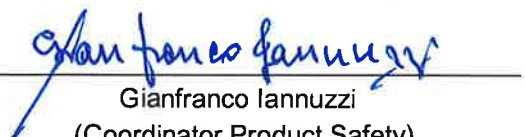


VDE-AR-N 4105 Certificate of conformity for the NS protection integrated in the inverters	
Manufacturer	Power-One Italy S.p.A. Via S. Giorgio, 642 52028 Terranuova Bracciolini (AR) - Italy
Type of NS protection	Relay contacts
Integrated NS protection assigned to power generation unit type	Relay
Network connection rule	VDE-AR-N 4105 “Power generation systems connected to the low-voltage network” Technical minimum requirements for connection and parallel operation of power generation systems connected to the low-voltage network
The network and system protection integrated in the power generation units listed in Table 1 meets the requirements of VDE-AR-N 4105.	
The setting values and disconnection times (total break times) of the protective functions are as follows:	
<p style="margin-left: 40px;">Voltage drop protection $U <$: 184 V < 200 ms</p> <p style="margin-left: 40px;">Rise-in-voltage protection $U > (*)$: 253 V < 200 ms</p> <p style="margin-left: 40px;">Rise-in-voltage protection $U >>$: 264.5 V < 200 ms</p> <p style="margin-left: 40px;">Frequency decrease protection $f <$: 47.5 Hz < 200 ms</p> <p style="margin-left: 40px;">Frequency increase protection $f >$: 51.5 Hz < 200 ms</p>	
(*) moving 10-minute average protection according EN 50160	
<ul style="list-style-type: none"> - All requirements of VDE-AR-N 4105 are fulfilled and have been confirmed via type tests conducted in Power One and witnessed by an accredited certification institute. - The conformity is ensured for all products with model name and firmware version as listed in Table 1. 	
Terranuova Bracciolini, 2018 January 15	
 Gianfranco Iannuzzi (Coordinator Product Safety)	
This certificate of conformity of two pages shall not be used in parts.	
Power-One Italy S.p.a. Via San Giorgio, 642 – 52028 Terranuova Bracciolini – Arezzo – Italy Web Site: www.abb.com/solarinverters	

Inverter models	Maximum active power P_{Emax}	Maximum apparent power S_{Emax}	AC reference voltage	Fulfill VDE-AR-N 4105 requirements from firmware version
UNO-DM-5.0-TL-PLUS-XYK-JVN	5.0 kW	5.0 kVA	230 V	Not less than 1705C (Standard Selection: VDE 4105)
UNO-DM-4.6-TL-PLUS-XYK-JVN	4.6 kW	4.6 kVA	230 V	Not less than 1705C (Standard Selection: VDE 4105)
UNO-DM-4.0-TL-PLUS-XYK-JVN	4.0 kW	4.0 kVA	230 V	Not less than 1705C (Standard Selection: VDE 4105)
UNO-DM-3.3-TL-PLUS-XYK-JVN	3.3 kW	3.3 kVA	230 V	Not less than 1705C (Standard Selection: VDE 4105)
UNO-DM-2.0-TL-PLUS-XYK-JVN	2.0 kW	2.0 kVA	230 V	Not less than 1705C (Standard Selection: VDE 4105)
UNO-DM-1.2-TL-PLUS-XYK-JVN	1.2 kW	1.2 kVA	230 V	Not less than 1705C (Standard Selection: VDE 4105)

Table 1
Power-One Grid Tied Solar Inverters in compliance with VDE-AR-N 4105.