

SOLAR INVERTERS

## ABB PV + Storage

REACT-3.6/4.6-TL

3.6 to 4.6 kW



REACT stores and allows to make the most of the energy produced by a residential photovoltaic system.

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01 REACT-3.6/4.6-TL  
PV + Storage inveter

REACT is an innovative photovoltaic inverter, equipped with a built-in 2 kWh battery that lets you store your unused energy generated during the day for use later when you really need it.

Taking full advantage of the energy generated by your photovoltaic system, REACT allows you to achieve greater energy self-sufficiency.

### The advantages of REACT are:

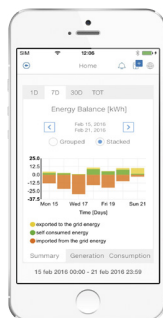
- Coordination of all the energy flows with the goal of aligning PV energy production and home consumption
- Integrated load manager for control of energy consumption
- Auxiliary AC back-up output
- MyREACT: dedicated mobile app for control and monitoring
- Integrated Li-Ion battery with 2 kWh capacity, expandable up to 3x (6 kWh)

### Highlights

- Single-phase grid-connected inverter
- Two independent MPPT inputs
- Transformerless topology
- Energy meter for management of energy flows

# ABB PV + Storage

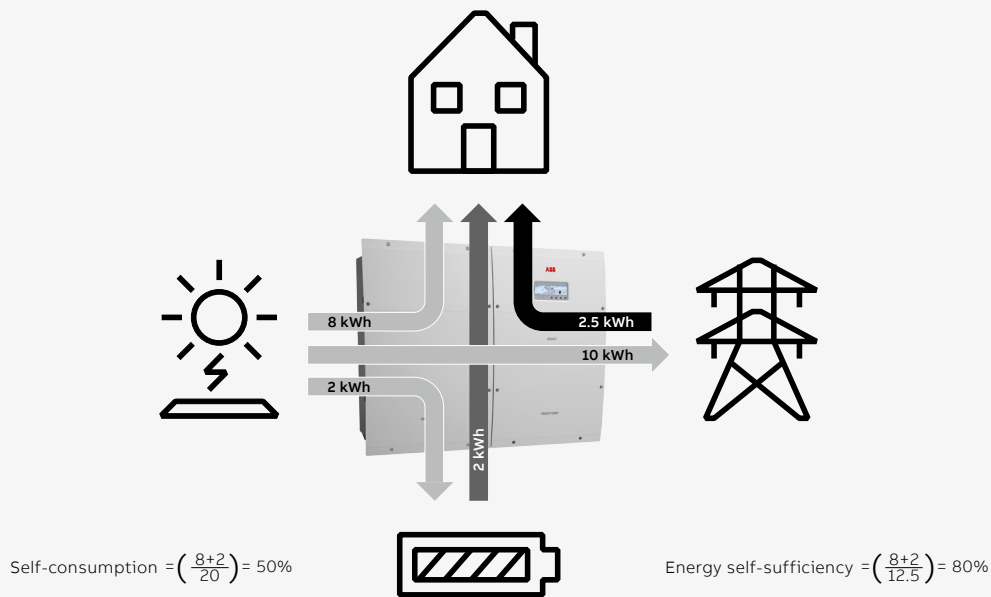
## REACT-3.6/4.6-TL



### Technical data and types

| Solar and storage inverter system   | REACT-3.6-TL   | REACT-4.6-TL   |
|---|--|--|
|   | REACT-UNO-3.6-TL   | REACT-UNO-4.6-TL   |
| <b>System components</b>  | REACT-BATT-AP1<br>REACT-MTR-1PH or REACT-MTR-3PH                 |  |
| <b>Inverter</b>   | REACT-UNO-3.6-TL   | REACT-UNO-4.6-TL   |
| <b>Input side</b>   |  |  |
| Absolute maximum DC voltage - $V_{dc\ max}$   | 600 V  |  |
| Start-up DC voltage - $V_{start}$   | 200 V (adj. 120...350 V)   |  |
| Operating DC voltage range - $V_{dc\ MPP}$  | 0.7 x $V_{start}$ ...580 V (min 90 V)                            |  |
| Rated DC voltage - $V_{dcr}$  | 360 V  |  |
| Rated DC power - $P_{dcr}$  | 5000 W   | 6000 W   |
| Number of independent MPPT  | 2  |  |
| Maximum DC power for each MPPT - $P_{MPPT\ max}$  | 2500 W<br>Linear derating [ $520\ V \leq V_{MPPT} \leq 580\ V$ ] | 3000 W<br>Linear derating [ $520\ V \leq V_{MPPT} \leq 580\ V$ ] |
