

The smartest residential inverter, battery charger and solar converter out there, all united in a single platform!



Modular / Scalable / Silent / Remotely Controllable / Smart Grid-Ready

**IEEE1547/2030
INTER OPERABILITY**



- Advanced DER management functions (Volt/VAR optimization, voltage control, etc.)
- Flexible processor architecture to handle California rule 21 updates phases I, II & III

**HIGH-SPEED
COMMUNICATION**



- Embedded wireless server
- Fiber-optic communication (> 200x CANBUS speed)
- API for custom DER directives, signal monitoring & recording

**LONG-TERM
RELIABILITY**



- Natural convection heat dissipation, no fan
- State-of-the-art SICMOS switching technology
- Transformerless

**EASY
INSTALLATION**



- Add-on modules
- 50% weight and footprint reduction over current competition
- Wall-mount installation inside/outside (Nema 3R)



POWERED BY **idenergy**

Introducing Idenergy's Power Converters



The Next Generation of Power Converters

Idenergy has developed an advanced inverter system which converts electricity from solar panels to feed a residence with electricity and store excess energy into batteries.

It also provides the smart grid with interaction and support, thanks to highly integrated high-speed communication capabilities which allow to send commands and visualize grid signals remotely.

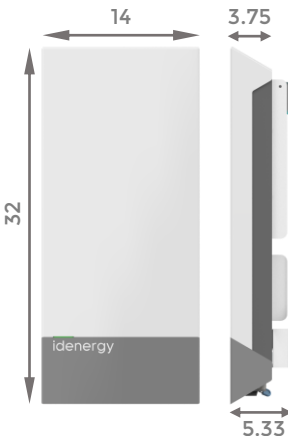
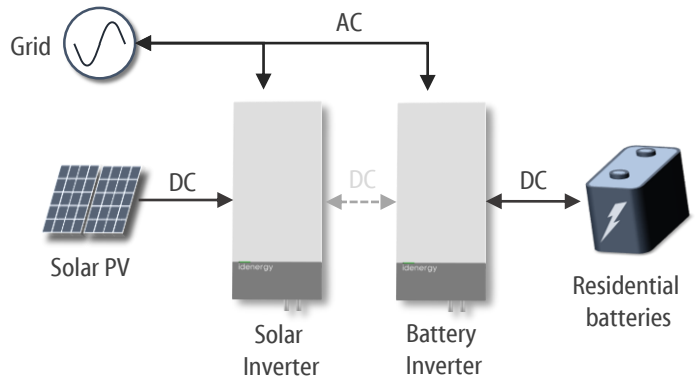
Idenergy's outstrips competition thanks to its Scalability, Natural Cooling, Size, Weight, integrated communication but above all, its ability to withstand the new stricter standards of IEEE1547, UL1741SA and California Rule 21 with its high quality signal control system.

Solar PV and Battery Inverter Modules

Idenergy has developed a system of inverter modules that can either convert solar power to the grid or charge/discharge energy to residential batteries.

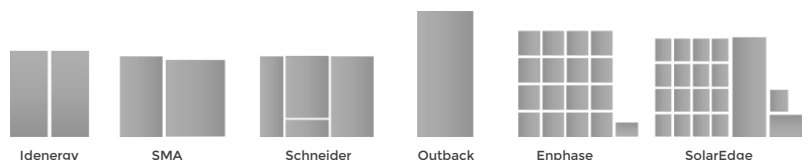
The system is also scalable to many units placed in parallel, exchanging energy through the AC line. Optional DC connection is also available.

The galvanic isolation of battery chargers and the large range of acceptable voltages makes the chargers very versatile, able to adapt to different batteries types.



The smallest footprint in the industry

When it comes to installation, especially involving battery charging, inverters are large and heavy, require a lot of hardware and occupy space on a wall. We designed our technology with the latest high-frequency switching devices using the lightest passive components to make your life easier, whether installed inside or outside.

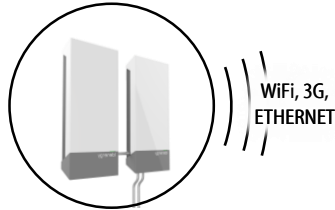


Improved Technologies for Smart Grid

Advanced Communication Architecture for Smart-Grid Applications

Idenergy's system is the only one that allows utilities to control inverters and visualize signals remotely in real time; the only way to operate grid-edge services.

