Discover®
Innovative Battery Solutions

EV512G-034

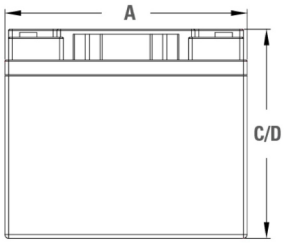
Printed: 03/16/2021

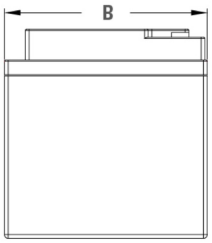
GEL CELL Traction Industrial Battery

Discover® GEL CELL Traction batteries incorporate a "true Gel" traction formula that meets aftermarket replacement and Original Equipment battery requirements. With a long history of safety, reliability, the batteries deliver exceptional longevity even under Partial State of Charge (PSOC) operation and high temperature conditions.

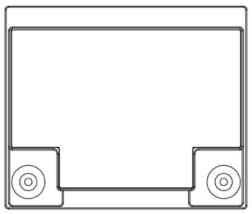
GEL CELL Traction Industrial batteries exceed flooded and AGM batteries in deep discharge recovery making them ideal for energy storage applications.

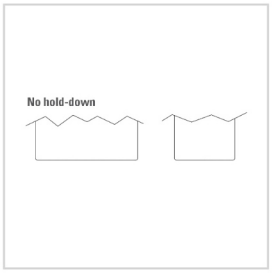
MECHANICAL DRAWINGS





LAYOUT





HOLD-DOWN

MECHANICAL SPECIFICATIONS

Length A (in/mm)	7.8	197
Width B (in/mm)	6.5	165
Height C (in/mm)	6.7	170
Total Height D (in/mm)	6.7	170
Weight (lbs/kgs)	28.6	13
Terminal *	M6	
Technology	Gel, 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)	11.80
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
28	34	40

Minutes of Discharge				
@25A	@56A	@75A	@85A	@100A
51	21	15	12	9

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

FEATURES

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

CARBON BOOST
- Carbon additives to increase duty cycle performance, charge acceptance and partial state of charge operation

AUTOMATED THROUGH-THE-PARTITION WELD
- Improved intercell weld consistency, and less lead waste than manual welding process (key industry models)
- Supports high-current loads and lowers internal resistance

POLYPROPYLENE CASE
- High heat resistance and durability (key industry models)
- High precision pressure relief valves reduce water loss and extend life
- Integrated flame arrestors to prevent fire and explosion

BENEFITS

ENHANCED RUNTIME
- Consistent amp hour capacity over lifetime
- High operational voltage over lifetime

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

EXTREME TEMPERATURES
- High temperature life superior to AGM
- Low temperature operation superior to flooded batteries

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

RELIABLE AND SAFE
- Valve Regulated Lead-Acid, Gel
- Maintenance-free
- Nonspillable, no-gassing

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
- 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)

IGR POWER

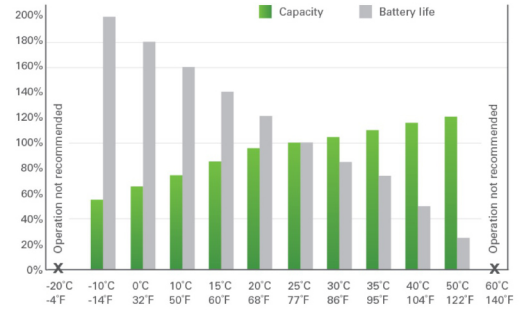
NOTES

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 U2 and the charger output has been on for more than 30 seconds, the output is shut off until the vpc falls to U3. The finish phase then resumes and this "pulsing" continues until the target overcharge (108% - 112%) is reached.

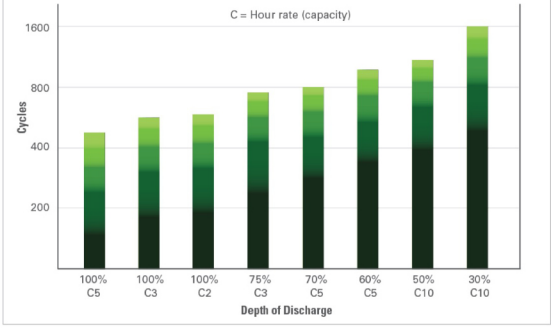
Due to self-discharge characteristics of lead acid battery technologies, all batteries must be charged within 6 months of storage to prevent a possible permanent loss of capacity as a result of sulfation.

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).

