

## ALMEMO® 5690-1CPU

### Technical data and functions

- Technical data and functions, as for ALMEMO® 5690 series
- CPU board with measuring circuit (without measuring inputs) and output sockets
- Up to 100 measuring inputs / 100 measuring channels via selector switch boards
- Option XU - up to 190 measuring inputs / 250 measuring channels via selector switch boards
- Option XM - high-speed measuring operations, up to 190 measuring inputs / 250 measuring channels via active measuring circuit boards. The measuring circuit boards operate in parallel, thus ensuring short scanning times for a large number of channels. The scanning time is determined by the measuring circuit board with the highest number of active measuring channels - or, at conversion rate 50 Hz, also by the processing time of the CPU.
- Option - 5 ALMEMO® output sockets for digital interfaces, analog outputs, trigger, alarm contacts, socket P0 for integrated relay outputs
- Data logger with internal RAM (standard) or FeRAM (option) or external ALMEMO® memory connector with micro SD card

### Technical data

| Technical data, as for ALMEMO® 5690 series |   | External memory (accessory) | ALMEMO® memory connector with micro SD card  |
|--|---|-----------------------------|--|
| CPU board                                  | Measuring circuit (without measuring inputs), input boards (see page 61/62) | Outputs                     | 5 ALMEMO® sockets, suitable for all output modules (analog / data / trigger / relay cables, etc.) . Alarm signal transmitter, internal Socket P0 for integrated relay outputs (option) Or trigger and analog output (by request) |
| Measuring inputs / measuring channels      |   | Operation                   | 1 key, 5 LEDs, 2 coding switches   |
| Standard                                   | up to 100 inputs / 100 meas. channels via selector switch boards            |                             |  |
| Option XU                                  | up to 190 inputs / 250 meas. channels via selector switch boards            |                             |  |
| Option XM                                  | up to 190 inputs / 250 meas. channels via active measuring circuit boards   |                             |  |
| Memory, internal                           | sufficient for 400,000 values, linear or ring memory                        |                             |  |
| Standard                                   | RAM (buffered by battery)   |                             |  |
| Option SF                                  | FeRAM (non-volatile)  |                             |  |

### Accessories

|   | Order no. |
|---|-----------|
| Memory connector with micro SD, including USB card reader (see chapter „General accessories“) | ZA1904SD  |

### Input boards / expansions

|   | Order no.        |
|---|------------------|
| Option XM - selector switch boards and active measuring circuit boards  | (see page 61/62) |
| Relay / trigger / analog board, 2 slots Per system up to 4 boards are supported. (see chapter „Output modules“) | ES5690RTA5       |

### Options

|   | Order no. |
|---|-----------|
| Up to 190 measuring inputs / 250 measuring channels   | OA5690XU  |
| For active measuring circuit boards, up to 190 measuring inputs / 250 measuring channels                    | OA5690XM  |
| Data memory, internal FeRAM, non-volatile (instead of battery-buffered RAM)                                 | OA5690SF  |
| Multi-point adjustment, special linearization, management of calibration data                               | OA5690KL  |
| Temperature ranges for 8 refrigerants (see page 224)  | SB0000R2  |
| Measuring rate for 1 measuring channel, 500 mops (SD card required) This cannot be combined with option XM. | SA0000Q5  |
| For output socket P0  |           |
| SH2 2 semiconductor relays (normally open) internal, 0.5 A, 50 V  | OA5690SH2 |
| OH2 2 additional relays (normally closed) for option SH2 (thus 2 changeover relays)                         | OA5690OH2 |

### Standard delivery

Precision measuring instrument, data acquisition system with CPU board  
 Measuring circuit (without measuring inputs) Input boards must be ordered separately. (see page 61/62)  
 Mains plug assembly ZB1212NA11, Operating instructions, manufacturer's test certificate

DAkKS or works calibration KE90xx, electrical, for measuring instrument, see chapter „Calibration certificates“.  
 DAkKS calibration meets all the requirements regarding test resources laid down in DIN EN ISO/IEC 17025.

