

VR420A

Rechargeable Lithium ion Smart Battery

Technical Datasheet

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Overview

The VR420A is part of the Entellion range. Entellion products are smart, innovative portable power products, designed to meet the emerging needs of feature-laden devices in professional markets. Created and manufactured by Ultralife UK, Entellion combines our expertise in custom OEM requirements and market trends. Entellion products are available off the shelf and can be customised for your application, getting you to market quickly and confidently.

Features

- 14.4V high energy density Lithium ion technology
- High current delivery (6.2A continuous)
- Compact mechanical footprint
- SBDS rev1.1 compliant impedance tracking fuel gauge
- Active protection circuitry (OV, UV, OC, SC)
- 5-Bar LED visual state of charge indicator
- Redundant passive over-current protection
- 6 position Samtec connector interface
- Tough plastic enclosure
- IEC 62133-2:2017+AMD1:2021 and UL 2054 (safety) compliant
- UN 38.3 (transportation) compliant
- CE marked (EMC compliance)

Technical Specifications

Part No.	VR420A	
Capacity	0.2C (Minimum Rated)	6500mAh ⁽¹⁾⁽²⁾
Charging	Voltage	16.8V ⁽⁸⁾
	Current (Maximum)	3000mA ⁽⁸⁾
	Temperature	0°C to +45°C ⁽⁶⁾
Discharging	Voltage (Average)	14.4V ⁽²⁾
	Cut-Off Voltage	10.0V ⁽⁷⁾
	Current (Maximum)	6.2A ⁽⁸⁾
	Temperature	-10°C to +60°C ⁽⁴⁾⁽⁶⁾
Storage	Temperature	-20°C to +60°C
Cycle Life	>300 ⁽¹⁾⁽³⁾⁽⁵⁾⁽⁶⁾	
Dimensions	Length	87.9mm ± 0.20mm
	Width	152.0mm ± 0.20mm
	Thickness	22.8mm ± 0.20mm
Weight	~495g	
Fuel Gauge	Texas Instruments BQ20z65-R1 Impedance Track™ fuel gauge with SMBus communication	
Termination	6 position Samtec Connector (UPS-06-07.0-01-L-V). The following mating parts are available: (a) UPT-06-03.0-01-L-V-LC-TR (vertical mount) (b) UPT-06-01-01-L-RA (right angle mount)	
Certification	Transportation	ST/SG/AC.10.11 Rev 8 (UN 38.3 T1-T8 Tests)
	Safety	IEC 62133-2:2017 +AMD1:2021 & UL 2054
	CE Marking	EMC Directive 2014/30/EU

Notes

1. CV-CC 16.8V, 3A charge to Terminate Charge Alarm at +20°C.
2. 0.2C discharge to Terminate Discharge Alarm at +20°C.
3. 0.5C discharge to Terminate Discharge Alarm at +20°C.
4. Discharge performance degrades at lower temperatures. Empirical testing in application is suggested to determine suitability. Maximum current capability may not be available at low temperatures.
5. To 80% of 0.2C minimum rated capacity.
6. Cycle life degrades at higher operating temperatures, empirical testing in application suggested to determine suitability.
7. Battery will disconnect itself below this level.
8. Do not exceed this level.

VR420A

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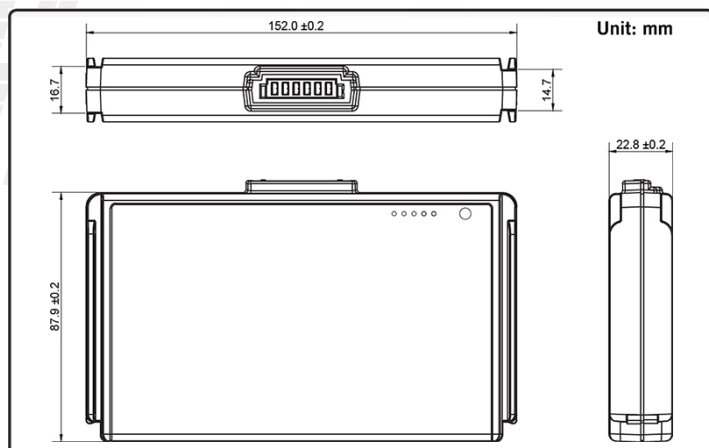
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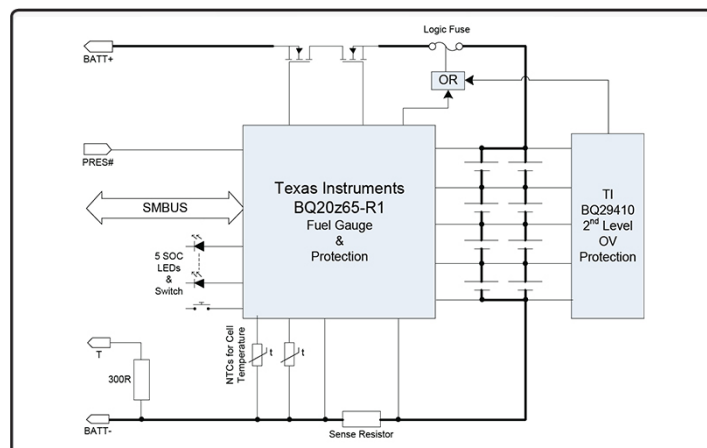
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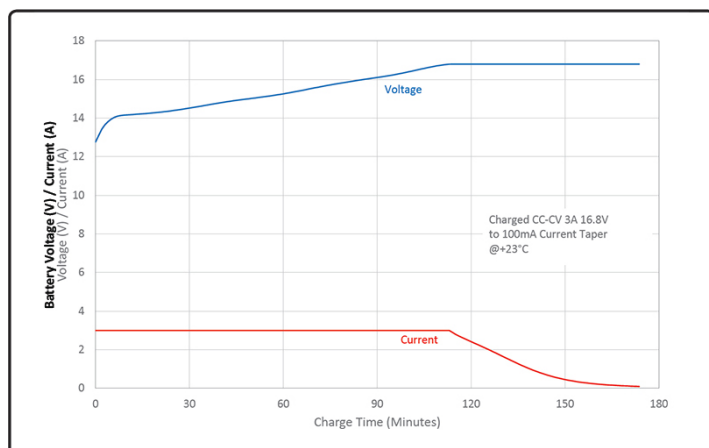
Mechanical Drawing



