

## INDUSTRIAL LINE

**MODEL:** IND23-4V

**DIMENSIONS:** inches (mm)

**BATTERY:** Flooded/wet lead-acid battery

**COLOR:** Maroon (case/cover)

**MATERIAL:** Polypropylene (internal cell container)  
Polyethylene (outer container)

Now Available With



### SMART CARBON™

Deep-cycle batteries used in off-grid and unstable grid applications are heavily cycled at partial state of charge (PSOC). Operating at PSOC on a regular basis can quickly diminish the overall life of a battery, which results in frequent and costly battery replacements.

To address the impact of PSOC on deep-cycle batteries in renewable energy (RE), inverter backup and telecom applications, Trojan Battery has now included Smart Carbon™ as a standard feature in its Industrial and Premium flooded battery lines.

### PRODUCT SPECIFICATIONS

BCI GROUP SIZE	TYPE	CAPACITY <sup>A</sup> Amp-Hours (AH)							ENERGY (kWh)	VOLTAGE	TERMINAL Type <sup>D</sup>	DIMENSIONS <sup>B</sup> Inches (mm)			WEIGHT lbs. (kg)
		5-Hr Rate	10-Hr Rate	20-Hr Rate	48-Hr Rate	72-Hr Rate	100-Hr Rate	240-Hr Rate				100-Hr Rate	Length	Width	
INDUSTRIAL LINE - DEEP-CYCLE FLOODED BATTERIES															
N/A	IND23-4V	1000	1129	1270	1490	1587	1654	1659	6.62	4 VOLT	14	22.38 (568)	10.34 (263)	23.56 (598)	370 (168)

### CAPACITY AMP-HOURS (AH)

Cutoff Voltage	5-Hr	10-Hr	20-Hr	48-Hr	72-Hr	100-Hr	240-Hr
1.75 vpc	1000	1129	1270	1490	1587	1654	1659
1.80 vpc	904	1061	1219	1452	1548	1609	1614
1.85 vpc	820	960	1120	1297	1413	1516	1520
1.90 vpc	600	775	935	1084	1200	1347	1349

### CHARGING INSTRUCTIONS

CHARGER VOLTAGE SETTINGS (AT 77°F/25°C)	
	Voltage per cell
Absorption charge	2.35-2.45
Float charge	2.20
Equalize charge	2.58

Do not install or charge batteries in a sealed or non-ventilated compartment. Constant under or overcharging will damage the battery and shorten its life as with any battery.

### OPERATIONAL DATA

Operating Temperature	Specific Gravity
-4°F to 113°F (-20°C to +45°C). At temperatures below 32°F (0°C) maintain a state of charge greater than 70%.	The specific gravity at 100% state-of-charge is 1.260

### CHARGING TEMPERATURE COMPENSATION

To the Voltage Reading -- Subtract 0.005 volt per cell (VPC) for every 1°C above 25°C or add 0.005 volt per cell for every 1°C below 25°C.

### EXPECTED LIFE VS. TEMPERATURE

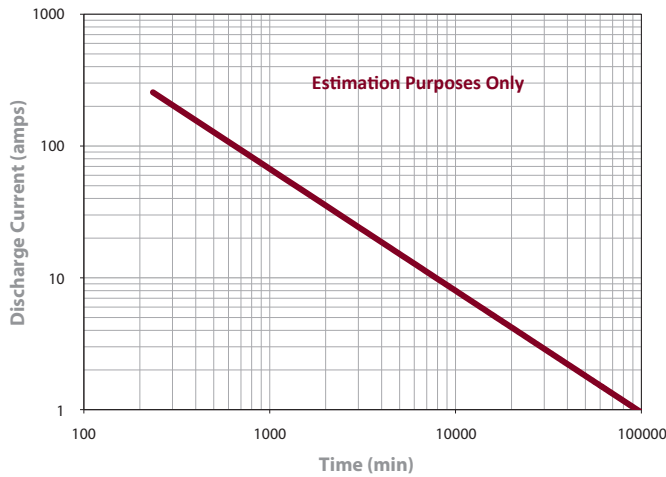
Chemical reactions internal to the battery are driven by voltage and temperature. The higher the battery temperature, the faster chemical reactions will occur. While higher temperatures can provide improved discharge performance the increased rate of chemical reactions will result in a corresponding loss of battery life. As a rule of thumb, for every 10°C increase in temperature the reaction rate doubles. Thus, a month of operation at 35°C is equivalent in battery life to two months at 25°C. Heat is an enemy of all lead acid batteries, FLA, GEL, and AGM alike and even small increases in temperature will have a major influence on battery life.

