

PRELIMINARY

# TS-1 HV 80

The commercial and industrial all-rounder



Integrated inverter • 1C charging speed • Safest cell technology

HIGH-VOLTAGE SYSTEM

**TESVOLT**  
THE ENERGY STORAGE EXPERTS

# WE HAVE A "THEN" FOR ANY "WHEN".

Our battery storage system can be optimally adapted to suit every application

The *TESVOLT TS-I HV 80* is the first battery storage system with an integrated inverter and TESVOLT energy management system. Whether to increase self consumption, to cut peak loads, or for on-/off-grid use, the *TESVOLT TS-I HV 80* is not only the perfect energy storage solution for every application but also provides sustainable local grid quality due to active

filter technology. It is extremely robust and well-suited to the hardest tasks. Thanks to high-quality battery cells from the automobile industry and innovative technologies, such as the *Active Battery Optimizer*, our *TESVOLT TS-I HV 80 storage system* is one of the most efficient and durable products on the market.

## Maximum safety

Prismatic battery cells are incredibly durable, safe and powerful, particularly in comparison to round cells. TESVOLT uses Samsung SDI cells and offers a performance guarantee of 10 years on the battery modules.

## Long lifespan

The lifespan of a battery has a huge impact on its economic efficiency. Our storage system features outstanding performance: all components are designed to last 8,000 cycles or offer a 30-year lifespan.

## High performance without compromise

The *TS-I HV 80 storage systems* can store energy very quickly, and release it again just as quickly. With a continuous power rating of 1C the storage system is optimised for professional use in commercial applications, agriculture and industry.

## Ready for the future

Not only do our *TS-I HV 80 storage systems* offer easy modular configuration as they are purchased – you can also add further IPU's to increase output or another *TS-I HV 80 battery cabinet* at any time.

## Battery system



## Samsung SDI cell



- 1 Active Power Unit
- 2 Battery module
- 3 Overcharge safety device
- 4 Vent
- 5 Fuse
- 6 Active Battery Optimizer

Prismatic cells from Samsung SDI are extremely safe. For example, the *NSD (Nail Safety Device)* ensures that, even when penetrated with a metal nail, the cell will not catch fire.

## Battery module



Every battery module has its own *Active Battery Optimizer (ABO)* which can be separated from the module in a few easy steps, for example, for servicing.

## TESVOLT TS-I HV 80 INVERTER AND TESVOLT ENERGY MANAGEMENT

*TESVOLT TS-I HV 80 storage systems* are fitted with an integrated 3-phase battery inverter. The inverter is available in four power levels and can be upgraded at a later date. It can also be operated in parallel with up to five cascaded systems. In combination with the innovative TESVOLT energy management system, *TESVOLT TS-I HV 80* systems adapt perfectly to the requirements of trade and

industry. TESVOLT energy management offers not just the most diverse, combinable range of applications, it also enables comprehensive monitoring, intelligent control of consumers and improved quality of power supply. This flexibility increases the sustainability of your TESVOLT battery storage system and, thanks to multi-use application, its profitability as well.

### TESVOLT INVERTER BENEFITS

- Black-start capable – the battery inverter can be operated off-grid or supply back-up power in the event of power outage
- Active filter – stabilise your voltage and frequency while reducing load imbalance, reactive power and harmonics in your local utility grid
- Modular principle – the inverter consists of up to four IPU inverter modules (of 85 kW each, can be upgraded at any time)
- Control speed – response time to power requirements in the network in milliseconds
- Maximum power density – potential for up to 340 kW with a footprint of just 0.54 m<sup>2</sup>

