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Amtsgericht (District court) Kassel HRB (registration number) 3972
Vorsitzender des Aufsichtsrats (Chairman of the Supervisory Board): Dr. Ralph Lässig
Vorstand (Managing Board): Dr.-Ing. Jürgen Reinert (CEO), Olaf Heyden (CTrO/COO), Dr. Kaveh Rouhi (CFO)

Manufacturer's Declaration

Realization of grid and PV system protection in accordance with VDE-AR-N 4105:2018-11, Chapter 6.4.1 Method C, for 30 to 135 kW plants and in accordance with the FNN note "Simplified connection according to NELEV and EAAV[1)]" for systems from 135 to 270 kW, by means of the AC interface switch integrated into the following inverters

Sunny Tripower X 50 / 60 inverters (STP 50-80 / STP 60-80):

The AC interface switch integrated into the inverter can replace an external central interface switch in connection with the following system requirements:

- Firmware ≥ 01.00.00.R
- Country data set used for AR-N 4105: "DE VDE-AR-N4105:2018-11 Generator > 4.6 kVA"
- Set country data used for the NELEV/EAAV: "Germany, medium-voltage directive for generators with an external decoupling protection device" with device parameterization according to the setting document[2)]
- External, central, and certified grid protection unit with alarm contact, designed as a potential-free break contact. Sum of switching and measuring time ≤ 100 ms
- Connection of the integrated digital inputs of all inverters with the external grid protection unit

Sunny Tripower Storage X / Sunny Island X inverters (STPS30-20/STPS50-20/SI30-20/SI50-20):

The AC interface switches integrated into the inverter can replace an external central interface switch in connection with the following system requirements:

- Firmware ≥ 03.00.04.R
- Country data set used: "DE VDE-AR-N4105:2018-11 Storage facilities > 4.6 kVA"
- Set country data used for the NELEV/EAAV: "Germany, medium-voltage directive for storage facilities with an external decoupling protection device" with device parameterization according to the setting document[2)]
- SMA I/O Module installed in inverter
- External, central, and certified grid protection unit with alarm contact, designed as a potential-free break contact. Sum of switching and measuring time ≤ 100 ms
- Connection of the integrated digital inputs of all inverters with the external grid protection unit

Sunny Tripower 125 inverter (STP 125-70):

The AC interface switches integrated into the inverter can replace an external central interface switch in connection with the following system requirements:

- Firmware ≥ 04.00.48.R
- Country data set used: "DE VDE-AR-N4105:2018-11 Generator > 4.6 kVA"
- Set country data used for the NELEV/EAAV: "Germany, medium-voltage directive for generators with an external decoupling protection device" with device parameterization according to the setting document[2)]

- External, central, and certified grid protection unit with alarm contact, designed as a potential-free break contact. Sum of switching and measuring time ≤ 100 ms
- Connection of the integrated digital inputs of all inverters with the external grid protection unit

Sunny Tripower X inverters (STP 15-50/STP 20-50/STP 25-50):

The AC interface switches integrated into the inverter can replace an external central interface switch in connection with the following system requirements:

- Firmware ≥ 02.02.07.R
- Country data set used: "DE VDE-AR-N4105:2018-11 Generator > 4.6 kVA"
- Set country data used for the NELEV/EAAV: "Germany, medium-voltage directive for generators with an external decoupling protection device" with device parameterization according to the setting document[2)]
- External, central, and certified grid protection unit with alarm contact, designed as a potential-free break contact. Sum of switching and measuring time ≤ 100 ms
- Connection of the integrated digital inputs of all inverters with the external grid protection unit

Sunny Tripower CORE 1 inverter (STP 50-41):

The AC interface switch integrated into the inverter can replace an external central interface switch in connection with the following system requirements:

- Firmware ≥ 03.01.00.R
- Country data set used for AR-N 4105: "DE VDE-AR-N4105:2018-11 Generator > 4.6 kVA"
- Set country data used for the NELEV/EAAV: "Germany, medium-voltage directive for generators with an external decoupling protection device" with device parameterization according to the setting document[2)]
- SMA I/O Module installed in inverter
- External, central, and certified grid protection unit with alarm contact, designed as a potential-free break contact. Sum of switching and measuring time ≤ 100 ms
- Connection of all SMA I/O modules to the external grid protection unit (see also Technical Information "Simplified Realization of Grid and PV System Protection in PV Systems" in accordance with VDE AR-N-4105:2018)

