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.

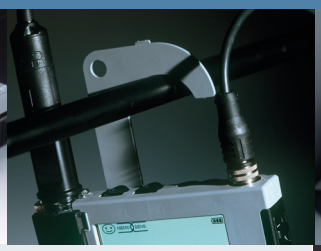
Portavo 907 features a wide range of new functions, such as

- a new pH calibration procedure with a set process flow
- multi-level user management with access control for configuration, calibration, and data logger settings
- 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.

pH/ORP Measurement

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
- Multichannel function
- Li-ion rechargeable battery – USB chargeable
- Concentration measurement with toroidal conductivity sensors
- New add-on functions, such as a new pH calibration procedure, user management, sensor verification, and calibration of the temperature detector, are available as options.

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 room temp., 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 % of meas. value + 0.3 mV	TC < 0.03 mV/K
Temperature input	2 x Ø 4 mm for integrated or separate temperature detector		
	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
		Cal SOP	Cal SOP calibration method (TAN option 001)
		Temperature	(TAN option 001/002)
		Manual	Manual calibration with entry of individual buffer values
		Data entry	Data entry of zero 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)	Loadable via Paraly SW112
	Permissible calibration range	Zero point	6 ... 8 pH
		Slope	Approx. 74 ... 104 %
		(possibly restricting notes from Sensoface)	
	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	

pH/ORP Measurement

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), temperature (TAN option 001/002)	
	Permissible calibration range	ΔmV (offset)	–700 … +700 mV
Memosens conductivity input	M8 socket, 4-pin, for Memosens laboratory cable, or measuring cable for digital CONDI sensors with Memosens protocol, 4-pin M12 coupling; 4-pin M8 connector		
	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 (ultrapure water with traces)	
		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 … 5000 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 detector	Temperature adjustment (offset) with Memosens sensors (TAN option 001/002)	

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
		Volume concentration in gas	0.00 … 99.99 Vol%
	Temperature range[4)]	–20 … +150 °C / -4 … +302 °F	
Sensor adjustment	Automatic calibration in air, adjustable relative humidity Zero calibration, temperature (TAN option 001/002)		
Temperature detector	Temperature adjustment (offset) with Memosens sensors		
Connections	2 x socket Ø 4 mm for separate temperature detector 1 x M8 socket, 4-pin, for Memosens laboratory cable 1 x micro USB-B for data transmission to PC 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, Chinese		
Status indicators	For battery condition, logger		
Graphic display	QVGA TFT display with white backlighting		
Keypad	[on/off], [meas], [enter], [◀], [▶], [▲], [▼] 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)	
	Immunity to interference	Industrial applications	
	EN 61326-2-3 (Particular requirements for transducers)		

pH/ORP Measurement

Specifications

RoHS conformity	According to Directive 2011/65/EU	
Power supply	4 x AA (Mignon) alkaline batteries 4 x NiMH rechargeable batteries or 1 x Li-ion rechargeable battery (rechargeable via USB)	
Rated operating conditions	Ambient temperature	–10 … +55 °C / +14 … +131 °F
	Transport / storage temp.	–25 … +70 °C / –13 … +158 °F
	Relative humidity	0 … 95 %, brief condensation permissible
Housing	Material	PA12 GF30 + TPE
	Ingress protection	IP66/67 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

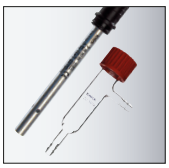
*) User-defined
1) At rated operating conditions
2) ± 1 digit
3) Plus sensor error
4) Ranges dependent on Memosens sensor
5) c = cell constant

