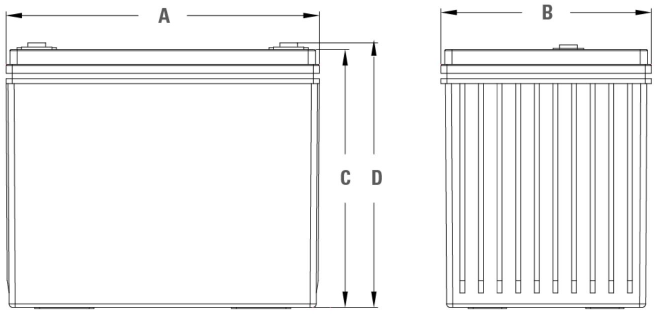
Discover®
Innovative Battery Solutions

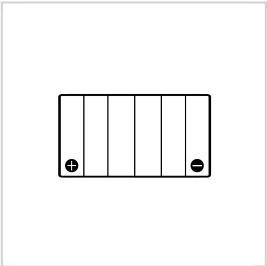
EV24A-A

DRY CELL Traction Industrial Battery

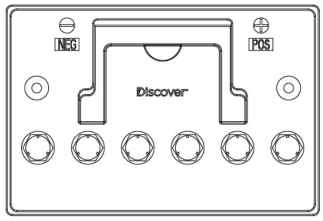
Discover® DRY CELL Traction Industrial batteries outperform traditional Flooded, AGM, and GEL deep cycle batteries in demanding traction and industrial applications. DRY CELL Traction Industrial batteries are designed to deliver a long runtime, high operating current and withstand deep discharge and are ideal for powering equipment that is used multiple times a day. DRY CELL Traction Industrial batteries have been used and trusted for more than ten years by the world's largest industrial Original Equipment Manufacturers. Specific charge algorithms are available that support optimal battery performance and longevity.

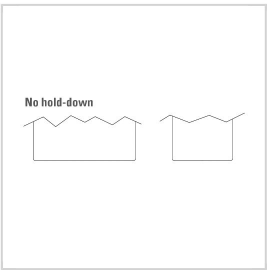
MECHANICAL DRAWINGS





LAYOUT





HOLD-DOWN

MECHANICAL SPECIFICATIONS

Industry Reference	BCI: 24 JIS: D26R OLD JIS: NS70	
Length A (in/mm)	10.2	258
Width B (in/mm)	6.8	172
Height C (in/mm)	8.4	214
Total Height D (in/mm)	8.5	216
Weight (lbs/kgs)	51.8	23.5
Terminal *	M8	
Technology	VRLA Non-spill	

NOTE: There is a tolerance of +/-2% in dimensions. Weights may vary
***TERMINAL TORQUE:** Please refer to our document, located in the Resources webpage Click here.

ELECTRICAL SPECIFICATIONS

Voltage (V)	12
Voltage Cutoff (80% DOD)	11.40
Internal Resistance (mΩ)	4.86
Short Circuit (A) (20°C / 68°F)	2400
Self-Discharge (20°C / 68°F)	2-3% per month
Charge Temperature	Min: -10°C (14°F) | Max: 50°C (122°F)
Discharge Temperature	Min: -40°C (-40°F) | Max: 50°C (122°F)
Storage Temperature	Min: -20°C (-4°F) | Max: 60°C (140°F)

CAUTION: Extra considerations must be given to depths of discharge, operating voltages and currents when designing systems for use at maximum temperatures.

PERFORMANCE SPECIFICATIONS

Amp Hours (AH)		
3 HR	5 HR	20 HR
66	72	85

3 HR: 1.70VPC; 5 HR: 1.75VPC; 20 HR: 1.80VPC. All at 25°C/77°F

Minutes of Discharge				
@25A	@56A	@75A	@85A	@100A
160	57	38	32	27

FEATURES

HYDRO POLYMER
- Organic capillary separator technology saturated with hydro polymer electrolytes delivers extra electrolyte volume
- Resists dry-out and prevents thermal runaway
- Maintains performance characteristics over operational life
- Absorbed Glass Mat Dry Cell technology. No free-flowing electrolyte

ENHANCED ALLOYS
- Thick plate construction with graphite enhanced plate alloys deliver maximum runtime over operational life

CARBON BOOST
- Carbon additives increase duty cycle performance, battery charge acceptance and Partial State of Charge operation

AUTOMATED THROUGH-THE-PARTITION WELD
- Key industry models have improved product consistency and quality. Less wasted lead than manual welding process
- Supports high-current loads and lowers Internal Resistance

