



Tango1B

PoE Driven Power Supply with
Lithium Battery Backup

Installation Guide



Rev. TANGO-071119



More than just power.™

Overview:

Altronix Tango1B PoE Driven Power Supply/Charger converts an IEEE802.3bt PoE input from UL294 listed power supply or injector into a regulated 24VDC and/or 12VDC output up to 72W. Ideal for access installations, it eliminates the need for a high voltage power supply inside of an enclosure. The Tango1B's 8-pin connector allows for stacking with compatible Altronix sub-assemblies such as PDS8(CB), ACMS8(CB) or LINQ8ACM(CB)*, saving valuable enclosure space. Tango1B is designed to support sealed Lead Acid batteries or a single LiFePO₄ (**Lithium Iron Phosphate**) battery for high storage and charge/discharge cycle life reliability.

Specifications:

Agency Listings:

Commercial Access Control Power Supply/Charger.

- UL Listed for Access Control Systems (UL 294*).

***UL 294 7th edition Access Control.**

Performance Levels:

Destructive Attack - I; Endurance - I;

Line Security - I; Stand-by Power: II.

See *Stand-by Specification chart below.*

Ethernet Input:

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

Input from PSE Device	Power Output
37.0-57VDC (af)	350mA (15W) Max.
42.6-57VDC (at)	600mA (30W) Max.
41.1-57VDC (bt)	960mA per pair (90W) Max.

- CAT-6 or higher cable is recommended for optimum performance.

Power Output (when using 802.3bt 90W):

- When used without battery backup:
12VDC: up to 5A regulated,
24VDC: up to 3A regulated.
- When used with 12V lead acid battery:
12VDC up to 5A Special application (9.75-12V),
24VDC up to 2.7A regulated.
- When used with 12.8V LiFePO₄ battery (*not evaluated by UL*):
12VDC up to 5A regulated,
24VDC up to 2.7A regulated.

Ethernet Output:

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

Supervision:

- Loss of PoE Input.
- Battery Supervision.

Visual Indicators:

- Input indicates input voltage is present.
- Battery status indicates battery trouble condition.
- PoE Class indicator.
- Supervision PoE Fail or BAT Fail.

Battery Backup:

- Battery fuse reading 10A/32V.
- Automatically adjusts between Lead Acid and Lithium Iron Phosphate batteries.
- Unique technology allows for single LiFePO₄ 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.

Environmental:

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

Additional Features:

- Short circuit and overload protection.

Board Dimensions (approximate L x W x H):

7.625" x 4.125" x 1.25"
(193.7mm x 104.8mm x 32.0mm).

Accessories:

Power Sourcing Equipment:

- **NetWay4BT** - 4-Port Managed 802.3bt (4PPoE) Midspan Injector supplies 480W total power.
- **NetWay8BT** - 8-Port Managed 802.3bt (4PPoE) Midspan Injector supplies 480W total power.

Stackable Power Distribution/Controller Modules:

- **PDS8(CB)** - Dual Input, 8-Output Fuse/PTC Protected Power Distribution Module.
- **ACMS8(CB)** - Dual Input, 8-Output Fuse/PTC Protected Access Power Controller.
- **LINQACM(CB)*** - Dual Input, 8-Output Fuse/PTC Protected Network Access Power Controller.

Tango1B Sub-Assembly can be installed in Trove1, Trove2, Trove3 and Trove1R Access and Power Integration Systems.

Stand-by Specifications Chart:

Battery	Access Control Applications Stand-by
4.5AH minimum 12.8V Lithium Iron Phosphate battery (Application is not evaluated by UL)	30 Minutes
7AH/12V UL Listed or recognized Lead Acid battery	30 Minutes

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.

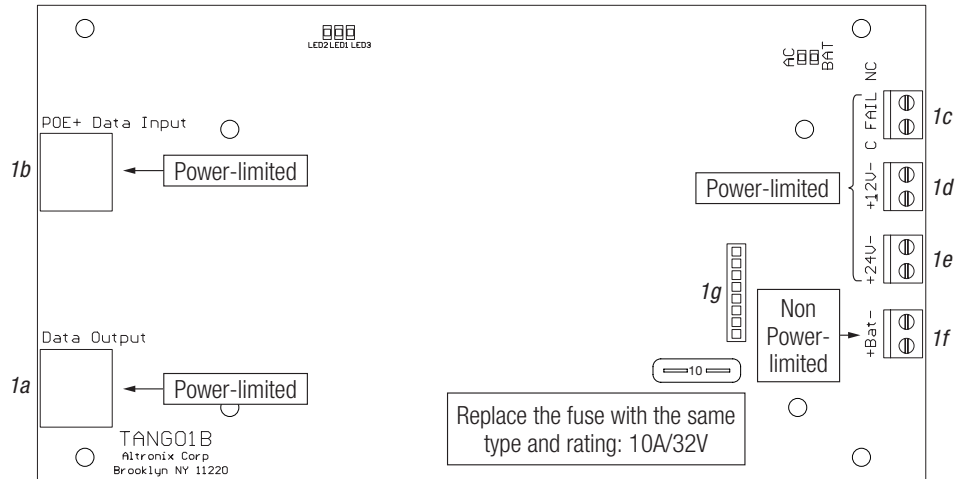
1. Mount Tango1B in the desired location/enclosure (mounting hardware included).
2. Connect IEEE802.3bt PSE to RJ45 Jack marked PoE+ Data Input (Fig. 1b, pg. 3).

