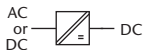


## Power Conversion Systems

Power Supplies | Converters | Inverters | Chargers | Systems





## DC / DC Converters, AC / DC Power Supplies &amp; Battery Chargers

- **DC Input voltage:** from 80 - 800V DC
- **AC Input voltage:** 115 / 230V AC, single phase or 200 / 400 / 480V AC, three phases
- **AC Input frequency:** 47 - 400Hz
- **Output voltage:** 5 / ... / 800V DC
- **Output current:** up to 800A
- **Output power:** 5 - 40kW

## Features

- Input / Output isolation
- Continuous short circuit protection
- Overvoltage protection
- Thermal shutdown with auto-restart
- Operational from - 40 to +75 °C
- Industrial grade components
- High efficiency through ZVS topology
- High power density
- Compact and robust design
- Fan or liquid cooled

## Specifications

## Input

Voltage range	narrowing of input voltage range optimizes the efficiency (pls. specify); unit switches off at under- and overvoltage
No-load input power	30W typical
Switch-on time	<1s typical
Inrush current	3-phase AC input: limited by thermistor (except for series 55xx, 64xx, 66xx, 67xx & CW/BW56xx)
Immunity	acc. to EN 61000-6-2

## Output

DC output voltages	5	9	12	15	24	28	48
	60	110	200	220	400	600	800
Output power	from 5 to 40kW						
Line regulation ( $\pm 10\%$ )	0.1%						
Load regulation (10-90%)	0.2%						
Load transient (10-90-10%)	6 % typical						
Response time to $\pm 1\%$	10 ms typical						
Turn-on rise time	Soft-start, 300 ms typical						
Ripple	$\leq 1\% + 30$ mV p-p						
Overload protection	current limited to 105-110% of $I_{nom}$						
Overvoltage protection	OVP switches off module with automatic return to operation; after 5 seconds, the unit will remain latched off						

Remote sense	standard for all series up to 150 V output, except for battery chargers; up to 10 % of $U_{nom}$ for output < 60 VDC, up to 6 V for output > 60 VDC
--------------	---

## General

Efficiency	80 - 95% typical
Operating temperature	-20 to +75 °C optional: -40 to +75 °C
Load derating	2.5%/°C above + 55 °C
Storage temperature	-40 to + 85 °C
Cooling (details see page 131)	☼ = fan cooled 💧 = liquid cooled
Humidity	up to 95 % RH, non-condensing
Temperature coefficient	0.02 % / °C typical
Safety / Construction	acc. to EN 60950-1 / EN 50178
Protection category (built-in module)	IP20 acc. to EN 60529, NEMA or others upon request
EMI	acc. to EN 61000-6-4, class A, optionally class B
MTBF	approx. 70,000h @ 40 °C acc. to MIL - HDBK - 217E (notice 1)
Connectors (details see page 132)	terminals / bolts / bars or CombiTacs for Series 5100



## Options (details see page 115)

### Input

- Inrush current limiting
- Reverse polarity protection for DC input

### Output

- Decoupling diode for redundant / parallel operation
- Active current sharing for parallel operation
- Remote on / off (inhibit)
- Reducing of current limiting at high ambient temperature

### Signals

via relay contacts

- Power ok (input)
- DC ok (output)

### Monitoring

of input / output voltage or current via

- analog signal
- interface card RS232 or CAN Bus

### Programming

of output voltage or current via

- potentiometer
- analog signal
- interface card RS232 or CAN Bus

### Programming of battery chargers

- Temperature compensated charging voltage
- Automatic / manual selection of charging characteristic

### Mechanics / environment:

- Wall mount
- Digital or analog V- and A-meter
- Increased mechanical strength
- Tropical protection
- Extended temperature range to  $-40^{\circ}\text{C}$





Selector Guide

Series	Output Power						DC input					AC input			
	[kW]	2 – 6 kW	6 – 8 kW	8 – 10 kW	10 – 15 kW	15 – 30 kW	30 – 40 kW	[V]	80 - 160 V	160 - 320 V	320 - 380 V	320 - 640 V	450 - 800 V	1-phase	3-phase
C/B 5100	2.4 – 5							320 – 800							
C/B 5200	4 – 5							80 – 800							
C/B 5600	4.5 – 6							80 – 800							
C/B 5300	5.6 – 7.5							80 – 800							
C/B 5700	6.5 – 8							80 – 800							
C/B 5400	7.5 – 10							80 – 800							
C/B 5800	8.5 – 12							80 – 800							
C/B 6400	20 – 22							320 – 800							
C/B 6600	20 – 30							320 – 800							
CW/BW 5300	5.6 – 8							80 – 800							
CW/BW 5400	5.6 – 10							320 – 800							
CW/BW 5500	7.5 – 15							80 – 800							
CW/BW 5600	9.1 – 20							320 – 800							
CW/BW 6600	24 – 30							320 – 800							
CW/BW 6700	20 – 40							320 – 800							
Step-Up Converters	2.4 – 40							80 – 800							

<sup>1)</sup> value (adjustable) to be advised

Further Information

Order example

Assistance in table use:

- 1 Select the column for input voltage range.
- 2 Select the row for the appropriate output voltage.
- 3 The intersection of both results in the module required.

For example:

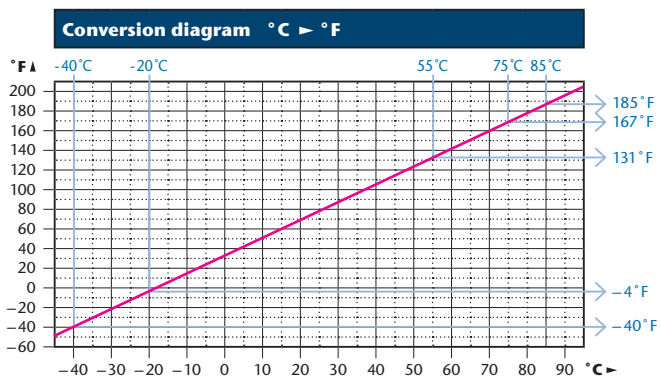
- 1 input voltage = 160 - 320 VDC
- 2 output voltage = 60 VDC @ 110 A
- 3 results in a C 5376 module.

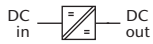
Conversion table

Height:	1 U = 44.45 mm
	1 U = 1.75"
Width:	1 TE = 5.08 mm
	1 TE = 0.2"
	1" = 25.4 mm
	19" = 483 mm
Weight:	1 kg = 2.2 lbs

▶ 5.6 kW		▶ 7.5 kW							
		Input VDC					Output VDC		
80–160 VDC	Output Amps	160–320 VDC	320–380 <sup>1)</sup> VDC	320–640 VDC	450–800 VDC	Output Amps	Adj.	Range	
C 5353	350	C 5373	C 5383 Z	C 5373 G	C 5373 K	350	15	14– 16	
C 5354	216	C 5374	C 5384 Z	C 5374 G	C 5374 K	288	24	23– 26	
C 5355	187	C 5375	C 5385 Z	C 5375 G	C 5375 K	250	28	26– 30	
C 5359	102	C 5379	C 5389 Z	C 5379 G	C 5379 K	136	48	45– 55	
C 5356	83	C 5376	C 5386 Z	C 5376 G	C 5376 K	110	60	58– 68	
C 5357	43	C 5377	C 5387 Z	C 5377 G	C 5377 K	58	110	100– 130	
C 5357 J	28	C 5377 J	C 5387 ZJ	C 5377 GJ	C 5377 KJ	38	200	190– 200	
C 5358	22.5	C 5378	C 5388 Z	C 5378 G	C 5378 K	30	220	200– 250	
C 5358 J	14	C 5378 J	C 5388 ZJ	C 5378 GJ	C 5378 KJ	19	400	380– 400	

nominal DC output voltage [V]												Package			Cooling		Page				
	5 V	9 V	12 V	15 V	24 V	28 V	48 V	60 V	110 V	200 V	220 V	400 V	600 V <sup>1)</sup>	800 V <sup>1)</sup>	Euro-cassette / 19" Rack mount Height [U]	19" Plug-in module Height [U]		Wall mount	Fan cooled	Liquid cooled	
24 / 28 / ... / 200															3/5			■		53	
5 / 9 / ... / 400	■	■	■	■	■	■	■	■	■	■	■	■	■	■		4			■		55
5 / 9 / ... / 400																6/9	■		■		57
12 / 24 / ... / 400																4			■		59
12 / 24 / ... / 400																6/9	■		■		61
24 / 28 / ... / 400																4			■		63
12 / 24 / ... / 400																6/9	■		■		65
48 / 60 / ... / 800																8			■		67
24 / 48 / ... / 800																10			■		69
12 / 24 / ... / 400																5				■	71
12 / 24 / ... / 400																3				■	73
24 / 28 / ... / 400																5				■	75
24 / 28 / ... / 400																5				■	77
48 / 60 / ... / 800																9				■	79
24 / 48 / ... / 800																10				■	81
80 / ... / 800															depending on module					83	





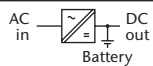
## DC / DC Converters

▶ 5 kW						
Input VDC			Output Amps	Cooling	Output VDC	
320–380 <sup>1)</sup> VDC	320–640 VDC	450–800 VDC			Adj.	Range
C 5184 Z	C 5174 G	C 5174 K	100	☼	24	23– 26
C 5185 Z	C 5175 G	C 5175 K	100	☼	28	26– 30
C 5189 Z	C 5179 G	C 5179 K	91	☼	48	45– 55
C 5186 Z	C 5176 G	C 5176 K	74	☼	60	58– 68
C 5187 Z	C 5177 G	C 5177 K	39	☼	110	100– 130
C 5187 ZJ	C 5177 GJ	C 5177 KJ	25	☼	200	190– 200



## AC / DC Power Supplies

▶ 5 kW						
Input VAC, 3-Phase		Output Amps	Cooling	Output VDC		
3x400 <sup>+15%</sup> <sub>-20%</sub>	3x480 <sup>+10%</sup> <sub>-15%</sub>			Adj.	Range	
C 5184 V	C 5194 V	100	☼	24	23– 26	
C 5185 V	C 5195 V	100	☼	28	26– 30	
C 5189 V	C 5199 V	91	☼	48	45– 55	
C 5186 V	C 5196 V	74	☼	60	58– 68	
C 5187 V	C 5197 V	39	☼	110	100– 130	
C 5187 VJ	C 5197 VJ	25	☼	200	190– 200	



## Battery Chargers

▶ 5 kW						
Input VAC, 3-Phase		Output Amps	Cooling	Output VDC		
3x400 <sup>+15%</sup> <sub>-20%</sub>	3x480 <sup>+10%</sup> <sub>-15%</sub>			Nom. Battery Voltage	Range	
B 5182 V	B 5192 V	100	☼	24	24– 32	
B 5184 V	B 5194 V	80	☼	48	48– 64	
B 5186 V	B 5196 V	62	☼	60	60– 80	
B 5187 V	B 5197 V	34	☼	110	110– 145	

## Series specific information

**Input**

- Hold-up time for AC input: 5ms typical @ nom. input voltage

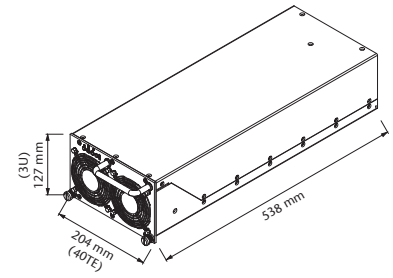
<sup>1)</sup> input supply from PFC also suitable

**General**

- optional: Cooling via speed-controlled fans (depending on temperature)
- optional: 19" sub-rack (3U or 5U) with terminals / bolts / bars

