



Portavo 904 X Cond

Portable, sturdy process analyzer for conductivity measurement in hazardous locations. Ideal for applications in the process industry.

Portavo 904 X Cond makes it possible to check process measuring points directly on site. Memosens or analog conductivity sensors can be connected to the Portavo.

Up to 5,000 values can be recorded using the integrated data logger. The MemoLog function enables the logging of calibration data from various Memosens measuring points, which can then be easily transferred to a PC via the USB interface. The Paraly SW 112 software enables easy management of all recorded data.



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.

Facts and Features

- Memosens sensors or analog sensors for conductivity measurement can be used with one device
- Can be used with toroidal conductivity sensors with Memosens protocol
- Sensor quiver protects the sensor from damage
- The sturdy housing with IP66/67 protection is also suitable for outdoor use.
- Data logger with 5,000 values
- Micro USB port and Paraly SW 112 operating software
- Mineral glass screen can still be read perfectly after many years
- Use in hazardous locations
- 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)

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.

Conductivity Measurement



Specifications

Conductivity input, analog	Multi-contact for 2-/4-electrode sensors with integrated temperature detector	
Measuring ranges	SE 202 sensor:	0.01 ... 200 $\mu\text{S}/\text{cm}$
	SE 204 sensor:	0.05 ... 500 mS/cm
Permissible cell constant	2-electrode sensors:	$0.1 \mu\text{S} \cdot \text{cm} \dots 200 \text{mS} \cdot \text{cm}^4$
	4-electrode sensors:	$0.1 \mu\text{S} \cdot \text{cm} \dots 1000 \text{mS} \cdot \text{cm}^4$
Measurement error ^{1,2,3)}	< 0.5 % of measured value + 0.4 $\mu\text{S} \cdot \text{cm}^4$	
Temperature input	2 x Ø 4 mm for integrated or separate temperature probe	
Measuring ranges	NTC 30 k Ω	-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	
Conductivity input	Measuring cycle	
Display resolution (autoranging)	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)
	Conductivity ⁴⁾	0.001 $\mu\text{S}/\text{cm}$ (c < 0.05 cm^{-1}) 0.01 $\mu\text{S}/\text{cm}$ (c = 0.05 ... 0.2 cm^{-1}) 0.1 $\mu\text{S}/\text{cm}$ (c > 0.2 cm^{-1})
	Resistivity	00.00 ... 99.99 $\text{M}\Omega \cdot \text{cm}$
	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 determination	Concentration	0.00 ... 100 wt%
	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)
	H ₂ SO 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	COND cell constant	Input of cell constant with simultaneous display of conductivity value and temperature
	CONDI cell constant	Input of cell constant with simultaneous display of installation factor and zero point
	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 calibration (TAN option)	Software option SW-P002 for temperature detector adjustment in the Memosens sensor (offset correction)

Conductivity Measurement

Specifications

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 analog 2- and 4-electrode sensors
Display	LCD STN 7-segment display with 3 lines and icons Sensoface Provides information on the condition of the sensor 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 – 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, operating time Calibration data Calibration date; cell constant 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)
Explosion protection	See Ex Certificates and EU Declaration of Conformity or www.knick.de
RoHS conformity	According to Directive 2011/65/EU
Power supply	4 x AA (Mignon) alkaline batteries Operating time Approx. 1000 h (alkaline)
Rated operating conditions	Ambient temperature $-10\text{ °C} \leq T_a \leq 40\text{ °C}$ T4 $-10\text{ °C} \leq T_a \leq 50\text{ °C}$ T3 Transport / storage temp. $-25 \dots 70\text{ °C}$ / $-13 \dots 158\text{ °F}$ Relative humidity 0 ... 95 %, brief condensation permissible
Housing	Material PA12 GF30 (silver gray RAL 7001) + TPE (black) 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) c = cell constant

Portable Device and Sensor Product Line for Conductivity Measurement in Hazardous Locations

Portavo 904 X Cond



Portavo 904 X for conductivity measurements in hazardous locations with analog or Memosens conductivity sensors, incl. USB connector cable

Order No.

904 X Cond

Portavo 904XSET-COND



Portavo 904 X COND, SE 204 conductivity sensor with cable, ZU 6945 calibration solution NaCl, ZU 0934 field case

Order No.

904 X Set Cond

SE 604 Memosens conductivity sensor



Sturdy 2-electrode sensor for precise, reliable measurement of low and very low conductivity, in particular in ultrapure water, digital, with Memosens technology
Further conductivity sensors: www.knick.de

SE 604X-MS

Memosens cable



Measuring cable for digital sensors with Memosens connector
Length 1.5 m / 4.92 ft

CA/MS-001XFA

Measuring cable for digital sensors with Memosens connector
Length 2.9 m / 9.51 ft

CA/MS-003XFA-L

Measuring cable for digital CONDI sensors with Memosens protocol
Length 1.5 m / 4.92 ft

CA/M12-001M8-L

Adapter



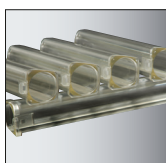
For connecting a conductivity sensor with 2 banana plugs to the socket on the Portavo Cond product line

ZU 0289

For connecting the ZU 6985 4-electrode sensor to the socket on the Portavo Cond product line

ZU 0290

Sensor quiver



5 pcs., replacement, for leak-proof storage of sensors

ZU 0929




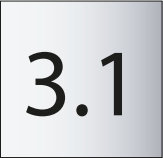
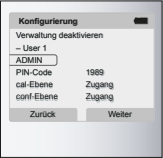

Sturdy field case



For device and sensor

ZU 0934

Portable Device and Sensor Product Line for Conductivity Measurement in Hazardous Locations

Conductivity standard		Order No.
	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 $\pm 1\%$ (0.1 mol/l KCl), 500 ml ready-to-use solution	CS-C12880K/500
	For determining and checking cell constants, conductivity 1413 μ S/cm $\pm 1\%$ (0.01 mol/l KCl), 500 ml ready-to-use solution	CS-C1413K/500
	For determining and checking cell constants, conductivity 147 μ S/cm $\pm 1\%$, 500 ml ready-to-use solution	CS-C147K/500
	For determining and checking cell constants, low conductivity 15 μ S/cm $\pm 5\%$, 500 ml ready-to-use solution	CS-C15K/500
	For determining and checking cell constants, conductivity standard 1.3 μ S/cm KCl 300 ml	ZU 0701
Base stand		
	Base stand for mounting up to 3 sensors with base plate made of stainless steel	ZU 6953
Pt1000 temperature detector		
	For temperature measurements with quick response time: Monel 2.4360, $-10 \dots 100 \text{ }^\circ\text{C}$ / $14 \dots 212 \text{ }^\circ\text{F}$, accuracy class A according to IEC 751	ZU 6959
Inspection certificate 3.1		
	For Portavo/Portames Cond	ZU 0268/9nnCOND
TAN options	For Portavo 904	
	User management, sensor verification, temperature adjustment (offset)	SW-P001
	Temperature adjustment (offset)	SW-P002
Paraly SW 112 software	PC software for Portavo 904	
	Software for configuration and firmware update (free download at www.knick.de)	