FIMER




# Solar inverter
# PV + Storage

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

**From 3.6 to 5.0 kW**

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 (REACT2-BATT) or from 5 kWh to 15 kWh (REACT2-BATT-5.0), 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.

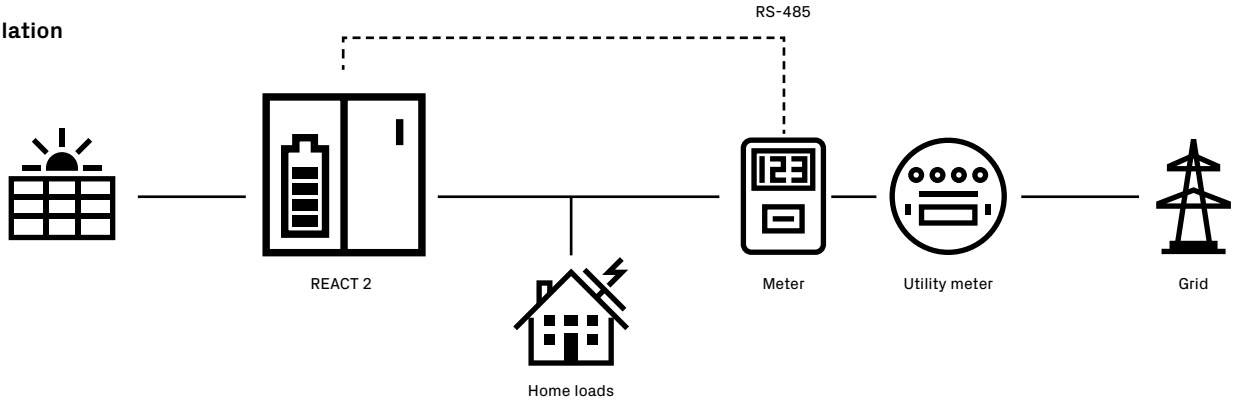
The embedded data logger and direct transferring of data to a secure cloud platform allows customers to monitor and keep their system under control through the dedicated mobile app.

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.

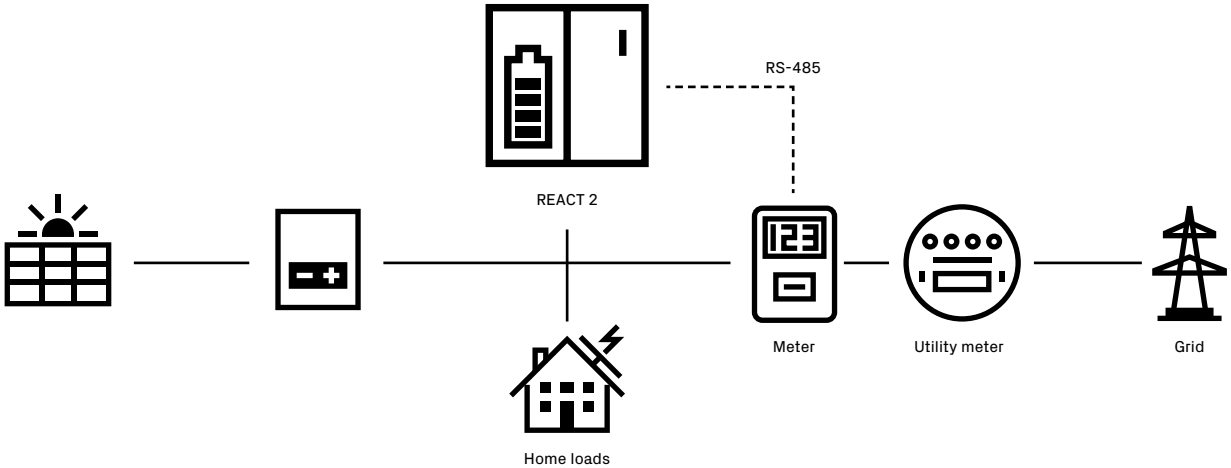
**Highlights**
- Li-Ion battery unit for energy storage (from 4 kWh to 12 kWh or from 5 kWh to 15 kWh based on battery model choice)
- Industry leading energy efficiency
- Suitable for new and existing applications
- Battery units can be upgraded anytime during lifetime of system
- Flexible and modular design, optimizes installation space
- Simple and safe installation with plug and play connection
- System monitoring through dedicated mobile app
- Modbus TCP/RTU Sunspec compliant
- Energy community ready

