



# TPS FLEX

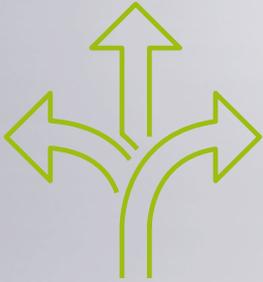
The great all-rounder for commercial and industrial applications

**TESVOLT**  
THE ENERGY STORAGE EXPERTS



## 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 10-year performance guarantee on the battery modules.



## FLEXIBILITY NOW AND IN THE FUTURE

Our TPS flex storage systems do more than just provide flexible configuration on procurement; thanks to their innovative Active Battery Optimizer technology, the battery modules can be retrofitted or replaced even after years of use.





## 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

TPS flex 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.

# A POWERHOUSE

# FOR ALL PURPOSES

**Our battery storage systems are easy to adapt to every application.**

Whether to increase self consumption or to cut peak loads, on- or off-grid to optimise diesel hybrid systems, whether in the desert or the Arctic circle – with the TESVOLT TPS flex storage system, TESVOLT offers a technical storage solution for any application. Its advanced, cost-optimised design makes for unbeatable efficiency – without sacrificing quality or performance. It is extremely robust and therefore well suited to the hardest tasks. Thanks to high-quality battery cells originally designed for the automotive sector and innovative technologies, such as the Active Battery Optimizer, our TESVOLT TPS flex storage system is one of the most efficient and durable products on the market.



### SAMSUNG SDI CELLS

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

- 1 Overcharge safety device
- 2 Vent
- 3 Fuse
- 4 Battery module
- 5 Active Battery Optimizer
- 6 Active Power Unit
- 7 AC sub-distribution unit
- 8 Battery racks
- 9 HVAC



### BATTERY MODULE

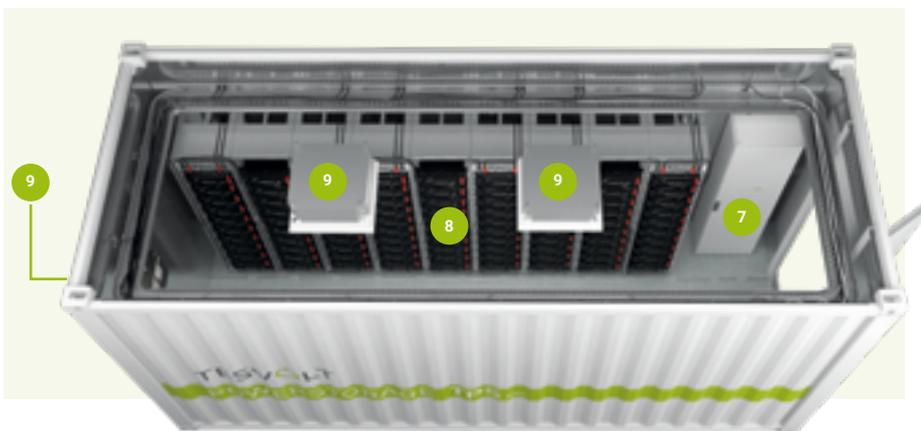
Every battery module has its own Active Battery Optimizer (ABO) that can be separated from the module in a few easy steps, for example, for servicing.



### SMA SUNNY TRIPOWER STORAGE 60

**TESVOLT TPS flex storage systems have been optimised for use with three-phase SMA Sunny Tripower Storage 60 battery inverters and are ideal for meeting demands in both trade and industry.**

