



Tango8AQ Series

Dual Input Network Access Power Controllers
with PoE Driven Power Supply

Models Include:

Tango8AQ

- 12VDC and/or 24VDC selectable by output @ 65W max.
- Eight (8) programmable trigger inputs
- Eight (8) programmable fuse protected outputs
- Eight (8) selectable Fail Safe, Fail-Secure or Form "C" dry outputs
- Fire Alarm Disconnect selectable by output
- Built-in Lithium Iron Phosphate Battery Charger

Tango8AQCB

- 12VDC and/or 24VDC selectable by output @ 65W max.
- Eight (8) programmable trigger inputs
- Eight (8) programmable Class 2 power-limited PTC protected outputs
- Eight (8) selectable Fail Safe, Fail-Secure or Form "C" dry outputs
- Fire Alarm Disconnect selectable by output
- Built-in Lithium Iron Phosphate Battery Charger

Installation Guide



Rev. TANGO8AQ - 110920

More than just power.™

Installing Company: _____ Service Rep. Name: _____

Address: _____ Phone #: _____

Overview:

Altronix Tango8AQ(CB) Dual Input Network Access Power Controller with PoE Driven Power Supply converts an IEEE802.3bt PoE input into eight (8) regulated 24VDC and/or 12VDC outputs up to 65W. It eliminates the need for a high voltage inside of an enclosure. 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. Tango8AQ(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 Tango8AQ(CB) modules. This feature allows you to distribute the power over more outputs for larger systems. Built-in LINQ™ Network Power Management facilitates monitoring, reporting and control of power/diagnostics.

Tango8AQ(CB) is designed to support a single 12VDC LiFePO₄ (Lithium Iron Phosphate) battery for 12VDC and 24VDC backup.

Specifications:

Inputs:

Tango1B:

- 802.3bt PoE up to 90W or 802.3at up to 30W or 802.3af up to 15W.

ACMS8/ACMS8CB:

- Eight (8) trigger inputs:
 - a) Normally open (NO) inputs (dry contacts).
 - b) Normally closed (NC) inputs (dry contacts).
 - c) Open collector sink inputs.
 - d) Wet Input (5VDC - 24VDC) with 10K resistor
 - e) Any combination of the above.

Outputs:

Tango1B:

- 12VDC up to 5.4A (65W) and/or 24VDC up to 2.7A (65W). Combined output not to exceed 65W.
- **When charging batteries:**
12VDC up to 4.6A (55W) and/or 24VDC up to 2.3A (55W). Combined output not to exceed 55W.
- **LINQ8ACM:**
Fuse protected outputs rated @ 2.5A per output, non power-limited. Total output 20A max.
- **LINQ8ACMCB:**
PTC protected outputs rated @ 2A per output, Class 2 power-limited. Total output 16A max.
Do not exceed the individual power supply ratings.
- Eight (8) selectable independently controlled outputs (see below for ratings):
 - a) Fail-Safe and/or Fail-Secure power outputs.
 - b) Auxiliary power outputs (unswitched).
 - c) Any combination of the above.
- Individual outputs may be set to OFF position for servicing (output jumper set to middle position).
- 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.

Ethernet Output (Tango1B):

- Pass-through Ethernet Port (data only).
- 100/1G.

Battery (Tango1B):

- 12VDC battery charger for Lithium Iron Phosphate Battery (LiFePO₄ only).
- Unique technology allows for single battery to backup 12VDC and/or 24VDC systems.
- Low power shutdown. Shuts down DC output terminals if battery voltage drops below 80% of nominal. Prevents deep battery discharge.

Fuse Ratings:

- **LINQ8ACM:** Main input fuses rated 15A/32V each. Output fuses are rated 3A/32V.
- **LINQ8ACMCB:** Main input PTCs rated 9A each. Output PTCs are rated 2A.

