

Compact. Cost-efficient. Digital.

# MemoRail®

Plug & Measure with the new  
analyzers for Memosens®

pH · ORP · Cond · Oxy · Temp



Isolation Amplifiers  
Transmitters

Indicators

Process Analytics

Portable Meters

Laboratory Meters

Sensors

Fittings



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# MemoRail®

## The Essence of Measuring

MemoRail® is the first genuinely compact, digital analyzer for measuring pH values, ORP, conductivity, oxygen and temperature with Memosens® sensors. Two analog active / passive 4 to 20 mA outputs supply the measurement values for process value and temperature to the process control system or an SPC.

### Plug & Measure

MemoRail® is immediately ready for measurement on connecting a pre-calibrated Memosens® sensor. "Used" sensors can simply be replaced.

### Memosens®

Optimum availability of the point of measurement is achieved by using precalibrated sensors with contactless Memosens® technology. Calibration is no longer carried out on site but under reproducible conditions in the laboratory with the new MemoSuite software tool. Separate sensor data are always directly assigned to each Memosens® sensor. Problems at the connector involving humidity, corrosion or even defective galvanic isolation are a thing of the past.

### Compact

The highly space-saving modular housing of the MemoRail® devices is only 12.5 mm wide.

### Versatile

With its simple configuration via DIP switches, MemoRail® is set up only once for the measurement parameters and ranges. For precise adjustment to the application, a range of variants is available, including models with one or two analog current outputs which can be active or passive. The unit is supplied with 24 V DC via screw terminals / bus connectors or with 90 to 230 V AC via

the integrated VariPower® broad-range power supply. LEDs report operating and sensor states.

### Cost-efficient

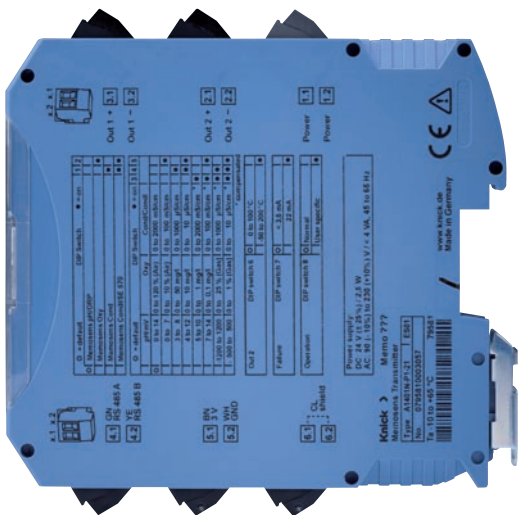
The outstanding properties of MemoRail® enable the implementation of measurement stations with low overall costs, especially in combination with modern Memosens® sensors specially tailored for use with MemoRail®.

### Applications

MemoRail® offers economical alternatives in applications such as:

- drinking water
- wastewater, sewage plants
- aquaria, fish farms, greenhouses
- fermentation
- rinsing equipment
- car wash systems
- water treatment plants/ equipment

Furthermore, with its narrow modular housing, MemoRail® is perfectly suited to installation in restricted spaces – e.g. in control cabinets, fermenters, or on ships.





## Memosens® sensors

pH, Cond, Oxy, Temp



## MemoRail®

Digital analyzer for Memosens® sensors



## MemoSuite

Software tool for calibration, sensor diagnostics, and database documentation

## Facts

- Modular housing, 12.5 mm wide
- Measurement of pH value, ORP, conductivity, oxygen and temperature
- Memosens® communication
- 2 current outputs 4 to 20 mA, active or passive
- Power supply 24 V DC (screw terminals or bus connection) or VariPower® broad-range power supply 90 to 230 V AC
- Simple configuration via DIP switches
- LEDs report operating and sensor states





# MemoRail®

## The Principle

### Plug & Measure

MemoRail® supplies power to the Memosens® sensors and converts the digital measuring signals into output currents of 4 to 20 mA for connection to the process control system or to an SPC.

Memosens®



MemoRail®



PLS / SPC



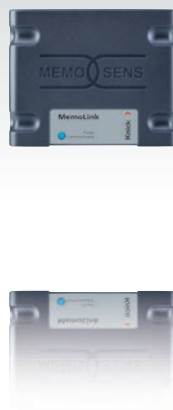
### Calibration, diagnostics, documentation

MemoSuite calibrates Memosens® sensors. Additional functions are the sensor diagnostics and database documentation. MemoLink establishes the connection between Memosens® sensor and PC.

