

#DCPOWEREDFUTURE

ENERGY INTELLIGENCE

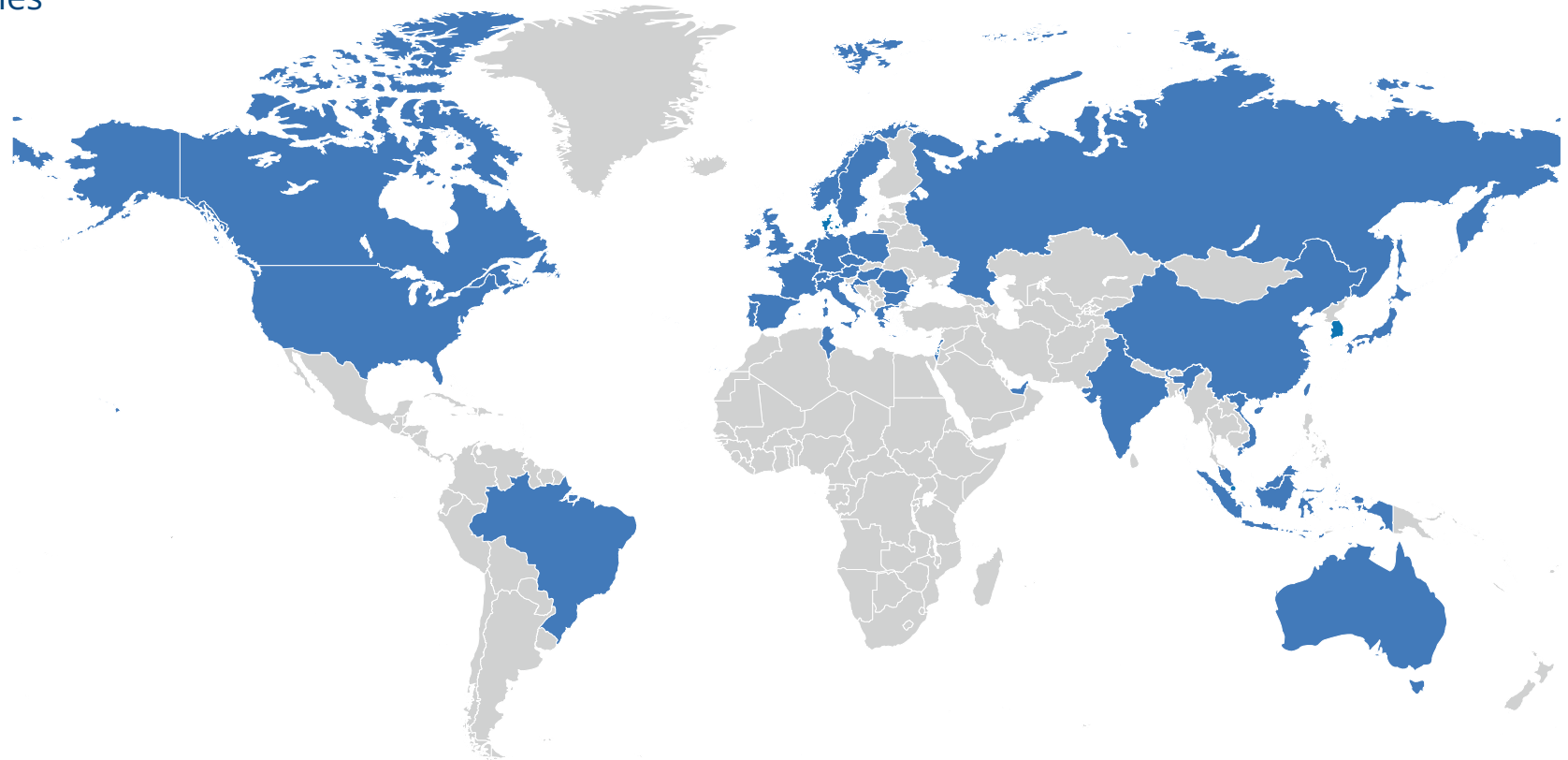
FOR LIFTS



epic power

Customers in 41 countries

***Making a
positive
impact***



Innovation, Technology & Solutions

► | **Designers and manufacturers**

With complete control of the power electronics value chain, we actively participate on every step of the process. We are designers of energy intelligent solutions for elevators, overseeing industrialization, managing the supply chain, handling certification, and delivering final product.