| DC voltage range with parallel configuration of MPPT at $P_{acr}$ , not operative battery - $V_{dc\ FULL\ POWER}$ | 160...520 V  | 180...520 V  |
| Maximum DC current - $I_{dc\ max}$ / for each MPPT  | 24 A / 12 A  | 27 A / 13.5 A  |
| Maximum short circuit current for each MPPT - $I_{sc\ max}$   | 15 A   |  |
| Number of DC input pairs for each MPPT  | 2  |  |
| DC connection type  | PV quick fit connector <sup>3)</sup>                             |  |
| <b>Input protection</b>   |  |  |
| Reverse polarity protection   | Yes, from limited current source                                 |  |
| Over voltage protection for each MPPT - varistor  | Yes  |  |
| Photovoltaic array isolation control  | According to local standard                                      |  |
| DC switch rating for each MPPT  | 25 A / 660 V   |  |
| <b>Battery charger</b>  |  |  |
| Maximum charging power (with at least 3 x battery unit)   | 3000 W   | 3000 W   |
| Maximum discharging power (with at least 2 x battery unit)  | 3000 W   | 3000 W   |
| <b>Output side</b>  |  |  |
| AC Grid connection type   | Single-phase   |  |
| Rated AC power - $P_{acr}$ ( $\cos\phi = 0.9 - 1$ , over/under excited)   | 3600 W   | 4600 W   |
| Maximum AC power - $P_{ac\ max}$  | 3600 W   | 4600 W   |
| Maximum apparent power - $S_{max}$  | 4000 VA  | 5100 VA <sup>4)</sup>  |
| Rated AC grid voltage - $V_{acr}$   | 230 V  |  |
| AC voltage range  | 180...264 V <sup>1)</sup>  |  |
| Maximum AC current - $I_{ac\ max}$  | 19 A   | 24 A   |
| Contributory fault current  | 23 A   | 29 A   |
| Rated frequency - $f_r$   | 50 Hz  |  |
| Frequency range   | 47...53 Hz <sup>2)</sup>   |  |
| Adjustable $\cos\phi$   | 0.1 - 1 (over/under excited)                                     |  |
| Total current harmonic distortion   | < 2%   |  |
| AC connection type  | Screw terminal block, cable gland M25                            |  |
| <b>Output protections</b>   |  |  |
| Anti-islanding protection   | According to local standard                                      |  |
| Maximum external AC overcurrent protection  | 25 A   | 32 A   |
| Output overvoltage protection - varistor  | 2 (L - N / L - PE)   |  |

