Scientific Equipment
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Portavo 904 pH

Portable, sturdy process analyzer for pH and ORP measurement.

Up to 5,000 values can be recorded using the integrated data logger. Using the USB port and Paraly SW 112 software, the logger data can be easily transferred to a PC for evaluation.

Custom pH Calibration
Cal SOP

The Cal SOP calibration procedure allows pH sensors to be checked with up to 3 calibration points. A buffer is used as the verification buffer. The buffer set for each calibration point can be separately selected, thus also allowing their order to be determined.
Custom buffer solutions can be used, or choose from a list of commercially available buffer solutions, e.g., CaliMat, NIST, and DIN. A maximum permissible deviation (Delta pH) is entered for the verification buffer.

Security Package, Including
User Management

Professional user management regulates access to the device and the sensor.
– Increased security for configuration, calibration, measurement data, and data logger settings.
– No unauthorized interventions during the operating cycle
– Up to 4 user profiles can be set
– Different access rights can be established

Depending on the user's experience, the role profile can optionally be defined for configuration of the device and sensor or for sensor calibration. This clearly minimizes the risk of inadvertently changing settings.

Greater Reliability During Operation

Memosens sensors can be assigned directly to the Portavo using the data stored in the sensor, such as

Sensor type
TAG
Group

Unambiguous assignment of the sensor to the device reduces the potential for errors. This ensures that only the right sensors are used for the selected measuring point.
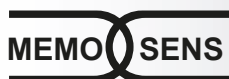
pH/ORP Measurement

Facts and Features

– Memosens sensors or analog sensors for pH or ORP measurement can be used with one device

– Sensor quiver protects the sensor from drying out and damage

– Sturdy housing with IP66/67 protection, also suitable for outdoor use

– Li-ion rechargeable battery – USB chargeable

– Data logger with 5,000 values

– Micro USB port and Paraly SW 112 operating software

– Custom pH calibration Cal SOP

– User management for access control

– Sensor verification for clear assignment of the sensor to the device via sensor type, TAG, or group

– Temperature detector adjustment in the Memosens sensor (offset correction)

3-year warranty

MEMO SENS

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	$1 \times 10^{12}\ \Omega$ (0 ... 35 °C / 32 ... 86 °F)	
	Input current	1×10^{-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 % 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 Pt1000	–20 ... 120 °C / –4 ... 248 °F –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, ISFET	M8 socket, 4-pin, for Memosens laboratory cable		
	Display ranges[4]	pH mV Temperature	–2.000 ... 16.000 –2000 ... 2000 mV –50 ... 250 °C / –58 ... 482 °F
Sensor adjustment*)	pH calibration		
Operating modes*)	Calimatic	Calibration with automatic buffer recognition	
	Manual	Manual calibration with entry of individual buffer values	
	ISFET zero	Calibration of ISFET sensors	
	Data entry	Data entry of zero and slope	
	Cal-SOP (TAN option)	Software option SW-P001: Defining the pH buffers and the sequence of the calibration steps; defining the delta deviation for the verification buffer	
	Temperature calibration (TAN option)	Software option SW-P002 for temperature detector adjustment in the Memosens sensor (offset correction)	
Calimatic buffer sets*)	–01– Mettler-Toledo –02– Knick CaliMat –03– Ciba (94) –04– NIST Technical –05– NIST Standard –06– HACH –07– WTW techn. buffers –08– Hamilton –09– Reagecon –10– DIN 19267 –U1– (User)	2.00/4.01/7.00/9.21 2.00/4.00/7.00/9.00/12.00 2.06/4.00/7.00/10.00 1.68/4.00/7.00/10.01/12.46 1.679/4.006/6.865/9.180 4.01/7.00/10.01/12.00 2.00/4.01/7.00/10.00 2.00/4.01/7.00/10.01/12.00 2.00/4.00/7.00/9.00/12.00 1.09/4.65/6.79/9.23/12.75 Loadable via Paraly SW 112	
Permissible calibration range	Zero point Slope	6 ... 8 pH Approx. 74 ... 104 %	
	ISFET	–750 … +750 mV	Operating point (asymmetry)
	Calibration timer*)	Interval 1 ... 99 days, can be deactivated	
	Sensoface	Provides information on the condition of the sensor	
	Evaluation of	Zero point/slope, response time, cal. 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) Permissible calibration range	ΔmV (offset)	−700 ... 700 mV
	Temperature calibration (TAN option)	Software option SW-P002 for temperature detector adjustment in the Memosens sensor (offset correction)	
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 pH socket in acc. with DIN 19262	
Display	LCD STN 7-segment display with 3 lines and icons	
	Status indicators	For battery condition, logger
	Notices	Hourglass
Keypad	[on/off], [cal], [meas], [set], [▲], [▼], [STO], [RCL], [clock]	
Data logger	Space for 5,000 entries	
	Recording	Manual, interval- or event-controlled
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
Diagnostic functions	Sensor data (Memosens only)	Manufacturer, sensor type, serial number, 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 EN 61326-2-3	Industrial applications
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)	
	Operating time	Approx. 1000 h (alkaline)
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
3) Plus sensor error

2) ± 1 digit
4) Ranges dependent on Memosens sensor