

DELIVERING LVAC STABILITY AT THE LEMVIG SUBSTATION: SUPPORTING DENMARK'S 1.1GW THOR OFFSHORE WIND FARM

RWE
SIEMENS

Thor
POWER SUPPLY PROJECT

Project: Lemvig Substation
Country: Denmark
Year: 2025
Product: AVR3PS1000-11 (690KVA, 1000A/PHASE)

AVR3PS1000-11

Sollatek's AVR ensures a reliable and accurate LVAC supply at RWE's Substation in Denmark. The system supports the critical onshore infrastructure distributing the power generated by the 1.1GW Thor offshore wind farm.

Delivering Stable LVAC Power for Critical Infrastructure

The AVR3PS1000 (690kVA) systems are engineered to maintain precise voltage regulation under continuous input variations of ±20%.

With an output accuracy of ±3%, the AVR ensures that fluctuations in incoming supply do not compromise sensitive substation equipment.

Designed for demanding environments, the solid-state AVR provides:

- Continuous voltage regulation at max boost, max load and max ambient temperature
- Fast operational response to voltage disturbances
- Immunity to dust and environmental conditions
- Overload capability up to 150% for 4 minutes
- High operational efficiency exceeding 97% at full load

Large-scale renewable energy projects demand absolute reliability, particularly within substations, where sensitive control and auxiliary systems rely on a stable voltage supply.

To ensure complete stability across the onshore substation at Lemvig, Denmark, Sollatek delivered two high-capacity, three-phase Automatic Voltage Regulators (AVR). By maintaining steady output under difficult conditions, the systems enhance operational resilience and protect the infrastructure supporting one of Europe's most significant offshore wind developments.

Installed
72 Turbines

Generating
1.1 Gigawatt

Powering
1 Million Homes

Note that some projects are in planning, actual figures may vary on completion.

CASE STUDY | THOR

By maintaining a stable LVAC supply, the AVR protects auxiliary systems, improves operational reliability reducing the risk of equipment stress or downtime. The installed AVR plays a supporting but critical role in enabling reliable transmission infrastructure of offshore wind generation.

Guaranteed Long-Term Performance

The enclosure is constructed from galvanised steel with a high anti-corrosion paint finish (ensuring durability within Denmark's coastal climate).

All cabling is LSZH compliant (Low Smoke Zero Halogen), supporting

enhanced safety standards within enclosed substation environments.

With a maximum output power of 690kVA and maximum current rating of 1000A per phase, the AVR provides robust capacity for the demands of a large-scale renewable energy substation.

Supporting Denmark's Energy Transition

Thor wind farm will comprise 72 wind turbines, with offshore installation scheduled to begin in 2026. Once operational, Thor will play a vital role in Denmark's renewable energy strategy and its transition toward

net-zero emissions.

Located approximately 22 kilometres off the west coast of Jutland in the Danish North Sea, Thor is Denmark's largest offshore wind development a landmark project in the nation's renewable energy transition.

As offshore wind capacity scales across Europe, dependable low voltage regulation remains essential to protecting infrastructure and maintaining consistent operation. Sollatek continues to deliver high-capacity voltage regulation solutions for major grid and renewable energy projects across Europe.



Siemens Power Transformer, Lemvig.



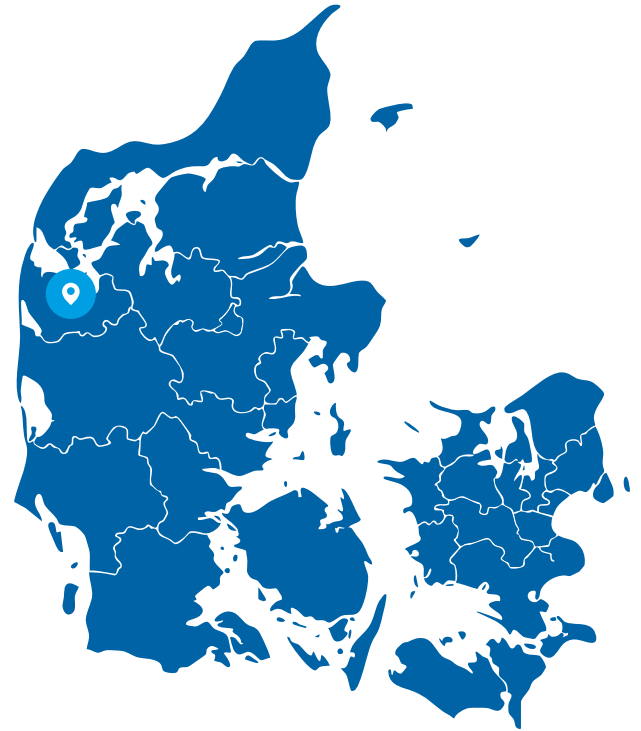
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Model	AVR3PS1000
Max Current	1000A per phase
Input Voltage	230/400V +/- 20% (continuous)
Output Voltage	230/400V +/- 3%
Max Output Power	690kVA
Number of Systems	2

INCLUDED FEATURES:

- Speed of operation.
- Immunity to dust and other environmental conditions.
- Wide input voltage range +/- 20%.
- High output accuracy +/- 3%.
- Momentary overload capability with up to 150% for 4 minutes.
- Low loss and minimal heat dissipation due to an efficiency of over 97% at full load.
- All cables made from LSZH compliant materials (low smoke zero halogen).
- Enclosure made of galvanised steel construction with high anti-corrosion paint finish (category C3).



Onshore substation built in the municipality of Lemvig, Denmark.



AVR3PE1200 containerised solutions



Sollatek has cemented its reputation as a dependable partner in the power supply infrastructure by providing Automatic Voltage Regulators (AVR) to projects across the UK and Europe.



Please note that the locations are approximations intended for illustrative purposes.



Sollatek's expertise extends worldwide through local networks

Established for over 40 years in the United Kingdom, Sollatek is a manufacturer of innovative products in power control, energy saving, temperature control and solar energy. Operating from 12 countries and a global distribution network in 60 more. Sollatek has grown to become a household name, particularly

in harsh and demanding environments where reliability and affordability are essential to everyday life. The Sollatek voltage protection product range now includes full lines of voltage switches, stabilisers, conditioners and uninterruptible power supplies (UPS).

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