



Portavo 908 Multi

Portable Multiparameter Analyzer for the Pharmaceutical and Biotech Industries.

Portavo 908 Multi is the first portable Memosens-based measuring device for the analysis of liquids with direct printer control. A printer for immediate printing of the calibration record (GLP compliant) can be directly connected via the micro USB port.

Many new features distinguish the Portavo 908 Multi for use in the pharmaceutical and biotech field. These include

- a new pH calibration procedure with a fixed process cycle
- multi-level user management with access control
- direct assignment of Memosens sensors to the device, which increases safety in operation.

Tailor-made pH calibration

SOP Cal

pH sensors can be tested using the new SOP calibration procedure with up to 3 calibration points. The third buffer is used as a verification buffer. You can pick and choose the buffer set for each calibration point and also set the sequence.

You can use your own buffer solutions or choose from a list of commercially available buffer sets, e.g., CaliMat, NIST and DIN. For the verification buffer, a maximum permitted deviation (delta pH) is entered.

Security package included

User management

The Portavo 908 Multi's professional user management regulates access to the device and the sensor.

- Increased security for configuration, calibration and measurement data
- No unauthorized interventions during the operating cycle
- Up to 4 user profiles can be entered
- Different access rights can be established

Depending on user experience, the role profile can be selectively defined for configuring the device and sensor as well as for calibrating the sensor. The risk of changing settings inadvertently is clearly minimized in this way.

More Safety During Operation

Memosens sensors can be assigned directly to the Portavo 908 Multi. As such, data saved in the sensor can be consulted, including

- sensor type
- TAG
- group

Unique sensor-to-device assignment reduces potential errors. This ensures that only the right sensors are used for the selected measuring point.

Facts and Features

- Multiparameter
 - pH
 - ORP
 - contacting conductivity
 - inductive conductivity
 - amperometric oxygen
 - optical oxygen
- Temperature
- GLP compliant
- Direct printer control
- User management
- pH calibration with a fixed process cycle
- Digital Memosens sensors
- Concentration measurement with toroidal conductivity sensors
- Robust, practical, ergonomic
- Li-ion battery – charged directly via USB



```

Calibration Record
Date                11/26/2015  11:41

Device information
Manufacturer         Knick
Serial no.          0003792
Model               908 Multi
SW version          1.5.0.Build 10904

Sensor information  Memosens
Sensor type         pH
Manufacturer        Knick
Order no.           SE 555X/1-NMSN
Serial no.          2180694
Software ver.       1.0.6
Hardware ver.       1.5.2
TAG                 ABC 11-13-12_wo
Temp. offset        0.0 K
Operating time      50 h
Wear                 0 %
SIP                 0

Calibration data
Calibration date    06/14/2015  09:48
Zero                pH 7.201 | 11.8 mV
Slope               99.154 % | 58.7 mV
Buffer 1            pH 4.005
Buffer 2            pH 6.996
    
```

MEMO SENS

3-year
warranty!

Specifications

Connections	2 x socket, 4 mm dia., for separate temperature probe 1 x M8 socket, 4 pins, for flexible Memosens lab cable 1 x micro USB-B for data transmission to PC or printer connection 1 x M12 socket, 8 pins, for flexible connecting cable for Memosens sensors or SE 340 sensor (optical oxygen)	
Air pressure measurement	700 ... 1100 hPa	
User interface	Straightforward menu navigation with graphic icons and detailed operating instructions in plain text	
Languages	German, English, French, Spanish, Italian, Portuguese, Russian	
Sensoface	Status indication (friendly, neutral, sad)	
Status indicators	For battery power level, logger	
Graphic display	QVGA TFT display with white backlighting	
Keypad	[on/off], [meas], [enter], [◀], [▶], [▲], [▼], 2 context-sensitive softkeys	
Data logger	10 000 memory locations	
Recording	Manual, interval- or event-controlled, with management of tag numbers and notes	
MemoLog calibration data logger (Memosens only)	Up to 100 Memosens calibration records can be saved	
	Recording	Directly retrievable via MemoSuite or Paraly SW 112 (USB)
	Viewable on the display	Manufacturer, sensor type, serial no., zero, slope, calibration date
Temperature input	2 x 4 mm dia. 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
Communication	USB 2.0	
	Profile	HID, driverless installation
	Usage	Data exchange and configuration via Paraly SW 112 software
Diagnostic functions		
Sensor data (Memosens only)	Manufacturer, sensor type, serial number, wear, operating time, remaining lifetime, max. temperature, adaptive calibration timer, calibration and adjustment data, counter for SIP, CIP and autoclaving	
Calibration data	Calibration date; pH/Oxy: zero, slope; Cond: cell constant	
Device self-test	Automatic memory test (FLASH, EEPROM, RAM)	
Device data	Device type, software version, hardware version	
Data retention	Parameters, calibration data > 10 years	
EMC	EN 61326-1 (General Requirements)	
	Emitted interference	Class B (residential environment)
	Immunity to interference	Industrial applications
	EN 61326-2-3 (Particular Requirements for Transmitters)	
RoHS conformity	According to directive 2011/65/EU	
Power supply	Batteries: 4 x AA alkaline or 1 x Li-ion battery, USB chargeable	
Nominal operating conditions		
Ambient temperature	-10 ... 55 °C / 14 ... 131 °F	
Transport/Storage temp.	-25 ... 70 °C / -13 ... 158 °F	
Relative humidity	0 ... 95 %, short-term condensing allowed	

