

GSEi 400/100, GSEi 400/125

GSEi 400 is a transformerless inverter designed for direct connection of an inverter or arbitrary number of parallel ranged inverters to 400 V grid.

GSEi 400 serves as a parallel backup power supply (UPS) for 400 V three-phase power system. VONSCH GSEi 400 is the ideal product to protect both the grid and the loads in companies in various industry sectors such as:

- Information technologies
- Automobile production
- Pharmaceutical industry
- Chemical and petrochemical industry
- Textile industry
- Remote settlements

Advantages

- Prevention of loss of profit and additional excessive costs during power failures
- Eliminates the need to shut down the facility during power failure
- Increases the reliability of the electricity system and the reliability of grid connected devices

Properties

- High efficiency
- Fast start-up
- Fast reaction time (200 ms) to step change of load
- Long durability of device
- Ecological device –minimal consumption in standby, operation without any harmful emissions

Operation description

When the device is connected to the grid, the device maintains the operating voltage of batteries or the batteries are charged. The device also monitors operational and overall battery conditions (Battery management system). After power supply failure, the grid contactor is turned off and the GSEi 400 device is turned on. The backup energy flows from the battery to the load.

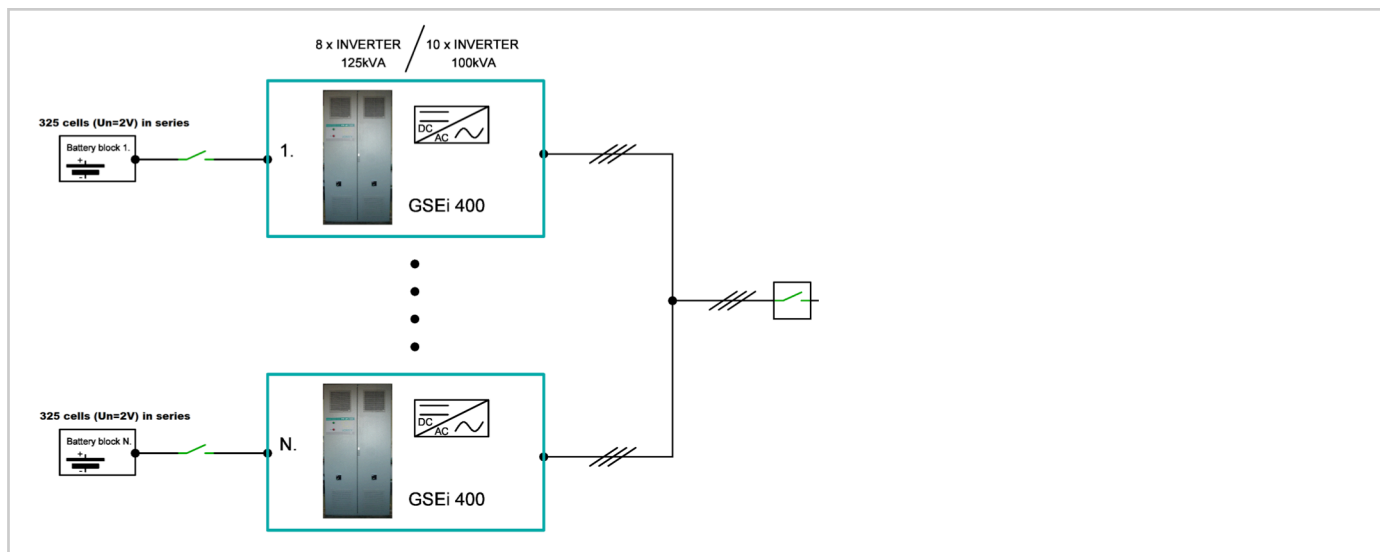
After power supply recovery, the GSEi 400 device is turned off and the grid contactor is turned on.



TECHNICAL DATA	GSEi 400 / 100	GSEi 400 / 125
AC side (output)		
AC voltage	3 x 400 V $\pm 10\%$	3 x 400 V $\pm 10\%$
Rated AC power	$P_{nom} = 100$ kVA	$P_{nom} = 125$ kVA
Rated output current	$I_{nom} = 145$ A	$I_{nom} = 180$ A
Maximum output current	$I_{max} = 217$ A (2s every 30s)	$I_{max} = 270$ A (2s every 30s)
DC input		
Rated input voltage	$U_{BATnom} = 650$ V _{DC}	$U_{BATnom} = 650$ V _{DC}
Permissible input voltage range	$U_{BATmin} = 620$ V _{DC} $U_{BATmax} = 820$ V _{DC}	$U_{BATmin} = 620$ V _{DC} $U_{BATmax} = 820$ V _{DC}
Rated input current at U_{BATnom}	$I_{INom} = 164$ A	$I_{INom} = 205$ A
TECHNICAL SPECIFICATION	GSEi 400 / 100, 125	
Efficiency	$\geq 96,8 \%$	
Output frequency	50 Hz	
Power factor $\cos \phi$	$\cos \phi = -1$ (Power supply into grid) $\cos \phi = 1$ (Consumption from the grid during battery charging)	
Total harmonic distortion of the output current at P_{nom}	THDi - Max. 3 % at	
RFI filter	Inbuilt input DC RFI filter and output AC RFI filter	
Control system	32 bit DSP Texas Instruments®	
Communication interface	RS 485, USB, CAN	
Communication modules	Modbus RTU, options - Profibus DP, Ethernet, GSM	
Contactor on AC side	YES	
Main switch on AC side	YES	
AC side fusing	YES	
Battery insulation status check	YES	
Number of DC inputs	1	
DC side fusing	YES	
DC side switch	YES	
Time of disconnection from grid at grid failure	≤ 10 ms	
Speed of response to a step change of load	to 200 ms for step change from 0 to 100%	
The rise time of backup energy generating after power supply grid failure	up to 5 seconds	
Control panel	graphical, detachable, programmable	
Analog inputs	4x / 0 (4) – 20 mA / 0 (2) – 10 V	
Analog outputs	3x / 0 (4) – 20 mA / 0 (2) – 10 V	
Relay outputs	3 programmable relay outputs	
Protections	current overloading, grid overvoltage, grid undervoltage, ground fault protection, short circuit on the AC side protection, overheating of the inverter	
Cooling	Forced air cooling by inbuilt fans	
Absolute altitude of the permitted usage	≤ 1000 m above the sea, 1% reduction of power for every 100 m above 1000 m. The installation site altitude in operation is from 0 to 2500 m.	
Relative humidity of the air	$\leq 95 \%$ without corrosive and explosive gases, without water vapor and	

	condensates
Ambient working temperature	+ 0 °C to + 40 °C
Storage ambient temperature	- 25 °C to + 50 °C
Cover	IP 54
Standards compliance	Safety: EN 50 178 EMC immunity, emissions: EN 61000-6-1,3 Harmonic distortion: EN 61000 – 3 – 11 EN 61000 – 3 – 12
Instructions EEC	2004/108/EEC, 2006/ 95/EEC
Dimensions	1000 x 2200 x 600 mm (width x height x depth)
Weight	390 kg

WIRING DIAGRAM FOR 1 MW SYSTEM WITH GSEi 400



BLOCK DIAGRAM

