SOLAR INVERTERS

ABB PV + Storage

REACT-3.6/4.6-TL
3.6 to 4.6 kW

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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 indipendent 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**
System components	REACT-UNO-3.6-TL	REACT-UNO-4.6-TL
	REACT-BATT-AP1	
	REACT-MTR-1PH or REACT-MTR-3PH	
Inverter	**REACT-UNO-3.6-TL**	**REACT-UNO-4.6-TL**
Input side		
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 Linear derating [520 V≤V_{MPPT}≤580 V]	3000 W Linear derating [520 V≤V_{MPPT}≤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 [3]	
Input protection		
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	
Battery charger		
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
Output side		
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 [4]
Rated AC grid voltage - V_{acr}	230 V	
AC voltage range	180...264 V [1]	
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 [2]	
Adjustable $\cos\phi$	0.1 - 1 (over/under excited)	
Total current harmonic distortion	< 2%	
AC connection type	Screw terminal block, cable gland M25	
Output protections		
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)	

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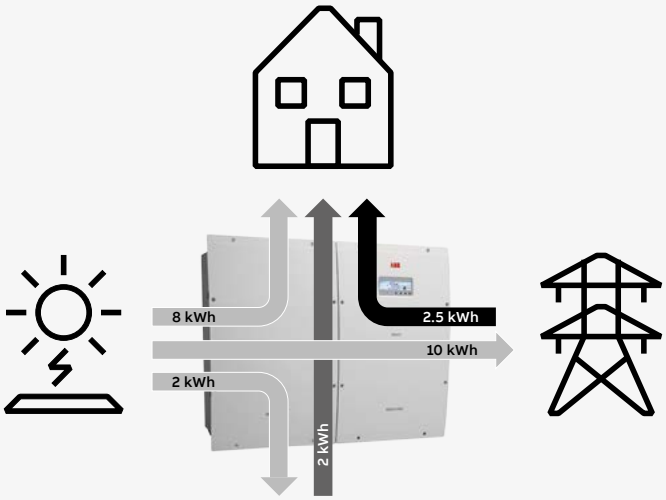
Daily energy flows example of REACT-4.6



Self-consumption $= \left(\frac{8+2}{20}\right) = 50\%$

Energy self-sufficiency $= \left(\frac{8+2}{12.5}\right) = 80\%$

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Technical data and types

Inverter	**REACT-UNO-3.6-TL**	**REACT-UNO-4.6-TL**
Backup output		
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	
Operating performance		
Maximum efficiency - η_{max}	97.1 %	
Weighted efficiency (EURO/CEC)	96.6 % / -	
Typical battery efficiency (full cycle)	94.0 %	
Communication		
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.)	
Environmental		
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	
Physical		
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	
Safety		
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	
Other features		
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	

[1] The AC voltage range may vary depending on specific country grid standard
[2] The Frequency range may vary depending on specific country grid standard
[3] Please refer to the document “String inverters – Product manual appendix” available at www.abb.com/solarinverters for information on the quick-fit connector brand and model used in the inverter
[4] 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

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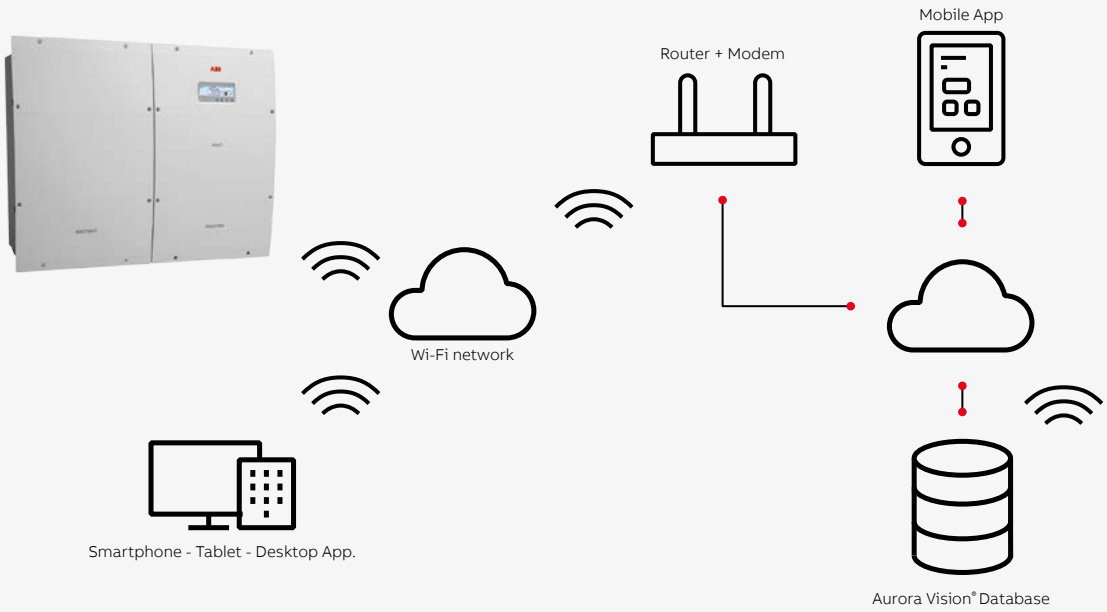
ABB REACT-3.6/4.6-TL block diagram



