

DC / AC Inverters, AC / AC Frequency Converters & Static Switches

- **Input voltage:** 10-800V DC or 115/ 230V AC, single phase, 47-400Hz or 200/ 400/ 480V AC, three phase, 47-400Hz
- **Output voltage:** 115/ 230 V AC, single phase or 200/ 400/ 480V AC, three phases
- **Output frequency:** 50/ 60/ 400/ 800Hz (crystal stabilized) or programmable within 40-400Hz or 400-800Hz
- **Output power:** 200VA - 45kVA

Features

- Sine Wave
- Continuous short circuit protection
- Thermal shutdown with auto-restart for 1-phase inverters >1.2kVA 3-phase inverters >3.6kVA
- Suitable for complex load
- Surge power capability
- Industrial grade components
- Compact and robust design
- **3-phase output:** Unsymmetrical load permissible, modular system with interchangeable inverters



Specifications

Input

Voltage range	unit switches off at under- and overvoltage
No-load input power	10 – 30 W
Inrush current	for AC input and DC input >160V: limited by thermistor
Hold-up time	AC input: 10 ms typical Series CI: 20ms typical
Immunity	acc. to EN 61000-6-2

General

Efficiency	80 – 92 %		
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	☼ = natural convection ☼ = incl. temperature controlled fans (details see page 131)		
Humidity	up to 95 % RH, non-condensing		
Safety / Construction	acc. to EN 60950-1 / EN 50178		
Protection category	IP20 acc. to EN 60529, NEMA or others upon request		
EMI	acc. to EN 61000-6-4, class A, optionally class B		
MTBF @40°C acc. to MIL -HDBK-217E (notice1)	series IT: 120.000h	series CI: 70.000h	series IV: 50.000h

Output

Output voltages	115V AC	230V AC
	3x200VAC	3x400VAC 3x480VAC or any other
Output power	from 200 VA up to 45k VA	
Line regulation (±10%)	0.1 % for series CI, 2 % for series IT and IV 3 % for series IT and IV @ 400Hz	
Load regulation (10-90%)	1 % typical, 3 % max. (400 Hz: 3 % typical, 5 % max.)	
Turn-on rise time	soft-start, 100ms typical	
Waveform	sine wave or any wave shape programmable by external signal	
Frequency	40 – 800 Hz: adjustable or programmable or any fixed frequency (crystal stabilized)	
Distortion	3 % typical, 5 % @ 400 Hz, 7 % @ 40 – 400 Hz, 800Hz	
Overload protection (steady state)	current limited to approx. 1.05 x nominal current	
Surge power	2 x nominal power for 1 s	
Short circuit protection	electronically limited to 3 x nominal current, unit switches off after 1 s	
Crest factor	approx. 3	
Power factor	cos 0.7 inductive / capacitive	

Options (details see page 115)

Input

- Inrush current limiting for DC input
- Reverse polarity protection for DC input
- Autoranging for 115 / 230 VAC input
- Special circuit for 16.6Hz AC input

Output

- Remote on / off (inhibit)
- Static Switch (details see page 97)
- Parallel operation for redundancy or increased power: series IT5xxx

Signals

- via relay contacts
- Power ok (input)
- AC ok (output)

Monitoring

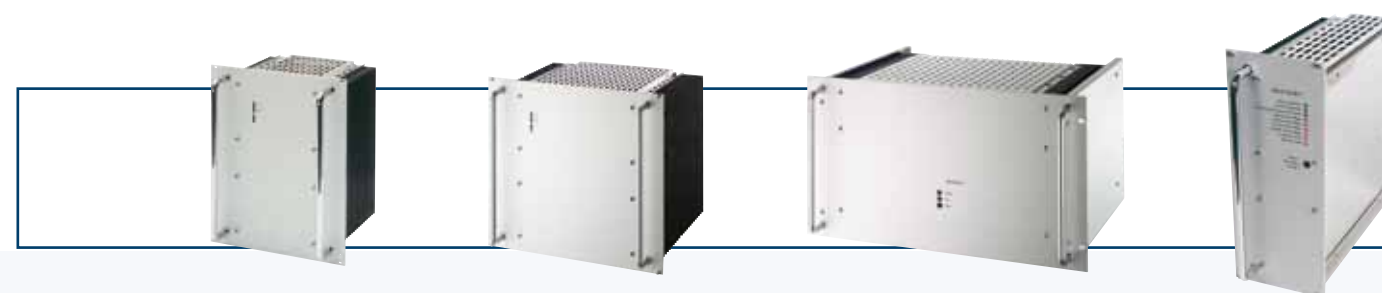
- of input / output voltage, current or frequency via
- analog signal
- interface card RS232 or CAN Bus (external)

Programming

- of output voltage, current or frequency via
- potentiometer
- analog signal
- interface card RS232 or CAN Bus (external)

Mechanics / environment:

- 19" sub-rack for eurocassette, refer to page 121
- Wall mount
- Increased mechanical strength
- Tropical protection
- Extended temperature range to –40 °C
- Temperature controlled fans for 19" units

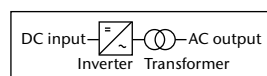


Series IT - Inverters with 1-phase output

▶ from 200 VA to 15 kVA **Page 89**

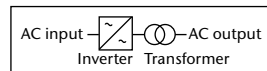
DC/AC Inverters

is a combination of a switch mode Inverter and a Transformer at the output. The transformer provides the isolation between input and output and transforms the voltage to the required level.



