

Manufacturer Warranty for ABB solar products

(STANDARD, STANDARD "+", ASSURE, ADVANCED  
Warranty for solar inverters, accessories and REACT 2 batteries)

Document valid from: 01.08.2019

**1. Applicable solar products**

This Manufacturer's Warranty is provided by Power One Italy S.p.A., a company incorporated under Italian law, with registered office at Terranuova Bracciolini (Arezzo, Italy), via S. Giorgio No. 642, with a fully paid share capital of EUR 22,000,000, Tax Code 09286180154, VAT No. 01574720510, registered in the Arezzo Company Register under No. AR 101220 and its possible successors and/or assignees, (**hereinafter referred to as "ABB"**) are applicable to the following ABB products:

Battery(-ies): the REACT 2 batteries.

Inverter(s): the UNO-DM, REACT 2, TRIO, PVS, CENTRAL PLUS single- phase and three-phase string inverter and respective accessories (excluding REACT 2 batteries).

Duration of Manufacturer Warranty granted herein for solar product

Default duration: 5 years (except accessories and batteries), for limitations and details please see below

**By invoking (the rights and remedies stipulated in) this Manufacturer Warranty, you (the "Warranty Holder") agree to be bound by the terms governed herein.**

This Manufacturer Warranty is freely provided by ABB and does not prejudice in any way the conditions of sales contracts for the sale of ABB solar products, including any warranty provided by a third party from which it has been purchased. Further details are provided in Clause 9 below – Legal aspects.

Please note:

It might be possible that in addition to this Manufacturer's Warranty there is a separate warranty under the underlying purchase order for the above products that is provided by a third party. For the avoidance of doubt, the separate warranty remains unchanged, it is not affected by this Manufacturer's Warranty. This Manufacturer's Warranty covers the services and costs set out in Appendices 1a and 1b for the periods defined above and subject to the conditions described herein which form an integral part of this document.

This does not include or imply any availability guarantee and/or guarantee of durability. That means this Manufacturer's Warranty shall not be understood as technical determinations of characteristics, availabilities, guaranties, affirmations or data in the sense of an availability guarantee and/or guarantee of durability as to fitness in the meaning of §§ 443, 444 or 639 German Civil Code (BGB); rather the technical specifications as defined in the attached tables shall be regarded as technical specifications on characteristics in the meaning of § 434 I sentence 1 or § 633 II, sentence 2 German Civil Code (BGB).

**1.1. STANDARD Manufacturer's Warranty Program for Inverters (however, excluding PVS- 175 Inverters)**

The STANDARD Warranty for Inverters covers the repair material and labor required for their repair at the ABB-repair-center or on site or replacement, at the sole discretion of ABB. Further details are provided in table 1. For deliveries within Germany the obligation under §439 German Civil Code (BGB) is limited to transport costs and other necessary expenses incurred e.g. in removing the defective item and installing or attaching the repaired or delivered item free of defects within the subsequent performance in Germany only. Apart from that, Clause 8 shall remain unaffected.

**1.2. STANDARD "+" Manufacturer's Warranty Program for PVS-175 Inverters**

The STANDARD "+" Warranty for Inverters PVS-175 covers the repair material and labor required for their repair at the ABB-repair-center or on site or replacement, at the sole discretion of ABB, as well as the freight cost of the repaired or replaced Inverter (delivery according to Incoterm 2010 CPT named place of destination). Further details are provided in table 1a. For deliveries within Germany the obligation under §439 German Civil Code (BGB) is limited to transport costs and other necessary expenses incurred e.g. in removing the defective item and installing or attaching the repaired or delivered item free of defects within the subsequent performance in Germany only. Apart from that, Clause 8 shall remain unaffected.

**1.3. ASSURE Manufacturer's Warranty Program for Inverters (however, excluding PVS-175 Inverters)**

In addition to the STANDARD Warranty, the ASSURE Warranty for Inverters covers advance replacement of Inverters or components thereof (power modules, string boxes) as well as the related freight cost (delivery according to Incoterm 2010 CPT named place of destination) and labor required for the removal and re-installation on site. It applies to those countries listed under Clause 2.2. Further

details are provided in table 1.

