Transmitter AMI-II CACE

Data sheet no. DenA13542X00

Electronic transmitter and controller for the automatic, continuous measurement of specific conductivity and conductivity after cation exchange with SWAN CACE Modules.
Calculation of sample pH and alkalizing reagent concentration based on differential conductivity measurement.

Application examples

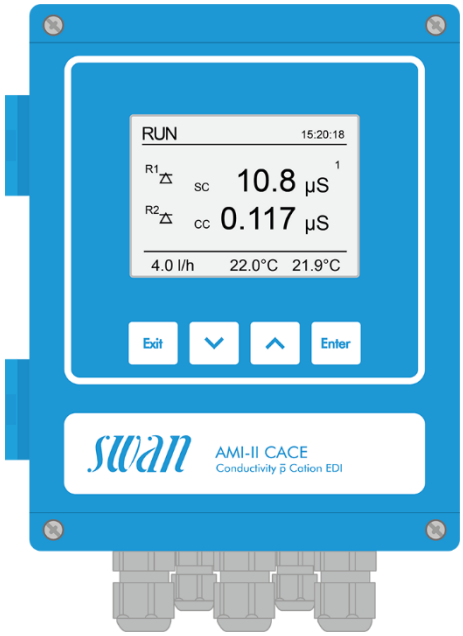
- Uninterrupted monitoring of the water-steam quality in power and industrial plants: no need for regular resin exchange and the associated rinsing times and no risk of resin exhaustion.

Sensors

- For use with SWAN CACE Modules.

Measuring range

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



Instrument features

- Measuring and control transmitter in a rugged aluminum enclosure (IP66).
- Large, backlit LC display and simple, menu-driven operation.
- Various connection options: two or optionally four analog signal outputs, two limit relays, one alarm relay and one relay input.
- Modbus, Profibus or HART as an option.

Order numbers:	Transmitter AMI-II CACE	A–13.542._00
Power supply	100 – 240 VAC, 50/60 Hz 10 – 36 VDC	1 2
Option	RS485 interface with Modbus RTU or Profibus protocol ..... HART interface ..... Two additional 0/4 – 20 mA signal outputs	A–81.470.0x0 A–81.470.030 A–81.470.040
Accessory	SWAN CACE Module	A–87.334.3X0

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Conductivity Measurement

Conductivity sensor type
2-electrode conductivity sensor.

Measuring range	**Resolution**
0.055 to 0.999 µS/cm	0.001 µS/cm
1.00 to 9.99 µS/cm	0.01 µS/cm
10.0 to 99.9 µS/cm	0.1 µS/cm
100 to 999 µS/cm	1 µS/cm

Automatic range switching.

Accuracy (at 25 °C) ±1% of measured value or ±1 digit (whichever is greater).

Response time (t_{90}, specific cond.) < 5 s

Temperature compensations
Non-linear function (NLF) for high purity water, neutral salts, strong acids, strong bases, ammonia, ethanolamine, morpholine, linear coefficient 0.00 – 10.00 %/°C, absolute (none).

pH and alkalizing 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 alkalizing reagent, contamination is mostly NaCl, phosphates < 0.5 mg/L, if pH value < 8 the concentration of contaminant must be small compared to alkalizing reagent

Auxiliary sensors
- Temperature measurement with Pt1000 type sensors (DIN class A).
  Measuring range: −30 to +250 °C
  Accuracy (0-50 °C) ±0.25 °C
  Resolution: 0.1 °C
- Sample flow measurement with digital SWAN sample flow sensor.

All specifications are valid in combination with SWAN CACE Modules.

Transmitter Specifications and Functionality

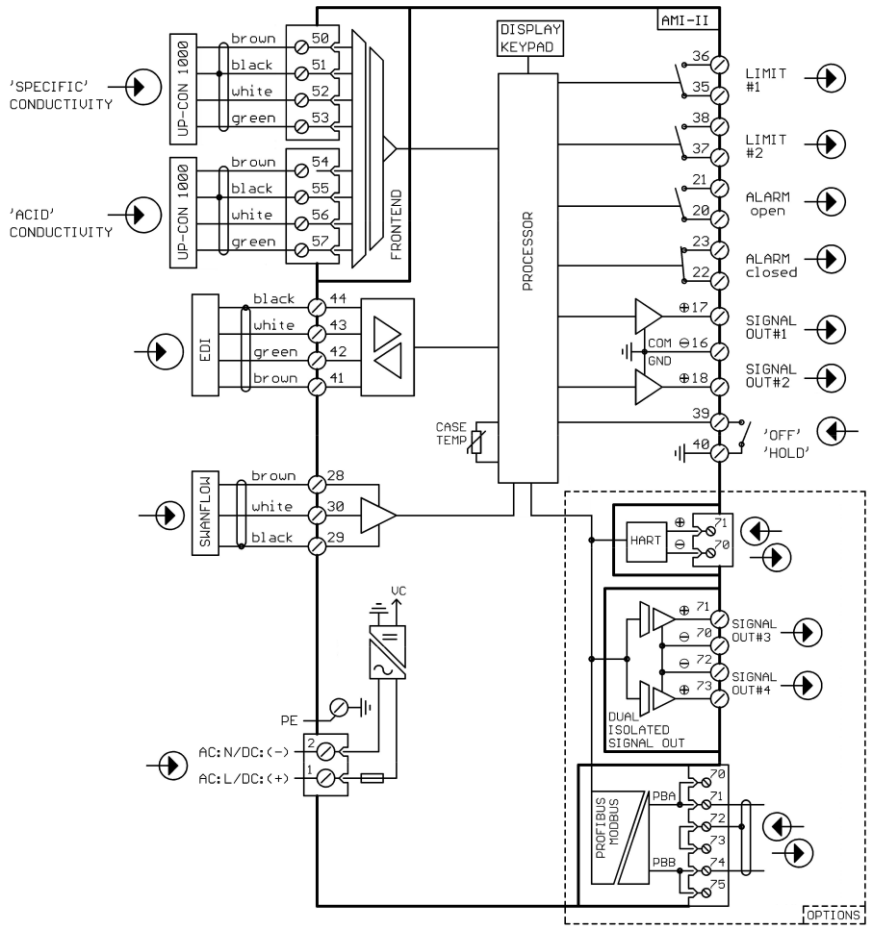
Electronics case:	Cast aluminum
Protection degree:	IP66 / NEMA 4X
Display:	backlit LCD, 74 x 53 mm
Electrical connectors:	screw clamps
Dimensions:	180 x 142 x 94 mm
Weight:	1.7 kg
Ambient temperature:	−10 to +50 °C
Humidity:	10 - 90% rel., non-condensing

Power supply

AC version:	100 – 240 VAC (±10 %), 50/60 Hz (±5 %)
DC version:	10 – 36 VDC
Power consumption:	max. 35 VA

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

Electrical Connection Scheme



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.

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 resistive

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 resistive

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

Current loop:	0/4 – 20 mA
Maximum burden:	510 Ω
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