Content

USA Distributor

Clark Solutions

10 Brent Drive

Hudson, MA 01749

Toll Free: 800-253-2497

Tel: 978-568-3400

Fax 978-568-0060

e-mail: sales@clarksol.com

www.clarksol.com

ALMEMO® Output modules

ALMEMO® Output modules

A modern measuring instrument must be able to communicate with its environment, i.e. transfer its measured data to peripheral equipment, execute commands from a computer, trigger alarm signals, and respond to switching pulses.

To cover all possibilities while also keeping the hardware needed to a minimum all necessary interfaces have been integrated in our ALMEMO® output connector. This concept allows the user - with one and the same ALMEMO® measuring instrument - to choose freely from a wide variety of output interfaces to best suit the particular task in hand .

For the purposes of connecting the modules virtually all ALMEMO® devices are equipped with two output sockets A1 and A2; these also allow the devices to participate in digital networking. The output modules, just like the sensors, are detected automatically; no extra programming is required.

Please note that many ALMEMO® output modules can only be operated in conjunction with ALMEMO® devices version 6 and above (not 2390, 8390). Labeled V6 (device firmware update may be needed).

Describing all the many options provided by the ALMEMO® system with output modules would be beyond the scope of this catalog.

Please ask for our ALMEMO® Manual. It will provide you with valuable tips and a detailed description of our ALMEMO® output modules.

We shall of course be pleased to offer you competent advice and support to help you solve your particular measuring tasks. Or you can arrange a date for a demonstration. Our experts will be pleased to visit you - to introduce and explain the numerous application options that the ALMEMO® system offers.

ALMEMO® trigger cable ZA 1000 ET / ZA 1006 EK2

Technical Data

Trigger input		
	ZA1000ET	Trigger variants can be programmed with key
	ZA1006EK2	For external zero-potential contact (not electrically isolated) and for external voltage 4 to 30 VDC (optocoupler), trigger variants can be programmed
Current consumption	approx. 3 mA	
Cable length	1.5 meters	
Connection	(see variants)	

Variants

	Order no.
ALMEMO® trigger cable, V5 / V6, with 1 key	**ZA1000ET**
ALMEMO® trigger cable, V5 / V6, with 1 trigger input for external voltage, with 2 banana plugs	**ZA1000EK**
ALMEMO® trigger cable, V6, with 2 trigger inputs for external contacts or voltages, with clamp connector	**ZA1006EK2**

## ALMEMO® trigger / relay cable V6 ZA 1006 EKG / ETG

Technical Data:

Trigger input	For external zero-potential contact (not electrically isolated) or for external voltage 4 to 30 VDC (optocoupler)
	New Trigger variants - can be programmed (V6 only)
Relay	Normally open contact (semiconductor relay)
	New Can also be programmed as inverted (V6 only) Load capacity: 50 VDC, 0.5 A, 1 ohm
Current consumption	approx. 3 mA
Cable length	1.5 meters
Connection	Clamp connector

Variants

	Order no.
ALMEMO® trigger / relay cable, V6, with 2 trigger inputs (programmable trigger variant) for external voltages and 2 normally open contacts	**ZA1006EKG**
ALMEMO® trigger / relay cable, V6, with 2 trigger inputs (programmable trigger variant) for external zero-potential contacts and 2 normally open contacts	**ZA1006ETG**
for ALMEMO® devices, version V5 ALMEMO® trigger / relay cable, V5, with 1 trigger input (Start / Stop only) for 1 external zero-potential contact or for voltage and 2 normally open contacts	**ZA1000EGK**

03.03

ALMEMO® Output modules

ALMEMO® relay cable, V6, ZA 1006 GK and electrical socket relay adapter, ZB 2280 RA
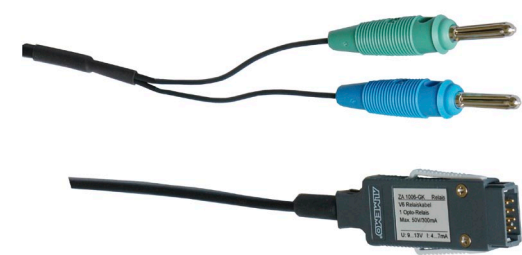
Technical Data

Relay cable, V6, type ZA 1006 GK	
Relay _New_	Normally open (semiconductor relay) Can also be programmed as inverted (V6 only) Load capacity 50 VDC, 0.5 A, 1 ohm
Current consumption	approx. 3 mA
Cable length	1.5 meters
Connection	Banana plugr

Variants	**Order no.**
ALMEMO® relay cable, V6, with 1 normally open contact	**ZA1006GK**
for ALMEMO® devices, version V5 ALMEMO® relay cable, V5, with 1 normally open contact	**ZA1000GK**

