The Art of Measuring. Knick

Maximum Performance in a Minimum of Space.

MemoRail Modbus A1405 N

Compact multi-parameter measuring device
for Memosens and digital sensors.

MEMOSENS

pH · pH/ORP · IsFET · ORP · Oxy · Cond · CondI · Temp

Compact and Inexpensive.

MemoRail Modbus is a space-saving transmitter with Modbus interface in a 17.5 mm modular housing. Available as a 1- or 2-channel version for operation with contactless Memosens sensors as well as the SE 680 digital conductivity sensor and the SE 740 optical oxygen sensor.

Versatile Functionality

The compact multi-parameter analyzer supports a variety of process variables:

- pH
- ORP
- Contacting conductivity
- Inductive conductivity
- Amperometric oxygen
- Optical oxygen
- Temperature

Red and green LEDs report the operating and sensor states. 1- and 2-channel versions are available to optimally suit your application.

Facts and Features

- Slim modular housing with 17.5 mm width
- Memosens communication
- With pH/ORP combination sensors, measurement of up to four process values simultaneously plus temperature
- Modbus RTU protocol with standard RS-485 interface
- Up to 32 devices in parallel on a Modbus master
- Power supply 24 V DC
- 3-year warranty

Easy to Use

For quick Modbus configuration, the network address is directly set on the MemoRail Modbus devices using the DIP switches on the front panel. 24 V DC is supplied via plug-in terminals or bus connectors.

Memosens and Digital Sensors

The use of digital sensors and Memosens sensors with contactless Memosens technology ensures maximum reliability and availability of the measuring point.

MemoRail Modbus is ready to use immediately after a Memosens or digital sensor is connected.

Universal Use

MemoRail Modbus is an attractively priced solution in process analytics and optimally suited for use in numerous industries:

- Pharmaceutical industry, biotechnology
  - Upstream/downstream process
  - CIP/SIP systems
- Food & beverage
  - Process monitoring
  - CIP/SIP systems
- Water treatment plants/equipment
- Power generation, etc.

Because of their narrow modular housing, these DIN rail devices are ideal for installations where space is limited — in fermentation plants and in control cabinets, for example.

MemoRail Modbus A1405 N

Inductive Sensor Connector System

Memosens

Memosens transfers both energy and data without contact between electrochemical sensors and analyzers. The integrated intelligence enables storing and analyzing process-related and sensor-relevant data directly in the sensors. These can be pre-calibrated under optimal laboratory conditions and quickly and easily installed at the measuring point or put in to replace sensors that have been "used up."

High Availability

Through predictive maintenance, pre-calibrated digital Memosens sensors have a longer service life than analog sensors. The result is a significant reduction in maintenance costs and process down-time.

EMI Protection

Perfect galvanic isolation ensures interference-free measurements, even under extreme potential conditions.

- Easy handling even under harsh conditions
- Up to 100 m cable length
- Resistant to moisture, dirt, corrosion, salt bridges, and interference potentials

Wide Range of Sensors

MemoRail Modbus A1405 N can be combined with a large number of sensors, such as (from left to right): pH/ORP, conductivity, oxygen (optical), inductive conductivity, amperometric oxygen

pH/ORP

Memosens sensors for measuring pH, ORP, and temperature. Different pH glasses and IsFET, reference systems, designs, and lengths make them perfectly adaptable to miscellaneous process requirements.

Cond

2-electrode sensors with Memosens technology for measuring very low to medium conductivities.

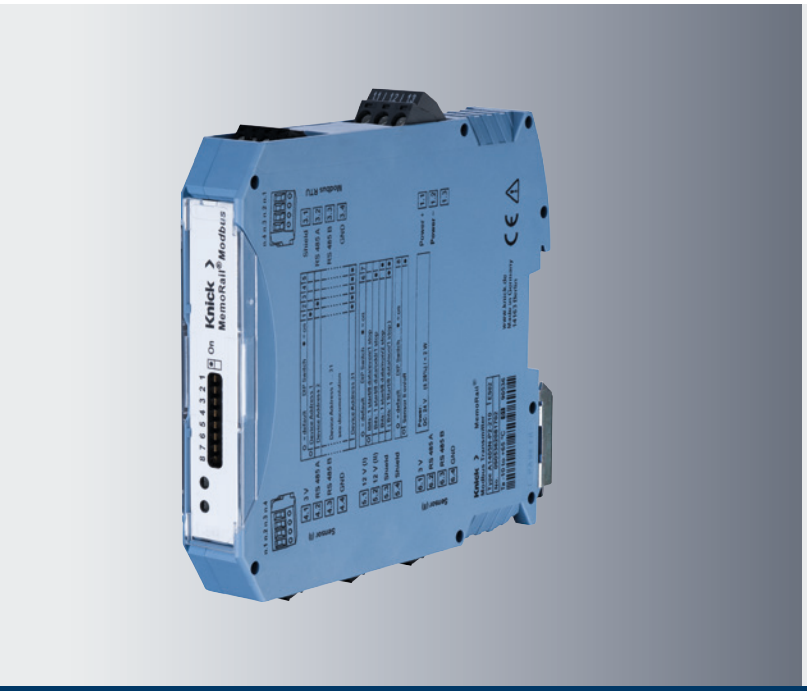
Digital inductive conductivity sensors with extremely wide measuring range up to the highest conductivities. Range of applications from ultrapure water to concentration determinations.

Oxy

Amperometric Memosens sensors for measuring very low oxygen values up to pure oxygen, dissolved in water or gaseous.

Flow-independent optical oxygen sensor with fast response time. For measurements in hygienic areas; steam-sterilizable, autoclavable, and CIP-resistant.

Convenient Calibration



Easy Sensor Calibration via Modbus

MemoRail Modbus A1405 N offers the option to calibrate the sensors directly on site using the Modbus. A variety of calibration procedures is available for the various parameters.

Mobile Sensor Calibration

A mobile alternative for offline calibration and adjustment of Memosens sensors is provided by the Portavo 908 Multi analyzer from Knick, which can also be used directly on site. The integrated temperature detector of the Memosens sensor can be very easily calibrated with the Portavo 908 Multi.

The Portavo 908 Multi portable multi-parameter analyzer for measuring pH, ORP, conductivity, or oxygen is available as a GLP-compliant version with printer interface for use in the pharmaceutical and biotechnology industries.

Sensor Calibration via MemoSuite

The flexible and intuitive MemoSuite software tool enables easy calibration of Memosens sensors in the lab. On-site calibration under adverse ambient conditions is no longer necessary. The only thing required there is quick and uncomplicated replacement of the used sensors with pre-calibrated sensors.

Extensive buffer management is offered by the convenient compilation of individual buffer sets from an extensive library. It is also a simple matter to enter special, user-specific buffer tables incl. temperature values.

To meet a variety of application-specific requirements, MemoSuite is available in different versions:

- **MemoSuite Basic** for calibration of Memosens sensors.

- **MemoSuite Advanced** for calibration, diagnostics and database documentation of the sensors. Up to 10 sensors can be calibrated simultaneously. The database complies with the requirements of GMP and FDA CFR 21 Part 11; the complete documentation can be output either as a calibration report or as a dataset in Excel format.

MemoRail Modbus A1405N

1-channel version: 1 x Memosens sensor or digital sensor
or
1 x optical SE 740 O_2 sensor

2-channel version: 2 x Memosens sensors or digital sensors
or
1 x Memosens sensor or digital sensor
and
1 x optical SE 740 O_2 sensor

Process variables: pH, ORP, IsFET
oxygen (amperometric/optical)
conductivity (conductive/inductive)

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