

Архангельск (8182)63-90-72
Астана (7172)727-132
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06

Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Липецк (4742)52-20-81

Киргизия (996)312-96-26-47

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16

Россия (495)268-04-70

Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13

Казахстан (772)734-952-31

Сургут (3462)77-98-35
Тверь (4822)63-31-35
Томск (3822)98-41-53
Тула (4872)74-02-29
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Ярославль (4852)69-52-93

www.sft.nt-rt.ru | | sfq@nt-rt.ru

Технические характеристики на литий-ионные аккумуляторы высокой производительности Xcelion

The Xcelion® Family of Lithium-ion Batteries



Xcelion® batteries deliver capacity and output surpassing that of two lead-acid batteries at a fraction of the weight, representing unprecedented gains in energy and cost efficiencies, performance, safety and environmental responsibility. As a design-compatible, drop-in alternative to traditional lead-acid batteries, the Xcelion product line provides increased energy density, measurable life cycle cost benefits and on-board diagnostics that monitor and manage output, performance and protections.

The Xcelion batteries weigh less than the lead-acid equivalent, deliver more power with greater reliability and require no structural or interface design adaptation.

 *Longer Life = Fewer Battery Replacements*

 *Real-Time Diagnostics = Fewer Spares to Store*

 *One Quarter the Weight = Costs Less to Ship*

 *Reduced Logistics Burden to Store, Transport, Distribute Replacement Batteries*

 *Keeps Soldiers Out of Harm's Way Translates to Over \$200 Million of Savings in Total Cost of Ownership for a Fleet of 20,000 Vehicles.*

Product Roadmap

2015 Xcelion 6T®
Product launch using Super-Phosphate® technology for its superior safety.

2019 Xcelion® 56V
Using Super-Phosphate® technology for high voltage applications running on 48V bus.

2018 Xcelion® 6T-E Launch
Like the Xcelion 6T, this variant uses Super-Phosphate® technology and includes product improvements for applications requiring higher levels of energy; includes EMI cell matching software.

2019 Xcelion® 6T Type 1-A
Includes BMS and interfaces updated from Xcelion 6T to meet MIL-PRF-32565 requirements.

Xcelion® Technology Powering The Future

Lithium-ion high performance batteries



Xcelion® 6T

The Xcelion 6T is a 24V, 60Ah high power lithium-ion battery based on Super-Phosphate® technology. It is a commercial off-the-shelf product, that replaces two 12V lead-acid batteries in the form factor of one, at one quarter of the weight. Its life cycle is typically 5-10 times that of lead-acid in comparable applications. Units can be wired in parallel to provide more power and capacity.



Xcelion® 6T-E

Similar to its predecessor, the Xcelion 6T, the Xcelion 6T-E is an off-the-shelf product capable of replacing two 12V lead-acid batteries in a form factor of one at one quarter of the weight. The Xcelion 6T-E offers extended nominal capacity and energy with only a minor reduction in maximum charge current which is ideal for applications requiring longer intervals between charges and lower maximum charge currents.



Xcelion® 56V

The Xcelion 56V delivers operating voltage from 40-60V. It is designed for 48V applications such as small electric mobility and stationary power. Like the 6T and 6T-E, the 56V is an off the shelf solution, drop-in replacement for lead-acid batteries with a longer life cycle and less weight. Available in two variations, power and energy.



Xcelion® 56V-LEV

A low-rate energy variant that offers a simple, right-sized configuration for 48V continuous cycling applications requiring lower current. Ideal for uninterruptible power supply (UPS) applications for the military, defense ground stations, electric mobility and back-up power storage.



Xcelion® 6T Type 1-A

The Xcelion 6T Type 1-A is designed to meet MIL-PRF-32565 Rev B and provides unsurpassed cold cranking performance and safety. The 58 Ah Li-ion battery is an off-the-shelf solution with a nominal voltage of 26.4 volts and is the only Li-ion battery that meets cold temperature performance requirements (1,100 amps at -18 C° for 30 seconds with no pre-heating and 400 amps at -40 C° for 30 seconds with no pre-heating).

2020 Xcelion® 56V -LEV

A low-rate energy variant that offers simpler, right-sized configurations for 48V continuous cycling applications requiring lower current.



