# Portavo 907 Multi pH

**Portable multiparameter analyzer for all Memosens pH/ORP, conductivity, and oxygen sensors, and all analog pH/ORP electrodes.**


### Great Flexibility Thanks to Multiparameter Technology

Portavo 907 Multi pH enables versatile and flexible use. In combination with digital Memosens sensors, the following process variables are supported:

- pH
- ORP
- Contacting conductivity
- Toroidal conductivity
- Amperometric oxygen
- Optical oxygen
- Temperature

As soon as the Memosens sensor is connected, the Portavo 907 Multi pH automatically adjusts to the selected parameter. All relevant sensor data can be seen at a glance.

Analog pH/ORP sensors can also still be used, if required.

### Comprehensive Data Logger

The following logger types can be selected:

- Manual logging
- Time-controlled logging at set intervals
- Signal-controlled logging of process variables and temperatures
- Combined time- and signal-controlled logging
- Threshold-controlled logging with pre-trigger

The data logger for up to 10,000 entries records the measuring point, annotation, sensor ID, sensor serial number (Memosens), primary value, temperature, time stamp, and device status.

### User-Friendly Software

Portavo 907 Multi pH proves that high functionality and ease of use do not exclude one another.

It guides you step by step through the calibration procedure. Technical terms are clearly explained in the context help.

Portavo 907 features a wide range of new functions, such as

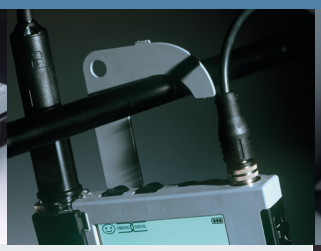
- a new pH calibration procedure with a set process flow
- multi-level user management with access control
- direct assignment of Memosens sensors to device
  for increased safety during operation

### Multi-Channel Function for Simultaneous Operation of 2 Sensors

If equipped with the multi-channel option, Portavo 907 Multi pH can be used for simultaneous measurements using 2 flexibly combined sensors. The multi-channel function is added to the functionality of the data logger.

Knick

# Portavo

**Facts and Features**

- High-resolution color graphic display
- Transflective, even when exposed to direct sunlight
- Mineral glass screen can still be read perfectly after many years
- Micro USB port and Paraly SW 112 operating software
- Sensor quiver protects the sensor from drying out and damage
- pH calibration with set process flow
- Temperature offset
- High-performance polymer housing is waterproof with IP67 / IP66 protection and ensures high impact resistance
- Intelligent data logger with 10,000 entries and graphic display
- Memosens sensors and analog pH/ORP sensors
- Multi-channel function
- Li-ion rechargeable battery – USB chargeable
- Concentration measurement with toroidal conductivity sensors