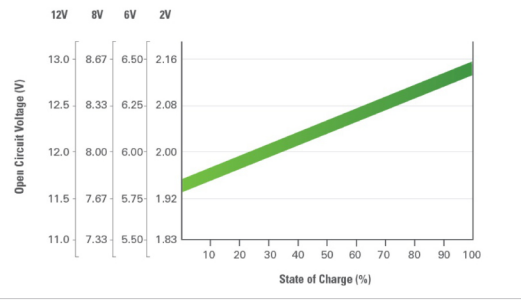
TEMPERATURE EFFECTS ON CAPACITY



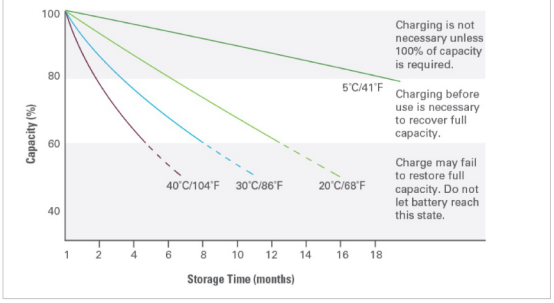
CYCLE LIFE IN RELATION TO DEPTH OF DISCHARGE (25°C)



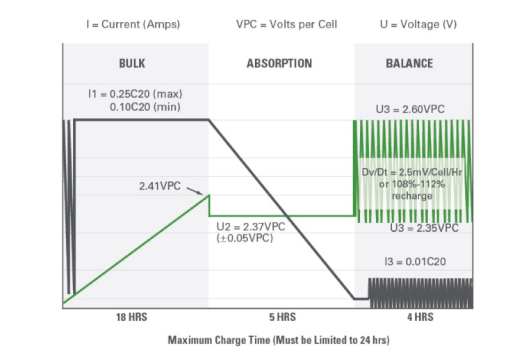
OPEN CIRCUIT VOLTAGE IN RELATION TO THE STATE OF CHARGE (20°C)



SELF-DISCHARGE CHARACTERISTICS



IUI WITH PULSE TERMINATION CHARGE PROFILE



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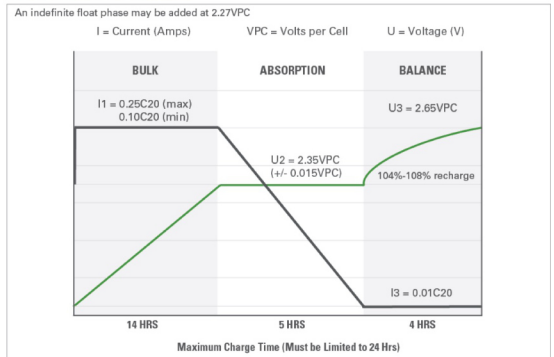

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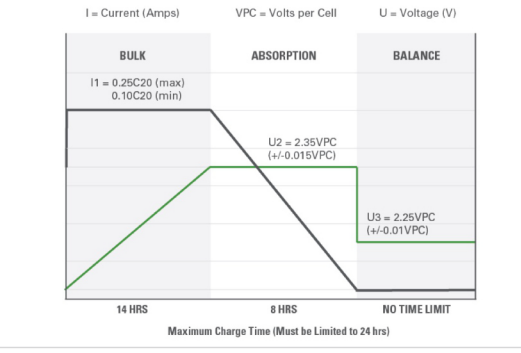
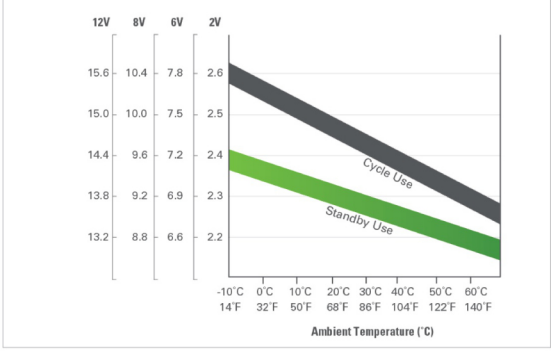


RELATION BETWEEN CHARGING, VOLTAGE AND TEMPERATURE



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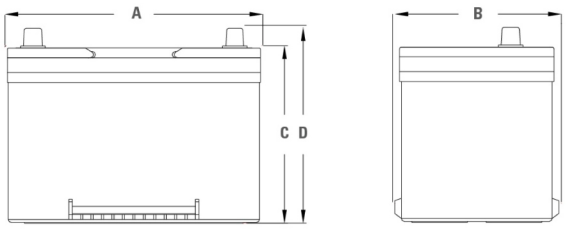
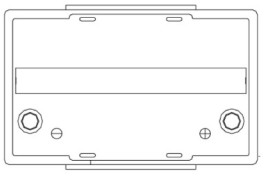
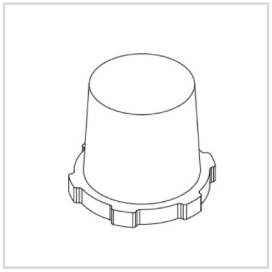
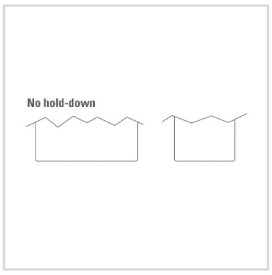






TERMINAL

LAYOUT



HOLD-DOWN

MECHANICAL SPECIFICATIONS

Industry Reference	BCI: 34	
Length A (in/mm)	10.2	258
Width B (in/mm)	6.6	167
Height C (in/mm)	7	178
Total Height D (in/mm)	7.8	198
Weight (lbs/kgs)	41.8	19
Terminal *	SAE	
Technology	Gel, VRLA Non-spill	

