

Complete monitoring system for the automatic, continuous measurement of the conductivity before (specific / total conductivity) and after a cation exchanger (acid / cation conductivity).

Calculation of the sample pH value or ammonia concentration based on differential conductivity measurement.

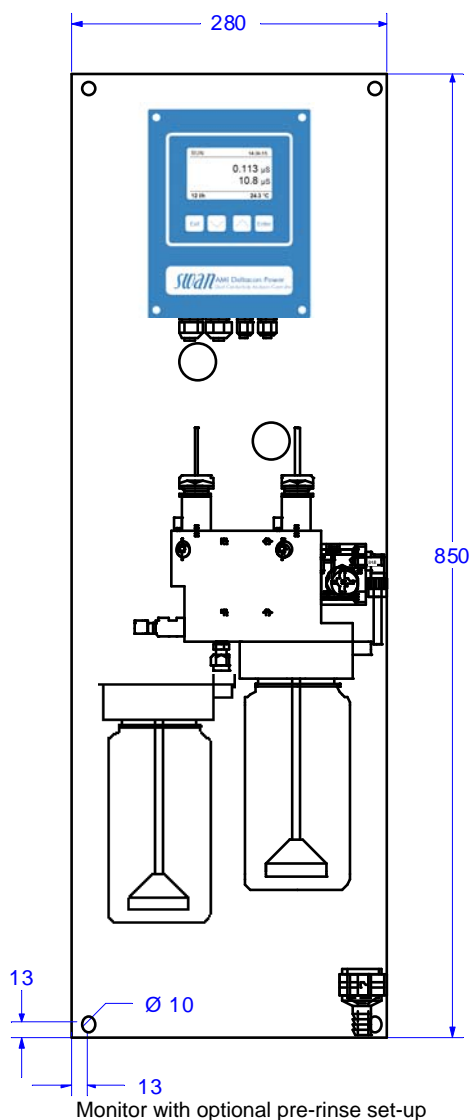
### Monitor AMI Deltacon Power

Complete system mounted on stainless steel panel:

- **Transmitter AMI Deltacon Power** in a rugged aluminum enclosure (IP 66).
- **Swansensor UP-Con1000-SL**  
Two 2-electrode conductivity sensors with slot-lock design and integrated Pt1000 temperature probe,  $k = 0.04 \text{ cm}^{-1}$ .
- **Flow cell Catcon-Plus-SL** made of stainless steel 316L with flow adjustment valve and digital sample flow meter. Quick sensor release with patented slot-lock design. Integrated, easy exchangeable, transparent cation exchanger vessel with automatic deaeration. Nuclear grade resin with capacity indicator.
- Optional trail vessel with pre-rinse setup for instantaneous resin exchange (lead-and-trail).
- Factory tested, ready for installation and operation.

#### Specifications:

- Conductivity measurement range: 0.055 to 1000  $\mu\text{S/cm}$ .
- Calculation of pH value in the range from pH 7.5 to 11.5 (VGB-directive 450L).
- Calculation of ammonia concentration in the range from 0.01 to 10 ppm.
- Simultaneous measurement and display of both conductivities, pH or ammonia concentration, sample temperature and sample flow.
- Temperature compensation preset for strong acids but wide range of others selectable for other sample conditions.
- Two current outputs (0/4 - 20 mA) for measured signals (3<sup>rd</sup> as option).



Order scheme	Monitor AMI Deltacon Power	A	2	3	4	6	1	X	X	X
<b>Power supply</b> .....	85 - 265 VAC / 47 - 63 Hz .....							1	↑	↑
	24 VDC, direct current .....							2		
<b>Signal output option</b> .....	None .....							0		
	Third current signal output 0/4 - 20 mA .....							1		
	Profibus DP interface .....							2		
	HyperTerminal interface (for logger download) .....							3		
	Modbus interface (for <i>Webserver</i> connection) .....							4		
<b>Pre-rinse option</b> .....	None (but with automatic deaeration).....									1
	Additional cation exchanger vessel with pre-rinse setup .....									2

**Conductivity Measurement**

Swansensors UP-Con1000-SL with integrated Pt1000 temperature probe.

<b>Measuring range</b>	<b>Resolution</b>
0.055 to 0.999 $\mu\text{S/cm}$	0.001 $\mu\text{S/cm}$
1.00 to 9.99 $\mu\text{S/cm}$	0.01 $\mu\text{S/cm}$
10.0 to 99.9 $\mu\text{S/cm}$	0.1 $\mu\text{S/cm}$
100 to 1000 $\mu\text{S/cm}$	1 $\mu\text{S/cm}$
Automatic range switching.	