Portavo 907 MULTI PH Product Line

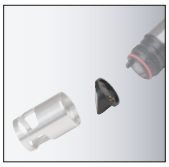
Portavo 907 MULTI PH		Order No.
	Portavo 907 Multi pH for measurement using digital Memosens sensors for pH/ORP, conductivity (contacting or toroidal), and oxygen or using the SE 340 optical oxygen sensor, incl. Paraly SW 112 configuration software with USB connector cable and USB adapter (A female to B male) for printer connection.	907MULTIPH
Portavo 907 SET-MULTI-PH		
	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
Portavo 907 SET-MULTI-PH-101		
	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 Polymer body, ceramic junction, length 120 mm / 4.72 inches	SE 101 MS
pH/Pt1000 sensor		
	Digital Memosens pH sensor Glass body, ceramic junction, length 110 mm / 4.33 inches	SE 102 MS
pH/Pt1000 sensor		
	Digital Memosens pH puncture sensor Polymer body, length 90 mm / 2.36 inches	SE 104 MS

pH/ORP Measurement

Portavo 907 MULTI PH Product Line

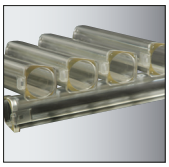
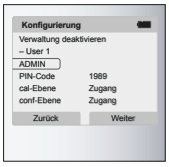
pH/Pt1000 sensor		Order No.
	Polymer body, fiber junction, length 120 mm / 4.72 inches	SE 101 AN
pH/Pt1000 sensor		
	Glass body, ceramic junction, length 110 mm / 4.33 inches	SE 102 AN
pH puncture sensor		
	Polymer body, hole junction, length 65 / 25 mm, 4.33 / 0.98 inches	SE 104 AN
pH/Pt1000 sensor		
	For measurements in Ex Zone 0, including equipotential bonding cable, glass body, ceramic junction, length 105 mm / 4.13 inches	ZU 6979
2-electrode sensor		
	Digital conductivity sensor with Memosens technology Stainless steel body, length 120 mm / 4.72 inches	SE 202-MS
2-electrode sensor		
	Digital conductivity sensor with Memosens technology Polymer body, length 120 mm / 4.72 inches	SE 615/1-MS
Toroidal conductivity sensor (digital)		
	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 ARF 210/215	SE 680N-K8N4U00M

Portavo 907 MULTI PH Product Line

		Order No.
Oxygen sensor		
	The SE 715 oxygen sensor with Memosens plug-in system requires little maintenance and is equipped with a temperature detector. 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
Optical oxygen sensor		
	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
Memosens cable		
	Measuring cable for digital sensors with Memosens connector Length 1.5 m / 4.92 ft	CA/MS-001XFA-L
	Measuring cable for digital sensors with Memosens connector Length 2.9 m / 9.51 ft	CA/MS-003XFA-L
	Measuring cable for digital sensors with M12 socket, 4-pin, M8 connector, 4-pin, length 1.5 m / 4.92 ft	CA/M12-001M8-L
Sensor protection / calibration cap		
	Sensor protector that also serves as a calibration beaker for the SE 340 optical oxygen sensor.	ZU 0911
Protective cap		
	Sensor cap, spare part for the SE 340 optical oxygen sensor.	ZU 0913
Maintenance kit		
	Electrolyte, 3 membrane caps for amperometric oxygen sensors	ZU 0879
Adapter		
	Adapter for 12 mm / 0.47 inch industrial sensors with PG 13.5 thread.	ZU 0939
	Adapter for BNC pH sensors to DIN socket	ZU 1190

pH/ORP Measurement

Portavo 907 MULTI PH Product Line

Sensor quiver		Order No.
	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	ZU 0925
Pt1000 temperature detector		
	For temperature measurements with quick response time: Monel 2.4360, –10 ... +100 °C / +14 ... +212 °F, accuracy class A according to IEC 751	ZU 6959
Base stand		
	Base stand for mounting up to 3 sensors with base plate made of stainless steel	ZU 6953
TAN options		
	Cal SOP calibration method, user management, sensor verification, temperature detector adjustment in the Memosens sensor (offset correction) Note: This list applies only to pH devices.	SW-P001
	Temperature detector adjustment in the Memosens sensor (offset correction)	SW-P002
	Multichannel function	SW-P003
Paraly SW112		
	PC software for configuration and firmware update (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

pH/ORP Measurement

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