☼ = incl. fans

5U



**Standard**

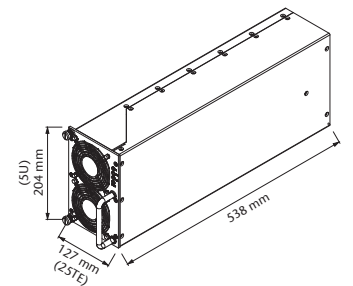
Pluggable module  
(for 3U sub-rack)

approx. 17 kg



**Optional**

3U, 19" sub-rack with 2 modules



**Standard**

Pluggable module  
(for 5U sub-rack)

approx. 17 kg



**Optional**

5U, 19" sub-rack with 3 modules



Series C / B 5200

www.schaeferpower.de



DC / DC Converters

▶ 4 kW			▶ 5 kW				Cooling	Output VDC	
Input VDC								Adj.	Range
80-160 VDC	Output Amps	160-320 VDC	320-380 <sup>1)</sup> VDC	320-640 VDC	450-800 VDC	Output Amps			
C 5250	350	C 5270	C 5280 Z	C 5270 G	C 5270 K	350	5	4.5- 5.5	
C 5251	350	C 5271	C 5281 Z	C 5271 G	C 5271 K	350	9	8- 10	
C 5252	305	C 5272	C 5282 Z	C 5272 G	C 5272 K	350	12	11- 13	
C 5253	250	C 5273	C 5283 Z	C 5273 G	C 5273 K	310	15	14- 16	
C 5254	154	C 5274	C 5284 Z	C 5274 G	C 5274 K	192	24	23- 26	
C 5255	133	C 5275	C 5285 Z	C 5275 G	C 5275 K	167	28	26- 30	
C 5259	73	C 5279	C 5289 Z	C 5279 G	C 5279 K	91	48	45- 55	
C 5256	59	C 5276	C 5286 Z	C 5276 G	C 5276 K	74	60	58- 68	
C 5257	31	C 5277	C 5287 Z	C 5277 G	C 5277 K	39	110	100- 130	
C 5257 J	20	C 5277 J	C 5287 ZJ	C 5277 GJ	C 5277 KJ	25	200	190-200	
C 5258	16	C 5278	C 5288 Z	C 5278 G	C 5278 K	20	220	200-250	
C 5258 J	10	C 5278 J	C 5288 ZJ	C 5278 GJ	C 5278 KJ	12.5	400	380-400	
C 5257H	6.66	C 5277 H	C 5287ZH	C 5277GH	C 5277KH	8.5	tba <sup>2)</sup>	570-600	
C 5258H	5	C 5278 H	C 5288ZH	C 5278GH	C 5278KH	6.5	tba <sup>2)</sup>	760-800	

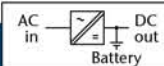
**new**  
Higher voltage upon request



AC / DC Power Supplies

▶ 5 kW			Output Amps	Cooling	Output VDC	
Input VAC, 3-Phase					Adj.	Range
3x200 <sup>+15%</sup> <sub>-20%</sub>	3x400 <sup>+15%</sup> <sub>-20%</sub>	3x480 <sup>+10%</sup> <sub>-15%</sub>				
C 5260 V	C 5280 V	C 5290 V	350	5	4.5- 5.5	
C 5261 V	C 5281 V	C 5291 V	350	9	8- 10	
C 5262 V	C 5282 V	C 5292 V	350	12	11- 13	
C 5263 V	C 5283 V	C 5293 V	310	15	14- 16	
C 5264 V	C 5284 V	C 5294 V	192	24	23- 26	
C 5265 V	C 5285 V	C 5295 V	167	28	26- 30	
C 5269 V	C 5289 V	C 5299 V	91	48	45- 55	
C 5266 V	C 5286 V	C 5296 V	74	60	58- 68	
C 5267 V	C 5287 V	C 5297 V	39	110	100- 130	
C 5267 VJ	C 5287 VJ	C 5297 VJ	25	200	190-200	
C 5268 V	C 5288 V	C 5298 V	20	220	200-250	
C 5268 VJ	C 5288 VJ	C 5298 VJ	12.5	400	380-400	
C 5267VH	C 5287VH	C 5297VH	8.5	tba <sup>2)</sup>	570-600	
C 5268VH	C 5288VH	C 5298VH	6.5	tba <sup>2)</sup>	760-800	

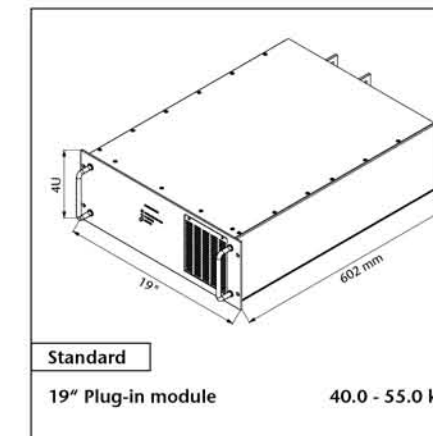
**new**  
Higher voltage upon request



Battery Chargers

▶ 5 kW			Output Amps	Cooling	Output VDC	
Input VAC, 3-Phase					Nom. Battery Voltage	Range
3x200 <sup>+15%</sup> <sub>-20%</sub>	3x400 <sup>+15%</sup> <sub>-20%</sub>	3x480 <sup>+10%</sup> <sub>-15%</sub>				
B 5261 V	B 5281 V	B 5291 V	310	12	12- 16	
B 5262 V	B 5282 V	B 5292 V	160	24	24- 32	
B 5264 V	B 5284 V	B 5294 V	80	48	48- 64	
B 5266 V	B 5286 V	B 5296 V	62	60	60- 80	
B 5267 V	B 5287 V	B 5297 V	34	110	110- 145	
B 5268 V	B 5288 V	B 5298 V	17	220	220-290	
B 5266VH	B 5286VH	B 5296VH	12.5	tba <sup>2)</sup>	380-400	
B 5267VH	B 5287VH	B 5297VH	8.5	tba <sup>2)</sup>	570-600	
B 5268VH	B 5288VH	B 5298VH	6.5	tba <sup>2)</sup>	760-800	

**new**  
Higher voltage upon request



4U



Series specific information

**Input**

- Hold-up time for AC input: 5ms typical @ nom. input voltage

<sup>1)</sup> input supply from PFC also suitable

**General**

- optional: Cooling via speed-controlled fans (depending on temperature)

• = incl. temperature controlled fans

<sup>2)</sup> tba = to be advised





DC / DC Converters

▶ 6 KW						Cooling	Output VDC	
Input VDC							Adj.	Range
80-160 VDC	160-320 VDC	320-380 <sup>1)</sup> VDC	320-640 VDC	450-800 VDC	Output Amps			
▲ C 5650	▲ C 5670	▲ C 5680 Z	▲ C 5670 G	▲ C 5670 K	400	●	5	4.5- 5.5
▲ C 5651	▲ C 5671	▲ C 5681 Z	▲ C 5671 G	▲ C 5671 K	400	●	9	8- 10
▲ C 5652	▲ C 5672	▲ C 5682 Z	▲ C 5672 G	▲ C 5672 K	400	●	12	11- 13
▲ C 5653	▲ C 5673	▲ C 5683 Z	▲ C 5673 G	▲ C 5673 K	375	●	15	14- 16
● C 5654	● C 5674	● C 5684 Z	● C 5674 G	● C 5674 K	230	●	24	23- 26
● C 5655	● C 5675	● C 5685 Z	● C 5675 G	● C 5675 K	200	●	28	26- 30
● C 5659	● C 5679	● C 5689 Z	● C 5679 G	● C 5679 K	110	●	48	45- 55
● C 5656	● C 5676	● C 5686 Z	● C 5676 G	● C 5676 K	88	●	60	58- 68
● C 5657	● C 5677	● C 5687 Z	● C 5677 G	● C 5677 K	46	●	110	100- 130
● C 5657 J	● C 5677 J	● C 5687 ZJ	● C 5677 GJ	● C 5677 KJ	30	●	200	190-200
● C 5658	● C 5678	● C 5688 Z	● C 5678 G	● C 5678 K	24	●	220	200-250
● C 5658 J	● C 5678 J	● C 5688 ZJ	● C 5678 GJ	● C 5678 KJ	15	●	400	380-400
● C 5657 H	● C 5677 H	● C 5687 ZH	● C 5677 GH	● C 5677 KH	10	●	tba <sup>2)</sup>	570-600
● C 5658 H	● C 5678 H	● C 5688 ZH	● C 5678 GH	● C 5678 KH	7.5	●	tba <sup>2)</sup>	760-800

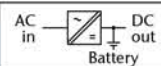
**new**  
Higher voltage upon request



AC / DC Power Supplies

▶ 4.5 KW			▶ 6 KW				Cooling	Output VDC	
Input VAC, 1-Phase			Input VAC, 3-Phase			Output Amps		Adj.	Range
115 ±20%	Output Amps	230 <sup>+15%</sup> <sub>-20%</sub>	3x200 <sup>+15%</sup> <sub>-20%</sub>	3x400 <sup>+15%</sup> <sub>-20%</sub>	3x480 <sup>+10%</sup> <sub>-15%</sub>				
■ C 5660	400	■ C 5680	■ C 5660 V	■ C 5680 V	■ C 5690 V	400	●	5	4.5- 5.5
■ C 5661	380	■ C 5681	■ C 5661 V	■ C 5681 V	■ C 5691 V	400	●	9	8- 10
■ C 5662	310	■ C 5682	■ C 5662 V	■ C 5682 V	■ C 5692 V	400	●	12	11- 13
■ C 5663	265	■ C 5683	■ C 5663 V	■ C 5683 V	■ C 5693 V	375	●	15	14- 16
▼ C 5664	170	▼ C 5684	▼ C 5664 V	▼ C 5684 V	▼ C 5694 V	230	●	24	23- 26
▼ C 5665	150	▼ C 5685	▼ C 5665 V	▼ C 5685 V	▼ C 5695 V	200	●	28	26- 30
▼ C 5669	80	▼ C 5689	▼ C 5669 V	▼ C 5689 V	▼ C 5699 V	110	●	48	45- 55
▼ C 5666	65	▼ C 5686	▼ C 5666 V	▼ C 5686 V	▼ C 5696 V	88	●	60	58- 68
▼ C 5667	35	▼ C 5687	▼ C 5667 V	▼ C 5687 V	▼ C 5697 V	46	●	110	100- 130
▼ C 5667 J	22	▼ C 5687 J	▼ C 5667 VJ	▼ C 5687 VJ	▼ C 5697 VJ	30	●	200	190-200
▼ C 5668	18	▼ C 5688	▼ C 5668 V	▼ C 5688 V	▼ C 5698 V	24	●	220	200-250
▼ C 5668 J	11	▼ C 5688 J	▼ C 5668 VJ	▼ C 5688 VJ	▼ C 5698 VJ	15	●	400	380-400
▼ C 5667H	7.5	▼ C 5687H	▼ C5667VH	▼ C5687VH	▼ C5697VH	10	●	tba <sup>2)</sup>	570-600
▼ C 5668H	5.625	▼ C 5688H	▼ C5668VH	▼ C5688VH	▼ C5698VH	7.5	●	tba <sup>2)</sup>	760-800

