SOLAR INVERTERS

ABB PV + Storage

REACT 2
3.6 to 5.0 kW

REACT 2 is ABB's photovoltaic energy storage system, allowing to store excess energy and optimize the energy use in residential applications.

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REACT 2 3.6/5.0
PV + Storage inverter

This new line, available in power ratings of 3.6 and 5.0 kW, has one of the industry's highest energy efficiency rates, providing up to 10% more energy than lower voltage battery systems.

For new and retrofit installations
Thanks to the possibility of both AC and DC side connection, REACT 2 is the ideal solution for new systems or the retrofitting of existing ones, allowing homeowners to improve their energy self-consumption and save on their energy bills.

Wide battery capacity
Providing a totally flexible solution, REACT 2 offers a wide storage capacity, which can be expanded from 4 kWh to 12 kWh, depending on the number of batteries used, and can achieve up to 90 percent energy self-reliance.
The addition of further battery units can take place anytime during the lifetime of the system.

Design flexibility
The different set-up configurations available allow maximum installation flexibility and optimization of available spaces.
Quick and easy to install thanks to the simple plug and play connection, both on inverter and battery side.

Smart connectivity
Future proof technology enables a full smart home experience with advanced communication features and load management capabilities.

The embedded data logger and direct transferring of data to a secure cloud platform allows customers to monitor and keep their system under control through the dedicated mobile app.

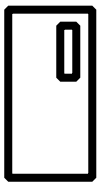
The advanced communication interfaces combined with a standard Modbus communication protocol, Sunspec compliant, allow the inverter to be easily integrated within any smart environment and with third party monitoring and control systems.

Highlights
- Li-Ion battery unit for energy storage (from min 4 kWh to 12 kWh)
- Industry leading energy efficiency
- Suitable for new and existing applications
- Battery units can be upgraded anytime during lifetime of system
- Flexible and modular design, optimizes installation space
- Simple and safe installation with plug and play connection
- System monitoring through dedicated mobile app
- Modbus TCP/RTU Sunspec compliant
- Compatible with ABB free@home for a full ABB smart home experience

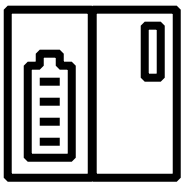
ABB PV + Storage

REACT 2

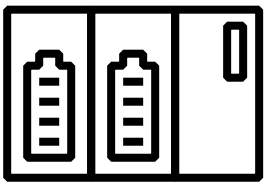
3.6 to 5.0 kW



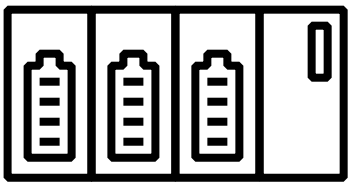
Hybrid inverter (battery ready)



