

Wireless data links using ALMEMO® Bluetooth modules

Various types of connection are possible

Wireless PC connection see page 04.09

Wireless connection from a PC with ALMEMO® Bluetooth CPU to up to 7 ALMEMO® measuring instruments each with Bluetooth slave

Wireless device connection see page 04.10

Wireless connection from an ALMEMO® measuring instrument with Bluetooth CPU to up to 7 ALMEMO® measuring instruments each with Bluetooth slave

Wireless sensor connection see page 04.12

Wireless sensor connection from a Bluetooth measuring device to a measuring input of a receiving ALMEMO® device with Bluetooth sensor module. Up to 4 measuring channels can be transmitted per connection..

Common technical data

Bluetooth	class 1 with active antenna
Protocol	SPP (sequence packet protocol) (128-bit encryption)
Operating range	300 meters (free field)*
ALMEMO® data rate	1200 baud up to 115.2 kbaud
Module housing ZA 1719-Bx	(LxWxH) 61 x 30 x 12 mm Polystyrene (-10 to +70 °C)
Cable length	for plug-in module ZA 1719-Bx with option OA1719BK Length = 1 meter

* Inside a building the operating range of the wireless link will be substantially lower.

Advantages of ALMEMO® connections using Bluetooth compared with other wireless technologies

- Bluetooth wireless technology is industrial standard in compliance with IEEE 802.15.1; it ensures high transmission reliability.
- The frequency hopping procedure used ensures robustness against interference. The Bluetooth partners move continually to and from among the 79 wireless channels available.
- Any number of Bluetooth connections can operate in parallel with complete reliability.

- The multi-digit PIN code ensures that all Bluetooth participants are identified reliably and unequivocally.
- These links - once configured - will, as soon as the device is switched ON, be automatically setup - and, in the event of interruption, be automatically restored.
- One Bluetooth CPU supports up to 7 parallel connections to Bluetooth slaves.
- These powerful new Bluetooth class 1 wireless modules incorporate an integrated active antenna ensuring an especially wide operating range (up to 300 meters free field); there is no need for an extra antenna.

Common technical features

- Bluetooth links are supplied already paired, i.e. simply plug in and start measuring.
- In the event of interruption to the Bluetooth connection the USB / COM interface in the PC remains available for the software being used. For continuous monitoring purposes this ensures very high transmission reliability. Advisory note : The Bluetooth links integrated in some laptops / PCs cannot be used for these purposes because in the event of interruption the operating system deactivates the COM interface and this must then be reactivated manually each time.
- Any ALMEMO® measuring instrument with a Bluetooth slave module connected can be used.
- Using the Bluetooth CPU on the PC or a plug-in Bluetooth CPU module on the ALMEMO® measuring instrument up to

7 measuring instruments with Bluetooth slave modules can participate in a star-configured network. Compared with paired single connections star-configured networking saves on additional master modules.

- The plug-in module variant with a 1-meter cable can, in order to optimize the wireless link, be positioned away from the measuring instrument between the ALMEMO® connector and the module (option OA1719BK) and specially aligned (using Velcro fastener).
- All (multiple) connections can be configured end-to-end quickly and easily either with the AMR-Control software.
- To search through and select from all the available Bluetooth slave partners the user simply enters the appropriate PIN codes.

Wireless PC link with Bluetooth

Bluetooth USB CPU module ZA 1719 BCU

Wireless connection from a PC with ALMEMO® Bluetooth CPU to up to 7 ALMEMO® measuring instruments with Bluetooth slave



Technical data

Common technical data see page 04.07		
Cable	ZA1719BCU	Length = 1.5 meters
Voltage supply		
ZA1719BCU	via USB interface on the PC	
ZA1719BT1XS	via ALMEMO® measuring instrument, approx. 35 mA (9 V)	



- Connection of the CPU module to the USB interface on a PC
- Connection of the plug-in slave module to socket A1 on an ALMEMO® device

07/2017 • We reserve the right to make technical changes.

Option for plug-in module ZA1719BT1XS

Cable between ALMEMO® connector and module Length = 1 meter

Order no.

OA1719BK

Variants	Order no.
Paired wireless PC connection (USB) for 1 ALMEMO® measuring instrument (configured and ready-to-operate)	
Bluetooth CPU module with USB (ZA1719BCU) and plug-in Bluetooth slave module (ZA1719BT1XS)	ZA1719BPVU
Extension for multiple connections	
Plug-in Bluetooth slave module for 1 ALMEMO® device	ZA1719BT1XS

Wireless device connection with Bluetooth

Wireless connection from an ALMEMO® measuring instrument with Bluetooth CPU to up to 7 ALMEMO® measuring instruments with Bluetooth slave.