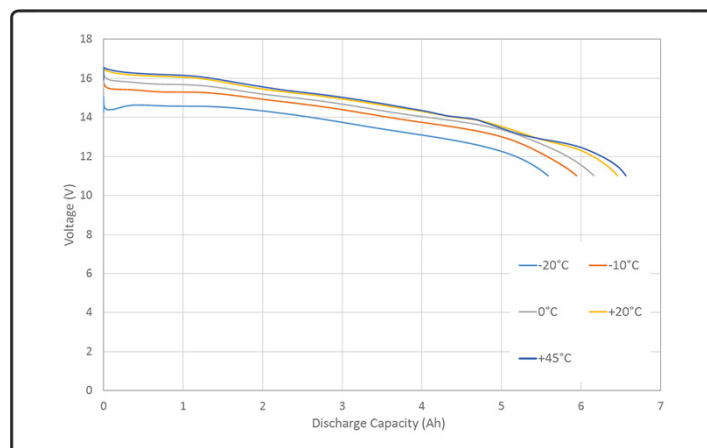
Block Diagram



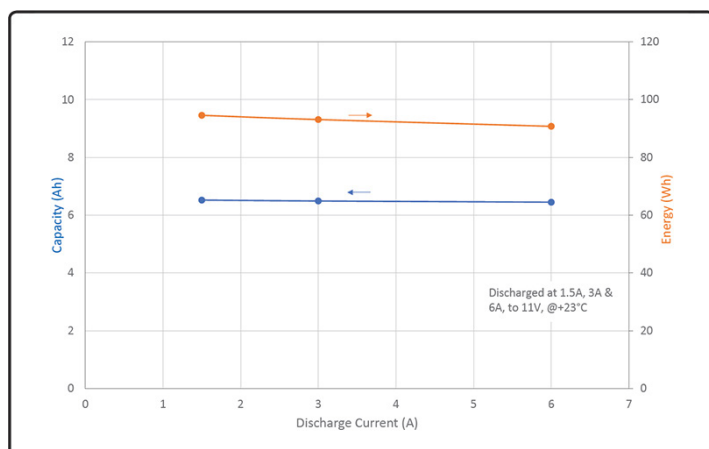
Typical Charge Performance



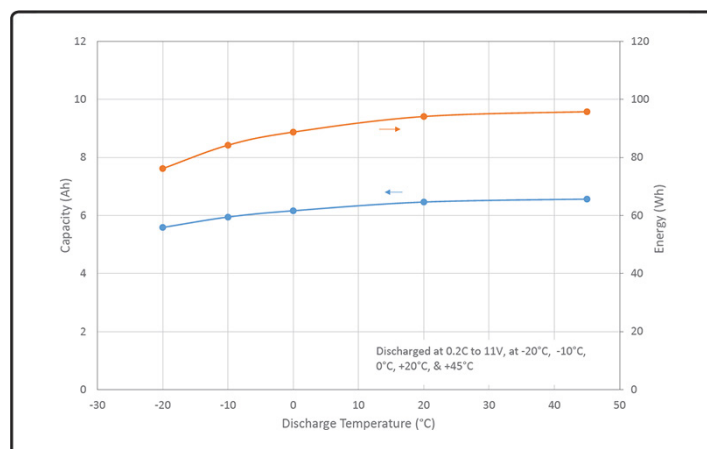
Typical Discharge Performance at Various Temperatures



Effect of Discharge Current on Capacity & Energy



Effect of Discharge Temperature on Capacity & Energy



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