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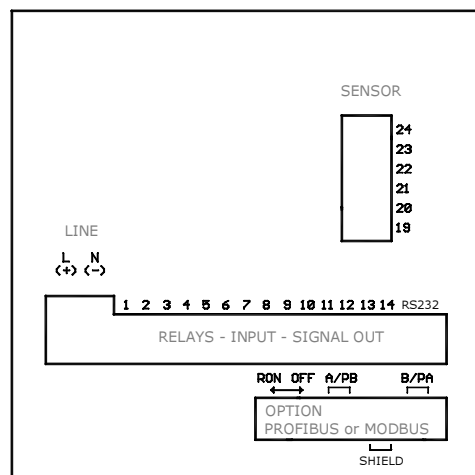**Transmitter AMU Solicon4**

Data sheet No. DenA13451X0X

Electronic transmitter / controller for the measurement of the specific conductivity, concentration of CIP solutions, salinity and TDS.

Transmitter AMU Solicon4

- Measuring and control transmitter for panel installation in a Noryl® resin enclosure, 96 x 96 x 120 mm (DIN 43700).
- Conductivity measurement range from 0.05 µS/cm to 100 mS/cm.
- For the measurement of specific conductivity, concentrations (for NaCl, NaOH and acids in %), salinity (as NaCl in %) and total dissolved solids (TDS in % or mg/l).
- Connections for a four-electrode conductivity sensor with built-in Pt1000 temperature probe like Swansensor Shurecon P or Swansensor Shurecon S.
- Temperature compensation with selectable coefficient or non linear function for natural waters according to EN 27888 / DIN 38404.
- Big backlit LCD display for measuring value, sample temperature, sample flow and operating status.
- User menus in English, German, French and Spanish. Simple programming of all parameters by keypad.
- Electronic record of major process events.
- 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. Serial interface for data download to PC with Microsoft HyperTerminal included.
- Galvanically separated sensor connection.
- Overvoltage protection for in- and outputs.
- Two current signal 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.

Front panel

Rear panel with electrical connections

- Input for potential-free contact to freeze the measuring value or to interrupt control in automated installations (hold function or remote-off).

Order scheme	Transmitter AMU Solicon4	A – 1 3 . 4 5 1 .	X	0	X
			↑		↑
Power supply ……………………	100 - 240 VAC / 50/60 Hz ……………………………………………...........	1		
	24 VDC, direct current ………………………………………………………..	2		
Communication options …….	None ………………………………………………………………………………….			0
	Profibus DP interface …………………………………………………..............			2
	Modbus interface (for Webserver connection)			4
Alarm Relay ……………………	Default: normally open; please contact dealer for configuration "normally closed".			

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ANALYTICAL INSTRUMENTS

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Conductivity Measurement

Sensor type
4-electrode sensor

Measuring range	**Resolution**
0.05 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
1.00 to 9.99 mS/cm	0.01 mS/cm
10.0 to 29.9 mS/cm	0.1 mS/cm
30 to 100 mS/cm	1 mS/cm

Automatic range switching.
Values for Swansensors Shurecon P and Shurecon S.

Precision
0.5 % of measured value or 0.01 µS/cm

Greatest long-term stability by auto-zero front-end calibration procedure.

Sensor cell constant
Selectable from 0.005 to 1.000 cm^{-1}

System calibration
Automatic calibration procedure with 1.413 mS/cm standard solution.

Temperature compensations
- Absolute (none)
- Linear coefficient in %/°C
- Non-linear function (NLF) for natural waters according to EN 27888 / DIN 38404

Concentration measurements (25°C)
- NaCl:	0 - 4.6%
- HCl:	0 - 0.8%
- NaOH:	0 - 1.6%
- H_2SO_4:	0 - 1.1%
- HNO_3:	0 - 1.5%
- Salinity:	0 - 4.6% (as NaCl)
- TDS:	0 - 4.6% (as NaCl)
- TDS:	0.0 mg/l - 20.0 g/l (coefficient)

Temperature measurement
with Pt1000 type sensor (DIN class A)
Measuring range: -30 to +250 °C
Resolution: 0.1 °C

Sample flow measurement
with digital SWAN sample flow meter.

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:	0.5 kg
Ambient temperature:	-10 to +50 °C
Limit range of operation:	-25 to +65 °C
Storage and transport:	-30 to +85 °C
Humidity:	10 to 90 % relative, non-condensing

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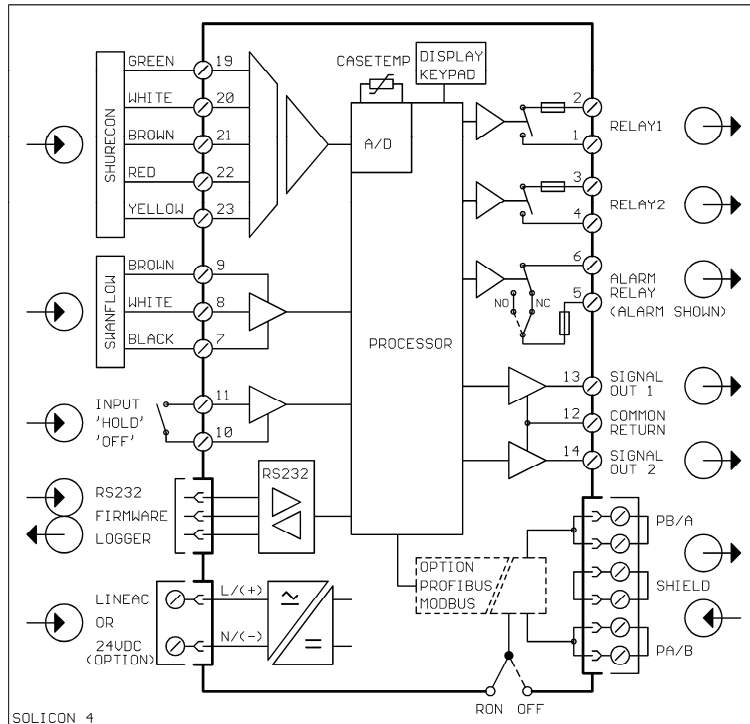
Power supply
Voltage:	100 - 240 VAC (± 10 %), 50/60 Hz (± 5 %) or 24 VDC (± 15 %)
Power consumption:	max. 8 VA

Operation
Easy operation based on separate menus for "Messages", "Diagnostics", "Maintenance", "Operation" and "Installation".
Separate menu specific password protection.
Display of process value, sample flow, alarm status and time during operation.
Storage of event log, alarm log.
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.

Temperature monitoring
Alarm if the transmitter temperature is higher than +65 °C or lower than 0 °C.

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 with Microsoft HyperTerminal and for transmitter firmware updates.

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

Remote instrument access with PC requires Modbus interface and optional *Webserver*.