

Small programmable controller MKA 500

» for cooking, universal, baking, kettle units and autoclaves

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CONTROLS for
FOODTECHNOLOGY

» OVERVIEW



The controller **MKA 500** can be used in **cooking, universal, baking and kettle units and autoclaves**. The controller is freely adjustable and can be easily adapted to many applications.

The controller has **4 configurable measurement inputs** and **5 potential free output relays**. The controller regulates the **temperature for heating or cooling as well as humidification and dehumidification**. As **Switch-off condition you can choose between operating time and/or core temperature**. **Delta-T cooking and F-value** are possible after corresponding coding.

Free assignment of the output relays. Each relay can be pre-programmed as **leading or lagging, with delayed start-up or delayed switch-off or pulsating**.

Via an optional interface you can transfer data between the MKA 500 and a computer. The controller is easier to program via PC with installed **aditec service programme**.

The connection is made using a serial **Mini-USB interface (only for programming, configuration and firmware update)** or **optionally via LAN or serial interface RS485 (necessary for VisuNet recording)**.

Via an **optional USB host interface**, a **data logger function** is possible.

The visualization programme **aditec "VisuNet"** offers the possibility of linking the controller to a super-ordinate programme-surveillance and of logging temperature trends, treatment types etc. It thereby ensures a comprehensive quality control of the products treated in the units in accordance with HACCP and IFS (ISO 9000).

Use the **remote maintenance system/telecontrol system aditec control** to not only run and monitor the **VisuNet programme** but to also make changes to the system, from anywhere you happen to be.



» FEATURES

- Number of programs and steps individually adjustable. **A total of maximum 99 steps, but maximum 30 programs can be selected. 1 hand program.**
- **Adjustable program names** (max. 8 characters)
- Easy and systematic adjustment of configuration data
- **5 programmable processes**
- **Adjustable process names** (max. 8 characters)
- **5 potential-free relay outputs**, programmable
- **4x galvanically insulated analogue inputs**, programmable as: Pt100, three-wire connection and all thermocouples according to standard DIN EN 60584 or digital inputs. Additional 2 inputs can be programmed as current or voltage inputs.
- **Mini USB port** for programming, configuration and firmware update
- **6x Button-LED's** (red) for status display
- **2,7" OLED-Display** with 128 x 64 pixel and 16 grey scales,
- **Robust stainless steel housing** (1.4016)
- Programmable nominal value limits
- Program memory is retained during a power cut.
- Programs that were interrupted through a power cut are resumed at the point where they stopped when power is restored.
- Process runtimes adjustable in h:min or min:sec or continuous operation
- **Preselecting time** (starting time) adjustable via Real Time Clock or date
- Detection of sensor defects (break or short circuit)
- **24 limit value alarms**
- **Change-over of the measuring unit from °C to °F**

» OPTIONS

- **Ethernet LAN** for connection to a PC or networking via **additional board ZSL**
- **USB Host interface** via **additional board ZSU**
- **RS485** for connection to a PC via **additional board ZS4**
- **2 analogue outputs** 4...20mA/0...10V via **additional board ZA2**
- **2 analogue inputs** universally adjustable via **additional board ZE2**
- **2 analogue outputs** 4...20mA/0...10V und **1 vacuum sensor** via **additional board ZAV21**
- Possibility of networking for visualization and recording according to HACCP with **aditec-VisuNet**