Programmable Features:

- **Eight (8) Programmable Outputs:**
 - Fail-safe, fail-secure or auxiliary outputs.
 - Input controlled or manually controlled through software.
 - High (over) and low (under) voltage and current monitoring by output.
 - Multiple outputs may be programmed to be triggered by a single input.
 - Battery back-up by output.
- **Eight (8) Programmable Trigger Inputs:**
 - Normally open (NO).
 - Normally closed (NC).
 - Open collector sink inputs.
 - Wet Input (5VDC - 24VDC) with 10k resistor.
 - Any combination of the above.
- Programmable port IDs.
- Monitor power supply(ies) input for voltage and current limits (high/low).
- Input and output current calibration.
- Programmable timer events.
- Programmable user levels.
- Enable or disable alerts by type.
- Programmable alert reporting delay.

Specifications (cont'd):

Fire Alarm Disconnect:

- Fire Alarm disconnect (Inactive, latching or non-latching) is individually selectable for any or all of the eight (8) outputs.
- Fire Alarm disconnect input options:
 - a) Supervised Normally Open [NO] or Normally Closed [NC] dry contact input.
 - b) Polarity reversal input from FACP signaling circuit.
- FACP input WET is rated 5-30VDC 7mA.
- FACP dry input EOL requires 10K end of line resistor.
- FACP output relay [NC]: Either Dry 1A/28VDC, 0.6 Power Factor or 10K resistance with [EOL JMP] intact.

Visual Indicators:

- **Tango1B:**
 - Input indicates input voltage is present.
 - Battery status indicates battery trouble condition.
 - PoE Class indicator.
 - Supervision PoE Fail or BAT Fail.
- **LIHQ8ACM(CB):**
 - **Green AC LED:** indicates AC trouble condition.
 - **Green BAT LED:** indicates battery trouble condition.
 - **Green FACP LED:** indicates FACP disconnect is triggered.
 - **Flashing Blue Heartbeat LED:** indicates network connection.
 - **Individual OUT1 - OUT8 Red LEDs:** indicate outputs are triggered.
 - **Individual Voltage LEDs:** indicate 12VDC (Green) or 24VDC (Red).

Environmental:

- Operating temperature: 0°C to 49°C ambient.
- Humidity: 20 to 85%, non-condensing.

Enclosure Dimensions (approximate H x W x D):

15.5" x 12.23" x 4.5"
(393.7mm x 310.6mm x 114.3mm).

Accessories:

Power Sourcing Equipment

NetWay1BT - Single Port Managed Hi-PoE Injector supplies 90W total power.

NetWaySP1BT - 802.3bt Media Converter/Injector supplies 90W total power.

NetWay4BT - 4-Port Managed Hi-PoE Midspan Injector supplies 480W total power.

NetWay8BT - 8-Port Managed Hi-PoE Midspan Injector supplies 480W total power.

Stand-by Specifications:

Battery	Access Control Applications Stand-by
4AH	30 Mins.
7AH	45 Mins.
12AH	1.5 Hours

Configuring Unit for Network Connection:

(Please see important information on page 9)

Visit altronix.com for the latest firmware and installation instructions

Installation Instructions:

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

1. Mount unit in desired location. Mark and predrill holes in the wall to line up with the top two keyholes in the enclosure. Install two 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 two 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. 20*). Secure enclosure to earth ground.

2. Ensure all output jumpers [PWR1] - [PWR8] are placed in the OFF (center) position (*Fig. 1, pg. 3*).
3. Connect IEEE802.3bt PSE to RJ45 Jack marked PoE+ Data Input on the Tango1B board (*Fig. 2b, pg. 5*). If Data pass-through is required, connect another IEEE802.3bt PSE to RJ45 Jack marked [Data Output] (*Fig. 2a, pg. 5*).

CAUTION: Do not touch exposed metal parts.

There are no user serviceable parts inside.

Refer installation and servicing to qualified service personnel.

4. Set each output [OUT1] - [OUT8] to route power from Power Supply 1 or 2 (*Fig. 1*).

Note: Measure output voltage before connecting devices.

This helps avoiding potential damage.

5. Turn main power off before connecting devices.

6. **Output Options (program output options via LINQ software):**

Tango8AQ(CB) will provide up to eight (8) switched power 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].

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 (program trigger input options via LINQ software):**

Note: If Fire Alarm disconnect is not used, connect a 10 kOhm resistor to terminals marked [GND and EOL].