4 kWh kit



8 kWh kit



12 kWh kit

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Possible configurations

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Technical data and types

Inverter	REACT2-UNO-3.6-TL	REACT2-UNO-5.0-TL
Input side		
Absolute maximum DC input voltage ($V_{max,abs}$)	575 V	
Start-up DC input voltage (V_{start})	200 V (adj. 120...350 V)	
Operating DC input voltage range ($V_{dcmin...Vdcmax}$)	0.7 x V_{start}...575 V (min 90 V)	
Rated DC input voltage (V_{dcr})	390 V	
Rated DC input power (P_{dcr})	5000 W	6000 W
Number of independent MPPT	2	
Maximum DC input power for each MPPT ($P_{MPPT\ max}$)	2500 W Linear derating [480 V≤V_{MPPT}≤575 V]	3000 W Linear derating [480 V≤V_{MPPT}≤575 V]
DC input voltage range with parallel configuration of MPPT at P_{acr}, not operative battery	160 V...480 V	195 V...480 V
Maximum DC input current ($I_{dc\ max}$) / for each MPPT ($I_{MPPTmax}$)	24 A / 12 A	27 A / 13,5 A
Maximum input short circuit current for each MPPT	15.0 A	
Number of DC inputs pairs for each MPPT	2	
DC connection type	PV quick fit connector (1)	
Input protection		
Reverse polarity protection	Yes, from limited current source	
Input over voltage protection for each MPPT - varistor	Yes	
Photovoltaic array isolation control	According to local standard	
DC switch rating for each MPPT	25 A / 575 V	
Battery port		
Operating DC voltage range	170-575 V	
N° of battery units	1, 2, 3	1, 2, 3
Charge power	1.6 kW, 3.2 kW, 4.8 KW	1.6 kW, 3.2 kW, 4.8 KW
Discharge power	2 kW, 3.6 kW, 3.6 kW	2 kW, 4 kW, 5 kW
Grid connected output side		
AC Grid connection type	Single-phase	
Rated AC power (P_{acr} @cosϕ=1)	3600 W	5000 W (2)
Maximum AC output power (P_{acmax} @cosϕ=1)	3600 W	5000 W (2)
Maximum apparent power (S_{max})	3600 VA	5000 VA (2)
Rated AC grid voltage ($V_{ac,r}$)	230 V	
AC voltage range	180...264 V (3)	
Maximum AC output current ($I_{ac\ max}$)	16 A	22 A
Contributory fault current	16 A	22 A
Rated output frequency (f_r)	50 Hz / 60 Hz	
Output frequency range (f_{min}...f_{max})	45...55 Hz / 55...65 Hz (4)	
Nominal power factor and adjustable range	> 0.995, adj. ± 0.1 - 1 (over/under exited)	> 0.995, adj. ± 0.1 - 1 (over/under exited)
Total current harmonic distortion	< 3%	
AC connection type	AC circular connector	
Grid connected output protection		
Anti-islanding protection	According to local standard	
Maximum external AC overcurrent protection	20 A	25 A
Output overvoltage protection - varistor	2 (L - N / L - PE)	

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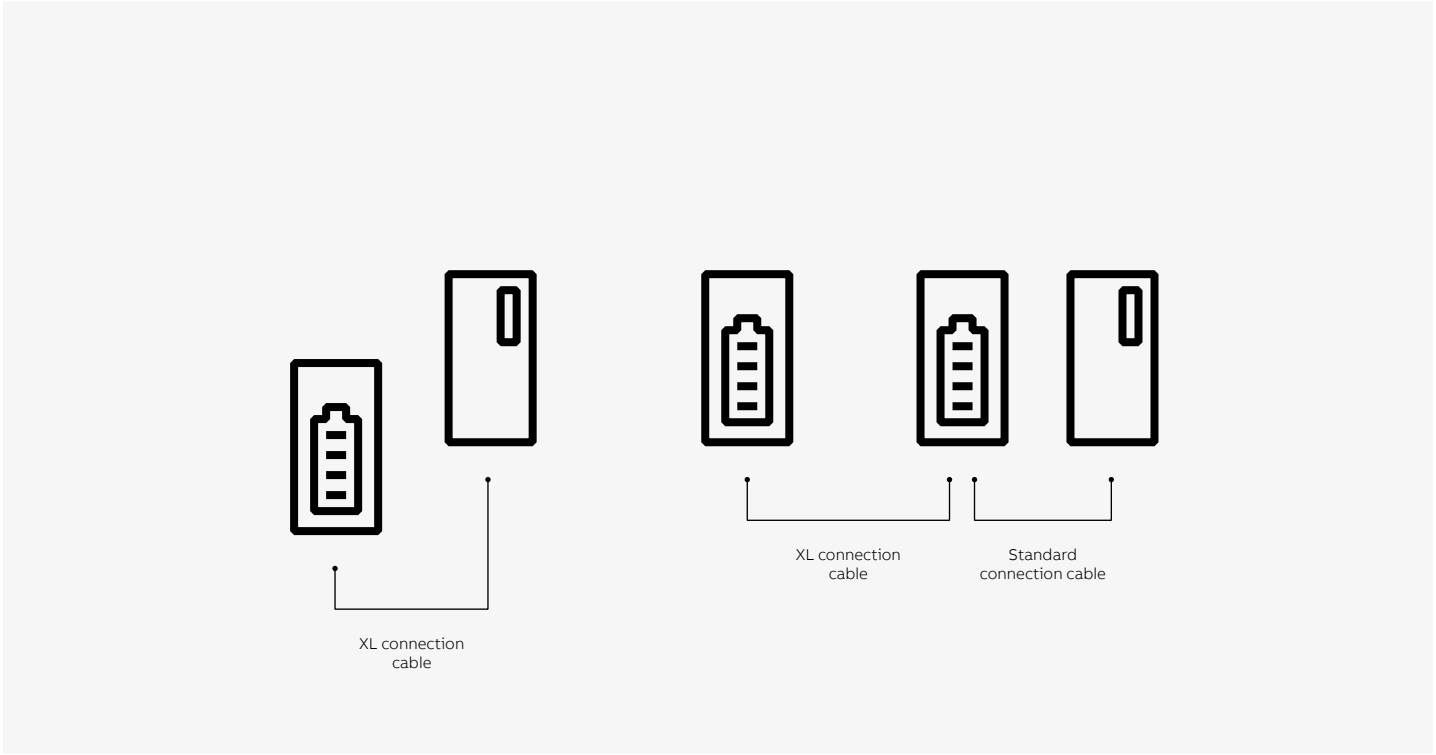
REACT 2 - Installation flexibility