Technical Data

Relay adapter ZB2280RA	
Control input	for optocoupler output or switching contact R <10 kW
Output	Electrical safety socket, mechanical relay, load capacity 250 V, 6 A
Switching status	OFF idle; ON alarm

Variants	**Order no.**
Relay adapter for switching mains supplied devices combined with relay cable ZA1006GK/ZA1000GK	**ZB2280RA**

ALMEMO® analog output cable ZA 1601 RK

Technical Data:

Output voltage	-1.250 to 2 000 V, not electr. isolated
Gain	0.1 mV / digit
Load	>100 kW
Accuracy	±0.1% ± 6 digits
Temperature drift	1 digit / K
Time constant	100 ms
Current consumption	approx. 3 mA
Cable length	1.5 meters

- Measured values can be recorded using a chart recorder or a similar output device.
- A signal converter is integrated in the connector.
- The device signal is converted into a voltage corresponding to the linearized measured value.
- To obtain a high response speed a conversion rate of 10 mops can be set in the ALMEMO® device.
- The output signal can be scaled as required..

Variants	**Order no.**
Analog output cable -1.250 to 2.000 V (0.1 mV / digit) not electrically isolated	**ZA1601RK**

03.04

ALMEMO® relay trigger adapter, analog ZA 8006 RTA3 for connecting to ALMEMO® devices


```
ZA 8006 RTA3        V6.01
All Ports              ▶
Single Ports
Device Configuration
Messages
           F     ▶   *ON
```
menu selection

```
ZA 8006 RTA3    Socket: A2
Port:  0 1 2 3 4 5 6 7 8 9
Type:  R R R R - - A A T T
Activ:  ✓      ✓         ✓
x9z3:  I ✓  ✓ I     U A
 TR8  MENU  P  *ON  TR9
```
all peripherals

```
ZA 8006 RTA3    Socket: A2
Port:  0            Adr: 20
Relay:  Normally oPen 0.5A
-8: external steered inv
State:  active
Contact:  x2-x3 oPen
 TR8  MENU  P  *ON  TR9
```
relais

```
Messages: 2
Port: 0 3

Port 3:
Furnace overheated
Tel: 08024-3007-99
 OFF        P       *ON
```
messages

- Universal trigger output interface for connecting to output so-ckets on ALMEMO® devices - from version V6 up (not 2390, 8390). device firmware update may be needed.
- Up to 10 peripheral elements (relays, trigger inputs, analog outputs) each with individually configurable function
- Relay functions, total alarm, assignment to particular limit values, or addressing via interface
- Integrated alarm signaling device can be assigned to all relay functions.
- Inverse relay addressing for alarm in the event of power failure
- Programmable messages to be issued when relays are activated
- Comprehensive trigger features with the aid of command macros, addressing via 2 keys or electrical signals
- Either 2 or 4 analog outputs (10 V or 20 mA) can be assigned to any measuring channels, scalable sub-areas, or alternatively addressing via interface.
- *New:* Analog output type 10 V or 20 mA (programmable)
- All programming and peripheral states shown on illuminated graphics display

- Keypad for selecting menu and port

```
ZA 8006 RTA3    Socket: A2
Port:  8            Adr: 28
Trigger: Key + OPtokoPPler
 0: Start-StoP
    State:      inactive
    Connection:  x3: - x2: +
 TR8  MENU  P  *ON  TR9
```
trigger inputs

```
ZA 8006 RTA3    Socket: A2
Port:  6            Adr: 26
AnalogoutPut:       0-10 V
 2: int. assigned       M01
    Analogue value:  3.4560 V
    Connection:  x3: - x2: +
 TR8  MENU  P  *ON  TR9
```
analog outputs

- Watchdog function in the event of a failure of ALMEMO® device or computer addressing
- Connection of peripherals via ALMEMO® clamp connectors, cable with anti-kink protective sleeve and strain relief
- Power supply via the ALMEMO® device; in case of the analog output option a mains adapter may also be required.
- Modern, compact housing - also suitable for DIN top-hat rail mounting

On request: ALMEMO® output interface ZA8006RTA4 for connection to the PC (directly or via network).

Technical Data

Trigger inputs	Optocoupler, 4 to 30 V, Ri >3 kohms
Relay	Semiconductor relay 50 V, 0.5 A, 1 ohms
Analog outputs	10 V or 20 mA (programmable)
	16-bit DAC, electrically isolated
0.0 to 10.0 V	0.5m V / digit, Load > 100 kohms
0.0 to 20.0mA	0.1 mA / digit, Load <500 ohms
Accuracy	0.1% of final value
Temperature drift	10 ppm / K
Time constant	100 µs
Power supply	via ALMEMO® device

or mains adapter	ZA1312NA7
	(recommended for analog output option)
Current consumption	approx. 10 mA, Lighting approx. 15 mA
(with 9V supply)	2 analog outputs approx. 30 mA + 1.6 I_{Out}
Display	Graphics 128 x 64 (55 x 30 mm)
	Lighting 2 white LEDs
Keypad	7 silicone keys (4 soft-keys)
Housing	127 x 83 x 42 mm (LxWxH)
	ABS (maximum 70°C), 290 g

