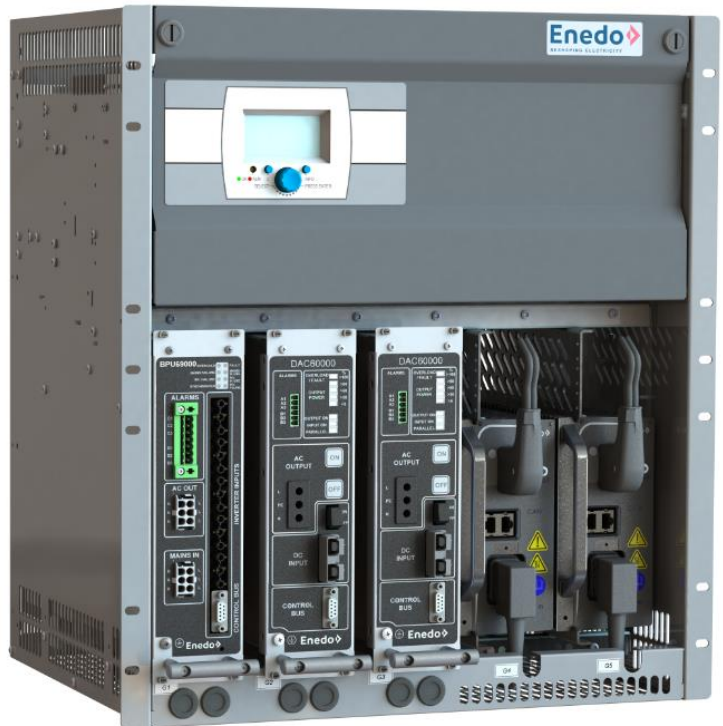


OPUS MVPS 24-3.0 230-3.6 R12U F
 OPUS MVPS 24-3.0 230-2.4/6.0 R12U F
 OPUS MVPS 48-4.0 230-3.6 R12U F
 OPUS MVPS 48-4.0 230-2.4/6.0 R12U F
 OPUS MVPS 60-4.0 230-3.6 R12U F
 OPUS MVPS 60-4.0 230-2.4/6.0 R12U F
 OPUS MVPS 110-4.0 230-3.6 R12U F
 OPUS MVPS 110-4.0 230-2.4/6.0 R12U F
 OPUS MVPS 125-4.0 230-3.6 R12U F
 OPUS MVPS 125-4.0 230-2.4/6.0 R12U F
 OPUS MVPS 220-4.0 230-3.6 R12U F
 OPUS MVPS 220-4.0 230-2.4/6.0 R12U F

On-line / Off-line



Product Description

OPUS HE power systems are robust, free convection cooled, N+1 redundant backup power solutions for critical infrastructure applications such as transmission and distribution substations, process industries, railway signalling and substations and telecommunications.

OPUS HE modular UPS system consists of MHE rectifiers, DAC inverters, bypass units, VIDI+ controllers, Connections for mains and battery and DC and AC load distribution MCBs. System is configurable to match with the requirements of the application.

19" 12U Rack delivers maximum 4 kW DC output power and 3.6kVA/3.6kW AC output power. All typical battery voltages 24V, 48V, 60V, 110V, 125V and 220V are supported. 19" 12U UPS Racks include slots for maximum 2 rectifier modules and 3 inverter modules. Load distribution configuration of MCB quantity and current ratings can be configured per order. Wall mounting, IP21 cover kit, temperature sensor and battery block voltage monitoring are options.

Features

- Efficiency off-line AC loads 99%, rectifiers up to 97%, inverters 90%
- Convection cooling or temp.controlled fans for inverters
- Outputs 24VDC - 220 VDC, 200 – 240 VAC
- DC power max 4kW
AC power on-line max 3.6kVA, off-line 6kVA
- Configurable load distribution
- VIDI+ I/O controller, local and remote interfaces
12 x relays, Ethernet, Modbus, IEC61850, SNMP, RS-232
- Flexible design with full front cabling
- Options: Wall mounting and IP21 kit, battery block voltage monitoring
- Safety:
Rack: EN61439-1, EN61439-2
Low voltage switchgear controlgear assemblies
Modules: EN 62368-1
- EMC:
Rack: EN61439-1, EN61439-2
Modules: EN 61000-6-1 / -2 / -3 / -4

