



# Ruggedized Traffic UPS / BBS

**650VA / 650W • 1100VA / 1100W**

Traffic control and signal equipment consistently experience power interruptions. The Marathon Power Ruggedized Traffic UPS series are high performance systems suitable for a wide range of transportation applications and extreme temperature environments.

Designed for extended run-times, these units also feature temperature-compensated charging to maximize battery life. The units are extremely versatile and fully programmable to give complete control of system interface and data acquisition. They are also customizable to ensure we meet the requirements of any transportation application, making our units the most versatile battery back-up solution for traffic control.

Both are compact models equipped with a 24VDC bus designed for today's modern traffic cabinets and smaller loads associated with the use of LED signal lighting. The units are contained in a rugged, low profile 2U, rack- or shelf-mount chassis and have a 4-line LCD panel to display various data, parameters, and settings. There is also a 12-amp internal charger to ensure that larger battery strings are recharged in an appropriate amount of time.

## FEATURES & BENEFITS

- ❑ Line Interactive Topology
- ❑ NEMA TS2 Certified
- ❑ High Output Power Factor – 1.0 PF
- ❑ Backlit 4-line LCD Display and LED indicators.
- ❑ 24VDC System – Can be used with as few as two batteries, or four plus batteries for longer runtimes.
- ❑ 12A Selectable Temperature-compensated charger. Maximizes battery life in harsh environments.
- ❑ Backs up power to traffic control and signal equipment.
- ❑ Anderson Powerpole connectors.
- ❑ Fits in all types of traffic enclosures, control panels and custom pedestals.
- ❑ Low harmonic AC sine wave output in backup mode.
- ❑ Fully programmable AC threshold voltages.
- ❑ Transient voltage protection from damaging spikes & surges.
- ❑ External connections accessible from front panel.
- ❑ Six fully programmable dry contacts for greater control.
- ❑ Remote access via RS-232, USB & Network.
- ❑ Time / Date stamp of events and alarms - up to 100 events.
- ❑ Designed with input relay with Anti-Back Feed Protection function, conforming to UL 1778.



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## LINE INTERACTIVE TOPOLOGY

Functions	
Brownout Protection	This unit boosts the output voltage (or transfers to Battery) during Brownout or Low input line conditions and returns to Normal when input power stabilizes and returns to Normal. These values for Transfer / Retransfer, To / From Battery / Boost mode are user programmable
Generator Compatibility	Generator mode allows for more variations in input voltage and frequency for use with an AC generator
Battery Charger 10A	PFC switch-mode charger is temperature-compensated (-2.5 to -5 mV/C/Cell) with automatic shut off above 50 deg C / 122 deg F
Inverter Mode	Capable of running continuously in inverter mode
Inverter Mode Current Limit	Continuous electronic current limit is provided
Measurements available for remote monitoring	<ul style="list-style-type: none"> <li>- Input and output voltages</li> <li>- Input line frequency</li> <li>- Battery voltage and current</li> <li>- Battery and heat sink temp</li> </ul>
Mechanical Specifications	
Dimensions (H x W x D)	88.6mm x 432mm x 254mm / 3.5" x 17.0" x 10"
Weight	13 kg / 29 lbs
Input Connection	3 Position Terminal Block OR Anderson PP45 Quick connector OR IEC
Output Connection	3 Position Terminal Block OR Anderson PP45 Quick connector OR IEC
Mounting	19" (483 mm) or 23" (584 mm) rack/shelf mount
Cooling (Ext. Fan)	Microprocessor controlled, 24VDC Fan
Audible Noise Level	<40 dBA
Operating Temperature	-37° C to + 74°C / -35° F to +165° F
Storage Temperature	-50° C to + 75°C / -58° F to +167° F
Humidity	Less than or equal to 95%, Non-Condensing
Altitude	10,000 ft / 3048 meters (See Note 1)

**Note:** De-rate operating temperature above 4900 ft (1500m) by 2°C per 1000 ft (300m).

Due to ongoing product improvements, specifications are subject to change without notice.

**Model Numbers:**

120V: TRTC-0654-N1/H1, TRTC-1124-N1/H1  
 230V: TRTC-0654-N2/H2, TRTC-1124-N2/H2

Electrical Specifications	
Output Apparent Power	TRTC-0654-N1/N2/H1/H2: 650VA TRTC-1124-N1/N2/H1/H2: 1100VA
Output Active Power Inverter Mode and Line Mode	TRTC-0654-N1/N2/H1/H2: 650W TRTC-1124-N1/N2/H1/H2: 1100W
Power Factor	1.0
Input Frequency +/- 3Hz Output Frequency +/- 0.3Hz	120V: 60Hz 220/230/240V: 50/60Hz
Input Voltage Range	120V: 85 to 150 VAC 230V: 175 to 287 VAC User programmable
Output Voltage Inverter Mode	120/220/230/240 VAC (Tolerances are User programmable) 120/220/230/240 VAC +/-5%
Maximum Input Current	All models: 20A
Transformer	Linear (Non-Isolated)
Transfer Time	<65 msec
Inrush Current	Load Dependent
Output Waveform THD	< 3 % (Resistive Load)
Load Crest Ratio	3:1
Efficiency, Line Mode	> 95% (Resistive Load)
Efficiency, Inverter Mode	> 80% (Resistive Load)
Nominal Battery String Voltage	All models: 24VDC
Step Load Response	1 Cycle Full recovery.
Over current Protection	All models: 20A Single pole circuit breaker for input, 60A Circuit Breaker for DC Bus
DC Power	Drawn from batteries
Compliance	NEMA TS2 Certified. Conforms to UL 1778, CSA 107.1 Upstream back-feed voltage < 1VAC
Surge Immunity	ANSI/IEEE C62.41
Communication Specifications	
RS-232 / USB / Ethernet ports	Monitors, controls and calibrates with terminal emulation software for user to obtain unit diagnostics
RS-232	DB-9, Female, Opto-Isolated, straight-thru cable
USB	B-Type receptacle
Ethernet (optional)	10/100 Mbps Ethernet, auto-detected
Display Panel	4-line LCD