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Technical data and types

Inverter	REACT2-UNO-3.6-TL	REACT2-UNO-5.0-TL
Backup output side		
AC grid connection type	Single-phase	
Maximum apparent power (S_{max})	3000 VA	
Rated AC grid Voltage (V_{acr})	230 V	
AC Voltage range	180...264 V [3]	
Maximum AC output current ($I_{ac\,max}$)	13 A	
Rated output frequency (f_r)	50 Hz / 60 Hz	
Output frequency range (f_{min}...f_{max})	45...55 Hz / 55...65 Hz [4]	
AC connection type	Screw terminal block	
Backup output protection		
Maximum external AC overcurrent protection	16 A	
Output overvoltage protection - varistor	2 (L-N/L-PE)	
Embedded communication		
Embedded physical interface	Wireless[5], 2 x Ethernet, RS485	
Embedded communication protocols	Modbus TCP (SunSpec), Modbus RTU (Sunspec), ABB-free@home®	
Datalogger data retention	30 days	
Remote monitoring	Mobile app	
Local monitoring	Web server user interface	
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	
Acoustic noise emission level	< 50 dB (A) @ 1 m	
Maximum operating altitude without derating	2000 m	
Physical		
Environmental protection rating	IP65	
Cooling	Natural	
Dimension (H x W x D)	740 mm x 490 mm x 229 mm	
Weight	< 22 kg	
Mounting system	Wall bracket	
Safety		
Isolation level	Transformerless	
Marking	CE (50 Hz only)	
Safety and EMC standard	IEC/EN 62109-1, IEC/EN 62109-2, IEC 62477-1, 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, RD 413, AS/NZS 4777.2, C10/11, IEC 61727, IEC 62116	
Other features		
Load manager	Yes, with two integrated relays	
AC backup output, off grid	Yes	
Battery charge from AC	Yes, it can be enabled	
AC-coupled feature	Yes, settable during commissioning	