Coming soon Xcelion® 28V-LEV

The Xcelion® 28V-LEV is half the size and half the voltage as its 56V counterpart, with comparable performance designed for UPS and defense applications running on a 28V bus.

Coming soon Xcelion® Cube

The Xcelion® is a scalable, modular solution for high voltage systems. It can be configured in series strings and parallel arrays of strings to meet either power or energy demands. Each power cube can deliver 24kW of peak power and over 1.5kWh of energy per cube. Each energy cube contains 2.1kWh of energy and 12kW of peak power. It uses bypassable module electronics and is based on the field-proven mechanical design of the Xcelion® family of batteries to offer simple system integration.



Xcelion® batteries deliver more capacity and output than that of two lead-acid batteries at a fraction of the weight. They represent unprecedented gains in energy and cost efficiencies, performance, and environmental responsibility, plus a focus on safety.



Xcelion 6T[®] battery

Rechargeable lithium-ion battery system

Super lithium-iron phosphate 6T high performance battery

NATO Stock Number: 6140-99-380-7294

One 24V Xcelion 6T[®] replaces two 12V Pb-acid 6T batteries at a quarter of the weights and half the volume.

Saft's Xcelion 6T[®] is a 24V battery system that offers a drop-in replacement solution for legacy battery technology in military vehicles and other industrial applications.

This ruggedized battery uses Saft's proprietary Super-Phosphate[®] chemistry which is ideally suited for high performance applications requiring high levels of safety.

Benefits

- Only Li-ion 6T battery that meets cold temperature performance requirements
- Significant weight savings and life cycle costs compared to lead-acid chemistries
- Maintenance free
- Drop-in replacement for current vehicle batteries
- Commercial off-the-shelf solution
- Communicates over J1939 CAN Bus protocol
- Compatible with MIL-STD-1275E power bus
- UN transportation approved

Features

- Built-in self-balancing
- Fast charging under varying conditions*
- Self shut-down in unsafe conditions
- Internal battery management system

Applications

- Military ground vehicle power
- Starting, lights, and ignition (SLI)
- Silent watch
- Applications requiring balance of power and energy



Electrical characteristics

Nominal capacity	60 Ah
Nominal voltage	26.4 V
Voltage at full state of charge	30.0 VDC
Voltage at zero state of charge	20.0 VDC
Energy	1.6 kWh
Cold cranking amps (CCA)	
at -18 C° for 30 seconds	1,100 A
at -40 C° for 30 seconds	400 A
Maximum discharge current	
Continuous	400 A
Pulse (25 ms)	3,000 A
Maximum charge current	
Continuous	250 A
Pulse (20 s)	400 A

Mechanical characteristics

Weight	20.7 kg
Height	230 mm
Width	256 mm
Length	269 mm

Operating Conditions

Operating temperature	
Discharge	-40 °C to +60 °C
Charge*	
Storage and transportation temperature**	-46 °C to +71 °C

*Battery manages charge energy to ensure maximum battery life. At low temperature, the battery will automatically engage built-in heaters for optimum charging.