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ELECTRICAL SPECIFICATIONS

Voltage (V)	12
Voltage Cutoff (80% DOD)	11.80
Internal Resistance (mΩ)	8
Short Circuit (A) (20°C / 68°F)	1800
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
46	50	61

Minutes of Discharge				
@25A	@56A	@75A	@85A	@100A
105	36	26	22	18

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IGR POWER

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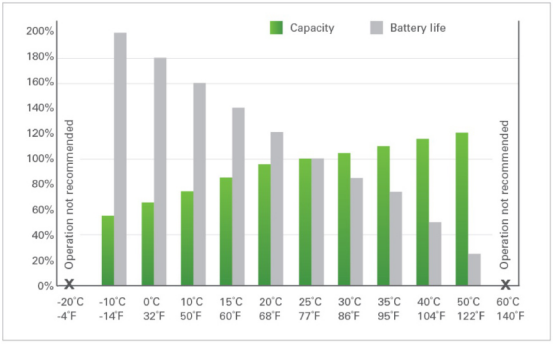
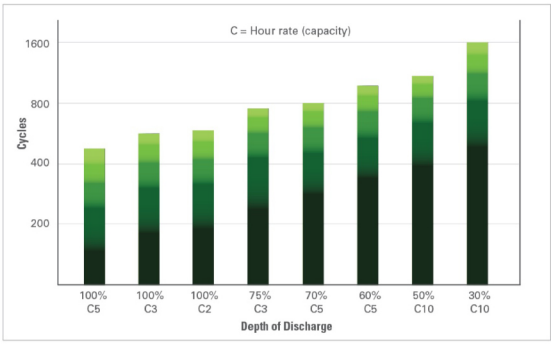
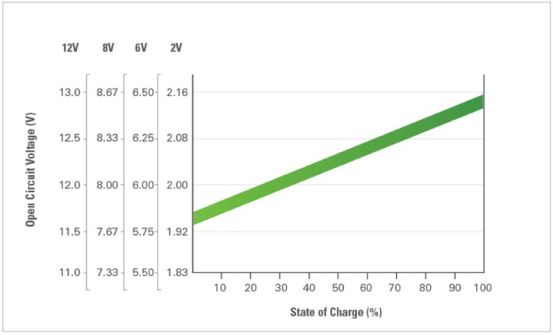


CYCLE LIFE IN RELATION TO DEPTH OF DISCHARGE (25°C)



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



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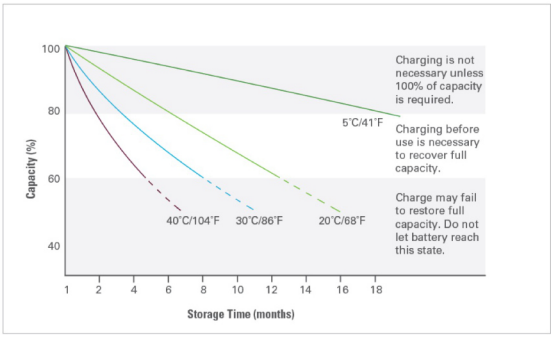
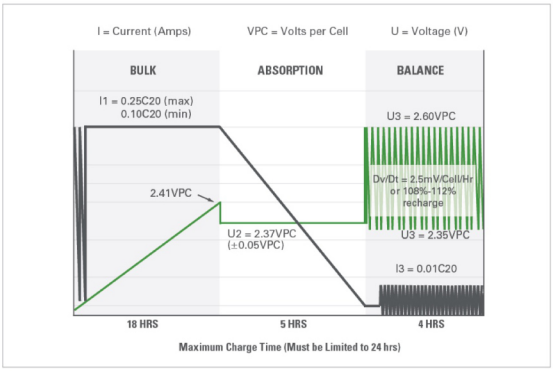


IUI WITH PULSE TERMINATION CHARGE PROFILE



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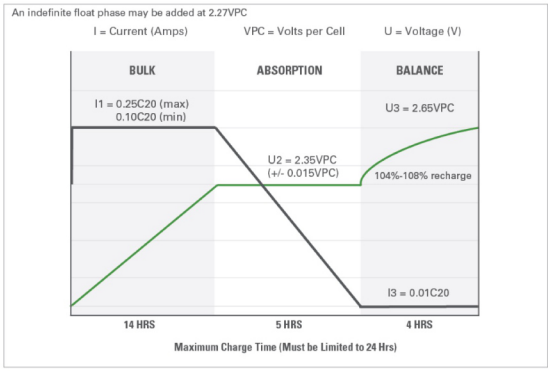