Technical Specifications

General construction		Environment and standards	
Cooling	Natural convection	Temp. range	-25 ... +60°C, see derating, Start-up at -40°C
Protection	IP 20, Option IP21	Humidity max	95% relative humidity, non-condensing
Controller user interface	Display and local control in front panel	Altitude	Max 3km, full power up to 2km above sea level Derating 2% per 100 m between 2-3km
Connections	Behind front panel	Safety	Rack: EN61439-1, EN61439-2 Modules: EN 62368-1
Colour	Frame RAL 7024	EMC	Rack: EN61439-1, EN61439-2 Modules: EN61000-6-1 / -2 / -3 / -4 Generic
Dimensions & weight	Height 12U (533 mm) Width 19" (482 mm) Depth 395 mm Weight 20 kg w/o rectifiers		

AC Input, Rectifiers	OPUS HE 24V R12U F	OPUS HE 48V R12U F	OPUS HE 60V R12U F	OPUS HE 110V R12U F	OPUS HE 125V R12U F	OPUS HE 220V R12U F
AC connection	TN-S system, 2W + N + PE, (2-phases, neutral and protective earth wires)					
Nominal input voltage	220-240 VAC / 3 x 380-415 VAC (TN-S system) 50/60Hz <i>Options: 1-phase 1W+N+PE supply 220-240VAC, 2-phase Delta 2W+PE 200-250VAC</i>					
Input range	See Rectifier datasheet					
Nominal current	8A @ 220/380V		11A @ 220/380VAC			
Maximum phase current	13A @ 85-130V		13A @ 85-180VAC			
Recommended mains fuse	2 x 25 A (TN-S)					
Rectifier input protection	MCB C16A / rectifier module					

DC Input, Inverters	24 V		48V - 60 V		110V – 125 V		220 V	
Model 3 x Inverters	No Fans	Fan cooled	No Fans	Fan cooled	No Fans	Fan cooled	No Fans	Fan cooled
Nominal voltage	24 VDC		48 VDC / 60 VDC		110 VDC / 125 VDC		220 VDC	
Voltage range	20-32 VDC		40-72 VDC		88-150 VDC		178-275 VDC	
Nominal current (Uin 1.8vpc)	3 x 33 A	3 x 45 A	3 x 19A	3 x 32A	3 x 8A	3 x 14A	3 x 4A	3 x 7A
Input Protection per module	MCB C63A		MCB C40A		MCB C25A		MCB C16A	

AC Input, Bypass	OPUS HE 24V R12U F	OPUS HE 48V R12U F	OPUS HE 60V R12U F	OPUS HE 110V R12U F	OPUS HE 125V R12U F	OPUS HE 220V R12U F
Model 2 x INV + BPU						
AC connection	TN-S system, 1W + N + PE, (phase, neutral and protective earth wire)					
Nominal input	200-240 VAC 50/60Hz					
Input range	80-270 VAC 45-66Hz					
Input current	10A @ 2kVA rated power, max 30A at max 6kVA of-line supply					
Mains fuse FS1	32 A (sizing is based max off-line supply 6kVA)					

DC Output	OPUS HE 24V R12U F	OPUS HE 48V R12U F	OPUS HE 60V R12U F	OPUS HE 110V R12U F	OPUS HE 125V R12U F	OPUS HE 220V R12U F
Grounding	2-pole, floating					
Nominal voltage	24 VDC	48 VDC	60 VDC	108 VDC	120 VDC	216 VDC
Voltage factory setting	27.24 VDC	54.48 VDC	68.10 VDC	122.58 VDC	136.20 VDC	245.16 VDC
Voltage range	21-33 VDC	42-59 VDC	51-72 VDC	90-150 VDC	100-160 VDC	178-280 VDC
Quantity of rectifiers	Max 2 pcs					
Max current	125A @ 24V	82,3 @ 48V	66.7A @ 60V	37A @ 108V	33,3 @ 120V	18.5A @ 216V
Max Power	Max 3.0kW	Max 4kW	Max 4kW	Max 4kW	Max 4kW	Max 4kW
Static voltage regulation	± 2 % @ rack terminals (load, line, temp)			± 1 % @ rack terminals (load, line, temp)		
Rectifier output protection	MCB C63A	MCB C50A	MCB C40A	MCB C20A	MCB C20A	MCB C10A

