ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

DAkkS Deutsche Akkreditierungsstelle D-ZE-11321-01-00

TÜV SÜD Product Service

Certificate of Conformity

No. ESY 115067 0067 Rev. 00

Holder of Certificate: **Xiamen Kehua Digital Energy Tech Co., Ltd.**
Room 208-38, Hengye Building
No. 100 Xiangxing Road
Torch High-tech Zone
(Xiangan) Industrial Zone
361115 Xiamen
PEOPLE'S REPUBLIC OF CHINA

Product: **Converter (PV Inverter)**

Model(s): **SPI100K-B, SPI110K-B, SPI125K-B, SPI100K-B PLUS, SPI110K-B PLUS, SPI125K-B PLUS**

Parameters: See pages 2-7

Applicable standards:
VDE-AR-N 4110:2018
FGW TR3:2018
FGW TR4:2019
FGW TR8:2019

This Certificate of Conformity confirms the compliance with the above listed standards on a voluntary basis. It refers only to the sample submitted to TÜV SÜD Product Service GmbH and does not certify the quality or safety of the serial products. It was issued according to TÜV SÜD Product Service certification program Photovoltaics and Grid Integration. For details see: www.tuvsud.com/ps-cert

Test report no.: 64290223147301

Date, 2024-06-07

(Billy Qiu)

TÜV SÜD Product Service GmbH • Certification Body • Ridlerstraße 65 • 80339 Munich • Germany

TÜV®

DAkkS Deutsche Akkreditierungsstelle D-ZE-11321-01-00

TÜV SÜD Product Service

Certificate of Conformity

No. ESY 115067 0067 Rev. 00

Parameters:

General and Output values	
Manufacturer	Xiamen Kehua Digital Energy Tech Co., Ltd.
Type name	SPI100K-B
No. of phases	3 phases
Rated apparent power	100 kVA
Rated active power	100 kW
Rated AC-voltage	3P+PE, 400 A_{AC}
Rated frequency	50 Hz
Contribution to short circuit current (RMS)	200.934 A_{AC}
DC input	
Min. DC input voltage	200 V_{DC}
Max. DC input voltage	1000 V_{DC}
Max. DC input current	30 *9 A_{DC}
Max. peak power	112.2 kW
Converter-Power section	
Manufacturer	Xiamen Kehua Digital Energy Tech Co., Ltd.
Type name	SPI100K-B
Rated apparent power	100 kVA
Generic type	MV/LV or HV/LV transformer is not included in the inverter
Pulse rated of inverter	16200 Hz
Generic type of power control	PQ and MPP-Tracking
Software version	DSP1: V1 DSP2: V1 HMI ARM: V1

DAkkS Deutsche Akkreditierungsstelle D-ZE-11321-01-00

TÜV SÜD Product Service

Certificate of Conformity

No. ESY 115067 0067 Rev. 00

General and Output values	
Manufacturer	Xiamen Kehua Digital Energy Tech Co., Ltd.
Type name	SPI110K-B
No. of phases	3 phases
Rated apparent power	110 kVA
Rated active power	110 kW
Rated AC-voltage	3P+PE, 400 A_{AC}
Rated frequency	50 Hz
Contribution to short circuit current (RMS)	200.934 A_{AC}
DC input	
Min. DC input voltage	200 V_{DC}
Max. DC input voltage	1000 V_{DC}
Max. DC input current	30 *9 A_{DC}
Max. peak power	123.5 kW
Converter-Power section	
Manufacturer	Xiamen Kehua Digital Energy Tech Co., Ltd.
Type name	SPI110K-B
Rated apparent power	110 kVA
Generic type	MV/LV or HV/LV transformer is not included in the inverter
Pulse rated of inverter	16200 Hz
Generic type of power control	PQ and MPP-Tracking
Software version	DSP1: V1 DSP2: V1 HMI ARM: V1