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» TECHNICAL DATA

General Data						
Dimensions	(HxWxD) 96mm x 96mm x 100,5mm (depth with terminals 110,5 mm)		With WP-frame: (HxW) 138 x 138 mm			
Mounting dimensions (recess size)	(HxW) 90mm x 90mm					
Material	Robust stainless steel housing (1.4016)		Particularly suitable for the food industry			
Own weight	750 g					
Operating temperature	-20 to +65°C					
Storage temperature	-50 to +75°C					
Protection class	IP65 according to EN 60529					
Electrical Data						
Power supply	85~260V AC		Optional: 18-36VDC			
Residual ripple	5%					
Current consumption	63 mA at 230 VAC					
Power consumption	14,5 VA					
Relay contact load	Max. 250V AC 4A					
Electrical safety	According to DIN EN 61010-1 overvoltage category III					
Electromagnetic compatibility	According to DIN EN 61326-1 Emitted interference		Class A for industrial use			
	Interference immunity		For industrial requirements			
Battery lifetime (for Real Time Clock)	8-10 years					
Display	2,7" OLED-Display with 128 x 64 pixel and 16 grey scales					
Connection for relay outputs and power supply	Removable lift terminals with screws		Wire min. 0,5 - max. 2,5 mm ²			
Connection for dig./analogue inputs	Removable terminals in Push-in-technology (spring terminals)		Min. 0,14 mm ² - max. 1,5 mm ² wire cross-section Minimum length of wire end sleeves 10mm			
4x analogue inputs (plus 2x optionally via additional board ZE2)						
Sensor	Type	Additional settings	Measuring range	Measuring unit	Accuracy	Ambient temperature effect
E1 + E2 E3 + E4 (E5 + E6 optional)	Pt100	-	-100... 500 °C (-148... 932 °F)	°C / °F	≤ 0,1%	≤ 100ppm/°C
	TFG80H	-	0...100 % relative humidity	%	≤ 0,6%	≤ 100ppm/°C
	Type K: NiCr-Ni	-	-200...1372 °C (-328...2501 °F)	°C / °F	≤ 0,4%	≤ 100ppm/°C
	Type T: Cu-CuNi	-	-200... 400 °C (-328... 752 °F)	°C / °F	≤ 0,5%	≤ 100ppm/°C
	Type B: Pt30Rh-Pt6Rh	-	250...1820 °C (482...3308 °F)	°C / °F	≤ 0,4%	≤ 100ppm/°C
	Type E: NiCr-CuNi	-	-200...1000 °C (-328...1832 °F)	°C / °F	≤ 0,4%	≤ 100ppm/°C
	Type J: Fe-CuNi	-	-210...1200 °C (-346...2192 °F)	°C / °F	≤ 0,4%	≤ 100ppm/°C
	Type N: NiCrSi-NiSi	-	-200...1300 °C (-328...2372 °F)	°C / °F	≤ 0,4%	≤ 100ppm/°C
	Type R: Pt13Rh-Pt	-	-50...1768 °C (-58...3214 °F)	°C / °F	≤ 0,4%	≤ 100ppm/°C
	Type S: Pt10Rh-Pt	-	-50...1768 °C (-58...3214 °F)	°C / °F	≤ 0,4%	≤ 100ppm/°C
E70 - ZAV 21	Power	0(4)...20 mA	-9.999...30.000	variable	≤ 0,3%	≤ 100ppm/°C
	Voltage	0...1 V 0(2)...10 V	-9.999...30.000	variable	≤ 0,1%	≤ 100ppm/°C
Adjustable nominal value limitation via code						
Optional: 2 analogue inputs (E5 + E6) via additional board ZE2						
Optionally via additional board ZAV21						
4x digital inputs						
D1, D2, D3, D4		Via analogue inputs			Adjustable	
4x incremental inputs						
Via analogue inputs		Up to 3 Hz (180 pulses/min) Number of pulses -9.999...30.000			Variable	
2x analogue outputs (optional) via additional board ZA2						
A1 and A2		Output range: 0(2)-10V with R _{Last} ≥ 1000 Ω or 0(4)-20mA with R _{Last} ≤ 500 Ω			Optionally via additional board ZA2	
5x relay outputs						
R1...R5		Potential free contacts, switching capacity 250V AC, 4A			4 change-over contacts 1 closer	

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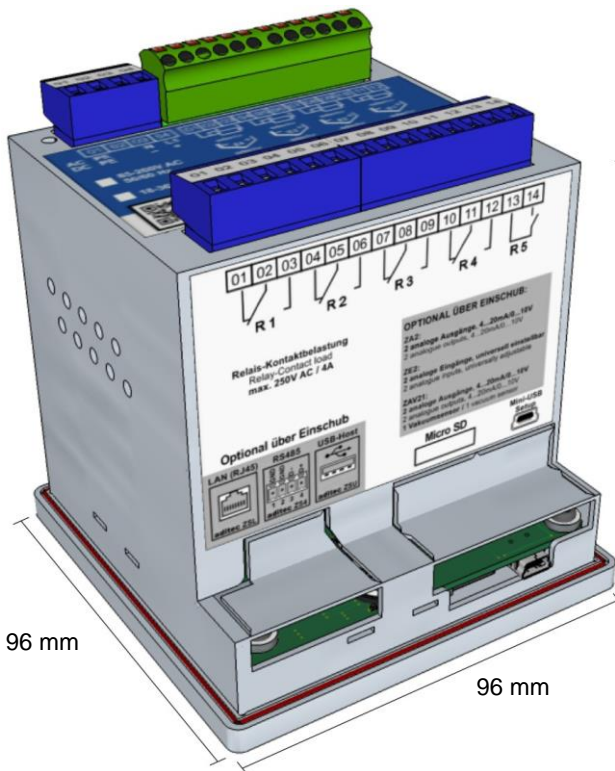
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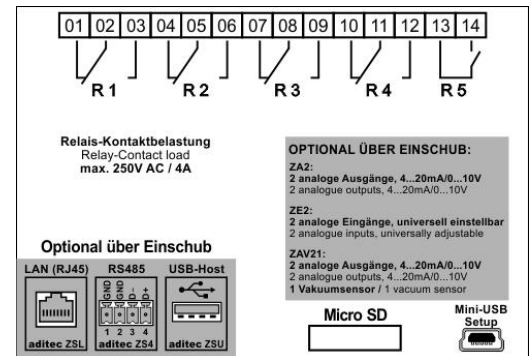
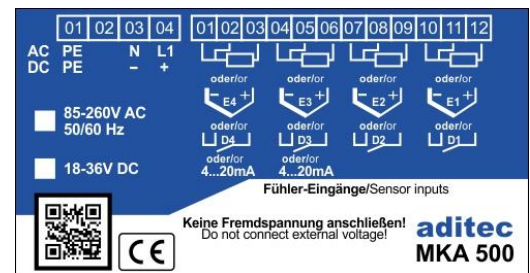
» TECHNICAL DATA