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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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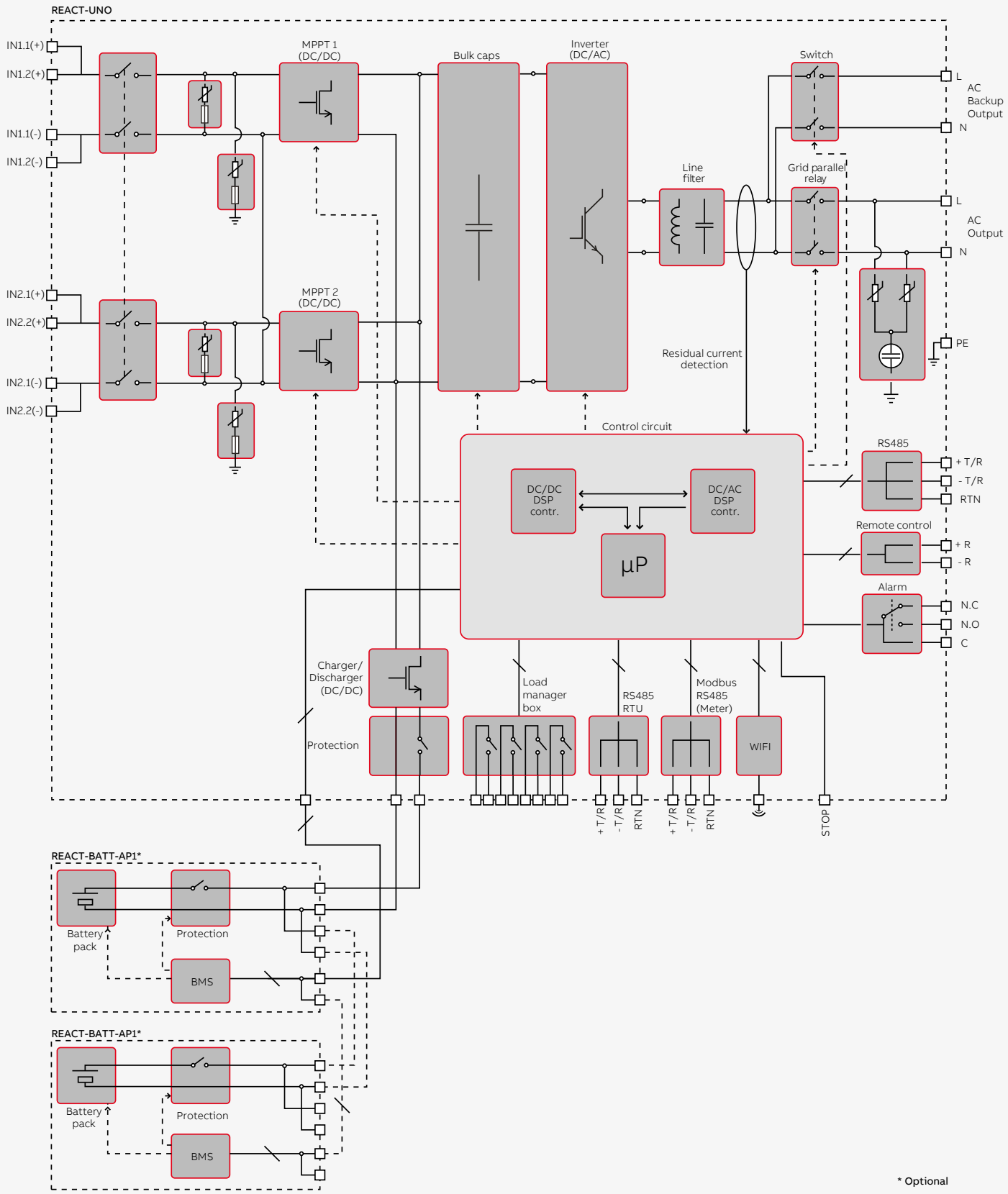
REACT-3.6/4.6-TL

Block diagram of REACT-4.6



* Optional

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

www.abb.com/solarinverters
www.abb.com/react
www.abb.com

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BCD.00386 Rev. H EN 28.08.2017