# ALMEMO® Measuring Instruments

## ALMEMO® 5690-1CPUTG1



Dimensions:  
77 x 145 x 218 mm  
(WxHxD)

Data acquisition system in desktop housing TG1  
CPU board, 1 free slot  
**MA56901CPUTG1**  
Messeingänge über:  
Measuring inputs via 1 MU board (10 inputs)

## ALMEMO® 5690-1CPUTG3



Dimensions:  
179 x 158 x 232 mm  
(WxHxD)

Data acquisition system in desktop housing TG3  
CPU board, 6 free slots  
**MA56901CPUTG3**  
Measuring inputs  
via three A10 or TH2 boards (30 inputs)  
or 6 MU boards (60 inputs)  
or three RTA5 output boards

## ALMEMO® 5690-1CPUTG8



Dimensions:  
444 x 158  
x 232 mm  
(WxHxD)

Data acquisition system in desktop housing TG8  
CPU board, 19 free slots  
**MA56901CPUTG8**  
Measuring inputs  
via nine A10 or TH2 boards (90 inputs)  
or 19 MU boards (190 inputs)  
or four RTA5 output boards

## ALMEMO® 5690-1CPUBT8



Dimensions:  
483 x 132  
x 273 mm  
(WxHxD)

Data acquisition system in 19-inch rack housing  
CPU board, 19 free slots  
**MA56901CPUBT8**  
Measuring inputs  
via nine A10 or TH2 boards (90 inputs)  
or 19 MU boards (190 inputs)  
or four RTA5 output boards



Carry case, aluminum profile frame ZB5600TK3  
for ALMEMO® 5690-1/ -2



Rack case with handle ZB5090RC  
for ALMEMO® 5690-xxBT8 in 19-inch rack housing

## ALMEMO® 5690-2CPU

### Technical data and functions

- Technical data and functions, as for ALMEMO® 5690 series
- CPU board with measuring circuit (without measuring inputs) and output sockets
- Up to 100 measuring inputs / 100 measuring channels via selector switch boards
- Option XU - up to 190 measuring inputs / 250 measuring channels via selector switch boards
- Option XM - high-speed measuring operations, up to 190 measuring inputs / 250 measuring channels via active measuring circuit boards. The measuring circuit boards operate in parallel, thus ensuring short scanning times for a large number of channels. The scanning time is determined by the measuring circuit board with the highest number of active measuring channels - or, at conversion rate 50 Hz, also by the processing time of the CPU.
- Option - 5 ALMEMO® output sockets for digital interfaces, analog outputs, trigger, alarm contacts, socket P0 for integrated relay outputs
- Generously dimensioned graphics display, bright illumination, large display of measured values
- Measured values can be displayed graphically in line chart or bar chart form or numerically in various sizes.
- 3 user-defined menus can be freely configured from a range of 50 functions.
- Easy to operate by means of 4 soft-keys and cursor block, menu-guided with wizards and context-sensitive help windows
- Choice of languages : German, English, French
- Data logger with internal RAM (standard) or FeRAM (option) and with micro SD card (standard).

### Technical data

| Technical data, as for ALMEMO® 5690 series |   | Memory           | Micro SD card, integrated drive   |
|--|---|------------------|---|
| CPU board                                  | Measuring circuit (without meas. inputs)<br>Input boards (see page 61/62)     | Outputs          | 5 ALMEMO® sockets, suitable for all output modules (analog / data / trigger / relay cables, etc.)<br>Alarm signal transmitter, internal<br>Socket P0 for integrated relay outputs (option)<br>Or trigger and analog output (by request) |
| Measuring inputs / measuring channels      |   | Display          |   |
| Standard                                   | up to 100 inputs / 100 measuring channels via selector switch boards          | Graphics display | 128 x 128 pixels, 16 rows   |
| Option XU                                  | up to 190 inputs / 250 measuring channels via selector switch boards          | Illumination     | 5 white LEDs, 3 brightness levels   |
| Option XM                                  | up to 190 inputs / 250 measuring channels via active measuring circuit boards | Operation        | 9 keys (4 soft-keys and cursor block)<br>9 status LEDs on front panel   |
| Memory, internal                           | sufficient for 400,000 values, linear or ring memory                          |                  |   |
| Standard                                   | RAM (buffered by battery)   |                  |   |
| Option SF                                  | FeRAM (non-volatile)  |                  |   |

