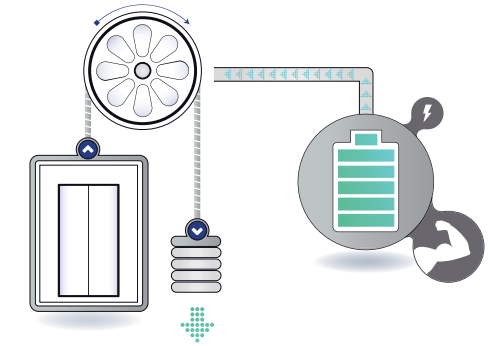
ERS 2G

plug & save

Stores the energy wasted by the elevator when motor brakes to return it in the next consumption trip. Energy savings up to 70% with no harmonic distortion and no added stand-by consumption with a simple two-wire connection to any drive.

ENERGY RECOVERY SYSTEM FOR LIFTS



ADVANTAGES

- **More efficient lift**
- **Consumption reduction**
- **Meets market demands**
- **Easy installation (<1hour)**
- **For new or existing lifts**
- **Without feeding back into the grid (No THD problems)**
- **Supercapacitors require no maintenance or replacement**

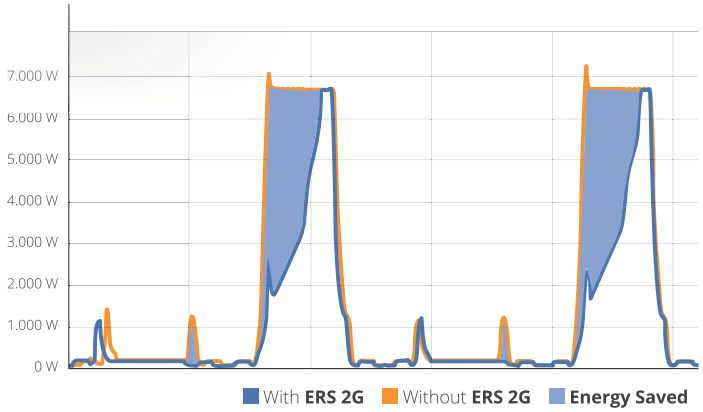
What is it?

- **Bidirectional high-efficiency DC/DC converter** integrating energy storage module of **ultracapacitors**.
- Very simple connection of ERS 2G to any VVVF drive is enough to transform the elevator to a **regenerative** one with storage.
- Only the connection to DC link of the drive is enough for the system to **automatically store** the energy in the supercapacitors when generated and return it when there is a consumption.
- **Supercapacitor** modules offer better power density and cycling features than batteries. Therefore, they are the best possible solution **for fast charging and discharging applications** such as in elevators.
- **Ultracapacitors require no maintenance**.
- **Simple** integration both in **new or existing** elevators with no need for replacements.

One single system achieves **energy savings up to 70%.**

Measurable and accessible energy savings.

Data obtained in a real elevator before and after installing ERS 2G.



ERS 2G

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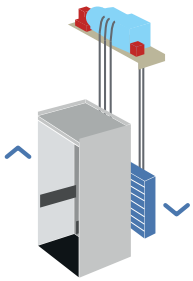
How is energy generated?

In electric traction elevators that include VVVF drives, also known as inverters, the generated energy is wasted in the form of heat in a braking resistor.

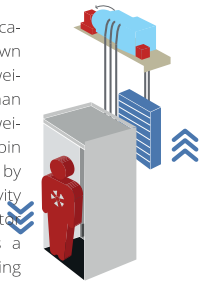
ERS 2G is capable of storing this energy to return it to the same elevator thus reducing the consumption in the next trip or, if there is no immediate trip, supplying the standby energy of the drive until the energy stored is depleted.

The new ERS 2G it revolutionizes how an elevator consumes energy because the elevator actually **demands less energy from mains**. This is not the case with regenerative drives, with which the elevator consumes the same and then returns to the grid. Saved energy is **measurable** and can be communicated via CAN bus under request.

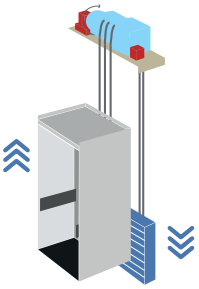
In a typical elevator, the cabin is counterweighted. When the counterweight goes down, the cabin goes up and vice versa.