**REACT 2 - DC and AC coupled connection**

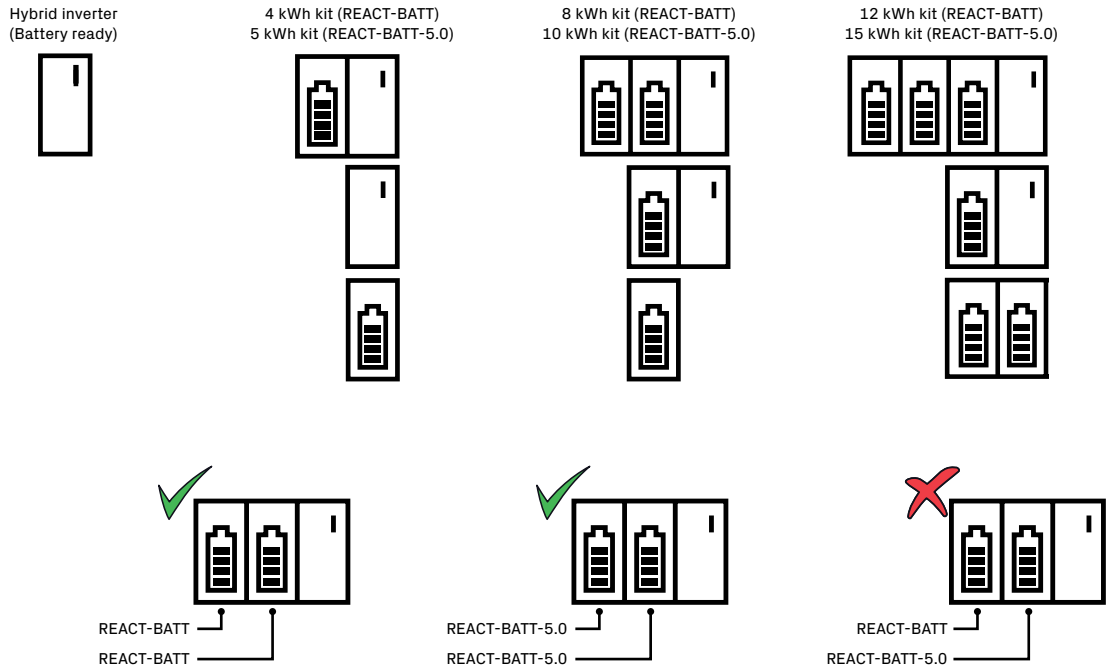
**New installation**




**Retrofit**



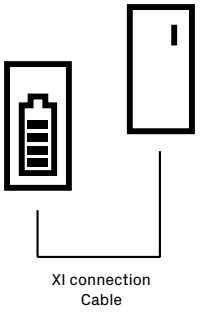
## Possible configurations

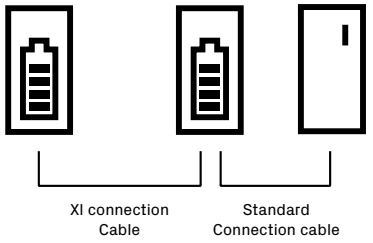



## Technical data and types

| 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 ($V_{dcmin}$...$V_{dcmax}$) | 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 |
| Suggested maximum DC input power | 6666 W | 8000 W |
| Number of independent MPPT | 2 | |
| Maximum DC input power for each MPPT ($P_{MPPT\ max}$) | 2500 W<br>Linear derating [480 V≤$V_{MPPT}$≤575 V] | 3000 W<br>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 ($I_{MPPT\ max}$) | 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 (REACT2-BATT)<br>2 kW, 4 kW, 5 kW (REACT2-BATT-5.0) | 1.6 kW, 3.2 kW, 4.8 kW (REACT2-BATT)<br>2 kW, 4 kW, 6 kW (REACT2-BATT-5.0) |
| Discharge power | 2 kW, 3.6 kW, 3.6 kW (REACT2-BATT)<br>2.5 kW, 3.6 kW, 3.6 kW (REACT2-BATT-5.0) | 2 kW, 4 kW, 5 kW (REACT2-BATT)<br>2.5 kW, 5 kW, 5 kW (REACT2-BATT-5.0) |
| **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) | |
| Total current harmonic distortion | < 3% | |
| AC connection type | AC circular connector | |