► | **Support, design and innovative solutions**

Using our experience, we can help you to choose the most energy-efficient solution for your lift projects.

► | **Installation support**

Our team of experts can and will give you the necessary support and service to make your installation 100% efficient from day one.

Who we are and what we do

It all began in 2012 when a top group of researchers from the Power Electronics Department of the University of Zaragoza embarked on an R&D project for an energy recovery system. The project evolved from pure research into a practical and viable product, and, over the years, has become a reference in the market.

Today, we continue to develop better and more advanced energy management solutions.

Our journey continues in advancing and improving the energy efficiency of elevators by developing innovative and cost effective solutions.

- Experts in design, manufacture and deliver of power electronics.
- Focused on bidirectional DC/DC conversion, our mission is to design and produce converters that are beyond the state-of-the-art.
- Solutions provider for intelligent energy management through energy storage, energy savings, peak power reduction and integration of renewable energy. Our vision is to contribute to a future without unnecessary AC/DC transformations. #dcpoweredfuture.
- Enhancing the energy intelligence of elevators through simple and smooth integration of storage and energy control hardware and software.

Transparency

We are straight forward

We like honest, open and constructive conversations. Our aspiration is to win your confidence and your trust in our solutions.

We are trustworthy. We prefer to lose a project than pretend unfeasible delivery dates. We share information with our clients, our suppliers and our workers.

We are genuine believers in the energy changes that we pursue.

Knowledge

We are researchers

Our solutions incorporate the latest technological advances, as we stay up to date with the latest research and scientific events.

Our knowledge solves efficiency problems to ensure your system operates at a smarter level.

Universities and research centers are colleagues, partners and customers. R+D is in our DNA.

Support

We listen to you

We are by your side from start to finish, becoming part of your team. We want your solution to perform optimally, so we work with you hand in hand.

Our support is always available to resolve any issues and optimizing energy management.

We simplify the installation and maintenance process. We listen, we learn, we improve.



ERS

Energy Recovery
System for lifts

Top advantages*

- More efficient lift.
- Easy installation (<1hour).
- Reduction of running costs.
- For new or existing lifts.
- Complies with all industry standards.
- No grid feedback (avoids THD problems).

