

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

Measuring inputs	2 ALMEMO® input sockets for Pt100 sensors	Standard equipment	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)
Measuring range		Date and time-of-day	Real-time clock, buffered by device battery
P314: Pt100, -200 to +720 °C resolution 0.001 K		Individual value memory, internal	100 measured values
P214: Pt100, -200 to +850 °C resolution 0.01 K		Power supply	
Measuring current	1 mA	Battery set	3 AA alkaline batteries
Measuring method	ratiometric	Mains adapter	ZA1312NA12 100 to 230 VAC to 12 VDC, 1.5 A, electrically isolated
Accuracy		Current consumption (without input and output modules)	approx. 20 mA
P314: ±0.010 K ±1 digit in range -100 to +720 °C		With illumination	approx. 40 mA
P214: ±0.03 K ±1 digit in range -100 to +850 °C		Housing	127 x 83 x 42 mm (LxWxH) ABS, 290 g
Nominal conditions	23 °C ±2 K, < 90 % r.H., battery mode	Ambient conditions	see general technical specifications
Temperature drift	typical 2 ppm / K		
Outputs	2 ALMEMO® sockets for interface cable and ALMEMO® memory connector		

Input connectors	Order no.
ALMEMO® input connector up to 720 °C, resolution 0.001 K (range P314)	ZA9030FS7P3
ALMEMO® input connector up to 850 °C, resolution 0,01 K (range P214)	ZA9030FS2P3

Accessories	Order no.
Software WinControl for data acquisition for 1 device up to 20 channels	SW5600WC1
USB data cable, electrically isolated	ZA1919DKU
Ethernet data cable	ZA1945DK
ALMEMO® memory connector with micro SD	ZA1904SD
Mains adapter 12V, 1.5 A with ALMEMO® plug	ZA1312NA12
Rubberized impact protection, gray	ZB2490GS2
DIN rail mounting	ZB2490HS
Instrument case	ZB2490TK2

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, according to ITS90	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 accredited calibration or factory calibration KT90xx temperature for sensor or measuring chain (sensor + device), see chapter „Calibration certificates“.

DAkKS accredited calibration meets all the requirements regarding test resources laid down in DIN EN ISO/IEC 17025.