Basic version 2 trigger inputs and 4 normally open relays

Options 2 additional relays (normally open)	OA8006SH2
Per normally open pair 2 additional normally closed relays (with normally open relays 2 changeover relays)	OA8006OH2
2 analog outputs (common ground), electrically isolated 10 V or 20 mA (programmable)	OA8006R02

Possible combinations

1x OA8006SH2 (+2 relays)
or 1x OA8006SH2 (+2 relays) + 1x OA8006R02 (+2 analog outputs)
or 2 x OA800R0H2 (+4 analog outputs)

Accessories

Mains unit, 12 V, 1 A	ZA1312NA7
DIN tophat rail mounting	ZB2490HS

Variants

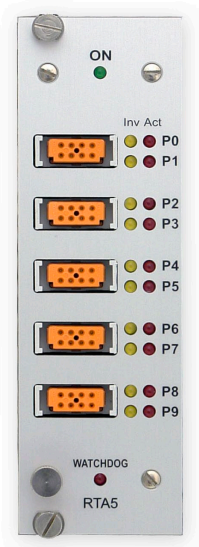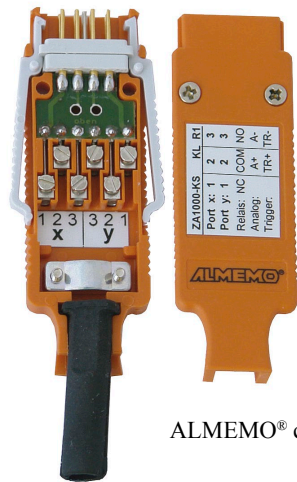|	Order no.
ALMEMO® relay trigger adapter with 2 trigger inputs, 4 normally open relays, DC socket, graphics display, and keypad, including 1.5-meter ALMEMO® connecting cable and 3 ALMEMO® clamp connectors	**ZA8006RTA3**

03.05

ALMEMO® Output modules

ALMEMO® trigger output interface, ES 5690 RTA5, for ALMEMO® data acquisition systems

Technical Data:

Trigger inputs	Optocoupler 4 to 30 V, Ri > 3 kohms
Relays	Semiconductor relays 50 V, 0.5 A, 1 ohm
Analog outputs	10 V or 20 mA (programmed)
	16 bit DAC. electrically isolated
0.0...10.0 V	0.5 mV/Digit. Load > 100 kohms
0.0...20.0 mA	0.1 mA/Digit. Load < 500 ohms
Accuracy	0.1 % of final value.
Temperature drift	10 ppm/K
Time constant	100 µs
Power supply	via ALMEMO® measuring system
Current consumption	Standard: approx. 10 to 20 mA
	2 analog outputs: approx. 15 mA + 1.8·IOut
Module	19" 8-DU (2 slots)

- Universal trigger output interface for ALMEMO® 5690 data acquisition systems
- System (master measuring circuit or CPU module) addressed via an internal SPI bus
- Up to 10 peripheral elements (relays, trigger inputs, analog outputs) each with individually configurable function
- Relay functions, total alarm, assignment to particular limit values, or addressing via interface
- Inverse relay addressing for alarm in the event of power failure
- Relay states shown via LEDs
- Watchdog function in the event of a failure of ALMEMO® device or computer addressing
- Comprehensive trigger features with the aid of command macros, addressing via electrical signals
- Either 2 or 4 analog outputs (10 V or 20 mA programmable) can be assigned to any measuring channels, scalable sub-areas, or alternatively addressing via interface.
- On request : 10 analog outputs per plug-in module (without trigger inputs, without relays)
- Connection of peripherals via ALMEMO® clamp connectors, cable with anti-kink protective sleeve and strain relief
- Power supply via ALMEMO® system.

ALMEMO® clamp connector

Basic version 2 trigger inputs and 4 normally open relays

Options 2 additional relays (normally open)   OA8006SH2

Per normally open pair 2 additional normally closed relays
(with normally open relays 2 changeover relays)   OA8006OH2

2 analog outputs (common ground), electrically isolated
10 V or 20 mA (programmable)   OA8006R02

Possible combinations
    2x OA8006SH2 (+4 relays)
or 1x OA8006SH2 (+2 relays) + 1x OA8006R02 (+2 analog outputs)
or 2 x OA8006R02 (+4 analog outputs)

Variants	Order no.
ALMEMO® relay trigger module - with 2 trigger inputs, 4 normally open relays, and 3 ALMEMO® clamp connectors	**ES5690RTA5**