

# Monitor AMI-II CACE Degasser

Data sheet no. DenA23582100

Complete monitoring system for the automatic, continuous measurement of specific conductivity, conductivity after cation exchange with continuous EDI resin regeneration, and degassed conductivity after sample reboiling according to ASTM D4519-16.

## Application examples

- Comprehensive monitoring of steam and condensate quality in power and industrial plants: specific conductivity & conductivity after cation exchange with simultaneous calculation of pH and alkalizing agent concentration; degassed conductivity to detect anionic impurities separately from dissolved CO<sub>2</sub>.

## Measuring range

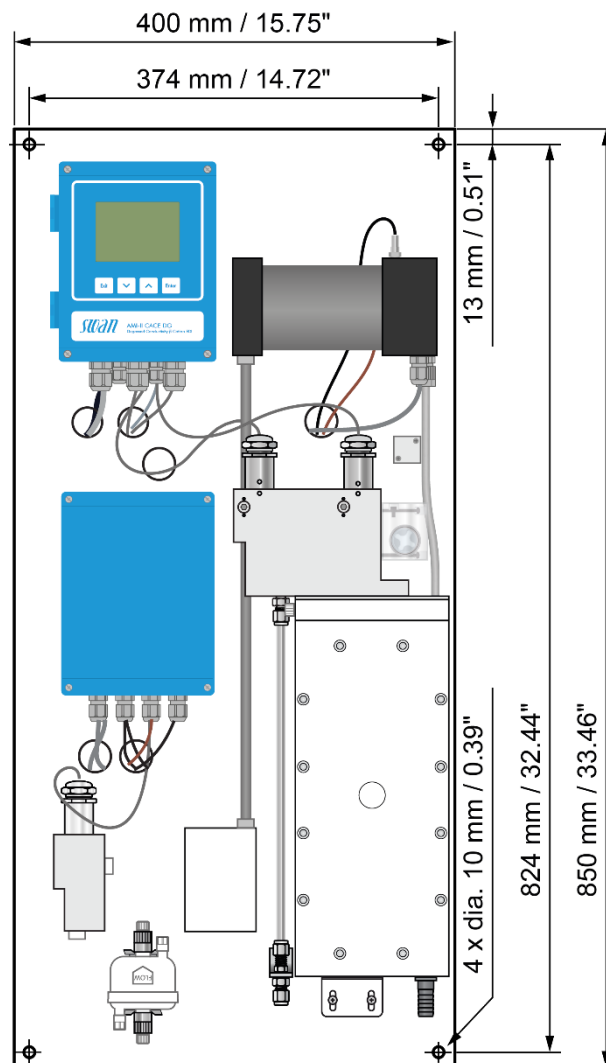
- Conductivity: 0.055 to 1000 µS/cm.  
Temperature compensation to 25 °C with various models: strong acids, strong bases, ammonia, ethanolamine, morpholine.
- pH: 7.5 to 11.5 (calculated; directive VGB-S-010-T-00).
- Concentration: 0.01 to 10 ppm ammonia (calculated).

## Instrument features

- Continuous operation with automatic regeneration of the cation exchange resin by electrodeionization (EDI).
- Effective and stable CO<sub>2</sub> removal from small sample volumes by horizontal degassing system.
- Efficient sample cooling system: degassed conductivity measurement at the temperature of the incoming sample. No hot water goes to drain.
- EDI module with exchangeable sample chamber module.
- Minimal sample flow and electrical power consumption compared to conventional sample reboilers.
- Instrument protection with optional sample filtration.

## On-board quality assurance

- Integrated sample flowmeter for measurement validation.
- Continuous determination of heater setpoint based on atmospheric pressure.
- Tracking of operational parameters of the EDI module to monitor the service life of the sample chamber.



Order numbers:	AMI-II CACE Degasser AC	A-23.582.100
Option 1	RS485 interface with Modbus RTU or Profibus protocol .....	A-81.470.0x0
	HART interface .....	A-81.470.030
	Two additional 0/4 – 20 mA signal outputs .....	A-81.470.040
Option 2	Inlet filter (1 µm) .....	A-82.811.040
Accessories	Backpressure regulator, 1 channel with manometer .....	A-82.581.001
	Verification adapter .....	A-83.910.130



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ANALYTICAL INSTRUMENTS

## Conductivity Measurement

### Conductivity sensor type

2-electrode conductivity sensor UP-Con1000-SL with integrated temperature probe.

