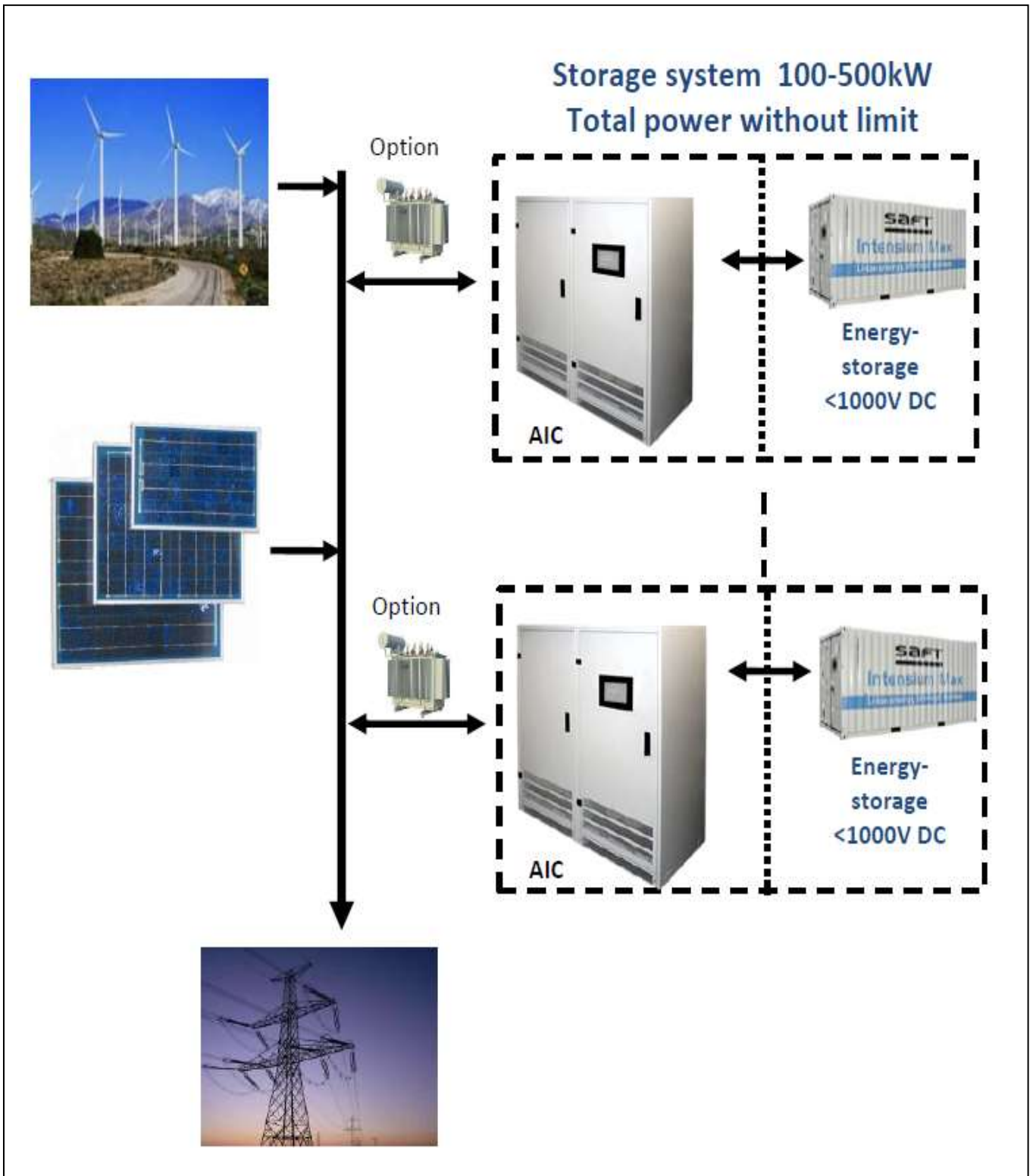
