Reference Measuring Instruments

Reference measuring instrument ALMEMO® 1020-2





ALMEMO® Reference measuring instrument for temperature
High-precision measuring by means of thermocouples
Types N, S, R, B
Resolution 0.01 K, up to 1800 °C

ALMEMO® X6

Technical features

- Temperature measurement with very high levels of resolution, precision, and linearity, using thermocouples Types N, S, R, B
- Suitable as reference device in calibration laboratories and quality assurance procedures
- Very high accuracy thanks to multi-point adjustment of the thermocouple temperature sensor
- Each temperature sensor has its own cold junction stored in the ALMEMO® plug or externally. The cold junction temperature in the ALMEMO® plug is measured to a very high resolution of 0.001 K by means of an NTC sensor.
- Two electrically isolated measuring inputs for thermocouples, types N, S, R, B
- Resolution 0.01 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, differential, measuring point list, cold junction temperature
- 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
- Device configuration: Illumination, contrast, device address, baud rate
- Choice of language: German, English, French

Technical data ALMEMO® 1020-2

Measuring inputs	2 ALMEMO® input sockets for thermocouples
Electrical isolation	Semiconductor relay (50 V)
A/D converter	Delta-sigma, 24-bit, 1.25 mops
Measuring ranges	
NiCrSi-NiSi Type N	-200 to +1300 °C
PtRh10-Pt Type S	-50 to +1768 °C
PtRh13-Pt Type R	-50 to +1768 °C
PtRh30-PtRh6 Type B	+250 to +1820 °C
Resolution	0.01 K
Accuracy	±0.1 K ± 1 digit in range
Type N	-200 to +1300 °C
Type S	+50 to +1760 °C
Type R	+100 to +1760 °C
Type B	+500 to +1800 °C
Nominal conditions	23 °C ±2 K, 1013 mbar, battery mode
Temperature drift	typical 10 ppm / K
Cold junction temperature	Measuring operations with 0.001 K resolution

Outputs	2 ALMEMO® sockets for interface cable and ALMEMO® memory connector
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 battery
Individual value memory, internal	100 measured values
Power supply	
Battery set	3 AA alkaline batteries
Mains adapter	ZA1312NA12 100 to 240 VAC to 12 VDC, 1.5 A, electrically isolated
Current consumption (without input and output modules)	approx. 20 mA
With illumination	approx. 40 mA
Housing	127 x 83 x 42 mm (LxWxH) ABS, 290 g
Environmental conditions see general technical specifications	

Accessories

	Order no.
Ethernet data cable	**ZA1945DK**
ALMEMO® memory connector with micro SD	**ZA1904SD**
Rubberized impact protection, gray	**ZB2490GS2**
DIN rail mounting	**ZB2490HS**

11/2025 • We reserve the right to make technical changes.

Variants

Complete set comprising reference measuring instrument for temperature plus accessories, evaluation software, thermocouple sensor, with DAkkS accredited calibration certificate

Reference measuring instrument ALMEMO® 1020-2, including 3 AA alkaline batteries, mains unit ZA1312NA12, USB data cable ZA1919DKU, instrument case, and evaluation software ALMEMO® View SW5500AV (see chapter software)

Set with high-precision sheathed thermocouple sensor type N



Set	Order no.
with sheathed thermocouple sensor type N FTAN926L0500P2 with DAkkS accredited calibration certificate at 0 / 100 / 500 / 1000 °C, including adjustment	**SP10202ND**
Accessories: Aluminum profile case for 1 sensor (up to 500 mm in length)	**ZB9000TK1**

Technical data:

Sheathed thermocouple sensor type N FTAN926L0500P2	
Measuring element	NiCrSi-NiSi, type N, class 1
Measuring tip	Mineral-insulated sheathed line, d = 6 mm, L = 500 mm
Operative range	-200 to +1150 °C
Connecting cable	1.5 meters, thermal line (stranded wire) FEP / silicone (-50 to +200 °C)
ALMEMO® plug	Resolution 0.01 K with integrated cold junction compensation sensor

Set with high-precision thermocouple sensor type S



Set	Order no.
with thermocouple sensor type S FTAS916L0700P2 replacement ceramic protective tube, case for sensors ZB9000TK2 with DAkkS accredited calibration certificate at 500 / 1000 / 1200 °C, including adjustment	**SP10202S1D**

Technical data:

Thermocouple sensor type S FTAS916L0700P2	
Measuring element	PtRh10-Pt, Type S, Class 1
Measuring tip	Thermowire, d = 0.5 mm in ceramic protective tube diameter = 6 mm, length = 700 mm
Operative range	up to +1400 °C
Connection head	ceramic protective tube, screwed
Connecting cable	1.5 meters, compensation line FEP / silicone (-50 to +200 °C)
ALMEMO® plug	Resolution 0.01 K with integrated cold junction compensation sensor

Set with precision thermocouple sensor type S, with external cold junction



Set	Order no.
with thermocouple sensor type S, with external cold junction FTAS906L0700P2, replacement ceramic protective tube, Case for sensors ZB9000TK2 with DAkkS accredited calibration certificate at 500 / 1000 / 1200 °C, including adjustment	**SP10202S2D**

Technical data:

Thermocouple sensor type S, with external cold junction FTAS906L0700P2	
Measuring element	PtRh10-Pt, Type S, Class 1
Measuring tip	Thermowire, d = 0.5 mm in ceramic protective tube diameter = 6 mm, length = 700 mm
Operative range	up to +1600 °C
Connection head	ceramic protective tube, screwed
Connecting cable	0.75 meters, insulated, thermo-wires PtRh10-Pt as far as cold junction
Cold junction	Stainless steel protective tube diameter = 5 mm, length = 250 mm
Connecting cable	2 meters, stranded copper wire
ALMEMO® plug	Resolution 0.01 K

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