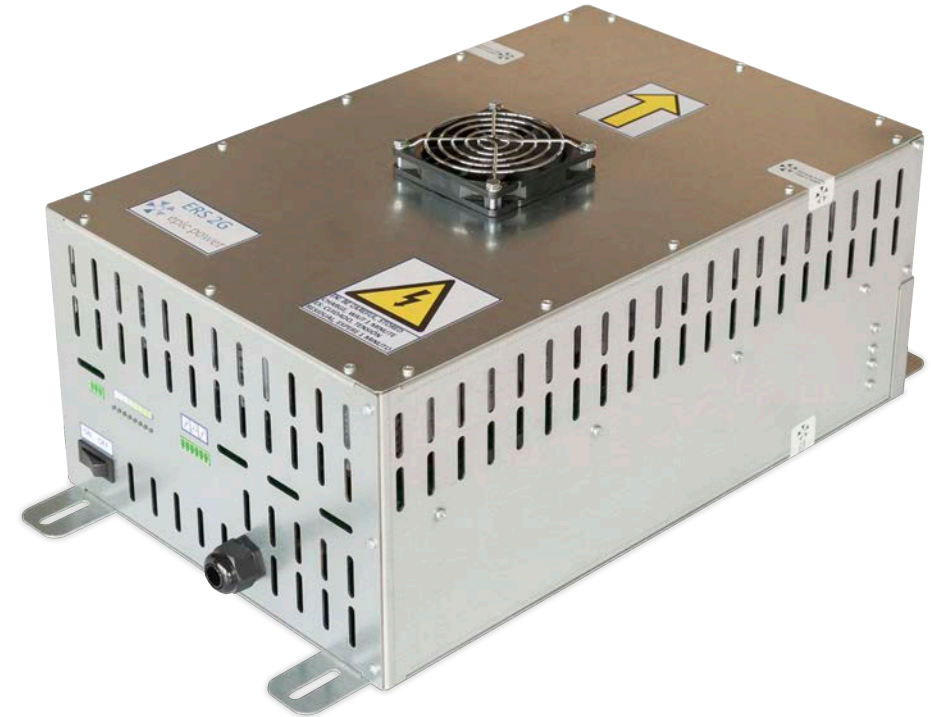
*2024 customer satisfaction survey

Recommended ERS in parallel given total travel distance and maximum load (for 1m/s)

1,0 m/s	800 kg	1000 kg	1600 kg	2000 kg	2500 kg	3000 kg
27 m	1	1	1	2	2	3
36 m	1	1	2	2	3	3
45 m	1	1	2	3	3	4
51 m	1	1	2	3	3	4
60 m	1	2	3	3	4	5

Recommended ERS in parallel given total travel distance and maximum load (for 1,6m/s)

1,6 m/s	800 kg	1000 kg	1600 kg	2000 kg	2500 kg	3000 kg
27 m	1	1	2	3	3	4
36 m	1	1	2	3	3	4
45 m	1	1	2	3	3	4
51 m	1	1	2	3	4	4
60 m	1	2	3	3	4	5



Stores in supercapacitors the energy wasted by the elevator when motor brakes to return it in the next consumption trip. The ERS saves braking resistor energy without any harmonic distortion, without additional standby energy usage, and with a simple two-wire connection.

The system is fully compatible with new and existing drives from all manufacturers. No energy is returned to the grid which avoids

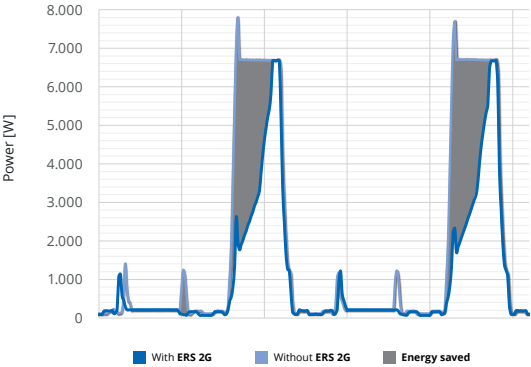
noise or harmonic distortion issues. Stand-by consumption is less than 3 watts.

The ERS 2G enhanced elevator's consumption savings are shown by the blue highlighted areas in the graph on the right (real measurements).

Supercapacitors are accumulators that require no maintenance or replacement.

Better than
REGENERATIVE

Real time power profile P(t) with and without ERS



Case Study 1

Maximum Load [kg]

→ 1600

Total travel distance [m]

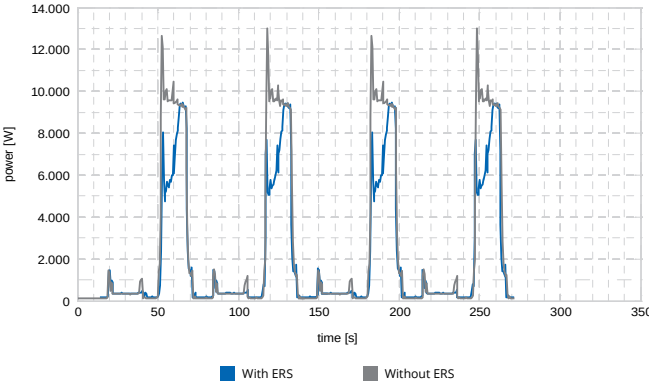
→ 20

Nominal speed [m/s]

