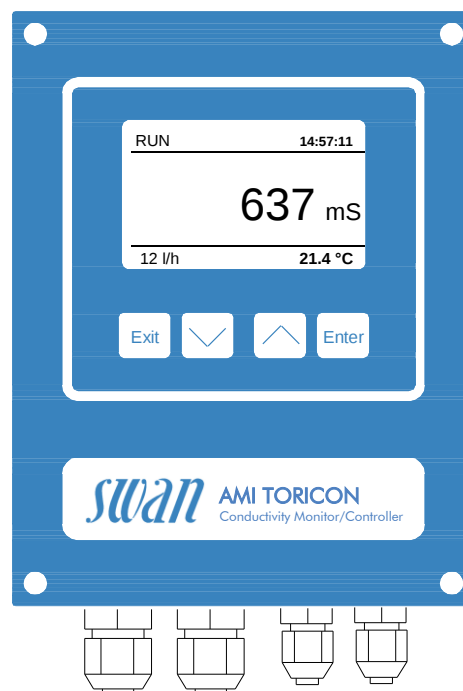


Electronic transmitter & controller for the measurement of specific conductivity, concentration, salinity and TDS.

Transmitter AMI Toricon

- Measuring and control transmitter in rugged aluminum enclosure (IP 66).
- Wide conductivity measurement range from 0 to 2000 mS/cm.
- For the measurement of specific conductivity, concentrations (for NaCl, NaOH and acids in %), salinity (as NaCl in %) and total dissolved solids (TDS as NaCl in %).
- Connections for an inductive (toroidal) conductivity sensor with built-in Pt1000 temperature probe (Swansensor Toricon1000) and for a digital SWAN sample flow meter.
- Temperature compensation with selectable coefficient or non-linear function for natural waters according to EN 27888.
- Easy user menus in English, German, French and Spanish. Simple programming of all parameters by keypad.
- Electronic record of major process events and calibration data.
- Real-time clock for time stamp in data logs and for automated functions.
- Data logger for 1'500 data records stored at a selectable interval.
- Big backlit LC display for the reading of measuring value, sample temperature, sample flow, temperature compensation type, substance name (for concentration measurements) and operating status.
- Galvanically separated sensor connection.
- Overvoltage protection for in- and outputs.
- Two current outputs (0/4 - 20 mA) for measured signals.



- Potential-free alarm contact as summary alarm indication for programmable alarm values and for instrument faults.
- Two potential-free contacts programmable as limit switch or PID-control.
- Input for potential-free contact to freeze the measuring value or to interrupt control in automated installations (hold function or remote-off).

Order Nr.	Transmitter AMI Toricon AC	A-13.431.100
	Transmitter AMI Toricon DC	A-13.431.200
Option:	☐ 3 rd current signal output (0/4 – 20mA)	A-81.420.050
	☐ Profibus DP & Modbus RTU interface (RS-485)	A-81.420.020
	☐ USB interface	A-81.420.042
	☐ HART interface	A-81.420.060

Conductivity Measurement

Conductivity type sensor

Inductive (toroidal) sensor: Swansensor Toricon1000.

Conductivity ranges

0.00 to 9.99 mS/cm	0.01 mS/cm
10.0 to 99.9 mS/cm	0.1 mS/cm
100 to 2'000 mS/cm	1 mS/cm

Resolution

Measurement error

< 1 %

Temperature compensations

- Absolute (none)
- Linear coefficient (0.00 - 19.99 %/°C)
- Non linear function (NLF) for natural waters according to EN 27888

Concentration measurements

- NaCl: 0 to max. 17.9 - 21 % (0 - 50°C)
- HCl: 0 to max. 10 - 12 % (0 - 50°C)
- NaOH: 0 to max. 6.5 - 9 % (0 - 50°C)
- H₂SO₄: 0 to max. 16 - 22 % (0 - 50°C)
- HNO₃: 0 to max. 17 - 20.8 % (0 - 50°C)
- Salinity (as NaCl) in %
- TDS (Total Dissolved Solids as NaCl) in %