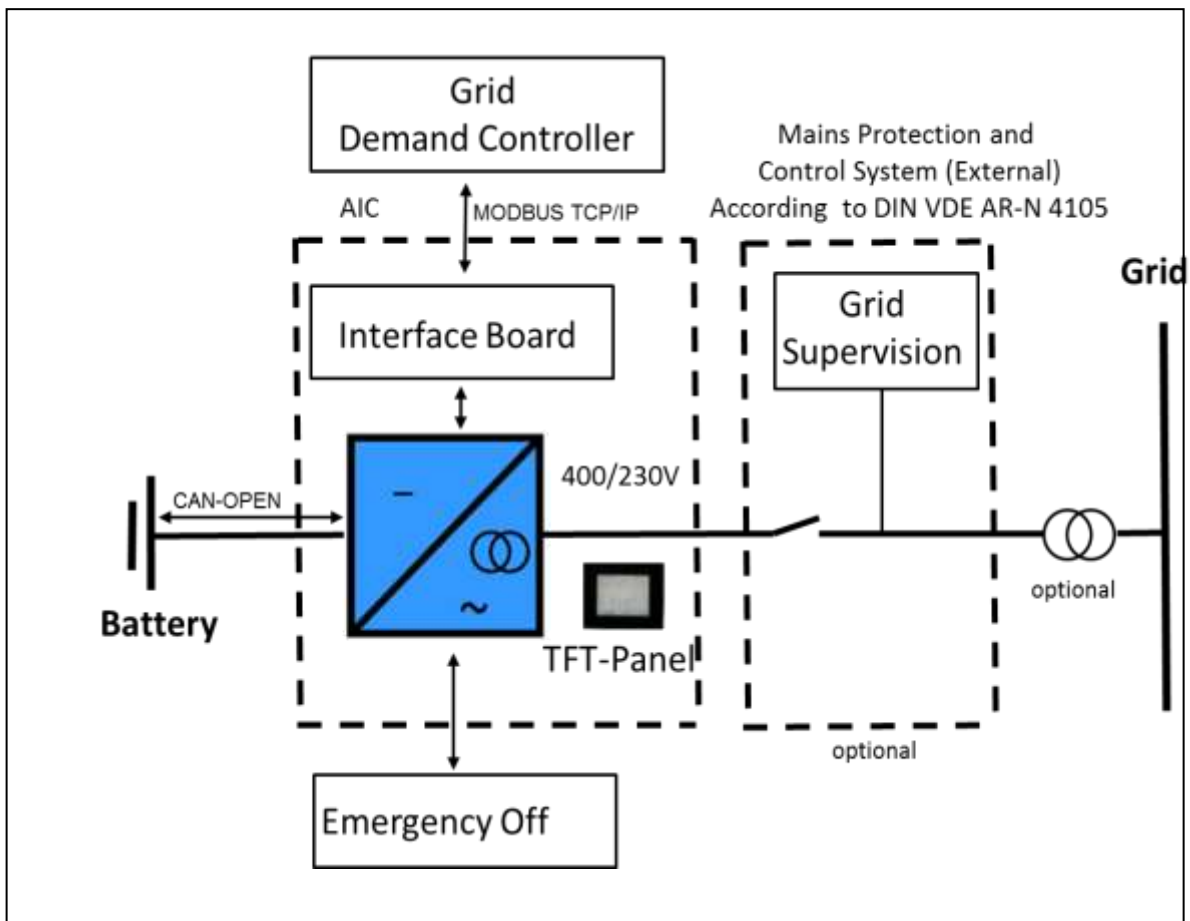