Measuring range	Resolution
0.055 to 0.999 $\mu\text{S/cm}$	0.001 $\mu\text{S/cm}$
1.00 to 9.99 $\mu\text{S/cm}$	0.01 $\mu\text{S/cm}$
10.0 to 99.9 $\mu\text{S/cm}$	0.1 $\mu\text{S/cm}$
100 to 999 $\mu\text{S/cm}$	1 $\mu\text{S/cm}$

Automatic range switching.

**Accuracy** (at 25 °C)  $\pm 1\%$  of measured value or  $\pm 1$  digit (whichever is greater).

**Response time** ( $t_{90}$ , specific cond.) < 5 sec.

### Temperature compensations

- Strong acids
- Strong bases
- Ammonia
- Ethanolamine
- Morpholine

Influence of temperature see PPChem 2012 14(7) [Wagner].

### pH and alkalinizing reagent calculation

Ranges (25 °C)

pH: 7.5 to 11.5  
e.g. ammonia: 0.01 to 10 ppm

Conditions for pH calculation: Only 1 alkalinizing reagent, contamination is mostly NaCl, phosphates < 0.5 mg/L, if pH value < 8 the concentration of contaminant must be small compared to alkalinizing reagent.

### Auxiliary sensors

- Temperature measurement with Pt1000 type sensors (DIN class A).  
Measuring range: -30 to +250 °C  
Accuracy (0-50 °C)  $\pm 0.25$  °C  
Resolution: 0.1 °C
- Atmospheric pressure measurement for automatic heater control.
- Sample flow measurement with digital SWAN sample flow sensor.

## Transmitter Specifications and Functionality

Electronics case:	Cast aluminum
Protection degree:	IP66 / NEMA 4X
Display:	backlit LCD, 74 x 53 mm
Electrical connectors:	screw clamps
Ambient temperature:	-10 to +50 °C
Humidity:	10 - 90% rel., non-condensing

### Operation

User menus in English, German, French, Spanish and Chinese.  
Separate, menu-specific password protection.

### Safety features

No data loss after power failure, all data is saved in non-volatile memory.  
Overvoltage protection of inputs and outputs.  
Galvanic separation of measuring inputs from signal outputs.

### Transmitter temperature monitoring

With programmable high/low alarm limits.

### Real-time clock with calendar

For action time stamp and preprogrammed actions.

### Alarm relay

Two potential-free contacts for summary alarm indication for programmable alarm values and instrument faults (one normally open and one normally closed contact).

Maximum load: 100 mA / 50 V

### Input

One input for potential-free contact.  
Programmable hold or remote off function.

### Relay outputs

Two potential-free contacts programmable as limit switches for measured values, controllers or timers with automatic hold function.

Rated load: 100 mA / 50 V

### Signal outputs

Two or four (with optional communication interface) programmable signal outputs for measured values (freely scalable, linear or bi-linear) or as controller outputs.

Current loop: 0/4 – 20 mA  
Maximum burden: 510  $\Omega$   
Type: current source

### SD card interface

Possibility to record measured values and diagnostic data to an SD card.  
SD card included.

### Communication interface options

- Two additional signal outputs, galvanically separated
- RS485 interface with Modbus RTU or Profibus DP protocol, galvanically separated
- HART interface

## Monitor Data

### Power supply

Voltage: 100 - 240 VAC ( $\pm 10\%$ )  
50/60 Hz ( $\pm 5\%$ )  
Power consumption: max. 180 VA

### Sample conditions

Flow rate: 5 to 6 L/h  
Temperature: up to 50 °C  
Inlet pressure (25 °C): 0.5 bar  
Outlet pressure: pressure free  
No sand, no oil

### EDI capacity:

$sc_{\max} = 40 \mu\text{S/cm}$  as  $\text{NH}_4\text{OH}$   
 $sc_{\max} = 350 \mu\text{S/cm}$  as  $\text{NaOH}$

The use of SWAN Back Pressure Regulator is highly recommended. Particle filtration recommended in case of high iron concentration. Use of film forming products may reduce lifetime of EDI module.

### Sample connections

Sample inlet: Swagelok 1/4" tube adapter  
Sample outlet: G 3/8" adapter for flexible tube  $\varnothing 20 \times 15$  mm

### Panel

Dimensions: 400 x 850 x 180 mm  
Material: stainless steel  
Total weight: 22 kg

06/2024 Subject to changes without notice



## Electrical Connection Scheme