** Sustained high temperature storage will reduce life.

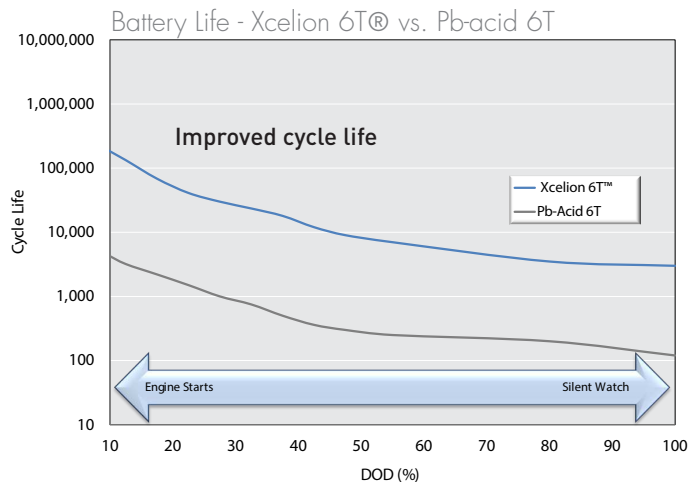
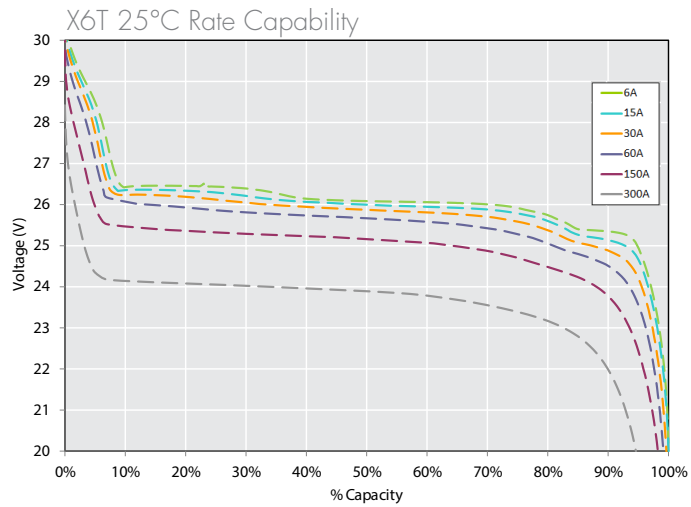
Xcelion 6T[®] battery

Top-level system functions

- Graphical User Interface Tool allows detailed view of battery status
- Communication of battery state of charge, temperature, and other key parameters via J1939 CAN Bus
- Redundant overcharge protection
- Overload protection
- Short circuit protection
- Over-discharge protection
- Battery reserve protection (preserves energy for engine start)
- Battery monitoring
- Built-in-Test
- Cell heating (allows full battery capability over operating temperature)
- Continuous cell balancing

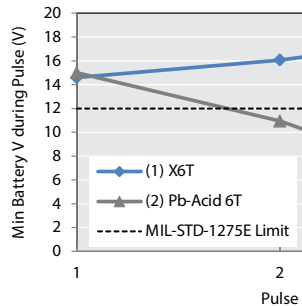
Safety heritage

- System design includes Saft's field proven electronic control architecture that includes overcharge protection, and over discharge, over temperature and overload protection.
- Cells equipped with hermetic seal and over pressure safety vent
- Rechargeable Li-FePO₄ cells ideally suited for applications requiring high discharge, continuous or pulse power, fast re-charge, long cycle and calendar life, and high levels of safety.

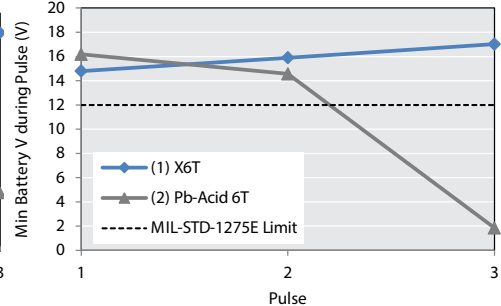


More stable performance across multiple start attempts

-40°C: 30s 400 Amp Pulse



-18°C: 30s 1,100 Amp Pulse



Xcelion[®] 56V-E

Rechargeable lithium-ion battery system

Super lithium-iron phosphate high energy battery

The Xcelion[®] 56V battery provides operating voltage from 40V-60V and is designed for 48V applications such as military microgrids, electric mobility and stationary power.

This ruggedized battery uses Saft's proprietary Super-Phosphate[®] chemistry which is ideally suited for high performance applications. requiring high levels of safety.



Benefits

- Significant weight savings and life cycle costs compared to lead-acid technology
- Maintenance free
- Commercial off-the-shelf solution
- Communicates over J1939 CAN Bus protocol
- Compatible with MIL-STD-1275E power bus

Features

- Built-in self-balancing
- Fast charging under varying conditions*
- Self shut-down in unsafe conditions
- Internal battery management system

Applications

- Military microgrids
- Silent watch
- Electric mobility applications
- Applications requiring a balance of power and energy

Electrical characteristics

Nominal capacity	41 Ah
Nominal voltage	52.8 V
Voltage at full state of charge	60 VDC
Voltage at zero state of charge	40.0 VDC
Energy	2.16 kWh
Maximum discharge current	
Continuous	100 A
Maximum charge current	
Continuous	20 A

Mechanical characteristics

Weight	20.7 kg	46 lb
Height	230 mm	9.2 in
Width	256 mm	10.1 in
Length	269 mm	10.6 in

Operating Conditions

Operating temperature	
Discharge	-30°C to +60°C
Charge*	
Storage and transportation temperature**	-46°C to +71°C

*Battery manages charge energy to ensure maximum battery life. At low temperature, the battery will automatically engage built-in heaters for optimum charging.