#### **1.4. Manufacturer's Warranty Program for accessories (2 years only)**

The accessories (all which is not inverter or battery) also include all monitoring components. The Manufacturer Warranty for accessories covers the repair material and repair labour in the ABB-repair centre or replacement product at ABB`s sole discretion. Further details are provided in table 1. For deliveries within Germany the obligation under §439 German Civil Code (BGB) is limited to transport costs and other necessary expenses incurred e.g. in removing the defective item and installing or attaching the repaired or delivered item free of defects within the subsequent performance in Germany only. Apart from that, Clause 8 shall remain unaffected.

#### **1.5. Manufacturer's STANDARD Warranty Program for REACT II Batteries**

The STANDARD Battery Warranty only covers the repair material and labor required to repair such Batteries at the ABB-repair-center or on site or replacement, at the sole discretion of ABB. Further details are provided in tables 2 and 2a. For deliveries within Germany the obligation under §439 German Civil Code (BGB) is limited to transport costs and other necessary expenses incurred e.g. in removing the defective item and installing or attaching the repaired or delivered item free of defects within the subsequent performance in Germany only. Apart from that, Clause 8 shall remain unaffected.

#### **1.6. Manufacturer's ASSURE Warranty Program for REACT II Batteries**

In addition to the STANDARD Warranty, the ASSURE Battery Warranty covers advance replacement of such Batteries as well as the related freight cost (delivery according to Incoterm 2010 CPT named place of destination) and labor required for their removal and re-installation on site. It applies to those countries listed under Clause 2.3. Further details are provided in tables 2 and 2a.

## **2. Applicable countries**

2.1 The Manufacturer's STANDARD and STANDARD "+" Warranty Programs for Inverters and the Manufacturer's Warranty Program for accessories apply in all countries in which ABB sells solar products and subject to the limitations defined in Clause 1 and 8.

2.2 The Manufacturer's ASSURE Warranty Program for Inverters (except PVS-175) however only applies to Inverters which are installed in any of the following countries: Australia, Austria, Belgium, Canada, Cyprus, Croatia, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Israel, Italy, Luxembourg, Norway, Netherlands, Poland, Portugal, United Kingdom, Czech Republic, Romania, Slovakia, Slovenia, Spain, United States, Sweden, Switzerland and Hungary.

2.3 The Manufacturer's ASSURE Warranty Plan for REACT 2 Batteries only applies to such Batteries which are installed in any of the following countries: Australia, Belgium, Germany, Italy, Luxembourg, the Netherlands and Portugal. For all other countries the The Manufacturer's STANDARD Warranty Program applies according to Clause 1.5.

## **3. Duration of Manufacturer Warranty:**

The warranty period for the STANDARD, STANDARD "+" and ASSURE Manufacturer's Warranty Programs for Inverters is – subject to above indications – 5 (five) years starting from the date of purchase by the Warranty Holder, but shall in no case exceed a maximum period of 66 (sixty-six) months from the manufacturing date.

The warranty period for the STANDARD and ASSURE Manufacturer's Warranty Programs for accessories is 24 (twenty-four) months years starting from the date of purchase by the Warranty Holder and shall in no case exceed a maximum period of 30 (thirty) months from the from the manufacturing date.

The warranty period for for REACT II Batteries, see clause 2.2 and 2.3, is (i) 120 (one hundred and twenty) months starting from the date of purchase by the Warranty Holder, but in no case more than 123 (one hundred and twenty-three) months from the date of shipment from ABB to the first buyer, or (ii) up to the moment when 3650 (three thousand, six hundred and fifty) cycles have been completed, whichever occurs first, as further explained in table 2.

Remark: The Battery shall be considered as being defective when its Residual Capacity is less than 60% of its rated energy (at the Battery unit level) during the above mentioned period or until 3650 cycles have been reached. It is also a condition precedent that the Warranty Holder complies with the operational and maintenance manuals of the solar product.

For Batteries installed in Germany, ABB warrants that the Batteries will have a minimum Residual Capacity of 80% (eighty percent) of the rated energy, either (i) for a period equal to 120 (one hundred and twenty) months from the date of delivery of the Battery to the first buyer, or (ii) up to the moment in which the energy discharged reaches 5892 (five thousand, eight hundred and ninety-two) kWh,



whichever occurs first, as further explained in table 2a.