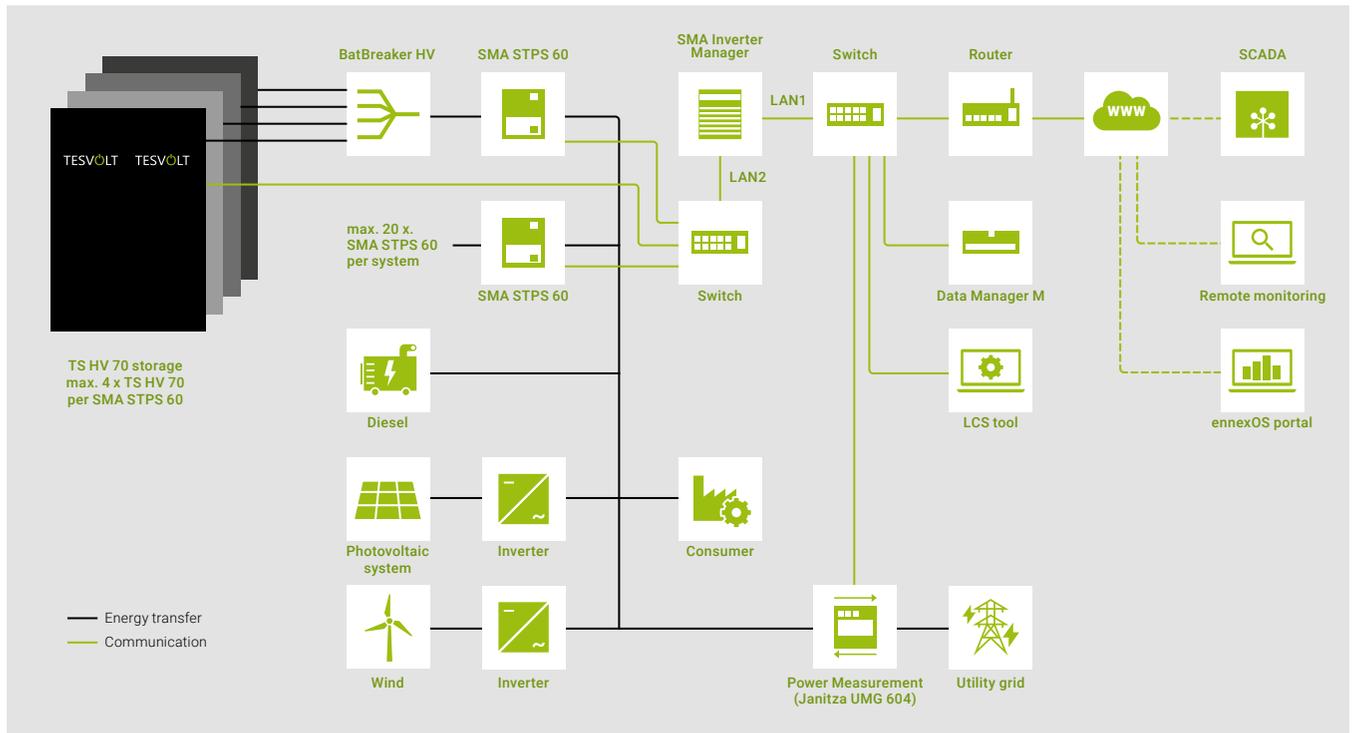
These solutions allow affordable storage solutions to be implemented for outdoor applications. An extremely wide range of grid system services are available thanks to the energy management system integrated in the Inverter Manager and the high C-rate of the TESVOLT TPS flex storage systems. At the same time, the system also provides new opportunities in terms of cost efficiency, as the investment costs are less than those of conventional outdoor storage systems. TESVOLT TPS flex storage systems are some of the most durable products on the market.



The TPS flex storage system has a fully modular design from the battery modules to the container, so it can be flexibly adapted and is also extremely efficient thanks to its long lifetime.

\*The graphics shown may differ from the actual structure.

## SYSTEM STRUCTURE



## APPLICATIONS

- **Diesel hybrid optimisation:** Diesel hybrid systems can be optimised for consumption with this system.
- **Time of use:** use of the storage system is dependent on the electricity cost (charge when low, discharge when high).
- **Peak shaving** Cap your consumption peaks and save money thanks to lower output use.
- **Self-consumption optimisation:** Use more of the power you have generated.
- **Grid system services:** Manage reactive/active power or frequency and compensate for grid fluctuations
- **Charging infrastructure:** Supports the integration of charging stations with applications such as peak shaving, self-consumption optimisation and grid system services.
- **Multi-use applications** Combine various applications such as increased self-consumption and peak shaving.

