CLIVET Home

ELECTRIC STORAGE SYSTEM INCLUDING HYBRID INVERTER
FOR SINGLE-PHASE AND THREE-PHASE SOLUTIONS

Clivet Sinergy

CLIVET | AIR CONDITIONING AND AIR QUALITY PARTNER

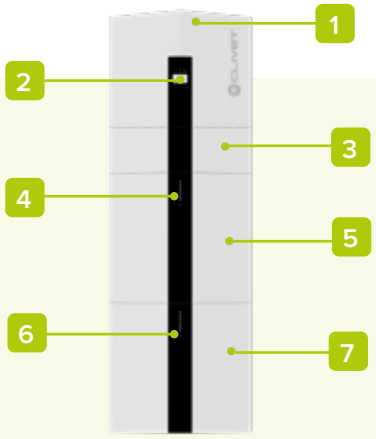
Inspiring Solutions since 1989

General characteristics (of product family)

Modular electric tank system with inverter for combination with solar photovoltaic system, compact and stylish, ideal for residential installations.

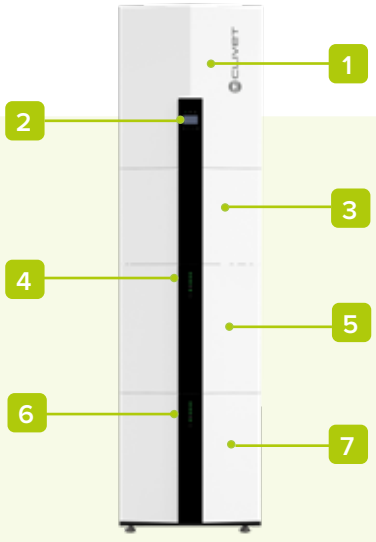
- ✓ A easy-to-install modular system
- ✓ Hybrid power inverter 5kW in the single-phase version and 10kW in the three-phase version
- ✓ Available in 4 capacity sizes by using the same battery pack:
  5/10/15/20 kWh in the single-phase version
  10/20/30/40 kWh in the three-phase version
- ✓ Compatible with the Control4 NRG system for managing the Clivet Smart Living
- ✓ On-grid function and 5 kW back-up output for single-phase version and 10kW for three-phase version integrated connecting loads in the event of a power failure

Single-phase version



1. 5 kW Hybrid Inverter including 2 x6,5 kW MPPT inputs
2. Display
3. Cable entry for connection to the system
4. Battery pack charge level indicator
5. 5 kWh battery pack including BMS (battery management system)
6. Battery pack charge level indicator
7. 5 kWh battery pack including BMS (battery management system)

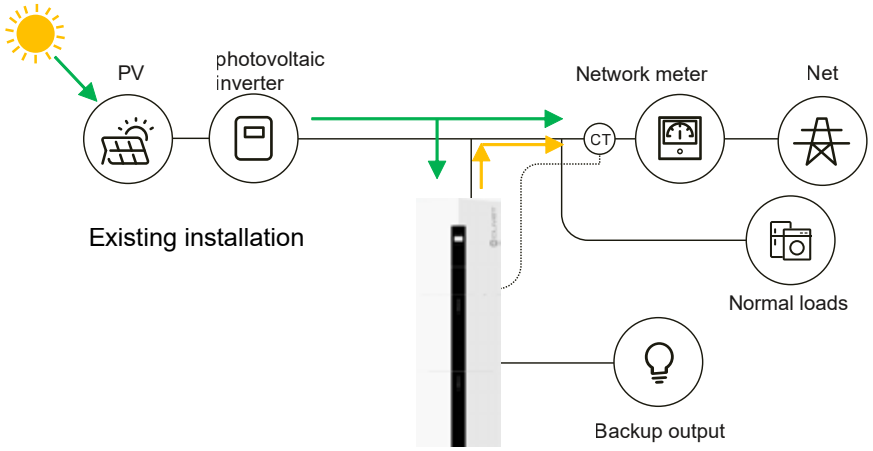
Three-phase version



1. 10 kW Hybrid Inverter including 2 x 20 kW MPPT inputs
2. Display
3. Cable entry for connection to the system
4. Battery pack charge level indicator
5. 5 kWh battery pack including BMS (battery management system)
6. Battery pack charge level indicator
7. 5 kWh battery pack including BMS (battery management system)

