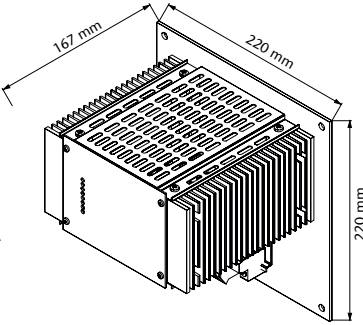
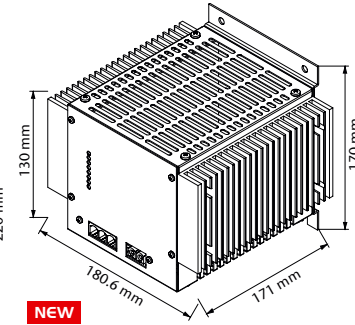


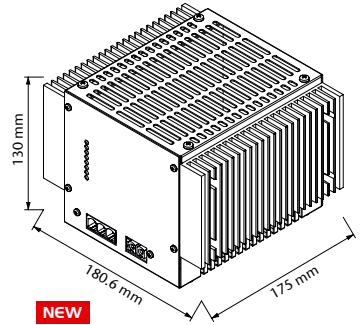
Eurocassette / approx. 2.6 kg  
(pluggable module for 19" sub-rack)



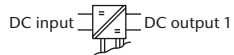
Wall mount / approx. 3.6 kg



**NEW**  
Chassis mount / approx. 3.1 kg

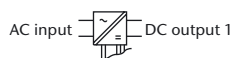


**NEW**  
DIN rail mount / approx. 3.0 kg



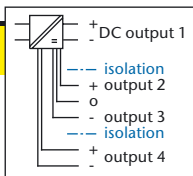
**DC / DC Converters**

▶ 180 W		▶ 250 W		▶ 300 W								
Input VDC											Output 1 VDC	
10–16 VDC	Max. Output Amps	18–36 VDC	Max. Output Amps	36–75 VDC	45–90 VDC	80–160 VDC	160–320 VDC	320–380 <sup>1)</sup> VDC	Max. Output Amps	Adj.	Range	
SM 600	25	SM 620	25	SM 630	SM 640	SM 650	SM 670	SM 680 Z	30	5	5– 5.5	
SM 601	12	SM 621	16	SM 631	SM 641	SM 651	SM 671	SM 681 Z	19	9	8– 10	
SM 602	9	SM 622	13	SM 632	SM 642	SM 652	SM 672	SM 682 Z	16	12	11– 13	
SM 603	7.2	SM 623	11	SM 633	SM 643	SM 653	SM 673	SM 683 Z	13	15	14– 16	
SM 604	4.8	SM 624	7	SM 634	SM 644	SM 654	SM 674	SM 684 Z	8.5	24	23– 26	
SM 605	4.2	SM 625	6	SM 635	SM 645	SM 655	SM 675	SM 685 Z	7	28	26– 30	
SM 609	2.65	SM 629	3.3	SM 639	SM 649	SM 659	SM 679	SM 689 Z	3.9	48	45– 55	
SM 606	2.2	SM 626	2.5	SM 636	SM 646	SM 656	SM 676	SM 686 Z	3	60	58– 68	



**AC / DC Converters**

▶ 300 W					
Input VAC, 1-Phase				Output 1 VDC	
115 ±20%	230 <sup>+15%</sup> <sub>-20%</sub>	115 ±20% / 230 <sup>+15%</sup> <sub>-20%</sub>	Max. Output Amps	Adj.	Range
SM 660	SM 680	SM 690	30	5	5– 5.5
SM 661	SM 681	SM 691	19	9	8– 10
SM 662	SM 682	SM 692	16	12	11– 13
SM 663	SM 683	SM 693	13	15	14– 16
SM 664	SM 684	SM 694	8.5	24	23– 26
SM 665	SM 685	SM 695	7	28	26– 30
SM 669	SM 689	SM 699	3.9	48	45– 55
SM 666	SM 686	SM 696	3	60	58– 68



**Additional DC outputs**

+ output 2		– output 3		output 4	
common return					
5 V	3 A max.	5 V	1.2 A max.	5 V	3 A max.
12 V		12 V		12 V	3 A max.
15 V		15 V		24 V	1.2 A max.