MEMOSENS

3-year warranty

**Specifications**

| | | | |
|---|---|---|---|
| pH/mV input (analog) | pH socket DIN 19 262 (13/4 mm) | | |
| | pH measuring range | -2 … +16 | |
| | Decimal places*) | 2 or 3 | |
| | Input resistance | 1 x $10^{12}$ Ω (0 ... +35 °C/+32 ... +95 °F) | |
| | Input current | 1 x $10^{-12}$ A (at RT, doubles every 10 K) | |
| | Measuring cycle | Approx. 1 s | |
| | Measurement error[1,2,3)] | < 0.01 pH, TC < 0.001 pH/K | |
| | mV measuring range | -1300 ... +1300 mV | |
| | Measuring cycle | Approx. 1 s | |
| | Measurement error[1,2,3)] | < 0.1 % meas. val. + 0.3 mV | TC < 0.03 mV/K |
| Temperature input | 2 x Ø 4 mm for integrated or separate temperature probe | | |
| | Measuring ranges | NTC 30 kΩ | -20 ... +120 °C / -4 ... +248 °F |
| | | Pt1000 | -40 ... +250 °C / -40 ... +482 °F |
| | Measuring cycle | Approx. 1 s | |
| | Measurement error[1,2,3)] | < 0.2 K (Tamb = +23 °C / +73.4 °F); TC < 25 ppm/K | |
| Memosens pH input (also ISFET) | M8 socket, 4-pin, for Memosens laboratory cable | | |
| | Display ranges[4)] | pH | -2.000 ... +16.000 |
| | Sensor adjustment*) | pH calibration | |
| | Operating modes*) | Calimatic | Calibration with automatic buffer recognition |
| | | Manual | Manual calibration with entry of individual buffer values |
| | | Data entry | Data entry of zero point and slope |
| | Calimatic buffer sets*) | –01– Mettler-Toledo | 2.00/4.01/7.00/9.21 |
| | | –02– Knick CaliMat | 2.00/4.00/7.00/9.00/12.00 |
| | | –03– Ciba (94) | 2.06/4.00/7.00/10.00 |
| | | –04– NIST Technical | 1.68/4.00/7.00/10.01/12.46 |
| | | –05– NIST Standard | 1.679/4.006/6.865/9.180 |
| | | –06– HACH | 4.01/7.00/10.01/12.00 |
| | | –07– WTW techn. buffers | 2.00/4.01/7.00/10.00 |
| | | –08– Hamilton | 2.00/4.01/7.00/10.01/12.00 |
| | | –09– Reagecon | 2.00/4.00/7.00/9.00/12.00 |
| | | –10– DIN 19267 | 1.09/4.65/6.79/9.23/12.75 |
| | | –U1– (User) | Chargeable via Paraly SW 112 |
| | Permissible calibration range | Zero point | 6 ... 8 pH |
| | | Slope | Approx. 74 ... 104 % |
| | | (Sensoface may indicate restrictions) | |
| | Calibration timer*) | Interval 1 … 99 days, can be switched off | |
| | Sensoface | Provides information on the condition of the sensor | |
| | Evaluation of | Zero point/slope, response time, calibration interval | |

**Specifications**

| | | | |
|---|---|---|---|
| Memosens ORP input | M8 socket, 4-pin, for Memosens laboratory cable | | |
| | Display ranges[4] | mV | -2000 ... +2000 mV |
| | | Temperature | -50 ... +250 °C |
| | | | -58 ... +482 °F |
| | Sensor adjustment*) | ORP calibration (zero offset) | |
| | Permissible calibration range | ΔmV (offset) | -700 … +700 mV |
| Memosens conductivity input | M8 socket, 4-pin, for Memosens laboratory cable | | |
| | Measuring range | Sensor SE 615/1-MS | 10 µS/cm … 20 mS/cm |
| | Measuring cycle | Approx. 1 s | |
| | Temperature compensation | Linear 0 … 20 %/K, adjustable reference temperature | |
| | | nLF: 0 ... +120 °C/+32 ... +248 °F | |
| | | NaCl | |
| | | HCl (ultrapure water with traces) | |
| | | NH3 (ultrapure water with traces) | |
| | | NaOH (ultrapure water with traces) | |
| Display resolution[5] (autoranging) | Conductivity | 0.001 µS/cm | (c < 0.05 $cm^{-1}$) |
| | | 0.01 µS/cm | (c = 0.05 … 0.2 $cm^{-1}$) |
| | | 0.1 µS/cm | (c > 0.2 $cm^{-1}$) |
| | Resistivity | 00.00 … 99.99 MΩ • cm | |
| | Salinity | 0.0 … 45.0 g/kg | (0 … +30 °C) |
| | | | (+32 ... +86 °F) |
| | TDS | 0 … 1999 mg/l | (+10 … +40 °C) |
| | | | (+50 … +104 °F) |
| | Concentration | 0.00 … 100 wt% | |