When the cabin goes down loaded, it weights more than the counterweight so the cabin goes down by effect of gravity and the elevator motor acts as a brake, generating energy



The same thing happens when the cabin goes up unloaded; in that case the counterweight is heavier, gravity moves it down and the motor generates energy again in the same way a dynamo does.



Technical features

Available solutions for all types of loads and travel distances

	ERS 2G	ERS 2G x n (paralelizable)
Optimum for lifts	Up to 15 kW	Up to 15 kW x n
Stored energy	60000 Ws	60000 Ws x n
Nominal power	6300 W	6300 W x n
Efficiency	Up to 98%	
Standby	< 2 W	

Recommended ERS in parallel depending on 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 depending on 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

Recommended ERS in parallel depending on total travel distance and maximum load (for 2m/s)

2 m/s	800 kg	1000 kg	1600 kg	2000 kg	2500 kg	3000 kg
36 m	1	1	3	4	5	6
45 m	1	2	3	4	5	6
54 m	1	2	3	4	5	6
63 m	1	2	3	4	5	6
72 m	1	2	3	4	5	6

Recommended ERS in parallel depending on total travel distance and maximum load (for 3m/s)

3m/s	800 kg	1000 kg	1600 kg	2000 kg	2500 kg	3000 kg
36 m	2	2	3	4	6	7
45 m	2	2	3	4	6	7
54 m	2	2	3	4	6	7
63 m	2	2	3	4	6	7
72 m	2	2	3	4	6	7

SCAN ME

Stingl SYSTEMS

YANTRAA tech

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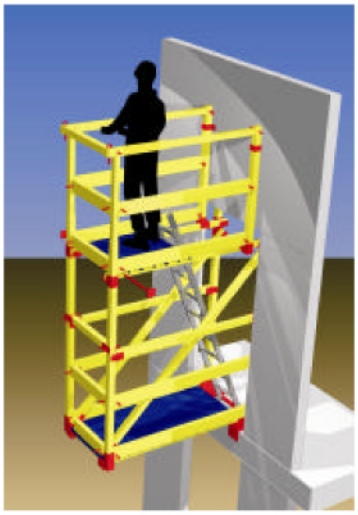
Stingl – *mobil PANO*



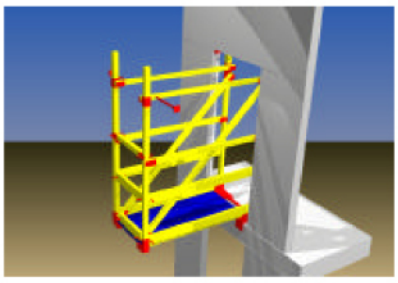
Telescopic work scaffolding made of glass reinforced polyester (GRP), which can be used in various shafts.
Stingl - *mobil PANO* can be installed at any shaft door opening independent of the number of landings. The areas of application range from panoramic lifts to all those lifts where the shaft walls cannot be used as fixing ground for platforms.
Stingl - *mobil PANO* is the perfect tool for installation of **machine roomless lifts** with machinery located in the shaft head as well as for **service and repair work** on existing units.

Work scaffolding made of GRP

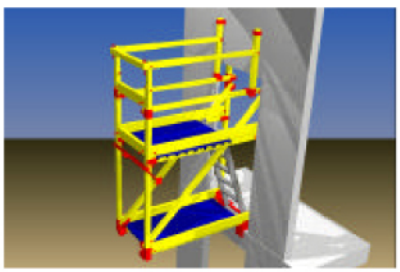
Unlike the conventional, static working platforms, Stingl - *mobil PANO* is designed for multiple use in shafts with **depths ranging from 1000mm to 2000mm** (in 250mm steps). The scaffolding is designed for a working load of max. 3 kN/m². It does not require a substructure. The following scaffolding widths (working area) are available: 700 mm and 1000 mm. Due to the favourable properties of GRP as well as an intelligent lightweight construction, installation can be performed by **one** trained person (e.g. elevator fitters).

Variants

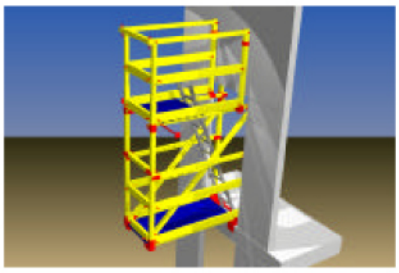
Variant 1
Scaffolding made of GRP with **one** working level incl. lateral fall protection devices according to DIN 4420. The perfect configuration for modernisation and maintenance work like drive change, rope change, rescue or loosening brakes.