Input: Connect dry access control (NC/NO) input 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 –].

9. **Fire Alarm Interface Options (program fire alarm interface options via LINQ software):**

A normally closed [NC], normally open [NO] input or polarity reversal input from FACP signaling circuit will trigger selected outputs.

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].

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 in the DIS position, the output is of 0 Ohm resistance in a normal condition.

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

11. **Battery Backup (if desired):**

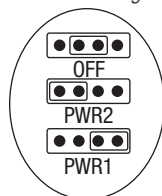
Connect one (1) 12V LiFePO₄ (**Lithium Iron Phosphate**) battery to terminals marked [+ BAT –]

(*Fig. 3, pg. 6*), carefully observing polarity. Use Altronix **BTL125** 12V/4.5AH Lithium Iron Phosphate battery.

Note: When battery is not used, a loss of PoE power will result in the loss of output voltage.

CAUTION: Do not use lead acid or gel type batteries as damage may occur.

Fig. 1



Wiring:

Use 18 AWG or larger for all low voltage power connections.

LED Diagnostics:

Tango1B

LED	ON	BLINKING
Input	Input voltage is present.	Input voltage not present.
Battery	Normal operating condition.	Battery is low or missing.
PoE	Indicates Class.	Refer to table below Classes 3-8
Supervision	PoE Fail or BAT Fail.	NC dry contact 30V 1A (not an LED)

Class	Green	Red	Blue
Class 1	—	—	—
Class 2	—	—	—
Class 3	Off	Off	Off
Class 4	Off	On	Off

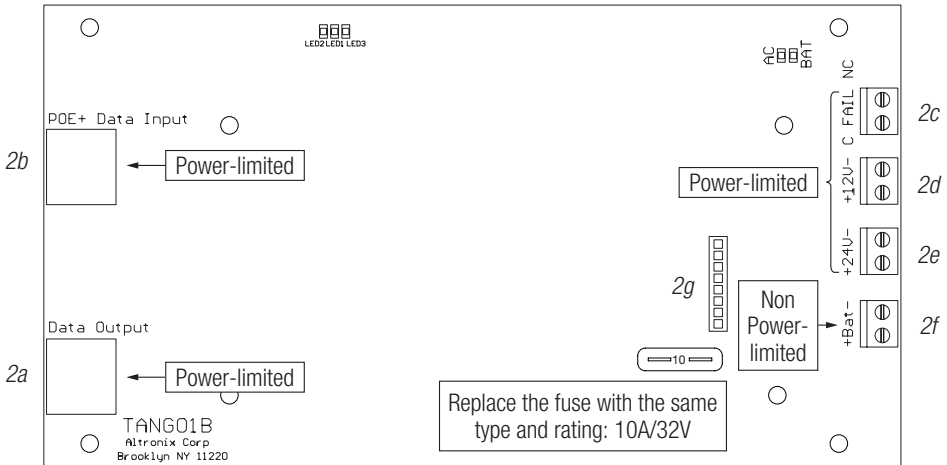
Class	Green	Red	Blue
Class 5	On	Off	On
Class 6	On	Off	On
Class 7	On	On	On
Class 8	On	On	On

LINQ8ACM(CB) 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 Output 1-8	24VDC	—
AC	AC Fail	AC Normal
BAT	Battery Fail	Battery Normal

Terminal/Connector Identification:

