Portavo 907 Multi Cond

Portable multiparameter analyzer for digital pH/ORP, conductivity, and oxygen sensors, plus an interface for analog conductivity sensors.

Portavo 907 Multi Cond can be used with digital Memosens conductivity sensors, analog 2-electrode sensors, and analog 4-electrode sensors. The powerful Li-ion rechargeable battery can be charged via USB in the device. The clear sensor diagram provides an at-a-glance view of the sensor condition.

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 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.

Multi-Channel Function for Simultaneous Operation of 2 Sensors

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

Facts and Features

- High-resolution color graphic display
- Transflective, even when exposed to direct sunlight
- Li-ion rechargeable battery
- Micro USB port and Paraly SW 112 operating software
- Sensor quiver protects the sensor from drying out and damage
- High-performance polymer housing ensures low water absorption and high impact resistance
- Intelligent data logger with 10,000 entries and graphic display
- Use Memosens and analog sensors with one device
- Multichannel function
- IP66 / IP67 protection
- Mineral glass screen can still be read perfectly after many years
- New add-on functions, such as user management, sensor verification, and calibration of the temperature detector are available as options

Knick

Conductivity Measurement

Original size

MEMOSENS

3-year warranty

Specifications

Conductivity input, analog	Multi-contact for 2-/4-electrode sensors with integrated temperature detector		
	Measuring ranges	SE 202 sensor:	0.01 … 200 µS/cm
	Decimal places*)	SE 204 sensor:	1 µS/cm ... 500 mS/cm
	2-electrode sensors	0.1 µS • c … 200 mS • c[5)]	
	4-electrode sensors	0.1 µS • c … 1000 mS • c[5)]	
	Permissible cell constant	0.005 … 200.0 cm^{-1} (adjustable)	
	Measurement error[1,2,3)]	< 0.5 % of measured value + 0.4 µS • c[5)]	
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	
Conductivity input, Memosens	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
Conductivity input	Measuring cycle	Approx. 1 s	
	Temperature compensation	Linear 0 … 20 %/K, adjustable reference temp. 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
	Temperature	(TAN option 001/002)
	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

Conductivity Measurement

Specifications

Memosens pH input (also ISFET)	M8 socket, 4-pin, for Memosens laboratory cable		
	Display ranges[4)]	pH	–2.000 … +16.000
		mV	–2000 … +2000 mV
		Temperature	–50 … +250 °C
			–58 … +482 °F
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
Sensor adjustment*)	pH calibration		
Operating modes*)	Calimatic	Calibration with automatic buffer recognition	
	Cal SOP	Cal SOP calibration method (TAN option 001)	
	Temperature	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*)	Knick CaliMat	Ciba (94)	User-defined
	NIST Technical	HACH	Mettler-Toledo
	NIST Standard	Hamilton	WTW techn. buffers
	DIN 19267	Reagecon	
Permissible calibration range	Zero point	6 ... 8 pH	
	With ISFET:	–750 … +750 mV	Operating point (asymmetry)
	Slope	approx. 74 … 104 %	
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 input, oxygen	M8 socket, 4-pin, for Memosens laboratory cable		
	Display ranges[4)]	Saturation	0.000 … 1000.0 %
		Concentration	000 µg/l … 100.00 mg/l
		Partial pressure	0.0… 2000 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)		
Storage	In quiver		
Connections	2 x socket Ø 4 mm for separate temperature probe 1 x M8 socket, 4-pin, for Memosens laboratory cable 1 x micro USB-B for data transmission to PC 1 x multi-contact socket for 2- and 4-electrode sensors		
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 can be shown on the display – directly readable via MemoSuite (USB): 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	
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)		

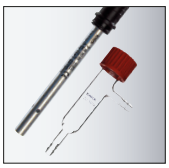
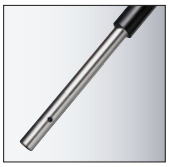
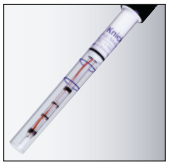
Conductivity Measurement

Specifications

RoHS conformity	According to Directive 2011/65/EU	
Power supply	4 x AA (Mignon) alkaline 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 Cond Product Line