**new**  
Higher voltage upon request



Battery Chargers

▶ 4.5 KW			▶ 6 KW				Cooling	Output VDC	
Input VAC, 1-Phase			Input VAC, 3-Phase			Output Amps		Nom. Battery Voltage	Range
115 ±20%	Output Amps	230 <sup>+15%</sup> <sub>-20%</sub>	3x200 <sup>+15%</sup> <sub>-20%</sub>	3x400 <sup>+15%</sup> <sub>-20%</sub>	3x480 <sup>+10%</sup> <sub>-15%</sub>				
■ B 5661	265	■ B 5681	■ B 5661 V	■ B 5681 V	■ B 5691 V	375	●	12	12- 16
▼ B 5662	140	▼ B 5682	▼ B 5662 V	▼ B 5682 V	▼ B 5692 V	190	●	24	24- 32
▼ B 5664	70	▼ B 5684	▼ B 5664 V	▼ B 5684 V	▼ B 5694 V	95	●	48	48- 64
▼ B 5666	55	▼ B 5686	▼ B 5666 V	▼ B 5686 V	▼ B 5696 V	75	●	60	60- 80
▼ B 5667	31	▼ B 5687	▼ B 5667 V	▼ B 5687 V	▼ B 5697 V	41	●	110	110- 145
▼ B 5668	16	▼ B 5688	▼ B 5668 V	▼ B 5688 V	▼ B 5698 V	21	●	220	220- 290
▼ B 5666H	11.25	▼ B 5686H	▼ B5666VH	▼ B5686VH	▼ B5696VH	15	●	tba <sup>2)</sup>	380-400
▼ B 5667H	7.5	▼ B 5687H	▼ B5667VH	▼ B5687VH	▼ B5697VH	10	●	tba <sup>2)</sup>	570-600
▼ B 5668H	5.625	▼ B 5688H	▼ B5668VH	▼ B5688VH	▼ B5698VH	7.5	●	tba <sup>2)</sup>	760-800

**new**  
Higher voltage upon request

Series specific information

Input

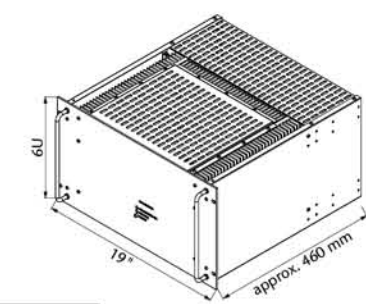
- Inrush current for 230V AC and 3-phase input: limited by thermistor
- Hold-up time for AC input: 5ms typical @ nom. input voltage
- <sup>1)</sup>input supply from PFC also suitable

General

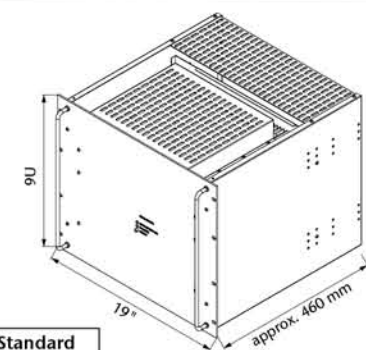
- = incl. temperature controlled fans
- <sup>2)</sup> tba = to be advised



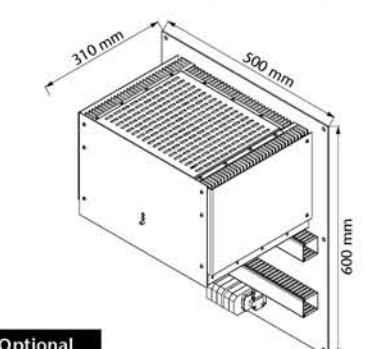
6U / 9U



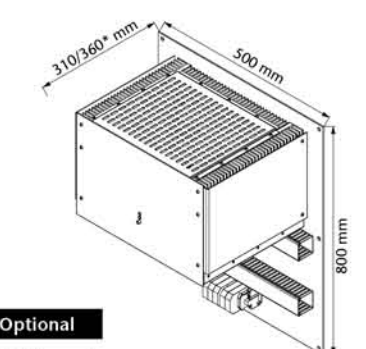
Standard  
19" Plug-in module  
● 35-50 kg ▼ 50-65 kg



Standard  
19" Plug-in module  
▲ 50-65 kg ■ 65-75 kg



Optional  
Wall mount  
● 35-50 kg



Optional  
Wall mount  
▼▲ 50-65 kg ■ 65-75 kg  
\*) applicable to output current > 350 A

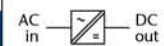




DC / DC Converters

▶ 5.6 kW		▶ 7.5 kW					Cooling	Output VDC	
Input VDC								Adj.	Range
80-160 VDC	Output Amps	160-320 VDC	320-380 <sup>1)</sup> VDC	320-640 VDC	450-800 VDC	Output Amps			
C 5353	350	C 5373	C 5383 Z	C 5373 G	C 5373 K	350	•	15	14- 16
C 5354	216	C 5374	C 5384 Z	C 5374 G	C 5374 K	288	•	24	23- 26
C 5355	187	C 5375	C 5385 Z	C 5375 G	C 5375 K	250	•	28	26- 30
C 5359	102	C 5379	C 5389 Z	C 5379 G	C 5379 K	136	•	48	45- 55
C 5356	83	C 5376	C 5386 Z	C 5376 G	C 5376 K	110	•	60	58- 68
C 5357	43	C 5377	C 5387 Z	C 5377 G	C 5377 K	58	•	110	100- 130
C 5357 J	28	C 5377 J	C 5387 ZJ	C 5377 GJ	C 5377 KJ	38	•	200	190- 200
C 5358	22.5	C 5378	C 5388 Z	C 5378 G	C 5378 K	30	•	220	200- 250
C 5358 J	14	C 5378 J	C 5388 ZJ	C 5378 GJ	C 5378 KJ	19	•	400	380- 400
C 5357H	9.5	C 5377H	C 5387ZH	C 5377GH	C 5377KH	12.5	•	tba <sup>2)</sup>	570- 600
C 5358H	7	C 5378H	C 5388ZH	C 5378GH	C 5378KH	9.5	•	tba <sup>2)</sup>	760- 800

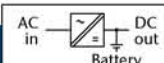
**new**  
Higher voltage upon request



AC / DC Power Supplies

▶ 7.5 kW							Cooling	Output VDC	
Input VAC, 3-Phase						Output Amps		Adj.	Range
3x200 <sup>+15% -20%</sup>	3x400 <sup>+15% -20%</sup>	3x480 <sup>+10% -15%</sup>							
C 5363 V	C 5383 V	C 5393 V	350	•	15	14- 16			
C 5364 V	C 5384 V	C 5394 V	288	•	24	23- 26			
C 5365 V	C 5385 V	C 5395 V	250	•	28	26- 30			
C 5369 V	C 5389 V	C 5399 V	136	•	48	45- 55			
C 5366 V	C 5386 V	C 5396 V	110	•	60	58- 68			
C 5367 V	C 5387 V	C 5397 V	58	•	110	100- 130			
C 5367 VJ	C 5387 VJ	C 5397 VJ	38	•	200	190- 200			
C 5368 V	C 5388 V	C 5398 V	30	•	220	200- 250			
C 5368 VJ	C 5388 VJ	C 5398 VJ	19	•	400	380- 400			
C 5367VH	C 5387VH	C 5397VH	12.5	•	tba <sup>2)</sup>	570- 600			
C 5368VH	C 5388VH	C 5398VH	9.5	•	tba <sup>2)</sup>	760- 800			

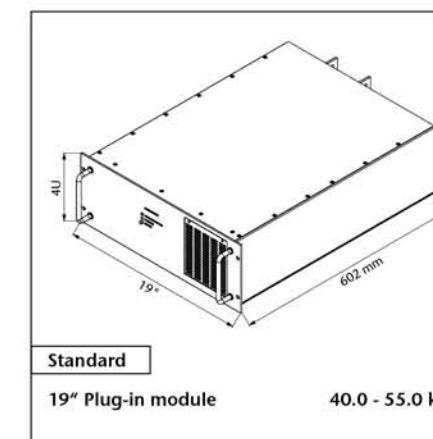
**new**  
Higher voltage upon request



Battery Chargers

▶ 7.5 kW							Cooling	Output VDC	
Input VAC, 3-Phase						Output Amps		Nom. Battery Voltage	Range
3x200 <sup>+15% -20%</sup>	3x400 <sup>+15% -20%</sup>	3x480 <sup>+10% -15%</sup>							
B 5361 V	B 5381 V	B 5391 V	350	•	12	12- 16			
B 5362 V	B 5382 V	B 5392 V	235	•	24	24- 32			
B 5364 V	B 5384 V	B 5394 V	115	•	48	48- 64			
B 5366 V	B 5386 V	B 5396 V	93	•	60	60- 80			
B 5367 V	B 5387 V	B 5397 V	52	•	110	110- 145			
B 5368 V	B 5388 V	B 5398 V	26	•	220	220- 290			
B 5366VH	B 5386VH	B 5396VH	19	•	tba <sup>2)</sup>	380- 400			
B 5367VH	B 5387VH	B 5397VH	12.5	•	tba <sup>2)</sup>	570- 600			
B 5368VH	B 5388VH	B 5398VH	9.5	•	tba <sup>2)</sup>	760- 800			

**new**  
Higher voltage upon request



4U



Series specific information

**Input**

- Hold-up time for AC input: 4ms typical @ nom. input voltage

<sup>1)</sup> input supply from PFC also suitable

**General**

- optional: Cooling via speed-controlled fans (depending on temperature)

• = incl. fans

<sup>2)</sup> tba = to be advised

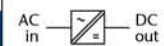




DC / DC Converters

▶ 8 KW									
Input VDC						Cooling	Output VDC		
80-160 VDC	160-320 VDC	320-380 <sup>1)</sup> VDC	320-640 VDC	450-800 VDC	Output Amps		Adj.	Range	
▲ C 5753	▲ C 5773	▲ C 5783 Z	▲ C 5773 G	▲ C 5773 K	400	●	15	14- 16	
▲ C 5754	▲ C 5774	▲ C 5784 Z	▲ C 5774 G	▲ C 5774 K	310	●	24	23- 26	
▲ C 5755	▲ C 5775	▲ C 5785 Z	▲ C 5775 G	▲ C 5775 K	270	●	28	26- 30	
▲ C 5759	● C 5779	● C 5789 Z	● C 5779 G	● C 5779 K	145	●	48	45- 55	
▲ C 5756	● C 5776	● C 5786 Z	● C 5776 G	● C 5776 K	120	●	60	58- 68	
▲ C 5757	● C 5777	● C 5787 Z	● C 5777 G	● C 5777 K	62	●	110	100- 130	
▲ C 5757 J	● C 5777 J	● C 5787 ZJ	● C 5777 GJ	● C 5777 KJ	40	●	200	190- 200	
▲ C 5758	● C 5778	● C 5788 Z	● C 5778 G	● C 5778 K	32	●	220	200- 250	
▲ C 5758 J	● C 5778 J	● C 5788 ZJ	● C 5778 GJ	● C 5778 KJ	20	●	400	380- 400	
▲ C 5757 H	● C 5777 H	● C 5787 H	● C 5777 GH	● C 5777 KH	13.5	●	tba <sup>2)</sup>	570- 600	
▲ C 5758 H	● C 5778 H	● C 5788 H	● C 5778 GH	● C 5778 KH	10	●	tba <sup>2)</sup>	760- 800	

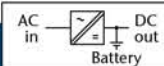
**new**  
Higher voltage upon request



AC / DC Power Supplies

▶ 6.5 KW				▶ 8 KW					
Input VAC, 1-Phase		Input VAC, 3-Phase				Output Amps	Cooling	Output VDC	
115 ±20%	Output Amps	230 <sup>+15%</sup> <sub>-20%</sub>	3x200 <sup>+15%</sup> <sub>-20%</sub>	3x400 <sup>+15%</sup> <sub>-20%</sub>	3x480 <sup>+10%</sup> <sub>-15%</sub>			Adj.	Range
■ C 5761	400	—	—	—	—	—	●	9	8- 10
■ C 5762	400	—	—	—	—	—	●	12	11- 13
■ C 5763	385	■ C 5783	■ C 5763 V	■ C 5783 V	■ C 5793 V	400	●	15	14- 16
■ C 5764	250	■ C 5784	■ C 5764 V	■ C 5784 V	■ C 5794 V	310	●	24	23- 26
■ C 5765	215	■ C 5785	■ C 5765 V	■ C 5785 V	■ C 5795 V	270	●	28	26- 30
■ C 5769	115	▼ C 5789	▼ C 5769 V	▼ C 5789 V	▼ C 5799 V	145	●	48	45- 55
■ C 5766	95	▼ C 5786	▼ C 5766 V	▼ C 5786 V	▼ C 5796 V	120	●	60	58- 68
■ C 5767	50	▼ C 5787	▼ C 5767 V	▼ C 5787 V	▼ C 5797 V	62	●	110	100- 130
■ C 5767 J	32	▼ C 5787 J	▼ C 5767 VJ	▼ C 5787 VJ	▼ C 5797 VJ	40	●	200	190- 200
■ C 5768	26	▼ C 5788	▼ C 5768 V	▼ C 5788 V	▼ C 5798 V	32	●	220	200- 250
■ C 5768 J	16	▼ C 5788 J	▼ C 5768 VJ	▼ C 5788 VJ	▼ C 5798 VJ	20	●	400	380- 400
■ C 5767 H	10.8	▼ C 5787 H	▼ C 5767 VH	▼ C 5787 VH	▼ C 5797 VH	13.5	●	tba <sup>2)</sup>	570- 600
■ C 5768 H	8	▼ C 5788 H	▼ C 5768 VH	▼ C 5788 VH	▼ C 5798 VH	10	●	tba <sup>2)</sup>	760- 800