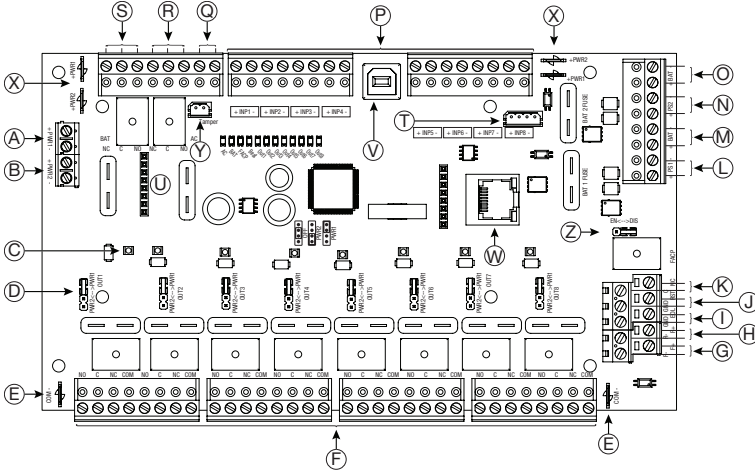
Fig. 2 - Tango1B



Terminal/RJ45 Legend	Function/Description
PoE+ Data Input	IEEE802.3bt Input (Fig. 2b, pg. 5).
Data Output	Passes Data to Switch (Fig. 2a, pg. 5)
C FAIL NC	Power and Battery Fail (Fig. 2c, pg. 5).
+ 12V —	12VDC output (Fig. 2d, pg. 5).
+ 24V —	24VDC output (Fig. 2e, pg. 5).
+ BAT —	Lithium Iron Phosphate battery backup (Fig. 2f, pg. 5).
8-Pin Connector	Factory connected to LINQ8ACM(CB). Do not use.

Terminal/Connector Identification:

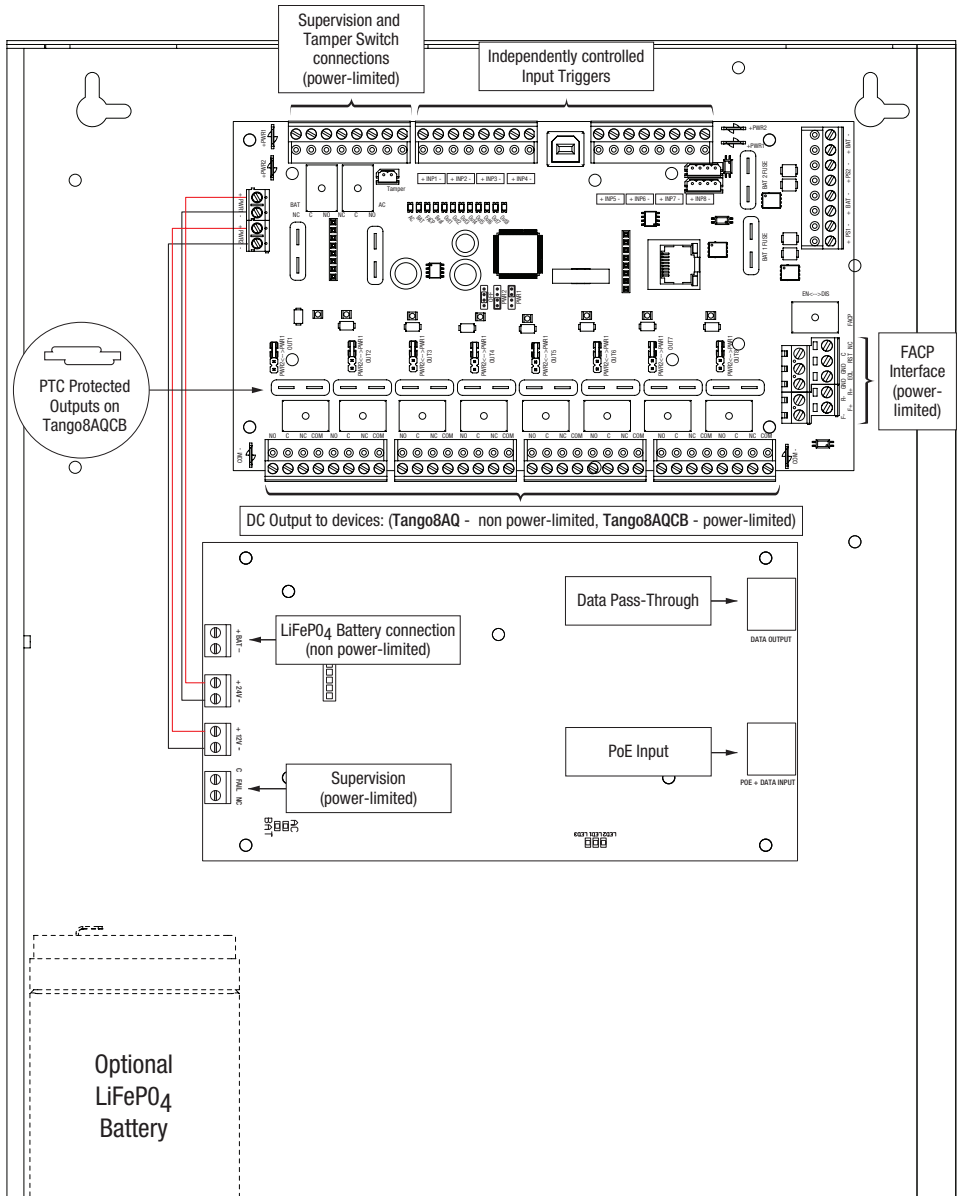
Fig. 3 - LINQ8ACM(CB) Access Power Controller