#### 4. Claims under the Manufacturer Warranty:

All claims under this Manufacturer Warranty must follow the procedures described below. The claim must be submitted through one of the following channels:

In Germany:

Via the ABB web site:

<http://new.abb.com/power-converters-inverters/de/solar>

or by post or facsimile to ABB Solar GmbH or fax to: +49/ 7641 / 955 20 40

and/or

<http://new.abb.com/power-converters-inverters/de/service-einreichen>

Via the toll-free number: 0800 / 22 00 211 from Germany

Via the non-toll-free number: +49 7641 / 955 20 60 from other countries (outside Germany)

Both during regular office times on German business days from Monday to Friday from 08:30 to 16:00.

The following mandatory information must be provided:

- Solar product and/or device model;
- Evidence of the purchase of the solar product concerned;
- Serial number (S/N) and production week (WK) of the solar product: e.g. both are visible on the label on the side of the inverter (a photograph of the label of the inverter and/or device in .jpg format is recommended);
- Description of the problem and if available, e.g. the error code shown on the inverter;
- Details of Warranty Holder (complete address and name of the contact person, Email address if possible);
- Address of site of installation

ABB will provide a CARE Number associated with the claim. This CARE number must be mentioned in all correspondence during the claim resolution steps.

For a returned solar product (or analysed at site, as the case may be) that shows no fault or defect attributable to ABB after analysis by ABB, ABB will invoice all costs and expenses associated with such analysis and handling.

#### 5. Warranty Claim resolution:

Claims shall be handled following one of the following procedures, at the discretion of ABB:

- Return and repair
- Replacement with a reconditioned device (only possible for solar products older than 2 years from purchase date)
- Early replacement with new, repaired or equivalent Product at the sole discretion of ABB (with ASSURE Warranty only)
- On-site repair
- Batteries: Possible reimbursement (time value ("Zeitwert")), at the sole discretion of ABB. This shall apply in case no replacement battery is available. In such a case ABB reserves the right to reimburse the time value of the Battery. This time value is determined by straight-line writing-off of the Warranty Holder's purchase price of 10% per annum (from delivery date to Warranty Holder) over 10 years; see Appendix 1b for further details.

The above Warranties are exclusive and supersede any other quality and performance warranties, whether written, verbal or implicit; any other guarantees or warranties, including any implied warranties of merchantability or fitness for a particular purpose are hereby excluded by ABB.



## 6. Advance replacement (advanced swap) under the ASSURE Manufacturer's Warranty Program:

The ASSURE Warranty Programs (Clauses 1.3 or 1.6) provide for an advance replacement unit. ABB shall deliver a replacement solar product or components thereof (power module, string box or battery) before the product suspected to be defective is shipped to an ABB Repair Centre. At the sole discretion of ABB, this replacement unit may be new or reconditioned (in case the defective solar product is older than 2 years from date of purchase). The delivery of the advance replacement unit shall in no event constitute ABB's acknowledgement that the claim is covered by the warranty. ABB's acceptance or rejection of the claim will follow upon ABB's analysis of the returned solar product only.

The Warranty Holder must make the defective solar product available for return within 7 (seven) calendar days following the delivery of the replacement unit and with the appropriate packaging as per the replacement unit provided.

Allegedly defective solar products will be returned to an ABB Repair Centre for validation of the warranty claim. In case the warranty claim is confirmed, the remaining warranty period of the defective solar product will be transferred to the replacement or repaired unit. In case the defect is not covered by the Manufacturer's Warranty (see below under clause 8 - Exclusion from Manufacturer Warranty), the warranty claim will be rejected and the incurred cost (logistics, administration, failure analyse and replacement product) will be invoiced to the Warranty Holder by the respective ABB Group local entity and subject to the conditions of a local sales contract.

In case the allegedly defective solar product is not available for return within the timeframe above mentioned, the warranty of the replacement solar product shall consequently not be claimable until the solar product is returned to ABB. In such case, if the alleged defective solar product is not available for return to ABB after the elapse of the above 7 (seven) calendar day-term, regardless of the solar product falling within the warranty terms, ABB is entitled to charge a lump sum amount of 100 EUR for administrative costs of the Warranty Holder.

ABB undertakes to perform the inspection within 3 (three) months of the allegedly defective solar product's delivery.