**new**  
Higher voltage upon request



Battery Chargers

▶ 6.5 KW				▶ 8 KW					
Input VAC, 1-Phase		Input VAC, 3-Phase				Output Amps	Cooling	Output VDC	
115 ±20%	Output Amps	230 <sup>+15%</sup> <sub>-20%</sub>	3x200 <sup>+15%</sup> <sub>-20%</sub>	3x400 <sup>+15%</sup> <sub>-20%</sub>	3x480 <sup>+10%</sup> <sub>-15%</sub>			Nom. Battery Voltage	Range
■ B 5761	385	■ B 5781	■ B 5761 V	■ B 5781 V	■ B 5791 V	400	●	12	12- 16
■ B 5762	200	■ B 5782	■ B 5762 V	■ B 5782 V	■ B 5792 V	250	●	24	24- 32
■ B 5764	100	▼ B 5784	▼ B 5764 V	▼ B 5784 V	▼ B 5794 V	125	●	48	48- 64
■ B 5766	80	▼ B 5786	▼ B 5766 V	▼ B 5786 V	▼ B 5796 V	100	●	60	60- 80
■ B 5767	45	▼ B 5787	▼ B 5767 V	▼ B 5787 V	▼ B 5797 V	55	●	110	110- 145
■ B 5768	22	▼ B 5788	▼ B 5768 V	▼ B 5788 V	▼ B 5798 V	28	●	220	220- 290
■ B 5766H	16.25	▼ B 5786H	▼ B 5766 VH	▼ B 5786 VH	▼ B 5796 VH	20	●	tba <sup>2)</sup>	380- 400
■ B 5767H	10.83	▼ B 5787H	▼ B 5767 VH	▼ B 5787 VH	▼ B 5797 VH	13.5	●	tba <sup>2)</sup>	570- 600
■ B 5768H	8.125	▼ B 5788H	▼ B 5768 VH	▼ B 5788 VH	▼ B 5798 VH	10	●	tba <sup>2)</sup>	760- 800

**new**  
Higher voltage upon request

Series specific information

Input

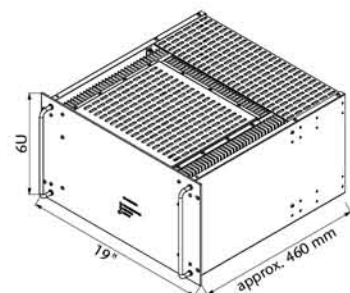
- Hold-up time for AC input: 4ms typical @ nom. input voltage
- <sup>1)</sup> input supply from PFC also suitable

General

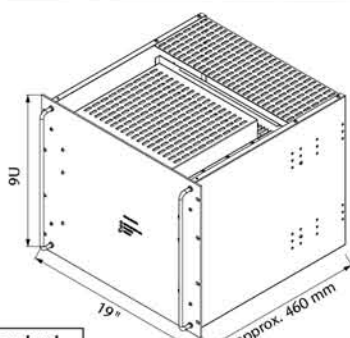
- = incl. temperature controlled fans
- <sup>2)</sup> tba = to be advised



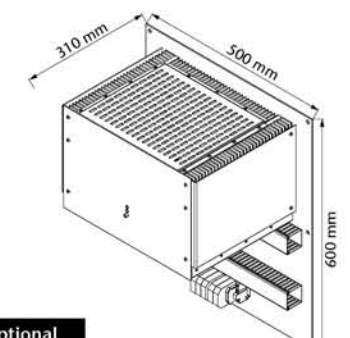
6U / 9U



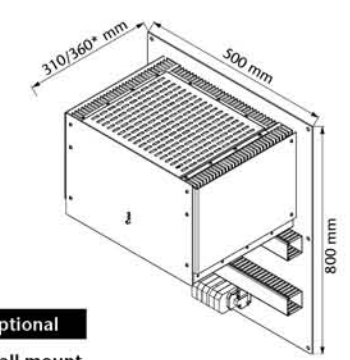
Standard  
19" Plug-in module  
● 35-50 kg ▼ 50-65 kg



Standard  
19" Plug-in module  
▲ 50-65 kg ■ 65-75 kg



Optional  
Wall mount  
● 35-50 kg



Optional  
Wall mount  
▼▲ 50-65 kg ■ 65-75 kg  
\*) applicable to output current > 350 A





DC / DC Converters

7.5 KW			10 KW				Cooling	Output VDC	
Input VDC								Adj.	Range
80-160 VDC	Output Amps	160-320 VDC	320-380 <sup>1)</sup> VDC	320-640 VDC	450-800 VDC	Output Amps			
C 5454	288	C 5474	C 5484 Z	C 5474 G	C 5474 K	350	•	24	23- 26
C 5455	250	C 5475	C 5485 Z	C 5475 G	C 5475 K	330	•	28	26- 30
C 5459	136	C 5479	C 5489 Z	C 5479 G	C 5479 K	182	•	48	45- 55
C 5456	110	C 5476	C 5486 Z	C 5476 G	C 5476 K	147	•	60	58- 68
C 5457	58	C 5477	C 5487 Z	C 5477 G	C 5477 K	77	•	110	100- 130
C 5457 J	38	C 5477 J	C 5487 ZJ	C 5477 GJ	C 5477 KJ	50	•	200	190- 200
C 5458	30	C 5478	C 5488 Z	C 5478 G	C 5478 K	40	•	220	200- 250
C 5458 J	19	C 5478 J	C 5488 ZJ	C 5478 GJ	C 5478 KJ	25	•	400	380- 400
C 5457H	12.5	C 5477H	C 5487ZH	C 5477GH	C 5477KH	17	•	tba <sup>2)</sup>	570- 600
C 5458H	9.375	C 5478H	C 5488ZH	C 5478GH	C 5478KH	12.5	•	tba <sup>2)</sup>	760- 800

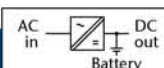
**new**  
Higher voltage upon request



AC / DC Power Supplies

10 KW						Cooling	Output VDC	
Input VAC, 3-Phase			Output Amps	Adj.	Range			
3x200 <sup>+15%</sup> <sub>-20%</sub>	3x400 <sup>+15%</sup> <sub>-20%</sub>	3x480 <sup>+10%</sup> <sub>-15%</sub>						
C 5464 V	C 5484 V	C 5494 V	350	•	24	23- 26		
C 5465 V	C 5485 V	C 5495 V	330	•	28	26- 30		
C 5469 V	C 5489 V	C 5499 V	182	•	48	45- 55		
C 5466 V	C 5486 V	C 5496 V	147	•	60	58- 68		
C 5467 V	C 5487 V	C 5497 V	77	•	110	100- 130		
C 5467 VJ	C 5487 VJ	C 5497 VJ	50	•	200	190- 200		
C 5468 V	C 5488 V	C 5498 V	40	•	220	200- 250		
C 5468 VJ	C 5488 VJ	C 5498 VJ	25	•	400	380- 400		
C 5467VH	C 5487VH	C 5497VH	17	•	tba <sup>2)</sup>	570- 600		
C 5468VH	C 5488VH	C 5498VH	12.5	•	tba <sup>2)</sup>	760- 800		

**new**  
Higher voltage upon request



Battery Chargers

10 KW						Cooling	Output VDC	
Input VAC, 3-Phase			Output Amps	Nom. Battery Voltage	Range			
3x200 <sup>+15%</sup> <sub>-20%</sub>	3x400 <sup>+15%</sup> <sub>-20%</sub>	3x480 <sup>+10%</sup> <sub>-15%</sub>						
B 5462 V	B 5482 V	B 5492 V	320	•	24	24- 32		
B 5464 V	B 5484 V	B 5494 V	160	•	48	48- 64		
B 5466 V	B 5486 V	B 5496 V	130	•	60	60- 80		
B 5467 V	B 5487 V	B 5497 V	70	•	110	110- 145		
B 5468 V	B 5488 V	B 5498 V	35	•	220	220- 290		
B 5466VH	B 5486VH	B 5496VH	25	•	tba <sup>2)</sup>	380- 400		
B 5467VH	B 5487VH	B 5497VH	17	•	tba <sup>2)</sup>	570- 600		
B 5468VH	B 5488VH	B 5498VH	12.5	•	tba <sup>2)</sup>	760- 800		

**new**  
Higher voltage upon request

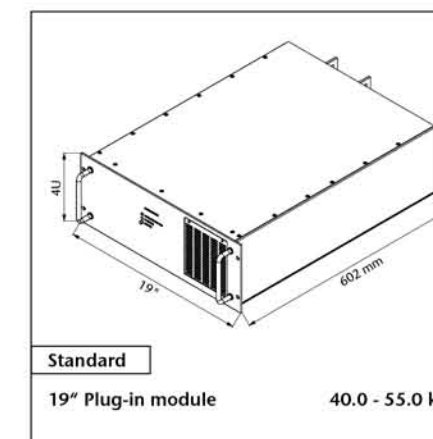
Series specific information

Input

- Hold-up time for AC input: 2.5ms typical @ nom. input voltage
- <sup>1)</sup> input supply from PFC also suitable

General

- optional: Cooling via speed-controlled fans (depending on temperature)
- = incl. fans
- <sup>2)</sup> tba = to be advised



4U



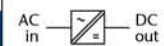




DC / DC Converters

▶ 12 KW						Cooling	Output VDC	
Input VDC							Adj.	Range
80-160 VDC	160-320 VDC	320-380 <sup>1)</sup> VDC	320-640 VDC	450-800 VDC	Output Amps			
▲ C 5854	▲ C 5874	▲ C 5884 Z	▲ C 5874 G	▲ C 5874 K	400	●	24	23- 26
▲ C 5855	▲ C 5875	▲ C 5885 Z	▲ C 5875 G	▲ C 5875 K	400	●	28	26- 30
▲ C 5859	▲ C 5879	● C 5889 Z	● C 5879 G	● C 5879 K	220	●	48	45- 55
▲ C 5856	▲ C 5876	● C 5886 Z	● C 5876 G	● C 5876 K	180	●	60	58- 68
▲ C 5857	▲ C 5877	● C 5887 Z	● C 5877 G	● C 5877 K	92	●	110	100- 130
▲ C 5857 J	▲ C 5877 J	● C 5887 ZJ	● C 5877 GJ	● C 5877 KJ	60	●	200	190- 200
▲ C 5858	▲ C 5878	● C 5888 Z	● C 5878 G	● C 5878 K	48	●	220	200- 250
▲ C 5858 J	▲ C 5878 J	● C 5888 ZJ	● C 5878 GJ	● C 5878 KJ	30	●	400	380- 400
▲ C 5857 H	▲ C 5877 H	● C 5887 ZH	● C 5877 GH	● C 5877 KH	20	●	tba <sup>2)</sup>	570- 600
▲ C 5858 H	▲ C 5878 H	● C 5888 ZH	● C 5878 GH	● C 5878 KH	15	●	tba <sup>2)</sup>	760- 800