→ 1

VVVF drive

→ VACON



Case Study 2

Maximum Load [kg]

→ 1000

Total travel distance [m]

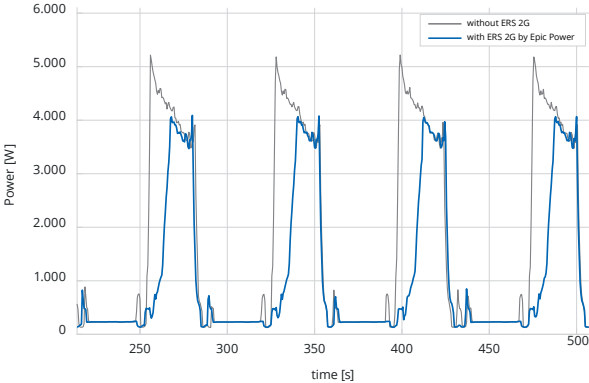
→ 35

Nominal speed [m/s]

→ 1,6

VVVF drive

→ ARKEL



Case Study 3

Maximum Load [kg]

→ 675

Total travel distance [m]

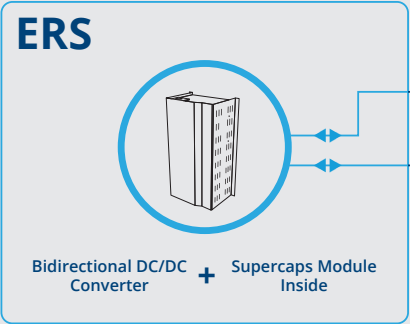
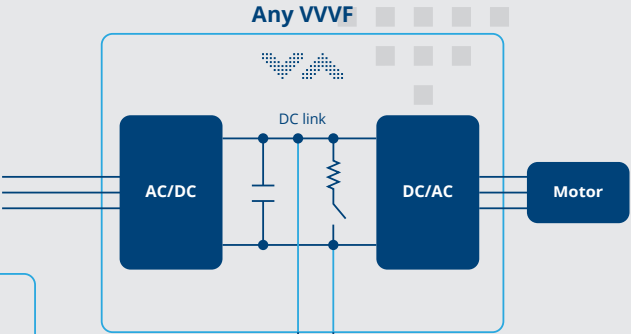
→ 21

Nominal speed [m/s]

→ 1,0

VVVF drive

→ KONE



Documentation	
Electrical connections (recommended)	
VVVF drive connections	
Dimensioning of the system	
Installation Manual	

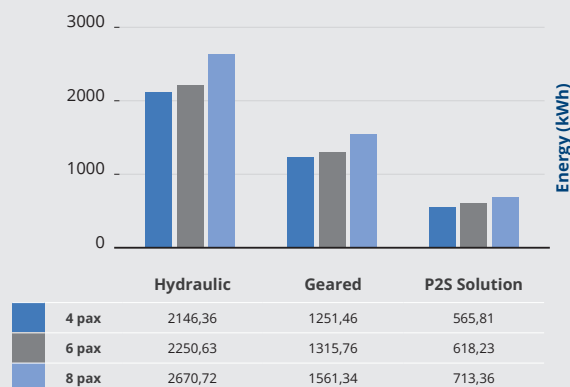
	ERS 2G x 1	ERS 2G x 2	ERS 2G x n
Motor power	Up to 15kW	Up to 30kW	Up to 15kW x n
Stored energy	60.000Ws	120.000Ws	60.000Ws x n
Nominal power	6.300W	12.600W	6.300W x n
Efficiency	Up to 98%		
Standby	<2W		
Dimensions (Height x Width x Depth) (mm)	497x265x190		
Weight (kg)	13		
IP rating	IP2X		