** Sustained high temperature storage will reduce life.

Xcelion[®] 56V

Top-level system functions

- Graphical User Interface Tool allows detailed view of battery status
- Communication of battery state of charge, temperature, and other key parameters via J1939 CAN Bus
- Redundant overcharge protection
- Overload protection
- Short circuit protection
- Over-discharge protection
- Battery reserve protection
- Battery monitoring
- Built-in-Test
- Cell heating (allows full battery capability over operating temperature)
- Continuous cell balancing

Safety heritage

- System design includes Saft's field proven electronic control architecture that includes overcharge protection, and over discharge, over temperature and overload protection.
- Cells equipped with hermetic seal and over pressure safety vent
- Rechargeable Li-FePO₄ cells ideally suited for applications requiring high discharge, continuous or pulse power, fast re-charge, long cycle and calendar life, and high levels of safety.

Xcelion® 56V-P

Rechargeable lithium-ion battery system

Super lithium-iron phosphate high performance battery

The Xcelion® 56V battery provides operating voltage from 40-60V and is useful for 48V applications such as electric mobility and stationary power.

This ruggedized battery uses Saft's proprietary Super-Phosphate® chemistry which is ideally suited for high performance applications requiring high levels of safety.



Benefits

- Significant weight savings and life cycle costs compared to lead-acid chemistries
- Maintenance free
- Commercial off-the-shelf solution
- Communicates over J1939 CAN Bus protocol
- Compatible with MIL-STD-1275E power bus

Features

- Built-in self-balancing
- Fast charging under varying conditions*
- Self shut-down in unsafe conditions
- Internal battery management system

Applications

- Silent watch
- Applications requiring a balance of power and energy
- Electric mobility applications

Electrical characteristics

Nominal capacity	30 Ah
Nominal voltage	52.8 V
Voltage at full state of charge	60.8 VDC
Voltage at zero state of charge	40.0 VDC
Energy	1.6 kWh
Maximum discharge current	
Continuous	200 A
Pulse (25 ms)	1,500 A
Maximum charge current	
Continuous	125 A
Pulse (20 s)	200 A

Mechanical characteristics

Weight	20.7 kg	46 lb
Height	230 mm	9.2 in
Width	256 mm	10.1 in
Length	269 mm	10.6 in

Operating Conditions

Operating temperature	
Discharge	-40°C to +60°C
Charge*	
Storage and transportation temperature**	-46°C to +71°C

*Battery manages charge energy to ensure maximum battery life. At low temperature, the battery will automatically engage built-in heaters for optimum charging.

**Sustained high temperature storage will reduce life.

Xcelion[®] 56V

Top-level system functions

- Graphical User Interface Tool allows detailed view of battery status
- Communication of battery state of charge, temperature, and other key parameters via J1939 CAN Bus
- Redundant overcharge protection
- Overload protection
- Short circuit protection
- Over-discharge protection
- Battery reserve protection
- Battery monitoring
- Built-in-Test
- Cell heating (allows full battery capability over operating temperature)
- Continuous cell balancing

Safety heritage

- System design includes Saft's field proven electronic control architecture that includes overcharge protection, and over discharge, over temperature and overload protection.
- Cells equipped with hermetic seal and over pressure safety vent
- Rechargeable Li-FePO₄ cells ideally suited for applications requiring high discharge, continuous or pulse power, fast re-charge, long cycle and calendar life, and high levels of safety.

Xcelion® 56V-LEV

Rechargeable lithium-ion battery system

Super lithium-iron phosphate low-rate energy variant battery

The Xcelion® 56V-LEV (low-rate energy variant) battery provides operating voltage from 40V-60V and is designed for repetitive cycling applications including defense, electric mobility, and UPS.

