



# Sustainable Solutions for Traffic Technologies

## Line Interactive (Buck/Boost)



### Traffic control Battery Backup from a traffic control company – the logical choice for reliable intersection operation.

The PB2000-ITS automatically provides emergency back-up power to traffic signals and controls whenever normal electric power is lost. It increases or decreases voltage to maintain normal operation during brownouts and power spikes, reducing the chance of dangerous intersection collisions due to “dark” signals, thus reducing the need for law enforcement and emergency personnel resources.

Minimizes component damage and signal tech callouts due to power failures.

### Features

The PB2000-ITS includes advanced logging/programming capabilities, real-time status reporting, and fully programmable dry contacts.

- ✓ Local keypad programmability – no laptop necessary
- ✓ Backlit LCD display
- ✓ External connections are front panel accessible
- ✓ Remote access via RS232 serial interface, USB, or optional SNMP Ethernet access (web-based)
- ✓ Fully interactive program and status reporting using built-in Windows™ compatible software.
- ✓ Time/date stamp of events and alarms with download and print capability
- ✓ Low harmonic AC sinewave output
- ✓ Transient voltage protection from damaging line spikes
- ✓ Temperature-compensated charging maximizes battery life in harsh, outdoor environments
- ✓ Noise suppression, FCC Class A
- ✓ Designed based on UL1778 2nd edition
- ✓ Wide operating temperature range from -37°C to +74°C (-34°F to +165°F)

# Specifications

INPUT	
Voltage Range, VAC	90 to 150 programmable Default 100 to 130 +/- 2VAC
Frequency, Hz	60 +/- 3 Hz
Maximum Input Current, A	30 A (resistive)
Inrush Current	Load Dependent
Over current Protection	Double pole single throw circuit breaker rated 30 A for input and output, DC bus 60 A breaker
Transient Suppression	MOV transient suppression elements (>150 V)
Step Load Response (50% Load Change)	½ Cycle Full Recovery (Full resistive load)
Short Circuit Protection	15 A Circuit Breaker
Battery String Voltage, VDC	48 (Four 12VDC Batteries)

OUTPUT	
Apparent Power, VA	2000VA (Inverter Mode) 2000VA (Line Mode)
Active Power, W	1500 (Inverter Mode) 1500 (Line Mode)
Power Factor	0.75
Output Voltage, VAC Line and Buck/Boost Mode Inverter Mode	120 nominal 100-130 +/- 2 VAC (follows input voltage) 120 VAC +/- 5%
Frequency, Hz	60 +/- 0.4 Hz
Transformer	Linear (non-isolated)
Output Waveform	Sine Wave
Output Waveform THD	<3% (Resistive Load)
Load Crest Factor	3:1 (Max)
Overload Capacity	110% for 3 min.

FUNCTIONS	
Brownout Protection	Unit boosts output voltage (or transfers to battery) during brownout or low input line conditions and returns to normal when input power stabilizes over user-selected time period. Set points for Transfer / Retransfer, To / From Battery / Boost are users programmable
Generator Compatibility	Generator mode allows wider variation in input voltage and frequency for use with an AC generator
Battery Charger 10 A	PFC switch-mode, two-stage charger, temperature compensated (-2.5 to -5 mV/°C/cell, auto shutdown above 50°C)
Inverter Mode	Capable of running continuously in inverter mode
Inverter Mode Current Limit	Continuous electronic current limit is provided
Remote monitoring	-Input and output voltages -Input line frequency -Output power -Battery voltage -Battery temperature

ENVIRONMENTAL	
Operating Temp °C	-37 to +74°C (See Notes 1 & 2)
Storage Temp °C	-50 to +75°C
Humidity	<95% non-condensing
Altitude, ft (m)	10,000 (3000) (See Note 2)

MECHANICAL	
PB2000 Dimensions (WxDxH) inch/mm	W: 17.5 / 444 19 / 483 w/flange D: 10.5 / 267 H: 5.25 / 133
PB2000 Weight (lb/kg)	46.2 / 21
PB2000 Mounting	19" (483mm) rack or shelf mount
PB2000 Input Connection	3 Position Terminal Block
PB2000 Output Connection to Loads	Two 3 Position Terminal Blocks
PB2000 Cooling	Microprocessor controlled, 12 VDC, 3.6" (92mm) fan
PB2000 Audible Noise Level, dBA	<40
MBS/PTS Dimensions (WxDxH) inch/mm For standard rack mount	W: 17.5 / 444 19 / 483 w/flange D: 8.5 / 216 H: 3.5 / 89
MBS/PTS Weight (lb/kg)	7.0 / 3.2
MBS/PTS Mounting	Shelf or 19" rack mount
MBS/PTS Input Connection	Terminal Block
MBS/PTS Output Connection to Loads	Terminal Block
MBS/PTS Output Connection to UPS	6 foot cable ready for hard wire to UPS terminal block
MBS/PTS Cooling	Convection (approx. 7 W contactor coil dissipation)

COMMUNICATIONS	
RS-232 / USB / Ethernet ports	Monitors, controls with terminal emulation software
RS-232	DB-9, Female, Opto-Isolated, straight-thru cable
USB	B-Type receptacle
SNMP (optional)	10/100 Mbps Ethernet, auto-detected
Ethernet (optional)	10/100 Mbps Ethernet, auto-detected
Display Panel	2-line LCD

PERFORMANCE	
Transfer Time	4 to 10 ms
Controller	<30 ms
PTS	<65 ms
TOTAL	<65 ms
Efficiency, Line Mode	>95% (Resistive Load)
Efficiency, Inverter Mode	>80% (Resistive Load)

CERTIFICATIONS AND APPROVALS	
Electrical Safety	UL-1778, CSA-107.1, UL-1950
EMI	FCC Class A
Surge Immunity	Tested to: IEC 1000-4-5, IEEE C62.41

**NOTES:**  
 1. Between 55° and 74°C, the unit is de-rated to a maximum rectified-capacitive load of 1,500VA / 1,200W  
 2. De-rate operating temperature above 4,900 ft (1,500 mts) by 2°C per each additional 1,000 ft (300m).

CONTROL TERMINAL BLOCK	
Functions	A. Provides 6 sets of programmable contacts at pin 1 thru pin 18 for intersection flash control, Remote Alarms, Pagers or other user interface. 1. "Low Batt": batteries have reached approximately 40% capacity remaining 2. "On Batt": unit is in inverter mode 3. "Timer": unit has been in inverter mode for 2 hours (programmable) 4. "Alarm": any of the following conditions occur: Line Frequency error, low Output voltage, no Temperature Probe, overload, no battery connected, high temperature, low temperature. 5. "Fault": any of the following conditions occur: short circuit, Batt low voltage, Batt high voltage, high temperature, overload. B. Provides 48 VDC signal to PTS on pins 21 & 22 C. Triggers self-test by momentarily shorting pin 19 & 20 with less than 100 ohm
Contact Type	Form C. Dry contacts rated 1 Amp at 240V
Wiring	Uses 14-26 AWG



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**About Peek Traffic Corporation** – Peek's heritage goes back over 120 years, covering a broad range of quality turnkey traffic control products and services. Throughout the years, Peek's products have helped to make motorists around the world safer and their travels more pleasant and efficient. This expertise, experience, and breadth of product lines has made Peek one of the most respected and recognized leaders in the traffic control marketplace.

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