AC/AC Frequency Converters

is a combination of a switch mode Inverter with a rectifier at the input and a Transformer at the output. The transformer provides the isolation between input and output and transforms the voltage to the required level.



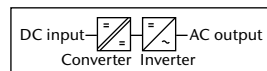
For lower input voltages the CI version is more compact than the IT version.

Series CI - Inverters with 1-phase output

▶ from 400 VA to 3.5 kVA **Page 91**

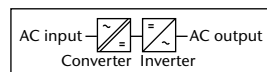
DC/AC Inverters

is a combination of a switch mode Converter and Inverter. The converter provides the isolation between input and output and transforms the voltage to the level needed by the inverter for supplying the specified AC output voltage.



AC/AC Frequency Converters

is a combination of a switch mode Converter and Inverter. The converter provides the isolation between input and output and transforms the voltage to the level needed by the inverter for supplying the specified AC output voltage.

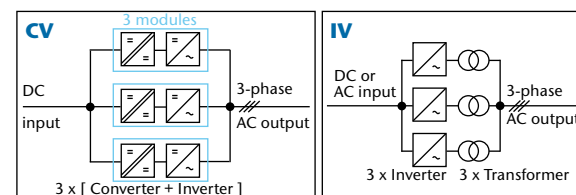


Series CV & IV - Inverters with 3-phase output

▶ from 600VA to 45 kVA **Page 93 a & b)**

DC/AC or AC/AC

is a combination of 3 individual switch mode inverters synchronized for a symmetrical 3-phase output. For series CV the converters provides the isolation between input and output; For series IV the transformers provide the isolation between input and output and transform the voltages to the required levels.



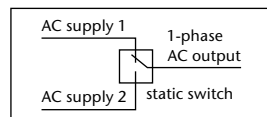
Series SS

▶ from 800 VA to 10 kVA **Page 97**

Static Switches

The Static Switch has two inputs for load supply, a priority and a non-priority input, and synchronizes the frequency of one supply to the other. Typically, but not exclusively, supplied by Mains & an Inverter, there are 3 modes of operation:

1. Service mode Mains - mains is selected as the load provider.
2. Service mode Inverter - inverter is selected as the load provider.
3. Automated function with priority selection.

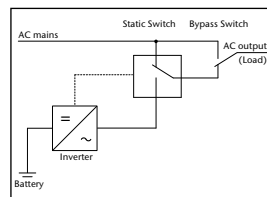


Series U

▶ from 1 to 2.5 kVA **Page 99**

UPS Systems with Static Switch

provides uninterrupted AC power to a critical load by connecting the load to AC supply 1 which can be the inverter output or to AC supply 2 which can be the mains. Series U does not include the batteries. The batteries can be specified and both, batteries and charger can be added to the system.

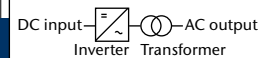


Connectors

▶ for Series CI, IT, IV & SS **Page 132**

Mechanics	Series CI	Series IT	Series IV	Series SS	Series U
Eurocassette	H15 & high current connector for I > 50 A	H15 and F24H7	--	H15 and F48	--
Wall mount or 19" unit	Terminals	Terminals	Terminals	Terminals	Terminals

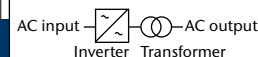




DC / AC Inverters with 1-phase output from 200VA to 15kVA

		Input VDC														Cooling	Output VAC
20-32 VDC	Output kVA	Size	40-64 VDC	50-80 VDC	Output kVA	Size	80-160 VDC	Output kVA	Size	160-320 VDC	340-400 VDC	340-640 ¹⁾ VDC	450-800 ¹⁾ VDC	Output kVA	Size		
IT 1626	0.2	A	IT 1636	IT 1646	0.4	A	IT 1656	0.5	A	IT 1676	IT 1686 Z			0.5	A	115	
			IT 3636	IT 3646	0.5	B	IT 3656	1	B	IT 3676	IT 3686 Z	IT 3676 G		1	B		
			IT 4836	IT 4846	1.2	D	IT 4856	2	C	IT 3876	IT 3886 Z	IT 3876 G	IT 3876 K	1.6	C		
			IT 5636	IT 5646	2	E	IT 5656	3	E	IT 5676	IT 5686 Z	IT 5676 G	IT 5676 K	2.5	D		
			IT 5736	IT 5746	3	E	IT 5756	5	F+T1	IT 5776	IT 5786 Z	IT 5776 G	IT 5776 K	8	F+T2		
										IT 5876	IT 5886 Z	IT 5876 G	IT 5876 K	10	F+T3		
IT 1628	0.2	A	IT 1638	IT 1648	0.4	A	IT 1658	0.5	A	IT 1678	IT 1688 Z			0.5	A	230	
			IT 3638	IT 3648	0.5	B	IT 3658	1	B	IT 3678	IT 3688 Z	IT 3678 G		1	B		
			IT 4838	IT 4848	1.2	D	IT 4858	2	C	IT 3878	IT 3888 Z	IT 3878 G	IT 3878 K	1.6	C		
			IT 5638	IT 5648	2	E	IT 5658	3	E	IT 5678	IT 5688 Z	IT 5678 G	IT 5678 K	2.5	D		
			IT 5738	IT 5748	3	E	IT 5758	5	F+T1	IT 5778	IT 5788 Z	IT 5778 G	IT 5778 K	8	F+T2		
										IT 5878	IT 5888 Z	IT 5878 G	IT 5878 K	10	F+T3		