Daily energy flows example of REACT-4.6



Technical data and types

| Inverter  | REACT-UNO-3.6-TL   | REACT-UNO-4.6-TL                     |
|---|--|--------------------------------------|
| <b>Backup output</b>                                      |  |                                      |
| AC connection type  | Single-phase   |                                      |
| Rated apparent power - $S_{acr}$                          | 3000 VA  |                                      |
| Rated AC Voltage - $V_{acr}$                              | 230 V  |                                      |
| Maximum AC current - $I_{ac\ max}$                        | 13 A   |                                      |
| Contributory fault current                                | 27 A rms (60 ms)   |                                      |
| Maximum external AC overcurrent protection                | 16 A   |                                      |
| Rated frequency - $f_r$                                   | 50 Hz  |                                      |
| AC connection type  | Screw terminal block, cable gland M25  |                                      |
| <b>Operating performance</b>                              |  |                                      |
| Maximum efficiency - $\eta_{max}$                         | 97.1 %   |                                      |
| Weighted efficiency (EURO/CEC)                            | 96.6 % / -   |                                      |
| Typical battery efficiency (full cycle)                   | 94.0 %   |                                      |
| <b>Communication</b>                                      |  |                                      |
| Remote monitoring   | Integrated WiFi datalogger   |                                      |
| Wireless local monitoring                                 | WiFi with webserver, Mobile app  |                                      |
| User interface  | Mobile app, Webserver UI, Graphic display  |                                      |
| Wired local monitoring                                    | PVI-USB-RS232_485 (opt.)   |                                      |
| <b>Environmental</b>                                      |  |                                      |
| Ambient temperature range                                 | -20...+55°C with derating above 50°C   | -20...+55°C with derating above 45°C |
| Relative humidity   | 4...100 % condensing (5...95 % no condensing; with at least 1 battery unit)  |                                      |
| Sound pressure level, typical                             | 50 dB (A) @ 1 m  |                                      |
| Maximum operating altitude without derating               | 2000 m / 6560 ft   |                                      |
| <b>Physical</b>   |  |                                      |
| Environmental protection rating                           | IP65 (inverter), IP21 (battery unit)   |                                      |
| Cooling   | Natural  |                                      |
| Dimension (H x W x D)                                     | 740 mm x 490 mm x 229 mm   |                                      |
| Dimension (H x W x D), equipped with 1 battery unit       | 740 mm x 983 mm x 229 mm   |                                      |
| Weight  | < 30 kg  |                                      |
| Weight, equipped with 1 battery unit                      | < 67 kg  |                                      |
| Mounting system   | Wall bracket   |                                      |
| <b>Safety</b>   |  |                                      |
| Isolation level   | Transformerless  |                                      |
| Marking   | CE   |                                      |
| Safety and EMC standard                                   | IEC/EN 62109-1, IEC/EN 62109-2, EN 61000-6-2, EN 61000-6-3, EN 61000-3-2, EN 61000-3-3, EN61000-3-11, EN61000-3-12 |                                      |
| Grid standard (check your sales channel for availability) | CEI 0-21, DIN V VDE V 0126-1-1, VDE-AR-N 4105, G83/2, G59/3, VFR 2014, AS/NZS 4777.2:2015, C10/11                  |                                      |
| <b>Other features</b>                                     |  |                                      |
| Load manager  | Yes, with load manager box   |                                      |
| AC backup output, off grid                                | Yes, automatic or manual restart in case of power outage   |                                      |
| Grid support  | Yes, where required  |                                      |

<sup>1)</sup> The AC voltage range may vary depending on specific country grid standard

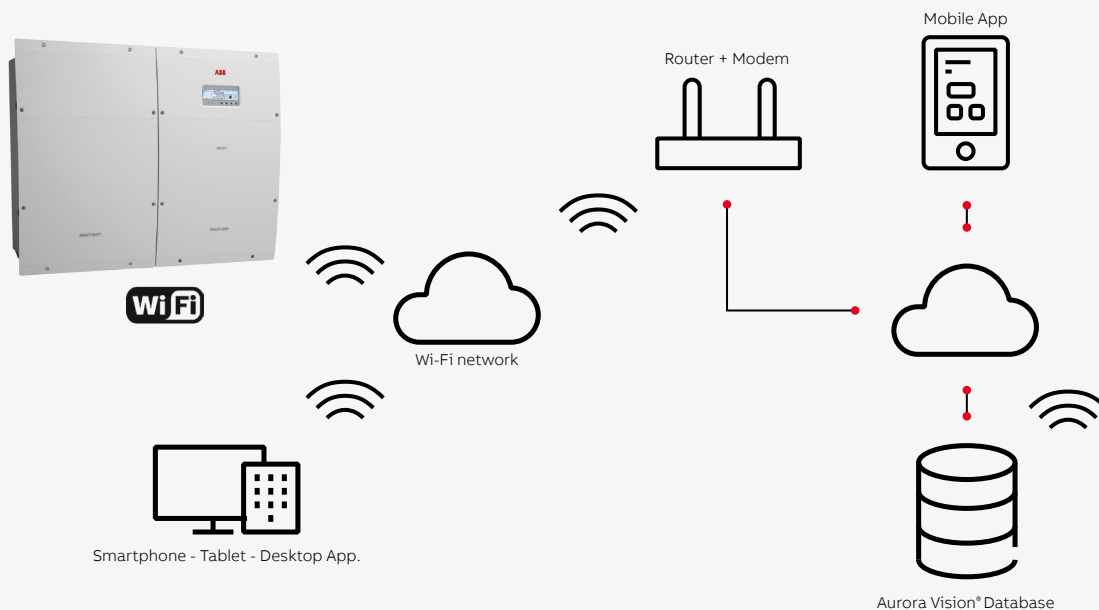
<sup>2)</sup> The Frequency range may vary depending on specific country grid standard

