

OPUS Inverter System

EIM



General description

The OPUS Inverter system is a redundant, fault tolerant system. Inverter system is optimal solution when long autonomy time and long battery service life are required. Inverter system fits in the standard 19" racks and cabinets. EIM inverters efficiencies are high, up to 90%.

The OPUS Inverter system has a modular construction. The inverter modules can be combined with static switch, manual bypass, AC distribution and 3-phase synchronization modules based on customer's needs.

The OPUS Inverter system can be integrated in the same cabinet as Efore DC power systems with advanced VIDDI+ controller, temperature sensors and battery monitoring.

Features

- Support to 24, 48, 60, 110, 125, 220, 230Vdc nominal battery voltages
- Standard 19" rack
- Small size, light weight
- Full access from front
- Remote monitoring
- High efficiency
- Hot swap N + 1 redundant system
- Static switch allows On-line and Off-line modes
- High overload capability
- Parallel connectable 1000 VA to 24 kVA
- 1-phase and 3-phase output

Technical Specifications, Inverter modules

Nominal DC input	24 VDC		48/60 VDC		110/125 VDC		220 VDC	
Nominal Power	1000VA	1200VA	1000VA	1200VA	1000VA	1200VA	1000VA	1200VA
Electrical								
Input voltage	20 – 32 VDC		40 – 72 VDC		88 – 150 VDC		178 – 270 VDC	
Input current, max continuous	37 A	50 A	22 A	35 A	10 A	16 A	5 A	8 A
Input current, max 5 sec peak	75 A	75 A	50 A	50 A	22 A	22 A	11 A	11 A
Inrush current	< 30 A		< 20 A		< 10 A		< 10 A	
Output voltage	Nominal 230 VAC sine wave, user programmable 200 – 240V, floating output							
Output frequency	Nominal 50 Hz, user programmable 40 – 70 Hz							
Nominal output power	1000VA 600W	1200VA 800W	1000VA 700W	1200VA 1200W	1000VA 700W	1200VA 1200W	1000VA 700W	1200VA 1200W
Overload, 5 s	1200W		1700W		1700W		1700W	
Overload, 60 s	110% for all models, max time can be limited shorter. Number of restart attempts and delays are user programmable							
Output current, nominal	4.4 A	5.2 A	4.4 A	5.2 A	4.4 A	5.2 A	4.4 A	5.2 A
Max short circuit current, 1-4 sec	13 A	13 A	13 A	13 A	13 A	13 A	13 A	13 A
Efficiency	85 %	83 %	90 %		90 %		90 %	
Load power factor range	Full power rating from 0 inductive to 0 capacitive							
THD, resistive load	< 2 %							
Crest factor	> 3	> 2.7	> 3	> 2.7	> 3	> 2.7	> 3	> 2.7
Static regulation, 0...100% load	+/- 3%							
Transient recovery	< 0.3 ms							
Psometric noise, input	< 2 mV							
Isolation	Input-Chassis 1500 VAC (2000 VDC), Input-Output 3000 VAC (4000 VDC), Output-Chassis 1500 VAC (2000 VDC)							
Protection	Output current limiting, Overload and short circuit proof. Internal input and output fuses							
DC input fuse (external fuse needed)	max C 63 A		max C 40 A		max C 25 A		max C 16 A	
Alarms, Indications and controls								
LED-indications	Input ON; Output ON; Output overloading, 4 levels; Overload/Fault							
Relay alarms	2 relay contacts;							
Remote monitoring	Web interface, SNMP traps, SMTP mail alerts and Modbus TCP/IP through VIDIA+ controller. Status information: for example input and output voltage, power, temperature, faults, etc. Parameter adjustment: limits, output voltage, overload, faults, etc.							