☐ = natural convection * = incl. temperature controlled fans ¹⁾ standard version: wall mount



AC / AC Frequency Converters with 1-phase output from 500VA to 15kVA

Input VAC 1-Phase	Output kVA	Size	Input VAC 1-Phase				Output kVA	Size	Cooling	Output VAC
			230 ^{+15% -20%}	3x200 ^{+15% -20%}	3x400 ^{+15% -20%}	3x480 ^{+10% -15%}				
115 ±20%	0.5	A	IT 1666	IT 1666 V			0.5	A	115	
	1	B	IT 3666	IT 3666 V	IT 3686 V		1	B		
	1.2	C	IT 3866	IT 3866 V	IT 3886 V	IT 3896 V	1.6	C		
	2	D	IT 4866	IT 4866 V	IT 4886 V	IT 4896 V	2.5	D		
	3	E	IT 5666	IT 5666 V	IT 5686 V	IT 5696 V	5	F+T1		
	5	F+T1	IT 5766	IT 5766 V	IT 5786 V	IT 5796 V	8	F+T2		
230	0.5	A	IT 1668	IT 1668 V			0.5	A	230	
	1	B	IT 3668	IT 3668 V	IT 3688 V		1	B		
	1.2	C	IT 3868	IT 3868 V	IT 3888 V	IT 3898 V	1.6	C		
	2	D	IT 4868	IT 4868 V	IT 4888 V	IT 4898 V	2.5	D		
	3	E	IT 5668	IT 5668 V	IT 5688 V	IT 5698 V	5	F+T1		
	5	F+T1	IT 5768	IT 5768 V	IT 5788 V	IT 5798 V	8	F+T2		

☐ = natural convection * = incl. temperature controlled fans

Frequency Designation

.1	40 - 400 Hz adjustable / programmable
.2	45 - 65 Hz adjustable / programmable
.3	any fixed frequency between 40 - 400 Hz
.4	400 Hz
.41	synchronized with 400 Hz mains
.5	50 Hz
.51	synchronized with 50 Hz mains
.6	60 Hz
.61	synchronized with 60 Hz mains
.7	50/60 Hz switchable
.8	800 Hz

Size A

Standard: Eurocassette / approx. 9 kg

Optional: Wall mount / approx. 11 kg

Size B

Standard: Eurocassette / approx. 11 - 13 kg

Optional: Wall mount / approx. 13 - 15 kg

Size C

Standard: Eurocassette / approx. 16 - 18 kg

Optional: Wall mount / approx. 19 - 21 kg

Size D

Standard: Eurocassette / approx. 18 - 24 kg

Optional: Wall mount / approx. 21 - 27 kg

Size E

Standard: 19" Plug-in module / approx. 46 - 50 kg

Optional: Wall mount / approx. 54 - 58 kg

Size F

Standard: 19" Plug-in module / approx. 32 kg

Optional: Wall mount / approx. 36 kg

Size L

Optional: 19", 3U Plug-in module

19", 3U high packages: available for series IT16xx up to IT36xx.

* = incl. temperature controlled fans

Size T1 - T4

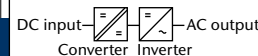
Transformer	H	W	D	Weight in kg
T1	390	240	233	33
T2	450	280	253	50
T3	450	280	283	66
T4	500	320	280	110

Transformers refer to 50/60 Hz. Other frequencies or tropical insulation may change size and weight.

Size T1

Transformer	H	W	D	Weight in kg
T1	335	230	210	33

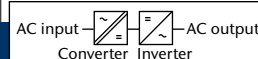
Transformers refer to 50/60 Hz. Other frequencies or tropical insulation may change size and weight.



DC / AC Inverters with I-phase output from 400VA to 3.5kVA

Input VDC													Cooling	Output VAC	
10-16 VDC	Output kVA	Size	20-32 VDC	Output kVA	Size	40-64 VDC	50-80 VDC	80-160 VDC	160-320 VDC	320-380 VDC	320-640 ¹⁾ VDC	450-800 ¹⁾ VDC			Output kVA
CI 1606	0.4	G	CI 1626	0.5	G	CI 1636	CI 1646	CI 1656	CI 1676	CI 1686 Z			0.6	G	115
			CI 3626	1	H	CI 3636	CI 3646	CI 3656	CI 3676	CI 3686 Z	CI 3676 G		1.2	H	
CI 4806	0.8	I	CI 4826	1.4	I	CI 4836	CI 4846	CI 4856	CI 4876	CI 4886 Z	CI 4876 G	CI 4876 K	1.8	I	
			CI 5626	2	K	CI 5636	CI 5646	CI 5656	CI 5676	CI 5686 Z	CI 5676 G	CI 5676 K	2.4	K	230
CI 5706	2	K	CI 5726	3	K	CI 5736	CI 5746	CI 5756	CI 5776	CI 5786 Z	CI 5776 G	CI 5776 K	3.5	K	
CI 1608	0.4	G	CI 1628	0.5	G	CI 1638	CI 1648	CI 1658	CI 1678	CI 1688 Z			0.6	G	230
			CI 3628	1	H	CI 3638	CI 3648	CI 3658	CI 3678	CI 3688 Z	CI 3678 G		1.2	H	
CI 4808	0.8	I	CI 4828	1.4	I	CI 4838	CI 4848	CI 4858	CI 4878	CI 4888 Z	CI 4878 G	CI 4878 K	1.8	I	
			CI 5628	2	K	CI 5638	CI 5648	CI 5658	CI 5678	CI 5688 Z	CI 5678 G	CI 5678 K	2.4	K	230
CI 5708	2	K	CI 5728	3	K	CI 5738	CI 5748	CI 5758	CI 5778	CI 5788 Z	CI 5778 G	CI 5778 K	3.5	K	

