

## Reference measuring instrument ALMEMO® 1033-2



**ALMEMO® Reference measuring instrument for temperature.**  
**High-precision measuring with Pt100 sensors**  
**Resolution 0.001 K**  
**Measuring range up to 720 °C**  
**with highest resolution 1 mK**

## Technical data and functions

- Extended measuring range up to 720 °C with highest resolution 1 mK.
- Function expansion as standard. The 4 sensor-specific parameters R0 and A, B, C of the CvD equation (Callendar-van-Dusen equation) for any Pt100 sensor can be programmed by the user.
- Temperature measurement with very high resolution, precision, and linearity, using Pt100 sensors
- Suitable as reference device in calibration laboratories and quality assurance procedures
- Very high accuracy thanks to multi-point adjustment of the Pt100 temperature sensor
- 2 electrically isolated measuring inputs for Pt100 sensors
- Resolution: 0.001 K, Units: °C, °F, K
- High-resolution A/D converter, delta-sigma, 24-bit, 1.25 mops (measuring operations per second)
- Two output sockets for digital interface, ALMEMO® memory connector
- Compact, modern, ergonomic design
- Graphics display, illuminated with white light
- Easy and convenient to operate by means of 4 soft-keys and cursor block
- Measured value display 2 measured values and differential
- Measuring functions: Zero-setting, smoothing, maximum / minimum values, individual value memory for 100 values
- Data logger with ALMEMO® memory connector (accessory)
- Sensor programming: Smoothing, designation, units, resolution, multi-point adjustment
- Device configuration: Illumination, contrast, device address, baud rate
- Choice of language: German, English, French

## Technical data ALMEMO® 1033-2

<b>Measuring inputs</b>	2 ALMEMO® input sockets for Pt100 sensors	<b>Standard equipment</b>	Display Graphics display, 128 x 64 pixels, 8 rows
Electrical isolation	Semiconductor relay (50 V)	Illumination	2 white LEDs
A/D converter	Delta-sigma, 24-bit, 1.25 mops	Keypad	7 silicone keys (of which 4 soft-keys)
<b>Measuring range</b>	P314: Pt100, -200 to +720 °C resolution 0.001 K P214: Pt100, -200 to +850 °C resolution 0.01 K	Date and time-of-day	Real-time clock, buffered by device battery
Measuring current	1 mA	Individual value memory, internal	100 measured values
Measuring method	ratiometric	<b>Power supply</b>	
Accuracy	P314: ±0.010 K ±1 digit in range -100 to +720 °C P214: ±0.03 K ±1 digit in range -100 to +850 °C	Battery set	3 AA alkaline batteries
Nominal conditions	23 °C ±2 K, < 90 % r.H., battery mode	Mains adapter	ZA1312NA12 100 to 230 VAC to 12 VDC, 1.5 A, electrically isolated
Temperature drift	typical 2 ppm / K	Current consumption (without input and output modules)	approx. 20 mA
<b>Outputs</b>	2 ALMEMO® sockets for interface cable and ALMEMO® memory connector	With illumination	approx. 40 mA
		Housing	127 x 83 x 42 mm (LxWxH) ABS, 290 g
		Ambient conditions	see starting on page 16

## Input connectors

## Order no.

ALMEMO® input connector up to 720 °C, resolution 0.001 K (range P314)	<b>ZA9030FS7P3</b>
ALMEMO® input connector up to 850 °C, resolution 0,01 K (range P214)	<b>ZA9030FS2P3</b>

## Accessories

## Order no.

Software WinControl for data acquisition for 1 device up to 20 channels	<b>SW5600WC1</b>
USB data cable, electrically isolated	<b>ZA1919DKU</b>
Ethernet data cable	<b>ZA1945DK</b>
ALMEMO® memory connector with micro SD	<b>ZA1904SD</b>
Mains adapter 12V, 1.5 A with ALMEMO® plug	<b>ZA1312NA12</b>
Rubberized impact protection, gray	<b>ZB2490GS2</b>
DIN rail mounting	<b>ZB2490HS</b>
Instrument case	<b>ZB2490TK2</b>

## Standard delivery

## Order no.

Reference measuring instrument for temperature up to 720 °C.  
 Batteries, operating instructions, manufacturer's test certificate.

**MA10332**

## Precision resistance temperature sensor Pt100 FPA924L0500H for the operating range -100 ... +660 °C



Precision RTD temperature sensor Pt100 FPA924L0500H in case (Measuring device and accessories not included)

### Technical data FPA924L0500H

Measuring element:	Pt100 resistor, class B	Handle:	up to 60 °C
Measuring tip:	Application range -100 ... +660 °C	Connection cable:	2 m cable in PTFE/fiberglass protection hose.
Sensor tube:	stainless steel, diameter 4 mm	ALMEMO® plug:	ZA9030FS7P3, resolution 0.001 K
Nominal length:	465 mm (visible)		

! To achieve a high precision, it is absolutely necessary to calibrate the electrode incl. multi-point adjustment! Please order additionally!

*On request:* Precision resistance temperature sensor Pt100 for the application range -200 ... +250 °C

### Standard delivery

**Precision resistance temperature probe for the application range -100 ... +660 °C**  
Measuring element Pt100, class B, probe diameter 4 mm, length 465 mm, with handle, 2 m cable and ALMEMO® connector for ALMEMO® 1030, 1033, 1036, 8036, storage case

**Order no.**

**FPA924L0500H**

## Precision resistance temperature probe Pt100 FPA923L0250 for the operating range -50 ... +400 °C



! To achieve a high precision, it is absolutely necessary to calibrate the measuring chain incl. multi-point adjustment! Please order additionally!

### Accessories

**Order no.**

Aluminum profile case for 1 probe (up to 500 mm length)

**ZB9000TK1**

### Technical data

Measuring element	Pt100 wire-wound	Nominal length	250 mm
Class	1/10 B (DIN EN 60751) at 0 °C	Sensor tube	Stainless steel, diameter 3 mm
Measuring tip	Operative range -50 to +400 °C	Connecting cable	2 meters, FEP / silicone
Response time T90	5 seconds	ALMEMO® plug	ZA9030FS7P3, resolution 0.001 K

### Standard delivery

High-precision temperature sensor, measuring element Pt100 1/10 DIN class B, Sensor diameter 3 mm, length 250 mm, Measuring tip -50 to +400 °C, with 2-meter FEP / silicone cable and ALMEMO® plug Resolution 0.001 K for ALMEMO® 1030, 1033, 1036, 8036

**Order no.**

**FPA923L0250**

DAkkS or factory calibration KT90xx temperature for sensor or measuring chain (sensor + device), see chapter „Calibration certificates“. DAkkS calibration meets all the requirements regarding test resources laid down in DIN EN ISO/IEC 17025.