### Input boards / expansions

|   | Order no.         |
|---|-------------------|
| Option XM - selector switch boards and active measuring circuit boards  | (see page 61/62)  |
| Relay / trigger / analog board, 2 slots per system up to 4 boards are supported. (see chapter „Output modules“) | <b>ES5690RTA5</b> |

### Options

|   | Order no.        |
|---|------------------|
| Up to 190 measuring inputs / 250 measuring channels   | <b>OA5690XU</b>  |
| For active measuring circuit boards, up to 190 measuring inputs / 250 measuring channels                    | <b>OA5690XM</b>  |
| Data memory, internal FeRAM, non-volatile (instead of battery-buffered RAM)                                 | <b>OA5690SF</b>  |
| Multi-point adjustment, special linearization, management of calibration data                               | <b>OA5690KL</b>  |
| Temperature ranges for 8 refrigerants (see page 224)  | <b>SB0000R2</b>  |
| Measuring rate for 1 measuring channel, 500 mops (SD card required) This cannot be combined with option XM. | <b>SA0000Q5</b>  |
| For output socket P0  |                  |
| SH2 2 semiconductor relays (normally open) internal, 0.5 A, 50 V  | <b>OA5690SH2</b> |
| OH2 2 additional relays (normally closed) for option SH2 (thus 2 changeover relays)                         | <b>OA5690OH2</b> |

### Standard delivery

Precision measuring instrument, data acquisition system with graphics display and operating controls, CPU board  
Measuring circuit (without measuring inputs) Input boards must be ordered separately. (see page 61/62) Micro SD card, USB card reader, mains plug assembly ZB1212NA11, Operating instructions, manufacturer's test certificate.

DAkKS or works calibration KE90xx, electrical, for measuring instrument, see chapter „Calibration certificates“.  
DAkKS calibration meets all the requirements regarding test resources laid down in DIN EN ISO/IEC 17025.

# ALMEMO® Measuring Instruments

## ALMEMO® 5690-2CPUTG3



Dimensions:  
179 x 158 x 232 mm  
(WxHxD)

Data acquisition system in desktop housing TG3

CPU board, 6 free slots

**MA56902CPUTG3**

Measuring inputs

via three A10 or TH2 boards (30 inputs)

or 6 MU boards (60 inputs)

or three RTA5 output boards

## ALMEMO® 5690-2CPUWG3



Dimensions:  
209 x 207 x 153 mm  
(WxHxD)  
(width includes fastening strips)

Data acquisition system in wall-mounted housing WG3

CPU board, 6 free slots

**MA56902CPUWG3**

Measuring inputs

via three A10 or TH2 boards (30 inputs)

or 6 MU boards (60 inputs)

or three RTA5 output boards

The boards have their connections facing downwards. To facilitate wall-mounting four holes (5.3 mm) are provided on the protruding strips to the left and right of the housing's backplate (which cannot itself be removed).

## ALMEMO® 5690-2CPUTG8



Dimensions:  
444 x H158  
x T232 mm  
(WxHxD)

Data acquisition system in desktop housing TG8

CPU board, 19 free slots

**MA56902CPUTG8**

Measuring inputs

via nine A10 or TH2 boards (90 inputs)

or 19 MU boards (190 inputs)

or four RTA5 output boards

## ALMEMO® 5690-2CPUBT8



Dimensions:  
483 x 132  
x 273 mm  
(WxHxD)

