

ABB PV + Storage REACT-3.6/4.6-TL 3.6 to 4.6 kW



The photovoltaic renewable energy source will gain a renewed success thanks to battery storage usage for enhancing self-consumption and energy self-sufficiency*.

One of the biggest challenges with solar energy is that it is unpredictable and its usage is not completely discretionary. The solution is to combine energy storage and load management capability with a traditional PV inverter.

In this way self-consumption and energy self-sufficiency can be improved to a further level.

*Self-consumption is how much PV energy is used at home and not exported to the grid with respect to the total energy production.
Energy self-sufficiency is how much PV energy is used at home and not exported to the grid with respect to the total energy consumption.

The advantages of a single, fully integrated device

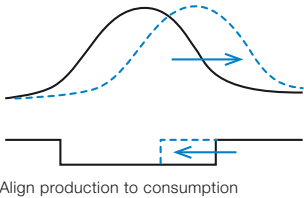
- Coordination of all the energy flows with the goal of aligning PV energy production and home consumption
- Battery management and battery life are optimized
- One user interface, with remote capability, to monitor renewable energy production and manage home loads

Highlights

- The REACT-4.6-TL (Renewable Energy Accumulator and Conversion Technology) is a PV single phase grid connected inverter able to store energy in a 2.0kWh useful capacity Li-Ion battery integrated within the same product enclosure, expandable up to 3x
- All features found in our family of string inverters are maintained: double fast MPPT, broad input voltage range, top class efficiency with TL topology, compactness, installation flexibility
- Up to four onboard load management outputs are included as well as an auxiliary AC back-up output for off grid capability in case of a black out

Additional highlights

- The product is designed for a long life cycle with a 10 year expected battery life thanks to the Li-Ion technology
- Storage capacity can be further expanded up to three times adding further battery units



Technical data and types

PV+Storage

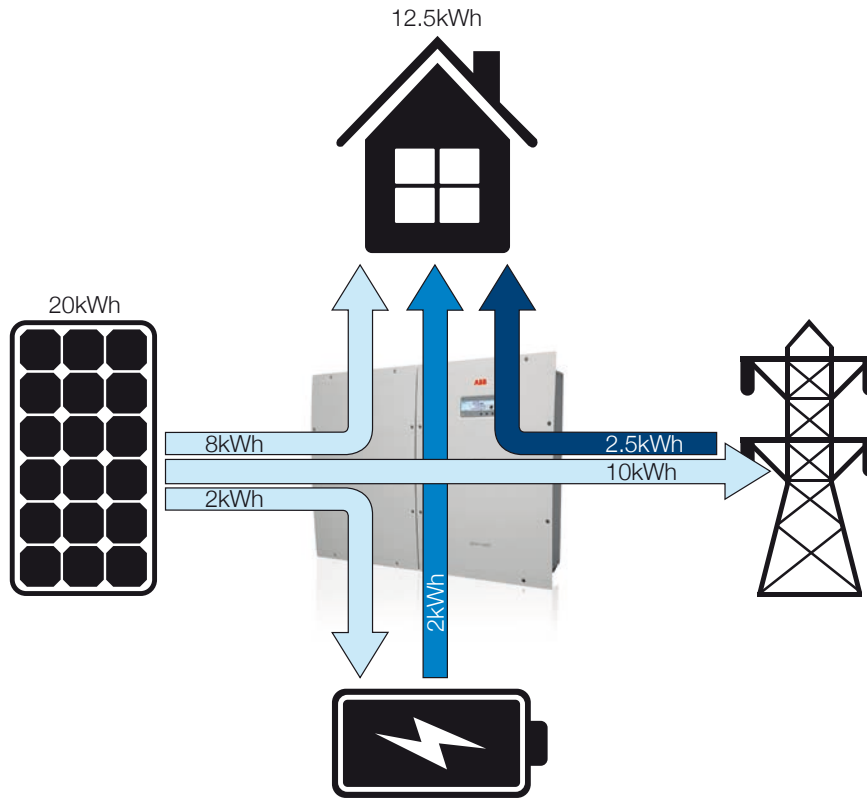
	REACT-3.6-TL	REACT-4.6-TL
	REACT-UNO-3.6-TL	REACT-UNO-4.6-TL
	REACT-BAT-AP1	REACT-BAT-AP1
System components	REACT-MTR-1PH (or -3PH)	REACT-MTR-1PH (or -3PH)