**Accuracy**  
 $\pm 1\%$  of measured value or  $\pm 1$  digit (whichever is greater).

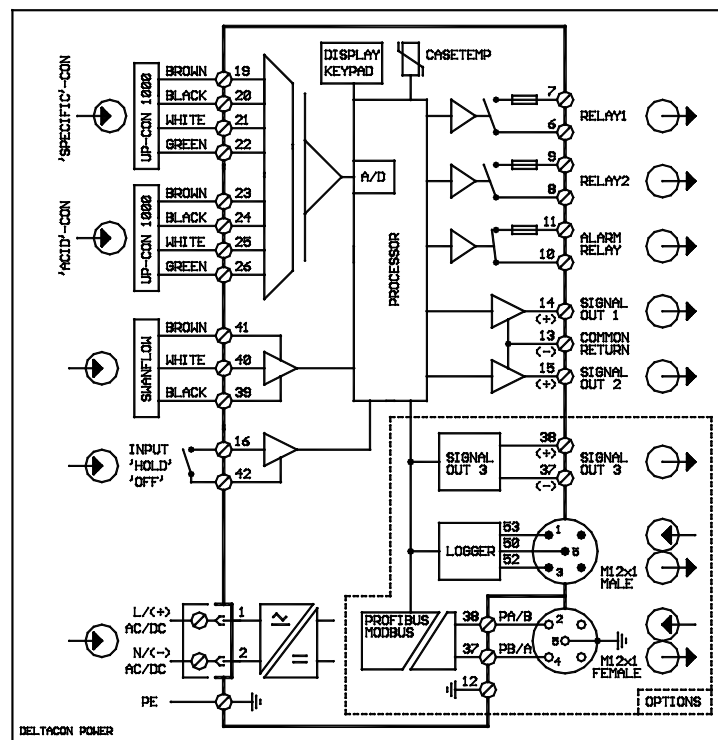
**Temperature compensation**  
Strong acids or non-linear function for high purity water, neutral salts, strong bases, ammonia, ethanalamine, morpholine, linear coefficient in  $\%/^{\circ}\text{C}$ , absolute (none).

**pH and ammonia calculation**  
Ranges (25 $^{\circ}\text{C}$ ): pH 7.5 to 11.5  
ammonia 0.01 to 10 ppm

**Temperature measurement Pt1000**  
Measuring range: -30 to +130  $^{\circ}\text{C}$   
Resolution: 0.1  $^{\circ}\text{C}$

**Sample flow measurement**  
With digital SWAN sample flow meter

**Electrical Connection Scheme**



**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 $^{\circ}\text{C}$   
Humidity: 10 - 90% rel., non condensing

**Power supply**  
Voltage: 85 - 265 VAC, 47 - 63 Hz  
or 24 VDC,  $\pm 15\%$   
Power consumption: max. 20 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.

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 1'000 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**

**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.  
Rated load: 1A / 250 VAC

**2 Signal outputs (3<sup>rd</sup> as option)**  
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  $\Omega$

**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)**  
RS232 interface for logger download to PC with Microsoft HyperTerminal or RS485 interface (galvanically separated) with Fieldbus protocol Modbus or Profibus DP.

**Monitor Data**

**Sample conditions**  
Flow rate: 5 to 20 L/h  
Temperature: up to 50  $^{\circ}\text{C}$   
Inlet pressure (25  $^{\circ}\text{C}$ ): up to 2 bar  
Outlet pressure: pressure free  
No sand, no oil

**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.

**Sample connections**  
Inlet: Swagelok 1/4" tube adapter  
Outlet: G 1/2" adapter for tube for flexible tube  $\varnothing$  20 x 15 mm

**Cation exchanger**  
Cleaned resin (1L, nuclear grade) with capacity indicator ready for operation.  
Permanent monitoring of resin consumption with alarm.  
Resin sufficient at 1 mg/L ammonia (pH 9.4). Resin capacity for 1L: 4 months at sample flow 10 L/h, 5 months at 5 L/h.  
Additional trail resin vessel with pre-rinse setup as option.  
Automatic deaeration of resin bottle(s).

**Panel**  
Dimensions: 850 x 280 x 200 mm  
Material: stainless steel  
Total instrument weight: 12.0 kg