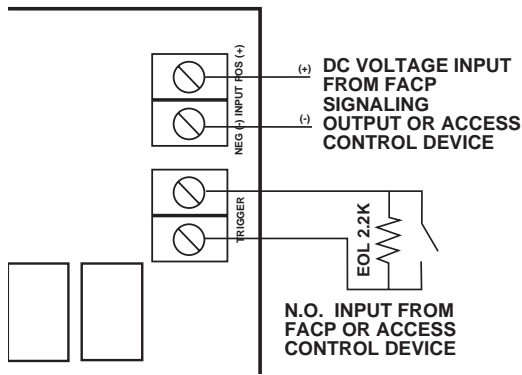


Fig. 3 - Two (2) or more AL300ULM modules shown with wet and/or dry normally closed trigger inputs (**Non-Latching**):

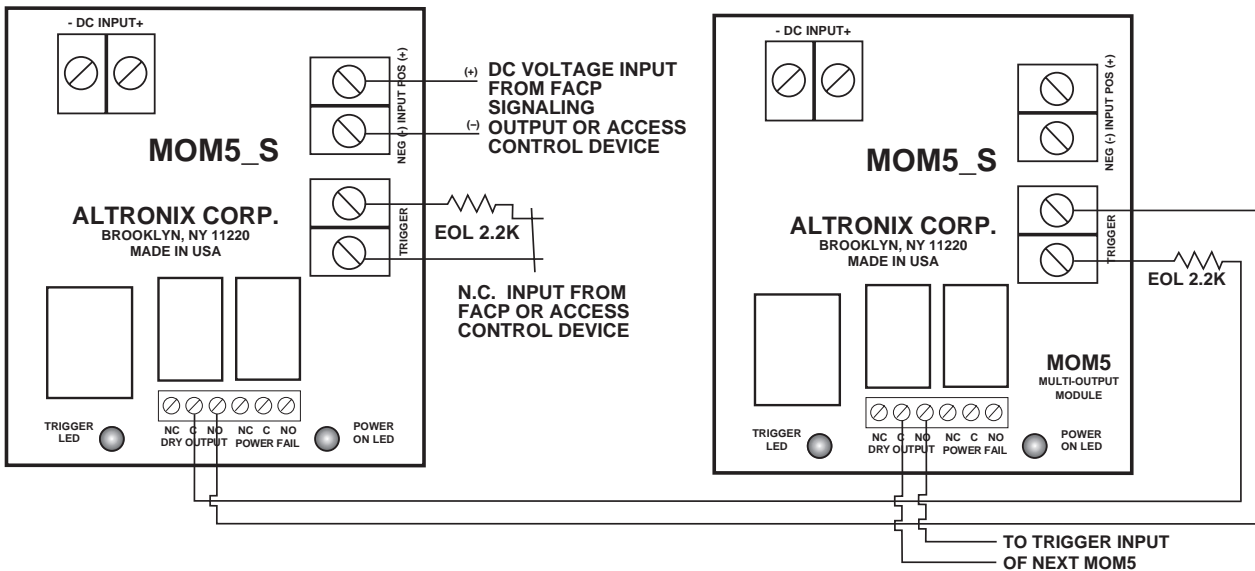
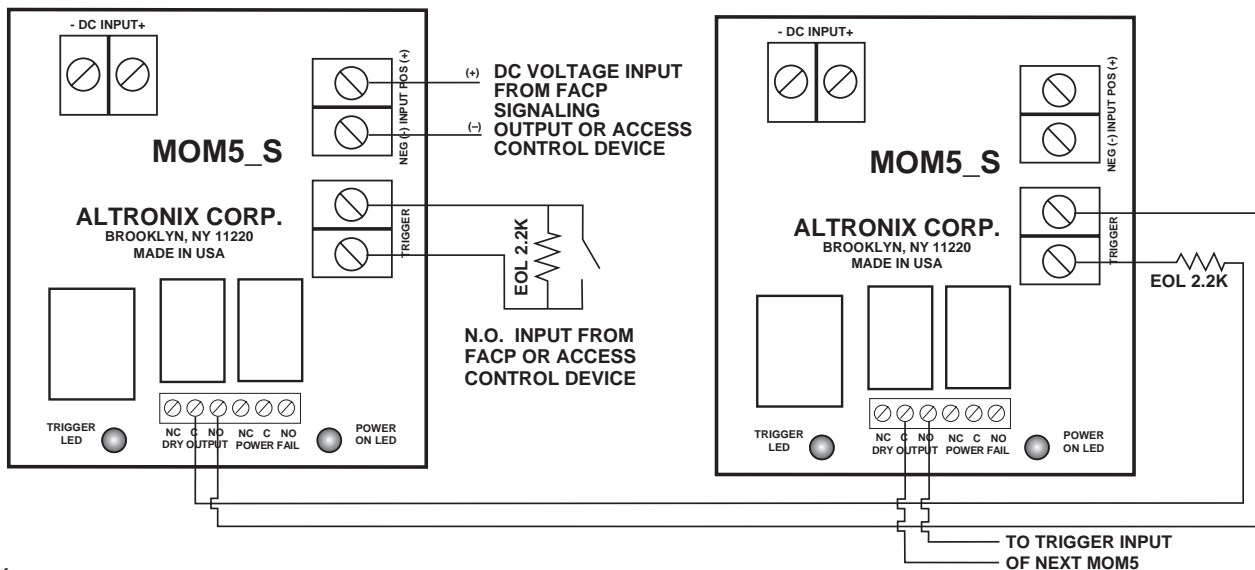
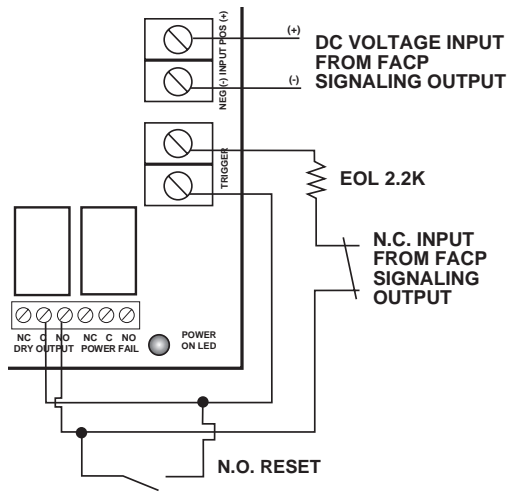