The modules require a minimum load of 10...20 % at the main output in order to generate sufficient voltage for the additional outputs.

**Assistance in table use:**

- Select the column for input voltage range.
- Select the row for the appropriate main output voltage.
- The intersection of both results in the module required.
- Additional outputs can be chosen, considering that the max. output power of 180 / 250 / 300 W will not be exceeded.

**For example:**

- input voltage = 230 VAC
- output voltage = 24 VDC @ 8.5 A
- results in a SM 684 module.
- Additional outputs to be specified.

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

## Features

- DC input: 10 - 380 V
- AC input: 115 / 230 V, 47 - 400 Hz
- Up to 4 DC outputs: 5 / ... / 60 V
- Power: 30 / ... / 700 W
- Continuous short circuit protection for main output
- Overvoltage protection for main output
- Industrial grade components
- Compact and robust design

## Specifications

### Input

Voltage range . . . . . see table, unit switches off  
 at under- and overvoltage  
 No-load input power. . . . . 3 - 6 W  
 Switch-on time . . . . . 0.5 - 2 s  
 Inrush current . . . . . AC input: limited by thermistor  
 Hold-up time . . . . . AC input: 10 ms typical

### Immunity

- ESD. . . . . acc. to DIN / EN 61000-4-2 level 3  
 - Fast transients . . . . . acc. to DIN / EN 61000-4-4 level 3  
 - Surges . . . . . acc. to DIN / EN 61000-4-5 level 3

### Main output

Line regulation ( $\pm 10\%$ ) . . . . . 0.1 %  
 Load regulation (10-90 %) . . . . . 0.2 %  
 Load transient (10-90-10 %) . . . . . 6 % typical  
 Response time to  $\pm 1\%$  . . . . . 2 - 3 ms  
 Turn-on rise time . . . . . Soft-start, 100 ms typical  
 Ripple. . . . .  $\leq 1\% + 30\text{ mV}_{p-p}$   
 Overload protection . . . . . current limited to 105 - 110 % of  $I_{nom}$   
 Overvoltage protection . . . . . OVP switches off module with  
 automatic return to operation  
 Remote sense. . . . . compensation up to 10 % of  $U_{nom}$

### Additional outputs

Line regulation ( $\pm 10\%$ ) . . . . . 0.1 %  
 Load regulation (10-90 %) . . . . . 2 % typical  
 Ripple. . . . . 0.5 % typical  
 Overload protection . . . . . current limited

### General

Efficiency . . . . . 70 - 85 %  
 Operating temperature. . . . .  $-20$  to  $+75\text{ }^\circ\text{C}$   
 Load derating . . . . .  $2.5\%$  /  $^\circ\text{C}$  from  $+55\text{ }^\circ\text{C}$   
 Storage temperature . . . . .  $-40$  to  $+85\text{ }^\circ\text{C}$   
 Humidity . . . . . up to 95 % RH, non-condensing  
 Cooling . . . . . natural convection  
 Temperature coefficient . . . . .  $0.02\%$  /  $^\circ\text{C}$  typical  
 Safety / Construction. . . . . acc. to DIN / EN 60950-1: 2003  
 Protection category. . . . . IP 20, others or NEMA upon request  
 EMI. . . . . acc. to EN 55022, class A,  
 optionally class B  
 MTBF . . . . . approx. 100,000 h @  $40\text{ }^\circ\text{C}$   
 acc. to MIL - HDBK - 217 E (notice 1)

Connector for  
 eurocassette - std. design . . . . . H 15  
 Marking . . . . . CE

## Options

### Input

- Inrush current limiting for DC input
- Reverse polarity protection for DC input
- Autoranging for 115 / 230 VAC input

### Output

- Parallel operation
- Redundant operation
- Inhibit (remote on / off)

### Signals

via open collector or relay contacts

- Power ok (input)
- DC ok (outputs)

### Monitoring

Input / output voltage or current via  
 - analog signal  
 - interface card RS232 or IEEE488 (external)

### Mechanics / environment:

- 19" sub-rack for eurocassette
- Wall mount
- Chassis mount
- DIN rail mount
- Increased mechanical strength
- Tropical protection
- Extended temperature range to  $-40\text{ }^\circ\text{C}$