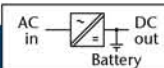
**new**  
Higher voltage upon request



AC / DC Power Supplies

▶ 8.5 KW			▶ 12 KW				Cooling	Output VDC	
Input VAC, 1-Phase			Input VAC, 3-Phase					Adj.	Range
115 ±20%	Output Amps	230 <sup>+15%</sup> <sub>-20%</sub>	3x200 <sup>+15%</sup> <sub>-20%</sub>	3x400 <sup>+15%</sup> <sub>-20%</sub>	3x480 <sup>+10%</sup> <sub>-15%</sub>	Output Amps			
■ C 5863	400	—	—	—	—	—	●	15	14- 16
■ C 5864	325	■ C 5884	■ C 5864 V	■ C 5884 V	■ C 5894 V	400	●	24	23- 26
■ C 5865	280	■ C 5885	■ C 5865 V	■ C 5885 V	■ C 5895 V	400	●	28	26- 30
■ C 5869	155	■ C 5889	■ C 5869 V	▼ C 5889 V	▼ C 5899 V	220	●	48	45- 55
■ C 5866	125	■ C 5886	■ C 5866 V	▼ C 5886 V	▼ C 5896 V	180	●	60	58- 68
■ C 5867	65	■ C 5887	■ C 5867 V	▼ C 5887 V	▼ C 5897 V	92	●	110	100- 130
■ C 5867 J	42	■ C 5887 J	■ C 5867 VJ	▼ C 5887 VJ	▼ C 5897 VJ	60	●	200	190- 200
■ C 5868	34	■ C 5888	■ C 5868 V	▼ C 5888 V	▼ C 5898 V	48	●	220	200- 250
■ C 5868 J	21	■ C 5888 J	■ C 5868 VJ	▼ C 5888 VJ	▼ C 5898 VJ	30	●	400	380- 400
■ C 5867H	14.16	■ C 5887H	■ C 5867VH	▼ C 5887VH	▼ C 5897VH	20	●	tba <sup>2)</sup>	570- 600
■ C 5868H	10.63	■ C 5888H	■ C 5868VH	▼ C 5888VH	▼ C 5898VH	15	●	tba <sup>2)</sup>	760- 800

**new**  
Higher voltage upon request



Battery Chargers

▶ 8.8 KW			▶ 12 KW				Cooling	Output VDC	
Input VAC, 1-Phase			Input VAC, 3-Phase					Nom. Battery Voltage	Range
115 ±20%	Output Amps	230 <sup>+15%</sup> <sub>-20%</sub>	3x200 <sup>+15%</sup> <sub>-20%</sub>	3x400 <sup>+15%</sup> <sub>-20%</sub>	3x480 <sup>+10%</sup> <sub>-15%</sub>	Output Amps			
■ B 5861	400	—	—	—	—	—	●	12	12- 16
■ B 5862	265	■ B 5882	■ B 5862 V	■ B 5882 V	■ B 5892 V	375	●	24	24- 32
■ B 5864	135	■ B 5884	■ B 5864 V	▼ B 5884 V	▼ B 5894 V	190	●	48	48- 64
■ B 5866	110	■ B 5886	■ B 5866 V	▼ B 5886 V	▼ B 5896 V	155	●	60	60- 80
■ B 5867	60	■ B 5887	■ B 5867 V	▼ B 5887 V	▼ B 5897 V	83	●	110	110- 145
■ B 5868	30	■ B 5888	■ B 5868 V	▼ B 5888 V	▼ B 5898 V	42	●	220	220- 290
■ B 5866H	22	■ B 5886H	■ B 5866VH	▼ B 5886VH	▼ B 5896VH	30	●	tba <sup>2)</sup>	380- 400
■ B 5867H	14.66	■ B 5887H	■ B 5867VH	▼ B 5887VH	▼ B 5897VH	20	●	tba <sup>2)</sup>	570- 600
■ B 5868H	11	■ B 5888H	■ B 5868VH	▼ B 5888VH	▼ B 5898VH	15	●	tba <sup>2)</sup>	760- 800

**new**  
Higher voltage upon request

Series specific information

Input

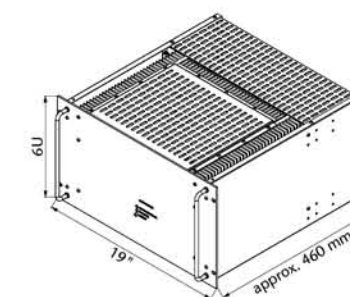
- Hold-up time for AC input: 2.5ms typical @ nom. input voltage
- <sup>1)</sup> input supply from PFC also suitable

General

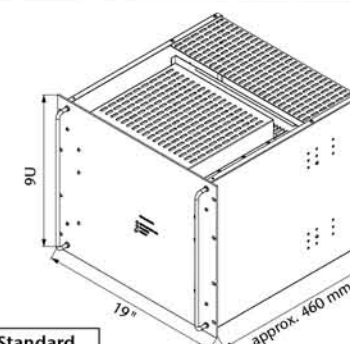
- = incl. temperature controlled fans
- <sup>2)</sup> tba = to be advised



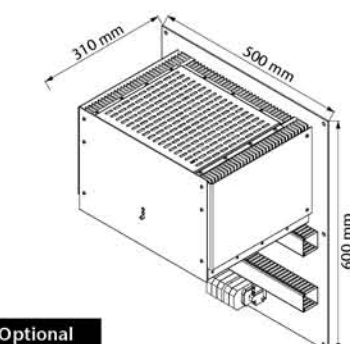
6U / 9U



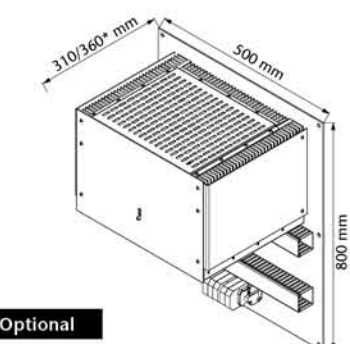
Standard  
19" Plug-in module  
● 35-50 kg ▼ 50-65 kg



Standard  
19" Plug-in module  
▲ 50-65 kg ■ 65-75 kg



Optional  
Wall mount  
● 35-50 kg



Optional  
Wall mount  
▼▲ 50-65 kg ■ 65-75 kg  
\*) applicable to output current > 350 A





DC / DC Converters

▶ 22 KW					
Input VDC			Cooling	Output VDC	
320-640 VDC	450-800 VDC	Output Amps		Adj.	Range
C 6479 G	C 6479 K	360	•	48	45- 55
C 6476 G	C 6476 K	320	•	60	58- 68
C 6477 G	C 6477 K	170	•	110	100- 130
C 6477 GJ	C 6477 KJ	110	•	200	190- 200
C 6478 G	C 6478 K	88	•	220	200- 250
C 6478 GJ	C 6478 KJ	55	•	400	380- 400
C 6477 GH	C 6477 KH	37	•	tba <sup>1)</sup>	570- 600
C 6478 GH	C 6478 KH	28	•	tba <sup>1)</sup>	760- 800

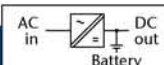
Higher voltage upon request



AC / DC Power Supplies

▶ 22 KW					
Input VAC, 3-Phase		Output Amps	Cooling	Output VDC	
3x400 <sup>+15%</sup> <sub>-20%</sub>	3x480 <sup>+10%</sup> <sub>-15%</sub>			Adj.	Range
C 6489 V	C 6499 V	360	•	48	45- 55
C 6486 V	C 6496 V	320	•	60	58- 68
C 6487 V	C 6497 V	170	•	110	100- 130
C 6487 VJ	C 6497 VJ	110	•	200	190- 200
C 6488 V	C 6498 V	88	•	220	200- 250
C 6488 VJ	C 6498 VJ	55	•	400	380- 400
C 6487 VH	C 6497 VH	37	•	tba <sup>1)</sup>	570- 600
C 6488 VH	C 6498 VH	28	•	tba <sup>1)</sup>	760- 800

Higher voltage upon request



Battery Chargers

▶ 22 KW					
Input VAC, 3-Phase		Output Amps	Cooling	Output VDC	
3x400 <sup>+15%</sup> <sub>-20%</sub>	3x480 <sup>+10%</sup> <sub>-15%</sub>			Nom. Battery Voltage	Range
B 6484 V	B 6494 V	310	•	48	48- 64
B 6486 V	B 6496 V	270	•	60	60- 80
B 6487 V	B 6497 V	150	•	110	110- 145
B 6488 V	B 6498 V	75	•	220	220- 290
B 6486VH	B 6496VH	55	•	tba <sup>1)</sup>	380- 400
B 6487VH	B 6497VH	37	•	tba <sup>1)</sup>	570- 600
B 6488VH	B 6498VH	28	•	tba <sup>1)</sup>	760- 800

Higher voltage upon request



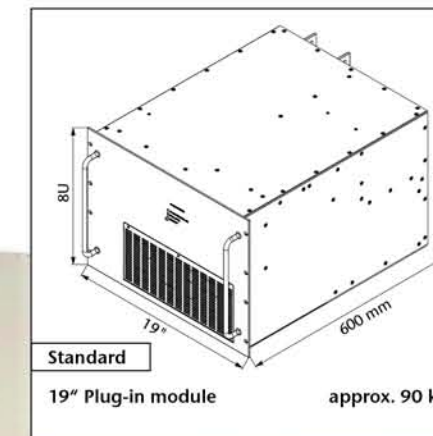
Series specific information

Input

- Hold-up time for AC input: 2.5ms typical @ nom. input voltage

General

- optional: Cooling via speed-controlled fans (depending on temperature)
- = incl. fans
- <sup>1)</sup> tba = to be advised



8U



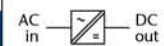




DC / DC Converters

▶ 30 KW					
Input VDC			Cooling	Output VDC	
320–640 VDC	450–800 VDC	Output Amps		Adj.	Range
C 6674 G	C 6674 K	800	•	24	23– 26
C 6675 G	C 6675 K	800	•	28	26– 30
C 6679 G	C 6679 K	540	•	48	45– 55
C 6676 G	C 6676 K	440	•	60	58– 68
C 6677 G	C 6677 K	230	•	110	100– 130
C 6677 GJ	C 6677 KJ	150	•	200	190– 200
C 6678 G	C 6678 K	120	•	220	200– 250
C 6678 GJ	C 6678 KJ	75	•	400	380– 400
C 6677 GH	C 6677 KH	50	•	tba <sup>1)</sup>	570– 600
C 6678 GH	C 6678 KH	38	•	tba <sup>1)</sup>	760– 800

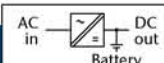
Higher voltage upon request



AC / DC Power Supplies

▶ 30 KW					
Input VAC, 3-Phase		Output Amps	Cooling	Output VDC	
3x400 <sup>+15%</sup> <sub>-20%</sub>	3x480 <sup>+10%</sup> <sub>-15%</sub>			Adj.	Range
C 6684 V	C 6694 V	800	•	24	23– 26
C 6685 V	C 6695 V	800	•	28	26– 30
C 6689 V	C 6699 V	540	•	48	45– 55
C 6686 V	C 6696 V	440	•	60	58– 68
C 6687 V	C 6697 V	230	•	110	100– 130
C 6687 VJ	C 6697 VJ	150	•	200	190– 200
C 6688 V	C 6698 V	120	•	220	200– 250
C 6688 VJ	C 6698 VJ	75	•	400	380– 400
C 6687 VH	C 6697 VH	50	•	tba <sup>1)</sup>	570– 600
C 6688 VH	C 6698 VH	38	•	tba <sup>1)</sup>	760– 800