## 7. On-site assistance:

In case of on-site assistance (including advance replacement), as decided by ABB, the selection of the qualified technician is made by ABB.

For on-site assistance, Warranty Holder is responsible to ensure access and shall provide any required special equipment required to access the installation (e.g. scissor lift). Warranty Holder has also to ensure that the installation and working environment for the installation is compliant with appropriate health and safety standards.

The qualified ABB technician may refuse to perform an operation where the conditions set out by the health and safety regulations are not met.

Should the above conditions not be fulfilled, ABB is entitled to charge the Warranty Holder any costs, including –but not limited to– the costs relating to the qualified technician who could not access the site and/or the solar product.

## 8. Exclusion from Manufacturer's Warranty:

The Manufacturer's Warranty claim is excluded in the following situations:

- Manufacturer Warranty period expired;
- damage arising after the passing of risk from faulty or negligent handling
- Any modification applied to the solar product that was not authorised by ABB;
- Inappropriate installation or commissioning;
- Inappropriate use of the product;
- External event (overvoltage, failure of other components in the installation causing solar product failure, etc.);
- Non-observance of solar product documentation like manual, installation instruction, including preventive maintenance;
- Force majeure, including but not restricted to lightning, power surges, natural disasters and fires;
- Improper or no application of safety regulations;
- Utilization in combination with equipment, items or materials not permitted as per ABB documentation.
- For Batteries, in case of failure to comply with the storage conditions, as specified under table 2a.

The Warranty Holder shall have no claim with respect to expenses incurred in the course of supplementary performance, to the extent that expenses e.g. in the sense of § 439 German Civil Code (BGB) are increased because the Inverters have subsequently been brought to another location than the Warranty Holder's place of business or in case the Warranty Holder is a consumer its private residency, unless doing so complies with the normal use of the inverters. The transport costs and other expenses for countries other than listed under Clause 2 are excluded. This applies accordingly to claims for the reimbursement of expenses on the part of the Warranty Holder in accordance with § 445 a German Civil Code (BGB), entrepreneur's right of recourse, provided the last contract in the supply chain is not a sale to a consumer. Claims based on defects attributable to improper modifications, installation/ removal or repair work carried out by the Warranty Holder or third parties and the consequences thereof are excluded. Also claims based on defects in cases of insignificant deviations from the ABB technical specification, of only minor impairment of usability, of natural wear and tear, excessive strain, unsuitable equipment, defective civil works, inappropriate foundations soil or claims based on particular external influences or from non-reproducible software errors are excluded.



The Warranty Holder shall have no claim for damages caused on defects including but not limited to for energy that has not been fed into the grid by the installation during any service activity, including preventive and corrective maintenance. This shall not apply to the extent that a defect has been fraudulently concealed, in the case of loss of life, bodily injury or damage to health and/or intentionally or gross negligent breach of contract on the part of ABB. The above provisions do not imply a change of the burden of proof to the detriment of the Warranty Holder.

Due to the evolution of technology, the replacement unit or new device available at the time of the claim may not be compatible with the installed system. This Manufacturer's Warranty does not cover any expenses or any costs which might incur to configure, retrofit, update or adapt the solar product system to allow installation.

## 9. Legal aspects

This Manufacturer's Warranty is an agreement on warranty terms and conditions concluded between ABB and the Warranty Holder. Third parties are not entitled to assert claims under this Manufacturer's Warranty unless they are explicitly authorized by the Warranty Holder to act in his name and on his behalf. The authorization must be evidenced by the third party to the satisfaction of ABB. Unless otherwise provided for in this Manufacturer's Warranty, the Warranty Holder has no claim for damages based on whatever legal ground including infringement of duties arising in connection with contract, tort or otherwise.

This does not apply, if the liability is based on:

- (a) the German Product Liability Act ("*Produkthaftungsgesetz*")
- (b) Intent, gross negligence on the part of the owners, legal representatives or executives, fraud
- (c) Negligent injury to life, limb or health; or
- (d) Negligent breach of a fundamental condition of contract

However, claims for damages arising from a breach of a fundamental condition of contract shall be limited to the foreseeable damage which is intrinsic to the solar products, provided that no other of the above cases applies.

The above provision does not imply a change in the burden of proof to the detriment of the Warranty Holder.