Technical Specifications, Inverters

Nominal DC input	24 VDC		48/60 VDC		110/125 VDC		220 VDC	
Nominal Power	1000VA	1200VA	1000VA	1200VA	1000VA	1200VA	1000VA	1200VA
Environmental								
Operating temperature/ Humidity	0...+45°C full power		0...+45°C full power		-10...+45°C full power		-10...+45°C full power	
	+45...60°C reduced power, derating -2%/°C, no condensation							
Cooling	Natural convection	Fan cooling	Natural convection	Fan cooling	Natural convection	Fan cooling	Natural convection	Fan cooling
Altitude	Full power up to 2000m, derating -2%/100m, max altitude 3000m							
Mechanical								
Dimensions	14TE x 6U x 372 mm							
Connectors in front panel	Input DC connector: Anderson SB506331 G4 Output: Finger protected AC-connector, Wieland ST18/3S2							
Enclosure	Steel casing IP20							
Standards								
Safety	EN60950-1							
EMC	48/60VDC inverters: EN55022B, EN61000-6-3, EN61000-6-2, ETS 300 132-2							

Technical Specifications, Static switch module

Electrical	
Operational voltage range	80 – 270 VAC
Synchronizing frequency range	40 – 70 Hz (user programmable)
Protection	external fuse in mains AC input
Efficiency	> 99 % @ 230 VAC, full power
Alarms, Indications and controls	
LED-indications	Overload – Fault – Mains failure – Mains in use – Inverter failure – Inverter in use – Synchronized – Communication
Relay alarms	Fault in system – Primary supply failure
Remote monitoring	Web interface, SNMP traps, SMTP mail alerts and Modbus TCP/IP through VIDDI+ controller. Status information: for example input and output voltage, power, temperature, faults, etc. Parameter adjustment: limits, output voltage, overload, faults, etc.
Mechanical	
Dimensions	14TE x 6U x 372 mm
Connectors in front panel	<ul style="list-style-type: none"> Inverters up to 5 pcs ST18AC input AC input AMP Mate-N-Lock AC output AC output AMP Mate-N-Lock
Enclosure	Steel casing IP20
Environmental	
Operating temperature	0...+45°C full power, +45...+60°C reduced power
Standards	
Safety	EN60950-1
EMC	EN55022B, EN61000-6-3, EN61000-6-2, EN61000-6-1

Technical Specifications, Manual bypass and AC distribution

Electrical	
Operational voltage range	100 – 240 VAC
Power rating	6000 VA, max 30 A
Bypass switch	4 pole (OFF, MAINS, SYNC, AUTO) manual bypass rotating switch
AC distribution	Three (3) MCBs. Standard configuration: 1 pc B6A, 1 pc B10A, 1 pc B32A
Mechanical	
Dimensions	14TE x 6U x 372 mm
Screw terminals	6 mm ² or 10 mm ² for mains in and load. 90 cm cable set for static switch
Enclosure	Steel casing IP20
Environmental	
Operating temperature	-25...+50°C full power, +45...+60°C reduced power
Standards	
Safety	EN60950-1
EMC	48/60VDC inverters: EN55022B, EN61000-6-3, EN61000-6-2, ETS 300 132-2

Order Information

Inverters				
Code	Nominal DC input voltage	Nominal power	Cooling	Order number
EIM62132VF	24 VDC	1000VA/600W	Convection	9060X0001150
EIM62232VF	24 VDC	1200VA/800W	Fan	9060X0001155
EIM62134VF	48/60 VDC	1000VA/700W	Convection	9060X0001152
EIM62234VF	48/60 VDC	1200VA/1200W	Fan	9060X0001156
EIM62135VF	110/125 VDC	1000VA/700W	Convection	9060X0001153
EIM62235VF	110/125 VDC	1200VA/1200W	Fan	9060X0001154
EIM62136VF	220 VDC	1000VA/700W	Convection	9060X0006463
EIM62236VF	220 VDC	1200VA/1200W	Fan	9060X0006464
Static switch and manual bypass units				
Code	Description			Order number
EBPU69130VF	External static switch, 6000VA 230VAC, 14TE x 6U x 372mm module			5A000503
EMBP68060	Manual bypass and AC-distribution unit			5A000504
Systems				
Code	Description			Order number
OPUS EIM Subrack 19" 6U	Sub-rack 19"x6Ux300mm. Including data cables. Place for static switch, manual bypass and 4 inverters.			8320X0007106
OPUS EIM Subrack 19" 7U	Sub-rack 19"x7Ux300mm. Including data and paralleling cables. Place for 6 inverters			8320X0007105
VIDI SAM kit	Adapter kit required for remote monitoring of inverters and bypass module.			8320X0004402
Other (3-phase, > 7.2kVA or other configurations)				
Contact sales				