

## MANUFACTURER'S DECLARATION

### Concerning the use of the single phase PV grid-tied inverters

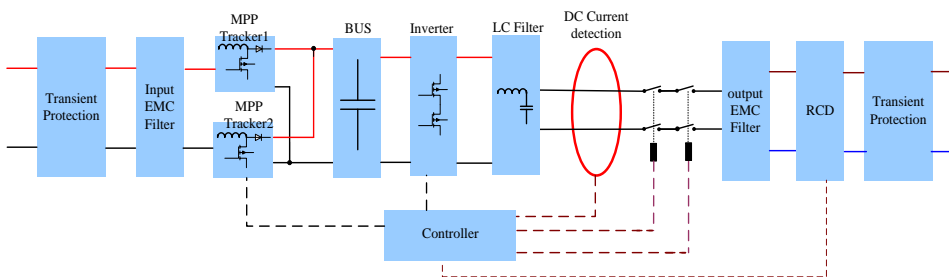
- SolarRiver 1100TL / 1600TL / 2300TL / 3000TL / 3300TL / 3680TL / 4400TL / 5200TL
- SolarRiver 1100TL-S / 1600TL-S / 2100TL-S / 2600TL-S
- SolarRiver 3400TL-D / 4000TL-D / 4500TL-D / 5000TL-D / 5200TL-D / 6000TL-D

### in photovoltaic systems with residual current circuit breakers of type A:

The following RCCBs (Residual Current Circuit Breakers) of type A are not impacted in their monitoring function when operated with Samil Power SolarRiver inverters named above.

- Residual current circuit breakers (RCCB) of type A from ABB, series F 202 A-... or F 204 A-...
- Residual current circuit breakers (RCCB) of type A from Siemens, series 5SM1... or 5SM3...

The minimum rated residual current of the RCCBs, when operating one inverter, amounts to 30mA. When operating up to 3 inverters, the rated residual current amounts to at least 100mA. However, depending upon the installation, higher rated residual currents may be necessary.



**Figure 1:**  
Block diagram of  
single phase inverters



## Concerning the use of the three phase PV grid-tied inverters

- **SolarLake 5500TL-PM / 7000TL-PM / 8500TL-PM / 10000TL-PM**
- **SolarLake 10000TL / 12000TL / 15000TL / 17000TL**
- **SolarLake 12000TL-PM / 15000TL-PM / 17000TL-PM / 20000TL-PM**
- **SolarLake 25000TL-PM / 30000TL-PM**

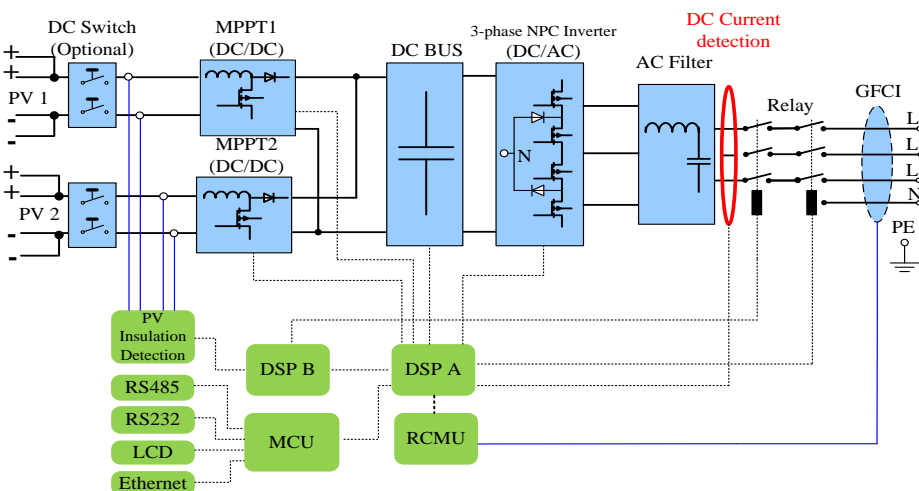
### in photovoltaic systems with residual current circuit breakers of type A:

The SolarLake inverters named above feed energy symmetrically into the grid in three phases. The conversion topology developed specifically for this purpose is characterized by an even flow of energy from the PV generator into the grid, which ensures smooth operations.

Permanent DC residual currents do not occur due to the design of the inverter. The current sensor is located at the point before AC connection and shown above in red (Figure 1 & 2 is for single phase and three phase respectively). Its control will check readings and control the redundant relays at predefined level of DC component amount. Switching to the mains grid only takes place after an automatic check for adequate isolation of the PV generator from the grid. A system error would result in residual DC current, so disconnection from the grid is immediately required and carried out by the redundantly structured, internal residual current monitoring unit (RCMU) of type B. The following residual current circuit breakers of type A do not cause any disruption of the monitoring function when operated with Samil Power SolarLake inverters named above:

- Residual current circuit breakers (RCCB) of type A from ABB, series F 204 A-...
- Residual current circuit breakers (RCCB) of type A from Siemens, series 5SM1... or 5SM3...

The minimum rated residual current of the RCCBs, when operating one inverter, amounts to 30mA. When operating up to 3 inverters, the rated residual current amounts to at least 100mA. However, depending upon the installation, higher rated residual currents may be necessary.



**Figure 2:**  
 Block diagram of  
 three phase inverters



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The Samil Power inverters thus fulfil the requirements of DIN VDE 0100-712 (IEC 60364-7-1 2) regarding installation and operation.

**Legal notice:**

**Standards and guidelines legally prescribed in the country of usage are always to be observed! The manufacturer of the inverter does not grant a warranty of any kind with the manufacturer's declaration.**

**Samil Power GmbH (Germany), 2014-07-22**



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