☐ = natural convection ☀ = incl. temperature controlled fans ¹⁾ standard version: wall mount



AC / AC Frequency Converters with I-phase output from 600VA to 3.5kVA

Input VAC 1-Phase			Input VAC 3-Phase			Output kVA	Size	Cooling	Output VAC
115 ±20%	230 ^{+15%} / _{-20%}	115 ^{±20%} / _{230 ^{+15%}/_{-20%}}	3x200 ^{+15%} / _{-20%}	3x400 ^{+15%} / _{-20%}	3x480 ^{+10%} / _{-15%}				
CI 1666	CI 1686	CI 1696	CI 1666 V		CI 1696 V	0.6	G	115	
CI 3666	CI 3686	CI 3696	CI 3666 V	CI 3686 V	CI 3696 V	1.2	H		
CI 4866	CI 4886	CI 4896	CI 4866 V	CI 4886 V	CI 4896 V	1.8	I		
CI 5666	CI 5686	CI 5696	CI 5666 V	CI 5686 V	CI 5696 V	2.4	K	230	
CI 5766	CI 5786		CI 5766 V	CI 5786 V	CI 5796 V	3.5	K		
CI 1668	CI 1688	CI 1698	CI 1668 V		CI 1698 V	0.6	G	230	
CI 3668	CI 3688	CI 3698	CI 3668 V	CI 3688 V	CI 3698 V	1.2	H		
CI 4868	CI 4888	CI 4898	CI 4868 V	CI 4888 V	CI 4898 V	1.8	I		
CI 5668	CI 5688	CI 5698	CI 5668 V	CI 5688 V	CI 5698 V	2.4	K	230	
CI 5768	CI 5788		CI 5768 V	CI 5788 V	CI 5798 V	3.5	K		

☐ = natural convection ☀ = incl. temperature controlled fans

Size G

Standard Eurocassette / approx. 6 kg

Optional Wall mount / approx. 8 kg

Size H

Standard Eurocassette / approx. 10 kg

Optional Wall mount / approx. 12 kg

Size I

Standard Eurocassette / approx. 18 kg

Optional Wall mount / approx. 21 kg

Size K

Standard 19" Plug-in module / approx. 28-32 kg
*) less depth upon request

Optional Wall mount / approx. 34-38 kg
**) applicable for CI 5706, 5708 5726 and 5728

Size M

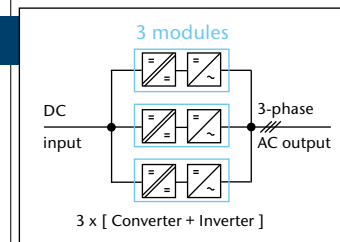
Optional 19", 2U Plug-in module

19", 2U high packages: available for series CI16xx.

☀ = incl. temperature controlled fans

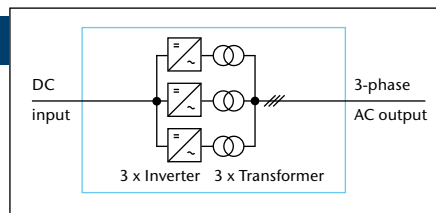
Frequency Designation

.0	any external signal (control, ramp) → only for Series CI
.1	40 - 400 Hz adjustable / programmable
.2	45 - 65 Hz adjustable / programmable
.3	any fixed frequency between 40 - 400 Hz
.4	400 Hz
.41	synchronized with 400 Hz mains
.5	50 Hz
.51	synchronized with 50 Hz mains
.6	60 Hz
.61	synchronized with 60 Hz mains
.7	50/60 Hz switchable
.8	800 Hz



Series CV

Switch mode converter (with isolation) and inverter in three modules
Please note: additional rack or wall plate required



Series IV

Switch mode inverter with output transformer for isolation and voltage transformation