Temperature measurement

with Pt1000 type sensor (DIN class A)

Measuring range: -30 to +250 °C

Resolution: 0.1 °C

Transmitter Specifications and Functionality

Electronics case: Cast aluminum
Protection degree: IP 66 / NEMA 4X
Display: backlit LCD, 75 x 45 mm
Electrical connectors: screw clamps
Dimensions: 180 x 140 x 70 mm
Weight: 1.5 kg
Ambient temperature: -10 to +50°C
Humidity: 10 - 90 % rel., non condens-ing

Power supply

Voltage:

AC version: 100 - 240 VAC (± 10 %),
50/60 Hz (± 5 %)

DC version: 10-36 VDC

Power consumption: max. 35 VA

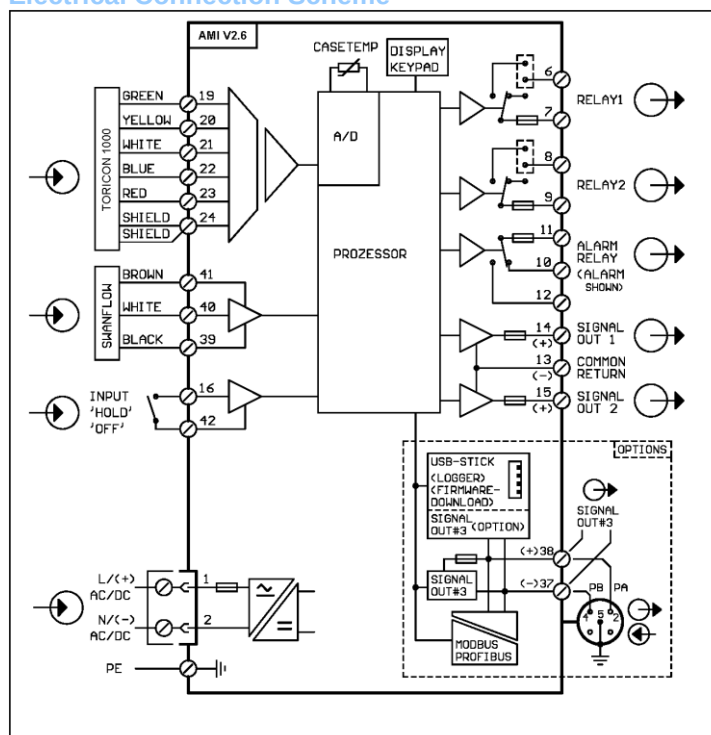
Operation

Easy operation based on separate menus for "Messages", "Diagnostics", "Maintenance", "Operation" and "Installation".

User menus in English, German, French and Spanish.

Separate menu specific password protection.

Electrical Connection Scheme



Display of process value, sample flow, alarm status and time during operation.

Storage of event log, alarm log and calibration history.

Storage of the last 1'500 data records in logger with selectable time interval.

Real-time clock with calendar

For action time stamp and preprogrammed actions.

Safety features

No data loss after power failure, all data is saved in non-volatile memory.

Overvoltage protection of in- and outputs.

Galvanic separation of measuring inputs and signal outputs.

Transmitter temperature monitoring with programmable high/low alarm limits.

1 Alarm relay

One potential free contact for summary alarm indication for programmable alarm values and instrument faults.
Maximum load: 1A / 250 VAC

1 Input

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

2 Relay outputs

Two potential-free contacts programmable as limit switches for measuring values, controllers or timer for system cleaning with automatic hold function.
Max. load: 1A / 250 VAC

2 Signal outputs (3rd optional)

Two programmable signal outputs for measured values (freely scaleable, linear or bilinear) or as continuous control outputs (control parameters programmable) as current source. 3rd signal output selectable as current source or current sink.

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

Control functions

Relays or current outputs programmable for 1 or 2 pulse dosing pumps, solenoid valves or for one motor valve. Programmable P, PI, PID or PD control parameters.

1 Communication interface (option)

- RS485 interface (galvanically separated) with Fieldbus protocol Modbus RTU or Profibus DP
- 3rd Signal output
- USB interface
- HART interface