Programmable controller MKA 800

» für cooking, baking, kettle units and autoclaves

aditec
CONTROLS for
FOODTECHNOLOGY

» OVERVIEW

The controller **MKA 800** is suitable for **cooking, baking, kettle units, autoclaves and much more**. The device is freely adjustable, flexible and can be adapted for many applications.

The controller has **4 configurable measurement inputs** and **10 potential free output relays**. The controller regulates the **temperature for heating or cooling and for humidification and dehumidification**. **Switch-off condition you can choose between operating time and/or core temperature**. **Delta-T cooking and F-value** are possible with according encoding.

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

The **serial interface** enables you to transfer data between the MKA 800 and a computer. The controller is easier to program via PC with installed **aditec service program**.
The connection is made using **Mini-USB (exclusively for programming, configuration and firmware update) or optionally via LAN (necessary for VisuNet recording) or serial interface RS 485.**

A Data Logger function is possible via an **optional USB-Host interface**.

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.

CE

» FEATURES

- Number of programs and steps individually adjusted. **Max. 450 steps total, but max. 50 programs selectable, 1 manual program**
- **Adjustable program names** (max. 8 characters)
- Easy and systematic adjustment of configuration data
- **5 programmable processes**
- **Adjustable process names** (max. 8 characters)
- **10x potential-free relay outputs,** programmable
- **4x galvanically isolated analogue inputs** programmable as: PT100, three-wire connection and all thermocouples (according to standard DIN EN 60584) or digital inputs. Programming of 2 additional inputs as current/voltage inputs.
- **Mini USB connection** (mini-USB Port for programming, configuration and firmware update)
- **10x button-LED** (red) for status display
- **OLED-Display** with 128 x 64 pixel and 16 grey scales, 2,7"
- **Robust stainless steel housing** (1.4016)
- Programmable nominal value limits
- Program memory will be 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 in adjustable in h : min or min : s or continuous operation
- **Preselecting time** (starting time) adjustable via real-time clock/date
- Detection of sensor defects (break or short circuit)
- **5 value alarms (limit values)**
- **Change-over of the measurement °C - °F**

» OPTIONS

- **Ethernet LAN** for connection to a PC or network via **additional board ZSL**
- **USB-Host** via 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**
- **CAN** for connection of CAN MODULES via additional **plug-in board ZSC**
- **2 analogue outputs** (4…20mA/0…10V) **+ 1 vacuum input** via **additional board ZAV21**
- Possibility of networking for visualisation and recording according to HACCP with **aditec-VisuNet**

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» TECHNICAL DATA

General data		
Dimensions	(WxHxD) 207 x 111 x 83 mm	
Mounting dimensions (recess size)	(WxH) 185 x 90 mm	Mounting depth with terminals: 77 mm
Material	Robust stainless steel housing (1.4016)	According to DIN standard / Industry norms
Own weight	750 g	
Operating temperature	-20 to +65°C	
Storage temperature	-50 to +75°C	
Protection class	IP 65 from the front side / IP 20 from the back	According DIN EN 60529
Electrical data		
Power supply Residual ripple	85~260V AC (50 – 60 Hz) /120~370V DC 5%	**Optional:**18-36 VDC
Current consumption	78 mA at 230V AC	
Power consumption	18 VA	
Contact load of the relay	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	OLED-Display with 128 x 64 pixel, 16 grey scales, 2,7"	
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 with 10 mm wire end sleeves

4x analogue inputs

Sensor		Type	Additional settings	Measuring area	Measuring unit	Accuracy	Ambient temperature effect	
E1 + E2	E3 + E4	Pt100	-	-100… 500 °C (-148… 932 °F)	°C / °F	≤ 0,1%	≤ 100ppm/°C	Adjustable nominal value limitation via code
		Typ K: NiCr-Ni	-	-200…1372 °C (-328…2501 °F)	°C / °F	≤ 0,4%	≤ 100ppm/°C	
		Typ J: Fe-CuNi	-	-210…1200 °C (-346…2192 °F)	°C / °F	≤ 0,4%	≤ 100ppm/°C	
		Typ T: Cu-CuNi	-	-200… 400 °C (-328… 752 °F)	°C / °F	≤ 0,5%	≤ 100ppm/°C	
		Typ B: Pt30Rh-Pt6Rh	-	250…1820 °C (482…3308 °F)	°C / °F	≤ 0,4%	≤ 100ppm/°C	
		Typ E: NiCr-CuNi	-	-200…1000 °C (-328…1832 °F)	°C / °F	≤ 0,4%	≤ 100ppm/°C	
		Typ N: NiCrSi-NiSi	-	-200…1300 °C (-328…2372 °F)	°C / °F	≤ 0,4%	≤ 100ppm/°C	
		Typ R: Pt13Rh-Pt	-	-50…1768 °C (-58…3214 °F)	°C / °F	≤ 0,4%	≤ 100ppm/°C	
		Typ S: Pt10Rh-Pt	-	-50…1768 °C (-58…3214 °F)	°C / °F	≤ 0,4%	≤ 100ppm/°C	
		Increment	D1 - D4	Up to 3 Hz (180 pulses/min) Number of pulses - 9.999…30.000	variable			
		TFG80H	-	0…100 % relative humidity	%			
⊖		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	
E70 - ZAV 21		Vacuum AG4	ADW	0…100 %	variable	**Optionally via additional board ZAV21**		
E5 – E8		See data sheet CAN module MAE24				**Optionally via ZSC + CAN module MAE24**		
E81 – E90		Ext LAN		variable	variable	Connect. to partner unit with the external sensors		

