VENSYS
Elektrotechnik

TECHNICAL DATA

VENCON
Hybrid Protect

Outdoor
- Specially designed for outdoor applications

Flexible
- Optional expandability
- Unlimited stand-alone network capability

Robust
- Proven technology
- Easy to maintain and low-wear
- Quick replacement of individual components (modular design)

Hybrid application
- 3 DC channels
- 2 AC channels

Power range
- 150 kW to > 10 MW
- Delivery of all system components incl. storage possible

Further options
- We offer complete engineering

VENCON
VENSYS HYBRID CONVERTER

TECHNICAL DATA

GENERAL SPECIFICATION	VENCON Hybrid Protect (1AC150/3DC120)	VENCON Hybrid Protect (1AC300/3DC120)	VENCON Hybrid Protect (2AC150/3DC120)
Article no.	27620	27359	27619
Dimensions L x W x H	1738 x 2139 x 1214 mm		
Weight	1020 kg	1370 kg	1370 kg
Protection class	IP55		
Volume	77 dB(A)@1m at P_{Nom}		
Temperature range, operation	- 20 to + 40 °C, > 40 to + 50 °C = derating		
Temperature range, storage	0 to + 40 °C		
Cable entry	At the bottom		
Cooling	Air cooling + air conditioning		
Place of installation	2000 m, > 2000 m optional		
Humidity	< 95 % non-condensing		
Standby consumption	Without air conditioning < 100 W		
Efficiency	> 96 %		
Communikation			
Display	Touchscreen		
Communication	MODBUS-TCP / Ethernet		
Web-Interface	included		
AC parameters for mains parallel operation			
Nominal voltage	400 V		
AC voltage range	360 – 440 V		
Apparent power	167 kVA	333 kVA	2 x 167 kVA
Nominal power	150 kW	300 kW	2 x 150 kW
Rated currend	216 A	433 A	2 x 216 A
Mains frequency	50 / 60 Hz		
Frequency range	45 - 55 Hz / 55 - 65 Hz		
Power factor at Pnom	0,9 cap to 0,9 ind		
Reactive power setting range	- 73 kVar to 73 kVar	- 145 kVar to 145 kVar	2 x - 73 kVar to 73 kVar
THDI	< 2.5 % at rated power		
AC connection	3/PEN / 3/N/PE		
Mains protection	U<<, U<, U>, U>>, f<, f>		
AC parameters for island operation (Additional components required, for parallel connection see data sheet conceptual design of island systems)			
Unbalanced load	100 %		
AC overload	35 % < 5 s; 10 % < 5 min		
Switchcover time Grid - Island	< 3 s → with VENCONNECT	< 3 s → with VENCONNECT	Uninterruptible
Switchcover time Island - Grid	5 s → with VENCONNECT	5 s → with VENCONNECT	< 5 s with VENCONNECT
Online UPS operation	optional	optional	included
Black start capable	Yes		
Short circuit current	1,35 x In		
THDU	< 1,5 % at rated power		
Switchover box	with VENCONNECT		
AC coupling FI operation			
AC voltage range	-		0 – 480 V
Nominal voltage	-		400 V
Rated current	-		216 A
Rated power	-		150 kW
Frequency	-		variable
DC parameters			
Nominal voltage	600 V DC		
Voltage / operating range	0 V - 820 V DC		
Max. input voltage	820 V DC		
DC connections	3		
Max. current per DC connection	200 A		
Rated power	3 x 120 kW		
Overload DC	-		
Additional parameters PV			
Max. open-circuit voltage	850 V DC		
MPP voltage range	300 V – 820 V DC		
Voltage / operating range	100 V – 820 V DC		
Max. connected load MPPT	180 kW (50% overdimens.)		
Protective devices			
AC-side	Circuit breaker + fuse		
DC-side	Fuses + contactors		
Grid monitoring	included		
Overheating protection	included		
Overvoltage protection	AC/DC Type 2 included		
Insulation monitoring	optional		
Certification	IEC 62477-1, VDE-AR-N 4110, IEC 61000-6-2, IEC 61000-6-4, EN 55011, IEC 60947-6-1, VDE-AR-E 2510-2		

VENSYS VENCON Hybrid Protect

Grid-connected and grid-independent applications

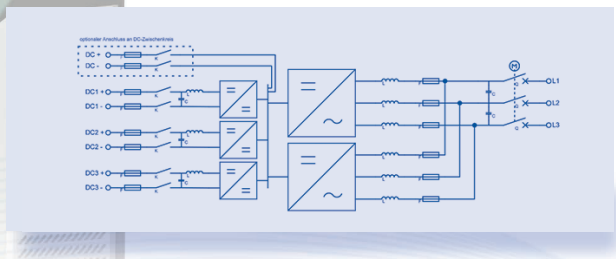
150/300 kW AC
Mains parallel operation

120 kW DC
PV system

120 kW DC
Battery storage 1

120 kW DC
Battery storage 2

optional connection
to DC link



Diesel

Grid

150 kW AC
Mains parallel operation

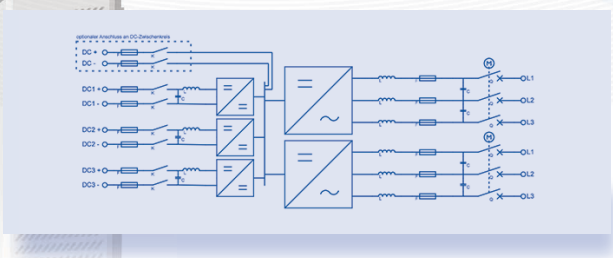
150 kW AC
Island operation

120 kW DC
PV system

120 kW DC
Battery storage 1

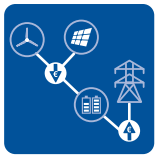
120 kW DC
Battery storage 2

optional connection
to DC link



APPLICATIONS at a glance

PRIMARY & SECONDARY CONTROL POWER



ARBITRAGE TRANSACTIONS

ACTIVE HARMONIC FILTER

HYBRID APPLICATIONS

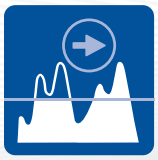
UNINTERRUPTIBLE POWER SUPPLY (UPS)

COMPENSATION OF VOLTAGE DIPS

PEAK-SHAVING

MAINS FREQUENCY STABILIZATION

ISLAND NETWORK OPERATION



PEAK-SHIFTING

STATIC STRESS MAINTENANCE

REACTIVE POWER COMPENSATION

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