POLYPROPYLENE CASE
- Key industry models Support high heat resistance and durability
- Pressure relief valves with low open / close tolerance reduce water loss and extend cycle life
- Integrated flame arrestors prevent fire and explosion

BENEFITS

ENHANCED RUNTIME
- High Amp Hour capacity
- High operational voltage over lifetime
- 80% DoD to 1.9 VPC

EXTENDED SERVICE LIFE
- Long life superior to flooded lead-acid / GEL / AGM deep-cycle batteries
- 550+ cycles 70% DoD (IEC 254-1 Traction Lead-Acid)
- 350+ cycles 100% DoD (DIN 43 539 VRLA)

RESILIENCE
- Partial Stage of Charge operation superior to AGM
- Intense duty cycling superior to GEL / AGM
- Over-harge / discharge resilience superior to AGM
- Compatible with GEL / AGM Semi-Traction charge profile

EXTREME TEMPERATURES
- High temperature life superior to AGM
- Low temperature operation superior to flooded lead-acid / GEL / AGM batteries

EXTREME VIBRATION RESISTANCE
- Vibration resistance superior to GEL / AGM
- Vibration shock tested IEC 61373, DIN EN 61373, SAE J537

OEM TRUSTED
- Exceeds OEM specifications
- Innovative technology
- Global service and support

RELIABLE AND SAFE
- Valve regulated lead-acid Dry Cell
- Maintenance-free
- Nonspillable. No-gas
- Safe for environmentally sensitive areas
- Spark and explosion tested (SAE J1495)

CERTIFIED QUALITY

Discover® manufacturing facilities are fully certified to ISO 9001/14001 and OSHA 18001 standards. Designed in accordance with and published in compliance with applicable standards, including:
- IEC 60254-1. Lead-Acid Traction
- DIN 43 539. VRLA
- SAE J537. Storage
- UL, CE Health Safety Certified

SHIPPING CLASSIFICATION

- Classified as a nonspillable battery
- Without restriction for transport by Sea (IMDG amendment 27)
- Without restriction for transport by Air (IATA/ICAO provision 67)
- Without restriction for transport by Ground (STB, DOT-CFR-HMR49)

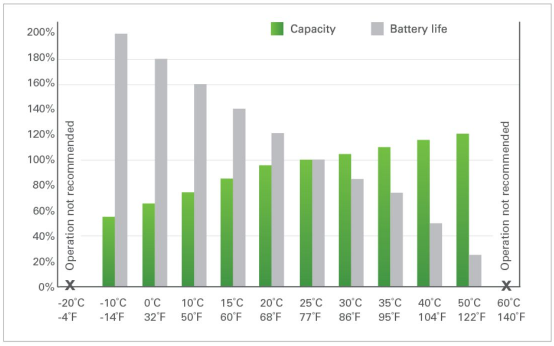
NOTES

IUI with Pulse Termination algorithm uses a pulse termination criterion. As a safety precaution during the Finish phase, if the average cell voltage, or volts per cell (vpc), exceeds U31 and the charger output has been on for more than 30 seconds, the output is shut off until the vpc falls to U32. The finish phase then resumes and this "pulsing" continues until the target overcharge (108% - 112%) is reached.

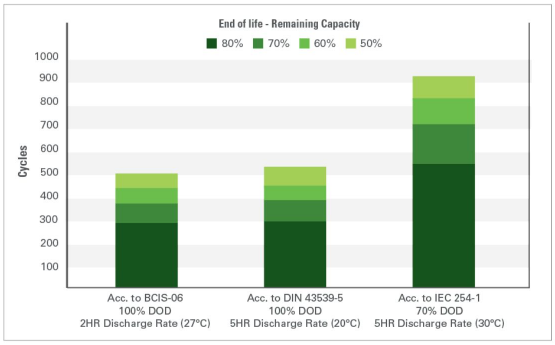
Please note the voltage settings displayed in the IUI with Pulse Termination Charge Profile graph, corresponds to the set points at 25°C (77°F). For temperatures below 25°C, adjust +0.005VPC/°C (or 0.003VPC per °F). For temperatures above 25°C, adjust -0.005VPC/°C (or 0.003VPC per °F).