AC output	24 V		48V - 60 V		110V – 125 V		220 V	
	No Fans	Fan cooled	No Fans	Fan cooled	No Fans	Fan cooled	No Fans	Fan cooled
Output voltage and frequency	On-line mode: Nominal 230 VAC/50Hz sine wave, user programmable 200–240V / 50–60 Hz Off-line mode: Mains voltage and frequency, transfer time to backup supply 4msec (programmable)							
Nominal Power, 3 x INV	3kVA/1.8kW	3.6kVA/2.4kW	3kVA/2.1kW	3.6kVA/kW	3kVA/2.1kW	3.6kVA/kW	3kVA/2.1kW	3.6kVA/kW
Max nom current, 3 x INV	3 x 4.4 A	3 x 5.2 A	3 x 4.4 A	3 x 5.2 A	3 x 4.4 A	3 x 5.2 A	3 x 4.4 A	3 x 5.2 A
Overload capacity, 5 sec	3 x 1200 W		3 x 1700 W		3 x 1700 W		3 x 1700 W	
Overload capacity, 60 sec	110% for all models, number of restart attempts and delays are user programmable							
Max short circuit current	3 x 13 A / 1-4 sec							

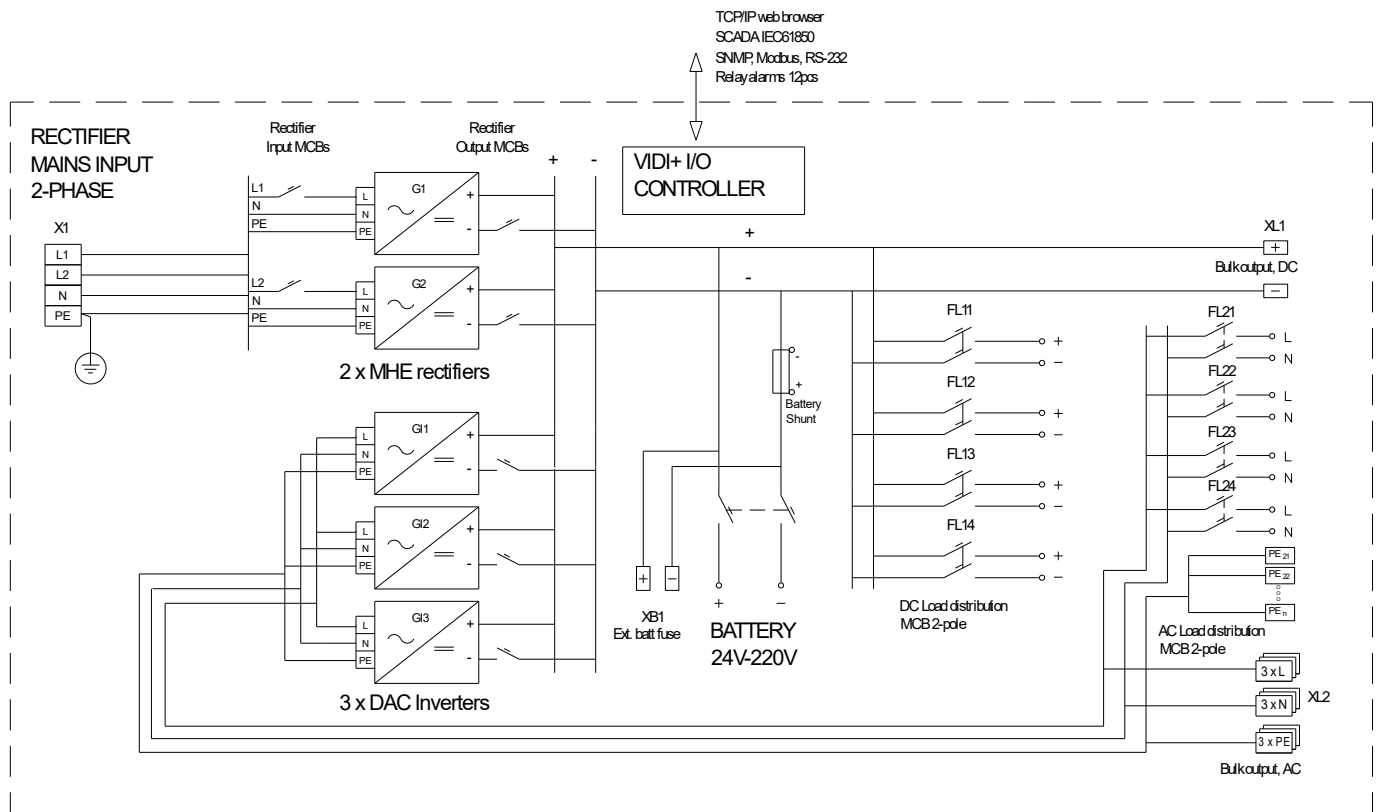
Battery connection	OPUS HE 24V R12U F	OPUS HE 48V R12U F	OPUS HE 60V R12U F	OPUS HE 110V R12U F	OPUS HE 125V R12U F	OPUS HE 220V R12U F
Bulk batt.conn. XB1	50mm ² Screw terminal, + / - (external battery protection)					
Protective device	MCB D125A 2-pole + aux	MCB D100A 2-pole + aux	MCB D100A 2-pole + aux	MCB D63A 2-pole + aux	MCB D63A 2-pole + aux	MCB D63A 2-pole + aux

