

## ALMEMO® 202-S and ALMEMO® 204



ALMEMO® data logger, professional measuring instrument of the latest V7 generation.

Two or four measuring inputs for all digital ALMEMO® D6 and D7 sensors, for ALMEMO® standard sensors with the DIGI measuring range.

## Applications

ALMEMO® devices can be used for a variety of applications, examples::

**Monitoring the indoor climate conditions:** temperature, air humidity, CO<sub>2</sub> level, air flow.

**Measuring the illumination and the UV exposure at the workplace:** illuminance in lux, UV index.

**Mobile measurements in ventilation systems:** air velocity, temperature, air humidity.

**Meteorological station with meteo multi sensor and radiation sensors:** air velocity, wind direction, temperature, air humidity, atmospheric pressure, global radiation, UV radiation, UV index.

**Monitoring temperatures in test stands and in industrial processes:** temperature, non-contact measurement (infrared sensor).

**Mobile test measurement in heating furnaces and climatic chambers:** temperature, air humidity, dew point, absolute humidity.

**Measuring the quality of deionized process water (ultrapure water):** electrical conductivity in the lower range of few  $\mu\text{S}/\text{cm}$ .

**Test measurement of process water and waste water in industry (i.a. chemistry, pharmacy, paper, food):** pH value, redox value, electrical conductivity, temperature.

Test measurements in compressed air systems: fast pressure measurement (up to 500 mops), dew point measurement (residual moisture).

**Measuring AC and DC voltage signals with high galvanic isolation:** voltage/power/output DC (up to 1000 mops), true RMS value AC.

## Technical data and functions

### Data logger of the latest V7 generation

The professional measuring instrument ALMEMO® 202-S and ALMEMO® 204 provides numerous outstanding functions for special applications using digital ALMEMO® D6 sensors and the latest ALMEMO® D7 sensors.

### Two or four measuring inputs for all digital ALMEMO® D6 and D7 sensors

All new digital ALMEMO® D6 and D7 sensors for a wide variety of measurable variables can be connected and evaluated. ALMEMO® standard sensors with the DIGI measuring range can also be used, e.g. for crossflow turbines and high-voltage modules for thermocouples, and DC and AC voltages. The ALMEMO® 202-S and ALMEMO® 204 supports all ALMEMO® functions.

### New digital ALMEMO® D7 sensors

With these digital ALMEMO® D7 sensors the ALMEMO® system is enhanced by many new functions and applications. ALMEMO® D7 sensors operate via an all-digital interface to the ALMEMO® 202-S and ALMEMO® 204 data logger ensuring high-speed serial transmission of all measured values. The measuring ranges of ALMEMO® D7 plugs are independent of the ALMEMO® measuring instrument being used and can be

expanded as and when required for new applications.

Measured values can be displayed with up to 8 digits (depending on range) and the units with up to 6 characters. Sensor designation and information can be up to 20 characters.

Each ALMEMO® D7 sensor has its own processor. They all work in parallel at their own sensor-specific sampling rate. D7 sensors thus attain very high measuring speeds in dynamic measuring operations.

The ALMEMO® D7 plug can process up to 10 channels for measured values and function values. This includes new applications, especially for multi-purpose sensors (e.g. Meteo sensors) and for linking up to complex third-party devices (e.g. chemical analysers, power analysers).

### Digitize and calibrate the existing sensor technology

Using the ALMEMO® D7 input plugs the existing sensor technology can easily be digitized. For digital sensors the overall accuracy of the measurement is independent from the ALMEMO® V7 display device / data logger. The complete measuring chain, consisting of sensor and connected ALMEMO® D7 measurement plug, can be calibrated. The accuracy during the calibration process can be increased by using multi-point adjustment.

**Data logger for all storage applications**

To save measured values a large flash memory is integrated. For monitoring tasks it can also be configured as a ring memory. For larger amounts of data, an external memory is available featuring a plug-in SD card.

For autonomous long-term monitoring the data logger can also be run in energy-saving sleep mode.

**One measuring instrument for every need**

This compact, handy device can, as an option, be fitted with rubberized impact protection for mobile use. The latest energy saving technology ensures long operating times. For stationary applications a H-rail mounting is available.

**Bright graphics display, easy and convenient operation by means of soft-keys**

The white, illuminated graphics display ensures that functions and measured values can be viewed in the clearest way possible. The device is easy and convenient to operate by means of 4 soft-keys and a cursor block. The menu guidance is clearly structured and easy to understand.

The sensor display shows the measured values together with all relevant sensor-specific functions, e.g. temperature compensation, atmospheric pressure compensation. Measured values, peak values, average values, and limit values can all be displayed in an easy-to-understand way in various forms,

namely lists or bar charts.

With ALMEMO® 202-S, users can even configure their own customized user menus from a range of 50 different parameters to display exactly those parameters required by a particular application. Choice of languages : German, English, French

**End-to-end programming of all parameters for ALMEMO® D6 and D7 sensors**

The ALMEMO® 202-S and ALMEMO® 204 professional measuring instrument provides a programming menu for the end-to-end programming of all the parameters needed for digital ALMEMO® D6 and D7 sensors.

The required measuring ranges are selected (with ALMEMO® D7 sensors up to 10 measuring channels) and other relevant sensor parameters are configured, e.g. moving average, atmospheric pressure compensation, temperature compensation.