- I = Current (Amps)
- VPC = Volts per Cell
- U = Voltage (V)

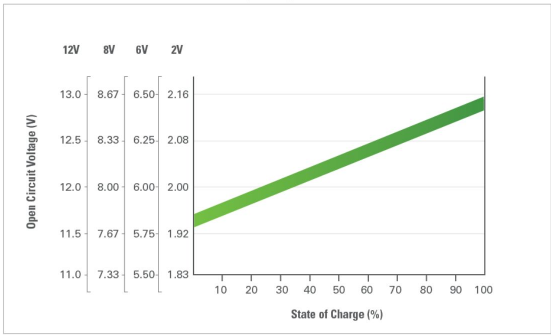
TEMPERATURE EFFECTS ON CAPACITY



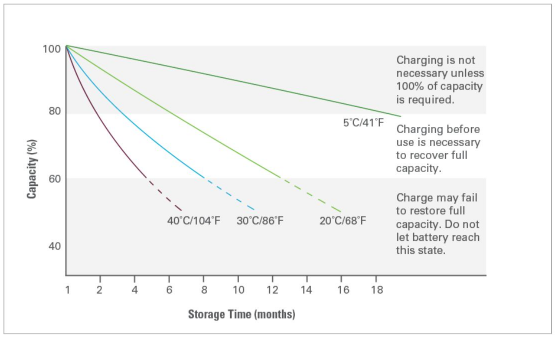
CYCLE LIFE VS. DEPTH OF DISCHARGE



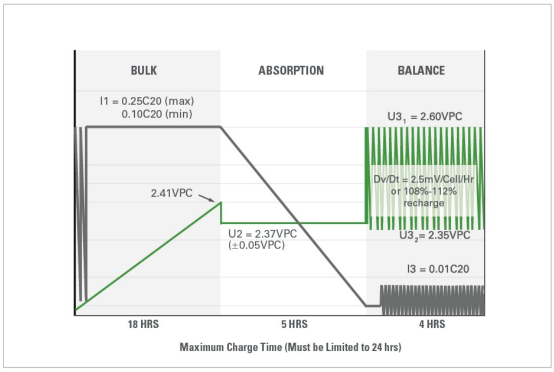
OPEN CIRCUIT VOLTAGE IN RELATION TO THE STATE OF CHARGE (20°C)



SELF-DISCHARGE CHARACTERISTICS

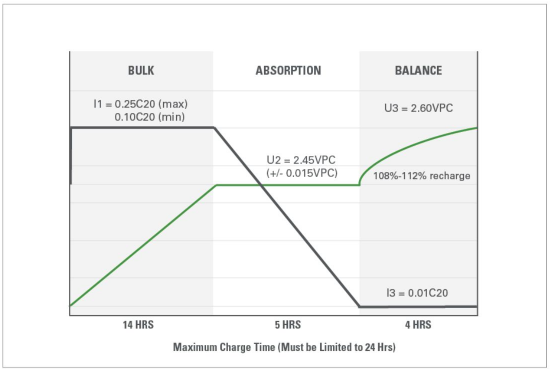


IUI WITH PULSE TERMINATION CHARGE PROFILE

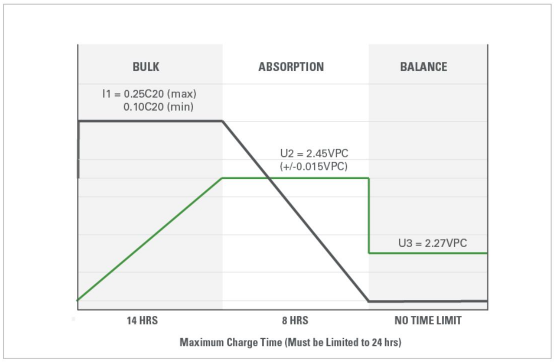
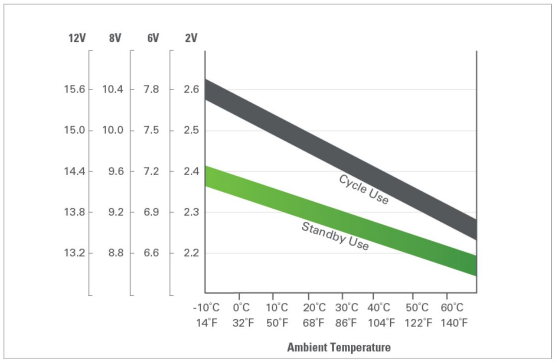


IUI CHARGE PROFILE

An indefinite float phase may be added at 2.27VPC



IUU CHARGE PROFILE



RELATION BETWEEN CHARGING, VOLTAGE AND TEMPERATURE