## REACT 2 - Installation flexibility

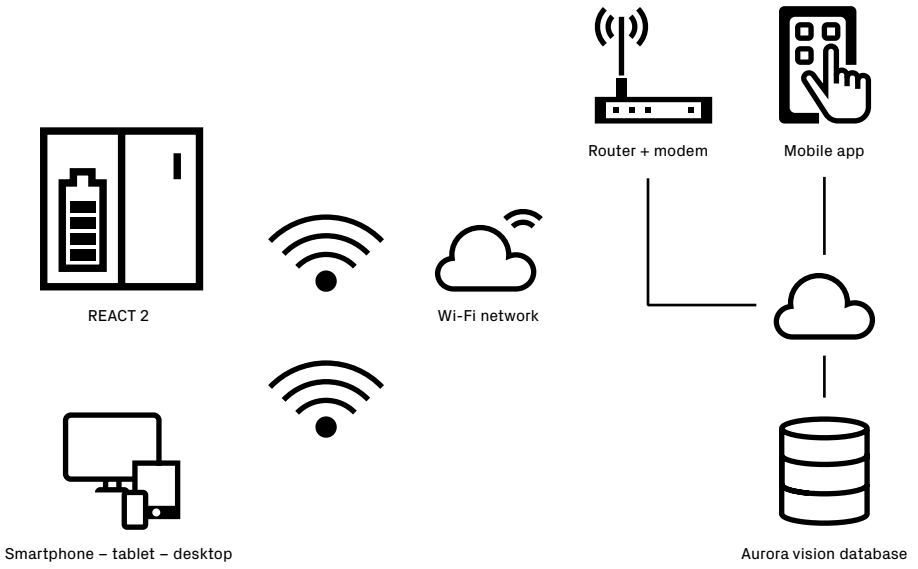



## Technical data and types

| Inverter | REACT2-UNO-3.6-TL | REACT2-UNO-5.0-TL |
|---|---|---|
| **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) | |
| **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 [4] | |
| 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 [5] | |
| 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 | Wi-Fi[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 | |

REACT 2 - Communication diagram




## Technical data and types

| **Battery unit** | **REACT2-BATT** | **REACT2-BATT-5.0** |
|---|---|---|
| Battery type | Li-Ion | |
| Total energy | 4 kWh | 5 kWh |
| Operating DC voltage range | 170-575 V | |
| Absolute maximum DC voltage | 575 V | |
| Module voltage | 200 V | |
| Deep of discharge (DoD) | 95% | 90% |
| Charge power | 1.6 kW | 2 kW |
| Discharge power | 2 kW | 2.5 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 meters**[6] | |
|---|---|
| REACT-MTR-1PH | Single-phase, 20 A |
| ABB B21 | Single-phase, 65 A |
| ABB B23 | Three-phase, 65 A |
| ABB B24 | Three-phase, External CT (opt.) |
| ABB A43 | Three-phase, 80 A |
| ABB A44 | Three-phase, External CT (opt.) |

1) Refer to the document “String inverter – Product Manual appendix” available at www.fimer.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
6) Refer to the document “Meters supported by FIMER string inverters and the VSN700-05 Data Logger”, available at www.fimer.com, to know the complete compatible meter list

**Remarks:**
- **Designed and manufactured in Italy**
- **Features not specifically listed in the present data sheet are not included in the product**

FIMER

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

**fimer.com**

We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. FIMER does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in parts – is forbidden without prior written consent of FIMER. Copyright© 2022 FIMER. All rights reserved.

FIMER_REACT2-PV-STORAGE-3.6-5.0-TL_EN_Rev_E 27.06.2023