DC Load distribution	OPUS HE 24V R12U F	OPUS HE 48V R12U F	OPUS HE 60V R12U F	OPUS HE 110V R12U F	OPUS HE 125V R12U F	OPUS HE 220V R12U F
Bulk Output XL1	50mm ² Screw terminal, + / -					
Protective devices	Max 4 x MCB 2-p + aux, 2 A to 63 A (total max DC+AC 4 x MCB 2-p+aux)					

AC Load distribution	OPUS HE 24V R12U F	OPUS HE 48V R12U F	OPUS HE 60V R12U F	OPUS HE 110V R12U F	OPUS HE 125V R12U F	OPUS HE 220V R12U F
Bulk Output XL2	3 x 10mm ² Screw terminal, 3xL - 3xN - 3xPE					
Protective devices	Max 4 x MCB 2-p + aux, 2 A to 63 A (total max AC+DC 4 x MCB 2-p+aux)					

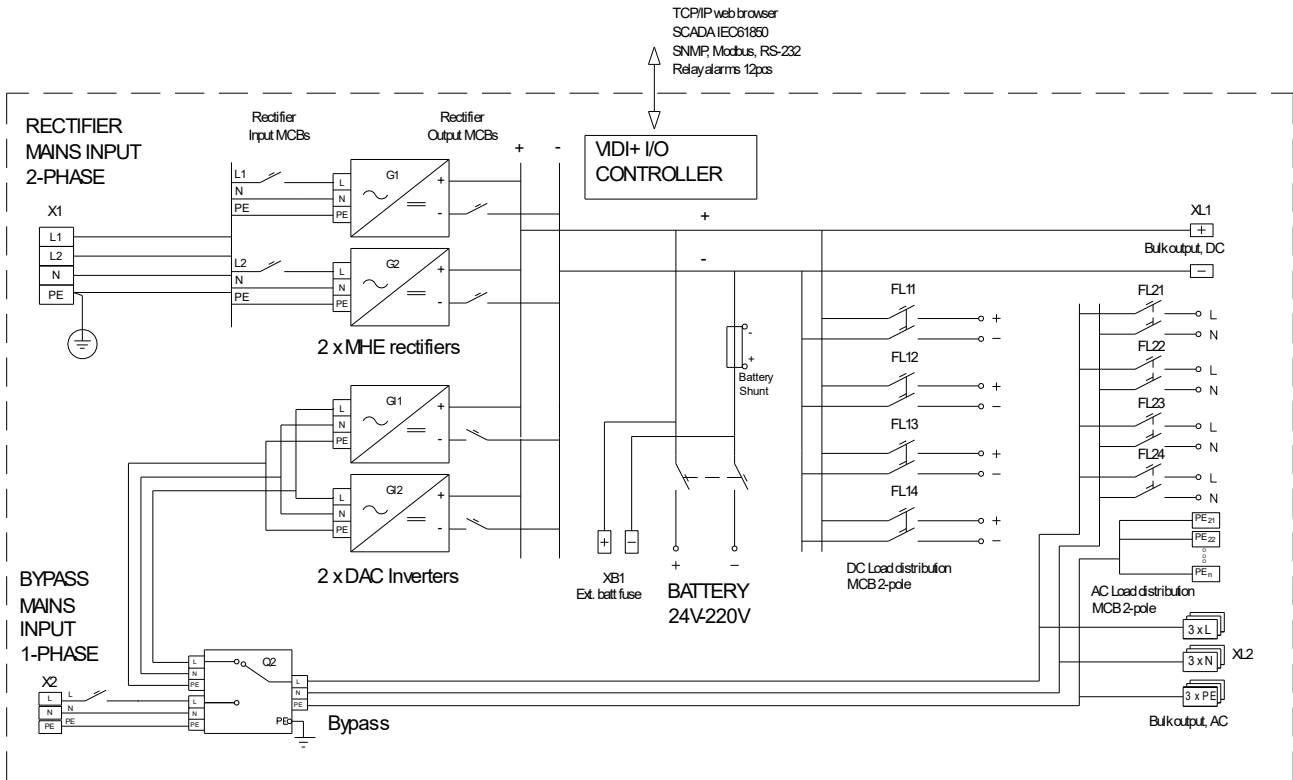
Connection terminals	
Rectifiers Mains Input X1	10 mm ² Screw terminal L1 - L2 (L1) – N - PE
Bypass Mains Input X2	10 mm ² Screw terminal L – N - PE
DC output	Bulk output XL1, screw terminal 50mm ² MCB screw terminals, 1.5mm ² ... 25 mm ² flexible cable, 1.5mm ² ... 35 mm ² rigid cable
AC output	Bulk output XL2, 3 x screw terminal 10mm ² MCB screw terminals, 1.5mm ² ... 25 mm ² flexible cable, 1.5mm ² ... 35 mm ² rigid cable
Battery	Bulk battery connection XB1, screw terminal 50mm ² MCB screw terminals, 1.5...35 mm ² flexible cable, 1...50 mm ² rigid cable
Alarms, Inputs	Configurable relay alarms 4 pcs (option up to 12), Spring terminals 0.75mm ² ... 1.5mm ² cable Configurable alarm/temp. inputs 2 pcs (option up to 12), Spring terminals 0.75mm ² ... 1.5mm ² cable