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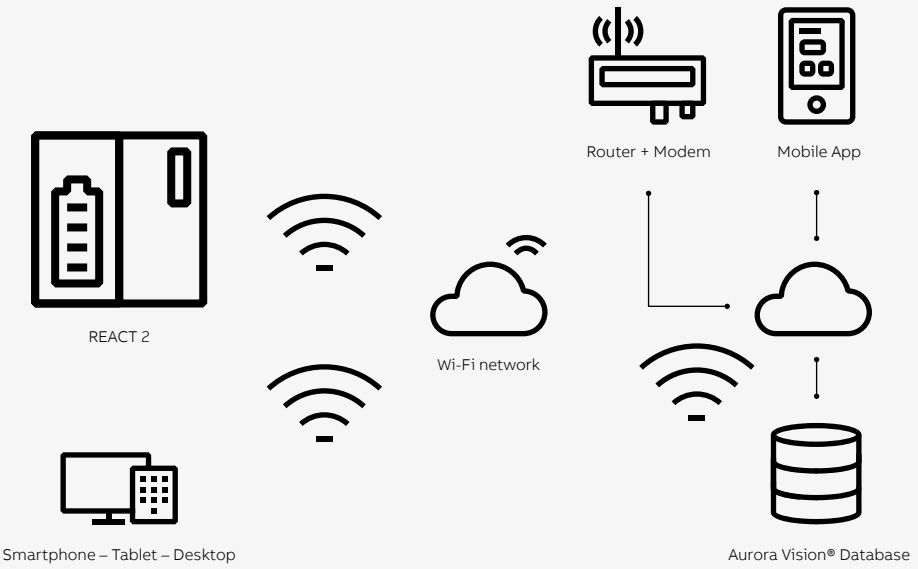
REACT 2 - Communication diagram



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Technical data and types

Battery unit	**REACT2-BATT**
Modules manufacturer	Samsung
Battery type	Li-Ion
Total energy	4 kWh
Operating DC voltage range	170-575 V
Absolute maximum DC voltage	575 V
Module voltage	200 V
Deep of discharge (DoD)	95%
Charge power	1.6 kW
Discharge power	2 kW
Environmental	
Enviromental protection rating	IP 54 (suggested indoor installation for preserving battery life time)
Ambient temperature range	-20...+55°C (power derating occurs out of suggested ambient temperature range)
Suggested ambient temperature	+0 to +40 °C
Relative humidity	4...100 % condensing
Physical	
Cooling	Natural
Dimension (H x W x D)	740 mm x 490 mm x 229 mm
Weight	< 50 kg
Mounting system	Wall bracket
Safety	
Marking	CE
Safety	IEC 62619, UN38.3, UN3480

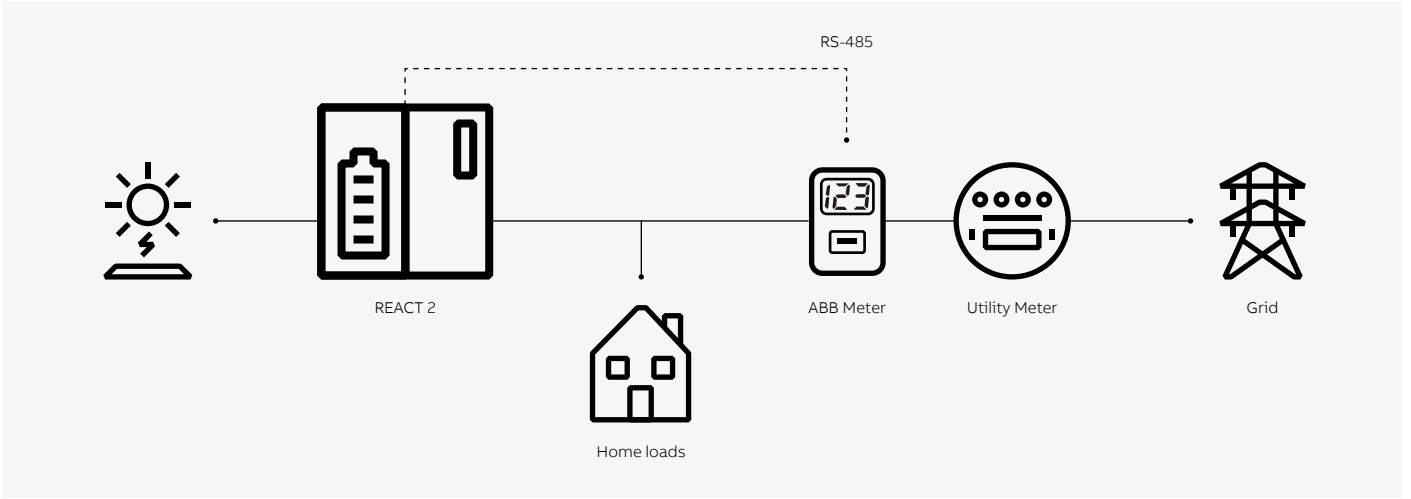
Compatible ABB meters	
REACT-MTR-1PH	Single-phase, 20 A
B21-212	Single-phase, 65 A
B23-212	Three-phase, 65 A
B24-212	Three-phase with external CT (opt.)