Interfaces		
1	Mini-USB	
1 memory	µSD Card Slot	For Micro-SD cards up to 32 GB
1	USB-Host	Optional: additional board ZSU
1	LAN	Optional: additional board ZSL
1	RS485	Optional: additional board ZS4
Galvanic isolation		
Mains input 85~264VAC/120~370VDC	1,5 kVAC/1min	Optional: Power input 18-36VDC -> 2,5kV Test 1 minute and 1mA max.
Sensor inputs (analogue inputs)	1 kV	
Serial interfaces: - USB (mini) - LAN - RS485	---- 1,5 kV 1 kV	Optional Optional

» DIMENSIONS + CONNECTION DIAGRAM



110,5 mm
(with terminals)



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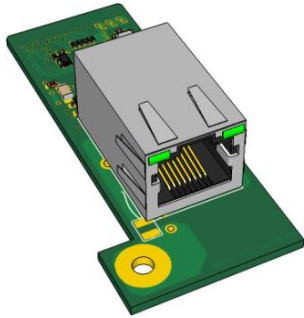
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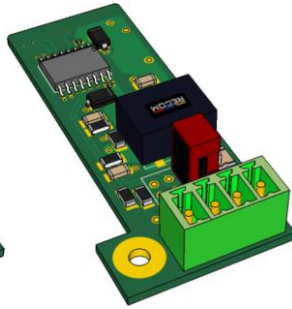
» ADDITIONAL BOARDS / OPTIONS SUITABLE FOR SUBSEQUENT INSTALLATION

Slot left:

► ZSL
additional board
Ethernet



► ZS4
additional board
RS485



► ZSU (on demand)
additional board
USB-Host

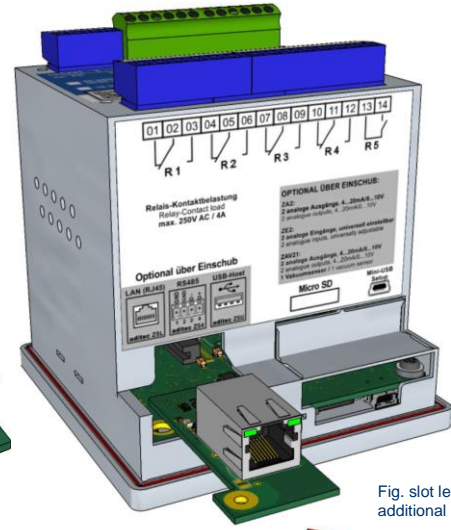
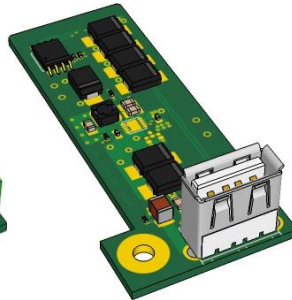


Fig. slot left,
additional board ZSL

Slot right:

► ZE2 (on demand)
additional board
2 analogue inputs



► ZA2
additional board
2 analogue outputs



► ZAV21
additional board
2 analogue outputs +
1 vacuum sensor

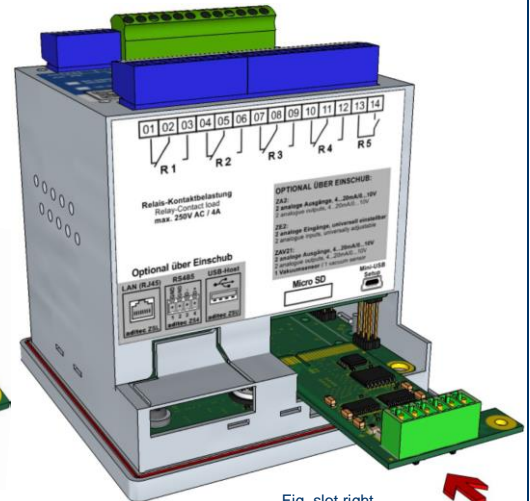


Fig. slot right,
additional board ZE2