Memosens®



MemoLink



MemoSuite



# MemoSuite

## The Software Tool

### Fast and user-friendly

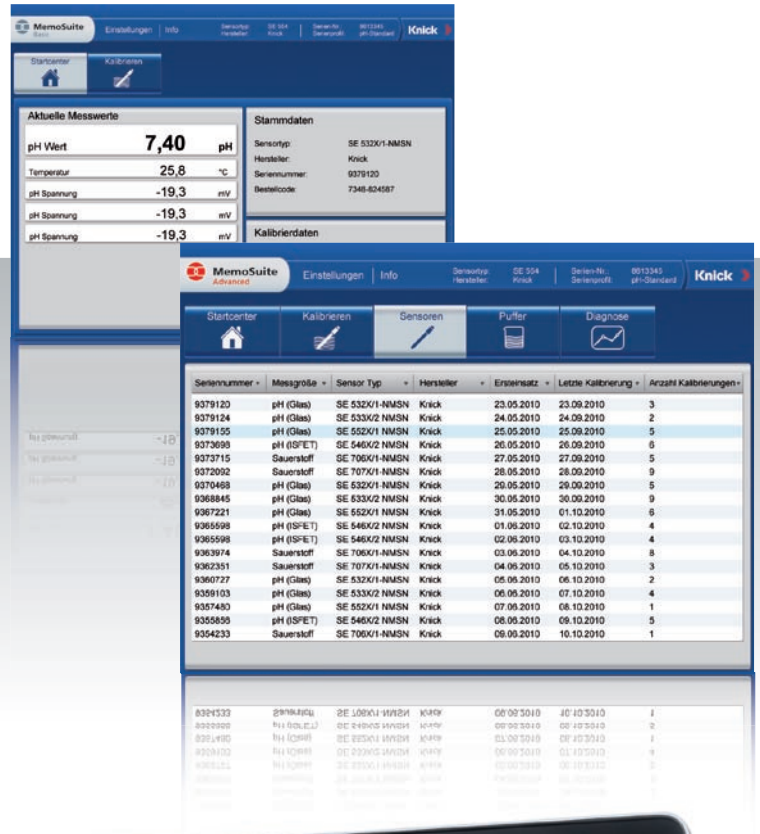
The MemoSuite software enables reproducible calibration of Memosens® sensors in the laboratory. Calibration under adverse ambient conditions on site is no longer necessary. The only thing required there is the quick and uncomplicated replacement of the sensors for pre-calibrated sensors.

### Two versions

MemoSuite Basic and MemoSuite Advanced meet differing application-specific requirements:

**MemoSuite Basic** calibrates Memosens® sensors.

In addition to calibration, **MemoSuite Advanced** also executes diagnostics and database documentation of the sensors. The database complies with the requirements of GMP and FDA CFR 21 Part 11.



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## Memosens® Sensors

In principle, all Memosens® sensors can be used to measure pH values, ORP, conductivity, oxygen and temperature with the MemoRail® analyzer. The new sensors specially developed for MemoRail®, however, can provide considerable cost savings:



### pH value

Model: SE 515/1-MS  
 Specifications:  
 pH 0 ... 14  
 Temp.: -5 ... +80 °C  
 Pressure: max. 4 bars  
 Length: 120 mm  
 Ground glass junction  
 Ag/AgCl reference,  
 gel electrolyte

### Conductivity

Model: SE 615/1-MS  
 Specifications:  
 Cond., 2-electrodes  
 10 µS/cm ... 20 mS/cm  
 Temp.: -5 ... +80 °C  
 Pressure: max. 4 bars  
 Length: 120 mm  
 Body: polysulfone  
 Electrodes: graphite

### Dissolved oxygen

Model: SE 715/1-MS  
 Specifications:  
 DO 0 ... 20 mg/l  
 Temp.: -5 ... +45 °C  
 Pressure: max. 3 bars  
 Length: 120 mm  
 Body: polysulfone /  
 stainless steel  
 Membrane: silicone

## Product Line

		Bestell-Nr.			
<b>MemoRail® A1401N</b>		<b>A1401N-P1-</b>	<input type="checkbox"/>	<input type="checkbox"/>	<b>-0000</b>
Outputs	1 x active 2 x active 1 x passive 2 x passive		<b>1</b> <b>2</b> <b>3</b> <b>4</b>		
Power supply	24 V DC, 90 ... 230 V AC (broad-range power supply via screw terminals)  24 V DC (via DIN rail bus connector or screw terminals)			<b>1</b>  <b>0</b>	
Customer-specific ranges					<b>-XXXX</b>
<b>Memosens® sensors<sup>1)</sup></b>					
pH sensor		<b>SE 515/1-MS</b>			
Conductivity sensor		<b>SE 615/1-MS</b>			
DO sensor	incl. maintenance kit	<b>SE 715/1-MS</b>			
1) more Memosens® sensors: <a href="http://www.knick.de">www.knick.de</a>					
<b>Calibration tool</b>					
MemoSuite Basic	Sensor calibration	<b>SW-MS1400-B</b>			
MemoSuite Advanced	Sensor calibration, diagnostics and database	<b>SW-MS1400-A</b>			
MemoLink	Memosens® interface	<b>MemoLink ML 1400</b>			
<b>Simulator</b>					
PortaSim® MS	Memosens simulator for pH, conductivity and oxygen	<b>ZU 0900X</b>			
<b>Indicators</b>					
830 S2 digital indicator	incl. min/max outputs	<b>830 S2</b>			
<b>Power supply</b>					
IsoPower® A 20900 H4	24 V DC, 1 A broad-range power supply, 100 ... 240 V AC	<b>A 20900 H4</b>			
<b>DIN-rail bus connector</b>					
Tapping of supply voltage	Routing to ZU 0628 DIN-rail bus connector Number required: supply towards left = 1, supply towards right = 2	<b>ZU 0678</b>			
Power supply bridging	for one MemoRail® unit	<b>ZU 0628</b>			