



RT Battery Module

Valence Technology delivers safe lithium iron magnesium phosphate (LFMP) energy storage solutions in standard BCI lead-acid battery sizes for a wide variety of applications.

Overview

The U-Charge® RT Energy Storage Systems are a family of 12V battery modules and accessories. The RT family is designed as a drop-in replacement for similar sized lead-acid batteries offering twice the run-time and nearly half the weight. The RT series is designed for lower voltage, lower power and longer run-time applications RT systems do not require extended BMS or protection.

They are built with Valence LFMP Technology that offers outstanding intrinsic safety and excellent float and cycle life resulting in low cost of ownership. Thousands of U-Charge systems have been deployed since 2006 across numerous motive and energy storage applications.

Features

- ✔ Built-in automatic protection for over-charge, over-discharge and over-temperature conditions
- ✔ No battery management system required
- ✔ Series connection up to four (4) batteries (48 V)
- ✔ Internal cell balancing
- ✔ LED battery status indicator
- ✔ Maintenance-free Rugged mechanical design – dust and water resistant to IP56 standards, flame retardant plastics
- ✔ Thousands of cycles, under normal conditions
- ✔ Can be charged using most standard lead-acid chargers (set for AGM/GEL cells)
- ✔ Optional battery discharge indicator (U-BDI) for SOC display and fault indication

Specifications	U1-12RTL	U1-12RT	U24-12RT	U27-12RT	
Voltage	12.8 V	12.8 V	12.8 V	12.8 V	
Nominal Capacity (C/5, 23°C)	24 Ah	40 Ah	110 Ah	138 Ah	
Weight (approximate)	4.1 kg	6.5 kg	15.8 kg	19.5 kg	
Dimension incl. Terminals LxWxH	197x131x183mm	197x131x183mm	260x172x225mm	306x172x225mm	
BCI Group Number	U1R	U1R	Group 24	Group 27	
Terminals, Female-Threaded	1/4-20	1/4-20	M8 x 1.25	M8 x 1.25	
Specific Energy	73 Wh/kg	79 Wh/kg	89 Wh/kg	91 Wh/kg	
Energy Density	66 Wh/l	110 Wh/l	139 Wh/l	148 Wh/l	
Standard Discharge @ 23°C	Max. Cont Current	30 A	30 A	30 A	
	Max. 30 sec. Pulse	80 A	80 A	80 A	
	Cut-off Voltage	10 V	10 V	10 V	10 V
	Run-time @ 10A	144 min	240 min	660 min	825 min
	Run-time @ 30A	45 min	80 min	220 min	275 min
Standard Charge	Charge Voltage	14.6 V	14.6 V	14.6 V	14.6 V
	Float	13.8 V	13.8 V	13.8 V	13.8 V
	Recommended	12 A	20 A	20 A	20 A
	Charge Time	2.5 hrs	2.5 hrs	6.5 hrs	8.5 hrs
DC internal resistance (max)	22 mΩ	15 mΩ	6 mΩ	5 mΩ	

Common specifications

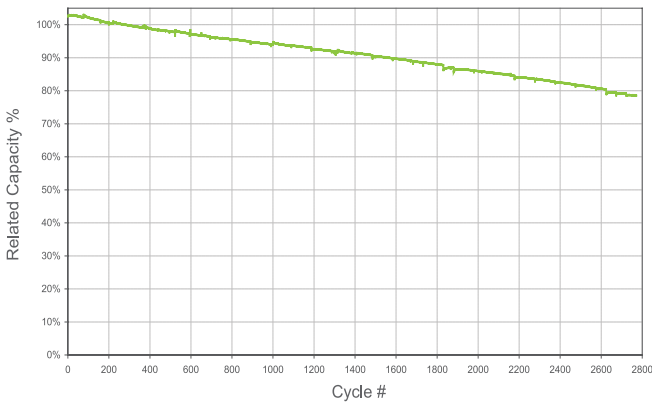
Operating temperature	-10°C to 50°C
Storage temperature	-40°C to 50°C
Operating humidity	5% to 95%, non-condensing
Water/dust resistance	IP56
Shock and vibration	IEC61960, DIN VG96 924
Certifications	FCC Class B, CE, UL1642
Shipping Classification	UN 3090, Class 9

Accessories

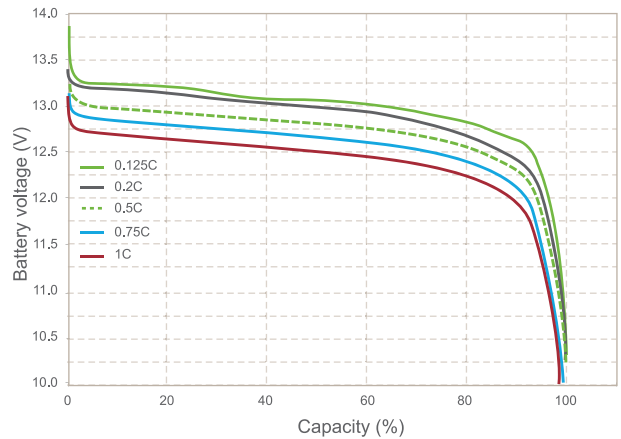
U-BDI – a wired, remote U-Charge Battery Discharge Indicator that displays a 10 segment State-of-Charge (SOC) LED indication bar and battery status indicators. The U-BDI also monitors and controls battery-to-battery balance for multiple battery systems.

Please refer to separate datasheet on the U-BDI products or visit the U-BDI section of our website for more information

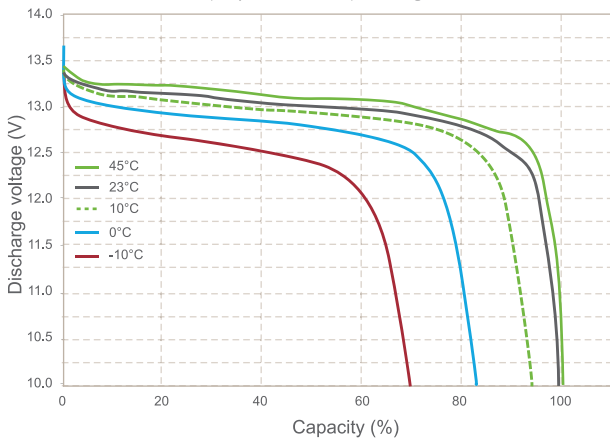
Life Cycle Performance
C/2 Charge and discharge @23°C



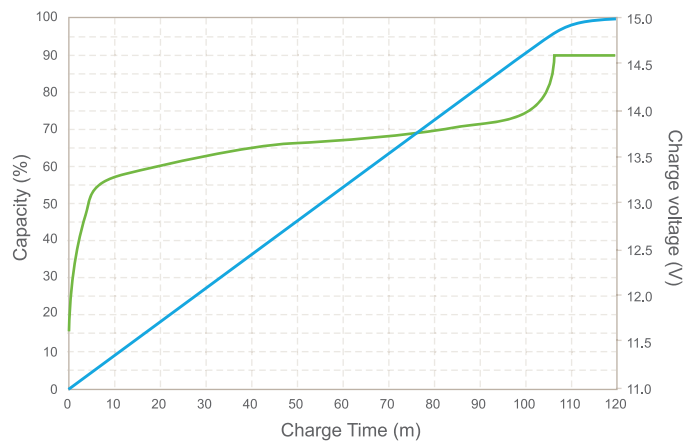
Discharge Performance
@23°C



Temperature Performance
Capacity % vs various temperatures @ C/5 Rate



Charge Performance



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