- PROBE SIGNAL SAMPLES REMOTELY
- RESOLUTION 6 SIGNALS, 40us/POINT
- REAL-TIME DIAGNOSTICS
- APPLY SIGNAL CORRECTIONS
- PROBE RESULTS INSTANTANEOUSLY



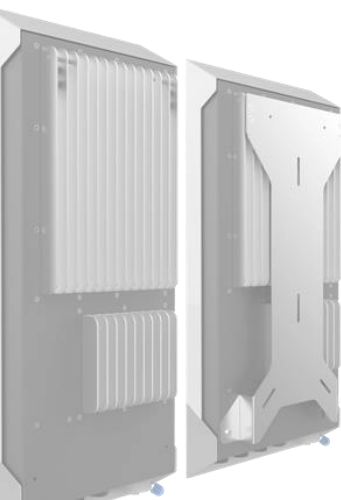
Adresses New Category III/B Standards Requirements and Beyond...

In 2018, IEEE1547 introduced a new classification system including Categories A, B / I, II and III to raise the standards of acceptability for higher DER penetration on grids.

As the majority of current commercial inverters barely qualify for Category A-I, Idenergy has built a technology that surpasses current competition and goes beyond these standards.

Reactive power capability and voltage/power control requirements			
CATEGORY	A	B	idenergy
Voltage and active power control	Not required	Mandatory	YES ✓
Voltage regulation by reactive power control	Not required	Mandatory	YES ✓
Injection / Absorption capability as % of nameplate kVA rating	25%	44%	95% ✓

Response to Area EPS abnormal conditions				
CATEGORY	I	II	III	idenergy
Undervoltage / Overvoltage ride through clearing time	2 sec.	2 sec.	13 sec.	Unlimited ✓
Maximum number of ride through disturbance sets	2	2	3	Unlimited ✓
Minimum time between successive disturbance sets	20 sec.	10 sec.	5 sec.	0,5 sec. ✓
Rate of change of frequency (ROCOF) ride through	0.5 Hz/s	2 Hz/s	3 Hz/s	10 Hz/s ✓



State-of-the-Art Electronic Architecture

Natural Convection, Silent

- Natural Convection → **No Fan, Silent, Reliable**
- High Power Density → **Lightweight, Compact**
- Improved Efficiency → **Increased Lifetime**

Reduction of Electrical BOS

- Embedded Connections → **Reduce Installation Labor**
- Transformerless 240V → **No Additional Transformer**
- Integrated DC Disconnect → **No Additional Electrical Box**



Power Modules Specifications (preliminary)

General specifications

Product name	Solar Inverter	Battery Inverter / charger
Product number	INV05	BAT05
Idle consumption (invert mode, no load)	5 W	5W
Max efficiency at full load (Solar → Load)	95,4%	95,4%
Total harmonic distortion	< 3%	< 3%

Inverter channels specific

Topology	Single phase inverter	-
Continuous output power at 25°C	5 kW	-
AC input / output frequency range	50Hz-60Hz	-
AC (grid) input /output current	21 amps	-
Power factor	0.025 to 1 lagging or leading	-

Battery charger specific

Voltage Range	-	0-200 VDC
Nominal current	-	40 Amps
Galvanic isolation	-	Yes
Charge control	-	Bulk, Absorb, Float, Equalize
Compatible battery types	-	Flooded (default), Gel, AGM, Lead, Li-ion, LiFePo

MPPT specific

Number of channels	2	-
Maximum usable power / channel	3 kW	-
Nominal power / channel	2 kW	-
Operating MPPT voltage range	50Vdc - 340 Vdc	-

Physical specifications

Temperature Range (operating)	-13°F to 122°F / -25°C to 50°C	
Weight (unit)	30 lbs (13,6 kg)	20 lbs (9 kg)
Dimensions (W x H x D)	14" x 32" x 5,33" (355 mm x 812 mm x 13.7 mm)	
Mounting	Wall Mounted	
Degree of protection	NEMA 3R	
Chassis type / cooling	Natural Convection	
Max operating altitude	6560 ft (2000 m)	

Communications and intelligent features

Intelligent features	California Rule 21 requirements phase I & II
System monitoring and communications	High Speed fiber optics up to 4.6 Mbps, Ethernet and embedded Wi-Fi server
Remote upgradable firmware	Yes

Certifications (2020)

Compliance	UL 1741, IEEE1547, CSA-C22.2N. 107.1-01, UL1998 UL1699B, FCC Part 15
Built-in Protections	GFDI, (Rapid Shutdown - NEC 2014 690.12), Anti-islanding protection, Arc Fault Detection
Rohs compliant	Yes
Warranty	5 years