| | | |
|---|---|---|
| Concentration determination | NaCl | 0 – 26 wt% (0 °C / +32 °F) ... 0 – 28 wt% (+100 °C / +212 °F) |
| | HCl | 0 – 18 wt% (–20 °C / –4 °F) ... 0 – 18 wt% (+50 °C / +122 °F) |
| | NaOH | 0 – 13 wt% (0 °C / +32 °F) ... 0 – 24 wt% (+100 °C / +212 °F) |
| | $H_2SO_4$ | 0 – 26 wt% (–17 °C /–1.4 °F) ... 0 – 37 wt% (+110 °C / +230 °F) |
| | $HNO_3$ | 0 – 30 wt% (–20 °C / –4 °F) ... 0 – 30 wt% (+50 °C / +122 °F) |
| | $H_2SO_4$ | 94 – 99 wt% (–17 °C/–1.4 °F) ... 89 – 99 wt% (+115 °C / +239 °F) |
| | HCl | 22 – 39 wt% (–20 °C / –4 °F) ... 22 – 39 wt% (+50 °C / +122 °F) |
| | $HNO_3$ | 35 – 96 wt% (–20 °C / –4 °F) ... 35 – 96 wt% (+50 °C / +122 °F) |
| | $H_2SO_4$ | 28 – 88 wt% (–17 °C /–1.4 °F) ... 39 – 88 wt% (+115 °C / +239 °F) |
| | NaOH | 15 – 50 wt% (0 °C / +32 °F) ... 35 – 50 wt% (+100 °C / +212 °F) |

| | | |
|---|---|---|
| Sensor adjustment | Cell constant | Input of cell constant with simultaneous display of conductivity value and temperature |
| | Solution input | Input of calibration solution conductivity with simultaneous display of cell constant and temperature |
| | Auto | Automatic determination of cell constant with KCl or NaCl solution |
| Temperature probe | Temperature adjustment (offset) with Memosens sensors | |

**Specifications**

| | | | |
|---|---|---|---|
| Memosens input | M8 socket, 4-pin, for Memosens laboratory cable | | |
| Amperometric oxygen | Display ranges[4)] | Saturation | 0.000 …200.0 % |
| | | Concentration | 000 µg/l … 20.00 mg/l |
| | | Partial pressure | 0.0… 1000 mbar |
| | Temperature range[4)] | -20 … +150 °C / -4 … +302 °F | |
| Sensor adjustment | Automatic calibration in air, adjustable relative humidity<br>Zero calibration | | |
| Temperature probe | Temperature adjustment (offset) with Memosens sensors | | |
| | Storage | In quiver | |
| Connections | 2 x socket Ø 4 mm for separate temperature probe<br>1 x M8 socket, 4-pin, for Memosens laboratory cable<br>1 x micro USB-B for data transmission to PC<br>1 x pH socket in acc. with DIN 19262 | | |
| Device operation | Easy-to-use menu navigation with graphic symbols and detailed user hints in plain text | | |
| Languages | German, English, French, Spanish, Italian, Portuguese | | |
| Status indicators | For battery condition, logger | | |
| Graphic display | QVGA TFT display with white backlighting | | |
| Keypad | [on/off], [meas], [enter], [◀], [▶], [▲], [▼]<br>2 softkeys with context-dependent assignment | | |
| Data logger | Space for 10,000 entries | | |
| | Recording | Manual, interval- and/or event-controlled with limit value and pre-trigger, management of tag numbers and annotations | |
| MemoLog calibration data logger (Memosens only) | Can save up to 100 Memosens calibration records | | |
| | Recording | Directly readable via MemoSuite or Paraly SW 112 (USB) | |
| | Can be shown on the display | Manufacturer, sensor type, serial no., zero point, slope, calibration date | |
| Communication | USB 2.0 | | |
| | Profile | HID, driverless installation | |
| | Usage | Data transfer and configuration via the Paraly SW 112 software | |
| | | Printer interface | |
| Diagnostic functions | Sensor data (Memosens only) | Manufacturer, sensor type, serial number, wear, operating time | |
| | Calibration data | Calibration date, zero point, slope | |
| | Device self-test | Automatic memory test (FLASH, EEPROM, RAM) | |
| | Device data | Device type, software version, hardware version | |
| Data retention | Parameter, calibration data > 10 years | | |
| EMC | EN 61326-1 (General requirements) | | |
| | Emitted interference | Class B (residential) | |
| | Interference immunity | Industrial applications | |
| | EN 61326-2-3 (Particular requirements for transducers) | | |