## DESIGN

- One or two battery systems (type: TS HV 70; up to four on request)
- One or two SMA STPS 60 units (up to four on request)
- 10 or 20 ft ISO container
- HVAC (PCS heating, ventilation and air conditioning)
- DC sub-distribution box and installation rack
- Systems with more than one battery have a 160-4X-HV1000 BatBreaker
- SMA Inverter Manager
- Janitza Power Quality Analyser

## VARIANTS

The TPS flex is available in a total of 18 standard variants. The variants listed here are just some of these standard variants.

A battery system consists of 15 battery modules with 72 kWh.

Up to four of these battery systems can be connected to each SMA STPS 60 unit. Up to six SMA STPS 60 units can be fitted in a 20 ft TPS flex on request.

| Type                         | Energy  | Charging power | Discharging power | Item no. | Container | Battery systems per 15 modules | Number of STPS units | Weight  |
|------------------------------|---------|----------------|-------------------|----------|-----------|--------------------------------|----------------------|---------|
| TPS flex 10 ft TS HV 70/60   | 72 kWh  | 60 kW          | 67 kW             | 101171   | 10 ft     | 1                              | 1                    | 2976 kg |
| TPS flex 10 ft TS HV 140/60  | 144 kWh | 60 kW          | 75 kW             | 101172   | 10 ft     | 2                              | 1                    | 3537 kg |
| TPS flex 10 ft TS HV 140/120 | 144 kWh | 120 kW         | 134 kW            | 101173   | 10 ft     | 2                              | 2                    | 3612 kg |
| TPS flex 20 ft TS HV 140/60  | 144 kWh | 60 kW          | 75 kW             | 101175   | 20 ft     | 2                              | 1                    | 5137 kg |
| TPS flex 20 ft TS HV 210/180 | 216 kWh | 180 kW         | 201 kW            | 101177   | 20 ft     | 3                              | 3                    | 5888 kg |
| TPS flex 20 ft TS HV 280/120 | 288 kWh | 120 kW         | 150 kW            | 101176   | 20 ft     | 4                              | 2                    | 6374 kg |

## TECHNICAL DATA TESVOLT TPS FLEX

|  |                 |  |
|--|-----------------|--|
| Energy for each TS HV 70 battery system (15 battery modules) |                 | 72 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 %   |
| Self-consumption (standby)                                   |                 | 5 W (without battery inverter)   |
| Operating voltage  |                 | 714 to 872 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 L)                                       | 10 ft container | 2900 x 2440 x 3000 mm  |
|  | 20 ft container | 2900 x 2440 x 6100 mm  |
| Certificates/standards                                       | Cells           | IEC 62619, UL 1642, UN 38.3  |
|  | Product         | CE, UN 38.3, IEC 62619, IEC 61000-6-1/2/3/4, German Battery Act 2006/66/EC |
| Guarantee  |                 | 10-year performance guarantee, 5-year system guarantee                     |
| Recycling  |                 | TESVOLT offers free return of batteries from Germany                       |
| Protection class   |                 | IP 35  |
| Battery specification as per DIN EN 62620:2015               |                 | IMP47/175/127/[14S]E/-20+60/90   |

## TECHNICAL DATA STPS 60

|                                |  |                    |
|--------------------------------|--|--------------------|
| Nominal charging power (AC)    |  | 60 kVA             |
| Nominal discharging power (AC) |  | 75 kVA             |
| DC voltage range               |  | 575 to 1000 V      |
| Dimensions (H x W x D)         |  | 740 x 570 x 306 mm |
| Max. efficiency                |  | 98.8 %             |
| Self-consumption (standby)     |  | < 3 W              |
| Operating temperature          |  | -25 to 60 °C       |
| Weight                         |  | 77 kg              |
| Protection class               |  | IP 65   NEMA 3R    |
| Communication                  |  | Modbus TCP/IP      |
| Topology                       |  | transformerless    |
| Guarantee                      |  | 5 years            |

## ABOUT TESVOLT

Daniel Hannemann and Simon Schandert established TESVOLT in the summer of 2014 with a vision – to bring affordable, clean energy to every corner of the world. Their aim was to develop and manufacture battery systems that store power from renewable energy sources as efficiently as possible.

Given that the biggest energy consumers in many countries are trade and industry, the company focused on storage systems with a large capacity from the very beginning. Today, TESVOLT produces its solutions for commercial storage systems in series and supplies them all around the world.

Your certified TESVOLT specialist partner

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