These Manufacturer's Warranty conditions are governed by German law to the exclusion of its conflict of laws principle as well as to the exclusion of the United Nations Convention on Contracts for the International Sale of Goods (CISG). Sole venue for all disputes arising out of or in connection with the present Manufacturer's Warranty shall be the courts at Mannheim. However ABB may also bring an action at the Warranty Holder's place of business.

Without prejudice to mandatory provisions of law, and notwithstanding any other clauses in this Manufacturer's Warranty, the liability for damages, cost compensations, third party claims, or other financial remedies of whatsoever nature of ABB towards the Warranty Holder shall be expressly excluded. This shall not affect ABB's direct obligations to repair, replace or refund as governed above.



**Table 1: Warranty Terms and Conditions (not applicable for PVS-175 Inverters) – please refer to sections 1.1, 1.3, 1.4**

| Definition   | Inverter  | Inverter  | Accessories (REACT 2 batteries not included)          |
|--|---|---|---|
|  | <b>STANDARD<br/>Manufacturer's Warranty</b>           | <b>ASSURE<br/>Manufacturer's Warranty</b>   | <b>Manufacturer's Warranty</b>                        |
| Default duration (years)   | 5   | 5   | 2   |
| Costs related to repair material and labor at the Repair Center  | Included  | Included  | Included  |
| Removal and re-installation costs (see Terms and Conditions in the description)                            | Included in Germany, for other countries not included | Included  | Included in Germany, for other countries not included |
| Replacement product parameter setting (manual restoring of previous parameter setting)                     | Not included  | Included  | Not included  |
| Shipping costs for the return of the faulty unit (to the destination indicated by ABB)                     | Included in Germany, for other countries not included | Included  | Included in Germany, for other countries not included |
| Costs related to the shipping of the repaired (or replacement) unit to the Warranty Holder                 | Included in Germany, for other countries not included | Included  | Included in Germany, for other countries not included |
| Early replacement unit (where technically possible; alternatively, on-site repair)                         | Not included  | Included  | Not included  |
| Technical Service Toll-free number   | See ABB web site                                      | See ABB web site  | See ABB web site                                      |
| Preventive maintenance   | Not included  | Not included  | Not included  |
| "Ready for shipment" notice following acceptance of the claim, subject to the availability of the material | Not included  | Generally 10 working days from the date the respective ABB service department receives and validates the claim and takes the decision for shipment of an early replacement unit at sole discretion of ABB | Not included  |
| Available  | World-wide  | See list in Section 3   | World-wide  |

**Table 1a: Warranty Terms and Conditions (applicable for PVS-175 Inverters only) – please refer to section 1.2**

| Definition   | PVS-175 Inverter  |
|--|---|
|  | <b>STANDARD “+”<br/>Manufacturer's Warranty</b>   |
| Default duration (years)   | 5   |
| Costs related to repair material and labor at the Repair Center  | Included  |
| Removal and re-installation costs (see Terms and Conditions in the description)                            | Included in Germany, for other countries not included   |
| Replacement product parameter setting (manual restoring of previous parameter setting)                     | Not included  |
| Shipping costs for the return of the faulty unit (to the destination indicated by ABB)                     | Included in Germany, for other countries not included   |
| Costs related to the shipping of the repaired (or replacement) unit to the Warranty Holder                 | Included in Germany, for other countries not included   |
| Early replacement unit (where technically possible; alternatively, on-site repair)                         | Included in Germany, for other countries not included   |
| Technical Service Toll-free number   | See ABB web site  |
| Preventive maintenance   | Not included  |
| "Ready for shipment" notice following acceptance of the claim, subject to the availability of the material | For Germany only: Generally 10 working days from the date the respective ABB service department receives and validates the claim and takes the decision for shipment of an early replacement unit at sole discretion of ABB |
| Available  | World-wide  |