Active Infeed Converter

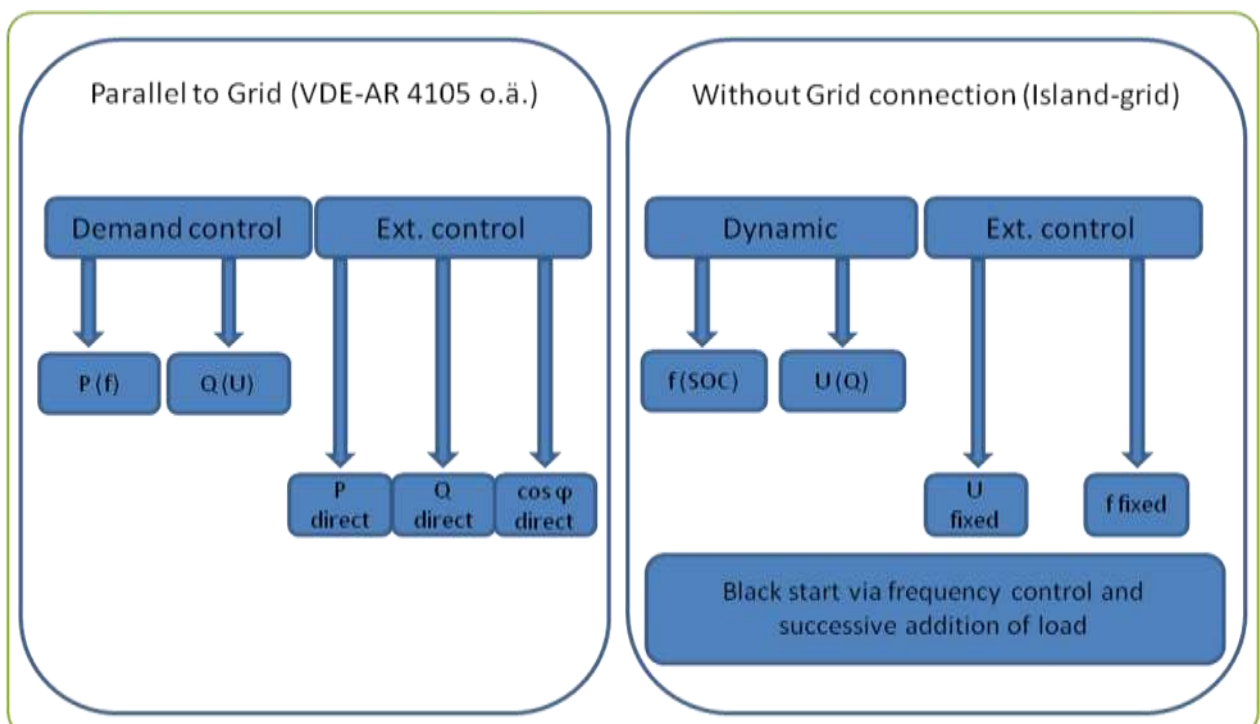
Power converter for storage systems with reactive power regulation



Bloc Diagram



Control and Applications



Technical Data:

AIC rated power (100 % active power possible)	kVA	100	200	250	320	500
AC side						
AC mains voltage	V	400/230V, ± 10%, 3-phase, N, PE				
AC power factor range		0.5 lag to 0.5 lead				
Discharging mode:						
Nominal AC output voltage	V	400/230V, 3-phase, N, PE				
Frequency		synchronized to the AC mains , 50 or 60Hz ± 5%				
Waveform		sinusoidal				
Distortion factor	%	≤ 3% with linear load				
EMC		EN61000-2-4 EN61000-6-2 EN61000-6-4	(05/2003) (03/2006) (09/2007)	Mains disturbance Noise immunity Transient emission		
Basic Norm		EN 62040-1 partly				
Acoustic noise	dB (A)	< 75				
DC Voltage range		300-450V (max. 200kVA) or 450-600V (max. 320kVA) or 600-850V				
Permissible ambient temperature	°C	0 to 40				
Permissible climate		3K3 according to IEC/EN 60721				
Permissible operating altitude		1000 m above m.s.l. with rated load				
Protection class		IP 20 to EN 60529				
Paint finish		RAL 7035, textured finish				
Cooling		"AF" forced-air cooling				
Display		TFT-Panel				
Interface: battery:		CAN-OPEN Slave				
operation system:		MODBUS TCP/IP				
Emergency stop		via floating contact				
Inverter efficiency	%	94	95	95	95	95
Dimensions (600-850 V DC):						
width	mm	1200	2000	2000	2200	2400
depth	mm	800	800	800	1000	1000
height	mm	2000	2000	2000	2000	2000
Weight	kg	900	1400	1500	1700	2300