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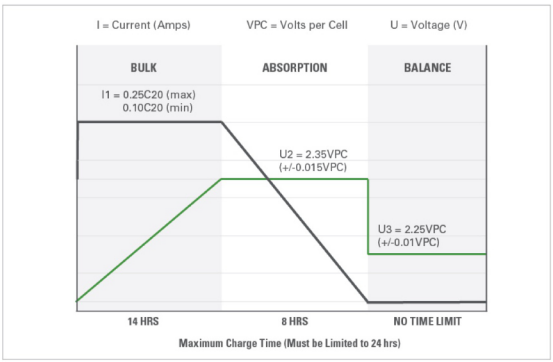
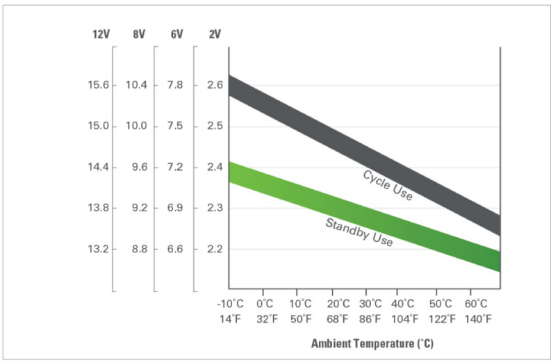


RELATION BETWEEN CHARGING, VOLTAGE AND TEMPERATURE



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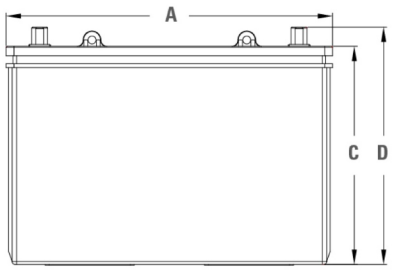
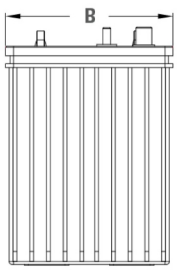
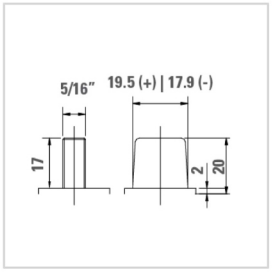
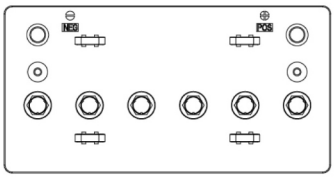


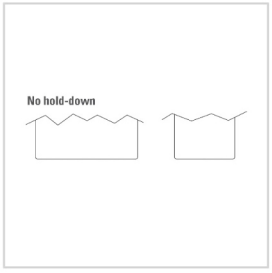




TERMINAL



LAYOUT



HOLD-DOWN

MECHANICAL SPECIFICATIONS

Industry Reference	BCI: 31	
Length A (in/mm)	13	330
Width B (in/mm)	6.8	172
Height C (in/mm)	8.5	216
Total Height D (in/mm)	9.3	236
Weight (lbs/kgs)	61.6	28
Terminal *	AM	
Technology	Gel, VRLA Non-spill	

NOTE: There is a tolerance of +/-2% in dimensions. Weights may vary
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ELECTRICAL SPECIFICATIONS

Voltage (V)	12
Voltage Cutoff (80% DOD)	11.80
Internal Resistance (mΩ)	5
Short Circuit (A) (20°C / 68°F)	2500
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)

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PERFORMANCE SPECIFICATIONS

Amp Hours (AH)		
3 HR	5 HR	20 HR
63	76	88

Minutes of Discharge				
@25A	@56A	@75A	@85A	@100A
148	57	40	32	26

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

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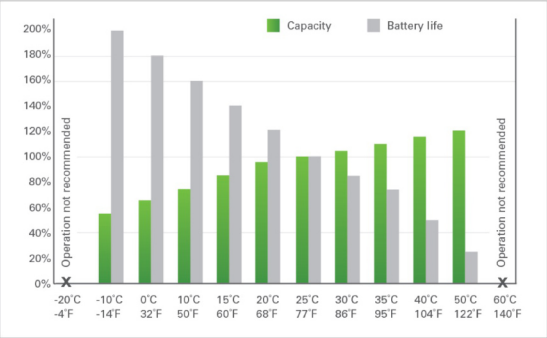
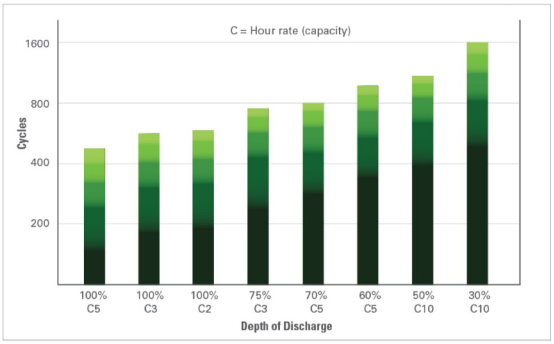
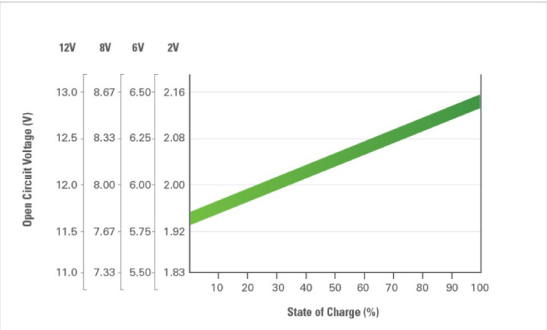
TEMPERATURE EFFECTS ON CAPACITY