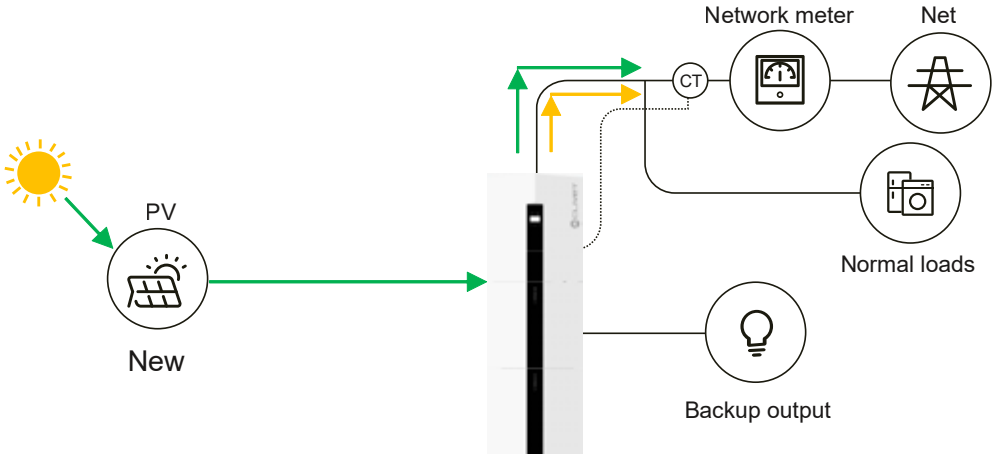
Existing system

Connection to an existing system is made without replacing existing inverters and photovoltaic panels.
The SINERGY system automatically stores the energy produced by the panels when it is not used by users connected to the grid.
The photovoltaic inverter inputs are not used in this case.
Installation is direct to the home network without additional wiring and/or connections.



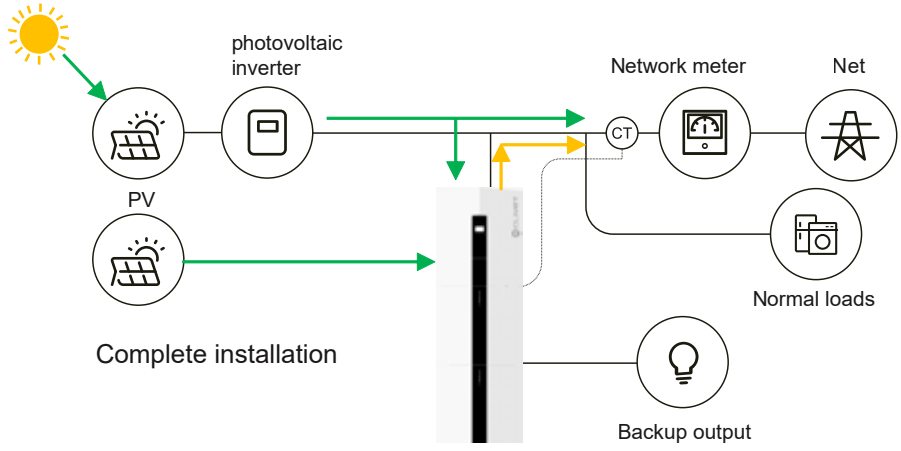
New system

In new installations, the photovoltaic system strings can be connected directly to the two direct current inputs in Clivet's SINERGY inverter.
The inverter has 2 string inputs for a total of 6.5 kW in the single-phase version and 20 kW in the three-phase version.
This configuration keeps the photovoltaic inverter costs low.



Complete installation

SINERGY makes it possible to extend the photovoltaic range and have more installed power.
In this type of installation, the new photovoltaic system can be installed without changing the existing system.
The inverter has 2 string inputs for a total of 6.5 kW in the single-phase version and 20 kW in the three-phase version.
Newly installed panels can be connected directly to the two direct current inputs in Clivet's SINERGY inverter.