P2S

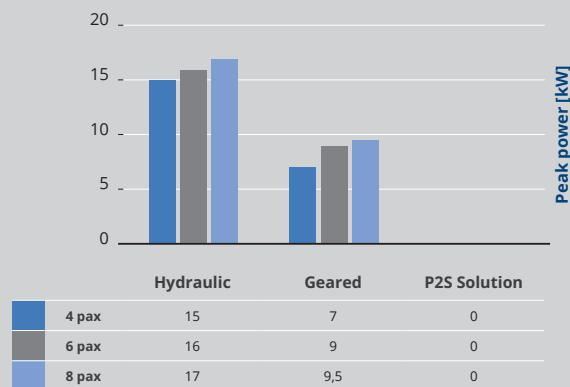
Single-phase power supply system

Plug & SINGLE PHASE

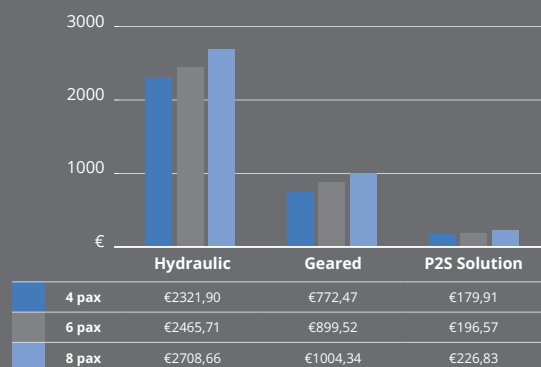
Energy consumption (per year)



Peak power consumption (per year)



Energy + Peak power demand (electricity bill) (per year)



* Lift with 21 total travel distance. ** Energy cost (0,25€ per kWh)



Powers new and existing VVVF drive (three-phase) elevators using a simple single-phase grid connection, with a maximum peak power of 500W. Over 100 trips after black-out are possible. It reduces the peak power consumption minimum levels from

all standard elevator motor and drive systems.

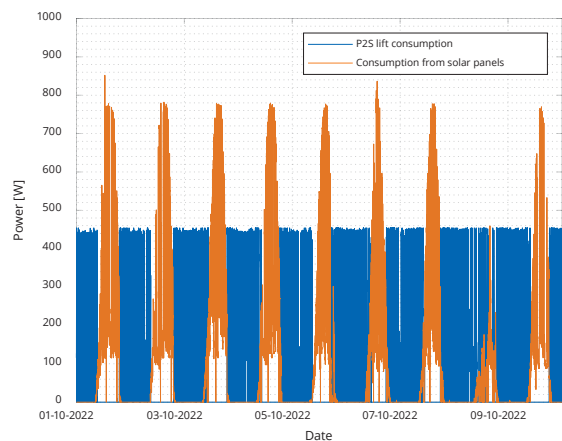
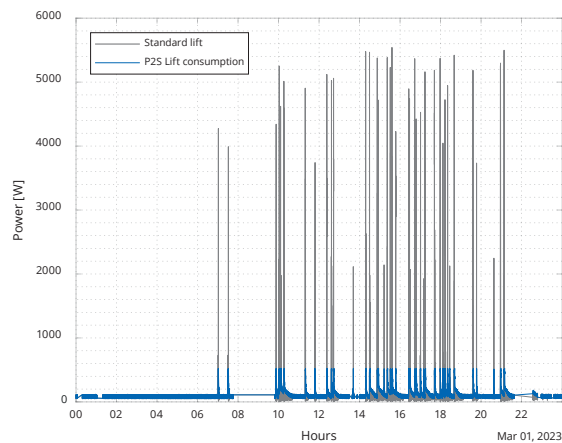
Adding two solar panels to the standard P2S creates an almost zero-energy elevator.



