WeCo Srl Lithium Battery Packs with the Steca Solarix PLI 5000-48 Inverter Charger

Recommended Steca Solarix PLI 5000-48 setup for the WeCo 5K3_LV_HV battery

The following setup and settings have been selected through cooperation between KATEK Memmingen GmbH and WeCo Srl.

They represent recommended values for cyclical applications as are typical in many solar PV applications with a depth of discharge (DOD) of approximately 90%. This recommendation is applicable to the **5K3_LV_HV**.

WeCo 5K3 LV-HV is a dual-voltage Module suitable for LV and HV applications.
The double inputs screw terminals for LV-connection and fast connector Amphenol Type for HV-connection, allows a wide range of application using the same module simply changing the DIP setting to pass from HV to LV or vice-versa.

LOW VOLTAGE
The 5K3 Module can be used as wall-mounted or stack-mounted without additional accessories. 25mm Cables, CAN cable, and RJ45 patches are all included with the battery module (Bus bar for LV connection are not included, need to be ordered as accessory if required).

The 5K3 can be set up with up to 8 modules in parallel without external devices, simply acting on the DIP switch.

Each module has also 2 x DI/DO programmable with the WeCo monitor software.

WeCo Battery App allows a remote monitoring and FW upgrade for the LV battery.

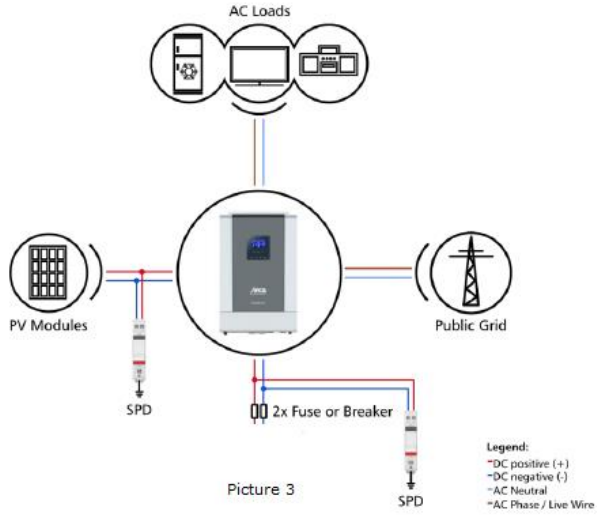
We recommend using *at least* two 5K3_LV_HV in parallel to reliably sustain the 5kW full power of one Solarix PLI, without risking an over-current situation on the batteries.

Install one fuse or circuit breaker in each the opposite and the negative cable between the battery bank and Solarix PLI with a rating of at least 150 ADC (slow).

Additionally, it is recommended to use a surge protector (SPD) on the battery terminals that protect from voltages above 60 to 65 VDC (example: Citel DS230S-48DC or similar), as well as on the PV side (Citel DS240S-110DC or similar)

Make sure to always follow the requirements and guidelines from the battery manufacturer and verify the settings with the data sheet of your batteries before applying them. Please contact your retailer in case of uncertainty. Read the Steca Solarix PLI and battery manuals before applying these settings. Adhere to local regulations.

Installation overview:



Picture 3

<Number x recommended battery model>

Please note that the overview above does not include AC breakers, AC surge protectors (SPD), residual current devices (RCD), earth / ground cables, or other safety equipment that may be required in the country of installation. Ensure that the system is installed by a professional according to national electrical safety standards.

Steca Solarix PLI Settings

The following settings refer to the Steca Solarix PLI 5000-48 inverter / charger, connected to an array of PV modules and the aforementioned 5K3_LV_HV batteries.

Please refer to the Solarix PLI manual for further explanation on the mentioned setting programs:

- **Maximum charging current**
  Program 02 → set to a value equal to or lower than number of used battery packs x 50 A. Example if using 2 pcs: 2 x 50 A = 100 A. Therefore the maximum charging current must be set to 100 A or lower. Recommendation: 80 A

- **Battery type**
  Program 05 → User-defined (USE)

- **Switch to AC input set-point (relevant when using "SBU" or "Solar first" modes in program 01)**
  Program 12 → 51 V

- **Switch back to solar / battery set-point (relevant when using "SBU" or "Solar first" modes in program 01)**
  Program 13 → 56 V if single module and 55.5V if multiple modules

- **Charger source priority (this is assuming you wish to utilise as much solar power as possible, if you do not, then choose another setting)**
  Program 16 → Solar first (CSO)
  Program 11 (maximum AC input charging current) → 2 A

  The reason "Solar first" is recommended here as opposed to "Only solar", is that when the battery is in a low-voltage state and the Solarix PLI switches to AC input / grid operation, the Solarix PLI inverter's self-consumption of approximately 50 W is still provided by the battery. To compensate for this (and thus prevent the battery voltage from dropping too low if there are prolonged periods without sunshine), it is recommended to charge the battery very slightly (less than 100 W when setting program 11 to 2A as recommended), when the Solarix PLI is in AC input / grid mode. This ensures that the battery will not be gradually depleted when the grid is available and there is no sunshine. Choosing a higher value than 2A would reduce the energy cost-savings potential from this system

- **Boost charging voltage**
  Program 26 → 56 V

- **Float charging voltage**
  Program 27 → 55 V

- **Low DC / battery cut-off voltage**
  Program 29 → 48 V

- **Boost charging time**
  Program 32 → 90 minutes

- **Battery equalisation**
  Program 33 → Battery equalisation disable (EdS)

Note: If there is a critical condition detected in the battery, the 5K3_LV_HV battery will shut down for safety reasons. To re-start the system, the battery must be started manually. Only once the battery has started up, can the Solarix PLI 5000-48 power up again