Dongguan Daly Electronics Co. Ltd

www.atakale.com

Product Specifications

Product Model: DL-R32U-F012S60ATJ-MM00-S4RV

Product Name: LiFePO4 12S 36V60A Common port with Balance, UART, Bluetooth

Version: Rev 1.0 – Modified to Solar 4 RV's Specifications

Distributed by Solar 4 RVs

	DL-R32U-F012S60ATJ-MM00-S4RV		

Product Summary：

- Using foreign premium IC class-A protection.
- Professional, high-current wiring design and workmanship thus can withstand the shock of high current
- Using heat-dissipating glue with a double-sided heat dissipation design, heat is dissipated passively
- Physically shock-resistant, waterproof PCB with many protective functions
- Complete over-charge, over-discharge, over-current, short-circuit, and equalization functions

Electrical Parameters: (Room temperature 25℃, humidity 55%)

(N0)	(Description)		(Specification)	(Unit)	Remarks
1	(Discharge)	(Continuous discharge current)	60	A	
2	(Charge)	(Charge voltage)	43.80	V	Adjustable
		(Continuous charge current)	30	A	
3	(Over charge protection)	(Over charge detect voltage)	3.7±0.05	V	Adjustable
		(over charge protection delay)	1	S	Adjustable

		(over charge release voltage)	3.6±0.05	V	Adjustable
4	(Balance)	(Balance detect Voltage)	3.20	V	Adjustable
		(Balance release voltage)	3.20	V	Adjustable
		(Balance current)	30±5	mA	
5	(Over discharge) protection	(Over discharge detect)	2.6±0.1	V	Adjustable
		(Over discharge detect delay)	1	S	Adjustable
		(Over discharge release voltage)	2.7±0.1	V	Adjustable
6	(Over Charge current protection)	(Overcharge current detect)	25±3	A	Adjustable
		(Overcharge current detect delay)	1	S	Adjustable
		(Overcharge current protection release condition)	(Off load)		
7	(Over discharge current protection)	Over discharge current detect	180±15	A	Adjustable
		(Over discharge current detect delay)	1	S	Adjustable
		(Over discharge current protection release condition)	(Off load)		
8	(Short Circuit protection)	(Short Circuit protection condition)	(Short circuit of external load)		
		(Short circuit detect delay)	250	μS	Adjustable
		(Short circuit protection release)	(Off load)		
9	(Temp Protect)	(Charge Temperature protection degrees)	-5~55	℃	Adjustable
		(discharge Temperature protection degrees)	-30~60	℃	Adjustable

	DL-R32U-F012S60ATJ-MM00-S4RV				

10	(Means of communication)	UART (Adjusting Settings) PC Interface Bluetooth (Status Only) Android and iOS			Play Store/ App Store: **SMART BMS** DalyBMS
11	(Inner Resistance)	(Main Circuit Conduct Inner resistance)	<20	mΩ	
12	Self Consumption	(Working current)	15	mA	
		Sleep current (over-discharge)	400	uA	
13	(Working Temp)	(Temp range)	-20~70	℃	
13	(Storing Temp)	(Temp range)	-40~80	℃	

(BMS wiring Connection)

