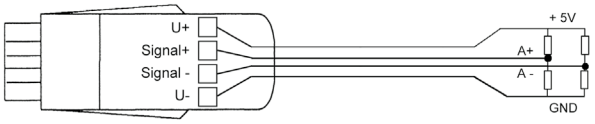
Input connectors for measuring bridges

Digital ALMEMO® D7 measuring connector for bridge differential mV

For force transducers (tension / compression), torque transducers, or strain gauges
High resolution up to 200 000 digits
or fast conversion rate, resolution up to 50 000 digits.
Only for latest ALMEMO® V7 measuring instruments, including ALMEMO® 500, 710, 809, 202-S, 204.



The new ALMEMO® D7 measurement plug enables high precision or fast conversion rate applicable for a vast variety of measuring tasks.
The user can select the preferred configuration quickly and easily on the ALMEMO® V7 measuring instrument itself.

Technical data and functions

- The digital ALMEMO® D7 measuring connector uses its own integrated A/D converter. The overall accuracy of the measuring operation is unaffected by the presence of an ALMEMO® V7 display device / data logger. The whole measuring chain, comprising e.g. a force transducer and the connected ALMEMO® D7 measuring connector, can be calibrated end-to-end.
- The measuring rate is determined entirely and exclusively by the integrated A/D converter. On the ALMEMO® V7 measuring instrument all D7 measuring connectors operate in parallel at their own measuring rate. The measuring instrument's very short scan cycle is determined by the measuring rates of the D7 measuring connectors - irrespective of their number.
- For high resolutions and stable values, e.g. for precision force transducers, the ALMEMO® D7 measuring plug works with a reduced conversion rate. For fast processes, measurements can be taken at a higher conversion rate. The ALMEMO® V7 measuring device stores the measured values and the WinControl measuring software displays them graphically.
- Measurements are taken using a full bridge with a 4-conductor circuit. The bridge is powered from the ALMEMO® D7 plug.
- The sensor is scaled to its actual physical quantity (e.g. end value 1 kN with characteristic 2 mV / V); this is performed via the ALMEMO® V7 device (device itself or ALMEMO® Control software). - zero-point adjustment, - scaling of end value by entering characteristic mV / V or adjustment by loading the bridge with end value The assigned units can be up to 6 characters in length. Sensor identification can be programmed with designations up to 20 characters in length.

Technical data

Sensor type	Full bridge, 4 conductors
Bridge resistance:	at least 350 Ohm
Measuring input	electrically interconnected with the power supply (ALMEMO® device ground)
Input range	see variants
Display range, Conversion rate:	see variants
Bridge power supply	5 V Accuracy 0.01 %
	Temperature drift 10 ppm / K
System accuracy	0.02 % +2 digits at 10 measurements / second
Nominal temperature	+22 °C ±2 K
Temperature drift	0.003 % / K (30 ppm)
Supply voltage	from 6 V up. from ALMEMO® device (sensor supply voltage)
Current consumption	approx. 32 mA (without force transducer)
Environmental conditions	see page 16 onwards

Types:

Range	Input range	Display range	Conversion rate	Order no.
DMS1*	±29.3 mV	±200 000 digits	10 mops	
or DMS2	±29.3 mV	±50 000 digits	1000 mops	
or DMS3	±58.6 mV	±200 000 digits	10 mops	
or DMS4	±58.6 mV	±50 000 digits	1000 mops	**ZKD700FS**

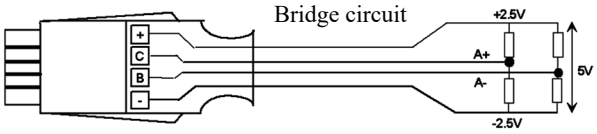
* Factory setting : The desired measuring range can be programmed on the ALMEMO® V7 device itself.

Option: Configuration of ALMEMO® D7 measuring connector; conversion rate 1000 mops, DMS2 (±29.3 mV) **OA9007PRM1000**

Input connectors for measuring bridges

ALMEMO® Connector for measuring bridges, millivolt / volt differential

With zero-symmetrical voltage supply of ±2.5 V stabilized from the ALMEMO® device



Technical Data

Sensor type:	Full bridge, 4 conductors
Bridge resistance:	at least 350 Ohm
Sensor supply	
Voltage U_E:	5V ± 0.05V
Temperature coefficient:	<50ppm/°C
Output current:	25 mA at U_G = 12 V 30 mA at U_G = 9 V 50 mA at U_G = 6 V
Ruhestrom:	approx. 3 mA
Energy saving	So long as the measuring point is not selected, the bridge voltage remains switched OFF.

Types:

Model	Meas. Range	Resolution	Order no.
55mV DC	–10.0 to +55.0	1 µV	**ZA9105FS0**
26mV DC	–26.0 to +26.0	1 µV	**ZA9105FS1**
260mV DC	–260.0 to +260.0	10 µV	**ZA9105FS2**
2.6V DC	–2.6 to +2.6*	0.1 mV	**ZA9105FS3**

* Data may vary depending on device; (see data sheet per device)