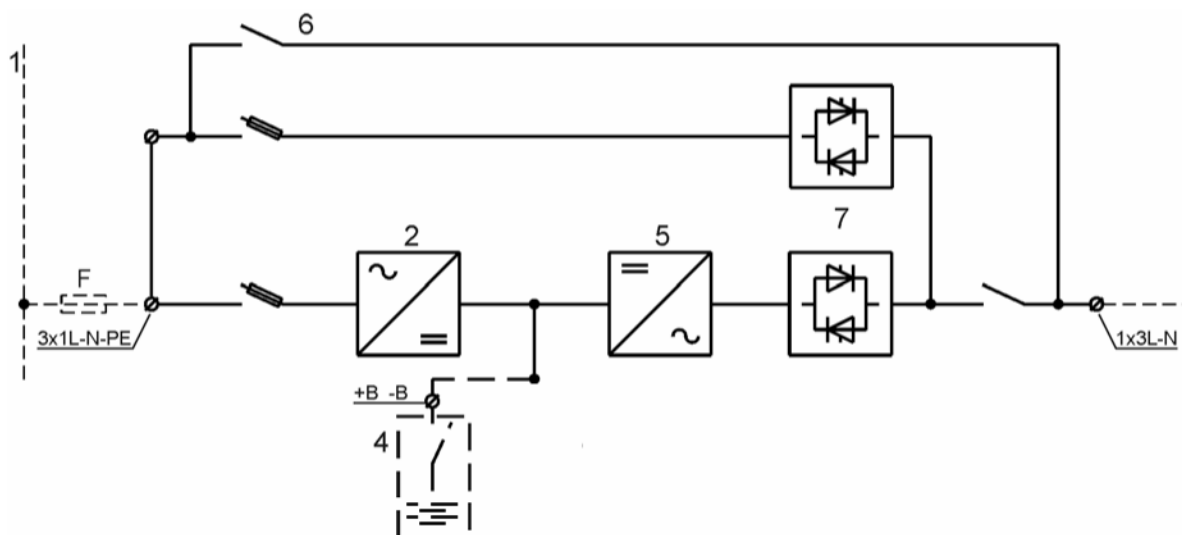


GENERAL INFORMATION

POWER - kVA	10	15	20	30	40
UPS topology	ON LINE - Double Conversion				
Classification	VFI-SS-111 in accordance with IEC 62040-3				
Nominal output power (Cos Ø 0,9) - kVA	10	15	20	30	40
Nominal output power (Cos Ø 1,0) - kW	9	13,5	18	27	36
Efficiency (AC ~ AC) - at 100 % load	max. 95 %				
Efficiency (AC ~ AC) – ECO-Mode	max. 98 %				
Heat dissipation at nominal load and voltage - kW	0,45	0,67	0,9	1,35	1,8
UPS ambient temperature -°C	0 ÷ 40				
BATTERY ambient temperature -°C	0 ÷ +20				
UPS storage temperature -°C	-25 ÷ +55				
BATTERY storage temperature -°C	-10 ÷ +40				
Relative humidity (non condensing)	< 95%				
Altitude	< 1500 mt (above sea level)				
Power derating for altitude > 1500m	max 5000 m with 1% derating for +100m				
Ventilation	FORCED				
Requested cooling air volume – m³/h	504	504	643	643	981
Audible noise level (according EN 50091)	< 55 db				
Standard battery type lead acid (n° of cells)	192, 204, 216, 228, 240				
Protection degree	IP 20				
EMI Electromagnetic compatibility	According to “EN62040-2” Class C3				
Paint	Pantone Black C; RAL9005				
Accessibility	front, top and side access for service				
Installation	50 -100 cm from wall				
Dimensions (mm) / *depending on battery configuration	W = 600 D = 780 H = 1200/1600*				
Weights (kg) (without battery)	185	189	189	198	201
Input/output cable connection	Bottom / Front Side				
Movement	By wheels				
Transport mechanical stress	According to “IEC62040-3”				
Design standard	According to “IEC EN 62040”				
Free contact interface	optional				
Communication interface	RS232, RS485, REPO, 1 x smart slot		RS232, RS485, USB, REPO, 2 x smart slot		
Parallel configuration	Up to 4 redundant or capacity				
Separate bypass input	yes				