Note: CAT-6 or higher cable is recommended for optimum performance.

Refer installation and servicing to qualified service personnel.

3. Measure output voltage before connecting devices. This helps avoid potential damage.
4. Connect 12V devices to be powered to terminals marked [+ 12V -] (Fig. 1d, pg. 3).
5. Connect 24V devices to be powered to terminals marked [+ 24V -] (Fig. 1e, pg. 3).
6. When the use of stand-by batteries is desired, they must be either sealed Lead Acid or Lithium Iron Phosphate (LiFePO₄). Connect batteries to the terminals marked [+ BAT -] (battery leads included) (Fig. 1f, pg. 3).
7. Connect appropriate signaling notification devices to terminals marked [C FAIL NC] (Fig. 1c, pg. 3) supervisory relay output. In normal conditions this relay is closed and in trouble conditions this relay is open.

Fig. 1 - Tango1B Configuration



Wiring:

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

0.25" spacing must be provided between power-limited and non power-limited circuits.

Terminal Identification:

Terminal/RJ45 Legend	Function/Description
PoE+ Data Input	IEEE802.3bt Input (Fig. 1b, pg. 3).
Data Output	Passes Data to Switch (Fig. 1a, pg. 3)
C FAIL NC	Power and Battery Fail (Fig. 1c, pg. 3). In normal conditions this relay is closed and in trouble conditions this relay is open. 0.5A/30V rated.
+ 12V -	12VDC output (Fig. 1d, pg. 3).
+ 24V -	24VDC output (Fig. 1e, pg. 3).
+ BAT -	Battery backup (Fig. 1f, pg. 3).
8-Pin Connector (Fig. 1g, pg. 3)	Facilitates electrical connection to PDS8(CB), ACMS8(CB) or LINQ8ACM(CB).

LED Diagnostics:

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

PoE Input Class (W)	Green	Red	Blue
Class 1 (3.84)	–	–	–
Class 2 (6.49)	–	–	–
Class 3 (13.00)	Off	Off	Off
Class 4 (25.50)	Off	On	Off
Class 5 (40.00)	On	Off	On
Class 6 (51.00)	On	Off	On
Class 7 (62.00)	On	On	On
Class 8 (71.30)	On	On	On

Available Power Using Structured Cable (CAT-5e)

Distance (Feet/Meters)	Available Watts	12VDC Available Amps	24VDC Available Amps
328 (100m)	60	5.0	2.5
300 (91m)	61	5.0	2.5
250 (76m)	62	5.0	2.62
200 (61m)	64	5.0	2.7
150 (46m)	66	5.0	2.77
100 (30m)	68	5.0	2.85
50 (15m)	70	5.0	2.92
4 (1.2m)	72	5.0	3.0

Connecting a Sub-Assembly Board to Tango1B:

Refer to Sub-Assembly Installation Guide.

1. Turn power off before connecting devices.
2. Mount Tango1B in the desired location/enclosure.
3. Plug-in male 8-pin connector to female 8-pin receptacle on Tango1 board (Fig. 2a, pg. 5; Fig. 3a, pg. 6).
4. Fasten spacers (Fig. 2, pg. 5; Fig. 3, pg. 6). Use metal spacers over mounting holes with star pattern (Fig. 2b, pg. 5; Fig. 3b, pg. 6).
5. Align 8-pin male connector with female receptacle of sub-assembly, then mount (Fig. 2a, pg. 5; Fig. 3a, pg. 6).
6. Do not connect any power supply to the Sub-Assembly's Input. All power will be provided by Tango1B.
7. Follow Sub-Assembly's Installation Guide for further connections.