Block Diagram, 2 x MHE Rectifier, 3 x DAC inverter



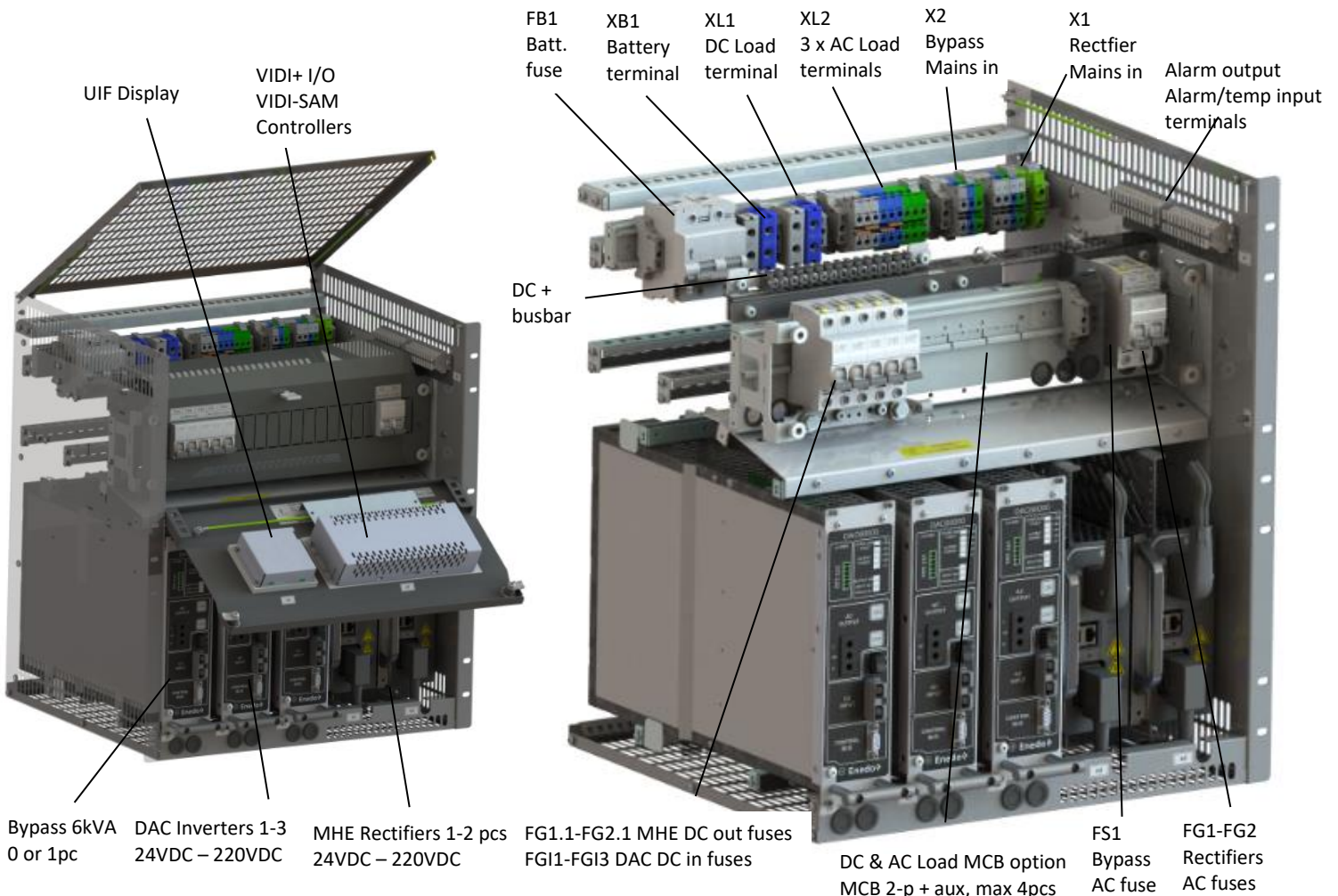
*) Distribution configurable, max total qty for DC and AC 4pcs of MCB 2-p+aux