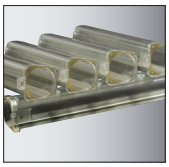
Portavo 907 Multi Cond		Order No.
	Portavo 907 Multi Cond for measurement using digital Memosens sensors for pH/ORP, conductivity (contacting or toroidal), and oxygen or using the SE 340 optical oxygen sensor, incl. Paraly SW 112 configuration software with USB connector cable and USB adapter (A female to B male) for printer connection.	907 MULTI COND
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
2-electrode sensor		
	With integrated temperature detector (NTC 30 kΩ), stainless steel body, incl. flow cell. For measurements in solutions with low conductivity such as ultrapure water and boiler feedwater, e.g., for checking water desalination systems.	SE 202
4-electrode sensor		
	With integrated temperature detector (NTC 30 kΩ) and epoxy body. For measurements in natural waters such as surface water or drinking water, in aqueous solutions such as acids and bases, and for determining the salinity of seawater.	SE 204
4-electrode sensor		
	With glass body (ZU 0290 adapter required). The sensor works reliably within a large range of < 1.00 µS/cm to > 1000 mS/cm and is equipped with a quick-reacting Pt1000 temperature detector. It has a glass/platinum measuring system with an easy-to-replace KPG tube, is simple to clean, and does not require platinization. With its glass body, use in laboratory conditions is recommended.	ZU 6985

Conductivity Measurement

Portavo 907 Multi Cond Product Line

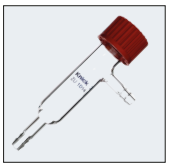
pH/Pt1000 sensor		Order No.
 pH/Pt1000 sensor	Digital Memosens pH sensor Polymer body, ceramic junction, length 120 mm / 4.72 inches	SE 101 MS
 pH/Pt1000 sensor	Digital Memosens pH sensor Glass body, ceramic junction, length 110 mm / 4.33 inches	SE 102 MS
 Oxygen sensor	Digital Memosens pH puncture sensor Polymer body, length 90 mm / 2.36 inches	SE 104 MS
 Optical 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
 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 (IP68), 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
 Adapter	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
	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

Portavo 907 Multi Cond 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
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
Conductivity standard		
	For determining and checking cell constants, 1 ampoule for producing 1000 ml 0.1 mol/l NaCl solution (12.88 mS/cm)	ZU 6945
	For determining and checking cell constants, conductivity 12.88 mS/cm ±1 % (0.1 mol/l KCl), 500 ml ready-to-use solution	CS-C12880K/500
	For determining and checking cell constants, conductivity 1413 µS/cm ±1 % (0.01 mol/l KCl), 500 ml ready-to-use solution	CS-C1413K/500
	For determining and checking cell constants, conductivity 147 µS/cm ±1 %, 500 ml ready-to-use solution	CS-C147K/500
	For determining and checking cell constants, low conductivity 15 µS/cm ±5 %, 500 ml ready-to-use solution	CS-C15K/500
	For determining and checking cell constants, conductivity standard 1.3 µS/cm KCl 300 ml	ZU 0701

Conductivity Measurement

Portavo 907 Multi Cond Product Line

KPG® tube		Order No.
	For ZU 6985 4-electrode sensor, incl. O-ring	ZU 0180
Replacement flow cell		
	For SE 202-MS 2-electrode sensor	ZU 1014
Adapter		
	For connecting a conductivity sensor with 2 banana plugs to the socket on the Portavo Cond product line	ZU 0289
	For connecting the ZU 6985 4-electrode sensor to the socket on the Portavo Cond product line	ZU 0290
Sensor protector		
	Sensor protector that also serves as a calibration beaker for the SE 340 optical oxygen sensor.	ZU 0911
Sensor cap		
	Sensor cap, spare part for the SE 340 optical oxygen sensor.	ZU 0913
Electrolyte		
	Electrolyte, 3 membrane caps for amperometric oxygen sensors	ZU 0879
Li-ion rechargeable battery		
	Li-ion rechargeable battery	ZU 0925

Portavo 907 Multi pH Product Line

TAN options

Cal SOP* calibration method, user management, sensor verification, temperature detector adjustment in the Memosens sensor (offset correction) *Cal SOP for pH only	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)

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

Conductivity 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