Higher voltage upon request



Battery Chargers

▶ 30 KW					
Input VAC, 3-Phase		Output Amps	Cooling	Output VDC	
3x400 <sup>+15%</sup> <sub>-20%</sub>	3x480 <sup>+10%</sup> <sub>-15%</sub>			Nom. Battery Voltage	Range
B 6682 V	B 6692 V	800	•	24	24– 32
B 6684 V	B 6694 V	468	•	48	48– 64
B 6686 V	B 6696 V	375	•	60	60– 80
B 6687 V	B 6697 V	208	•	110	110– 145
B 6688 V	B 6698 V	104	•	220	220– 290
B 6686VH	B 6696VH	75	•	tba <sup>1)</sup>	380– 400
B 6687VH	B 6697VH	50	•	tba <sup>1)</sup>	570– 600
B 6688VH	B 6698VH	38	•	tba <sup>1)</sup>	760– 800

Higher voltage upon request



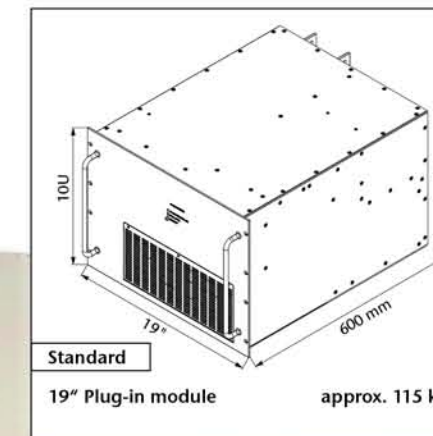
Series specific information

Input

- Hold-up time for AC input: 2.5ms typical @ nom. input voltage

General

- optional: Cooling via speed-controlled fans (depending on temperature)
- = incl. fans
- <sup>1)</sup> tba = to be advised



IOU





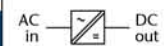


DC / DC Converters

5.6 kW			8 kW				Cooling	Output VDC	
Input VDC								Adj.	Range
80-160 VDC	Output Amps	160-320 VDC	320-380 <sup>1)</sup> VDC	320-640 VDC	450-800 VDC	Output Amps			
CW 5353	350	CW 5373	CW 5383 Z	CW 5373 G	CW 5373 K	350	15	14- 16	
CW 5354	216	CW 5374	CW 5384 Z	CW 5374 G	CW 5374 K	310	24	23- 26	
CW 5355	187	CW 5375	CW 5385 Z	CW 5375 G	CW 5375 K	270	28	26- 30	
CW 5359	102	CW 5379	CW 5389 Z	CW 5379 G	CW 5379 K	146	48	45- 55	
CW 5356	83	CW 5376	CW 5386 Z	CW 5376 G	CW 5376 K	118	60	58- 68	
CW 5357	43	CW 5377	CW 5387 Z	CW 5377 G	CW 5377 K	62	110	100- 130	
CW 5357 J	28	CW 5377 J	CW 5387 ZJ	CW 5377 GJ	CW 5377 KJ	40	200	190- 200	
CW 5358	22.5	CW 5378	CW 5388 Z	CW 5378 G	CW 5378 K	32	220	200- 250	
CW 5358 J	14	CW 5378 J	CW 5388 ZJ	CW 5378 GJ	CW 5378 KJ	20	400	380- 400	
CW 5357H	9.33	CW 5377H	CW 5387ZH	CW 5377GH	CW 5377KH	13.5	tba <sup>2)</sup>	570- 600	
CW 5358H	7	CW 5378H	CW 5388ZH	CW 5378GH	CW 5378KH	10	tba <sup>2)</sup>	760- 800	

**new**

Higher voltage upon request

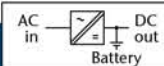


AC / DC Power Supplies

8 kW			Output Amps	Cooling	Output VDC	
Input VAC, 3-Phase					Adj.	Range
3x200 <sup>+15%</sup> <sub>-20%</sub>	3x400 <sup>+15%</sup> <sub>-20%</sub>	3x480 <sup>+10%</sup> <sub>-15%</sub>				
CW 5363 V	CW 5383 V	CW 5393 V	350	15	14- 16	
CW 5364 V	CW 5384 V	CW 5394 V	310	24	23- 26	
CW 5365 V	CW 5385 V	CW 5395 V	270	28	26- 30	
CW 5369 V	CW 5389 V	CW 5399 V	146	48	45- 55	
CW 5366 V	CW 5386 V	CW 5396 V	118	60	58- 68	
CW 5367 V	CW 5387 V	CW 5397 V	62	110	100- 130	
CW 5367 VJ	CW 5387 VJ	CW 5397 VJ	40	200	190- 200	
CW 5368 V	CW 5388 V	CW 5398 V	32	220	200- 250	
CW 5368 VJ	CW 5388 VJ	CW 5398 VJ	20	400	380- 400	
CW 5367VH	CW 5387VH	CW 5397VH	13.5	tba <sup>2)</sup>	570- 600	
CW 5368VH	CW 5388VH	CW 5398VH	10	tba <sup>2)</sup>	760- 800	

**new**

Higher voltage upon request



Battery Chargers

8 kW			Output Amps	Cooling	Output VDC	
Input VAC, 3-Phase					Nom. Battery Voltage	Range
3x200 <sup>+15%</sup> <sub>-20%</sub>	3x400 <sup>+15%</sup> <sub>-20%</sub>	3x480 <sup>+10%</sup> <sub>-15%</sub>				
BW 5361 V	BW 5381 V	BW 5391 V	350	12	12- 16	
BW 5362 V	BW 5382 V	BW 5392 V	250	24	24- 32	
BW 5364 V	BW 5384 V	BW 5394 V	125	48	48- 64	
BW 5366 V	BW 5386 V	BW 5396 V	100	60	60- 80	
BW 5367 V	BW 5387 V	BW 5397 V	56	110	110- 145	
BW 5368 V	BW 5388 V	BW 5398 V	28	220	220- 290	
BW5366VH	BW5386VH	BW5396VH	20	tba <sup>2)</sup>	380- 400	
BW5367VH	BW5387VH	BW5397VH	13.5	tba <sup>2)</sup>	570- 600	
BW5368VH	BW5388VH	BW5398VH	10	tba <sup>2)</sup>	760- 800	

**new**

Higher voltage upon request

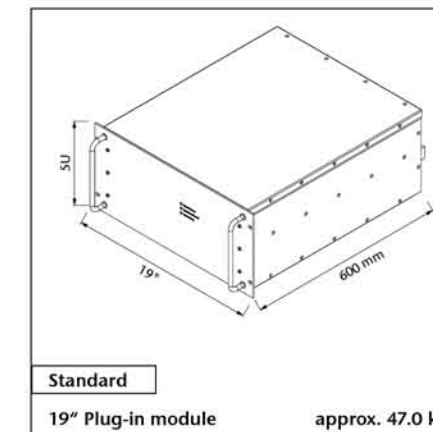
Series specific information

Input

- Hold-up time for AC input: 5ms typical @ nom. input voltage
- <sup>1)</sup> input supply from PFC also suitable

General

- = liquid cooled
- <sup>2)</sup> tba = to be advised



Standard  
19" Plug-in module approx. 47.0 kg



rear view

5U





DC / DC Converters

▶ 10 kW						
Input VDC				Cooling	Output VDC	
320–380 <sup>1)</sup> VDC	320–640 VDC	450–800 VDC	Output Amps		Adj.	Range
CW 5483 Z	CW 5473 G	CW 5473 K	350	🟢	15	14– 16
CW 5484 Z	CW 5474 G	CW 5474 K	350	🟢	24	23– 26
CW 5485 Z	CW 5475 G	CW 5475 K	330	🟢	28	26– 30
CW 5489 Z	CW 5479 G	CW 5479 K	180	🟢	48	45– 55
CW 5486 Z	CW 5476 G	CW 5476 K	147	🟢	60	58– 68
CW 5487 Z	CW 5477 G	CW 5477 K	76	🟢	110	100– 130
CW 5487 ZJ	CW 5477 GJ	CW 5477 KJ	50	🟢	200	190– 200
CW 5488 Z	CW 5478 G	CW 5478 K	40	🟢	220	200– 250
CW 5488 ZJ	CW 5478 GJ	CW 5478 KJ	25	🟢	400	380– 400
CW 5487ZH	CW5477GH	CW 5477KH	17	🟢	tba <sup>2)</sup>	570– 600
CW 5488ZH	CW5478GH	CW 5478KH	12.5	🟢	tba <sup>2)</sup>	760– 800

**new**

Higher voltage upon request

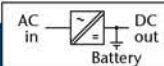


AC / DC Power Supplies

▶ 10 kW					
Input VAC, 3-Phase		Output Amps	Cooling	Output VDC	
3x400 <sup>+15%</sup> <sub>-20%</sub>	3x480 <sup>+10%</sup> <sub>-15%</sub>			Adj.	Range
CW 5483 V	CW 5493 V	350	🟢	15	14– 16
CW 5484 V	CW 5494 V	350	🟢	24	23– 26
CW 5485 V	CW 5495 V	330	🟢	28	26– 30
CW 5489 V	CW 5499 V	180	🟢	48	45– 55
CW 5486 V	CW 5496 V	147	🟢	60	58– 68
CW 5487 V	CW 5497 V	76	🟢	110	100– 130
CW 5487 VJ	CW 5497 VJ	50	🟢	200	190– 200
CW 5488 V	CW 5498 V	40	🟢	220	200– 250
CW 5488 VJ	CW 5498 VJ	25	🟢	400	380– 400
CW 5487VH	CW 5497VH	17	🟢	tba <sup>2)</sup>	570– 600
CW 5488VH	CW 5498VH	12.5	🟢	tba <sup>2)</sup>	760– 800

**new**

Higher voltage upon request



Battery Chargers

▶ 10 kW					
Input VAC, 3-Phase		Output Amps	Cooling	Output VDC	
3x400 <sup>+15%</sup> <sub>-20%</sub>	3x480 <sup>+10%</sup> <sub>-15%</sub>			Nom. Battery Voltage	Range
BW 5481 V	BW 5491 V	350	🟢	12	12– 16
BW 5482 V	BW 5492 V	312	🟢	24	24– 32
BW 5484 V	BW 5494 V	156	🟢	48	48– 64
BW 5486 V	BW 5496 V	125	🟢	60	60– 80
BW 5487 V	BW 5497 V	68	🟢	110	110– 145
BW 5488 V	BW 5498 V	34	🟢	220	220– 290
BW5486VH	BW5496VH	25	🟢	tba <sup>2)</sup>	380– 400
BW5487VH	BW5497VH	17	🟢	tba <sup>2)</sup>	570– 600
BW5488VH	BW5498VH	12.5	🟢	tba <sup>2)</sup>	760– 800

**new**

Higher voltage upon request

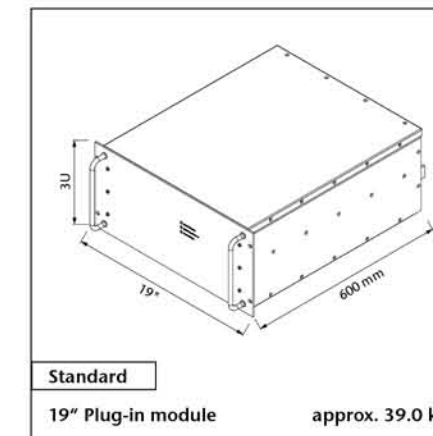
Series specific information

**Input**

- Hold-up time for AC input:  
5ms typical @ nom. input voltage
- <sup>1)</sup> input supply from PFC also suitable

