



HP602030 LFP 40

40 Ah LFP Lithium Ion Battery Cell

High Power Cell
3.2 V / 128 Wh

The lithium iron phosphate battery cell **HP602030 LFP 40** is ideally suited for applications requiring high power density, high charge and discharge rates and very safe operation.

Features and Benefits

- ▲ Very safe cell chemistry
- ▲ Robust stainless-steel casing avoids corrosion and provides shock resistance for harsh environment applications
- ▲ Ultra-high maximum pulse discharge to meet exceptional peak demands
- ▲ M12 terminals for easy assembly and low resistance interfaces
- ▲ Suitable for low temperature operation
- ▲ Made in Germany
- ▲ UN 38.3 certified

Mechanical Characteristics

Diameter	60	mm
Length	232	mm
Length without terminals	203	mm
Weight	1.3	kg
Volume	0.57	l

Chemical Characteristics

Cathode	Lithium Iron Phosphate (LFP)
Anode	Graphite

Electrical Characteristics

Maximum capacity @ 1 C @ 25 °C	42	Ah
Nominal capacity @ 1 C @ 25 °C	40	Ah
Nominal operating voltage	3.2	V
Charging voltage	3.5	V
Recommended cut-off discharge voltage	2.5	V
Energy	128	Wh

Discharge current @ 25 °C

Recommended	80	A (2 C)
Maximum continuous	800	A (20 C)
Maximum pulse (2 s)	1,600	A (40 C)

Low temperature performance

AC impedance (1 kHz)	See Chart
DC resistance (2 s pulse @ 20 C / 50 % SoC)	< 0.3 mΩ
Specific energy	< 0.7 mΩ
Energy density	99 Wh/kg
	223 Wh/l

Specific power

Continuous discharge @ 20 C / 50 % SoC	1,750	W/kg
2 s pulse discharge @ 40 C / 50 % SoC	2,400	W/kg

Power density

Continuous discharge @ 20 C / 50 % SoC	3,900	W/l
2 s pulse discharge @ 40 C / 50 % SoC	5,400	W/l

Applications and Markets

- ▲ Hybrid electric drives
- ▲ Electric drives
- ▲ Load leveling and peak shaving
- ▲ Boosting and range extension
- ▲ Space
- ▲ Aerospace
- ▲ Defense
- ▲ Marine
- ▲ Heavy duty vehicles
- ▲ Off-Road vehicles
- ▲ Rail and transport
- ▲ Mining

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Operating Conditions

Recommended charging method	Constant Current/ Constant Voltage
Recommended charging voltage	3.5 V (max. 3.6 V)
Recommended continuous charging current	40 A (1 C)
Maximum continuous charging current	120 A (3 C)

Maximum pulse charge current (15 s)
 (max. 70 % SoC, average current < 120 A) 320 A (8 C)

Absolute lower voltage limit for discharge

Continuous @ 20 °C (-30 °C to 60 °C)	2.0 V
Pulse @ 40 °C (-30 °C to 60 °C)	1.5 V

Storage and transport conditions

	25 to 50 % SoC
Maximum temperature range	-40 °C to 60 °C
Recommended temperature range	10 °C to 25 °C

Operating temperature

Discharge	-30 °C to 60 °C
Charge (recommended)	-10 °C to 40 °C

Cycle life @ 20 °C (EoL @ 80 % of nominal capacity)

100 % DoD, 2 C	> 5,000 cycles
80 % DoD, 2 C	> 6,250 cycles

