ELUMINATE
Brighter Power Solutions

Eluminate MV STATCOM

Changing generation. Support for the grid.



Fluctuating voltage and power factor can affect operation and make it harder to meet grid requirements. Eluminate MV STATCOM dynamically controls voltage and power factor in medium voltage networks, helping renewable energy plants and industrial sites respond to changes in generation and load.

Supports voltage control

Controls power factor

Configured for your site

As generation and load change, voltage can fluctuate.

Solar and wind generation, BESS and large motors affect network conditions. This can influence operation and compliance with grid requirements. Power factor is the ratio of active power, which does useful work, to total apparent power.

Variable generation

As cloud cover and wind conditions change throughout the day, control needs to adapt.

Large load changes

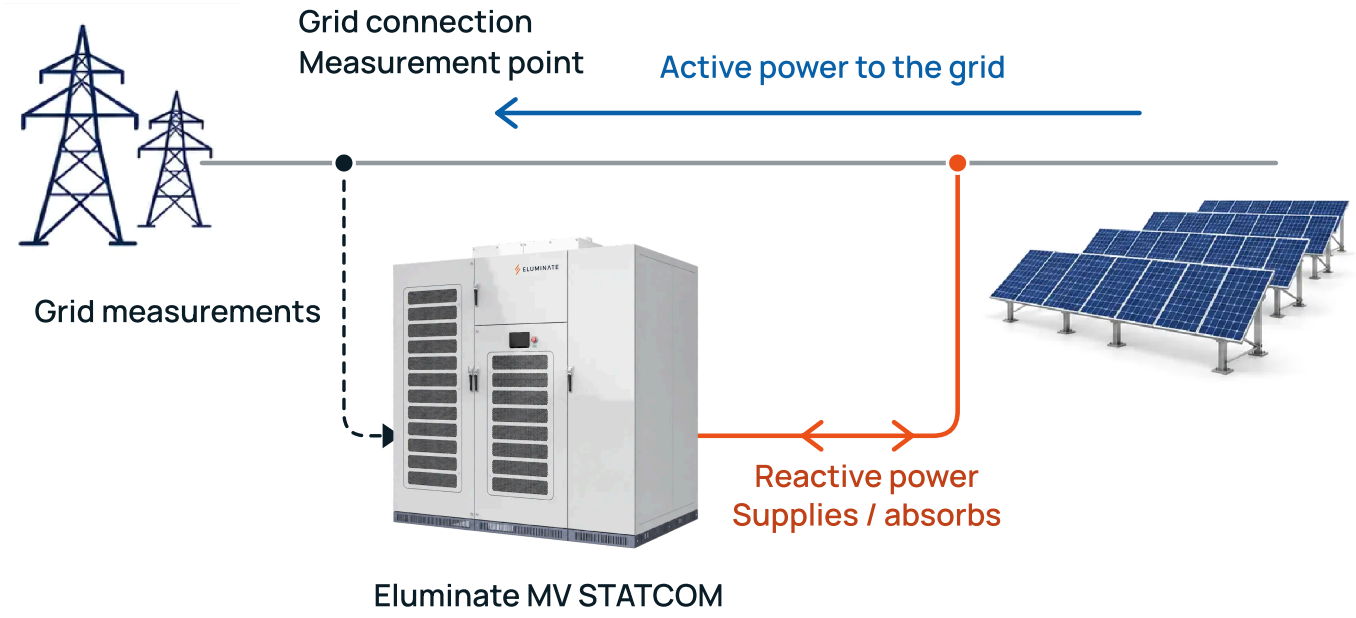
Battery storage switches between charging and discharging. Motors, cranes and process equipment can also change the load quickly. Control needs to follow the changing demand.

Grid connection requirements

The solution is sized to the installation's needs and the grid requirements for voltage, reactive power and power factor at the grid connection.

As solar generation changes, STATCOM keeps up.

STATCOM uses measurements at the grid connection to adjust reactive power and support voltage and power factor control.



Illustrative example, not measured site data. The solar farm supplies active power; STATCOM controls reactive power. The solution is sized for the installation's needs.

1 **Measures at the grid connection.**

2 **Adjusts reactive power.**

3 **Supports voltage and power factor.**

Continuous adjustment. Measurements at the grid connection point guide voltage, power factor or reactive power control. Measurement points, capacity and control targets are defined for the project.

Control for your operating goals.

Choose the control mode that matches your electrical system and operating goals.

Support voltage control

Adjust reactive power towards a voltage target at the selected measurement point.

Control power factor

Adjust compensation towards the required power factor as the load changes.

Follow reactive power demand

Continuously supply or absorb reactive power instead of working at one fixed compensation level.

Configure the solution

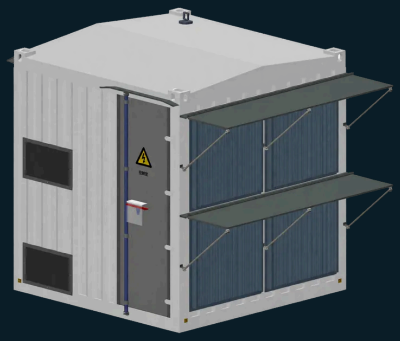
Select the configuration and capacity for your network conditions, space and environment.

Indoors or outdoors. Configured for your site.

Select the configuration for your network conditions, available space and cooling needs.

Illustration of a possible configuration





INDOOR CABINET

For installation in an electrical room with space for ventilation, connections and service access.

OUTDOOR CONTAINER

For sites without a dedicated indoor electrical room. Foundations and connections are defined for the installation.

Cooling method (air or water) and compensation capacity are selected for your project.

For sites where demand changes.

From variable energy generation to large industrial load changes.

Solar and wind

- ✓ Support voltage control and adjust reactive power as generation changes.

Industry and process plants

- ✓ Follow changing reactive power demand from large motors, pumps and production equipment.

Ports

- ✓ Dynamic compensation for cranes and heavy equipment with frequent load changes.

BESS

- ✓ Support voltage and power factor at the grid connection as battery storage switches between charging and discharging.

Optional functions can include harmonic compensation to reduce current distortion caused by harmonics, and compensation for uneven loads between phases. Their scope and capacity are assessed alongside reactive power control.

Start with the challenge. Find the right solution.

Tell Eluminate what you want to improve in your electrical system. We will work through the technical details together.

01

Describe the challenge

Is it voltage, power factor or changing loads that need to be addressed?

02

Share what you have

Existing measurements, grid requirements or a diagram give the discussion a concrete starting point.

03

Define the solution

Control targets, capacity and location are assessed together for your project.

TECHNICAL INPUTS FOR THE NEXT DISCUSSION

Single-line diagram, voltage level and transformers. · Control targets and grid connection requirements. · Measurements or an expected load profile. · Available space, location, cooling and environmental conditions. · Measurement points, auxiliary supply and communications. · Network model if harmonic compensation is required.

STATCOM controls reactive power and operates with the grid. Backup during a grid outage and operation without the grid are not included.

ELUMINATE MV STATCOM

Let's talk about your electrical system.

Together, we assess whether MV STATCOM fits your network conditions and operating goals. **Book a meeting or contact our sales team.**

CONTACT

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Book a meeting | Request a callback | sales@eluminate.dk

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