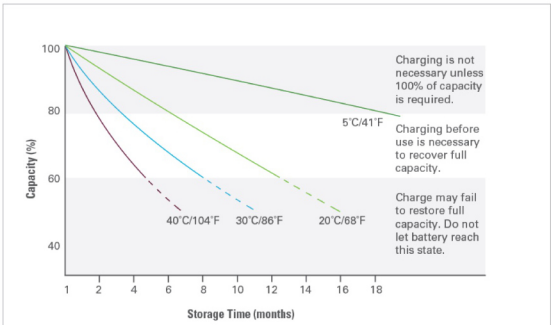
CYCLE LIFE IN RELATION TO DEPTH OF DISCHARGE (25°C)



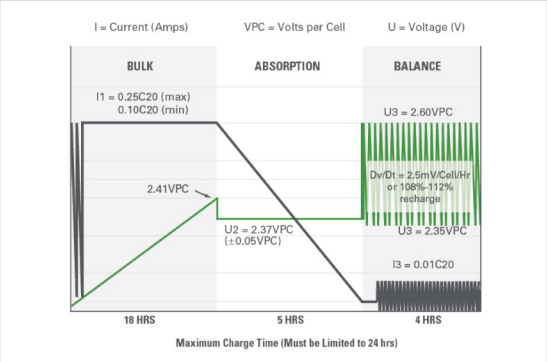
OPEN CIRCUIT VOLTAGE IN RELATION TO THE STATE OF CHARGE (20°C)



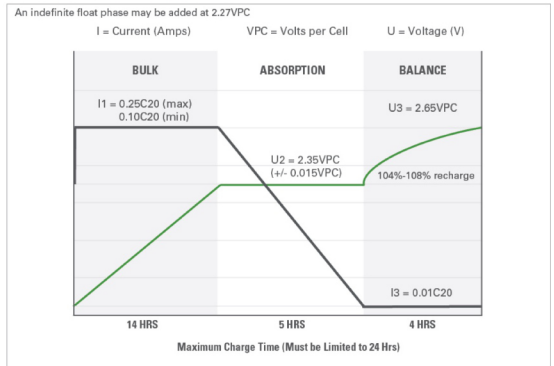
SELF-DISCHARGE CHARACTERISTICS



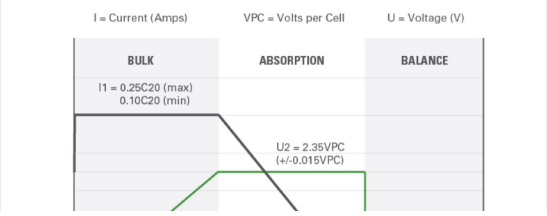
IUI WITH PULSE TERMINATION CHARGE PROFILE



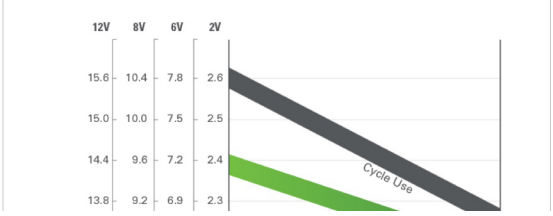
IUI CHARGE PROFILE



IUU CHARGE PROFILE



RELATION BETWEEN CHARGING, VOLTAGE AND TEMPERATURE



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Discover®
Innovative Battery Solutions

EV512G-103

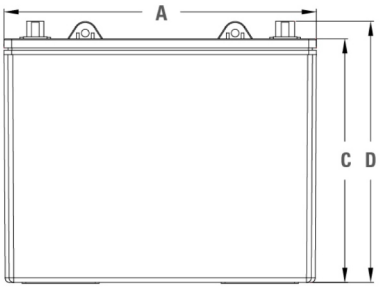
Printed: 03/16/2021

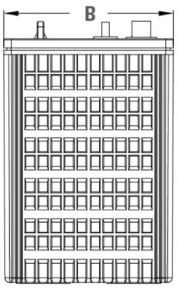
GEL CELL Traction Industrial Battery

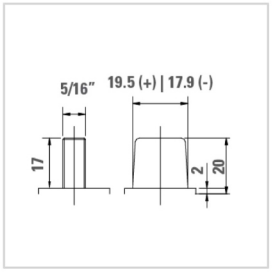
Discover® GEL CELL Traction batteries incorporate a "true Gel" traction formula that meets aftermarket replacement and Original Equipment battery requirements. With a long history of safety, reliability, the batteries deliver exceptional longevity even under Partial State of Charge (PSOC) operation and high temperature conditions.

GEL CELL Traction Industrial batteries exceed flooded and AGM batteries in deep discharge recovery making them ideal for energy storage applications.