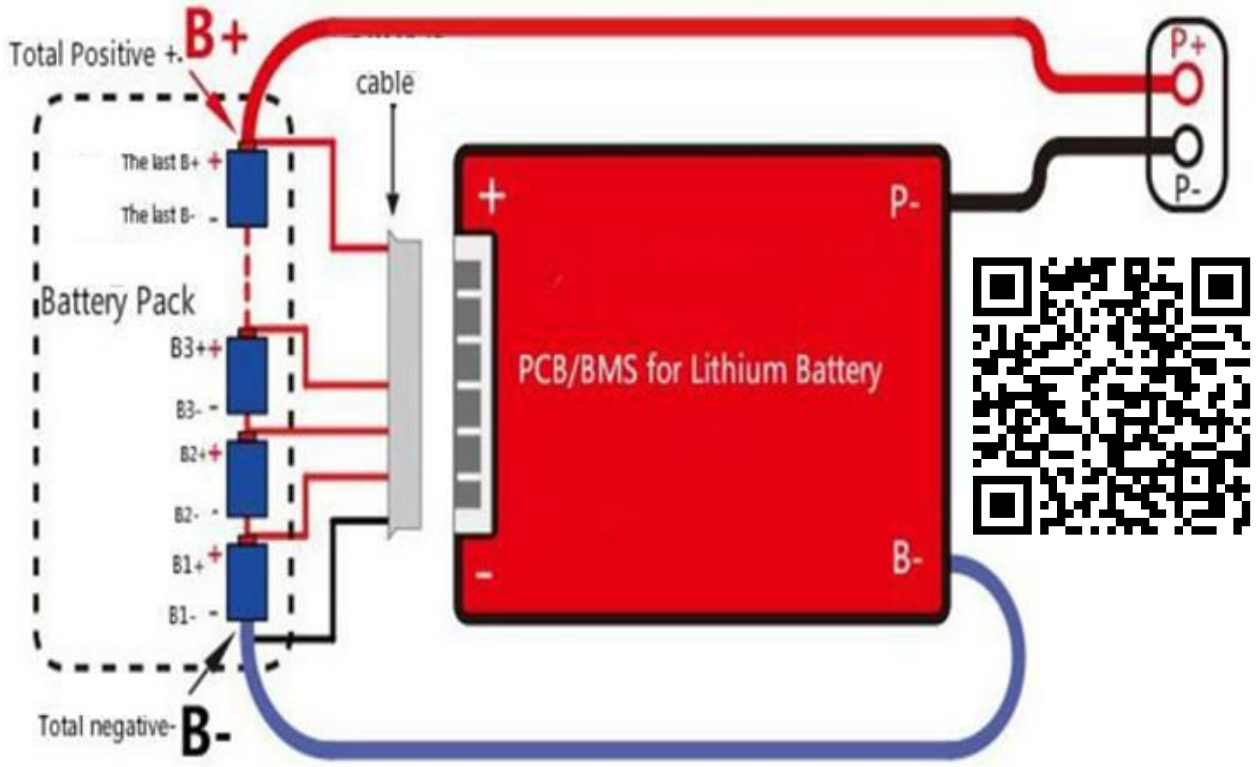
(1) (Product picture)

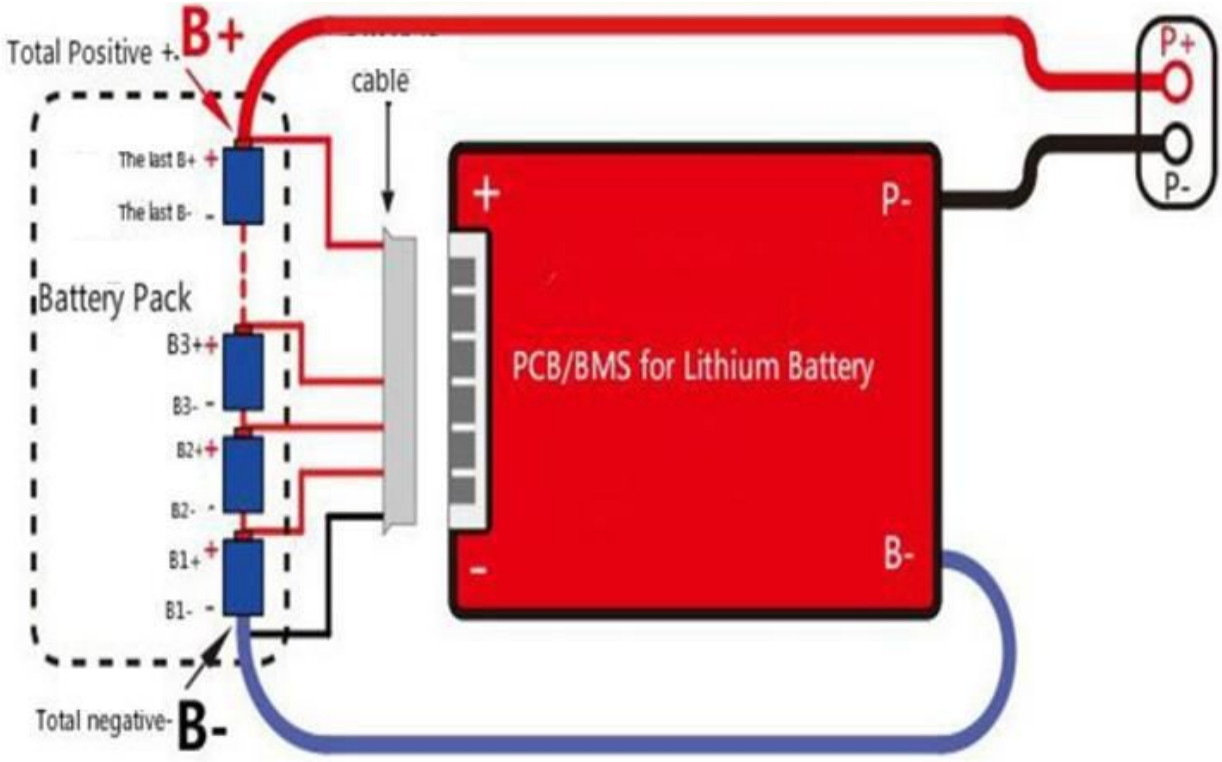
(Interface definition)