Single-phase product range

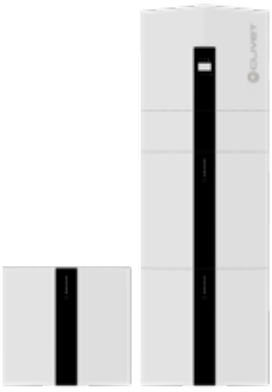
Clivet Sinergy 51.05

5 kWh
5 kW single battery pack

Clivet Sinergy 51.10

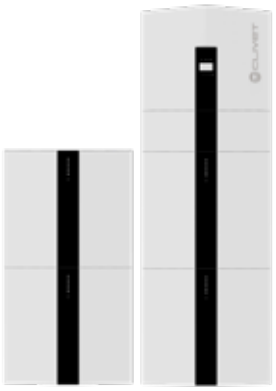
10 kWh
2 x 5 kWh battery packs

Clivet Sinergy 51.15



15 kWh
3 x 5 kWh battery packs

Clivet Sinergy 51.20



20 kWh
4 x 5 kWh battery packs

Version	Model	Product description and composition		
SINERGY 51.05	CEC-S5B5	Energy storage system 5kWh with single-phase 5kW inverter composed by:		
		230Vac 50Hz hybrid inverter, nominal power 5kW	37022297	1 unit
		5kWh single battery pack	37022296	1 unit
SINERGY 51.10	CEC-S5B10	Energy storage system10kWh with single-phase 5kW inverter composed by:		
		230Vac 50Hz hybrid inverter, nominal power 5kW	37022297	1 unit
		10kWh single battery pack	37022296	2 units
		Connection cable kit for single-phase version battery packs	89152285	1 unit
SINERGY 51.15	CEC-S5B15	Energy storage system 15kWh with single-phase 5kW inverter composed by:		
		230Vac 50Hz hybrid inverter, nominal power 5kW	37022297	1 unit
		15kWh single battery pack	37022296	3 units
		Connection cable kit for single-phase version battery packs	89152292	1 unit
SINERGY 51.20	CEC-S5B20	Energy storage system20kWh with single-phase 5kW inverter composed by:		
		230Vac 50Hz hybrid inverter, nominal power 5kW	37022297	1 unit
		20kWh single battery pack	37022296	4 units
		Connection cable kit for single-phase version battery packs	87022298	1 unit