Design:

High dynamic / low ripple / electrical isolation (galvanic)
 Low mains feed back through P.F.C /
 Input power factor $\lambda = 1$ (without pre setting of reactive power)
 Parallel connectable / Intelligent monitoring functions
 Suitable for any kind of battery with BMS system

Options:

Hardware:

Earth fault supervision / Control of battery fans
 IT-AC Mains / Cabinet lightning
 Mains switch AC
 Battery interface Profibus DP / MODBUS TCP-IP to control system
 Externals protection of mains and system according to DIN VDE V 0124-100
 resp. VDE-AR-N 4105

Software:

Parallel to line: cos phi regulation; P(f) characteristic; Q(U) characteristic
 Line leading: f(SOC) characteristic; U(Q) characteristic

GUSTAV KLEIN – a company introduces itself

The GUSTAV KLEIN company was founded in Schongau, Germany, in 1948.

In 1969, a subsidiary factory was opened in Austria, at that time our principal export country, located in Inzing to the west of Innsbruck. The GUSTAV KLEIN has approx. 220 employees in this two factories.



Factory Schongau (Germany)



Factory Inzing (Austria)

The manufacture of transformers was the beginning of our rapidly expanding product palette, followed by stabilizers and mains voltage controllers for broadcast and television stations of the German federal post.

The first thyristor rectifiers were presented in 1960. And since 1962 used together with thyristor controlled inverters as a UPS - uninterruptible power supply.

Switched-mode rectifiers and DC converters were delivered since 1970.

Later, high-current transistors became available on the market, and in 1985 the GUSTAV KLEIN company began to manufacture pulse-width modulated transistor inverters and UPS equipment up to 100 kVA.

New IGBT transistors made it possible to improve the efficiency of our UPS equipment in 1996.

Since the year 2000 UPS equipment with microprocessors and IGBT-rectifiers are in our product range.

Today we manufacture not only secured power supplies, but also high power test systems up to 1000 V DC and frequency converters in IGBT technology.

REASONS for choosing GUSTAV KLEIN:

- **Experience** More than 265.000 delivered units speak for themselves. The knowledge of our experienced engineers is also available for YOU.
- **Confidence and Consistency** GUSTAV KLEIN is established since 1948 on the market of power supplies. Renowned companies from the Railway, Telecom Power Stations, Chemical and Industry are from the beginning our regular customers.
- **High Product Reliability** Decades of practical experience in high security zones of rail networks, electricity power stations, telecommunications networks, hospitals and industrial plants guarantee the highest reliability and quality.
- **Competence in Consulting and Support** Starting from your inquiry until After-Sales-Service – YOU will be supported by our experienced engineers.
- **Competence in Technique** In-house development in the fields of equipment and microprocessor technology, as well as our own printed-circuit design and our own software programming department, emphasise our continuously innovative activities.
- **Custom Designed Power Supplies** Our special competence is to produce complete customized solutions to match YOUR specific requirements.
- **After-Sales** We guarantee the supply of spare parts for 15 years and a worldwide service.

D-86956 Schongau, Im Forchet 3
D-86952 Schongau, Postfach 12 48
Tel. (08861) 209-0, Fax (08861) 209-180



A-6401 Inzing/Tirol, Schießstand 2
Tel. (05238) 54209-0
Fax (05238) 54209-23