This ruggedized battery uses Saft's proprietary Super-Phosphate® chemistry which is ideally suited for high performance applications requiring high levels of safety.



Benefits

- Significant weight savings and life cycle costs compared to lead-acid technology
- Maintenance free
- Commercial off-the-shelf solution
- Communicates over J1939 CAN Bus protocol

Features

- Built-in self-balancing
- Self shut-down in unsafe conditions
- Resettable short circuit protection
- IP65 ingress protection
- Internal battery management system

Applications

- Defense
- Back-up power storage
- UPS
- Electric mobility
- Applications requiring a balance of power and energy

Electrical characteristics

Nominal capacity	41 Ah
Nominal voltage	52.8 V
Voltage at full state of charge	60.8 VDC
Voltage at zero state of charge	40.0 VDC
Energy	2.16 kWh
Maximum discharge current (continuous)	50 A
Maximum charge current	50 A
Recommended for continuous cycling	20 A

Mechanical characteristics

Weight	21 kg	50 lb
Height	249 mm	9.8 in
Width	120 mm	4.72 in
Length	460 mm	18.11 in

Operating Conditions

Operating temperature	
Discharge	-30°C to +60°C
Charge*	0°C to +60°C
Storage and transportation temperature**	-46°C to +71°C

*Allowed charge current is derated down to 0°C. Charging is blocked for conditions outside of the allowed operation.

** Sustained high temperature storage will reduce life.

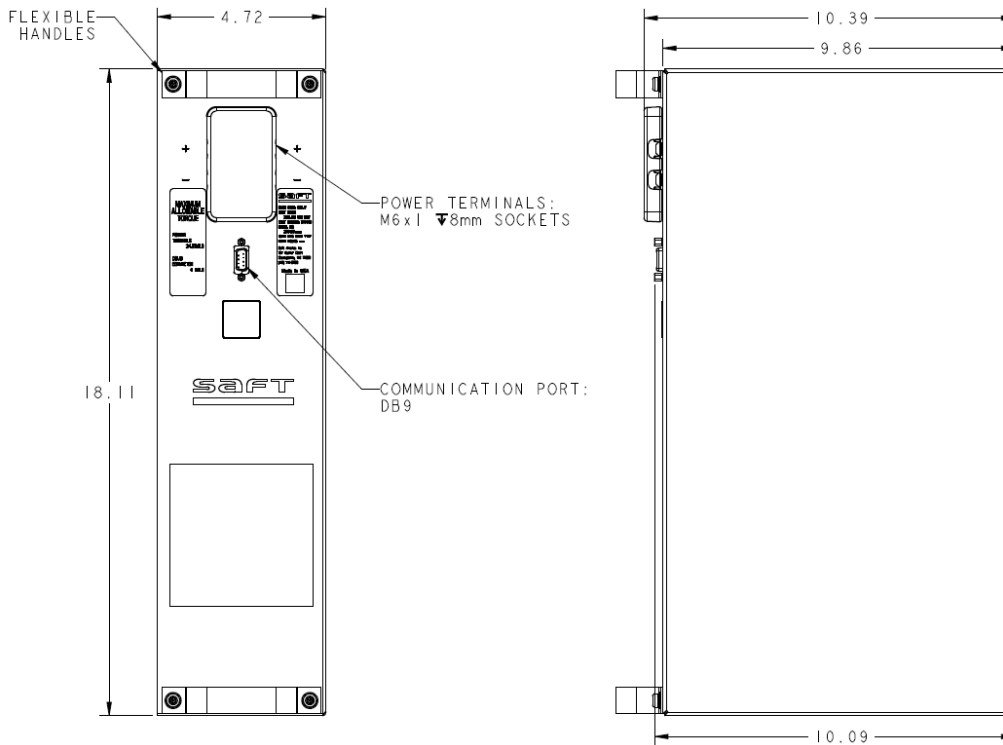
Xcelion[®] 56V-LEV

Top-level system functions

- Graphical User Interface Tool allows detailed view of battery status
- Communication of battery state of charge, temperature, and other key parameters via J1939 CAN Bus
- Redundant overcharge protection
- Overload protection
- Short circuit protection
- Over-discharge protection
- Battery reserve protection
- Battery monitoring
- Built-in-Test

Safety heritage

- System design includes Saft's field proven electronic control architecture that includes overcharge protection, and over discharge, over temperature and overload protection.
- Cells equipped with hermetic seal and over pressure safety vent
- Rechargeable Li-FePO₄ cells ideally suited for applications requiring high discharge, continuous or pulse power, fast re-charge, long cycle and calendar life, and high levels of safety.