DAkkS Deutsche Akkreditierungsstelle D-ZE-11321-01-00

TÜV SÜD Product Service

Certificate of Conformity

No. ESY 115067 0067 Rev. 00

General and Output values	
Manufacturer	Xiamen Kehua Digital Energy Tech Co., Ltd.
Type name	SPI125K-B
No. of phases	3 phases
Rated apparent power	125 kVA
Rated active power	125 kW
Rated AC-voltage	3P+PE, 400 A_{AC}
Rated frequency	50 Hz
Contribution to short circuit current (RMS)	200.934 A_{AC}
DC input	
Min. DC input voltage	200 V_{DC}
Max. DC input voltage	1000 V_{DC}
Max. DC input current	30 *9 A_{DC}
Max. peak power	140.3 kW
Converter-Power section	
Manufacturer	Xiamen Kehua Digital Energy Tech Co., Ltd.
Type name	SPI125K-B
Rated apparent power	125 kVA
Generic type	MV/LV or HV/LV transformer is not included in the inverter
Pulse rated of inverter	16200 Hz
Generic type of power control	PQ and MPP-Tracking
Software version	DSP1: V1 DSP2: V1 HMI ARM: V1

DAkkS Deutsche Akkreditierungsstelle D-ZE-11321-01-00

TÜV SÜD Product Service

Certificate of Conformity

No. ESY 115067 0067 Rev. 00

General and Output values	
Manufacturer	Xiamen Kehua Digital Energy Tech Co., Ltd.
Type name	SPI100K-B PLUS
No. of phases	3 phases
Rated apparent power	100 kVA
Rated active power	100 kW
Rated AC-voltage	3P+PE, 400 A_{AC}
Rated frequency	50 Hz
Contribution to short circuit current (RMS)	200.934 A_{AC}
DC input	
Min. DC input voltage	200 V_{DC}
Max. DC input voltage	1000 V_{DC}
Max. DC input current	40 *6 A_{DC}
Max. peak power	112.2 kW
Converter-Power section	
Manufacturer	Xiamen Kehua Digital Energy Tech Co., Ltd.
Type name	SPI100K-B PLUS
Rated apparent power	100 kVA
Generic type	MV/LV or HV/LV transformer is not included in the inverter
Pulse rated of inverter	16200 Hz
Generic type of power control	PQ and MPP-Tracking
Software version	DSP1: V1 DSP2: V1 HMI ARM: V1

DAkkS Deutsche Akkreditierungsstelle D-ZE-11321-01-00

TÜV SÜD Product Service

Certificate of Conformity

No. ESY 115067 0067 Rev. 00

General and Output values	
Manufacturer	Xiamen Kehua Digital Energy Tech Co., Ltd.
Type name	SPI110K-B PLUS
No. of phases	3 phases
Rated apparent power	110 kVA
Rated active power	110 kW
Rated AC-voltage	3P+PE, 400 A_{AC}
Rated frequency	50 Hz
Contribution to short circuit current (RMS)	200.934 A_{AC}
DC input	
Min. DC input voltage	200 V_{DC}
Max. DC input voltage	1000 V_{DC}
Max. DC input current	40 *6 A_{DC}
Max. peak power	123.5 kW
Converter-Power section	
Manufacturer	Xiamen Kehua Digital Energy Tech Co., Ltd.
Type name	SPI110K-B PLUS
Rated apparent power	110 kVA
Generic type	MV/LV or HV/LV transformer is not included in the inverter
Pulse rated of inverter	16200 Hz
Generic type of power control	PQ and MPP-Tracking
Software version	DSP1: V1 DSP2: V1 HMI ARM: V1

DAkkS Deutsche Akkreditierungsstelle D-ZE-11321-01-00

TÜV SÜD Product Service

Certificate of Conformity

No. ESY 115067 0067 Rev. 00

General and Output values	
Manufacturer	Xiamen Kehua Digital Energy Tech Co., Ltd.
Type name	SPI125K-B PLUS
No. of phases	3 phases
Rated apparent power	125 kVA
Rated active power	125 kW
Rated AC-voltage	3P+PE, 400 A_{AC}
Rated frequency	50 Hz
Contribution to short circuit current (RMS)	200.934 A_{AC}
DC input	
Min. DC input voltage	200 V_{DC}
Max. DC input voltage	1000 V_{DC}
Max. DC input current	40 *6 A_{DC}
Max. peak power	140.3 kW
Converter-Power section	
Manufacturer	Xiamen Kehua Digital Energy Tech Co., Ltd.
Type name	SPI125K-B PLUS
Rated apparent power	125 kVA
Generic type	MV/LV or HV/LV transformer is not included in the inverter
Pulse rated of inverter	16200 Hz
Generic type of power control	PQ and MPP-Tracking
Software version	DSP1: V1 DSP2: V1 HMI ARM: V1