# Portavo

**Specifications**

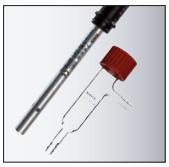
| | | |
|---|---|---|
| RoHS conformity | According to Directive 2011/65/EU | |
| Power supply | 4 x AA (Mignon) alkaline batteries<br>4 x NiMH rechargeable batteries or<br>1 x Li-ion rechargeable battery (rechargeable via USB) | |
| Rated operating conditions | Ambient temperature | -10 … +55 °C / +14 … +131 °F |
| | Transport/Storage temperature | -25 … +70 °C / -13 … +158 °F |
| | Relative humidity | 0 … 95 %, brief condensation permissible |
| Housing | Material | PA12 GF30 + TPE |
| | Protection | IP 66/67 with pressure compensation |
| | Dimensions | Approx. 132 x 156 x 30 mm / 5.2 x 6.14 x 1.18 inches |
| | Weight | Approx. 500 g / 1.10 lbs |

*) User-defined
1) At rated operating conditions
2) ± 1 digit
3) Plus sensor error
4) Ranges dependent on Memosens sensor
5) c = cell constant

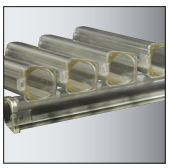
**Portavo 907 Multi pH Product Line**

| Portavo 907 Multi pH | | Order no. |
|---|---|---|
|  Portavo 907 SET-MULTI-PH | Portavo 907 Multi pH for measurement using digital Memosens sensors for pH/ORP, conductivity (contacting or toroidal), and oxygen or using the SE 340 optical oxygen sensor, incl. Paraly SW 112 configuration software with USB connector cable and USB adapter (A female to B male) for printer connection. | Portavo 907 Multi pH |
|  Portavo 907 SET-MULTI-PH-101 | Portavo 907 Multi pH, SE 102-MS Memosens pH sensor, CA/MS-001XFA-L cable, ZU 0934 field case, USB connector cable, CS-PSET47 CaliMat buffer set | 907SET-MULTI-PH |
|  pH/Pt1000 sensor | Portavo 907 Multi pH, SE 101-MS Memosens pH sensor, CA/MS-001XFA-L cable, USB connector cable, ZU 0934 field case, CS-PSET479 CaliMat buffer set | 907SET-MULTI-PH-101 |
|  pH/Pt1000 sensor | Digital Memosens pH sensor<br>Polymer body, ceramic junction, length 120 mm / 4.72 inches | SE 101 MS |
|  pH/Pt1000 sensor | Digital Memosens pH sensor<br>Glass body, ceramic junction, length 110 mm / 4.33 inches | SE 102 MS |
|  | Digital Memosens pH puncture sensor<br>Polymer body, length 90 mm / 2.36 inches | SE 104 MS |

**Portavo 907 Multi pH Product Line**

| | | Order no. |
|---|---|---|
| 2-electrode sensor | | |
|  2-electrode sensor | Digital conductivity sensor with Memosens technology<br>Stainless steel body, length 120 mm / 4.72 inches | SE 202-MS |
|  Toroidal conductivity sensor (digital) | Digital conductivity sensor with Memosens technology<br>Polymer body, length 120 mm / 4.72 inches | SE 615/1-MS |
|  Oxygen sensor | with dairy pipe DN 50 process connection | SE 680N-C1N4U00M |
| | with Varivent DN 50 process connection | SE 680N-V1N4U00M |
| | with 2" clamp process connection | SE 680N-J2N4U00M |
| | with process connection for für ARF 210/215 | SE 680N-K8N4U00M |
|  Optical oxygen sensor | The SE 715 oxygen sensor with Memosens plug-in system requires little maintenance and is equipped with a temperature probe. It features high long-term stability, a fast response, and low flow dependence. The sensor is designed for the simultaneous measurement of dissolved oxygen and temperature. | SE 715 MS |
|  Memosens cable | Thanks to its optical measuring function and digital data transmission, the SE 340 oxygen sensor is ideal for use with the Portavo 907. It is sturdy and waterproof (IP 68), and, with its extremely fast response time, suitable for a wide range of applications. A further plus point is the beveled membrane, which is both free from incident flow and easy to clean. With a 1.5 m / 4.92 ft fixed cable. | SE 340 |
|  | Measuring cable for digital sensors with Memosens connector<br>Length 1.5 m / 4.92 ft | CA/MS-001XFA-L |
| | Measuring cable for digital sensors with Memosens connector<br>Length 2.9 m / 9.51 ft | CA/MS-003XFA-L |
| | Measuring cable for digital sensors with M12 socket, 4-pin,<br>M8 connector, 4-pin, length 1.5 m / 4.92 ft | CA/M12-001M8-L |
| Adapter | | |
|  | Adapter for 12 mm / 0.47 inch industrial sensors<br>with PG 13.5 thread. | ZU 0939 |