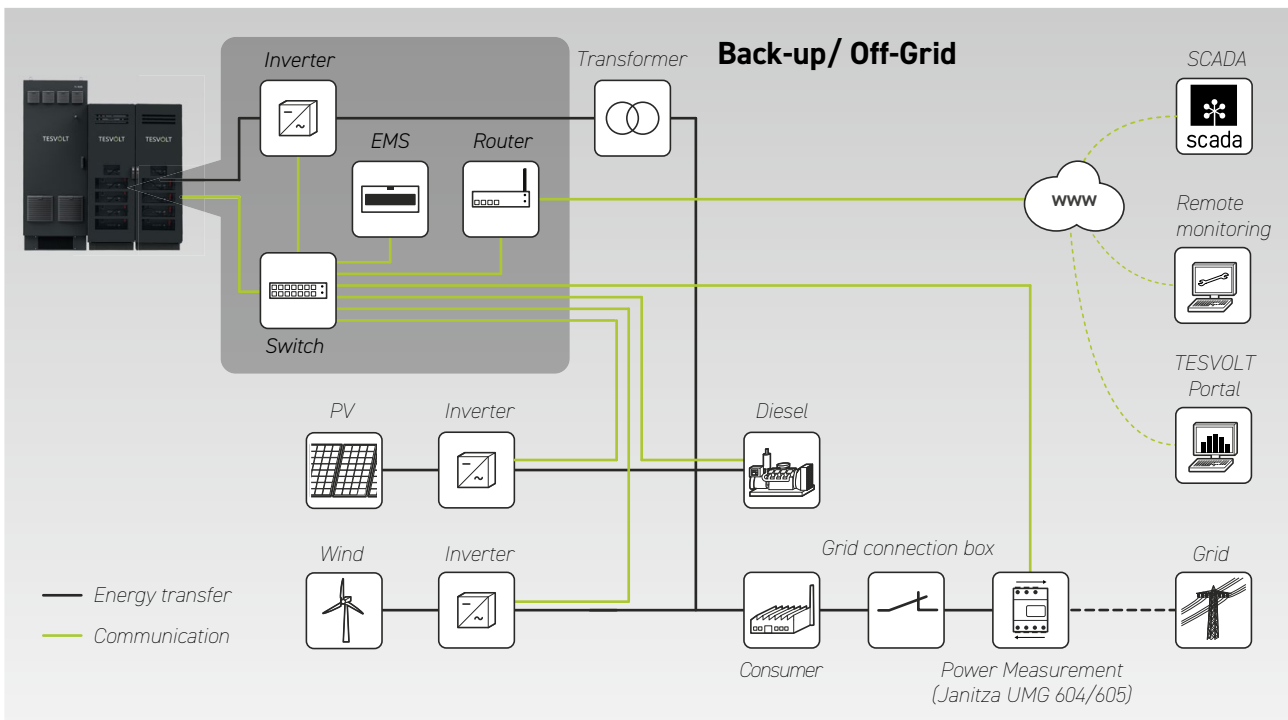
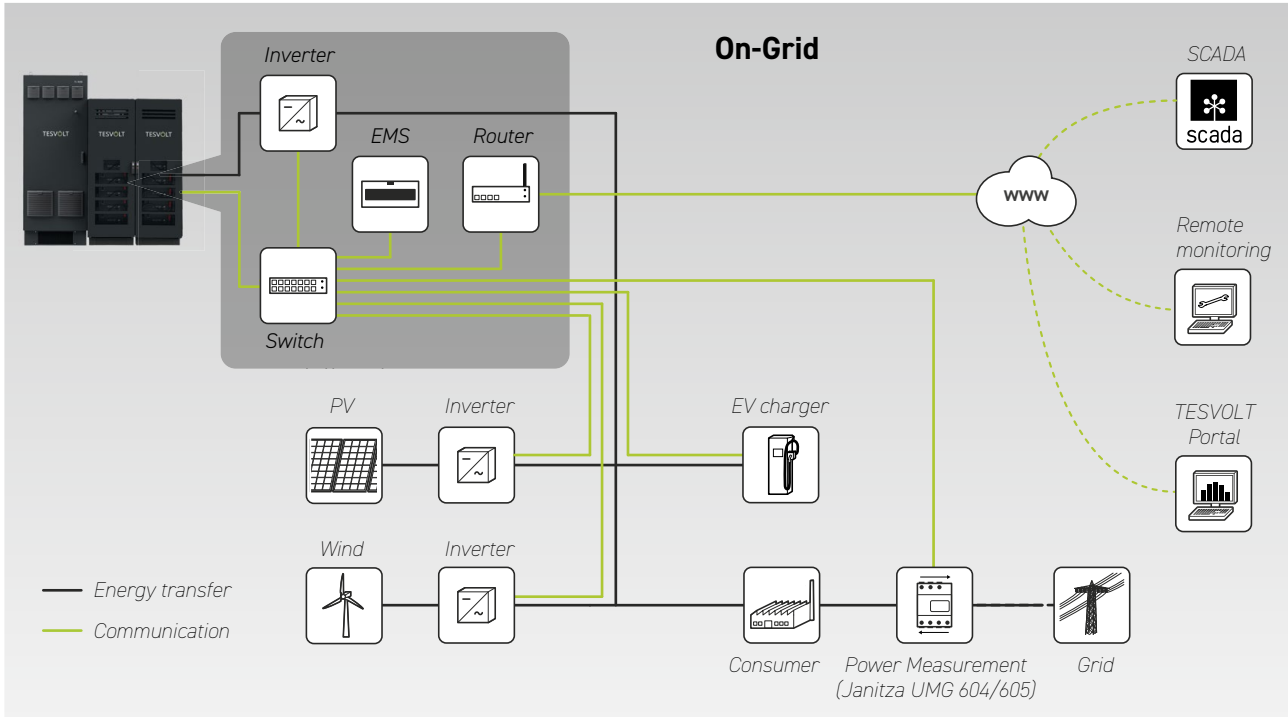
### TESVOLT ENERGY MANAGEMENT BENEFITS

