

Monitor for continuous measurement of pH or redox (ORP) in potable water and effluents.

### Monitor AMI pH-Redox (M-Flow)

Complete system mounted on PVC panel:

- **Transmitter AMI pH-Redox** in a rugged aluminum enclosure (IP 66).
- **Flow cell M-Flow 10-3PG** include a Pt1000 temperature sensor and optional sensor cleaning.
- Factory tested, ready for installation and operation.

For use with combined sensors with reference electrodes for various sample conditions:

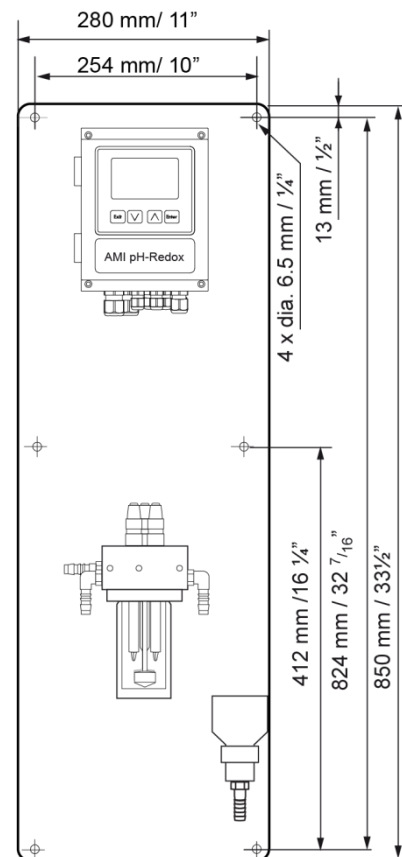
- **Swansensor pH- & ORP Standard** (combined electrode with gel electrolyte)
- **Swansensor pH- & ORP AY** (combined electrode with gel electrolyte)

#### Optional:

- Spray nozzle for sensor cleaning
- Swansensor deltaT for flow detection

#### Specifications:

- Measuring ranges: 1 to 13 pH  
respectively -400 to +1200 mV
- Simultaneous measurement of pH or redox, sample temperature and sample flow.
- Big backlit LC display for the reading of measuring value, sample temperature, sample flow (option) and operating status.
- Easy user menus with simple programming of all parameters by keypad.
- Two current outputs (0/4 - 20 mA) for measured signals (3<sup>rd</sup> output optional).



| Order Nr. | Monitor AMI pH-Redox; M-Flow, AC                       | A-21.221.050 |
|-----------|--|--------------|
| Option:   | [ ] 3 <sup>rd</sup> current signal output (0/4 - 20mA) | A-81.410.020 |
|           | [ ] Profibus DP interface                              | A-81.420.020 |
|           | [ ] HyperTerminal interface (RS-232)                   | A-81.420.010 |
|           | [ ] Modbus interface                                   | A-81.420.022 |
|           | [ ] USB interface                                      | A-81.420.040 |
| Option:   | [ ] Swansensor pH Standard                             | A-87.120.200 |
|           | [ ] Swansensor pH AY                                   | A-87.130.200 |
|           | [ ] Swansensor ORP Standard                            | A-87.420.200 |
|           | [ ] Swansensor ORP AY                                  | A-87.430.200 |
| Option:   | [ ] Swansensor deltaT Flow                             | A-87.933.010 |
| Option:   | [ ] Spray nozzle for sensor cleaning                   | A-83.491.120 |

**pH/ORP Measurement**

Signal input galvanically separated  
Input resistance: > 10<sup>13</sup> Ω

**pH measurement**  
with Swansensor ST/AY  
Measuring range: pH 1 to 13  
Resolution: 0.01 pH  
Reference temperature: 25 °C  
Automatic temperature compensation according to Nernst.

**ORP measurement**  
with Swansensor ST/AY  
Measuring range: -400 to 1200 mV  
Resolution: 1 mV

**Calibration solutions table**  
Programmable table for pH buffers and ORP calibration solution.

**Temperature measurement**  
Measuring range: -30 to +130 °C  
Resolution: 0.1 °C

**Transmitter Specifications and Functionality**

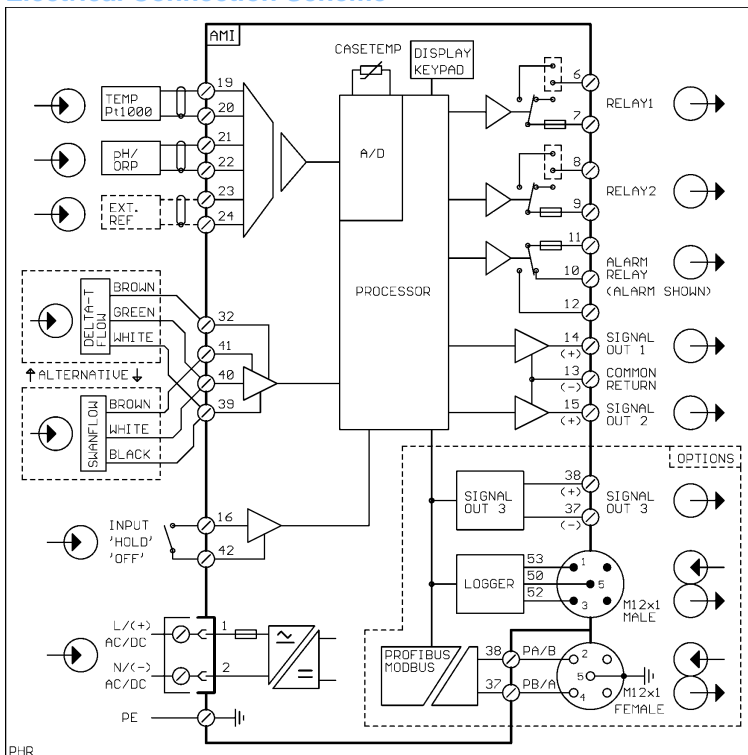
Electronics case: Cast aluminum  
Protection degree: IP 66 / NEMA 4X  
Display: backlit LCD, 75 x 45 mm  
Electrical connectors: screw clamps  
Dimensions: 180 x 140 x 70 mm  
Weight: 1.5 kg  
Ambient temperature: -10 to +50 °C  
Humidity: 10 - 90% rel., non condensing

**Power supply**  
Voltage: 100 - 240 VAC (± 10 %),  
50/60 Hz (± 5 %)  
or 24 VDC (± 10 %)  
Power consumption: max. 30 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 1'500 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.

**Electrical Connection Scheme**



**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 output (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 Communication interface (option)**  
- RS232 interface for logger download to PC with SWANterminal  
- RS485 interface (galvanically separated) with Fieldbus protocol Modbus or Profibus DP  
- 3<sup>rd</sup> Signal output  
- USB interface

**Monitor Data**

**Sample conditions**  
Flow rate: 4 to 15 L/h  
Temperature: up to 50 °C  
Inlet pressure: up to 1 bar  
Outlet pressure: pressure free

**Flow cell and connections**  
Flow cell made of PVC and acrylic glass.  
Sample inlet: Hose nozzle 1/4" -10 elbow for 10mm tube  
Sample outlet: G 1/2" adapter for flexible tube Ø 20 x 15 mm

**Panel**  
Dimensions: 280 x 850 x 150 mm  
Material: white PVC  
Total weight: 9.0