Sunny Tripower CORE 2 inverter (STP 110-60):

The AC interface switch integrated into the inverter can replace an external central interface switch in connection with the following system requirements:

- Firmware: >= 01.01.01.R
- Country data set used: VDEARN4105/18a
- Set country data used for the NELEV/EAAV: VDEARN4110/18a with device parameterization according to the setting document[2)]
- External, central, and certified grid protection unit with alarm contact, designed as a potential-free break contact. Sum of switching and measuring time ≤ 100 ms
- Connection of the integrated digital inputs of all inverters with the external grid protection unit

Functional principle:

The digital inputs integrated into the inverter, or the installed SMA I/O modules, are connected to the potential-free alarm contact of the external grid protection unit.

An AC disconnection by the interface switch installed in the inverter takes place within 100 ms of triggering by the alarm contact of the external grid protection unit.

The inverter checks that the AC interface switch integrated into the inverter is working correctly before each switch-on procedure. The inverter also checks the switching capability of its interface switch each day. In the event of a malfunction, the error is reported and the inverter does not connect to the utility grid; this also applies to the simultaneous approval by the central grid and PV system protection (VDE-AR-N 4105:2018-11 Chapter 6.4.1 Method C).

The manufacturer SMA Solar Technology AG guarantees that the response and turn-off time of the AC switch (relay) integrated into the inverter does not exceed 100 ms.

In order not to exceed the total turn-off time of 200 ms (response and turn-off time of interface switch + measuring and response time of the external grid protection unit) required in VDE-AR-N 4105:2018-11 in Chapter 6.4.1, the measuring and response time of the grid protection unit must be less than 100 ms. This proof must be provided independently of this declaration.

[1] Long title: "Simplified connection and verification of generation systems and storage facilities with grid connection in medium and high voltage"

[2] Instructions for FNN note "Simplified connection and verification of generation systems and storage facilities with grid connection in medium and high voltage"–parameter settings for SMA inverters together with the SMA Data Manager M–10 in systems with a maximum cumulative power of 135 kW to 270 kW

Niestetal, Germany, 2026-05-07

SMA Solar Technology AG

i.V. Sven Bremicker

i. V. Sven Bremicker

Chief Engineer – Home & Business Solutions

Certificate of compliance

Applicant: **SMA Solar Technology AG**
Sonnenallee 1
34266 Niestetal
Germany

Product: **Mains disconnection protection with communication-based tripping**

Intended use

Verification of AC disconnection by the coupling switch installed in the inverter within 100 ms after triggering by the signalling contact of the external network and system monitoring unit.

Inverter STP 50-40 / STP 50-41

The AC coupling switches (decoupling switches) integrated in the inverter can replace an external central coupling switch under the following system conditions:

- Firmware ≥ 03.01.00.R
- External, central and certified monitoring unit with signalling contact, designed as a floating NC contact.
- Connection of all SMA I/O modules with the external monitoring unit

Inverter STP110-60

The AC coupling switches (decoupling switches) integrated in the inverter can replace an external central coupling switch under the following system conditions:

- Firmware ≥ 01.01.01.R
- External, central and certified monitoring unit with signalling contact, designed as a floating NC contact
- Connection of the integrated digital inputs of all inverters with the external monitoring unit

Inverter STP 25-50, STP 20-50, STP 15-50, STP 12-50

The AC coupling switches (decoupling switches) integrated in the inverter can replace an external central coupling switch under the following system conditions:

- Firmware ≥ 02.02.07.R
- External, central and certified monitoring unit with signalling contact, designed as a floating NC contact
- Connection of the integrated digital inputs of all inverters with the external monitoring unit

Description / Function

The digital inputs integrated in the inverter or installed SMA I/O modules are connected to the potential-free signalling contacts of the external monitoring unit (network and system monitoring unit).

An AC disconnection by the switch installed in the inverter takes place within 100 ms after triggering by the signalling contact of the external network and system monitoring unit.