DAkkS Deutsche Akkreditierungsstelle D-ZE-11321-01-00

TÜV SÜD Product Service

Certificate of Conformity

No. ESY 115067 0067 Rev. 00

Unit Certificate			
Manufacturer	Xiamen Kehua Digital Energy Tech Co., Ltd.		
Power generation unit type	PV Inverter, type 2		
Technical data	Rated active power:	SPI100K-B	100 kW
		SPI110K-B	110 kW
		SPI125K-B	125 kW
		SPI100K-B PLUS	100 kW
		SPI110K-B PLUS	110 kW
		SPI125K-B PLUS	125 kW
	Rated voltage:	SPI100K-B	3P+PE, 400 V_{AC}
		SPI110K-B	
		SPI125K-B	
		SPI100K-B PLUS	
		SPI110K-B PLUS	
		SPI125K-B PLUS	
	Nominal frequency:	50 Hz	
Network connection rule	VDE-AR-N 4110:2018-11 “TCR Medium-voltage” Technical requirements for the connection and operation of customer installations to the medium voltage network		
Certification program	FGW Technical guideline No 8 (Revision 9)		
Standards/guidelines which are also applicable	FGW Technical guideline No 3 (Revision 25) FGW Technical guideline No 4 (Revision 9)		

The power generating unit designated above meets the requirements of the VDE application guide listed above.

The following restriction(s) and deviation(s) apply:

1. The computer simulation model is validated with the built environment DigSilent Powerfactory 2022 (x64) and with the identity number:
(1) For the PGU SPI100K-B and SPI100K-B PLUS, MD5 code: 1a8b71b45605494ba684a812b4a1ee22;
(2) For the PGU SPI110K-B and SPI110K-B PLUS, MD5 code: 071388f4db38e48640c0ae0ba98793c0;
(3) For the PGU SPI125K-B and SPI125K-B PLUS, MD5 code: a65fcfb71f91e5bfe81f6a1fda22f50e;

2. The integrated voltage/frequency protection is provided but without test terminal strips for function tests on-site for power generation system according to Clause 6.3.4.5 of VDE-AR-N 4110:2018. It should be considered during the planning of power generation system. The disconnection device is realized by the AC relay.

3. The manufacturer has provided proof of certification of the quality management system of his production facility in accordance with ISO 9001.

The certificate includes the following:

- technical data of the power generating unit, the auxiliary equipment used and the software version used (See Pages 2 to 7);
- schematic set-up of the power generation unit. (See Pages 10 to 11);
- summarized information on the properties of the power generating unit (Technical report 64.290.22.31473.01 for the full evaluation according to FGW TR8 guideline).

Certificate expiry date	2029-06-05

TÜV SÜD Product Service GmbH • Certification Body • Ridlerstraße 65 • 80339 Munich • Germany