Case study

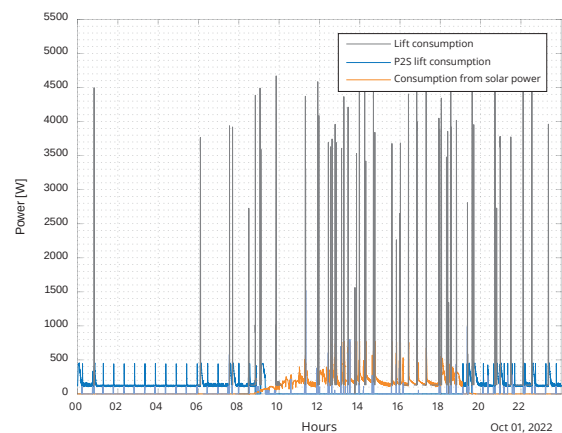
■ Consumption differences

Grey: standard lift consumption, normally coming from the grid.
Blue: grid consumption with P2S installed.



■ Nine-day consumption cycle using P2S solar+

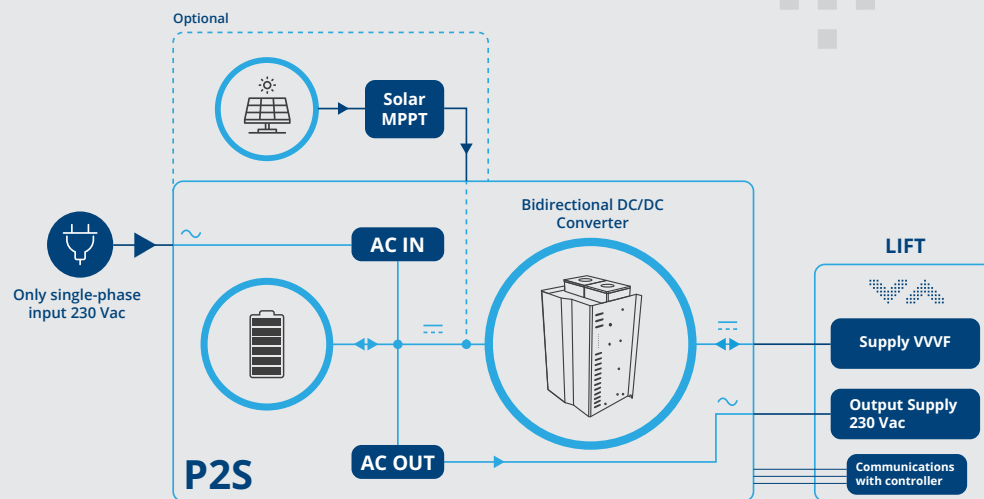
Blue: consumption from the grid.
Orange: consumption from the solar panels.



■ Grid and lift consumption*

Grey: standard motor consumption from the grid.
Blue: grid consumption with P2S solar+.
Orange: power is exclusively generated by solar panels.

*The motor power remains constant



Easy to install

- All single-phase connections
- 2A max consumption from the grid

Continues functioning during power outage

- No UPS needed

Regenerative

- Reuses regenerative energy

Low installation cost

- No three-phase needed

Savings on our electricity bills

Documentation

VVVF drive connections



Dimensioning of the system



Installation manual



E3

Epic Evacuation
Equipment

Power supplies for EVACUATION

In mains failure situations, a high-performance backup power supply energizes the elevator. A large number of trips are available, allowing complete building evacuation.

The system comprises of:

-  Auxiliary supply in case of mains failure, providing:
600 Vdc for the drive.
230 Vac for control, brakes, door operators, etc.
-  Low power input maintains the accumulators fully charged.
-  48 V batteries, standard for all models. Low cost and low maintenance. The system provides information to the controller about state-of-charge throughout the evacuation process.



* e3 Option 3 (600x600mm cabinet).
** Batteries not shown. See table.