Specifications

Housing		
Material	PA12 GF30 (silver gray RAL 7001) + TPE (black)	
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	
Printer	Printer protocols: HP-PCL, Epson, Samsung, IBM (ASCII texts) Connection via standard USB cable and USB adapter (A female to B male)	
Memosens pH input	M8 socket, 4 pins, for flexible Memosens lab cable or M12 socket, 8 pins, for flexible connecting cable for Memosens sensors	
Display ranges ⁴⁾	pH	-2.00 ... 16.00
	mV	-1999 ... 1999 mV
	Temperature	-50 ... 250 °C / -58 ... 482 °F
Sensor standardization*)	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 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
	-11- Metrohm	4,00/7,00/9,00
	-U1- (User)	loadable via Paraly SW 112
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 sensor condition	
Evaluation of	zero/slope, response, calibration interval	
Memosens ORP input	M8 socket, 4 pins, for flexible Memosens lab cable or M12 socket, 8 pins, for flexible connecting cable for Memosens sensors	
Display ranges ⁴⁾	mV	-1999 ... 1999 mV
	Temperature	-50 ... 250 °C / -58 ... 482 °F
Sensor standardization*)	ORP calibration (zero adjustment)	
Permissible calibration range	ΔmV (offset)	-700 ... 700 mV

Specifications

Memosens conductivity input	M8 socket, 4 pins, for flexible Memosens lab cable or M12 socket, 8 pins, for flexible connecting cable for Memosens sensors	
Measuring range	SE 615/1-MS sensor	10 $\mu\text{S}/\text{cm}$... 20 mS/cm
Measuring cycle	Approx. 1 s	
Temperature compensation	Linear 0 ... 20 %/K, reference temperature adjustable nLF: 0 ... 120 °C / 32 ... 248 °F NaCl (ultrapure water with traces) HCl (ultrapure water with traces) NH ₃ (ultrapure water with traces) NaOH (ultrapure water with traces)	
Display resolution	Conductivity	0.001 $\mu\text{S}/\text{cm}$ ($c < 0.05 \text{ cm}^{-1}$) 0.01 $\mu\text{S}/\text{cm}$ ($c = 0.05 \dots 0.2 \text{ cm}^{-1}$) 0.1 $\mu\text{S}/\text{cm}$ ($c > 0.2 \text{ cm}^{-1}$)
	Resistivity	00.00 ... 99.99 $\text{M}\Omega \text{ cm}$
	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 % by 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 ₂ SO 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 ₂ SO 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)
Sensor standardization	Cell constant	Input of cell constant with simultaneous display of conductivity value and temperature
	Input of solution	Input of conductivity of the calibration solution with simultaneous display of cell constant and temperature
	Auto	Automatic determination of the cell constant with KCl solution or NaCl solution