Xcelion[®] 6T-E

Rechargeable lithium-ion battery system

Super lithium-iron phosphate 6T format battery for high energy applications

The 24V Xcelion[®] 6T Energy battery variant provides double the usable capacity of lead-acid batteries in the same footprint.

Saft's Xcelion 6T[®] is a 24V battery system that offers a drop-in replacement solution for legacy battery technology in military vehicles and other industrial applications.

This ruggedized battery uses Saft's proprietary Super-Phosphate[®] chemistry which is ideally suited for high performance applications requiring high levels of safety.

Benefits

- Significant weight savings and life cycle costs compared to lead-acid chemistries
- Maintenance free
- Drop-in replacement for current vehicle batteries
- Commercial off-the-shelf solution
- Communicates over J1939 CAN Bus protocol
- Compatible with MIL-STD-1275E power bus

Features

- Built-in self-balancing
- Fast charging under varying conditions*
- Self shut-down in unsafe conditions
- Internal battery management system
- UN38.3 Certified

Applications

- Military ground vehicle energy
- Silent watch
- Applications requiring a balance of power and energy



Electrical characteristics	Xcelion 6T-E
Nominal capacity	82 Ah
Nominal voltage	26.4 V
Voltage at full state of charge	30.4 VDC
Voltage at zero state of charge	20.0 VDC
Energy	2.1 kWh
Cold cranking amps (CCA)	
at +25 C° for 30 seconds	750 A
at -18 C° for 30 seconds	600 A
at -30 C° for 30 seconds	300 A
Maximum discharge current	
Continuous	200 A
Maximum charge current	
Continuous	120 A
Pulse (20 s)	250 A
Mechanical characteristics	
Weight	20.7 kg
Height	230 mm
Width	256 mm
Length	269 mm
Operating Conditions	
Operating temperature	
Discharge	-40°C to +60°C
Charge*	
Storage and transportation temperature**	-46°C to +71°C

*For cold temperatures of -32°C and below, the battery can be commanded to self-heat to enable extreme cold temperature discharge. The battery will automatically engage the heaters during cold temperature charging to ensure maximum battery life

** Sustained high temperature storage will reduce life.

Xcelion 6T-E battery

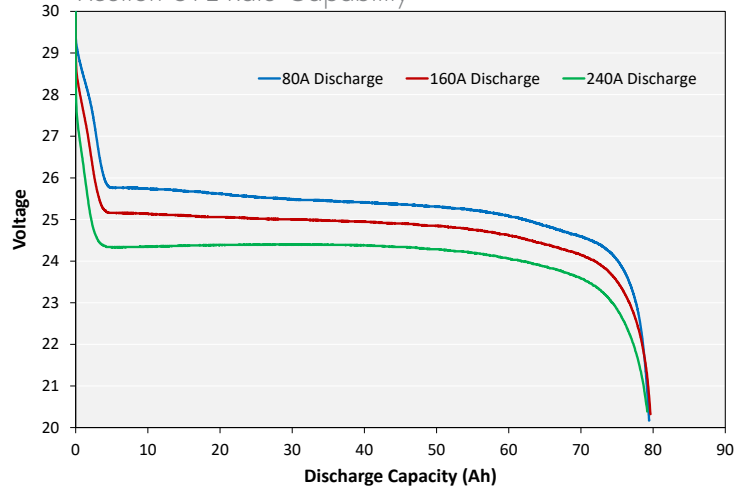
Top-level system functions

- Graphical User Interface Tool allows detailed view of battery status
- Communication of battery state of charge, temperature, and other key parameters via J1939 CAN Bus
- Redundant overcharge protection
- Overload protection
- Short circuit protection
- Over-discharge protection
- Battery reserve protection (preserves energy for engine start)
- Battery monitoring
- Built-in-Test
- Cell heating (allows full battery capability over operating temperature)
- Continuous cell balancing