Data acquisition system in 19-inch rack housing

CPU board, 19 free slots

**MA56902CPUBT8**

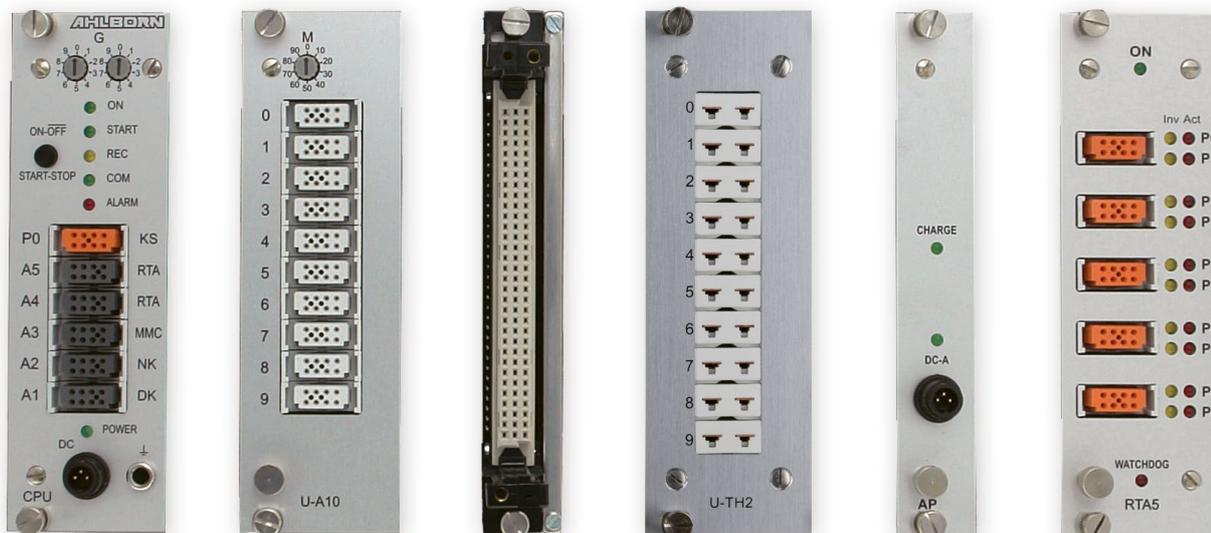
Measuring inputs

via nine A10 or TH2 boards (90 inputs)

or 19 MU boards (190 inputs)

or four RTA5 output boards

## CPU board, selector switch boards, active measuring circuit boards and expansions for CPU systems ALMEMO® 5690-1CPU and 5690-2CPU



CPU

U-A10  
M-A10

U-MU  
M-MU

U-TH2  
M-TH2

AP

RTA5

## Input boards for ALMEMO® 5690-1CPU and 5690-2CPU

### Technical data and functions

- Selector switch boards U-xx for CPU systems without options XU / XM or with option XU
- Active measuring circuit boards M-xx with own A/D converter for CPU systems with option XM
- There are several design variants for different installations / input plugs.

### Input board U-A10 / M-A10



**10 inputs for ALMEMO® single connectors.**  
**For flexible applications with individual sensors and measuring signals.**

### Technical data

|                  |   |
|------------------|---|
| Measuring inputs | 10 ALMEMO® input sockets, electrically isolated |
| Measuring ranges | All ranges (see page 17/18)                     |
| Sensor supply    | 12 V, maximum 0.3 A (per system max. 1.5 A)     |
| Footprint        | 2 slots   |

### Input board U-MU



**10 inputs for ALMEMO® 10 MU connectors.**  
**For permanently installing groups of 10, especially temperature sensors.**

### Technical data

|                  |  |
|------------------|--|
| Measuring inputs | 10 inputs, electrically isolated, socket strip for ALMEMO® 10-way MU connector |
| Measuring ranges | all thermocouples, Pt100, Ni100, NTC ohms, 2.6 V, 260 mV, 55 mV, 26 mV         |
| Sensor supply    | None   |
| Footprint        | 1 slot   |

### Standard delivery

Selector switch board U-A10  
Active measuring circuit board M-A10  
(for CPU system with option XM)

### Order no.

ES5690UA10  
ES5690MA10

### Standard delivery

Selector switch board U-MU  
Active measuring circuit board M-MU  
(for CPU system with option XM)  
ALMEMO® 10-way MU connector

### Order no.

ES5690UMU  
ES5690MMU  
ZA5690MU

## Input board U-TH2



**10 inputs for miniature thermal connectors.  
For any individual thermocouple temperature sensors with miniature thermal connector.**

### Technical data

|                  |   |
|------------------|---|
| Measuring inputs | 10 miniature thermal sockets, electr. isolated<br>ALMEMO® sensor parameters are saved<br>in the measuring instrument. |
| Measuring ranges | all thermocouples   |
| Sensor supply    | None  |
| Footprint        | 2 slots   |

### Standard delivery

### Order no.

Selector switch board U-TH2

**ES5690UTH2**

Active measuring circuit board M-TH2

(for CPU system with option XM)

**ES5690MTH2**

Miniature thermal connectors must be ordered separately