BLOCK DIAGRAM



1. Input mains (common for by-pass and rectifier)
2. Rectifier and battery charger
3. No internal battery
4. Standard / external battery
5. Inverter
6. Emergency line (by-pass)
7. Inverter (SSI) and by-pass (SSB) static switch

INPUT: RECTIFIER and BATTERY CHARGER

POWER - kVA	10	15	20	30	40
Input configuration	3 Phase + Neutral				
Nominal Voltage - Vac	380-400-415 V 3ph +10% -45%				
Operating Voltage - Vac	208 – 478				
Input Frequency - Hz	40 - 70				
Input Power Factor (@ 400 V)	> 0,99				
Input Harmonic current distortion (THDI)	< 3 %				
DC Output Voltage Accuracy	+/- 1%				
Walk-in time	10 sec				
DC Output Voltage Ripple	1% rms				
3-level Intelligent Charging Modes	IUoU				
Temperature-controlled charging voltage	no			optional	
Boost charge	adjustable				
Maximum Recharging Current (at nom. load) – A	6	6	6	10	10
AC-DC converter type	IGBT PFC				
Input protection	Fuses				
Nominal Current Absorbed from Mains (At nominal load and Battery charged) - A	15	22	29	44	58
Maximum Current Absorbed from Mains (At nom. load and max. recharging current) - A	20	27	34	53	67

BATTERY

POWER - kVA	10	15	20	30	40
Type	Free maintenance				
Number of Cells	192 – 204 – 216 – 228- 240				
Floating Voltage at 25°C - V	2,27 V per cell				
Minimum Discharge Voltage - V	1,75 V per cell				
Battery Protection (external to the UPS)	wall mounted fuse box on request				

UPS OUTPUT: INVERTER

POWER - kVA	10	15	20	30	40
Inverter Bridge	IGBT (transformerless)				
Nominal output power (Cos Ø 0,9) - kVA	10	15	20	30	40
Nominal output power (Cos Ø 1,0) - kW	9	13,5	18	27	36
Nominal Output Voltage - Vac (selectable)	380 ÷ 415 3Ph + N				
Output Voltage Stability -Static (Balanced Load) -Static (Unbalanced Load) -Dynamic (Step Load 0÷100%÷0) -Output Volt. Recovery Time (after step load)	+/- 1% +/- 1% +/- 5% < 20ms				
Phase Angle -Balanced Load -100% Unbalanced Load	+/- 1° +/- 1°				
Output Frequency -Hz	50 - 60				
Output Frequency Stability -Free Running Quartz Oscillator -Inverter Sync. with Mains - slew rate	+/- 0,001Hz +/- 2Hz (adjustable) 0.23Hz/sec				
Nominal Output Current - A - Cos ϕ 0,9 - Cos ϕ 1,0	15 13,5	22 20	29 25	44 39	58 52
Overload Capability (line mode)	60 min 10 min 1 min		110% 110%...125% 125%...150%		
Short Circuit Current - A for 200ms	43	92	92	99	116
Output Waveform	sine wave				
Output Harmonic Distortion - Linear Load - Non Linear Load (according to IEC EN62040-3)	<2% <5%				
Crest Factor without derating	3:1				

UPS OUTPUT: BY PASS

Automatic Static By-Pass	Electronic Thyristor Switch
Protection	fuses
Nominal Voltage - Vac	380 ÷ 415 3F+N +/-10% (adjustable)
Nominal Frequency - Hz	50 - 60 +/-2 Hz (adjustable)
Transfer mode	no break
Transfer Inverter ÷ Static By-Pass	In case of : - Inverter test - Inverter not operating - Battery end of discharge
Retransfer Static By-Pass ÷ Inverter	- Automatic - Block on bypass after 6 switchings within 2 min. - Reset by front panel
Overload Capability	- 150% continuously - 1000% for 20 ms
Manual By-Pass for maintenance	Standard: - Electronically controlled - no break

PARALLEL

Automatic Parallel Configuration for redundancy/capacity	Up to four units (by an additional cable)
Basic parallel Configuration	Redundant N+1
Connection Type	CAN Bus Loop
Share Accuracy	5% max unbalance in inverter mode; bypass mode based on wiring at site
Maximum distance between two Units	10 meter
Overload Capability	N x 200% for 100 msec N x 125% for 10 min
Automatic By-pass	On each unit
Manual By-pass	On each unit (common as option)