**Other equipment**

The two ALMEMO® output sockets can be used to connect a PC / network and an ALMEMO® output interface with relays and analog output at the same time. With option KL it is possible - for a digital ALMEMO® sensor (i.a. ALMEMO® D6 / D7 temperature or pressure sensors) to program multi-point adjustment or linearization in the ALMEMO® plug itself.

This option is possible with all digital ALMEMO® plug versions. Standard connector (DIGI), ALMEMO® D6 and D7 plugs.

**ALMEMO® Measuring network**

LAN network



Wired network, up to 99 devices, up to 50 m cable length

**Accessories**

Memory plug with Micro-SD incl. USB card reader (see chapter General Accessories)  
Mains adapter 12 V / 1.5 A  
DC adapter cable, 10 to 30 VDC, 12 V / 0.25A, electrically isolated  
Rubberized impact protection, gray  
Magnetic fastening  
DIN rail mounting  
Instrument case

**Order no.**

ZA1904SD  
ZA1312NA12  
ZA2690UK  
ZB2490GS2  
ZB2490MH  
ZB2490HS  
ZB2490TK2

**Connecting cables**

USB data cable, electrically isolated  
Ethernet data cable, electrically isolated  
WLAN module, wireless WLAN connection  
Analog output cable, galvanically isolated, 1 x 20mA  
Analog output cable, galvanically isolated, 2 x 10V  
V24 data cable, electrically isolated  
Network technology, Bluetooth modules: see chapter Network technology

**Order no.**

ZA1919DKU  
ZA1945DK  
ZA1739WL  
ZA1601RI  
ZA1602RU  
ZA1909DK5

### Technical data

Measuring inputs:	
ALMEMO® 202-S	2 ALMEMO®-input sockets
ALMEMO® 204	4 ALMEMO®-input sockets for all digital ALMEMO D6 and D7 sensors and for ALMEMO® standard sensors with the DIGI measuring range
Precision class:	depends on the digital ALMEMO® sensor used
Measuring rate:	total sampling rate up to 1000 mops for ALMEMO® D6 sensors and ALMEMO® standard sensor (DIGI): 10 and 2.5 mops, for ALMEMO® D7 sensors: up to 1000 mops (depending on sensor).
Channels:	
ALMEMO® 202-S	up to 20 measuring channels (depending on sensor)
ALMEMO® 204	up to 40 measuring channels (depending on sensor)
Sensor power supply:	6 / 9 / 12 V, maximum 0.4 A
Outputs:	2 ALMEMO® sockets suitable for all output modules (analog / data / trigger / relay cables, etc.)

Standard equipment:	
Display:	Graphics display, 128 x 64 pixels, 8 rows Illumination: 2 white LEDs
Keypad:	7 silicone keys (of which 4 soft-keys)
Date and time-of-day:	Real-time clock, buffered by device battery
Single value memory, internal:	10 measured values, can be called onto display
Memory:	8 MB internal, approx. 400 000 measured values (depending on number of channels)
Power supply:	
Battery set:	3 AA alkaline batteries
Mains adapter:	ZA1312NA12 100 to 240 VAC to 12 VDC, 1.5 A galvanically isolated
DC-adapter cable galvanically isolated: ZA2690-UK, 10 to 30V, 0.25A	
Current consumption (without input and output modules):	
Active mode:	approx 35mA
with display illumination:	approx. 70mA
Sleep mode:	approx. 0.05 mA
Housing:	127 x 83 x 42 mm (LxWxH), ABS Weight 290g
Environmental conditions and general technical data see page 01.04 onwards	

**Data logger, professional measuring instrument, latest V7 generation**  
**Measuring inputs for all digital ALMEMO® D6 and D7 sensors,**  
**for ALMEMO® standard sensors with the DIGI measuring range**  
**Data logger with internal memory or with external memory connector (accessory)**

#### ALMEMO® 202-S



**Data logger, 2 Measuring inputs**

#### ALMEMO® 204



**Data logger, 4 Measuring inputs**

#### Option

Order no.

Multi-point adjustment and / or linearization can - with all digital ALMEMO® plug versions - be programmed by users themselves

OA202KL

#### Option

Order no.

Multi-point adjustment and / or linearization can - with all digital ALMEMO® plug versions - be programmed by users themselves

OA204KL

#### Standard delivery

Order no.

Measuring instrument, batteries, instruction manual, data logger, **ALMEMO® 202-S professional measuring instrument**

MA202S

Measuring instrument, batteries, rubberized impact protection ZB2490GS1, mains adapter ZA1312NA12, USB data cable ZA1919DKU, device case ZB2490TK2, instruction manual, data logger, **ALMEMO® 202-S professional measuring instrument in a carrying case kit**

MA202SKSU

#### Standard delivery

Order no.

Measuring instrument, batteries, instruction manual, data logger, **ALMEMO® 204 professional measuring instrument**

MA204

Measuring instrument, batteries, rubberized impact protection ZB2490GS1, mains adapter ZA1312NA12, USB data cable ZA1919DKU, device case ZB2490TK2, instruction manual, data logger, **ALMEMO® 204 professional measuring instrument in a carrying case kit**

MA204KSU