

## ALMEMO® 1020-2



**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**

### 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

<b>Measuring inputs</b>	2 ALMEMO® input sockets for thermocouples	<b>Outputs</b>	2 ALMEMO® sockets for interface cable and ALMEMO® memory connector
Electrical isolation	Semiconductor relay (50 V)	<b>Standard equipment</b>	
A/D converter	Delta-sigma, 24-bit, 1.25 mops	Display	Graphics display, 128 x 64 pixels, 8 rows
Measuring ranges		Illumination	2 white LEDs
NiCrSi-NiSi Type N	-200 to +1300 °C	Keypad	7 silicone keys (of which 4 soft-keys)
PtRh10-Pt Type S	-50 to +1768 °C	Date and time-of-day	Real-time clock, buffered by battery
PtRh13-Pt Type R	-50 to +1768 °C	Individual value memory, internal	100 measured values
PtRh30-PtRh6 Type B	+250 to +1820 °C	<b>Power supply</b>	
Resolution	0.01 K	Battery set	3 AA alkaline batteries
Accuracy	±0.1 K ± 1 digit in range	Mains adapter	ZA1312NA12 100 to 240 VAC to 12 VDC, 1.5 A, electrically isolated
Type N	-200 to +1300 °C	Current consumption (without input and output modules)	approx. 20 mA
Type S	+50 to +1760 °C	With illumination	approx. 40 mA
Type R	+100 to +1760 °C	Housing	127 x 83 x 42 mm (LxWxH)
Type B	+500 to +1800 °C		ABS, 290g
Nominal conditions	23 °C ±2 K, 1013 mbar, battery mode	Environmental conditions see page 01.04 onwards	
Temperature drift	typical 10 ppm / K		
Cold junction temperature	Measuring operations with 0.001 K resolution		

### Accessories

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

## Variants

**Complete set comprising reference measuring instrument for temperature plus accessories, evaluation software, thermocouple sensor, with DAkkS 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 page 06.16)

### Set with high-precision sheathed thermocouple sensor type N



#### Set

with sheathed thermocouple sensor type N FTAN926L0500P2 with DAkkS calibration certificate at 0 / 100 / 500 / 1000 °C, including adjustment

**Accessories:** Aluminum profile case for 1 sensor (up to 500 mm in length)

#### Order no.

**SP10202ND**

**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

with thermocouple sensor type S FTAS916L0700P2 replacement ceramic protective tube, case for sensors ZB9000TK2 with DAkkS calibration certificate at 500/1000/1200 °C, including adjustment

#### Order no.

**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

with thermocouple sensor type S, with external cold junction FTAS906L0700P2, replacement ceramic protective tube, Case for sensors ZB9000TK2 with DAkkS calibration certificate at 500 / 1000 / 1200 °C, including adjustment

#### Order no.

**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