Terminal/Connector Identification:

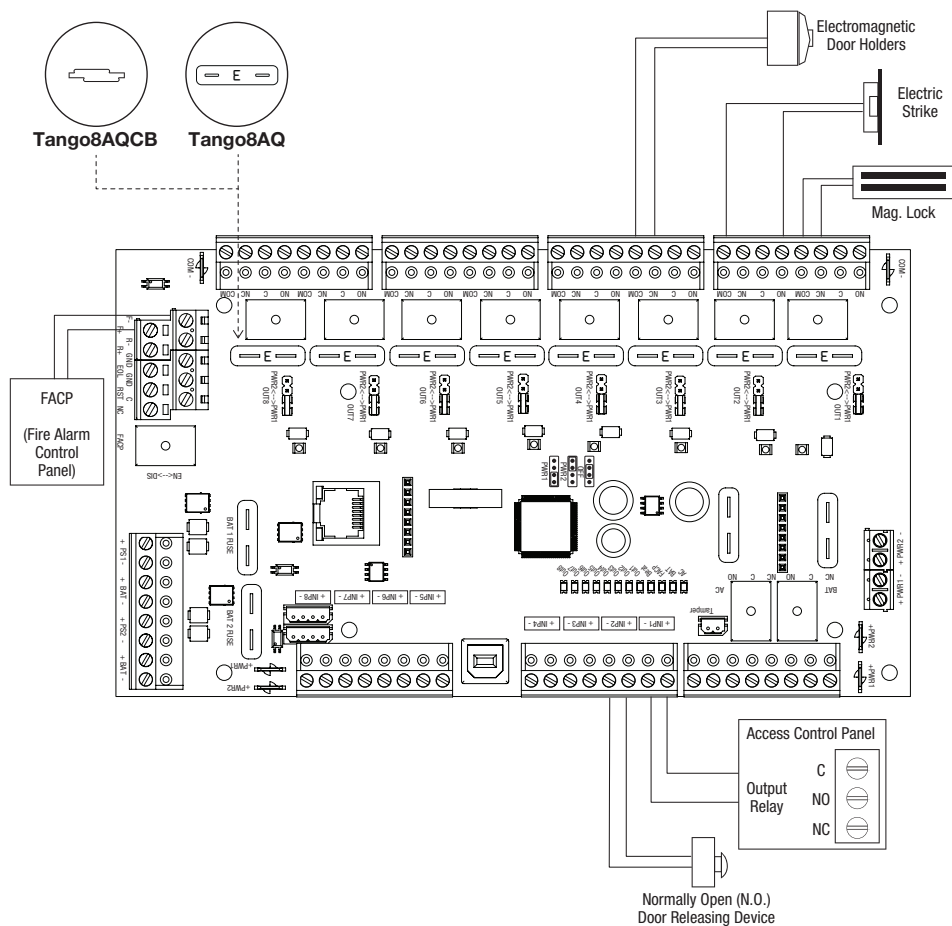
Terminal/Legend	Description
(A) – PWR1 +	Factory connected to Tango1B.
(B) – PWR2 +	Factory connected to Tango1B.
(C) Output LED	Individual output voltage LEDs. 12VDC (Green) or 24VDC (Red).
(D) Output Jumper	Individual output voltage selection jumper.
(E) COM –	Common Negative [–] plug for spade connectors.
(F) Output 1 through Output 8 NO, C, NC, COM	Eight (8) selectable independently controlled outputs [Fail-Safe (NC) or Fail-Secure (NO)].
(G) – F, + F	FACP Signaling Circuit Input terminals. Class 2 power-limited.
(H) – R, + R	FACP Signaling Circuit Return terminals. Class 2 power-limited.
(I) GND, EOL	EOL Supervised FACP Input terminals for polarity reversal FACP function. Class 2 power-limited.
(J) GND, RST	FACP interface latching or non-latching. NO dry input. Class 2 power-limited. To be shorted for non-latching FACP interface or Latch FACP reset.
(K) C, NC	FACP Dry NC output rated 1A/28VDC @ 0.6 Power Factor. Class 2 power-limited. With EOL JMP intact, will provide 10k resistance in a normal state.
(L) + PS1 –	Connection to [+ BAT –] terminals of Power Supply 1.
(M) + BAT –	Connection to stand-by battery(ies) for Power Supply 1.
(N) + PS2 –	Connection to [+ BAT –] terminals of Power Supply 2.
(O) + BAT –	Connection to stand-by battery(ies) for Power Supply 2.
(P) + INP1 – through + INP8 –	Eight (8) independently controlled Normally Open (NO), Normally Closed (NC), Open Collector Sink or Wet Input Triggers.
(Q) Tamper	Tamper Switch Input.
(R) AC / NC, C	Connect appropriate signaling notification devices to the terminals to report AC fail.
(S) BAT / NC, C	Connect appropriate signaling notification devices to the terminals to report battery fail.
(T)	Reserved for future use.
(U) 8-Pin Connector	For connection to VR6 or Tango1B.
(V) USB	Laptop connection enables LINQ8ACM(CB) initial setup and programming.
(W) RJ45	Ethernet: LAN or laptop connection enables LINQ8ACM(CB) programming and status monitoring.
(X) PWR1+, PWR2+	Positive [+] plugs for spade connectors.
(Y) 2-Pin Connector	Connection to [AC Fail] terminals on power supply.
(Z) EOL Jumper	Engages 10 kOhm End-of-Line resistor.