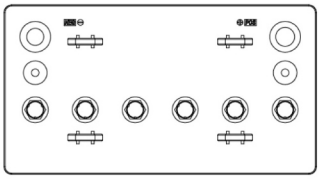
MECHANICAL DRAWINGS



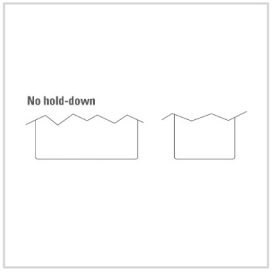




TERMINAL



LAYOUT



HOLD-DOWN

MECHANICAL SPECIFICATIONS

Industry Reference	BCI: 31T	
Length A (in/mm)	12.9	327
Width B (in/mm)	7.1	180
Height C (in/mm)	10	254
Total Height D (in/mm)	10.8	274
Weight (lbs/kgs)	79.2	36
Terminal *	AM	
Technology	Gel, 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)	11.80
Internal Resistance (mΩ)	5
Short Circuit (A) (20°C / 68°F)	2700
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
90	103	120

Minutes of Discharge				
@25A	@56A	@75A	@85A	@100A
240	90	55	45	35

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

FEATURES

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

CARBON BOOST
- Carbon additives to increase duty cycle performance, charge acceptance and partial state of charge operation

AUTOMATED THROUGH-THE-PARTITION WELD
- Improved intercell weld consistency, and less lead waste than manual welding process (key industry models)
- Supports high-current loads and lowers internal resistance

POLYPROPYLENE CASE
- High heat resistance and durability (key industry models)
- High precision pressure relief valves reduce water loss and extend life
- Integrated flame arrestors to prevent fire and explosion

BENEFITS

ENHANCED RUNTIME
- Consistent amp hour capacity over lifetime
- High operational voltage over lifetime

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

EXTREME TEMPERATURES
- High temperature life superior to AGM
- Low temperature operation superior to flooded batteries

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

RELIABLE AND SAFE
- Valve Regulated Lead-Acid, Gel
- Maintenance-free
- Nonspillable, no-gassing

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
- 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)

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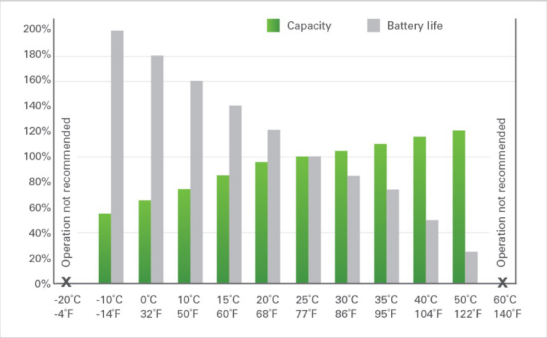
NOTES

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 U2 and the charger output has been on for more than 30 seconds, the output is shut off until the vpc falls to U3. The finish phase then resumes and this "pulsing" continues until the target overcharge (108% - 112%) is reached.

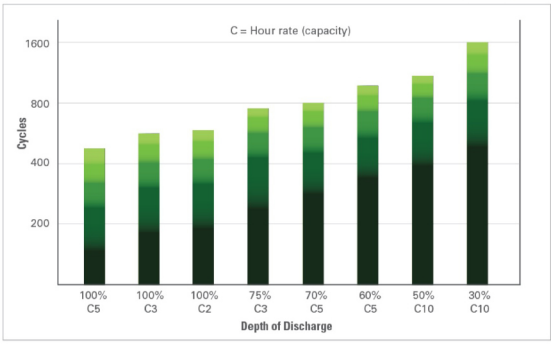
Due to self-discharge characteristics of lead acid battery technologies, all batteries must be charged within 6 months of storage to prevent a possible permanent loss of capacity as a result of sulfation.

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).

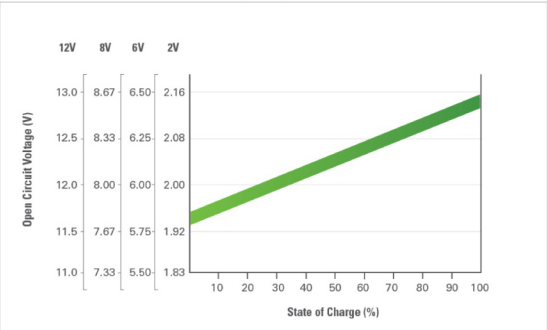
TEMPERATURE EFFECTS ON CAPACITY



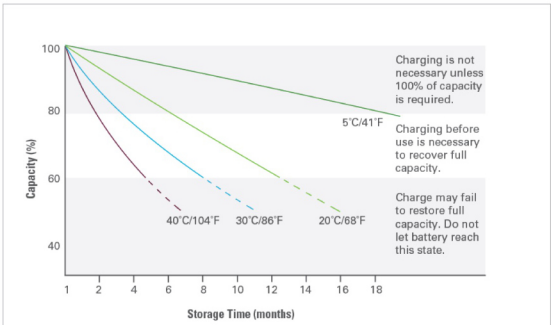
CYCLE LIFE IN RELATION TO DEPTH OF DISCHARGE (25°C)