PV+Storage Inverter	REACT-UNO-3.6-TL	REACT-UNO-4.6-TL
Input PV		
Max. input voltage $V_{max,abs}$		600 V
Max DC power	5000 W	6000 W
Input voltage range MPP at rated AC output power	160 ... 530 V	180 ... 530 V
Number of independent MPPT		2
Output AC		
Rated AC power ($P_{acr} @ \cos\phi=1$)	3600 W	4600 W
Maximum apparent power (S_{max})	3600 VA	4600 VA
Phases AC		Single phase
Rated AC grid voltage		240 V
AC voltage range		180...264 V
Rated output frequency		50/60 Hz
Anti-islanding protection		According to local standard
Nominal Power Factor, adj range	>0.995, adj. $\pm 0.9 @ P_{acr}$, ± 0.8 with max 3.68 kVA	
Max/Eur efficiency PV to AC	97% / 96%	
Battery full cycle efficiency	93%	
Battery charger		
Battery converter, max charge	3 kW	
Battery converter, max discharge	3 kW	

Battery pack	REACT-BAT-AP1
Manufacturer	Panasonic
Battery type	Li-Ion
Max power discharge	1.5 kW
Max power charge	1.0 kW
Usable life average battery capacity	2 kWh (6 kWh, with 3x expansion)
Battery lifetime	>4500 cycles
Battery calendar lifetime	10 years
Safety and EMC	EN62109-1, EN62109-2, EN50178, EN60950-1, EN61000-6-2, EN61000-6-3, UN38.X

Meter	REACT-MTR-1PH or REACT-MTR-3PH
AC line meter	Necessary for optimum battery energy management. Order separately REACT-MTR-1PH or REACT-MTR-3PH
Measures	P / Q / A / PF / V / I
Measures accuracy and resolution	<1%, 1%
Current capability	30 A, up to 5 Adc tolerant
Phases AC	1 or 3
Nominal voltage and range	110/230 Vac 85-265 Vac
Nominal frequency and range	50/60 Hz 45-65 Hz
Power supply and consumption	Integrated, <1W
Isolation and dielectric strength	4kVrms (for 1 minute) between AC measuring ports and communication port
Installation category	CAT III,
Protection class	Front IP40, screw terminals IP20
Installation	DIN 43880 Rail, 3 modules wide
Operational temperature range	-20...+55°C
Safety and EMC	IEC 61010-1, IEC 61326-1, CE mark

Daily energy flows example of REACT-4.6



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

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

Technical data and types

	REACT-3.6-TL	REACT-4.6-TL
PV+Storage		
Other features		
Load management function		Optional, four built in GOGO relays
AC back up output, off grid		Optional, automatic or manual restart, even with no battery
Enable battery charge from AC		Disabled by factory, can be enabled where allowed
No PV input version		Optional special version, AC bus storage
Display		Energy flow and GOGO relays activation indications
Communication		
Available ports		RS485 ModBus RTU, RS485Service, WiFi or Ethernet
Physical		
Protection class		IP54 (inverter), IP21 (battery pack)
Dimensions, WxHxD, equipped with 1 battery unit – weight (kg)		983mm x 740mm x 229mm – 60kg
Battery unit dimensions, WxHxD – weight (kg)		490mm x 740mm x 229mm – 30kg
Installation		Wall mount with provided brackets
Cooling		Natural convection
Environmental		
Operational temperature range		-20°C / +55°C
Full battery function operational temperature range		+5°C / +40°C
Relative humidity		Max 95%, no condensation
Altitude		2000 m above sea level
Recommended location		Indoor with ventilation opening
Safety		
Marking		CE
Grid connection standards		CEI 0-21, VDE-AR-N 4105, G83/2, VFR2014
Safety and EMC standard		EN62109-1, EN62109-2, EN50178, EN60529, DIN VDE 0126-1-1, EN61000-6-2, EN61000-6-3, EN61000-3-11, EN61000-3-12

Support and service

ABB supports its customers with dedicated, global service organization in more than 60 countries and strong regional and national technical partner networks providing complete range of life cycle services.

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

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