

## Double-Layer Capacitor (SuperCap) Modules with Very High Capacitances

### Special Features

- Modules with very high capacitance values from 62 F to 500 F and rated voltages from 16 VDC to 125 VDC
- Discharge current up to 1900 A
- Maintenance-free
- Series connected
- Actively balanced
- According to RoHS 2011/65/EU

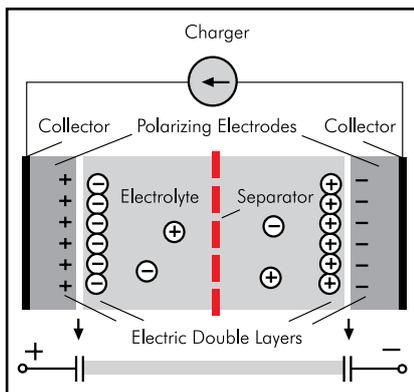
### Construction

**Encapsulation:** Metal case IP65

**Terminal tread size:** M8 / M10

**Marking:** Colour: Black. Marking: Gold

**Internal construction:**



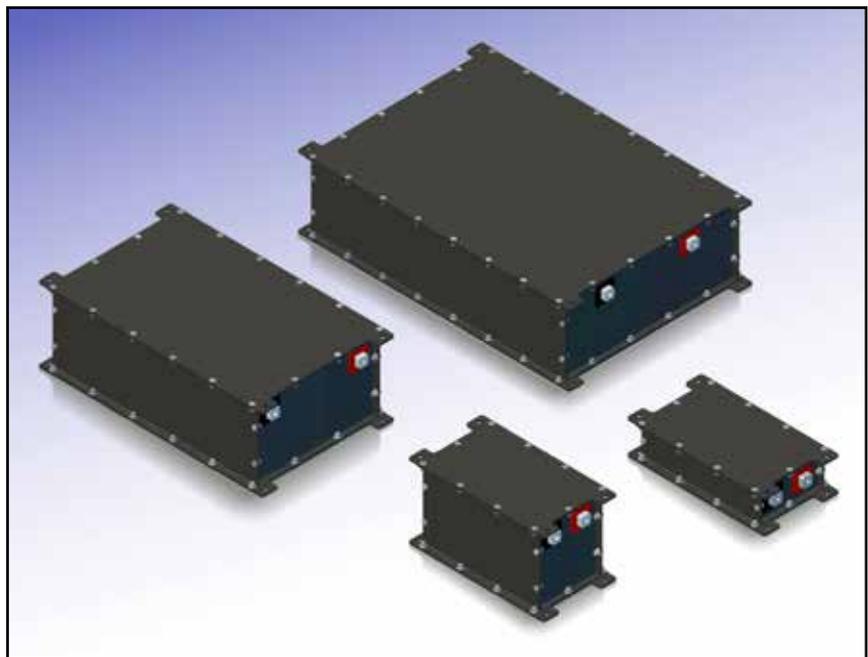
The WIMA PowerBlock range has a modular design. The configurations displayed are representative examples which at any time can be adapted in terms of capacitance, voltage or dimensions. Customized solutions can be realized on request.

### Technical Options on Request

- Temperature monitoring
- Overvoltage signal
- Voltage monitoring
- Industrial connector/CAN-connector
- Application-adapted cooling
- Application-specific protection classes

### General Data

U <sub>R</sub>	C <sub>N</sub>	Dimensions			Part number
		W	H	L	
16 V	105 F	157	69	250	MCPBA0B105MC00QV00
	500 F	157	156	250	MCPBA0B500MC00QV00
62.5 V	125 F	283	156	439	MCPBB4B125MC00QV00
125 V	62 F	409	156	575	MCPBDA620MC00QV00



### Application:

WIMA PowerBlock modules store energy and release it within short time in e.g.:

- Motor start in construction, agriculture and earth moving machines, trucks, busses, vessels, generators
- Railway technology e.g. locomotives, electric tramway, metro etc.
- Hybrid and heavy transportation in e.g. construction, agricultural and forest machines, city busses, forklifts, cranes etc.
- Automated guided vehicles (AGV) in production facilities, in-plant logistic systems etc.
- Uninterruptible power supply (UPS) in hospitals, telecommunication systems, oil and gas extraction etc.
- Wind power systems e.g. in pitch control.

### Advantages:

- Fast supply of several 100 - 1000 A in direct current operation
- Operating temperature range from -40° C to +65° C
- Maintenance-free operation with up to 1 million charge/discharge cycles
- Life expectancy >10 years
- Low weight against batteries or secondary batteries
- Environmentally friendly materials
- No risk of damage do to complete discharge of the component
- Very fast recharge of the PowerBlock.

### Conclusion:

The use of PowerBlocks as energy storage increases efficiency and life time of the applications, saves weight and cost for maintenance, and is environmentally friendly.

## Continuation

### Technical Data

<b>Rated capacitance:</b>	C <sub>N</sub> [F]	<b>105</b>	<b>500</b>	<b>125</b>	<b>62</b>
<b>Capacitance tolerance:</b>	[%]	0%/+20%			
<b>Rated voltage:</b>	U <sub>R</sub> [V]	<b>16</b>		<b>62.5</b>	<b>125</b>
<b>Max. continuous current<sup>1)</sup>:</b>	I <sub>C</sub> [A, rms]	54	130	130	130
<b>Current, peak (1 sec):</b>	I <sub>P</sub> [A]	up to 680	up to 1900	up to 1900	up to 1900
<b>Max. ESR, initial:</b>	R <sub>bc</sub> [mΩ]	5.2	2.1	8.3	16.4
<b>Max. stored energy: ±20%</b>	E <sub>max</sub> [Wh]	3.7	17.8	67.8	134.5
<b>Operating temperature:</b>	T <sub>op</sub> [°C]	-40° C ... +65° C			
<b>Storage temperature:</b>	T <sub>st</sub> [°C]	-40° C ... +70° C			
<b>Weight:</b>	m [kg]	2.3	4.4	16	31.9
<b>Volume:</b>	V [l]	2.7	6.1	19.4	36.7

### Additional Data

<b>Case:</b>	-	AlMg3
<b>Lug terminals:</b>	-	M8 / M10

### Comparative Data

<b>Lifetime:</b>					
in hours <sup>2)</sup>	[h]	90 000, rated voltage, 25° C			
in cycles <sup>3)</sup>	cycles	>1 million, rated voltage, 25° C			
<b>Energy density:</b>					
gravimetric	E <sub>d</sub> [Wh/kg]	1.62	4.03	4.24	4.21
volumetric	E <sub>v</sub> [Wh/l]	1.38	2.9	3.5	3.67

M10 x 1.5 negative terminal  
tread depth: 20 - 22 mm  
max. torque 15 Nm

M8 x 1.25 positive terminal  
tread depth: 20 - 22 mm  
max. torque 15 Nm

Dims. in mm.

C <sub>N</sub>	W ±1	H ±1	L ±1	W1 ±1	L1 ±1	a ±1	b ±1
62 F	409	156	575	376	555	97.1	189
105 F	157	69	250	695	230	47	63
125 F	283	156	439	250	419	46.6	189
500 F	157	156	250	124	230	47	63

1) ΔT = 40° C  
 2) Requirements: ΔC < 20% decrease, ESR < 100% increase.  
 3) Requirements: ΔC < 20% decrease, ESR < 100% increase.

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