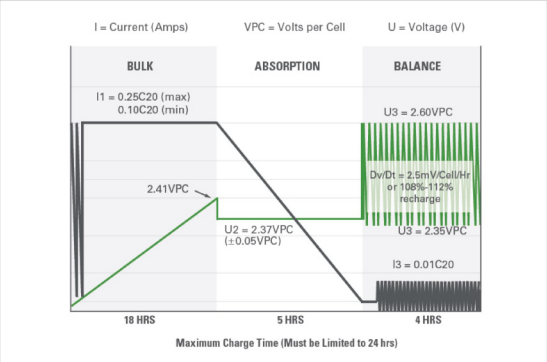
OPEN CIRCUIT VOLTAGE IN RELATION TO THE STATE OF CHARGE (20°C)



SELF-DISCHARGE CHARACTERISTICS



IUI WITH PULSE TERMINATION CHARGE PROFILE



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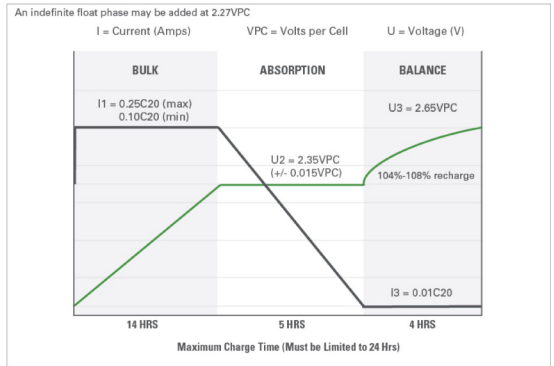

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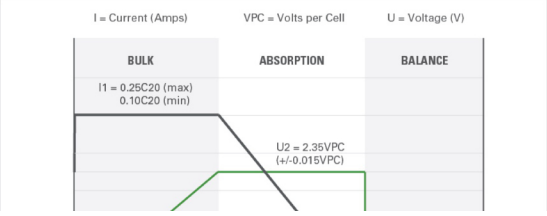

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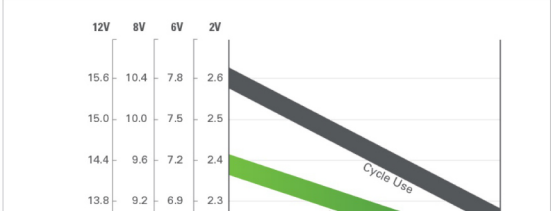

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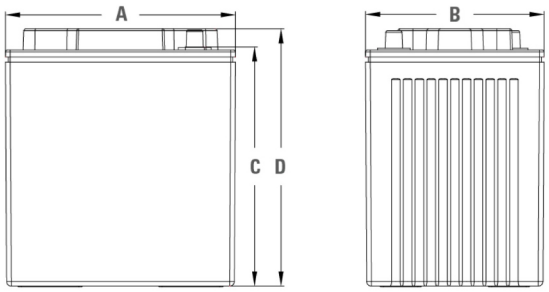
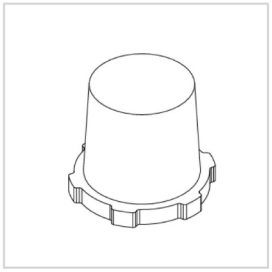
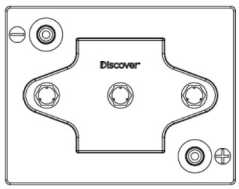
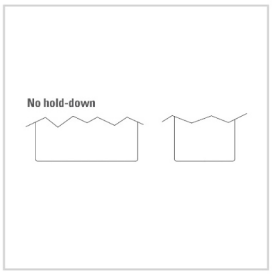




TERMINAL

LAYOUT





HOLD-DOWN

MECHANICAL SPECIFICATIONS

Industry Reference	BCI: GC6 DIN	
Length A (in/mm)	9.6	244
Width B (in/mm)	7.4	189
Height C (in/mm)	10.7	271
Total Height D (in/mm)	10.7	271
Weight (lbs/kgs)	69.3	31.5
Terminal *	SAE	
Technology	Gel, VRLA Non-spill	

NOTE: There is a tolerance of +/-2% in dimensions. Weights may vary
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ELECTRICAL SPECIFICATIONS

Voltage (V)	6
Voltage Cutoff (80% DOD)	5.90
Internal Resistance (mΩ)	2
Short Circuit (A) (20°C / 68°F)	4800
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
162	180	210