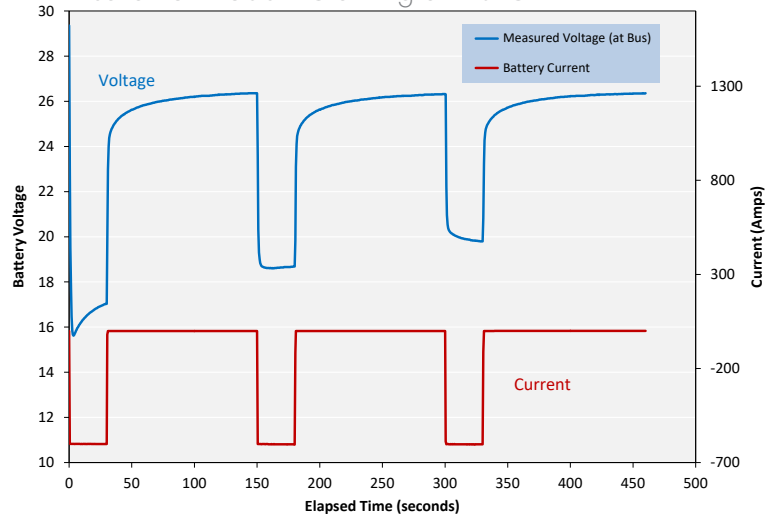
Safety heritage

- System design includes Saft's field proven electronic control architecture that includes overcharge protection, and over discharge, over temperature and overload protection.
- Cells equipped with hermetic seal and over pressure safety vent
- Rechargeable Li-FePO₄ cells ideally suited for applications requiring high discharge, continuous or pulse power, fast re-charge, long cycle and calendar life, and high levels of safety.

Xcelion 6T-E Rate Capability



Xcelion 6T-E 600A Cranking at -18°C



Архангельск (8182)63-90-72
 Астана (7172)727-132
 Астрахань (8512)99-46-04
 Барнаул (3852)73-04-60
 Белгород (4722)40-23-64
 Брянск (4832)59-03-52
 Владивосток (423)249-28-31
 Волгоград (844)278-03-48
 Вологда (8172)26-41-59
 Воронеж (473)204-51-73
 Екатеринбург (343)384-55-89
 Иваново (4932)77-34-06

Ижевск (3412)26-03-58
 Иркутск (395)279-98-46
 Казань (843)206-01-48
 Калининград (4012)72-03-81
 Калуга (4842)92-23-67
 Кемерово (3842)65-04-62
 Киров (8332)68-02-04
 Краснодар (861)203-40-90
 Красноярск (391)204-63-61
 Курск (4712)77-13-04
 Липецк (4742)52-20-81

Киргизия (996)312-96-26-47

Магнитогорск (3519)55-03-13
 Москва (495)268-04-70
 Мурманск (8152)59-64-93
 Набережные Челны (8552)20-53-41
 Нижний Новгород (831)429-08-12
 Новокузнецк (3843)20-46-81
 Новосибирск (383)227-86-73
 Омск (3812)21-46-40
 Орел (4862)44-53-42
 Оренбург (3532)37-68-04
 Пенза (8412)22-31-16

Россия (495)268-04-70

Пермь (342)205-81-47
 Ростов-на-Дону (863)308-18-15
 Рязань (4912)46-61-64
 Самара (846)206-03-16
 Санкт-Петербург (812)309-46-40
 Саратов (845)249-38-78
 Севастополь (8692)22-31-93
 Симферополь (3652)67-13-56
 Смоленск (4812)29-41-54
 Сочи (862)225-72-31
 Ставрополь (8652)20-65-13

Казахстан (772)734-952-31

Сургут (3462)77-98-35
 Тверь (4822)63-31-35
 Томск (3822)98-41-53
 Тула (4872)74-02-29
 Тюмень (3452)66-21-18
 Ульяновск (8422)24-23-59
 Уфа (347)229-48-12
 Хабаровск (4212)92-98-04
 Челябинск (351)202-03-61
 Череповец (8202)49-02-64
 Ярославль (4852)69-52-93