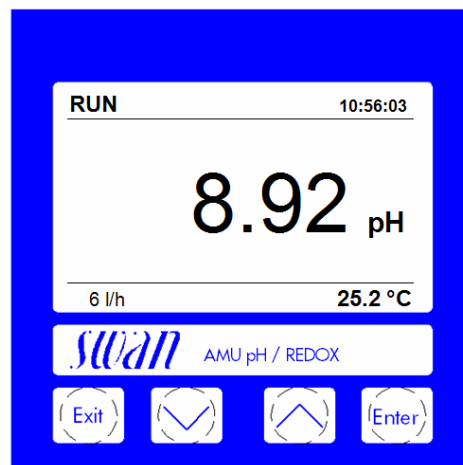


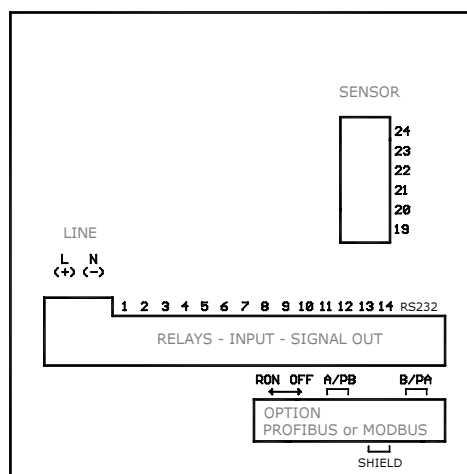
Electronic transmitter / controller for the continuous measurement of the pH value or Redox (ORP) in water.

Transmitter AMU pH-Redox

- Measuring and control transmitter for panel installation in a Noryl® resin enclosure, 96 x 96 x 120 mm (DIN 43700).
- Measuring range:
0 to 14 pH respectively -500 to +1500 mV
- Sensor connections for a pH or ORP sensor, reference electrode, Pt1000 temperature and for a digital sample flow meter.
- Galvanically separated sensor connections.
- Automatic temperature compensations according to Nernst with or without correction functions.
- Values for pH buffer solutions and redox calibration solution programmable.
- 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.
- Overvoltage protection for in- and outputs.
- Two current outputs (0/4 - 20 mA) for conductivity and temperature 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 pH-Redox	A – 1 1 . 4 3 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".				

pH / ORP Measurement

Signal inputs galvanically separated.
Input resistance: $> 10^{13} \Omega$

pH measurement

Measuring range: 0.00 to 14.00 pH
Resolution: 0.01 pH
Reference temperature: 25 °C

ORP measurement

Measuring range: -500 to +1500 mV
Resolution: 1 mV

Temperature compensations

Selectable modes, according to:

- Nernst (for potable water and wastewater)
- Nernst with non-linear solution compensation (for high purity water)
- Nernst with linear compensation with selectable coefficient (for high purity water)

Calibration solutions table

Programmable table for pH buffers and ORP calibration solution.

Sensor monitoring

Indication of glass breakage and line disconnection.

Temperature measurement

with SWAN Pt1000 sensor.
Measuring range: -30 to +130 °C
Resolution: 0.1 °C

Sample flow measurement

with digital 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: 0.45 kg
Ambient temperature: -10 to +50 °C
Humidity: 10 - 90% rel., non-condensing

Power supply

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

Operation

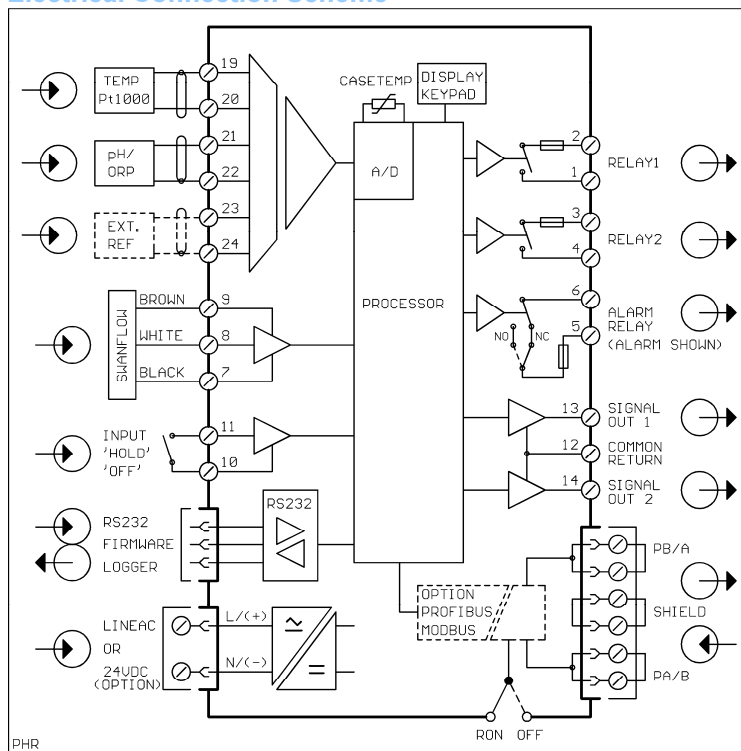
Easy operation based on separate menus for "Messages", "Diagnostics", "Maintenance", "Operation" and "Installation".

User menus in English, German, French and Spanish.

Separate menu specific password protection.

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

Electrical Connection Scheme



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.

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.

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