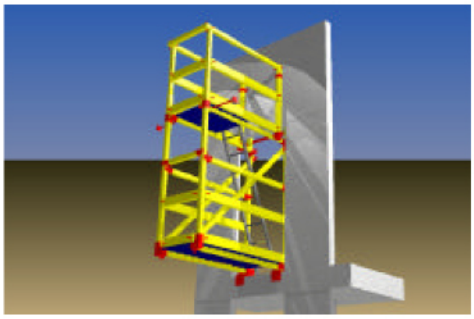
Variant 2
Scaffolding made of GRP with **one** elevated working level incl. lateral fall protection devices according to DIN 4420. The working level is reached by means of an access ladder. This variant allows safe working for example in 2,70m to 3,20m high shaft heads of machine roomless lifts.



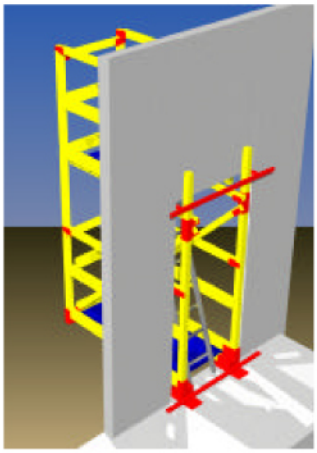
Variant 3
Scaffolding made of GRP with **two** working levels incl. lateral fall protection devices according to DIN 4420. The upper scaffolding level can be accessed over a rung ladder. This variant allows safe working for example in 3,40m to 3,90m high shaft heads of machine roomless lifts.



Benefits



- A **GS-seal** (certificate no. 02121) awarded by the German employers' liability insurance association guarantees a safe and approved solution.
- The platform can be used in shafts **without rear wall** (e.g. panoramic lifts, open through lifts).
- The requirement of **one-man-assembly** is met by the moderate weight of the scaffold elements (the heaviest subassembly weighs approx. 31 kg).
- **No dependence on third parties** for scaffolding erection and thus administrative savings.
- **Considerable savings** compared with conventional wooden scaffolds as the mobile scaffold can be used again.
- Since no substructures are required, the mobile scaffold can be installed **quickly**; it is also **flexible in use** and thus **highly economical**.
- The **modular design** allows the assembly of a single or bi-level mobile scaffolding.
- Defined material properties of GRP, such as high loading capacity, high impact strength, long service life, **low weight**, high corrosion resistance as well as electrical insulation are the advantages of GRP over conventional materials such as wood, steel or aluminium.
- **Low installation time** of approx. 50 minutes by trained personnel.



Requirements for the installation of Stingl *mobil PANO*

- Shaft depths of min. 1000mm.
- Working load per unit area of max. 300 kg/m² (scaffolding class 4 in accordance with DIN 4420-1).
- The vertical wall with shaft door opening must be made of reinforced concrete (German grade = B25 or higher) with a minimum thickness of 100mm or similar strong material.
- The vertical scaffolding pillars must surpass the opening by minimum 100mm.
- The horizontal traverses must surpass the opening on the left and right side by minimum 100mm.
- Before walking on the upper platform level (variants 2 and 3) at least two spacers must be installed according to the mounting instructions. The spacers can be stretched against surrounding shaft walls, guide rails or steel supports. If the spacers are stretched between the scaffolding and lift guide rails the appropriate adapters have to be used (available upon request).
- It must be ensured that the spacers are positioned in a 90° angle towards the scaffolding. The distance between the exterior measures of the scaffolding and the shaft wall mustn't be greater than 1000mm.
- Following maximum shaft widths must be obeyed when using the scaffolding:
  Platform width 600mm: max. shaft width 2700mm
  Platform width 700mm: max. shaft width 2800mm
  Platform width 1000mm: max. shaft width 3100mm.
- Platform width 600mm requires an opening width of min. 700mm
  Platform width 700mm requires an opening width of min. 800mm
  Platform width 1000mm requires an opening width of min. 1100mm.
- During platform installation fitters must secure themselves with a fall arrester and full body harness, attached outside of the lift shaft to a suitable EN 795 compliant sling point.

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