		Input VDC						Cooling	Output VAC line-to-line
10-16 VDC	Output kVA	20-32 VDC	Output kVA	40-64 VDC	50-80 VDC	Output kVA	Size		
CV 5806 ¹⁾	2.4	CV 5826 ¹⁾	0.6	IV 5536	IV 5546	1.2	A	3 x 200	
		CV 5626	1.5	IV 5636	IV 5646	1.5	B		
		CV 5726	3	IV 5736	IV 5746	1.8	M / N		
				IV 5836	IV 5846	3.6	E+T1		
				IV 6236	IV 6246	6	G+T2		
				IV 6436	IV 6446	10.5	Q		
CV 5808 ¹⁾	2.4	CV 5828 ¹⁾	0.6	IV 5538	IV 5548	1.2	A	3 x 400	
		CV 5628	1.5	IV 5638	IV 5648	1.5	B		
		CV 5728	3	IV 5738	IV 5748	1.8	M / N		
				IV 5838	IV 5848	3.6	E+T1		
				IV 6238	IV 6248	6	G+T2		
				IV 6438	IV 6448	10.5	Q		
CV 6408	6	CV 6428	0.6	IV 5539	IV 5549	1.2	A	3 x 480	
				IV 5639	IV 5649	1.5	B		
				IV 5839	IV 5849	3.6	E+T1		
				IV 6239	IV 6249	6	G+T2		
				IV 6439	IV 6449	10.5	Q		

☐ = natural convection ☀ = incl. temperature controlled fans
¹⁾ external fan recommended

Frequency Designation

- .1 40 - 400 Hz adjustable / programmable
- .2 45 - 65 Hz adjustable / programmable
- .3 any fixed frequency between 40 - 400 Hz
- .4 400 Hz (module size of series IV may be smaller)
- .41 synchronized with 400 Hz mains
- .5 50 Hz
- .51 synchronized with 50 Hz mains
- .6 60 Hz
- .61 synchronized with 60 Hz mains
- .7 50/60 Hz switchable
- .8 800 Hz (module size of series IV may change)

Size A

Standard: 19" sub-rack / approx. 24 / 27 kg¹⁾

Optional: Wall mount / approx. 28 / 31 kg¹⁾

Size B

Standard: 19" sub-rack / approx. 33 kg¹⁾

Optional: Wall mount / approx. 38 kg¹⁾

Size E

Standard: 19" sub-rack / approx. 35 kg¹⁾

Optional: Wall mount / approx. 65 kg¹⁾

Size G

Attention: 3 modules are required

Standard: 19" Plug-in module / approx. 32kg¹⁾ ☀

Optional: Wall mount / approx. 36kg¹⁾ ☀

Size T1 - T3

Transformer	Ø in mm	H in mm	approx. Weight in kg	Power in kVA
T1	190	75	8.6	1.4
T2	205	85	12	2
T3	243	85	15	3

Transformers refer to 50/60 Hz at the output. Other frequencies or tropical insulation may change size and weight.
 Attention: For 3-phase system 3 transformers are required.

Size M

Attention: 3 modules are required

Optional: 19", 2U Plug-in module ☀

Size N

Attention: 3 modules are required

Standard: Eurocassette / approx. 6 kg

Optional: Wall mount / approx. 8 kg

Size O

Attention: 3 modules are required

Standard: Eurocassette / approx. 10 kg

Optional: Wall mount / approx. 12 kg

Size P

Attention: 3 modules are required

Standard: Eurocassette / approx. 18 kg

Optional: Wall mount / approx. 21 kg

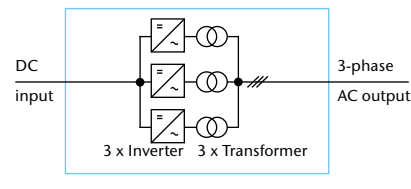
Size Q

Attention: 3 modules are required

Standard: less depth upon request
19" Plug-in module / approx. 28-32 kg ☀

Optional: Wall mount / approx. 34-38 kg ☀

¹⁾ transformers internal ¹⁾ transformers external ☀ = incl. temperature controlled fans



Series IV

Switch mode inverters with output transformers for isolation and voltage transformation