4x digital inputs		
D1, D2, D3, D4	Via analogue inputs	Adjustable
12x digital inputs optional via additional board ZSC + CAN module MD12		
D5 – D16	See data sheet CAN module MD12	**Optionally via ZSC + CAN module MD12**
2x analogue outputs optional via additional board ZA2		
A1 and A2	Output areas: 0(2)-10V with $R_{Last} \geq 1000\ \Omega$ oder 0(4)-20mA with $R_{Last} \leq 500\ \Omega$	**Optionally via additional board ZA2**
2x analogue outputs optional via additional board ZSC + CAN module MAE24		
A3 and A4	See data sheet CAN module MAE24	**Optionally via ZSC + CAN module MAE24**
10x relay outputs		
R1…R10	Potential free contacts, switching capacity 250V AC, 4A	4 change-over contacts 6 close contacts
6x relay outputs optional via additional board ZSC + CAN module MR6		
V1…V6	See data sheet CAN module MR6	**Optionally via ZSC + CAN module MR6**

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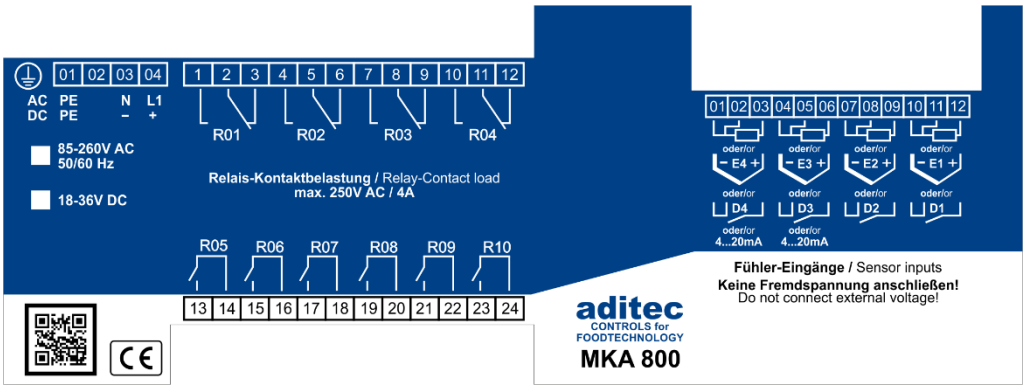
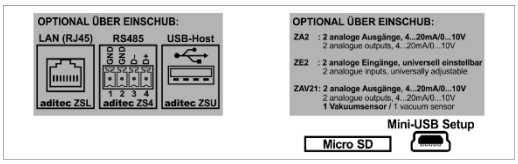
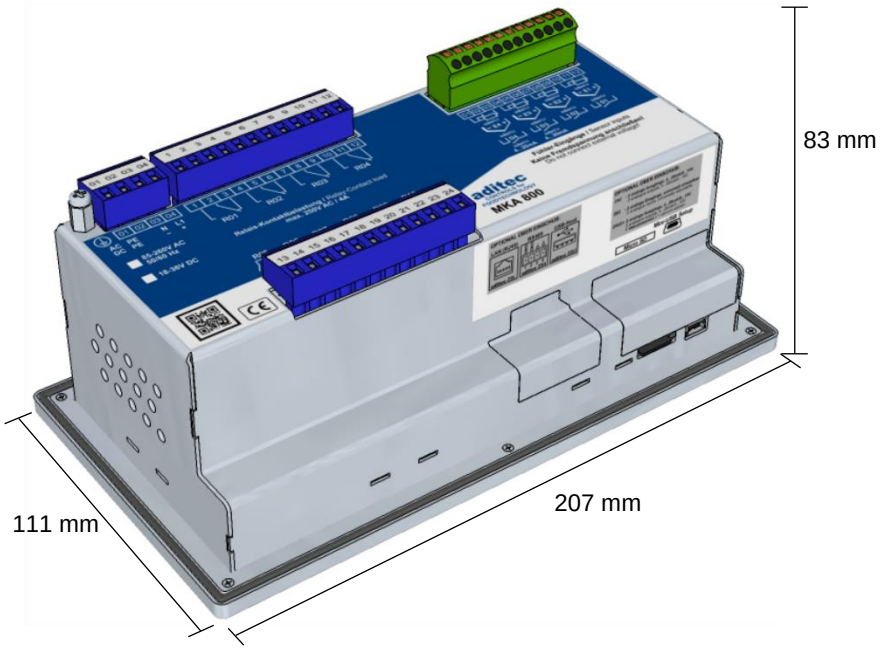
» TECHNICAL DATA