Three-phase product range

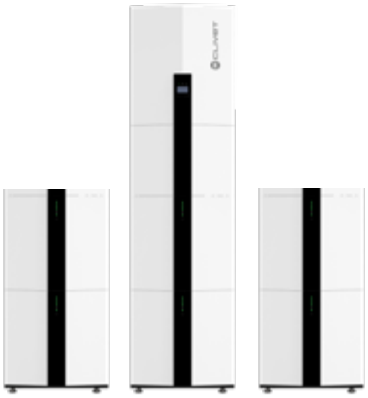
Clivet Sinergy 103.10

10 kWh
2 x 5 kWh battery packs

Clivet Sinergy 103.20

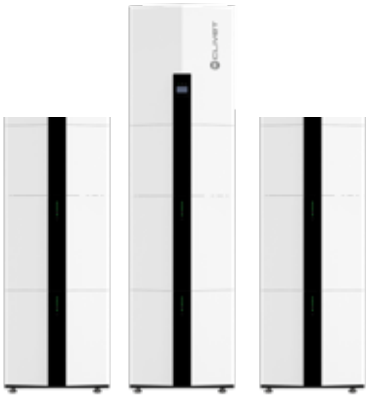
20 kWh
4 x 5 kWh battery packs

Clivet Sinergy 103.30



30 kWh
6 x 5kWh single battery pack

Clivet Sinergy 103.40



40 kWh
8 x 5kWh single battery pack

Version	Model	Product description and composition		
SINERGY 103.10	CEC-T10B10	Energy storage system 10kWh with three-phase 10kW inverter composed by:		
		Three-phase 400Vac 50Hz hybrid inverter with 10kW nominal power	13512328	1 unit
		10 kWh single battery pack	37022296	2 units
		Connection cable kit for three-phase version battery packs	63502370	1 unit
SINERGY 103.20	CEC-T10B20	Energy storage system 20 kWh with three-phase 10kW inverter composed by:		
		Three-phase 400Vac 50Hz hybrid inverter with 10kW nominal power	13512328	1 unit
		20kWh single battery pack	37022296	4 units
		Connection cable kit for three-phase version battery packs	63502369	1 unit
SINERGY 103.30	CEC-T10B30	Energy storage system 30kWh with three-phase 10kW inverter composed by:		
		Three-phase 400Vac 50Hz hybrid inverter with 10kW nominal power	13512328	1 unit
		30kWh battery pack	37022296	6 units
		Connection cable kit for three-phase version battery packs	63502371	1 unit
SINERGY 103.40	CEC-T10B40	Energy storage system 40kWh with three-phase 10kW inverter composed by:		
		Three-phase 400Vac 50Hz hybrid inverter with 10kW nominal power	13512328	1 unit
		40kWh battery packs	37022296	8 units
		Connection cable kit for three-phase version battery packs	63502368	1 unit

battery pack characteristics

Physical

Battery type	LFP (LiFeO4)
Weight	57 kg
Dimensions W x H x D	540 x 530 x 250 mm
IP protection	IP65
Warranty	5 years on product, 10 years on performance

Operation

Max. Charge/Discharge Current	50A/80A
Rated DC Power	4.096W
Maximum charge/discharge power	2.825W/4.096W
Operating temperature range	0..50°C charging
Operating temperature range	'-10..50°C discharging
Humidity	0°C ~ 95% (non condensante)

Electrical Data

Energy capacity	5,12kWh
Usable capacity	4,6 kWh
Depth of discharge (DoD)	0,9
Nominal Voltage	51,2V
DC Circuit Breakers	125A
Operating Voltage Range	44,8 - 56,6V
Internal Resistance	<20mΩ
Cycle life (charge/discharge)	10.000 cycles

BMS

Modules connection	Up to 4 in single-phase system modules Up to 8 in modules three-phase systems
Capacity	100-400Ah in single-phase systems 200-800Ah in three-phase systems
Power consumption	<2W

Safety (cells)
Pack: IEC/EN 62619;UN38.3
Cell: IEC/EN 62619;UN38.3;UL1973

single-phase inverter characteristics

PV String Input

max PV input power	6500W
Max. DC Voltage	580V
Nominal Voltage	400V
MPPT Voltage Range	80V-560V
Start Voltage	130V
Number of MPP Tracker	2
Strings Per MPP Tracker	1
Max. Input Current Per MPPT	15A
Max. Short-circuit Current Per MPPT	18A

AC Output (Grid)

Nominal AC Output Power	5.000W
Max. AC Apparent P ower	7.360VA (from grid)
Max. AC Output Power	5'000W (1)
Nominal AC Voltage	230Vac
AC Grid Frequency Range	50/60 Hz ±5Hz
Max. Output Current	22A (2)
Max. Input Current	22A (2)
Power Factor (cosΦ)	0.8 leading - 0.8 lagging
THDi	< 3%

Battery Input

Battery type	LFP (LiFePO4)
Nominal Battery Voltage	48V
Max. Charging Voltage Range	40-60V
Max. Charging Current	100A
Max. Discharging Current	100A
Battery Capacity	100-400Ah
Maximum charge/discharge power	4600/5000W

Certification & Standard
IEC/EN 62109-1&2;IEC/EN61000-6-1;IEC/EN61000-6-2;EN61000-6-3; IEC/EN61000-6-4;IEC/EN61000-3-11;
EN61000-3-12;IEC60529;IEC 60068;IEC61683;IEC62116;IEC61727;EN50549-1;
AS 4777.2;NRS 097;VDE-AR-N-4105;CEI0-21;G98;G99;C10/C11
NOTE
1. Nominal AC output power is 4999W for Australia and 4600W for Germany and South Africa
2. Maximum output current is 21.7A for Australia and 20A for Germany and South Africa