**Portavo 907 Multi pH Product Line**

| | | Order no. |
|---|---|---|
| pH/Pt1000 sensor | | |
|  | Polymer body, fiber junction, length 120 mm / 4.72 inches | SE 101 AN |
| pH/Pt1000 sensor | | |
|  | Glass body, ceramic junction, length 110 mm / 4.33 inches | SE 102 AN |
| pH puncture sensor | | |
|  | Polymer body, hole junction,<br>length 65 / 25 mm, 4.33 / 0.98 inches | SE 104 AN |
| Sensor quiver | | |
|  | 5 pcs., replacement, for leak-proof storage of sensors | ZU 0929 |
| Sturdy field case | | |
|  | For device and sensor | ZU 0934 |
| Li-ion rechargeable battery | | |
|  | Li-ion rechargeable battery (USB chargeable with Portavo 904, 907, and 908 only) | ZU 0925 |
| pH/Pt1000 sensor | | |
|  | For measurements in Ex Zone 0, including equipotential bonding cable, glass body, ceramic junction, length 105 mm / 4.13 inches | ZU 6979 |

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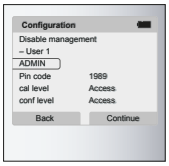
## Portavo 907 Multi pH Product Line

| Pt1000 temperature probe | | Order no. |
|---|---|---|
|  | For temperature measurements with quick response time:<br>Monel 2.4360, –10 ... +100 °C/+14 ... +212 °F,<br>accuracy class A according to DIN IEC 751 | ZU 6959 |
| **Base stand** | | |
|  | Base stand for accepting up to 3 sensors with base plate made of stainless steel | ZU 6953 |
| **TAN Options** | | |
|  | Cal SOP calibration method: User management, sensor check, temperature adjustment (offset) | SW-P001 |
| | Temperature adjustment (offset) | SW-P002 |
| | Multi-channel function | SW-P003 |
| **Software** | | |
|  | PC software for configuration and firmware update<br>(free download at www.knick.de) | |

## Portavo 907 Multi pH Product Line

| CaliMat pH Buffer Solutions | | Quantity | Order no. |
|---|---|---|---|
|  | pH 2.00 (20 °C / 68 °F) | 250 ml | CS-P0200/250 |
|  | pH 4.00 (20 °C / 68 °F) | 250 ml | CS-P0400/250 |
| | | 1000 ml | CS-P0400/1000 |
|  | pH 7.00 (20 °C / 68 °F) | 250 ml | CS-P0700/250 |
| | | 1000 ml | CS-P0700/1000 |
|  | pH 9.00 (20 °C / 68 °F) | 250 ml | CS-P0900/250 |
| | | 1000 ml | CS-P0900/1000 |
|  | pH 12.00 (20 °C / 68 °F) | 250 ml | CS-P1200/250 |

# Portavo

## Portavo 907 Multi pH Product Line

| CaliMat pH Buffer Solutions | | Quantity | Order no. |
|---|---|---|---|
|  | Set pH 4.00 (20 °C / 68 °F) | 3 x 250 ml | CS-PSET4 |
|  | Set pH 7.00 (20 °C / 68 °F) | 3 x 250 ml | CS-PSET7 |
|  | Set pH 9.00 (20 °C / 68 °F) | 3 x 250 ml | CS-PSET9 |
|  | Set pH 4.00 / 7.00 / 9.00 (20 °C / 68 °F) | 3 x 250 ml | CS-PSET479 |
|  | KCl solution, 3 molar | 250 ml | ZU 0062 |