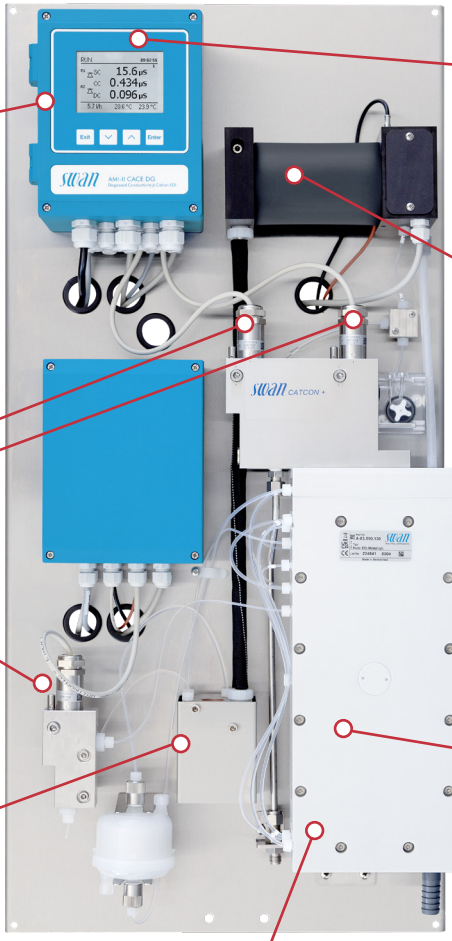
AMI-II CACE Degasser

The complete system for online monitoring of specific conductivity (SC), conductivity after cation exchange (CACE) with continuous EDI resin regeneration, and degassed conductivity after sample reboiling (DCACE) according to ASTM D4519-16.

Compact dimensions with minimal electrical power consumption and sample flow.



Integrated self-diagnostic capabilities for measurements validation and analyzer reliable operation

Integrated calculation of pH and alkalizing agent concentration

Continuous monitoring of SC, CACE and DCACE conductivities. Very short response time and high measurement accuracy

Sample heater with automatic control:
continuous heating point determination based on atmospheric pressure
effective and stable CO_2 removal from sample

Efficient sample cooling with incoming sample: all conductivity measurements at similar sample temperatures, no hot drain.

Electrodeionization (EDI) module for:
cations removal from sample
continuous resin regeneration
uninterrupted monitoring of CACE and DCACE

Resin regeneration instead of resin exhaustion:
reduced cost of operation
no resin exchange
no maintenance
no chemicals

SC, CACE and DCACE
0.055-1000 µS/cm
pH Value
7.5-11.5 (calculated)
Alkalization Reagent Concentration
0.01-10 ppm ammonia (calculated)

SWISS MADE

Water Steam Cycles

ANALYTICAL INSTRUMENTS

202404 Rev1

AMI-II CACE Degasser Monitor

The continuous cation resin regeneration, thermal degassing method, compact dimensions, and minimal electrical power consumption makes Swans AMI-II CACE Degasser a reliable, user-friendly and cost efficient instrument for your application.

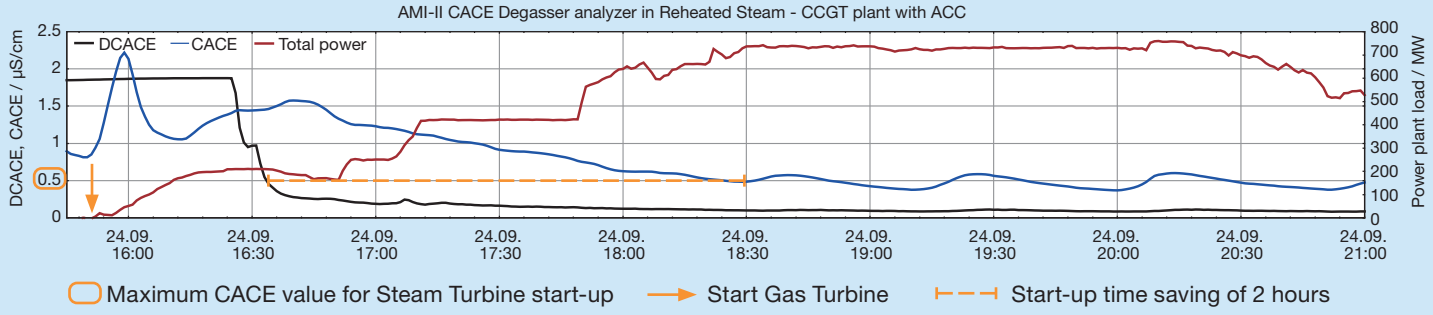
Continuous regeneration of the embedded cation resin
The EDI module removes cations from sample for CACE measurement and regenerate the resin, reducing resin exchange and eliminating the use of chemicals for regeneration.
It is featured with self-diagnostic for sample chamber lifetime surveillance, continuous deaeration and automatic EDI module shutdown if sample flow is not available.

Uninterrupted Measurements and data availability
Downtime due to regular resin exhaustion or flushing is avoided, resulting in continuous measurements to monitor the purity of the water-steam cycle samples.

Efficient, stable, and reproducible thermal degassing method
After the CACE measurement, the heater eliminates the CO_2 from the sample by thermal degassing. The heater's mechanical and control design guarantees reproducible, stable and efficient sample degassing over time. The sample heating set point is determined continuously, based on the water boiling temperature at actual air pressure. No overheating, to avoid anion concentration effect due to sample evaporation.
The degassed sample is cooled down in a heat exchanger, and then DCACE is measured at the temperature of the inlet sample.

Swan Quality
SWAN panel-based design with clearly arranged components and menu guided operation via the transmitter simplifies operation, maintenance, and integration into monitoring systems.

Every instrument is developed, manufactured, assembled, tested, and certified under real conditions in Switzerland.



Range of Applications

Carbon dioxide (CO_2) is a tolerated impurity that enters the water-steam cycle during standstill periods, as air in-leakage or by decomposition of organic matter (impurities or dosed organic amines). The online measurement of DCACE allows detection of the presence of CO_2 contamination. The presence of dissolved CO_2 in a concentration of only 50 ppb will increase CACE measurement to values higher than 0.2 µS/cm.

Main Steam, Reheat Steam and Superheated Steam
DCACE measurement is an excellent tool to determine if elevated CACE measurement is due to the presence of CO_2 or corrosive anions, such as chloride.

Power plants with cycling or flexible operation
Given the substantial fuel cost, environmental issues, and economic impact, any shortening of the power plant start-up time is of high importance. DCACE measurement allows an earlier start-up of the steam turbine, as indicated if the elevated CACE value is due to the presence of CO_2 or corrosive anions.

Condenser air-in leakage
In plants that are vulnerable to high air ingress rates, CACE measurement will often be increased in the main condensate by the ingress of CO_2.

Water-Steam cycle with dosed organic amines
Some organic alkalizing amines decompose thermically to CO_2, increasing the CACE measurement.

Water-steam cycle with high pH chemical regime
High pH values in the sample will have, as a consequence, a faster cation resin exhaustion in conventional CACE and DCACE monitoring analyzers. The EDI module reduces significantly the cation resin exchange and maintenance activities.

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