The AC coupling switch (decoupling protection) integrated in the inverter is checked for correct function by the inverter before each connection process. The inverter also checks the switching capability of its coupling switch daily. In the event of a malfunction, the fault is reported, and the inverter does not connect to the utility grid, this also applies by simultaneous release of the central network and system monitoring unit.

Report number: **P00282, Project Maintenance – Core2, P1466 Lynx Release A4**

Certificate number: **U23-0554** **Date:** **2023-07-07**

BUREAU VERITAS CPS GERMANY GMBH

Georg Lontz

Testing laboratory accredited according to DIN EN ISO/IEC 17025

Certificate of compliance

Applicant: **SMA Solar Technology AG**
Sonnenallee 1
34266 Niestetal
Germany

Product: **Mains disconnection protection with communication-based tripping**

Note: The tests were performed with firmware version 3.00.04.R (STPS30-20, STPS50-20, SI30-20, SI50-20) on and 4.00.48.R (STP 125-70). Changes in the firmware version on position 3.XX.XX and 4.XX.XX have no effect on the required electrical properties. "X" could be any number (or sign) higher (newer) than the tested version.

Intended use

Verification of AC disconnection by the coupling switch installed in the inverter within 100 ms after triggering by the signalling contact of the external network and system monitoring unit.

Inverter STPS30-20, STPS50-20, SI30-20, SI50-20

The AC coupling switches (decoupling switches) integrated in the inverter can replace an external central coupling switch under the following system conditions:

- Firmware 03.00.04.R
- External, central and certified monitoring unit with signalling contact, designed as a floating NC contact.

Connection of all SMA I/O modules with the external monitoring unit

Inverter STP 125-70

The AC coupling switches (decoupling switches) integrated in the inverter can replace an external central coupling switch under the following system conditions:

- Firmware 4.00.48.R
- External, central and certified monitoring unit with signalling contact, designed as a floating NC contact

Connection of the integrated digital inputs of all inverters with the external monitoring unit

Description / Function

The digital inputs integrated in the inverter or installed SMA I/O modules are connected to the potential-free signalling contacts of the external monitoring unit (network and system monitoring unit).

An AC disconnection by the switch installed in the inverter takes place within 100 ms after triggering by the signalling contact of the external network and system monitoring unit.

The AC coupling switch (decoupling protection) integrated in the inverter is checked for correct function by the inverter before each connection process. The inverter also checks the switching capability of its coupling switch daily. In the event of a malfunction, the fault is reported, and the inverter does not connect to the utility grid, this also applies by simultaneous release of the central network and system monitoring unit.

Report number: **P0532 Obelix A1, P1547 CoBra X**

Certificate number: **P25-0132** **Date:** **2025-02-21**

Georg Lortz
Lab Supervisor Energy Systems

Testing laboratory accredited according to DIN EN ISO/IEC 17025

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To whom it may concern,

the AC-side coupling switches built into the inverters

Type:	**STP 50-80**	**STP 60-80**
Nominal voltage AC / frequency:	3/N/PE ~ 230/400 V / 40 Hz	
Nominal power:	50 kW	60 kW

can act as central coupling switch when conforming with the following system requirements:

Type:	**STP 50-80**	**STP 60-80**
Firmware:	≥ 01.00.00.R*	≥ 01.00.00.R*
External N/S-protection:	External and certified central interface protection unit with alarm contact, designed as a potential-free normally open contact.	
Connection:	Connection of all SMA I/O modules to the external interface protection unit	

* The certified electrical properties are not affected by changes to the sections marked with an "x" in firmware version 1.xx.xx.

and additionally provided that:

- The inverter performs a functional test of the internal switches before each connection process and a daily test of the coupling switch's switching capability. If a malfunction is reported, connection to the grid is prevented, even if the central interface protection has already enabled it.
- The potential-free signaling contacts of the external interface protection are connected to the inverter's digital inputs respectively SMA I/O modules.
- If the signaling contact of the external interface protection device is triggered, the AC-side coupling switch integrated into the inverter disconnects the system within 100 ms.

Triggering by the external interface protection device via the signaling contact leads to AC disconnection, tripping the inverter’s internal coupling switches within 100 ms, as tested and documented in report P1591 Viper (STP 50-80 and STP 60-80).

Yours sincerely,

Willsbach, 2026-03-17
Dipl.-Ing. Lennart Luckert
Project Engineer