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# Type Certificate

**Applicant:** TRUMPF Hüttinger GmbH + Co. KG

**Address:** Bötzing Str. 80  
79111 Freiburg am Breisgau  
Germany

<b>Type of power generating unit:</b>	<b>Grid-tied bi-directional battery inverter</b>	<b>TruConvert AC3025</b> (for details see <i>Supplement of certificate</i> on p.2)
<b>Technical data:</b>	Rated apparent power:	25 kVA
	Nominal output AC voltage:	400 V
	Nominal frequency:	50 Hz
<b>Technical data determined by measurements:</b>	Max. active power $P_{Emax}$ / Max. active power peak $P_{600}$ :	(for details see <i>Supplement of Certificate</i> on p.2)
<b>Firmware version:</b>		V01.27.03
<b>Software version:</b>		IL14B008
<b>Validated type model:</b>	Model file:	Trumpf_TruConvert_AC3025_rev2c_enc.pfd
	Identification number (MD5):	157f2c15d4a6e2d77db75d7609c9bc39

**Grid connection regulation:** VDE-AR-N 4110:2018-11 – Technical requirements for the connection and operation of customer installations to the medium voltage network (TCR medium voltage) [1]

**Pertinent standards / Guidelines:** Technical guidelines:  
FGW TR 3 Rev. 25 [2], FGW TR 4 Rev. 09 [3], FGW TR 8 Rev. 09 [4]

The power generating units, stated in the certificate, were tested and certified according to the technical guidelines referenced to the grid connection regulation. The electrical characteristics fulfil the requirements of the grid connection regulation:

- Quasi-steady-state operation
- Dynamic network stability (reactive current characteristic according to TCR medium voltage)
- Active power output and network security management
- Active power adjustment as a function of the grid frequency
- Power quality

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

Restrictions, deviations or notes on usage: see *Supplement of Certificate* on p.2.

**The certificate includes the following information:**

- technical data of the power generating unit, the auxiliary equipment used and the software version used;
- schematic structure of the power generating units;
- summarized information on the properties of the power generating unit.

The certificate is comprised of 77 pages (including Annex of 75 pages).

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**BV project number :** 19TH0414

**Certificate no. :** U22-0235\_0

**Issued :** 2022-08-31

**Certification scheme :** NSOP-0032-DEU-ZE-V01

**Valid until :** 2027-08-30

**Certification body**

Alf Assenkamp



Deutsche  
Akkreditierungsstelle  
D-ZE-12024-01-00

Certification body of Bureau Veritas Consumer Products Services Germany GmbH accredited according to DIN EN ISO/IEC 17065  
A partial representation of the certificate requires the written approval of Bureau Veritas Consumer Products Services Germany GmbH



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## Supplement of Certificate (U22-0235\_0)

Type of power generating unit:	Grid-tied bi-directional battery inverter	TruConvert AC3025
Technical data:	Nominal active output power <sup>1)</sup>	25 kW
	Rated apparent / active output power:	25 kVA / 25 kW
	Nominal voltage:	400 V
	Nominal frequency:	50 Hz
Technical data determined by measurements:	Max. active power $P_{Emax}$ / Max. active power peak $P_{E00}$ <sup>2), 3)</sup> :	28,8 kW
	Firmware version:	V01.27.03
Software version:		IL14B008

Note:

- <sup>1)</sup> The nominal active output power  $P_n$  is just a nominal value defined by manufacturer, for details see p.6
- <sup>2)</sup> The  $P_{Emax}$  is the highest 10-min mean of the active power of a power generating unit defined according to VDE-AR-N 4110:2018 [1]. The  $P_{E00}$  is the maximum active power peak of the overall system (averaging period 10 min) defined according to FGW TR 3 Rev. 25 [2].
- <sup>3)</sup> The stated measurement results were determined according to test 4.1.1, FGW TR 3 Rev. 25 [2].

### Restrictions, deviations or notes on usage:

- Measurement results of reactive power capability are below -1% PrE of manufacturer specifications. For plant certification the measurement results have to be used (see manufacturer declaration)
- In the event the communication with the PGS controller is disturbed, PGU cannot be operated with a predefined value or process and is switched off instead. This behaviour requires the approval of the network operator as part of the plant certification process.
- The PGU provides no reactive power control functions. These have to be implemented on the plant level e.g. in a superimposed PGS controller.
- The functionality of the active power gradient in the case of connections in accordance with 10.4, setpoint specifications by third parties (e.g. direct marketing) and grid security management in accordance with 10.2.4.2 is not implemented in the PGU. This must be implemented at the plant level, e.g. in a superimposed PGS controller.
- Only one Interface for specifying active power implemented on the PGU. Separate specifying active power by grid operator and direct seller is not possible. For prioritization of different setpoints must be carried out at plant level e.g. in the superimposed PGS controller.
- Reconnection conditions after tripping of a protection device are not implemented in the unit. This functionality has to be implemented on the plant level e.g. in an external protection device.
- The PGU does not have an integrated protection device. An additional, certified device must be used.
- The coupling switch of the unit is not part of the scope of the certificate. An assessment of the requirements must be done at plant certification
- The PGU follows reactive power set points without delay and does not provide PT1 filtering effect. This functionality has to be implemented at plant level e.g. in a superimposed PGS controller.

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