Input VDC										Cooling	Output VAC line-to-line
80-160 VDC	Output kVA	Size	160-320 VDC	340-400 VDC	340-640 ¹⁾ VDC	450-800 ¹⁾ VDC	Output kVA	Size			
IV 5556	1.5	A	IV 5576	IV 5586 Z			1.8	A	3 x 200		
IV 5656	3	C	IV 5676	IV 5686 Z	IV 5676 G		3.6	C			
			IV 5776	IV 5786 Z			5.4	D+T2			
					IV 5776 G	IV 5776 K	5.4	D+T2			
IV 5856	6	E+T2	IV 5876	IV 5886 Z	IV 5876 G	IV 5876 K	7.5	F+T3			
			IV 5876 F ²⁾	IV 5886 ZF	IV 5876 GF ²⁾	IV 5876 KF ²⁾	10	F+T4			
IV 6256	9	G+T3	IV 6276	IV 6286 Z	IV 6276 G	IV 6276 K	15	G+T5			
IV 6456	15	G+T5	IV 6476	IV 6486 Z	IV 6476 G	IV 6476 K	24	G+T6			
			IV 6676	IV 6686 Z	IV 6676 G	IV 6676 K	30	G+T7			
			IV 6876	IV 6886 Z	IV 6876 G	IV 6876 K	45	G+T8			
IV 5558	1.5	A	IV 5578	IV 5588 Z			1.8	A		3 x 400	
IV 5658	3	C	IV 5678	IV 5688 Z	IV 5678 G		3.6	C			
			IV 5778	IV 5788 Z			5.4	D+T2			
					IV 5778 G	IV 5778 K	5.4	D+T2			
IV 5858	6	E+T2	IV 5878	IV 5888 Z	IV 5878 G	IV 5878 K	7.5	F+T3			
			IV 5878 F ²⁾	IV 5888 ZF	IV 5878 GF ²⁾	IV 5878 KF ²⁾	10	F+T4			
IV 6258	9	G+T3	IV 6278	IV 6288 Z	IV 6278 G	IV 6278 K	15	G+T5			
IV 6458	15	G+T5	IV 6478	IV 6488 Z	IV 6478 G	IV 6478 K	24	G+T6			
			IV 6678	IV 6688 Z	IV 6678 G	IV 6678 K	30	G+T7			
			IV 6878	IV 6888 Z	IV 6878 G	IV 6878 K	45	G+T8			
IV 5559	1.5	A	IV 5579	IV 5589 Z			1.8	A	3 x 480		
IV 5659	3	C	IV 5679	IV 5689 Z	IV 5679 G		3.6	C			
			IV 5779	IV 5789 Z			5.4	D+T2			
					IV 5779 G	IV 5779 K	5.4	D+T2			
IV 5859	6	E+T2	IV 5879	IV 5889 Z	IV 5879 G	IV 5879 K	7.5	F+T3			
			IV 5879 F ²⁾	IV 5889 ZF	IV 5879 GF ²⁾	IV 5879 KF ²⁾	10	F+T4			
IV 6259	9	G+T3	IV 6279	IV 6289 Z	IV 6279 G	IV 6279 K	15	G+T5			
IV 6459	15	G+T5	IV 6479	IV 6489 Z	IV 6479 G	IV 6479 K	24	G+T6			
			IV 6679	IV 6689 Z	IV 6679 G	IV 6679 K	30	G+T7			
			IV 6879	IV 6889 Z	IV 6879 G	IV 6879 K	45	G+T8			

☐ = natural convection ☀ = incl. temperature controlled fans

¹⁾ standard version: wall mount

²⁾ input voltage range to be narrowed

Frequency Designation

Frequency Designation

.1	40 - 400 Hz adjustable / programmable
.2	45 - 65 Hz adjustable / programmable
.3	any fixed frequency between 40 - 400 Hz
.4	400 Hz (module size of series IV may be smaller)
.41	synchronized with 400 Hz mains
.5	50 Hz
.51	synchronized with 50 Hz mains
.6	60 Hz
.61	synchronized with 60 Hz mains
.7	50/60 Hz switchable
.8	800 Hz (module size may change)

Size A

Standard: 19" sub-rack / approx. 30 kg¹⁾

Optional: with wall plate / approx. 34 kg¹⁾

Size C

Standard: 19" sub-rack / approx. 40 kg¹⁾

Optional: with wall plate / approx. 45 kg¹⁾

Size D

Standard: 19" sub-rack / approx. 24 kg¹⁾

Optional: with wall plate / approx. 65 kg¹⁾

Size E

Standard: 19" sub-rack / approx. 35 kg¹⁾

Optional: with wall plate / approx. 80 kg¹⁾

Size F

Standard: 19" sub-rack / approx. 37 kg¹⁾

Optional: with wall plate / 90 / 115 kg¹⁾

Size G

Standard: 19" Plug-in module / approx. 30 kg¹⁾

Optional: with wall plate / approx. 36 kg¹⁾

Attention: 3 modules are required

Size T1 - T3

Transformer	Ø in mm	H in mm	approx. Weight in kg	Power in kVA
T1	190	75	8.6	1.4
T2	205	85	12	2
T3	243	85	15	3

Transformers refer to 50/60 Hz at the output. Other frequencies or tropical insulation may change size and weight. Attention: For 3-phase system 3 transformers are required.

Size T4

approx. 23 kg / 3.4 kVA

Transformer refers to 50/60 Hz at the output. Other frequencies or tropical insulation may change size and weight. Attention: For 3-phase system 3 transformers are required.

Size T5 - T8

Transformer	H in mm	W in mm	D in mm	approx. Weight in kg	Power in kVA
T5	390	240	233	33	5
T6	450	280	253	50	8
T7	450	280	283	66	12
T8	500	320	280	110	15

Transformers refer to 50/60 Hz at the output. Other frequencies or tropical insulation may change size and weight. Attention: For 3-phase system 3 transformers are required.

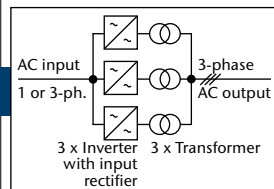
Size T5

Transformer	H in mm	W in mm	D in mm	approx. Weight in kg	Power in kVA
T5	335	230	210	33	5

Transformers refer to 50/60 Hz at the output. Other frequencies or tropical insulation may change size and weight. Attention: For 3-phase system 3 transformers are required.