TÜV®

DAkkS
Deutsche
Akkreditierungsstelle
D-ZE-11321-01-00

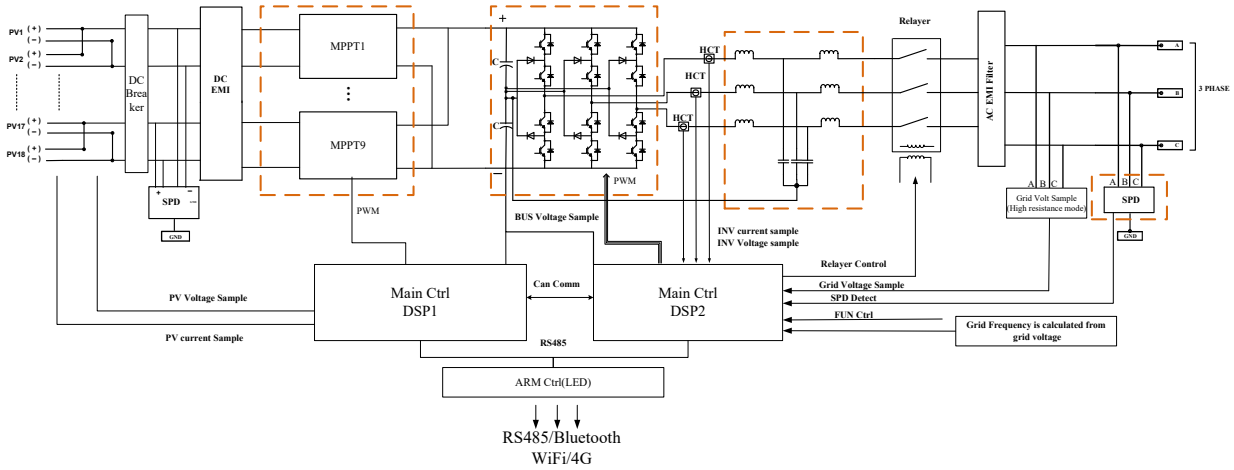
TÜV SÜD
Product Service

Certificate of Conformity

No. ESY 115067 0067 Rev. 00

Schematic set-up of the power generation unit

SPI100K-B, SPI110K-B, SPI125K-B



SPI100K-B PLUS, SPI110K-B PLUS, SPI125K-B PLUS

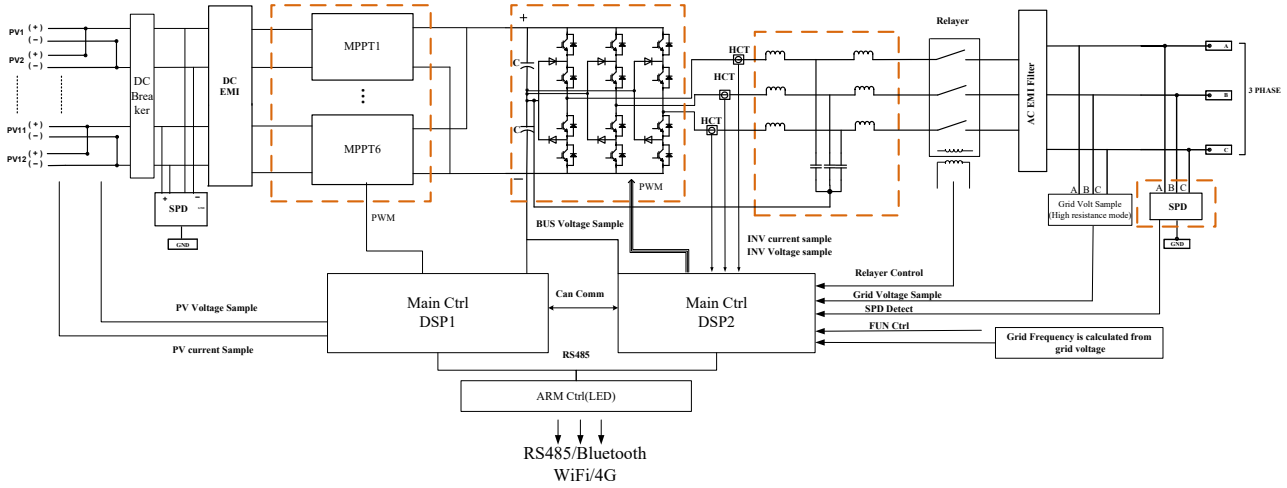