**General**

- 🟢 = liquid cooled
- <sup>2)</sup> tba = to be advised



Standard  
19" Plug-in module approx. 39.0 kg

3U







DC / DC Converters

▶ 7.5 KW			▶ 15 KW				Cooling	Output VDC	
Input VDC								Adj.	Range
80–160 VDC	Output Amps	160–320 VDC	320–380 <sup>1)</sup> VDC	320–640 VDC	450–800 VDC	Output Amps			
CW 5554	288	CW 5574	CW 5584 Z	CW 5574 G	CW 5574 K	350	24	23– 26	
CW 5555	250	CW 5575	CW 5585 Z	CW 5575 G	CW 5575 K	350	28	26– 30	
CW 5559	136	CW 5579	CW 5589 Z	CW 5579 G	CW 5579 K	273	48	45– 55	
CW 5556	110	CW 5576	CW 5586 Z	CW 5576 G	CW 5576 K	220	60	58– 68	
CW 5557	58	CW 5577	CW 5587 Z	CW 5577 G	CW 5577 K	116	110	100– 130	
CW 5557 J	38	CW 5577 J	CW 5587 ZJ	CW 5577 GJ	CW 5577 KJ	75	200	190– 200	
CW 5558	30	CW 5578	CW 5588 Z	CW 5578 G	CW 5578 K	60	220	200– 250	
CW 5558 J	19	CW 5578 J	CW 5588 ZJ	CW 5578 GJ	CW 5578 KJ	38	400	380– 400	
CW5557H	12.5	CW5577H	CW5587ZH	CW5577GH	CW5577KH	25	tba <sup>2)</sup>	570– 600	
CW5558H	9.375	CW5578H	CW5588ZH	CW5578GH	CW5578KH	19	tba <sup>2)</sup>	760– 800	

**NEW**

Higher voltage upon request

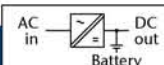


AC / DC Power Supplies

▶ 15 KW			Output Amps	Cooling	Output VDC	
Input VAC, 3-Phase					Adj.	Range
3x200 <sup>+15%</sup> <sub>-20%</sub>	3x400 <sup>+15%</sup> <sub>-20%</sub>	3x480 <sup>+10%</sup> <sub>-15%</sub>				
CW 5564 V	CW 5584 V	CW 5594 V	350	24	23– 26	
CW 5565 V	CW 5585 V	CW 5595 V	350	28	26– 30	
CW 5569 V	CW 5589 V	CW 5599 V	273	48	45– 55	
CW 5566 V	CW 5586 V	CW 5596 V	220	60	58– 68	
CW 5567 V	CW 5587 V	CW 5597 V	116	110	100– 130	
CW 5567 VJ	CW 5587 VJ	CW 5597 VJ	75	200	190– 200	
CW 5568 V	CW 5588 V	CW 5598 V	60	220	200– 250	
CW 5568 VJ	CW 5588 VJ	CW 5598 VJ	38	400	380– 400	
CW5567VH	CW5587VH	CW5597VH	25	tba <sup>2)</sup>	570– 600	
CW5568VH	CW5588VH	CW5598VH	19	tba <sup>2)</sup>	760– 800	

**NEW**

Higher voltage upon request



Battery Chargers

▶ 15 KW			Output Amps	Cooling	Output VDC	
Input VAC, 3-Phase					Nom. Battery Voltage	Range
3x200 <sup>+15%</sup> <sub>-20%</sub>	3x400 <sup>+15%</sup> <sub>-20%</sub>	3x480 <sup>+10%</sup> <sub>-15%</sub>				
BW 5562 V	BW 5582 V	BW 5592 V	328	24	24– 32	
BW 5564 V	BW 5584 V	BW 5594 V	234	48	48– 64	
BW 5566 V	BW 5586 V	BW 5596 V	188	60	60– 80	
BW 5567 V	BW 5587 V	BW 5597 V	104	110	110– 145	
BW 5568 V	BW 5588 V	BW 5598 V	52	220	220– 290	
BW5566VH	BW5586VH	BW5596VH	37.5	tba <sup>2)</sup>	380– 400	
BW5567VH	BW5587VH	BW5597VH	25	tba <sup>2)</sup>	570– 600	
BW5568VH	BW5588VH	BW5598VH	19	tba <sup>2)</sup>	760– 800	

**NEW**

Higher voltage upon request

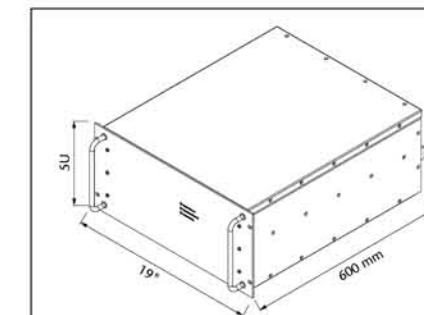
Series specific information

**Input**

- Hold-up time for AC input: 5ms typical @ nom. input voltage
- <sup>1)</sup> input supply from PFC also suitable

**General**

- Water = liquid cooled
- <sup>2)</sup> tba = to be advised



Standard

19" Plug-in module

approx. 47 kg



rear view

5U





DC / DC Converters

▶ 20 KW						
Input VDC				Cooling	Output VDC	
320–380 <sup>1)</sup> VDC	320–640 VDC	450–800 VDC	Output Amps		Adj.	Range
CW 5684 Z	CW 5674 G	CW 5674 K	350	🟢	24	23– 26
CW 5685 Z	CW 5675 G	CW 5675 K	350	🟢	28	26– 30
CW 5689 Z	CW 5679 G	CW 5679 K	350	🟢	48	45– 55
CW 5686 Z	CW 5676 G	CW 5676 K	294	🟢	60	58– 68
CW 5687 Z	CW 5677 G	CW 5677 K	153	🟢	110	100– 130
CW 5687 ZJ	CW 5677 GJ	CW 5677 KJ	100	🟢	200	190– 200
CW 5688 Z	CW 5678 G	CW 5678 K	80	🟢	220	200– 250
CW 5688 ZJ	CW 5678 GJ	CW 5678 KJ	50	🟢	400	380– 400
CW 5687ZH	CW5677GH	CW5677KH	33.5	🟢	tba <sup>2)</sup>	570– 600
CW 5688ZH	CW5678GH	CW5678KH	25	🟢	tba <sup>2)</sup>	760– 800

**new**

Higher voltage upon request

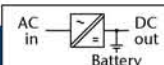


AC / DC Power Supplies

▶ 20 KW					
Input VAC, 3-Phase		Output Amps	Cooling	Output VDC	
3x400 <sup>+15%</sup> –20%	3x480 <sup>+10%</sup> –15%			Adj.	Range
CW 5684 V	CW 5694 V	350	🟢	24	23– 26
CW 5685 V	CW 5695 V	350	🟢	28	26– 30
CW 5689 V	CW 5699 V	350	🟢	48	45– 55
CW 5686 V	CW 5696 V	294	🟢	60	58– 68
CW 5687 V	CW 5697 V	153	🟢	110	100– 130
CW 5687 VJ	CW 5697 VJ	100	🟢	200	190– 200
CW 5688 V	CW 5698 V	80	🟢	220	200– 250
CW 5688 VJ	CW 5698 VJ	50	🟢	400	380– 400
CW5687 VH	CW 5697VH	33.5	🟢	tba <sup>2)</sup>	570– 600
CW5688 VH	CW 5698VH	25	🟢	tba <sup>2)</sup>	760– 800

**new**

Higher voltage upon request



Battery Chargers

▶ 20 KW					
Input VAC, 3-Phase		Output Amps	Cooling	Output VDC	
3x400 <sup>+15%</sup> –20%	3x480 <sup>+10%</sup> –15%			Nom. Battery Voltage	Range
BW 5682 V	BW 5692 V	350	🟢	24	24– 32
BW 5684 V	BW 5694 V	312	🟢	48	48– 64
BW 5686 V	BW 5696 V	250	🟢	60	60– 80
BW 5687 V	BW 5697 V	137	🟢	110	110– 145
BW 5688 V	BW 5698 V	68	🟢	220	220– 290
BW5686VH	BW5696VH	50	🟢	tba <sup>2)</sup>	380– 400
BW5687VH	BW5697VH	33.5	🟢	tba <sup>2)</sup>	570– 600
BW5688VH	BW5698VH	25	🟢	tba <sup>2)</sup>	760– 800

**new**

Higher voltage upon request

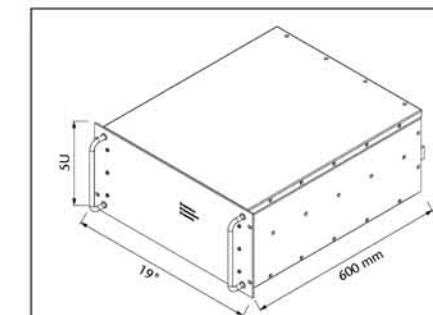
Series specific information

**Input**

- Hold-up time for AC input:  
4ms typical @ nom. input voltage  
<sup>1)</sup> input supply from PFC also suitable

**General**

- 🟢 = liquid cooled  
<sup>2)</sup> tba = to be advised



Standard  
19" Plug-in module approx. 47 kg



rear view

5U







DC / DC Converters

▶ 30 KW					
Input VDC			Cooling	Output VDC	
320-640 VDC	450-800 VDC	Output Amps		Adj.	Range
CW 6679 G	CW 6679 K	450	🟢	48	45- 55
CW 6676 G	CW 6676 K	442	🟢	60	58- 68
CW 6677 G	CW 6677 K	231	🟢	110	100- 130
CW 6677 GJ	CW 6677 KJ	150	🟢	200	190- 200
CW 6678 G	CW 6678 K	120	🟢	220	200- 250
CW 6678 GJ	CW 6678 KJ	75	🟢	400	380- 400
CW 6677 GH	CW 6677 KH	50	🟢	tba <sup>1)</sup>	570- 600
CW 6678 GH	CW 6678 KH	38	🟢	tba <sup>1)</sup>	760- 800

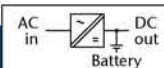
Higher voltage upon request



AC / DC Power Supplies

▶ 30 KW					
Input VAC, 3-Phase			Cooling	Output VDC	
3x400 <sup>+15%</sup> <sub>-20%</sub>	3x480 <sup>+10%</sup> <sub>-15%</sub>	Output Amps		Adj.	Range
CW 6689 V	CW 6699 V	450	🟢	48	45- 55
CW 6686 V	CW 6696 V	442	🟢	60	58- 68
CW 6687 V	CW 6697 V	231	🟢	110	100- 130
CW 6687 VJ	CW 6697 VJ	150	🟢	200	190- 200
CW 6688 V	CW 6698 V	120	🟢	220	200- 250
CW 6688 VJ	CW 6698 VJ	75	🟢	400	380- 400
CW 6687 VH	CW 6697 VH	50	🟢	tba <sup>1)</sup>	570- 600
CW 6688 VH	CW 6698 VH	38	🟢	tba <sup>1)</sup>	760- 800

Higher voltage upon request



Battery Chargers

▶ 30 KW					
Input VAC, 3-Phase			Cooling	Output VDC	
3x400 <sup>+15%</sup> <sub>-20%</sub>	3x480 <sup>+10%</sup> <sub>-15%</sub>	Output Amps		Nom. Battery Voltage	Range
BW 6684 V	BW 6694 V	386	🟢	48	48- 64
BW 6686 V	BW 6696 V	375	🟢	60	60- 80
BW 6687 V	BW 6697 V	208	🟢	110	110- 145
BW 6688 V	BW 6698 V	104	🟢	220	220- 290
BW6686VH	BW6696VH	75	🟢	tba <sup>2)</sup>	380- 400
BW6687VH	BW6697VH	50	🟢	tba <sup>2)</sup>	570- 600
BW6688VH	BW6698VH	38	🟢	tba <sup>2)</sup>	760- 800

Higher voltage upon request



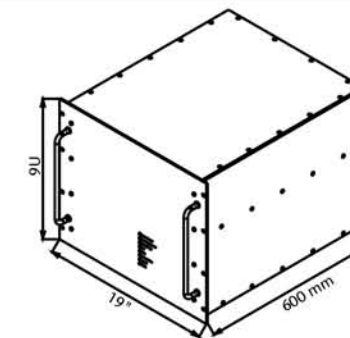
Series specific information

Input

- Hold-up time for AC input: 5ms typical @ nom. input voltage

General

- 🟢 = liquid cooled
- <sup>1)</sup> tba = to be advised



Standard  
19" Plug-in module approx. 108 kg



rear view

9U



Voltage **125.0** Current **26**

- 🟢 Output Voltage ok
- 🟢 Input Voltage / Phase ok
- 🔇 Current Limiting
- 🔇 OVP
- 🔇 75 °C
- 🔇 Overtemperature
- 🔇 Interlock
- 🔇 Failure