Minutes of Discharge				
@25A	@56A	@75A	@85A	@100A
475	175	120	110	85

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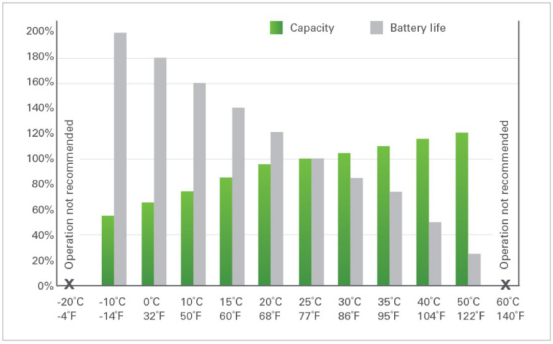
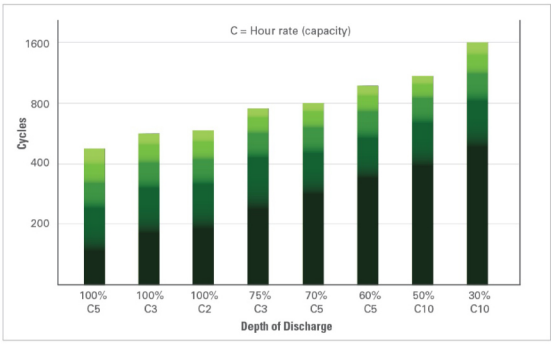
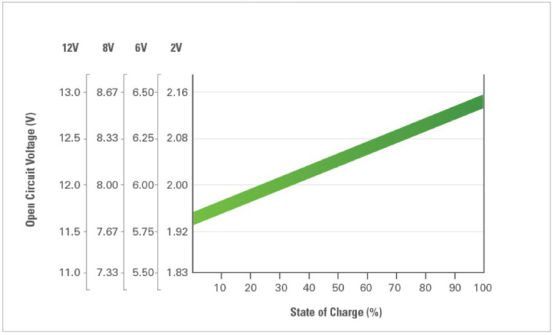
TEMPERATURE EFFECTS ON CAPACITY



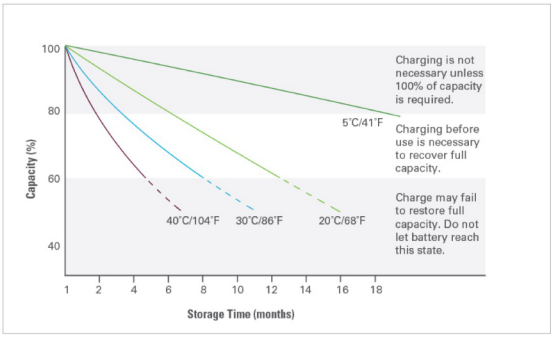
CYCLE LIFE IN RELATION TO DEPTH OF DISCHARGE (25°C)



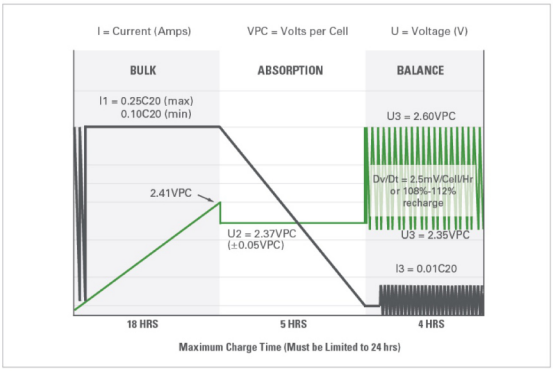
OPEN CIRCUIT VOLTAGE IN RELATION TO THE STATE OF CHARGE (20°C)



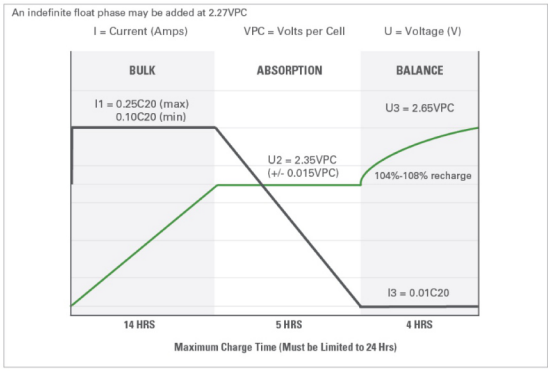
SELF-DISCHARGE CHARACTERISTICS



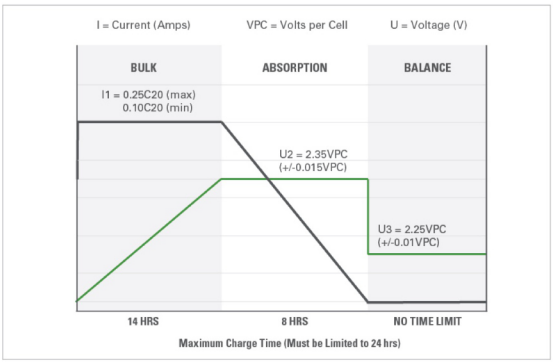
IUI WITH PULSE TERMINATION CHARGE PROFILE



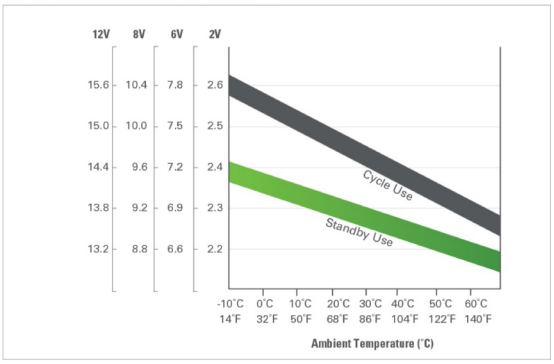
IUI CHARGE PROFILE



IUU CHARGE PROFILE



RELATION BETWEEN CHARGING, VOLTAGE AND TEMPERATURE



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