AC Output (Backup)

Max. Output Apparent Power	5.000VA
Peak Output Apparent Power	6.900VA 10sec
Max. Output Current	20A
Nominal Output Voltage	230V
Nominal Output Frequency	50/60Hz
Output THDv (@Linear Load)	<3% (Linear Load)

Efficiency

Max. PV Efficiency	97,0%

Protection

Anti-islanding Prote ction	YES
Output Over Current	YES
DC Reverse Polarity Protection	YES
String Fault Detection	YES
AC/DC Surge Protection	DC type II; AC type III
Insulation Detection	YES
AC Short Circuit Protection	YES

General Specifications

Dimensions W x H x D	540 x 590 x 255mm
Weight	32kg
Operating Temperature Range	-25°C ~ +60°C
Humidity	0°C ~ 95% (non condensing)
Noise (dB)	<25
Cooling Type	Natural convection
Max. Operation Altitude	2.000m
IP Class	IP65
Communication	RS485
Display	LCD

three-phase inverter characteristics

PV String Input	
max PV input power	20.000 W
Max. DC Voltage	1.100V
Nominal Voltage (DC)	720V
MPPT Voltage Range	140V-1.000V
MPPT Voltage Range (full load)	420V-850V
Start Voltage	130V
MPPT string inputs	2
Strings Per MPP Tracker	1
Max. Input Current Per MPPT	15A
Max. Short-circuit Current Per MPPT	20A

AC Output (Grid)	
Nominal AC Output Power	10.000W
Max. AC Apparent P ower	11.000VA
Max AC input power	17.800W (from grid)
Nominal AC Voltage	230V/400Vac 3P+N+PE
AC Grid Frequency Range	50/60 Hz ±5Hz
Max. Output Current	16A
Max. Input Current	25A
Power Factor (cosΦ)	0.8 leading - 0.8 lagging
THDi	< 3%

Battery Input	
Battery type	LFP (LiFePO4)
Nominal Battery Voltage	51.2V
Max. Charging Voltage Range	44-58V
Max. Charging Current	160A
Max. Discharging Current	200A
Battery Capacity	200-800Ah
Maximum charge/discharge power	8.000/10.000W

AC Output (Backup)	
Max. Output Apparent Power	10.000VA
Nominal AC Output Power	9200W
Max. Output Current	14.5A
Nominal Output Voltage	230/400Vac , 3P+N+PE
Nominal Output Frequency	50/60Hz
Output THDv (@Linear Load)	<3% (Linear Load)

Efficiency	
Max. PV Efficiency	98,1%

Protection	
DC Switch	Bipolar DC Switch (125A/Pole)
Anti-islanding Prote ction	YES
Output Over Current	YES
DC Reverse Polarity Protection	YES
String Fault Detection	YES
AC/DC Surge Protection	DC type II; AC type III
Insulation Detection	YES
AC Short Circuit Protection	YES

General Specifications	
Dimensions W x H x D	540 x 980 x 250mm
Weight	54kg
Operating Temperature Range	-25°C to +60°C, derating above 40 °C
Humidity	0°C ~ 95% (non condensing)
Noise (dB)	<25
Cooling Type	Natural convection
Max. Operation Altitude	2.000m
IP Class	IP65
Communication	RS485
Display	LCD

Certification & Standard
Grid regulation: EN50549-1, VDE-AR-N4105, CEI 0-21
Safety regulation: IEC/EN 62109-1&2, IEC62040-1,IEC62619
EMC: EN61000-6-1, EN61000-6-2, EN61000-6-3, EN61000-6-4,EN61000-3-2, EN61000-3-3, EN61000-3-11,EN61000-3-12

FOR OVER 30 YEARS WE HAVE BEEN OFFERING SOLUTIONS TO ENSURE SUSTAINABLE COMFORT AND THE WELL-BEING OF PEOPLE AND THE ENVIRONMENT

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