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Transmitter AMU Powercon
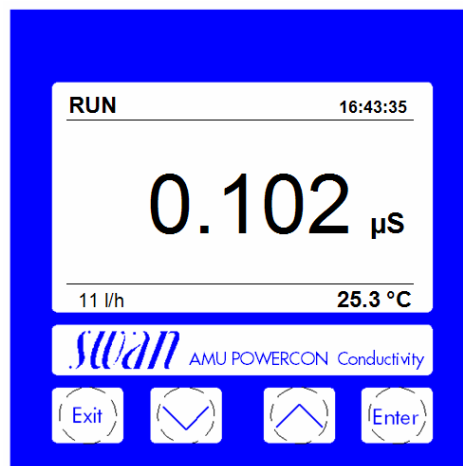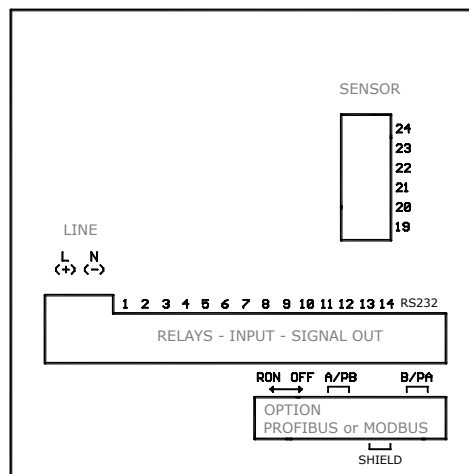
Data sheet No. DenA13463X0X

Electronic transmitter & controller for the measurement of the conductivity in power cycles. For the measurement before (specific resp. total conductivity) or after a cation exchanger (acid resp. cationic conductivity).

Transmitter AMU Powercon

- Measuring and control transmitter for panel installation in a Noryl® resin enclosure, 96 x 96 x 120 mm (DIN 43700).
- Measurement range:
  0.005 μS/cm to 30 mS/cm
- Connections for a 2-electrode conductivity sensor with integrated Pt1000 temperature probe (e.g. Swansensor UP-Con1000) and for a digital SWAN sample flow meter.
- Temperature compensations: non linear for high purity water, neutral salts, strong acids, strong bases, ammonia, ethanol-amine, morpholine or linear with coefficient.
- 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 Powercon	A – 1 3 . 4 6 3 .	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

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Conductivity Measurement

Conductivity sensor type
for 2-electrode sensor.

Measuring range / Resolution

Measuring range	Resolution
0.005 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
1.00 to 2.99 mS/cm	0.01 mS/cm
3.0 to 9.9 mS/cm	0.1 mS/cm
10 to 30 mS/cm	1 mS/cm

Automatic range switching.
Values for cell constant $0.0415\ cm^{-1}$
(Swansensor UP-Con1000)

Accuracy: ± 1 % of measured value

Sensor cell constant
Default value: $0.0415\ cm^{-1}$
or selectable from 0.005 to $10\ cm^{-1}$

Temperature compensations
- Non linear function (NLF) for high purity water
- Neutral salts
- Strong acids
- Strong bases
- Ammonia
- Ethanolamine
- Morpholine
- Linear coefficient in %/°C
- Absolute (none)

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 sensor.

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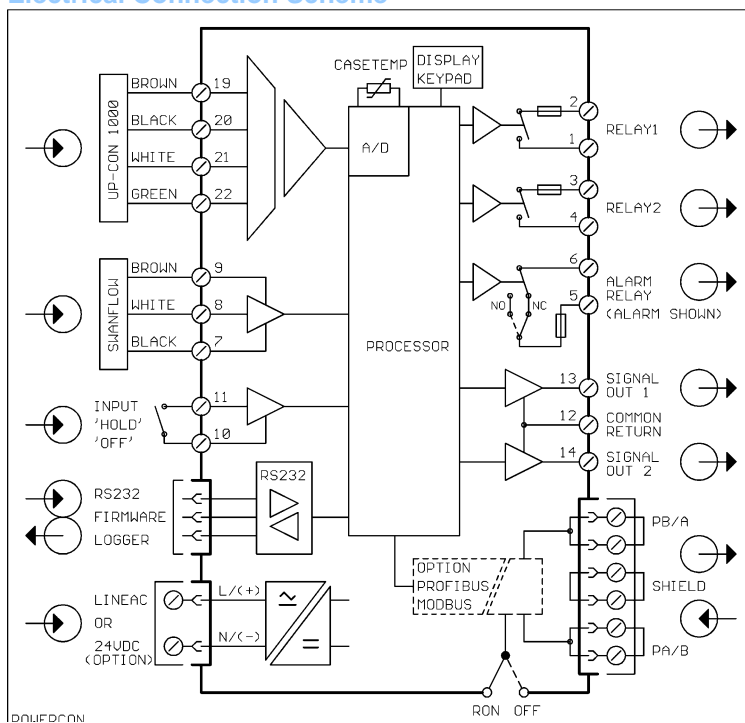Voltage: 100 - 240 VAC (± 10 %),
50/60 Hz (± 5 %)
or 24 VDC (± 15 %)
Power consumption: max. 8 VA

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

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.

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