¹⁾ transformers internal

¹⁾ transformers external



AC / AC Inverters with 3-phase output from 1.5kVA to 45kVA

Input VAC 1-Phase	Output kVA	Size	Input VAC 1-Phase	Input VAC 3-Phase			Output kVA	Size	Cooling	Output VAC line-to-line
				230 ^{+15%} _{-20%}	3x200 ^{+15%} _{-20%}	3x400 ^{+15%} _{-20%}				
IV 5566	1.5	A	IV 5586	IV 5566 V			1.8	A	3 x 200	
IV 5666	3	C	IV 5686	IV 5666 V	IV 5686 V		3.6	C		
IV 5766	3.6	D+T1	IV 5786	IV 5766 V	IV 5786 V	IV 5796 V	5.4	D+T2		
IV 5866	6	E+T2	IV 5886	IV 5866 V	IV 5886 V	IV 5896 V	7.5	E+T3		
IV 6266	9	G+T3	IV 6286	IV 6266 V	IV 6286 V	IV 6296 V	15	G+T5	3 x 400	
IV 6466	15	G+T5	IV 6486	IV 6466 V	IV 6486 V	IV 6496 V	24	G+T6		
					IV 6686 V	IV 6696 V	36	G+T7		
					IV 6886 V	IV 6896 V	45	G+T8		
IV 5568	1.5	A	IV 5588	IV 5568 V			1.8	A	3 x 480	
IV 5668	3	C	IV 5688	IV 5668 V	IV 5688 V		3.6	C		
IV 5768	3.6	D+T1	IV 5788	IV 5768 V	IV 5788 V	IV 5798 V	5.4	D+T2		
IV 5868	6	E+T2	IV 5888	IV 5868 V	IV 5888 V	IV 5898 V	7.5	E+T3		
IV 6268	9	G+T3	IV 6288	IV 6268 V	IV 6288 V	IV 6298 V	15	G+T5	3 x 480	
IV 6468	15	G+T5	IV 6488	IV 6468 V	IV 6488 V	IV 6498 V	24	G+T6		
					IV 6688 V	IV 6698 V	36	G+T7		
					IV 6888 V	IV 6898 V	45	G+T8		
IV 5569	1.5	A	IV 5589	IV 5569 V			1.8	A	3 x 480	
IV 5669	3	C	IV 5689	IV 5669 V	IV 5689 V		3.6	C		
IV 5769	3.6	D+T1	IV 5789	IV 5769 V	IV 5789 V	IV 5799 V	5.4	D+T2		
IV 5869	6	E+T2	IV 5889	IV 5869 V	IV 5889 V	IV 5899 V	7.5	E+T3		
IV 6269	9	G+T3	IV 6289	IV 6269 V	IV 6289 V	IV 6299 V	15	G+T5	3 x 480	
IV 6469	15	G+T5	IV 6489	IV 6469 V	IV 6489 V	IV 6499 V	24	G+T6		
					IV 6689 V	IV 6699 V	36	G+T7		
					IV 6889 V	IV 6899 V	45	G+T8		

☐ = natural convection * = incl. temperature controlled fans

Standard
19" sub-rack / approx. 27 kg¹⁾

Optional
with wall plate / approx. 31 kg¹⁾

Standard
19" sub-rack / approx. 40 kg¹⁾

Optional
with wall plate / approx. 45 kg¹⁾

Standard
19" sub-rack / approx. 24 kg²⁾

Optional
with wall plate / 55/65 kg¹⁾

Standard
19" sub-rack / approx. 27 kg²⁾

Optional
with wall plate / approx. 70/80 kg¹⁾

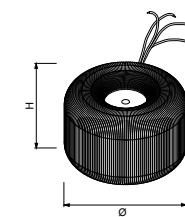
Standard
19" sub-rack / approx. 28 kg²⁾

Optional
with wall plate / approx. 104 kg¹⁾

Standard
19" Plug-in module / approx. 32 kg

Optional
with wall plate / approx. 36 kg

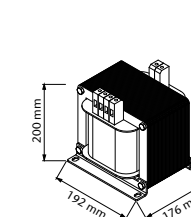
Attention:
For 3-phase system
3 modules are required.



Size T1 - T3

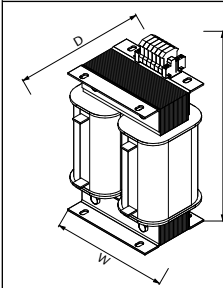
Trans- former	Ø in mm	H in mm	Weight in kg	Power in kVA
T1	190	75	8.6	1.4
T2	205	85	12	2
T3	243	85	15	3

Transformers refer to 50/60 Hz at the output. Other frequencies or tropical insulation may change size and weight.
Attention: For 3-phase system 3 transformers are required.



Size T4
Transformer refers to 50/60 Hz at the output. Other frequencies or tropical insulation may change size and weight.
Attention: For 3-phase system 3 transformers are required.

approx. 23 kg / 3.4 kVA

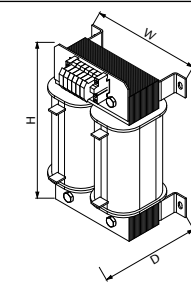


standing version

Size T5 - T8

Trans- former	H in mm	W in mm	D in mm	Weight in kg	Power in kVA
T5	390	240	233	33	5
T6	450	280	253	50	8
T7	450	280	283	66	12
T8	500	320	280	110	15

Transformers refer to 50/60 Hz at the output. Other frequencies or tropical insulation may change size and weight.
Attention: For 3-phase system 3 transformers are required.



Wall mount version

Size T5

Trans- former	H in mm	W in mm	D in mm	Weight in kg	Power in kVA
T5	335	230	210	33	5

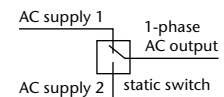
Transformers refer to 50/60 Hz at the output. Other frequencies or tropical insulation may change size and weight.
Attention: For 3-phase system 3 transformers are required.