<sup>3)</sup> Please refer to the document "String inverters – Product manual appendix" available at [www.abb.com/solarinverters](http://www.abb.com/solarinverters) for information on the quick-fit connector brand and model used in the inverter

<sup>4)</sup> Limited to 5000 VA when "Belgium" or "Australia" country standard is selected

**Remark. Features not specifically listed in the present data sheet are not included in the product**

ABB REACT-3.6/4.6-TL block diagram



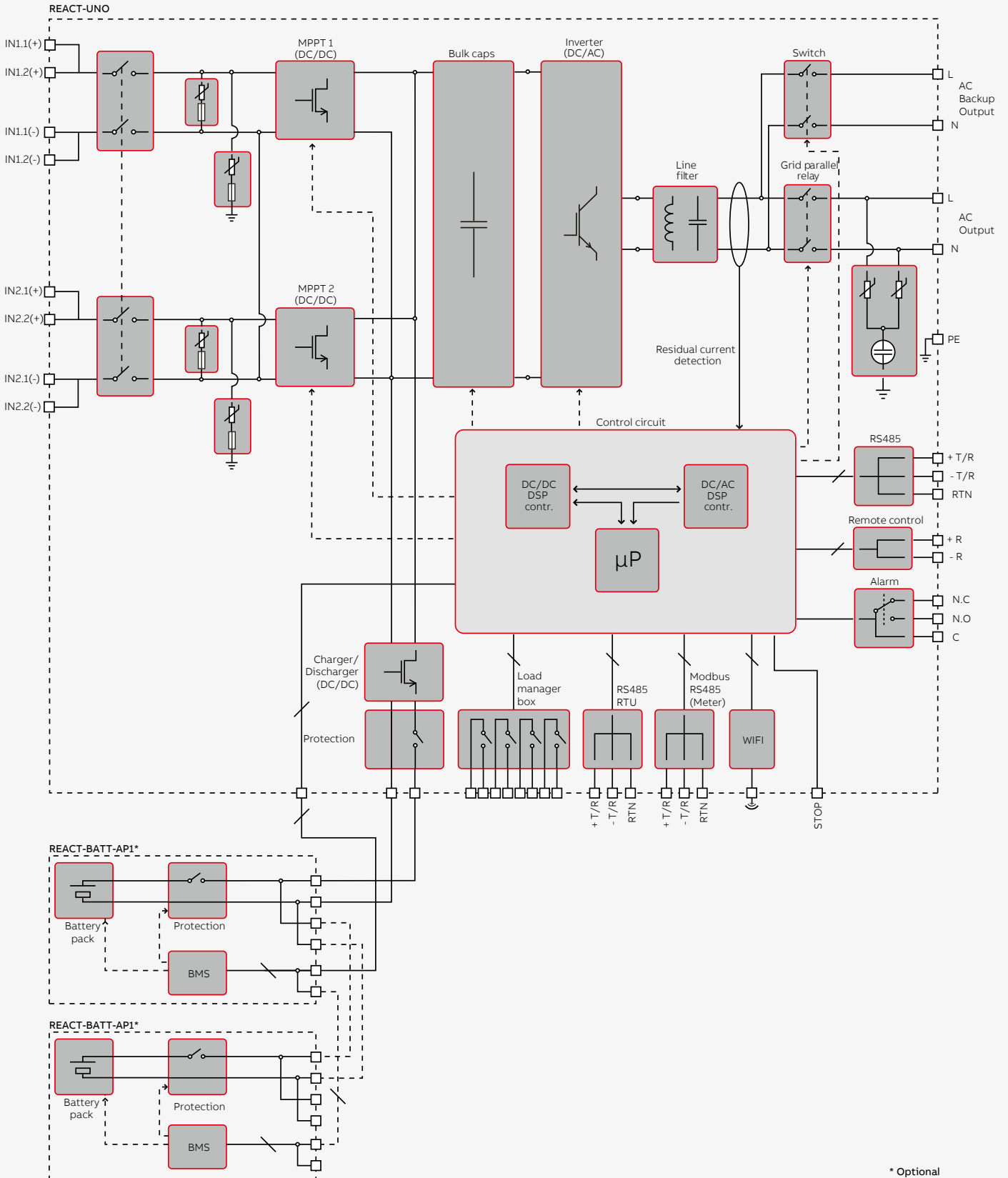
Technical data and types

| Battery unit  | REACT-BATT-AP1   |                       |
|---|--|-----------------------|
| Manufacturer  | Panasonic  |                       |
| Battery type  | Li-Ion   |                       |
| Initial capacity (typ.)                                       | 2.42 kWh   |                       |
| Average capacity (during battery lifetime)                    | 2 kWh with DoD 100 %   |                       |
| Nominal voltage   | 288 V  |                       |
| Typical/Max power discharge                                   | 1.5 kW / 1.8 kW  |                       |
| Max power charge  | 1.1 kW   |                       |
| Battery lifetime  | > 4500 cycles with DOD=100% and residual capacity=60%  |                       |
| Battery calendar lifetime, typical                            | 10 years ( Max 9 MWh discharged)   |                       |
| Dimension (H x W x D)   | 740 mm x 490 mm x 229 mm   |                       |
| Weight  | < 37 kg  |                       |
| Environmental protection rating                               | IP21   |                       |
| Optimal battery operational temperature range                 | +5...+35°C   |                       |
