SWAN ANALYTICAL INSTRUMENTS

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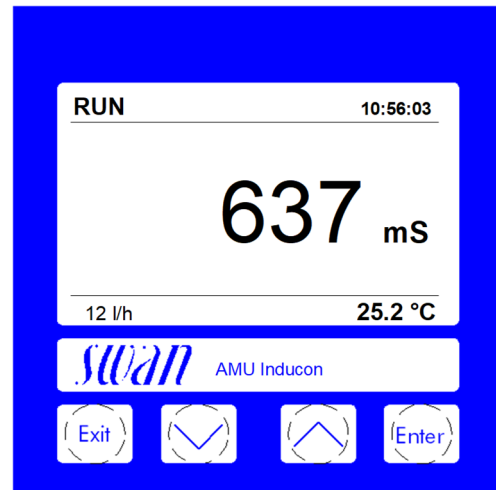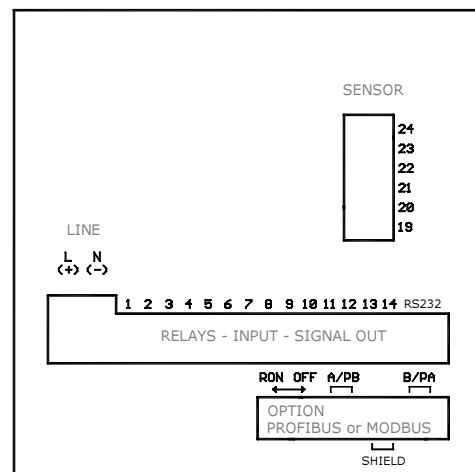**Transmitter AMU Inducon**

Data sheet No. DenA13471X0X

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

Transmitter AMU Inducon

- Measuring and control transmitter for panel installation in a Noryl® resin enclosure, 96 x 96 x 120 mm (DIN 43700).

- 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 Inducon1000) and for a digital SWAN sample flow meter.

- Temperature compensation with selectable coefficient or non-linear function for natural waters according to EN 27888.

- Big backlit LC display for measuring value, sample temperature, sample flow and operating status.

- Easy user menus in English, German, French and Spanish. Simple programming of all parameters by keypad.

- Data logger for 1'500 data records stored at a selectable interval. Serial interface included for data download to PC with Microsoft HyperTerminal.

- 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).

Front panel

Rear panel with electrical connections

Order scheme	Transmitter AMU Inducon	A – 1 3 . 4 7 1 .	X	0	X
			↑		↑
Power supply	100 - 240 VAC / 50/60 Hz		1		|
	24 VDC, direct current		2		|
Communication option	None				0
	Profibus DP interface				2
	Modbus interface (for *Webserver* connection)				4
Alarm relay	Default: normally open; please contact dealer for configuration "normally closed".				

Conductivity Measurement

Conductivity type sensor
Inductive (toroidal) sensor: Swansensor Inducon1000.

Conductivity ranges	Resolution
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

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)
- H_2SO_4: 0 to max. 16 - 22 % (0 - 50°C)
- HNO_3: 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: Noryl® resin
Protection degree: IP54 (front)
Display: backlit LCD, 75 x 45 mm
Electrical connectors: clamping yoke
Dimensions: 96 x 96 x 120 mm
Weight: 0.45 kg
Ambient temperature: -10 to +50 °C
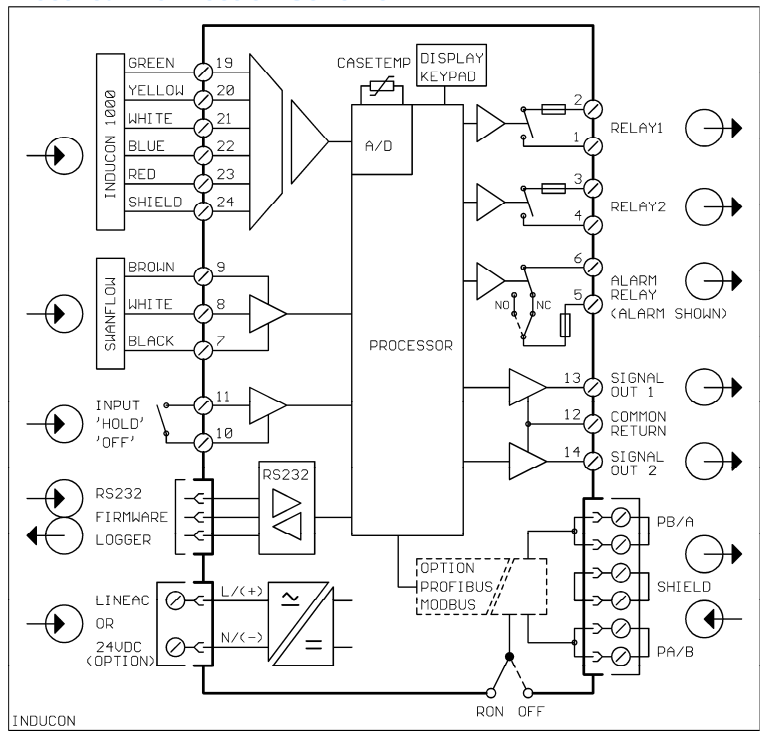Humidity: 10 - 90% rel., non-condensing

Power supply
Voltage: 100 - 240 VAC (± 10 %),
        50/60 Hz (± 5 %)
        or 24 VDC (± 15 %)
Power consumption: max. 8 VA

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

User menus in English, German, French and Spanish.

Electrical Connection Scheme

Separate menu specific password protection.

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

Storage of event- and alarm log.

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

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.

Real-time clock with calendar
For action time stamp and preprogrammed actions.

1 Alarm relay
One potential free contact for summary alarm indication for programmable alarm values and instrument faults.
Maximum load: 100 mA / 50 V
Default: NO (option: NC)

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.
Maximum load: 100 mA / 50 V

2 Signal outputs
Two programmable signal outputs for measured values (freely scaleable, linear or bilinear) or as continuous control outputs (control parameters programmable).
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 serial interface RS232
For data logger download to PC using Microsoft HyperTerminal and for transmitter firmware updates.

1 serial interface RS485 (option)
With Fieldbus protocol Modbus or Profibus DP, galvanically separated.