- Universal applications – off-grid, back-up power, peakshaving, increased self-consumption, multi-use, power quality, time of use, forecast-based charging, control of consumers, control of producers, network services (e.g. PBP)
- Multi-use – combine various applications such as increased self-consumption, peak load shaving, time of use, back-up power, etc.
- TESVOLT Monitoring Portal – manage and control the function and savings of your battery storage system/inverter at any time
- Long-term flexibility – add new functions whenever you want



*TESVOLT battery inverter with three independent power units*

# SYSTEM STRUCTURE





Technical specifications inverter	1 independent power unit (IPU)	2 IPU	3 IPU	4 IPU
Rated effective power	75 kW	150 kW	225 kW	300 kW
Rated apparent power	75 kVA	150 kVA	225 kVA	300 kVA
Rated AC current	125 A	250 A	375 A	500 A
Rated DC current	140 A	280 A	420 A	560 A
DC short-circuit current	175 A	350 A	525 A	700 A
Operating voltage AC	400 V			
Grid frequency	50/60 Hz			
DC voltage range	680 to 1200 V DC			
Dimensions (H x W x D)	2200 x 820 x 660 mm			
Max. efficiency	97.8%			
Operating temperature	0 to 40°C			
Weight	approx. 390 kg	approx. 530 kg	approx. 670 kg	approx. 820 kg
Protection class	IP 20			
Communication	Modbus TCP/IP			
Topology	Transformer-free			
Certificates and standards	EN 61000-4-2/3/4/5/6/8/11, EN 61000-6-2/4, EN 55011, EN 62477-1, EN 60664-1, IEC 60364, EN 61439-1/2, EN 50178, CE, VDE-AR-N 4110: 2018-11, VDE-AR-N 4120: 2018-11			

#### Technical specifications battery

Energy for each TS-I HV80 battery system (16 battery modules)	76 kWh		
C-rate	1C		
Cells	Lithium NMC prismatic (Samsung SDI)		
Max. charging, discharging current	94 A		
Cell balancing	Active Battery Optimizer		
Cycles @ 100% DoD   70% EoL   23°C +/- 5°C 1C/1C	6000		
Cycles @ 100% DoD   70% EoL   23°C +/- 5°C 0.5C/0.5C	8000		
Efficiency (battery)	Up to 98%		
Selfconsumption (standby)	5 Watt (without battery inverter)		
Operating voltage	761 to 930 V DC		
Operating temperature	-10 to 50°C		
Humidity	0 to 85% (non-condensing)		
Altitude of installation site	< 2000 m above sea level		
Dimensions (H x W x D)	1900 x 1200 x 600 mm		
Certificates/standards	Cells	IEC 62619, UL 1642, UN 38.3	
	Product	CE, UN 38.3, IEC 62619, IEC 61000-6-2/4/7, BattG 2006/66/EC	
Warranty	10-year performance guarantee, 5-year system guarantee		
Recycling	TESVOLT offers free return of batteries from Germany		
Total weight	(16 battery modules, 2 racks)	823 kg	
	Weight per battery module   rack	36 kg   120 kg	
Protection class	IP 20		

Your certified TESVOLT specialist partner

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