**Table 2: Warranty Terms and Conditions for Batteries (excluding Batteries installed in Germany) – please refer to sections 1.5, 1.6**

| Definition   | Battery   | Battery   |
|--|---|---|
|  | STANDARD<br>Manufacturer's Warranty   | ASSURE (5 ASSURE + 5<br>STANDARD)<br>Manufacturer's Warranty  |
| Default duration (years / cycles)  | 10 years / 3650 cycles<br>whatever occurs first   | 10 years / 3650 cycles<br>whatever occurs first   |
| ASSSURE Service level 5th through 10th year<br>Must be purchased together with the Warranty<br>Extension for the REACT 2 Inverter. | Cannot be extended  | Can be extended   |
| Costs related to repair material and labor at the<br>Repair Center   | Included  | Included  |
| Removal and re-installation costs (see Terms and<br>Conditions in the description)   | Not included  | Included for the first 5 years<br>(1825 cycles)   |
| Replacement product parameter setting (manual<br>restoring of previous parameter setting)  | Not included  | Included for the first 5 years<br>(1825 cycles)   |
| Shipping costs for the return of the faulty unit (to<br>the destination indicated by ABB)  | Not included  | Included for the first 5 years<br>(1825 cycles)   |
| Costs related to the shipping of the repaired (or<br>replacement) unit to the Warranty Holder                                      | Not included  | Included for the first 5 years<br>(1825 cycles)   |
| Early replacement unit (where technically possible;<br>alternatively, on-site repair)  | Not included  | Included for the first 5 years<br>(1825 cycles)   |
| Technical Service Toll-free number   | See ABB web site  | See ABB web site  |
| Preventive maintenance   | Not included  | Not included  |
| "Ready for shipment" notice following acceptance<br>of the claim, subject to the availability of the<br>material                   | Not included  | Generally 10 working days<br>from the date the respective<br>ABB service department<br>receives and validates the<br>claim and takes the decision<br>for shipment of an early<br>replacement unit at sole<br>discretion of ABB. |
| Available  | Worldwide, except Australia,<br>Belgium, Germany, Italy,<br>Luxembourg, the Netherlands<br>and Portugal | Australia, Belgium, Italy,<br>Luxembourg, the<br>Netherlands and Portugal   |

Cycle: Refers to the energy discharged during an effectively produced energy cycle, divided by the rated capacity of the module

Battery efficiency: Refers to the Residual Capacity; this CANNOT be lower than 60% (based on the Battery unit level); in case ABB confirms this value, the Warranty Holder will be entitled to the module and/or Try for the repair/replacement provided for by the Warranty

Residual Capacity: Actual capacity of the Battery in relation to the Rated Capacity





**Table 2a: Warranty Terms and Conditions for Batteries installed in Germany – please refer to sections 1.5, 1.6**

| <b>Definition</b>  | <b>Battery</b>  |
|--|---|
| <b>Manufacturer's Warranty</b>   | <b>ASSURE</b>   |
| Default duration (years / kWh)   | 10 years / 5892 (*)<br><br>5892 (five thousand, eight hundred and ninety-two) kWh whatever occurs first   |
| Costs related to repair material and labor at the Repair Center  | Included  |
| Removal and re-installation costs (see Terms and Conditions in the description)                            | Included  |
| Replacement product parameter setting (manual restoring of previous parameter setting)                     | Included  |
| Shipping costs for the return of the faulty unit (to the destination indicated by ABB)                     | Included  |
| Costs related to the shipping of the repaired (or replacement) unit to the Warranty Holder                 | Included  |
| Early replacement unit (where technically possible; alternatively, on-site repair)                         | Included  |
| Technical Service Toll-free number   | See ABB web site  |
| Preventive maintenance   | Not included  |
| "Ready for shipment" notice following acceptance of the claim, subject to the availability of the material | Only for Germany: Generally 10 working days from the date the respective ABB service department receives and validates the claim and takes the decision for shipment of an early replacement unit at sole discretion of ABB |
| Available  | Germany   |

(\*) ABB warrants that the Batteries will have a minimum Residual Capacity of 80% (eighty percent) of the rated energy, either (i) for a period equal to 10 (ten) years from the date of shipment of the Battery, or (ii) up to the moment in which the energy discharged reaches 5892 (five thousand, eight hundred and ninety-two) kWh.

Furthermore, in order not to lose the Warranty, please consider that if the installation is not performed immediately, the Battery must be stored in an environment with a controlled temperature ranging between -20 °C and +25 °C for no more than six months, or at a controlled temperature ranging between -20 °C and +45 °C for no more than three months, and in any case with relative humidity no higher than 80% without condensation.