[1] Refer to the document “String inverter – Product Manual appendix” available at www.abb.com/solarinverters to know the brand and the model of the quick fit connector”
[2] For VDE-AR-N 4105 setting, maximum active power of 4600 W and maximum apparent power of 4600 VA
[3] The AC voltage range may vary depending on specific country grid standard
[4] The Frequency range may vary depending on specific country grid standard
[5] As per IEEE 802.11 b/g/n standard
Remark. Features not specifically listed in the present data sheet are not included in the product

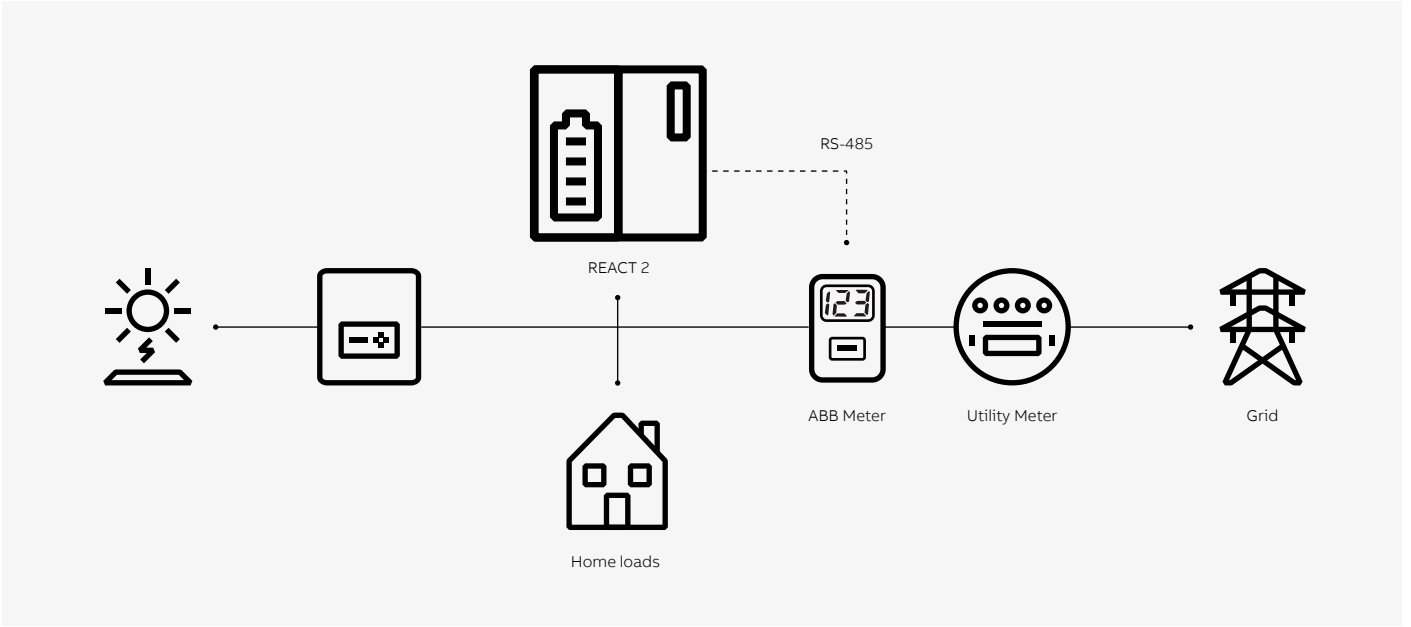
ABB PV + Storage
REACT 2

REACT 2 - DC and AC coupled connection

New installation



Retrofit



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

www.abb.com/solarinverters
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