Figure 1: Schematic overview circuit diagram

DAkkS Deutsche Akkreditierungsstelle D-ZE-11321-01-00

TÜV SÜD Product Service

Certificate of Conformity

No. ESY 115067 0067 Rev. 00

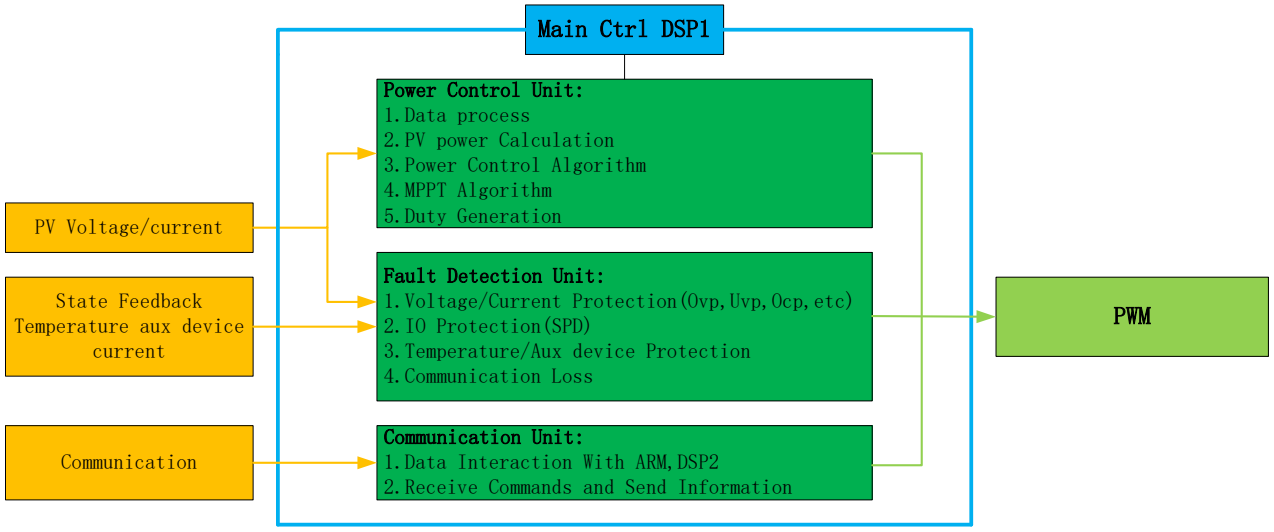


Figure 2: Function module and control signal of DSP1

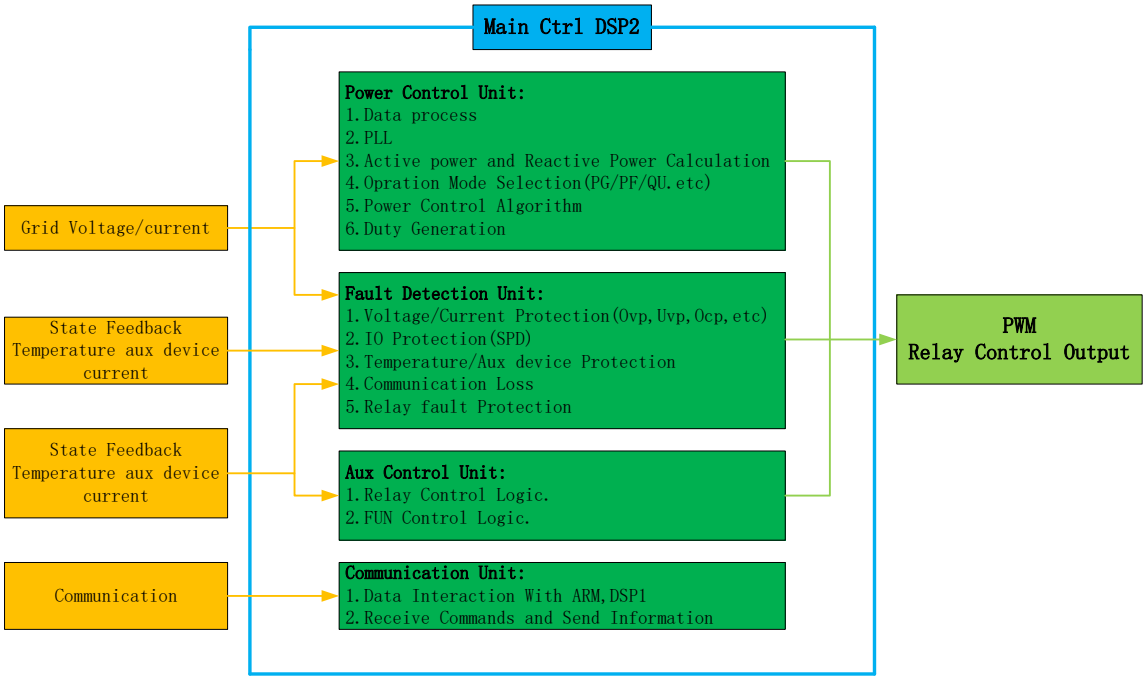


Figure 3: Function module and control signal of DSP2