Pfannenberg
ELECTRO-TECHNOLOGY FOR INDUSTRY

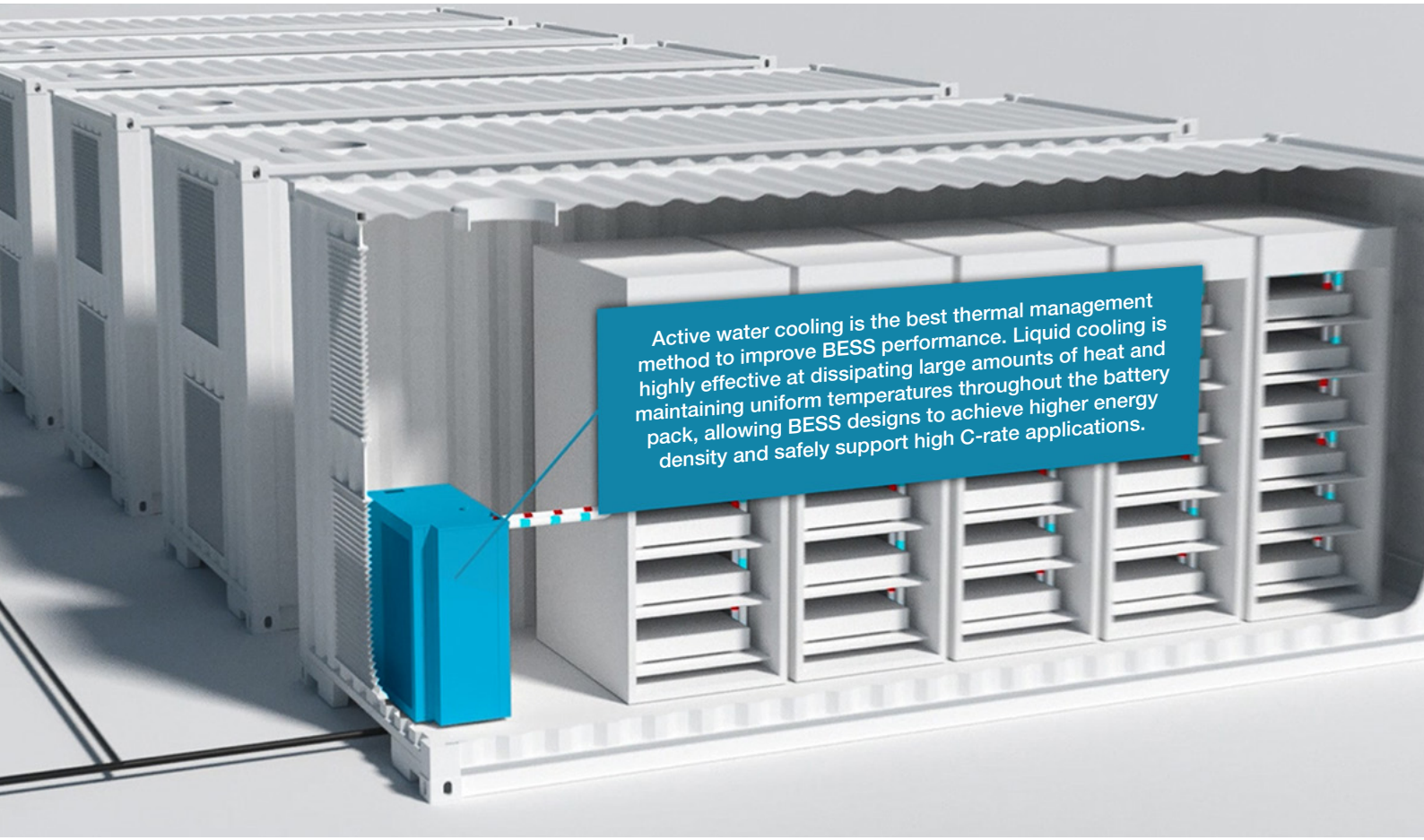
# VLV 4-12

## Off-grid chiller 800 V DC

Our award-winning compact chiller the VLV 4-12, designed for the battery energy storage solutions industry (BESS), comes with a power supply from 570 up to 800 V DC to directly connect with the battery system – no need for power conversion. This off-grid unit can be installed inside the container or cabinet. BESS-systems are a often placed in areas of extreme conditions, when it comes to temperature ranges – our VLV perfectly performs in ambient temperature ranges from -25° C to +45° C. And with its internal heater the VLV preserves battery life time maintaining a stable minimum temperature of the liquid in cold seasons.

THE smarter E AWARD WINNER

- **Power supply from 570 up to 800 V DC**
  Directly connectable with the battery system with no need for power conversion.
- **Made for all climates**
  Safely operates in cold and hot regions, between -25 and +45 °C.
- **Internal heater**
  Preserves battery life time in wintertime maintaining a stable minimum temperature of the liquid.
- **Variable frequency components (VFD) and micro-channel condenser:**
  Scores with high energy efficiency and reliability.
- **Error/warning and status communication**
  Integrable with your Battery Management System via Modbus TCP.
- **Off-grid unit**
  Easy to be installed inside the cabinet or BESS-container at commercial and industrial applications (C&I).




The choice of the optimal thermal management solution is informed by the C-rate* of the application, and the environmental conditions, among other factors. The most demanding thermal management applications, such as C&I BESS installations and high C-rate applications, require active liquid cooling.

As the BESS market evolves with a wide diversity of designs and applications, multiple versions of chillers are available to optimise the layout of the cooling system – the VLV 12 as an off-grid unit can be placed inside the container with no need for power conversion.

Our experts provide proven liquid cooling solutions backed with over 70 years of experience in thermal management and numerous customised projects carried out in the energy storage sector.

Fast commissioning. Small footprint. Efficient cooling. Reliability. Easy maintenance.

*C-rate is a measure of the rate at which a battery is charged or discharged relative to its maximum capacity.

**Our experts will provide guidance from the ideation stage right up to the execution of your project.**

## Technical Service

24/7 worldwide presence | Commissioning, repair and maintenance | Spare part kits | Service trainings | Warranty extension | Customised service contracts | Customised stocks | PSS - Pfannenberg Sizing Software