Frequency Designation

- .1 40 - 400 Hz adjustable / programmable
- .2 45 - 65 Hz adjustable / programmable
- .3 any fixed frequency between 40 - 400 Hz
- .4 400 Hz
- .41 synchronized with 400 Hz mains
- .5 50 Hz
- .51 synchronized with 50 Hz mains
- .6 60 Hz
- .61 synchronized with 60 Hz mains
- .7 50/60 Hz switchable
- .8 800 Hz

¹⁾ transformers internal

²⁾ transformers external



Static Switches with 1-phase output from 0.8 to 10kVA

Model	Output Power [kVA]	Cooling	Input / Output [V]
SS 1506	0.8	[Natural convection icon]	115
SS 3506	1.6		
SS 3516	3		
SS 3526	5		
SS 3536	10		
SS 1508	0.8	[Natural convection icon]	230
SS 3508	1.6		
SS 3518	3.2		
SS 3528	5		
SS 3538	10		

Frequency Designation	
.4	400 Hz
.5	50 Hz
.6	60 Hz
.8	800Hz

[Natural convection icon] = natural convection

Series specific information

Function

The Static Switch has two inputs for load supply, a priority and a non-priority input, and synchronizes the frequency of one supply to the other. Typically, but not exclusively, supplied by Mains and an Inverter, there are 3 modes of operation:

1. Service mode Mains - mains is selected as the load provider.
2. Service mode Inverter - inverter is selected as the load provider.
3. Automated function with priority selection.

In the automated function the supply of the priority input is connected to the load. If the static switch detects deviation from tolerance through monitoring, it will transfer the load to the non-priority input. When the supply of the priority input has returned to be within parameters of voltage and frequency, the static switch reverses this selection.

For adapting the static switch to different requirements, the priority for mains or inverter operation can be selected externally via an opto-coupler. The static switch can also be inhibited via another opto-coupler for disconnecting the load. LEDs and potential-free relay contacts indicate the mode of operation and / or the status of alarms.

Indication of operation mode

	Green LED	Red LED	potential free contacts *)
Mains operation	■		■
Inverter operation	■		■
Inverter synchronous with mains	■		■
Mains over voltage		■	■
Mains under voltage		■	■
Inverter over voltage		■	■
Inverter under voltage		■	■
Common alarm		■	■
Service mode		■	

*) U_{max} = 250 VAC, I_{max} = 3 A

Input / Output

Surge current	5 x I _{nom} for 1 s
Overload protection	For models with I _{nom} ≤ 15 A: short circuit protected: unit switches off at output current above 15 A; For models with I _{nom} > 15 A: an external fuse with slow characteristic is required
Inhibit (remote on / off)	logic low = 0 – 5 V; logic high = 12 – 30 V via opto-coupler
Priority selection	logic low = 0 – 5 V; logic high = 12 – 30 V via opto-coupler
Transfer trigger	0.8 x U _{nom} < voltage < 1.15 x U _{nom}
Transfer time	
- mains to inverter (mains priority) or inverter to mains (inverter priority)	For models with I _{nom} ≤ 15 A: ≤ ½ period, typically ¼ period (including failure detection time) For models with I _{nom} > 15 A: one period, typically ½ period (including failure detection time)
- return to mains (mains priority) or return to inverter (inverter priority)	For models with I _{nom} ≤ 15 A: practically no interruption For models with I _{nom} > 15 A: typically ½ period

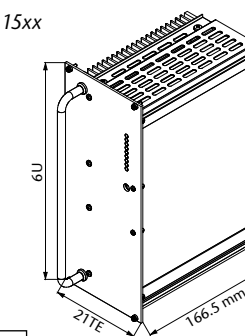
Options

Mechanics / environment	<ul style="list-style-type: none"> ■ 19" sub-rack for eurocassette, refer to page 121 ■ Wall mount ■ Increased mechanical strength ■ Tropical protection ■ Extended temperature range to -40 °C
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6U



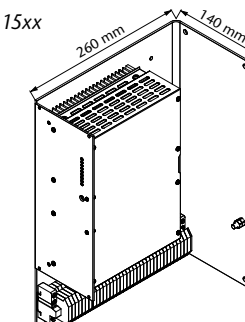
series SS 15xx



Standard

Eurocassette (pluggable module for 19" sub-rack) approx. 3.3 kg

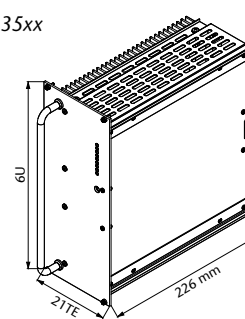
series SS 15xx



Optional

Wall mount approx. 6.3 kg

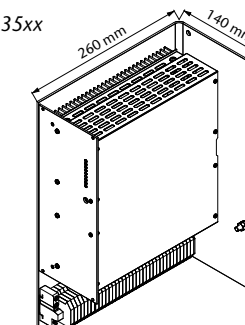
series SS 35xx



Standard

Eurocassette (pluggable module for 19" sub-rack) approx. 5.0 kg

series SS 35xx



Optional

Wall mount approx. 8.0 kg