Fig. 4 - Tango8AQ(CB)



Typical Application Diagram:

Fig. 5



Important notes related to interconnected computer and communication equipment

Data processing equipment and office appliance/business equipment used as computer equipment shall comply with the Standard for Information Technology Equipment – Safety – Part 1: General Requirements, UL 60950-1, or the Standard for Audio/Video, Information and Communication Technology Equipment – Part 1: Safety Requirements, UL 62368-1.

Line transient protection of the computer equipment should comply with the Standard for Transient Voltage Surge Suppressors, UL 1449, with a maximum marked rating of 330V. Also line transient protection should be complying with the Standard for Protectors for Data Communications and Fire Alarm Circuits, UL 497b, with a maximum marked rating of 50V.

Communication circuits and network components connected to the telecommunications network shall be protected by secondary protectors for communication circuits. These protectors shall comply with the Standard for Secondary Protectors for Communications Circuits, UL 497A. These protectors shall be used only in the protected side of the telecommunications network. In addition to the main power supply and secondary power supply that are required to be provided at the central supervisory station, the system shall be provided with an uninterruptable power supply (UPS) with sufficient capacity to operate the computer equipment for a minimum of 15 minutes. If more than 15 minutes is required for the secondary power supply to supply the UPS input power, the UPS shall be capable of providing input power for at least that amount of time.

UPS shall comply with the Standard for Uninterruptable Power Supply Equipment, UL 1778, or the Standard for Fire Protective Signaling Devices, UL 1481.

Hook-Up Diagrams:

Fig. 6 -

Daisy-chaining one or more LINQ8ACM(CB) units.
EOL Jumper [EOL JMP] (Fig. 3, pg. 6, Z) should be installed in the "EN" position.

Non-Latching.

