

Digital ALMEMO® D6 measuring module for AC voltage and AC current

For acquiring the true root mean square (RMS) value of a sinusoidal AC signal. Sampling rate of 1000 mops.
 Overvoltage proof measuring input. Galvanically isolated up to 6 kV.
 For connection to all ALMEMO® V6 / V7 measuring instruments



ZAD 903-ABx

ZAD 904-ABx

Applications

ALMEMO® D6 measuring modules can be used for a wide variety of applications. Examples:




- Inexpensive monitoring of several AC voltage signals with a large number of measuring modules
- Monitoring the supply voltage and the current consumption of machines, motors, and other consumers.
- Checking switches.
- Monitoring of the electrical parameters voltage, in addition to the physical measured variables such as temperature, pressure, air flow, flow rate, etc.
- Voltage and / or current measurement of 1-phase user (230 V AC) through a touch-proof Schuko-socket outlet adapter (accessory).

Technical data and function

- The digital ALMEMO® D6 measuring module uses its own integrated AD converter. The overall accuracy of the measurement is independent from the ALMEMO® display unit/data logger.
- The AC signal with sinusoidal curve progression is digitalized at the integrated AD converter at a high sampling rate and based on that, the true RMS value will be calculated continuously. At the same time, the frequency of the AC signal will be determined.
- The measured values are digitally interrogated by the ALMEMO® measuring device at the conversion rate of the measuring device..
- The ALMEMO® measuring instrument saves the measured values and the measuring software WinControl will display them graphically.
- The measuring input is overvoltage proof and galvanically isolated from the ALMEMO® measuring device.

Technical data

| | | | |
|----------------------------|---|----------------------|--|
| Input sockets: | Safety sockets CAT III, 20 A, Ø 4 mm | Nominal conditions: | Alternating signal: sinusoidal 50 Hz, 23 °C ±2 K, 10 to 90% RH (non-condensing) |
| Galvanic isolation: | 6 kV | Temperature drift: | max. 0.003 %/K (30 ppm/K) |
| Sampling rate: | 1 kHz internal | Suitable conditions: | +5 to +40 °C (Storage temperature: -20 to +60 °C), 10 to 90 % RH (non-condensing), maximum height above mean sea level: 2000 m |
| Refresh rate: | 0.5s | Housing: | ABS, 127 x 83 x 42 mm (LxWxH) |
| AC signals U,I: | only sinusoidal signals, no signals with phase angle control | Connecting cable: | 2 m, permanently connected |
| Response threshold U,I: | Signal U and I > 1 % of fin. val. | ALMEMO® D6-plug: | for measuring channels, see Types, configuration via ALMEMO® device |
| Operating range U, I, P: | DC ... 250 Hz | Supply voltage: | 6 to 12 V via ALMEMO® device |
| Measuring range U, I, P: | see Types | Current consumption: | approx. 50 mA (plug and module) |
| Resolution: | see Types | | |
| Overload: | see Types | | |
| Internal resistance: | see Types | | |
| Accuracy: | ±0.1% of fin. val. ±2 Digit | | |
| Measuring range frequency: | 20 to 250 Hz | | |
| Resolution: | 0.01 Hz | | |

| Accessories | | Order no. |
|--|---|---|
| DIN rail mounting | | ZB2490HS |
| Magnetic fastening | | ZB2490MH |
| Socket adapter: max. 230 V AC / 16 A | | ZE2000PA |
| Earthed socket for the consumer. 3 safety jacks: voltage, current, COM. Incl. short-circuit plug for current path. Housing: W 65 x H 120 mm | | |
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| DIN rail mounting | Magnetic fastening | Socket adapter |
| ALMEMO® extension cable, length = 4 m (see chapter 6) | | ZA9060VK4 |
| ALMEMO® extension cable, length = 10 m (see chapter 6) | | ZA9090VKC10 |

Types

Measuring module including touch proof connecting cable, ALMEMO® connection cable permanently connected to the ALMEMO® D6 plug

AC voltage

2 ALMEMO® measuring channels: voltage, frequency

| Measuring range | Resolution | Overload | Input resistance | Order no. |
|-------------------------|------------|-----------------------|------------------|-----------|
| 25 V _{RMS} AC | 0.01 V | ±60 V _{RMS} | 1 MOhm | ZAD903AB3 |
| 400 V _{RMS} AC | 0.1 V | ±400 V _{RMS} | 4 MOhm | ZAD903AB5 |

AC current

2 ALMEMO® measuring channels: current, frequency

| Measuring range | Resolution | Overload | Input resistance | Order no. |
|-------------------------|------------|----------------------|------------------|-----------|
| 1,8 A _{RMS} AC | 0.001 A | ±4 A _{RMS} | 100 mOhm | ZAD904AB1 |
| 20 A _{RMS} AC* | 0.01 A | ±20 A _{RMS} | 8 mOhm | ZAD904AB3 |

* Continuous operation up to a maximum of 10A RMS. For currents exceeding 10A RMS, the maximum measuring period is 10 minutes. After that, the device needs to cool down to room temperature.

Other version

ALMEMO® D7 measuring module ZED7 3x-ABx

see chapter 11

Power calculation via simultaneous measurement of voltage and current in one measuring module or acquisition of fast signal changes during switch-on / switch-off processes.