Fig. 4 - Two (2) or more AL300ULM modules shown with wet and/or dry normally open trigger inputs (**Non-Latching**):



Typical Application Diagrams:

Fig. 5 AL300ULM module shown with with wet and/or dry normally closed fire alarm trigger inputs (Latching with Manual Reset):



AL300ULM module shown with with wet and/or dry normally open fire alarm trigger inputs (Latching with Manual Reset):

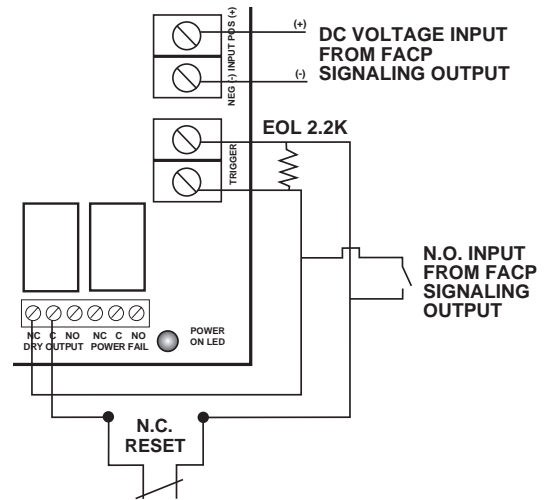


Fig. 6 - Two (2) AL300ULM modules shown with wet and/or dry normally closed fire alarm trigger inputs (Latching with Manual Reset):

