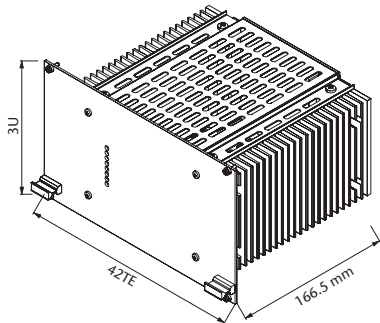
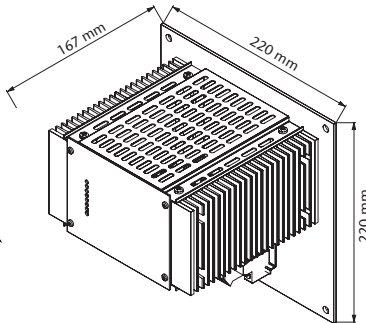
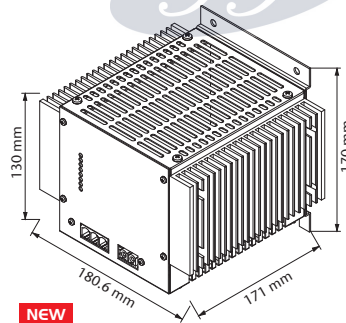
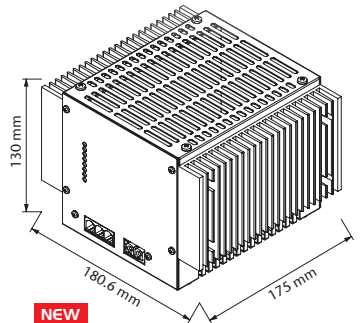


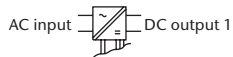
Eurocassette / approx. 3.5 kg
(pluggable module for 19" sub-rack)

Wall mount / approx. 4.5 kg

**NEW**
Chassis mount / approx. 4.0 kg**NEW**
DIN rail mount / approx. 3.9 kg

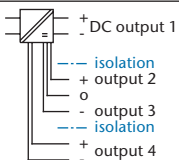
DC / DC Converters

▶ 270 W		▶ 400 W		▶ 450 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 ¹⁾ VDC	Max. Output Amps	Adj.	Range
M 600	35	M 620	40	M 630	M 640	M 650	M 670	M 680 Z	40	5	5– 5.5
M 601	18	M 621	25	M 631	M 641	M 651	M 671	M 681 Z	30	9	8– 10
M 602	15	M 622	20	M 632	M 642	M 652	M 672	M 682 Z	24	12	11– 13
M 603	12	M 623	16	M 633	M 643	M 653	M 673	M 683 Z	19	15	14– 16
M 604	7.2	M 624	10	M 634	M 644	M 654	M 674	M 684 Z	12	24	23– 26
M 605	6	M 625	8.7	M 635	M 645	M 655	M 675	M 685 Z	10	28	26– 30
M 609	3.2	M 629	4.6	M 639	M 649	M 659	M 679	M 689 Z	5.4	48	45– 55
M 606	3	M 626	3.8	M 636	M 646	M 656	M 676	M 686 Z	4.5	60	58– 68



AC / DC Power Supplies

▶ 450 W					
Input VAC, 1-Phase				Output 1 VDC	
115 ±20%	230 ^{+15%} –20%	115 ±20% / 230 ^{+15%} –20%	Max. Output Amps	Adj.	Range
M 660	M 680	M 690	40	5	5– 5.5
M 661	M 681	M 691	30	9	8– 10
M 662	M 682	M 692	24	12	11– 13
M 663	M 683	M 693	19	15	14– 16
M 664	M 684	M 694	12	24	23– 26
M 665	M 685	M 695	10	28	26– 30
M 669	M 689	M 699	5.4	48	45– 55
M 666	M 686	M 696	4.5	60	58– 68



Additional DC outputs

+ output 2		— output 3		output 4			
common return							
linear regulator				linear regulator		switch mode regulator	
5 V	3 A max.	5 V	3 A max.	5 V	3 A max.	5 V	10 A max.
12 V		12 V		12 V	3 A max.	12 V	6 A max.
15 V		15 V		15 V	3 A max.	15 V	5 A max.
				24 V	1.2 A max.	24 V	3 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:

- 1 Select the column for input voltage range.
- 2 Select the row for the appropriate main output voltage.
- 3 The intersection of both results in the module required.
- 4 Additional outputs can be chosen, considering that the max. output power of 270/400/450 W will not be exceeded.

For example:

- 1 input voltage = 12 VDC
- 2 output voltage = 60 VDC @ 3 A
- 3 results in a M 606 module.
- 4 Additional outputs to be specified.

¹⁾ 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 $\leq 1\% + 30 \text{ mV}_{\text{p-p}}$

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 (details see page 103)

Marking CE

Options (details see page 90 – 92)**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, refer to page 93
- Wall mount
- Chassis mount
- DIN rail mount
- Increased mechanical strength
- Tropical protection
- Extended temperature range to $-40\text{ }^{\circ}\text{C}$