* e3 Option 4 (2000x450mm cabinet).
** Batteries not shown. See table.

	e³3k5	e³5k5	e³7k	e³11k	e³16k5	e³22k
Maximum input power	450 W - 750 W	450 W - 750 W	900 W - 1500 W	900 W - 1500 W	1350 W - 2250 W	1800 W - 3000 W
Nominal output power (VVVF drive)	3500 W	5500 W	7000 W	11000 W	16500 W	22000 W
Maximum output power (VVVF drive)	4200 W	7000 W	8400 W	14000 W	18900 W	25200 W
Nominal output power (lift controller)	750 W - 1500 W (different options)					
Energy storage	From only 4 12V batteries		From only 8 12V batteries		According to requirements (no battery limitation)	
No. of operating hours and trips after main power failure	No limitations. Based on the needs					
Battery array S (LxWxH)	Op. 1: 410mm x 190mm x 556mm / Op. 2: 250mm x 189mm x 826mm					
Battery array M (LxWxH)	409mm x 194mm x 796mm					
Battery array L (LxWxH)	408mm x 268mm x 744mm					

* Higher power solutions available upon request.



The solution uses cost-effective, small-size 48 V batteries designed specifically for emergency applications. It provides a reliable and easily maintainable backup system to ensure evacuation in any situation. Compatible with any new or existing elevator. In emergencies, the system provides full auxiliary power supply to the switchgear and drive, ensuring a safe and controlled evacuation. It informs the controller of the state of charge of the batteries throughout the process.

Case Studies

Case Study 1

Hospital



Case Study 2

High-rise building

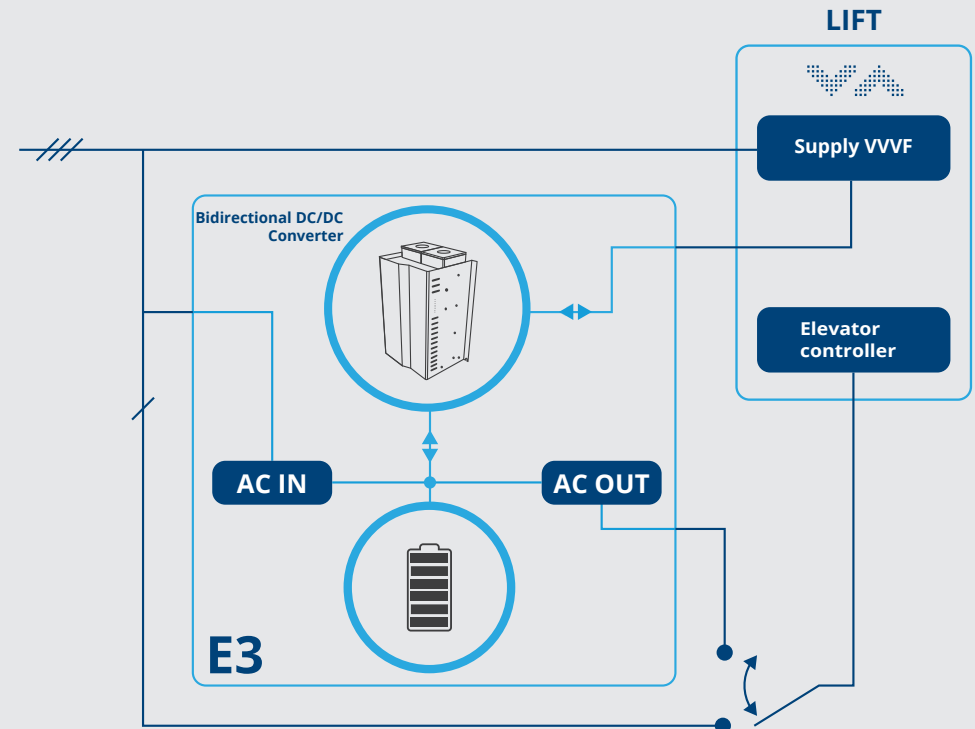


Case Study 3

Nursing home



- Simple installation, even for existing elevators with no additional cabling to floors.
- Fully scalable.
- Avoids need for diesel generator.
- Meets EN81-72, EN81-76 Firefighting, BS9999 and B9991 requirements.
- 48 V battery as standard. Easy to replace and cost effective.