(GROUP)	(NAME)	(PIN)	(DESCRIPTION)	
Battery acquisition equalizer interface	B00	1	Battery Total Negative	
	B01	2	Battery positive electrode 1	
	B02	3	Battery positive electrode 2	
	.....	.....	.....	
	B14	15	Battery positive electrode 14	
	B15	16	Battery positive electrode 15	
	B16	17	Battery positive electrode 16	
Bluetooth / GPS module interface	GND	1	GND	
	POW_3.3V	2	Bluetooth module power supply 3.3 V	
	15V	3	Power supply 15 V GPS module	
	BLU_DRV	4	GPS control of power outages/recovery	
	URAT_TX 2	5	Bluetooth communication Transmitter	
	URAT_RX 2	6	Bluetooth communication Receiver	
Key switch	TRIG+	1	Activate input pin	
	TRIG-	2	Activate output pin	
External power indicator panel port	GND	1	GND	
	POW_3.3V	2	3.3 V of lamp board power supply	
	S1	3	Keyboard	
	LED_51	4	Fifth lamp (100%)	
	LED_41	5	Fourth lamp (80%)	
	LED_31	6	Third lamp (60%)	

	LED_21	7	Second Lamp (40%)	
	LED_11	8	First Lamp (20%)	
Temperature sensor input port	NTC1	1	Temperature Line #1	
	GND	2	GND	
	NTC2	3	Temperature Line #2	
Temperature sensor input port	NTC5	1	Temperature Line #3	
	GND	2	GND	
	NTC4	3	Temperature Line #4	
485 / CAN communication interface	UART_RX1	1	485 Communication receiver	
	UART_TX1	2	485 Communication transmitter	
	GND	3	GND	
	CAN_H	4	CAN communication high	
	CAN_L	5	CAN communication low	
Reserved IO interface	AI1	1	Switching signal	
	AI2	2	Switching signal	
	DI1	3	Switching signal	
	DO1	4	Switching signal	
	VCC_EX	5	External power supply	
	GND_EX	6	External power supply	

(2)（Wiring diagram)





（Warranty)

We guarantee a 3-year product warranty, if the damage is caused by improper operation, we will conduct the repair with charge. The warranty does not cover shipping costs, the cost of shipping both to and from the user must be paid for by the user.

（Additional Information)

1. Lithium battery BMS units with different voltage ranges cannot be mixed. i.e. The LiFePO4 BMS cannot be used for LiPo batteries.
2. Daly uses high quality cables, do not replace the Daly provided cables with any other cables.
3. When testing, installing, or contacting the protective board, take measures to avoid static electricity.
4. Do not let the heat dissipation surface of the protection board directly contact the battery core, otherwise the heat will be transmitted to the battery core, which will affect the safety of the battery.
5. Do not disassemble or change the components of the protection board.
6. The metal heat sink of the protection board is anodized and insulated, and the oxide layer will still be conductive after being destroyed. Avoid contact between the heat sink and the battery core and the nickel strip.
7. If you believe you are experiencing any abnormal operation, discontinue use until verified ok by Daly.
8. Do not use the two Daly BMS units in series.
9. Two or more units can be used in parallel if each unit is capable of sustaining the maximum load current.
10. Every product is tested by Daly engineers before shipping.