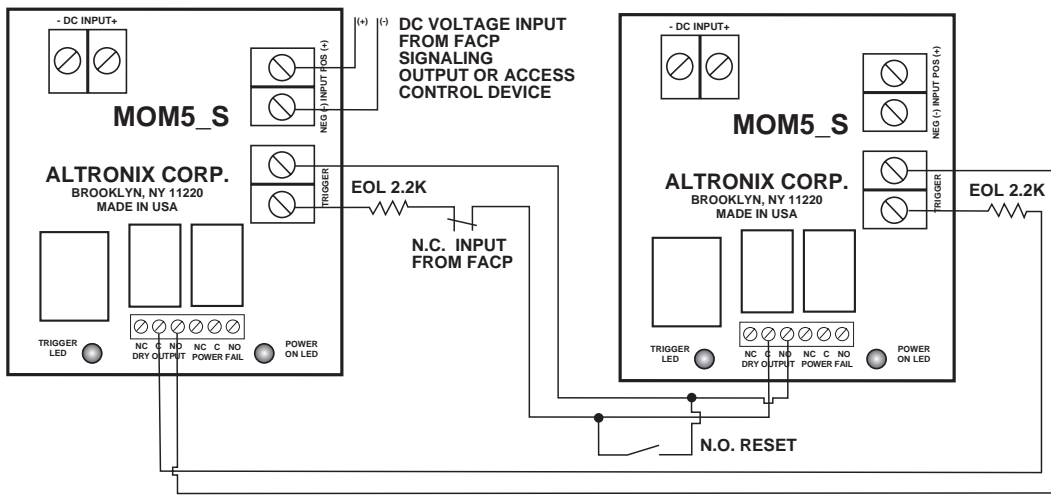
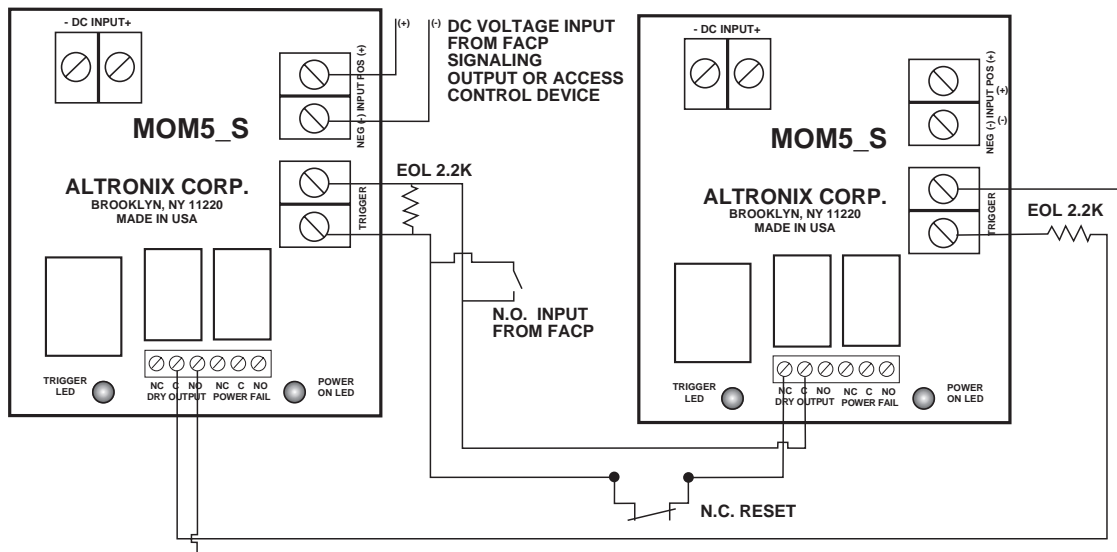
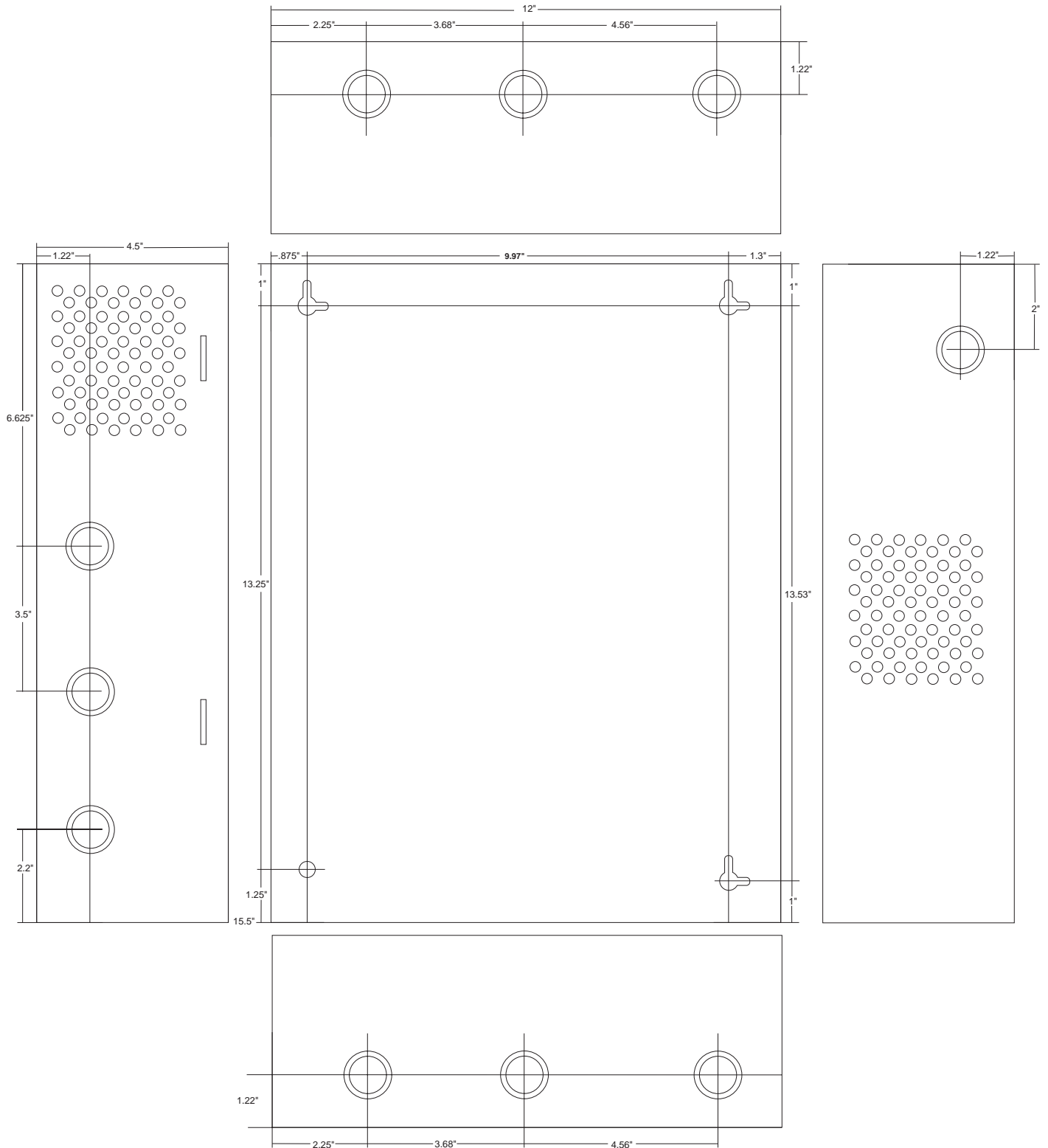


Fig. 7 - Two (2) AL300ULM modules shown with wet and/or dry normally open fire alarm trigger inputs (Latching with Manual Reset):



Enclosure Dimensions:
 15.5"H x 12"W x 4.5"D



MEMBER