Documentation

VVVF drive connections

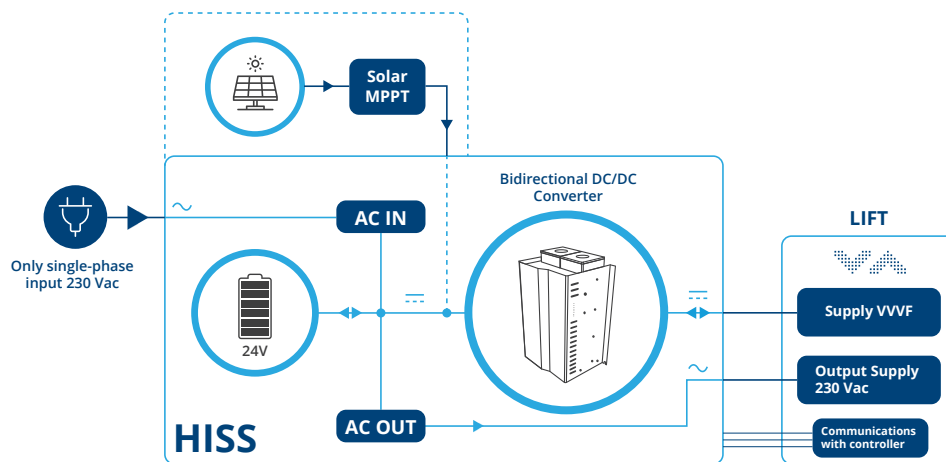


Installation manual



HISS

Homelift Intelligent
Supply System



HISS is an intelligent supply system for electric HOMELIFTS, feeding the elevator from a single-phase mains socket at 200W max power consumption. The included accumulators allow continuous operation after a blackout or in the case of mains failure.

The option of adding a solar panel to the system makes net ZERO energy consumption during daylight.

- Intelligent supply system.
- Connection to a 230 Vac socket 200W peak power.
- Recovering and storing the homelift's generated energy.
- Large number of trips in case of mains failure.
- Avoids occupant getting stuck in homelift.
- Very simple solar panel connectivity.
- Quick and efficient installation even for existing homelifts.

	HISS 2kW	HISS 3kW	HISS 4kW
Maximum input power	200 W	200 W	200 W
Input voltage	230 Vac - (90 ~ 305 Vac - 47 ~ 63Hz)		
Nominal output power (to VVVF drive)	2000 W	3000 W	4000 W
Maximum output power (to VVVF drive)	2200 W	3300 W	4400 W
Output voltage (to VVVF drive)	300 Vdc - Compatible with 230 Vac single-phase drives. Soft Start - Drive can be started as many times as required without compromising life cycle		
Maximum output power @ 230 Vac	400 W or 700 W (different options available)		
Energy storage	24 Vdc From 1kWh up to requirements		
Allied with the sun	One or two 72-cell solar panels in parallel (optional)		



Documentation

VVVF drive connections



INTELLIGENT
homelifts



Lift



Cranes



Intralogistics



Renewables



Redox / batteries



H2

Electrolyzer / Fuel Cells



Marine



Recognitions and Awards

ISO 9001 & 14001

Bureau Veritas is our auditor for these two standards. Furthermore, we hold ISO 56001 certification that covers R&D processes.

UL compliance

Intertek is our quarterly auditor for ETL assesment to ensure compliance with UL standards.

2023 Factories of the Future Award winners

First prize in the Murrelektronik award for Best Industrial Equipment or System for the Factory of the Future.

Innovative SME

The Ministerio de Ciencia e Innovación (Spanish Ministry of Science and Innovation) has awarded us with the Innovative SME recognition until 2025.

*Edison
would love it*



■ epicpowerlifts.com



epic power

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