DC / DC Converters

▶ 40 KW					
Input VDC			Cooling	Output VDC	
320-640 VDC	450-800 VDC	Output Amps		Adj.	Range
CW 6774 G	CW 6774 K	800	🟢	24	23- 26
CW 6775 G	CW 6775 K	800	🟢	28	26- 30
CW 6779 G	CW 6779 K	720	🟢	48	45- 55
CW 6776 G	CW 6776 K	580	🟢	60	58- 68
CW 6777 G	CW 6777 K	305	🟢	110	100- 130
CW 6777 GJ	CW 6777 KJ	200	🟢	200	190- 200
CW 6778 G	CW 6778 K	160	🟢	220	200- 250
CW 6778 GJ	CW 6778 KJ	100	🟢	400	380- 400
CW 6777 GH	CW 6777 KH	67	🟢	tba <sup>1)</sup>	570- 600
CW 6778 GH	CW 6778 KH	50	🟢	tba <sup>1)</sup>	760- 800

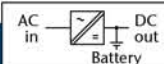
Higher voltage upon request



AC / DC Power Supplies

▶ 40 KW					
Input VAC, 3-Phase		Output Amps	Cooling	Output VDC	
3x400 <sup>+15%</sup> <sub>-20%</sub>	3x480 <sup>+10%</sup> <sub>-15%</sub>			Adj.	Range
CW 6784 V	CW 6794 V	800	🟢	24	23- 26
CW 6785 V	CW 6795 V	800	🟢	28	26- 30
CW 6789 V	CW 6799 V	720	🟢	48	45- 55
CW 6786 V	CW 6796 V	580	🟢	60	58- 68
CW 6787 V	CW 6797 V	305	🟢	110	100- 130
CW 6787 VJ	CW 6797 VJ	200	🟢	200	190- 200
CW 6788 V	CW 6798 V	160	🟢	220	200- 250
CW 6788 VJ	CW 6798 VJ	100	🟢	400	380- 400
CW 6787 VH	CW 6797 VH	67	🟢	tba <sup>1)</sup>	570- 600
CW 6788 VH	CW 6798 VH	50	🟢	tba <sup>1)</sup>	760- 800

Higher voltage upon request



Battery Chargers

▶ 40 KW					
Input VAC, 3-Phase		Output Amps	Cooling	Output VDC	
3x400 <sup>+15%</sup> <sub>-20%</sub>	3x480 <sup>+10%</sup> <sub>-15%</sub>			Nom. Battery Voltage	Range
BW 6782 V	BW 6792 V	800	🟢	24	24- 32
BW 6784 V	BW 6794 V	625	🟢	48	48- 64
BW 6786 V	BW 6796 V	500	🟢	60	60- 80
BW 6787 V	BW 6797 V	275	🟢	110	110- 145
BW 6788 V	BW 6798 V	135	🟢	220	220- 290
BW6786VH	BW6796VH	100	🟢	tba <sup>1)</sup>	380- 400
BW6787VH	BW6797VH	67	🟢	tba <sup>1)</sup>	570- 600
BW6788VH	BW6798VH	50	🟢	tba <sup>1)</sup>	760- 800

Higher voltage upon request



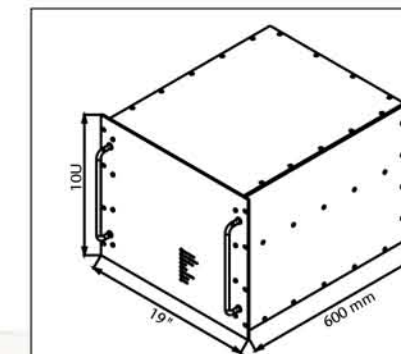
Series specific information

Input

- Hold-up time for AC input: 4ms typical @ nom. input voltage

General

- <sup>1)</sup> tba = to be advised
- 🟢 = liquid cooled



Standard  
19" Plug-in module approx. 168 kg



rear view

IOU



Voltage **125.0** Current **26**

- Output Voltage ok
- Input Voltage / Phase ok
- Current Limiting
- OVP
- 75 °C
- Overtemperature
- Interlock
- Failure



## Step-up converters

The step-up converters are very similar to the DC/DC converters of series "C", except that the step-up converters sense the voltage across the load which is the total of the battery voltage and the voltage added by the step-up converter. The step-up converter can not reduce the voltage being applied to its input. Therefore, the load should be specified for the maximum battery voltage.

### For output voltage stabilization

The output voltage of an e.g. battery charger with parallel connected battery varies substantially with the charging condition of the battery. For many applications, however, the load circuit requires a better stabilized voltage. Frequently used methods for reducing the voltage variation are e.g. "voltage dropping diodes". A more economical solution is given by switch mode step-up converters. These are DC/DC converters supplied from the battery with the output connected in series to the battery. Due to the circuit configuration, the output of a step-up converter is not isolated from the input supply (battery).

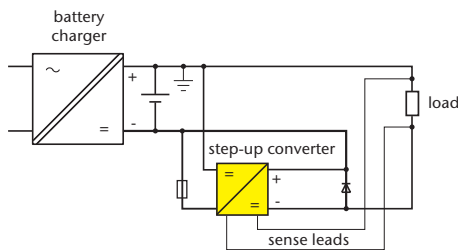


## Circuit diagrams

### Step-up converter with common positive line

standard version

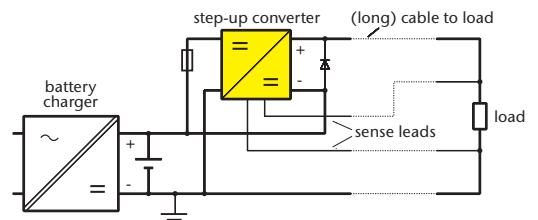
The following circuit diagram shows a step-up converter which can be grounded on the positive side. The voltage will be added at the negative side and the positive line is common for input and output.



### Step-up converter with common negative line

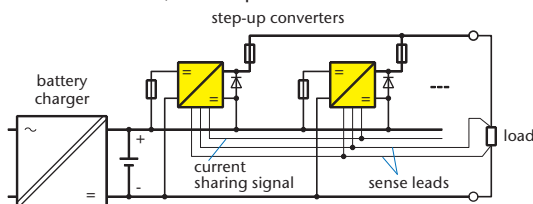
optional version

The following circuit diagram shows a step-up converter which can be grounded on the negative side. The voltage will be added at the positive side and the negative line is common for input and output.



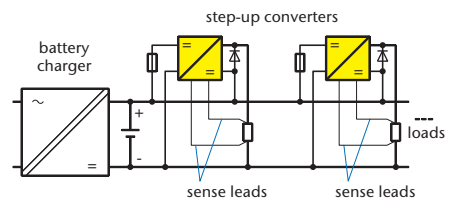
### Parallel operation of step-up converters

For more power or redundancy step-up converters may be connected in parallel with active current sharing, individually protected by fuses at the input and decoupling diodes or fuses at the output. Such systems have already been realized for 2,000 Amps.



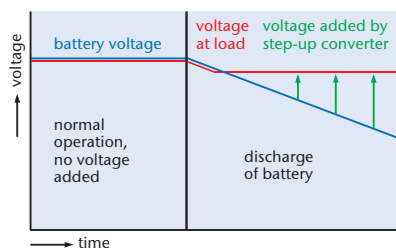
### Individual load supply

For applications that require individually stabilized voltages across the loads, the step-converters will be connected as shown in the following diagram and may be of different power ratings.



## Operation diagram

- During normal operation no voltage needs to be added and the converter runs with a minimum of power losses. The voltage at the load is slightly reduced as the current flows through the bypass diode. The bypass diode also allows for replacement of the step-up converter and should therefore be installed externally.
- During battery discharge the converter adds the voltage that is needed to maintain the required output voltage level.
- The maximum voltage to be added is normally less than 20 % of the total voltage. Therefore, the step-up converter needs to be designed for 20 % of the through-power, only.



Example:

- Input: 40 – 56 VDC (battery)
- Output: 0 – 10 VDC (step-up voltage)  
output voltage regulated to 50 V during discharge of battery

## Create your step-up converter

Each DC/DC converter can be modified to be a step-up converter:

- calculate the output power of the step-up converter: max. voltage to be added x max. load current
- choose the suitable "C" series & re-name the model as "E" ...

▶ 5.6 kW		▶ 7.5 kW						
Input VDC							Output VDC	
80–160 VDC	Output Amps	160–320 VDC	320–380 <sup>1)</sup> VDC	320–640 VDC	450–800 VDC	Output Amps	Adj.	Range
C 5353	350	C 5373	C 5383 Z	C 5373 G	C 5373 K	350	15	14– 16
C 5354	216	C 5374	C 5384 Z	C 5374 G	C 5374 K	288	24	23– 26
C 5355	187	C 5375	C 5385 Z	C 5375 G	C 5375 K	250	28	26– 30
C 5359	102	C 5379	C 5389 Z	C 5379 G	C 5379 K	136	48	45– 55
C 5356	83	C 5376	C 5386 Z	C 5376 G	C 5376 K	110	60	58– 68
C 5357	43	C 5377	C 5387 Z	C 5377 G	C 5377 K	58	110	100– 130
C 5357 J	28	C 5377 J	C 5387 ZJ	C 5377 GJ	C 5377 KJ	38	200	190– 200
C 5358	22.5	C 5378	C 5388 Z	C 5378 G	C 5378 K	30	220	200– 250
C 5358 J	14	C 5378 J	C 5388 ZJ	C 5378 GJ	C 5378 KJ	19	400	380– 400

Example:



### Step-up Converters

▶ 5.6 kW		▶ 7.5 kW						
Input VDC (battery voltage)							Output VDC	
80–160 VDC	Output Amps	160–320 VDC	320–380 <sup>1)</sup> VDC	320–640 VDC	450–800 VDC	Output Amps	Voltage at load regulated to	Step-up voltage
<b>E</b> 5353	350	<b>E</b> 5373	<b>E</b> 5383 Z	<b>E</b> 5373 G	<b>E</b> 5373 K	350	depending on input voltage	0– 16
<b>E</b> 5354	216	<b>E</b> 5374	<b>E</b> 5384 Z	<b>E</b> 5374 G	<b>E</b> 5374 K	288		0– 26
<b>E</b> 5355	187	<b>E</b> 5375	<b>E</b> 5385 Z	<b>E</b> 5375 G	<b>E</b> 5375 K	250		0– 30
<b>E</b> 5359	102	<b>E</b> 5379	<b>E</b> 5389 Z	<b>E</b> 5379 G	<b>E</b> 5379 K	136		0– 55
<b>E</b> 5356	83	<b>E</b> 5376	<b>E</b> 5386 Z	<b>E</b> 5376 G	<b>E</b> 5376 K	110		0– 68
<b>E</b> 5357	43	<b>E</b> 5377	<b>E</b> 5387 Z	<b>E</b> 5377 G	<b>E</b> 5377 K	58		0– 130
<b>E</b> 5357 J	28	<b>E</b> 5377 J	<b>E</b> 5387 ZJ	<b>E</b> 5377 GJ	<b>E</b> 5377 KJ	38		0– 200
<b>E</b> 5358	22.5	<b>E</b> 5378	<b>E</b> 5388 Z	<b>E</b> 5378 G	<b>E</b> 5378 K	30		0– 250
<b>E</b> 5358 J	14	<b>E</b> 5378 J	<b>E</b> 5388 ZJ	<b>E</b> 5378 GJ	<b>E</b> 5378 KJ	19		0– 400