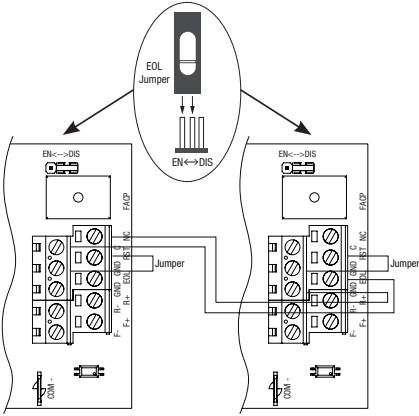


Fig. 7 -

Daisy-chaining one or more LINQ8ACM(CB) units.
EOL Jumper [EOL JMP] (Fig. 3, pg. 6, Z) should be installed in the "EN" position.

Latching Single Reset.

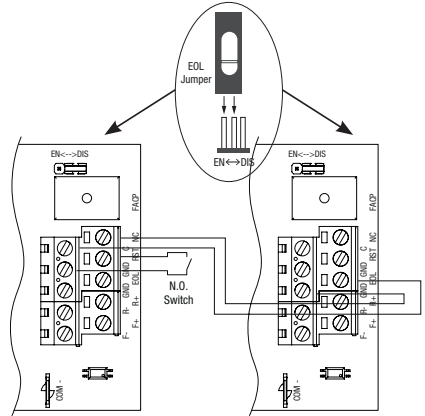
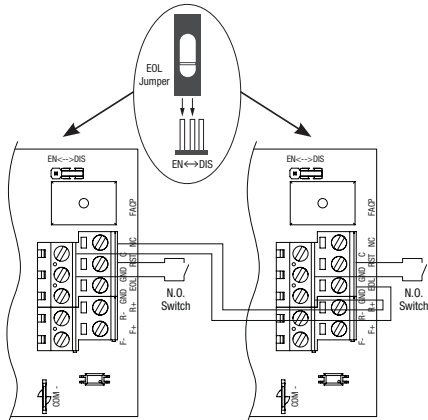


Fig. 8 -

Daisy chaining one or more LINQ8ACM(CB) units.
EOL Jumper [EOL JMP] (Fig. 3, pg. 6, Z) should be installed in the "EN" position.

Latching Individual Reset.



Hook-Up Diagrams:

Fig. 9 - Polarity reversal input from FACP signaling circuit output (polarity is referenced in alarm condition).
Non-Latching.

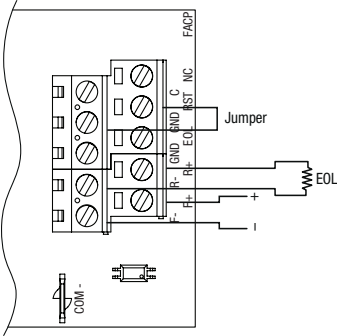


Fig. 10 - Polarity reversal input from FACP signaling circuit output (polarity is referenced in alarm condition).
Latching.

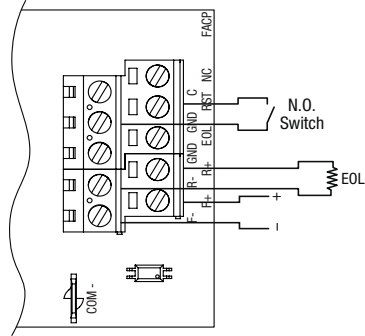


Fig. 11 - Normally Closed trigger input
(Non-Latching).

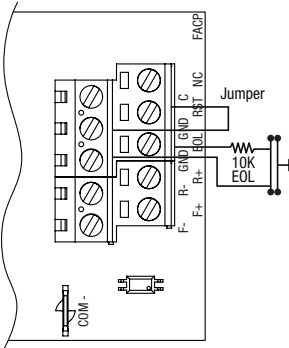


Fig. 12 - Normally Closed trigger input
(Latching).

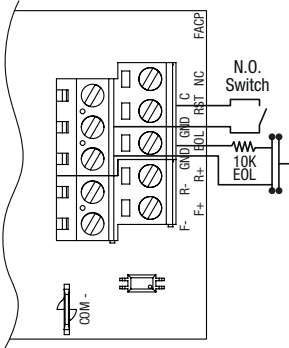


Fig. 13 - Normally Open trigger input
(Non-Latching).