Block Diagram, 2 x MHE Rectifier, 2 x DAC inverters, 1 x BPU bypass



*) Distribution configurable, max total qty for DC and AC 4pcs of MCB 2-p+aux

Layout drawings



Layout drawings, external bypass shelf

19" 12U UPS Rack

2 x Rectifier modules
3 x Inverter modules

External bypass shelf 19" 2U

Static bypass 6kVA
Manual bypass 6kVA
AC-load distribution option 4 x MCB 1-p



Order Information

Systems, Description	Order number	DC Output	AC Output On-line	AC Output Off-line
OPUS MVPS 24-3.0 230-3.6 R12U F	922X015970	24VDC 62.5A – 125A	230VAC 1-3.6kVA	N/A
OPUS MVPS 24-3.0 230-2.4/6.0 R12U F	922X015971	24VDC 62.5A – 125A	230VAC 1-2.4kVA	230V 6kVA
OPUS MVPS 48-4.0 230-3.6 R12U F	922X015980	48VDC 41.7A – 83.3A	230VAC 1-3.6kVA	N/A
OPUS MVPS 48-4.0 230-2.4/6.0 R12U F	922X015981	48VDC 41.7A – 83.3A	230VAC 1-2.4kVA	230V 6kVA
OPUS MVPS 60-4.0 230-3.6 R12U F	922X015982	60VDC 33.3A – 66.7A	230VAC 1-3.6kVA	N/A
OPUS MVPS 60-4.0 230-2.4/6.0 R12U F	922X015983	60VDC 33.3A – 66.7A	230VAC 1-2.4kVA	230V 6kVA
OPUS MVPS 110-4.0 230-3.6 R12U F	922X015984	110VDC 18.5A – 37A	230VAC 1-3.6kVA	N/A
OPUS MVPS 110-4.0 230-2.4/6.0 R12U F	922X015985	110VDC 18.5A – 37A	230VAC 1-2.4kVA	230V 6kVA
OPUS MVPS 125-4.0 230-3.6 R12U F	922X015986	125VDC 16.7A – 33.3A	230VAC 1-3.6kVA	N/A
OPUS MVPS 125-4.0 230-2.4/6.0 R12U F	922X015987	125VDC 16.7A – 33.3A	230VAC 1-2.4kVA	230V 6kVA
OPUS MVPS 220-4.0 230-3.6 R12U F	922X015988	220VDC 9.3A – 18.5A	230VAC 1-3.6kVA	N/A
OPUS MVPS 220-4.0 230-2.4/6.0 R12U F	922X015989	220VDC 9.3A – 18.5A	230VAC 1-2.4kVA	230V 6kVA

Rectifier modules

Description	Order number	Voltage / Current
MHE 24-1500	92I280	24VDC / 62.5A
MHE 48-2000	92I160	48VDC / 41.7A
MHE 60-2000	92I290	60VDC / 33.3A
MHE 110-2000	92I250	110VDC / 18.5A