Technical data

Common technical data see page 04.07		
Voltage supply		
ZA1719BC	via ALMEMO® measuring instrument, approx. 20 mA (9 V)	
ZA1719BT1XS	via ALMEMO® measuring instrument, approx. 35 mA (9 V)	



ZA 1719 BC ZA 1719 BT1XS

- Connection of the plug-in CPU module to socket A2 on an ALMEMO® device
- Connection of the plug-in slave module to socket A1 on a second ALMEMO® device

Option for plug-in module ZA1719BT1XS:	Order no.
Cable between ALMEMO® connector and module Length = 1 meter	OA1719BK

Variants	Order no.
Paired wireless device connection (configured and ready-to-operate) between 2 ALMEMO® measuring instruments comprising:	
Plug-in Bluetooth CPU module (ZA1719BC) and plug-in Bluetooth slave module (ZA1719BT1XS)	ZA1719BNV
Extension for multiple connections:	
Plug-in Bluetooth slave module for 1 ALMEMO® device	ZA1719BT1XS

Wireless sensor connection via Bluetooth

Wireless sensor connection from a Bluetooth measuring device to a measuring input of a receiving ALMEMO® device with Bluetooth sensor module. Four measuring channels per connection can be transmitted. Any number of sensor connections in parallel is possible.



Sensor connection via Bluetooth sensor measuring device ALMEMO® 2790 with built-in Bluetooth module

new



MA 2790-BTFM



ALMEMO® 2790
with sensors for humidity,
temperature, atmospheric pressure
option OA 2790-RHA



ZA 1729-BTFS

Technical data MA 2790-BTFM

Measuring input:	1 ALMEMO® input socket
A/D converter, measuring ranges, standard equipment, housing:	as for ALMEMO® 2490-1, see page 01.14, but:
Sensor supply:	6 / 9 / 12 V (depending on the programmed minimal sensor supply voltage in the ALMEMO® plug), max. 150 mA
Power supply:	5 to 13V DC not galvanically isolated.
Rechargeable battery:	3 AA rechargeable NiMH batteries, integrated charge circuitry
Current consumption:	approx. 14 mA with radio link (without sensor)
ALMEMO® socket DC:	for mains unit /interfaces
Bluetooth connection:	master module integrated

- Connection of an ALMEMO® sensor to the measuring input M0 of the ALMEMO® Bluetooth device.
- Connection of the plug-in sensor module to the input socket Mxx of a receiving ALMEMO® device.

Technical features:

- 1 measuring input for all ALMEMO® sensors.
- Optional: Integrated digital sensor for humidity, temperature, atmospheric pressure. Sensors can be plugged in, replaced and individually calibrated (without any measuring instrument).
- Power supply with 3 AA rechargeable NiMH batteries, with charging via the device itself. (Please order the mains unit separately)
- Power saving sleep mode (save-to-memory cycle starting at one minute). Operating time (per charged battery) up to 390 hours with memory cycle of 1 minute, respectively 1 year with memory cycle of 1 hour.
- modern, compact housing, also for DIN rail mounting housing
- Generously dimensioned 2-row static 7 / 16 segment display including units
- Operating functions: cycle, keys can be locked via password, atmospheric pressure compensation.

Accessories:

mains unit 12V/2A
DC adapter cable 10 to 30 V DC,
12V/0.25A galvanically isolated
DIN rail mounting

Order no.

ZA1312NA10

ZA2690UK

ZB2490HS

Option:

Integrated digital sensor for humidity, temperature, atmospheric pressure, (technical data FHAD 46-C2 see chapter Air humidity)

Order no.

OA2790RHA

Technical data ZA 1729-BTFS

Common technical data see page 04.07	
Power supply:	via ALMEMO® measuring instrument, approx. 25 mA (9 V)
Module housing:	ALMEMO® plug, 61 x 20 x 8 mm (LxWxH), ABS

Variants

Paired wireless sensor connection (configured and ready-to-operate) with Bluetooth sensor measuring device ALMEMO® 2790, comprising:

Bluetooth sensor measuring device ALMEMO® 2790, 1 measuring input, integrated Bluetooth, including 3 AA rechargeable NiMH batteries (MA2790BTFM), and Bluetooth sensor plug-in module (ZA1729BTFS)

Order no.

MA2790BTFV