| Full battery function operational temperature range charge    | 0...+40°C  |                       |
| Full battery function operational temperature range discharge | -10...+45°C  |                       |
| Relative humidity   | 5...95 % without condensing  |                       |
| Safety and EMC  | EN62109-1, EN62109-2, compliance to applicable requirements of EN60950-1, EN61000-6-2, EN61000-6-3, UN38.3, UN3480 |                       |
| Meter   | REACT-MTR-1PH  | REACT-MTR-3PH         |
| Measures  | P/ Q/ A/ V/ I  |                       |
| Measures accuracy and resolution                              | < 1%, 1%   |                       |
| Current capability  | 30 A   | 65 A                  |
| AC phases   | 1  | 3                     |
| Rated grid voltage / voltage range                            | 230 V / 85...265 V   | 400 V / 380 V...415 V |
| Rated grid frequency  | 50 Hz  |                       |
| Communication   | RS485  |                       |
| Power supply and consumption                                  | Integrated, < 1 W  |                       |
| Protection class  | IP20   |                       |
| Installation  | DIN rail   |                       |
| Operational temperature range                                 | -20...+55°C  |                       |
| Safety and EMC  | IEC 61010-1, IEC 61326-1   |                       |
| Marking   | CE   |                       |

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## REACT-3.6/4.6-TL

Block diagram of REACT-4.6



\* Optional

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For more information please contact  
your local ABB representative or visit:

**[www.abb.com/solarinverters](http://www.abb.com/solarinverters)**

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