# IND23-4V DATA SHEET

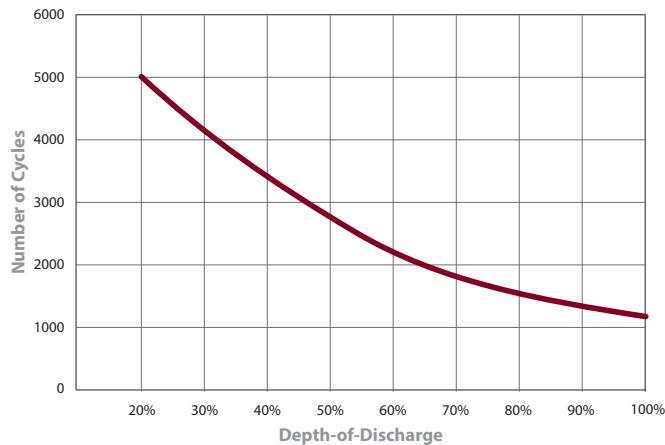
for Renewable Energy / Hybrid Systems / Backup Power Applications

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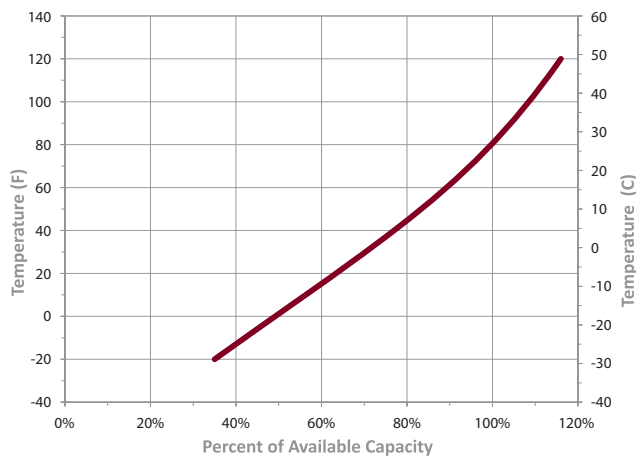
### TROJAN IND23-4V PERFORMANCE



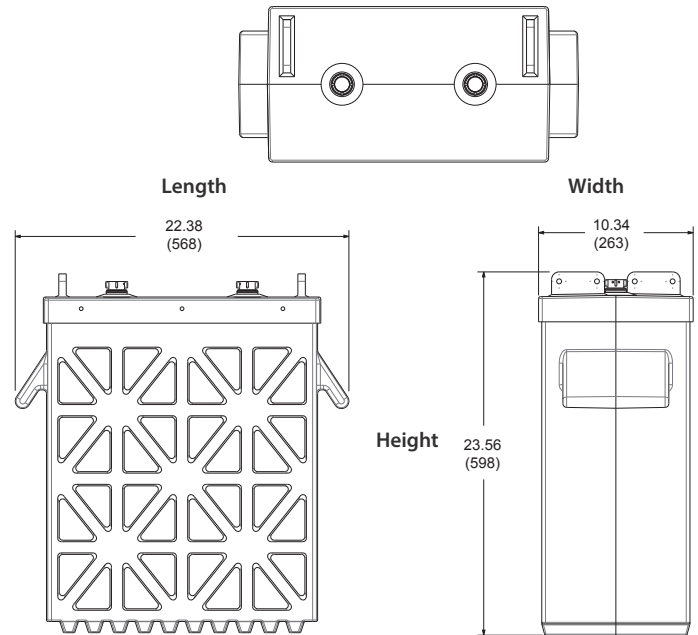
### TYPICAL CYCLE LIFE IN A STATIONARY APPLICATION



### PERCENT CAPACITY VS. TEMPERATURE



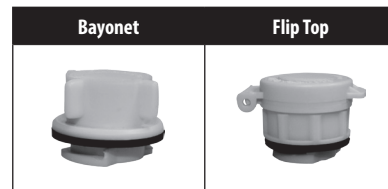
### BATTERY DIMENSIONS



### TERMINAL CONFIGURATIONS

14	IND	Ind Terminal
		Terminal Height Inches (mm)
		1.75 (44)
		Torque Values LB-IN (Nm)
		95 - 105 (11 - 12)
		Bolt
		5/16"

### VENT CAP OPTIONS



- A. The amount of amp-hours (AH) a battery can deliver when discharged at a constant rate at 80°F (27°C) and 86°F (30°C) for the 5-Hour rate and maintain a voltage above 1.75 V/cell. Capacities are based on peak performance.
- B. Dimensions are based on nominal size. Dimensions may vary depending on type of handle or terminal.
- C. Dimensions taken from bottom of the battery to the highest point on the battery. Heights may vary depending on type of terminal.
- D. Terminal images are representative only.

Trojan's Premium Line is tested to BCI and IEC 61427 standards.  
 \*\* Additional Terminals Available



Trojan batteries are available worldwide.

We offer outstanding technical support, provided by full-time application engineers.

**call 800.423.6569 or + 1.562.236.3000 or visit [www.trojanbattery.com](http://www.trojanbattery.com)**

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