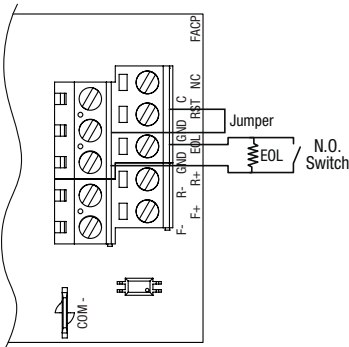
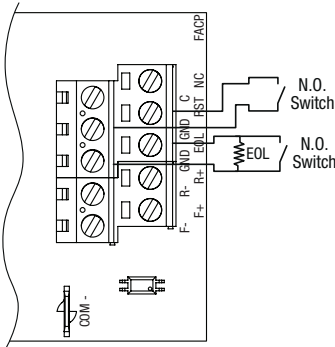
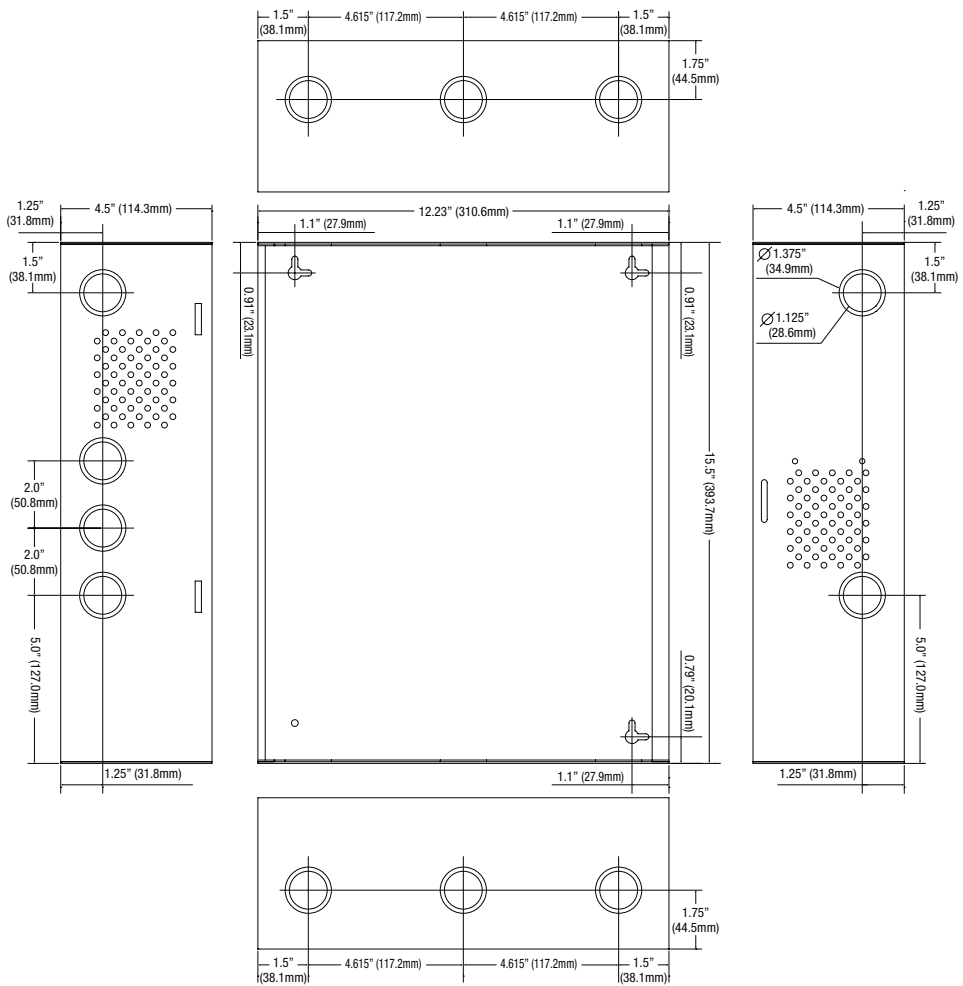


Fig. 14 - Normally Open trigger input
(Latching).



Enclosure Dimensions (BC400):

15.5" x 12.23" x 4.5" (393.7mm x 310.6mm x 114.3mm)



Altronix is not responsible for any typographical errors.

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