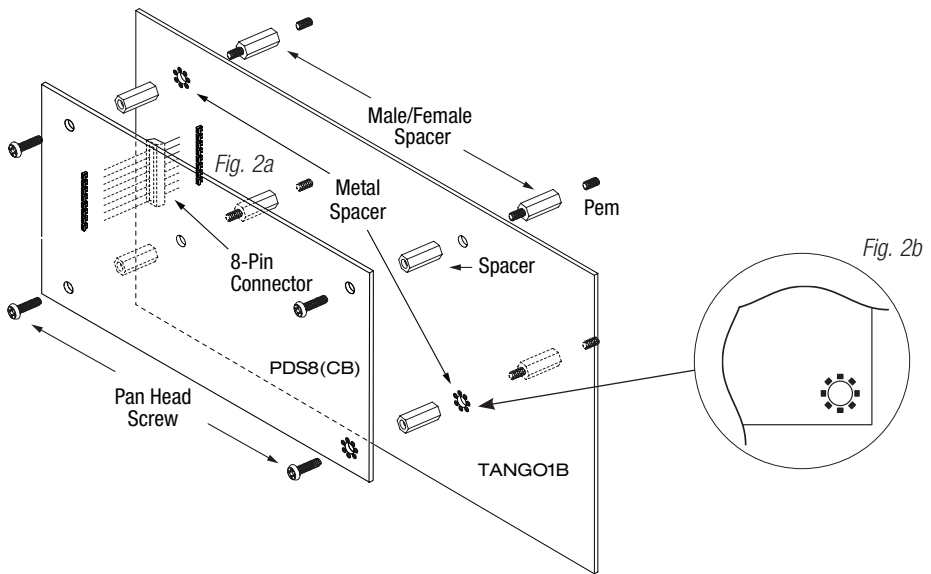
Note: Measure output voltage before connecting devices. This helps avoiding potential damage.

8. After all devices have been connected turn power on.

Connecting PDS8(CB) to Tango1B:

Altronix PDS8/PDS8CB are UL listed sub-assemblies dual input power distribution modules designed to distribute power over a total of eight (8) fuse/PTC protected outputs.

Fig. 2

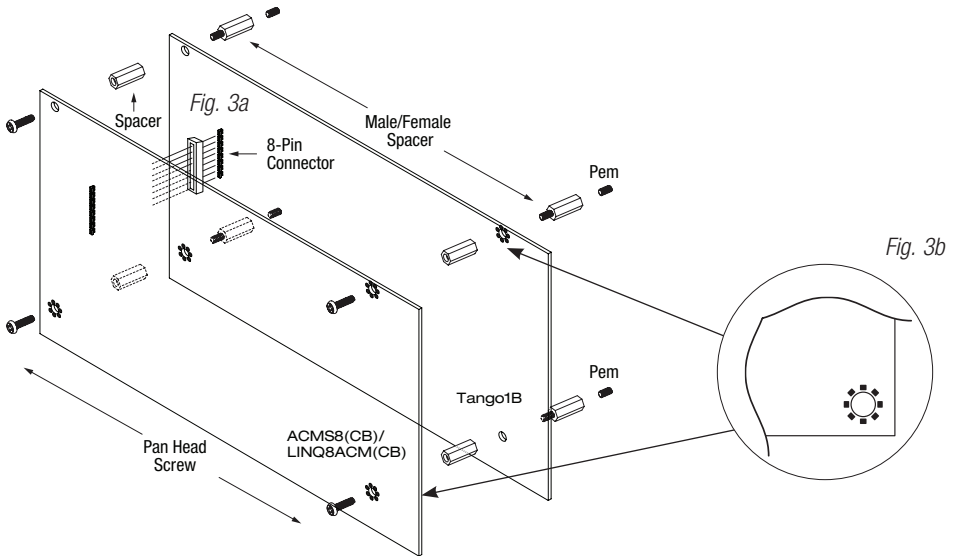


Connecting ACMS8(CB) or LINQ8ACM(CB) to Tango1B:

Altronix ACMS8/ACMS8CB are UL listed sub-assemblies designed for Access power control. Controller's dual input design allows power to be steered to eight (8) independently controlled fuse (ACMS8) or PTC (ACMS8CB) protected outputs. Power outputs 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.

Altronix LINQ8ACM(CB) are dual input network access power controllers which can be installed in Altronix wall and rack mount enclosures to facilitate access control deployment. Access Power Controller's dual input design allows power to be steered to eight (8) independently controlled fuse (LINQ8ACM) or PTC (LINQ8ACM(CB)) protected outputs. 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. LINQ8ACM(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 LINQ8ACM(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.

Fig. 3



Notes:

Notes:

Altronix is not responsible for any typographical errors.

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