Specifications

Memosens input, amperometric oxygen	M8 socket, 4 pins, for flexible Memosens lab cable or		
	M12 socket, 8 pins, for flexible connecting cable for Memosens sensors		
	Display ranges ⁴⁾	Saturation	0.000 ... 200.0 %
		Concentration	000 µg/l ... 20.00 mg/l
		Partial pressure	0.0 ... 1000 mbar
	Temperature meas. range ⁴⁾	-20 ... 150 °C / -4 ... 302 °F	
	Sensor standardization	Automatic calibration in air (100 % RH)	
Storage	Zero calibration in quiver with moistening sponge		
Optical oxygen input	M12 socket, 8 pins		
	OXY ranges at 20 °C / 68 °F	Saturation	0.000 ... 200.0 %
		Concentration	000 µg/l ... 20.00 mg/l
		Partial pressure	0.0 ... 1000 mbar
	Response time	t90 < 30 s	t99 < 60 s
	Measurement error ^{1,2,3)}	Zero signal < 0.1 % full saturation	
	Temperature meas. range ⁴⁾	0 ... 50 °C / 32 ... 122 °F	
	Measurement error ^{1,2,3)}	Temperature ± 0.2 K	
	Sensor standardization	Automatic calibration in air	
		Zero calibration	
	Max. overpressure	2.5 bar	
	Immersion depth	Min. 60 mm	Max. 25 m
Storage	in quiver with moistening sponge		

*) user-defined

1) at nominal operating conditions

2) ± 1 count

3) plus sensor error

4) ranges depending on Memosens sensor

Portavo 908 Multi Product Range

Portavo 908 Multi		Order No.
	Portavo 908 Multi for measurement using digital Memosens sensors for pH/ORP, conductivity (conductive or inductive) and dissolved 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.	908 Multi
pH/Pt1000 sensor		
	Digital Memosens pH sensor plastic 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 plastic body, length 90 mm / 2.36 inches	SE 104-MS
2-electrode sensor		Order No.
	Digital conductivity sensor with Memosens technology stainless steel body, length 120 mm / 4.72 inches	SE 202-MS
2-electrode sensor		Order No.
	Digital conductivity sensor with Memosens technology plastic body, length 120 mm / 4.72 inches	SE 615/1-MS
Toroidal conductivity sensor (digital)		
	With DN 50 dairy pipe process connection	SE 680N-C1N4U00M
	With DN 50 Varivent process connection	SE 680N-V1N4U00M
	With Clamp 2" process connection	SE 680N-J2N4U00M
	With process connection for ARF 210/215	SE 680N-K8N4U00M

Portavo 908 Multi Product Range
Oxygen sensor


The SE 715 oxygen sensor with Memosens connector system requires low maintenance and is equipped with a temperature detector. It is characterized by its high long-term stability, fast response and low flow dependence. The sensor is designed for simultaneous measurement of dissolved oxygen and temperature.

SE 715-MS

Optical oxygen sensor


The optical measuring principle and digital data transfer capability make the SE 340 oxygen sensor ideally suited for use with the Portavo 907. It is robust and water-proof (IP 68) and its extremely fast response makes it suitable for a multitude of applications. Another advantage is the flow-free and easy-to-clean beveled membrane. With 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

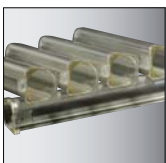
Measuring cable for digital sensors with 4-pin M12 socket, 4-pin M8 plug, length 1.5 m / 4.92 ft

CA/M12-001M8-L

Adapter


Adapter for 12 mm / 0.47 inches industrial sensors with PG 13.5 thread

ZU 0939

Sensor quiver


5 quivers, as replacement, for leak-proof storage of sensors

ZU 0929

Robust field case


For meter and sensor

Order No.

ZU 0934

Li-ion battery


Li-ion battery (USB chargeable only with Portavo 904, 907 and 908)

ZU 0925

Portavo 908 Multi Product Range

Impact receipt printer



EPSON TM_U220B

ZU 1000

Ink ribbon



for EPSON TM_U220B

ZU 1001

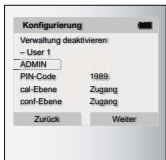
Receipt rolls



for EPSON TM_U220B, 70 mm x 80 m (WxL), SU: 32 pcs.

ZU 1002

TAN Options



Cal SOP calibration method: user management, sensor verification, temperature adjustment (offset)




Order No.

SW-P001

Temperature adjustment (offset)

SW-P002

Portavo 908 Multi Product Range
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 4.00 set (20 °C / 68 °F)	3 x 250 ml	CS-PSET4
	pH 7.00 set (20 °C / 68 °F)	3 x 250 ml	CS-PSET7
	pH 9.00 set (20 °C / 68 °F)	3 x 250 ml	CS-PSET9
	pH 4.00 / 7.00 / 9.00 set (20 °C / 68 °F)	3 x 250 ml	CS-PSET479
	KCl solution, 3 molar	250 ml	ZU 0062