MHE 125-2000	92I260	125VDC / 16.7A
MHE 220-2000	92I270	220VDC / 9.3A

Inverter and bypass modules

Description	Type number 1kVA no fan	Type number 1.2kVA fan cooling
Inverter 24VDC	DAC62132VF	DAC62232VF
Inverter 48/60VDC	DAC62132VF	DAC62232VF
Inverter 110/125VDC	DAC62132VF	DAC62232VF
Inverter 220VDC	DAC62132VF	DAC62232VF
Static Bypass 6kVA	BPU69130VF	

Controllers, Description	Order number	Options, Description	Order number
VIDI+ I/O System controller	94G910	VIDI-SAM Aux controller KIT	8320X0004402

Options, Description	Order number	Options, Description	Order number
Temperature Sensor	94M268	Wall mounting and IP21 kit	8320X0002080

Load MCBs, 2-p C-curve	Order number	Load MCBs, 2-p B-curve	Order number
C2A 2-p, Schneider C60H-DC	5540X0009012	B2A 2-p 6 kA Schneider iC60N	5540X0014950
C4A 2-p, Schneider C60H-DC	5540X0009014	B4A 2-p 6 kA Schneider iC60N	5540X0014951
C6A 2-p, Schneider C60H-DC	5540X0009016	B6A 2-p 6 kA Schneider iC60N	5540X0014952
C10A 2-p, Schneider C60H-DC	5540X0009017	B10A 2-p 6 kA Schneider iC60N	5540X0014953
C16A 2-p, Schneider C60H-DC	5540X0009020	B16A 2-p 6 kA Schneider iC60N	5540X0014955
C20A 2-p, Schneider C60H-DC	5540X0009021	B20A 2-p 6 kA Schneider iC60N	5540X0014956
C25A 2-p, Schneider C60H-DC	5540X0009023	B25A 2-p 6 kA Schneider iC60N	5540X0014957
C32A 2-p, Schneider C60H-DC	5540X0009025	B32A 2-p 6 kA Schneider iC60N	5540X0014958
C40A 2-p, Schneider C60H-DC	5540X0009026	B40A 2-p 6 kA Schneider iC60N	5540X0014959
C50A 2-p, Schneider C60H-DC	5540X0009027	B50A 2-p 6 kA Schneider iC60N	5540X0014960
C63A 2-p, Schneider C60H-DC	5540X0009028	B63A 2-p 6 kA Schneider iC60N	5540X0014961
Auxiliary contact, C60H-DC	5760X0008930	Auxiliary contact, iC60N series	5760X0009731