PowiDian

Lithium Ion Batteries

v 1.0

Lithium Ion Batteries

Lithium ion batteries are more powerful and provide more energy for high consumption than traditional lead–acid batteries. They can be discharged with up to 80 % compared to the traditional 30% to 50% without damaging the battery and are charged extremely fast, in down to 50 minutes for a 12VDC – 100Ah lithium ion battery.

+ Fast charging
+ Long lifetime
+ Low weight
+ Powerful

Lithium batteries have a uniquely long lifetime of 3000 charge/ discharge cycles. The batteries are compact and very light – by switching to lithium you may reduce the weight of your applications significantly.

Charging a lithium ion battery from an alternator is both efficient and fast compared to lead-acid batteries. It just requires a CDR Battery Separator or Converter between the starter battery and lithium ion battery.

Lithium battery packs are built of a number of individual lithium cells which must all maintain the same voltage for the battery to stay functional.

Therefore, all lithium power solutions from PowiDian have an integrated Battery Management System (BMS) that automatically balances the cells during charge, discharge and in idle mode. The BMS monitors the voltage and temperature of each lithium ion cell which influences the functionality of the battery.

Our BMSs include an electronic MOSFET based safety breaker that prevents short circuits, for safe and reliable use. Just plug the lithium battery in, and you're ready to go.

Lithium Ion Battery 12V–60 Ah

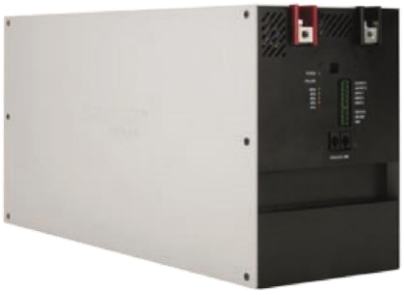
Capacity	**792Wh**
Efficient capacity (80% DOD):	**634Wh**
12VDC output	
Continuously:	**60A**
10min:	**100A**
5sec:	**>500A**
Operation times*	
200W @ 230V:	**2hr : 30min**
500W @ 230V:	**1hr : 10min**
1000W @ 230V:	**35min**
Charging times	
30A:	**1hr : 45min**
50A:	**1hr**

Lithium Ion Battery 12V-100 Ah

Capacity:	**1320 Wh**
Efficient capacity (80% DOD):	**1056Wh**
12VDC output	
Continuously:	**100A**
10min:	**200A**
5sec:	**>500A**
Operation times*	
200W @ 230V:	**4hr : 30min**
500W @ 230V:	**1hr : 45min**
2000W @ 230V:	**25min**
Charging times	
50A:	**1hr : 40min**
100A:	**50min**

Lithium Ion Battery 24V-100 Ah

Capacity:	**2640 Wh**
Efficient capacity (80% DOD):	**2112Wh**
24VDC output	
Continuously:	**100A**
10min:	**200A**
5sec:	**>500A**
Operation times*	
200W @ 230V:	**9hr**
500W @ 230V:	**3hr : 30min**
2000W @ 230V:	**45min**
Charging times	
50A:	**1hr : 40min**
100A:	**55min**



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Lithium Ion Battery:	12V – 60Ah Li–Ion	12V – 100Ah Li–Ion	24V – 100Ah Li–Ion
Model no.:	012-00001GF	012-00002GF	012-00004GF
Nominal capacity:	60Ah	100Ah	100Ah
Nominal battery voltage:	12 VDC	12 VDC	24 VDC
Operation voltage discharge:	9.2 VDC	9.2 VDC	18.4 VDC
Operation voltage charge:	15 VDC	15 VDC	30 VDC
Cell voltage min cut-off:	2.3 VDC	2.3 VDC	2.3 VDC
Cell voltage max cut-off:	4.2 VDC	4.2 VDC	4.2 VDC
Continuous discharge current:	60 A	100 A	100 A
Max discharge Impulse current:			
10 min.	100A (temp. controlled)	200 A (temp. controlled)	200 A (temp. controlled)
5 sec.	>500 A	>500 A	>500 A
uSec.	>1000 A	>1000 A	>1000 A
Continuous charge current:	60 A	100 A	100 A
Standard charge/discharge current:	30 A	50 A	50 A
Lifecycle 80%DOD:	>3000	>3000	>3000
Lifecycle 70%DOD:	>5000	>5000	>5000
Operating temperature:	-40°C~+50°C	-40°C~+50°C	-40°C~+50°C
Cooling:	Passive	Forced fan	Forced fan
Inputs (wakeup function):	3	3	3
Outputs (Open Collector):	2	2	2
Communication:	CAN (SAE J1939) - CP SW	CAN (SAE J1939) - CP SW	CAN (SAE J1939) - CP SW
Parallel connection:	1 to 20	1 to 20	1 to 20
Self-discharge rate per month (Sleep mode):	<3%	<3%	<3%
Operating mode consumption:	<50mA	350mA	180mA
Sleep mode consumption:	<2mA	<2mA	<2mA
Connection terminals:	M8 screw	M8 screw	M8 screw
Chemistry:	LiFeYPO4	LiFeYPO4	LiFeYPO4
Protection:	IP21	IP21	IP21
Watt hours:	792Wh	1320Wh	2640Wh
Weight of cells:	10kg	14kg	28kg
Weight:	12,5kg	19kg	37,2kg
Dimensions (WxHxD):	70,5x270x468 mm	192x274x301 mm	192x274x558 mm
Package weight (total):	NA	21kg	39kg
Package dimensions WxHxD (mm):	NA	285x330x390	330x360x685

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