Technical specifications

	Description	Specification						Unit e	Remarks
		15A	20A	30A	40A	50A	60A		
Discharge	Continue discharge current	15	20	30	40	50	60	A	
	Sparkle current	65±10	65±10	165±30	165±30	150±30	200±30	A	
Inner Resistance	Main Circuit Conduct Inner resistance	≤20	≤20	≤10	≤10	≤10	≤10	mΩ	
Charge	Charge voltage	Series*3.75						V	
	Charge current	10	10	20	30	40	50	A	
Over charge protection	Over charge detect voltage	3.75±0.05						V	
	over charge protection delay	1						S	
	over charge release voltage	3.55±0.05						V	
Balance	Balance detect Voltage	3.5						V	
	Balance release voltage	3.5						V	
	Balance current	30±5mA						mA	
Over discharge protection	Over discharge detect voltage	2.2±0.1						V	
	Over discharge detect delay	1						S	
	Over discharge release voltage	2.7±0.1						V	
Over current protection	Over current detect voltage	1						MS	
	Over current detect delay	Off load							
Short Circuit protection	Short Circuit protection condition	Short circuit of external load							
	Short circuit detect delay	250						uS	
	Short circuit protection release	Off load							
Temp Protect	Temp Protect	Charge < -5°or > 50°, Discharge > 70°						℃	
Self Consumption	Working current	100						uA	
	Sleeping current(when in discharge)	20						uA	
Working Temp	Temp range	-20~70						℃	
Storage Temp	Temp range	-40~80						℃	

Description	Description	Specification								Unit
		15A	20A	30A	40A	50A	60A	80A	100A	
		120A	150A	200A	250A	300A	400A	500A		
Discharge &Charge	Continue discharge current	15A	20A	30A	40A	50A	60A	80A	100A	A
	Over discharge current detect voltage	50±10	60±10	100 ± 20	160 ± 30	160 ± 30	220 ± 40	360 ± 50	360 ± 50	A
	Charge current	8	10	15	20	25	30	40	50	A
	Over Charge current detect delay	20±3	25±3	40±5	60±10	60±10	80± 10	140 ± 20	140 ± 20	A
	Continue discharge current	120A	150A	200A	250A	300A	400A	500A		A
	Over discharge current detect voltage	260 ± 50	260 ± 50	500 ± 100	500 ± 100	500 ± 100	1000 ±200	1000 ±200		A
	Charge current	60	75	100	125	150	200	250		A
	Over Charge current detect delay	100 ± 20	100 ± 20	200 ± 30	200 ± 30	200 ± 30	400 ± 100	400 ± 100		A
Inner Resistance	Main Circuit Conduct Inner resistance	<20								mΩ
Charge	Charge voltage	LifePO4: S*3.65 Li-ion: S*4.2 LTO: S*2.8								V
Over charge protection	Over charge detect voltage	4.25±0.05								V
	over charge protection delay	1								S
	over charge release voltage	4.15±0.05								V
Balance	Balance detect Voltage	4.13								V
	Balance release voltage	4.13								V
	Balance current	30±5								mA
Over discharge protection	Over discharge detect	2.7±0.05								V
	Over discharge detect delay	1								S
	Over discharge release voltage	3.0±0.05								V
Over Charge current protection	Over discharge current detect delay	1								S
	Over discharge current protection release condition	Off load								

Over Charge current protection	Over discharge current detect delay	1		S
	Over discharge current protection release condition	Off load		
Short Circuit protection	Short Circuit protection condition	Short circuit of external load		
	Short circuit detect delay	200-500	The actual results are based on the DALY test sent back by the customer.	μS
	Short circuit protection release	Off load		
Temp Protect	Temperature protection degrees	Charge： -20~55，Discharge： -40~75		℃
Self Consumption	Working current	100-200		μA
	Sleeping current(over-discharge)	0		μA
Working Temp	Temp range	-20~60		℃
Storing Temp	Temp range	-40~85		℃