Serial interfaces		
1	Mini-USB	
1 Memory	µSD Card Slot	For Micro-SD cards to 32 GB
1	USB-Host	**Optional**: additional board ZSU
1	LAN	**Optional**: additional board ZSL
1	RS485	**Optional:** additional board ZS4
1	CAN	**Optional:** additional board ZSC
Galvanic isolation		
Mains input 85~264VAC/120~370VDC	1,5 kV AC/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 - CAN	 ---- 1,5 kV 1 kV 1.5 kV	 **Optional: additional board** ZSL **Optional: additional board** ZS4 **Optional: additional board** ZSC

» DIMENSIONS + CONNECTION DIAGRAM







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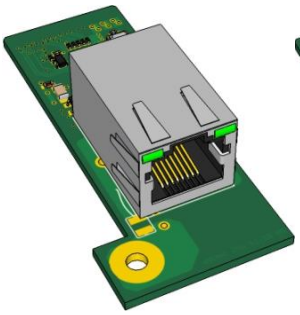
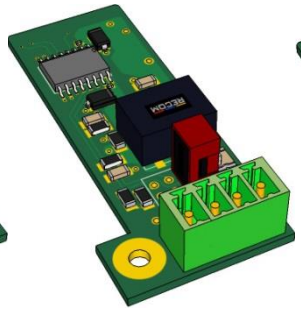
» ADDITIONAL BOARDS / OPTIOS SUITABLE FOR SUBSEQUENT INSTALLATION

Slot left:

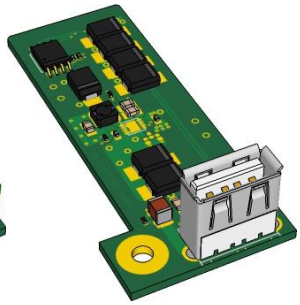
▶ **ZSL**
Additional board
Ethernet

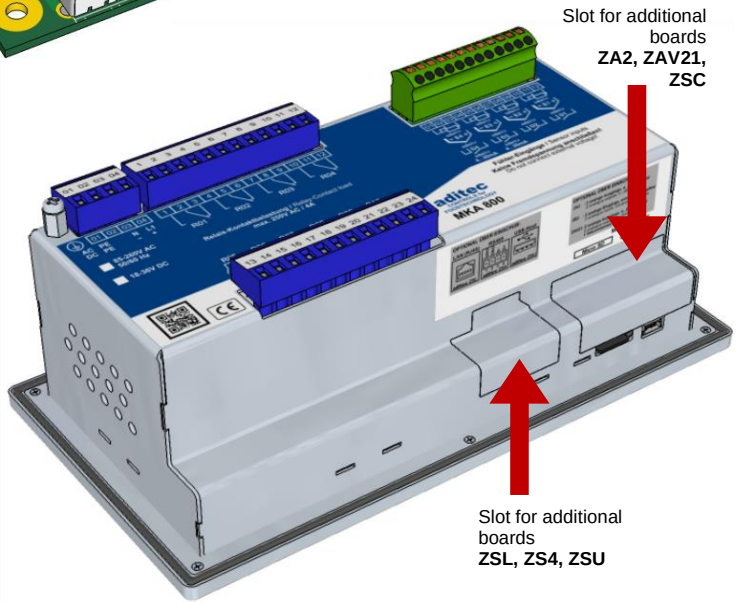


▶ **ZS4**
Additional board
RS485



▶ **ZSU**
Additional board
USB-Host

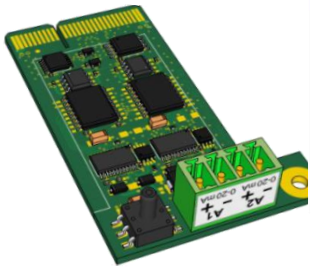




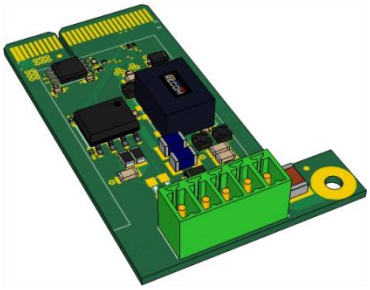
Slot right:

▶ **ZA2**
Additional board
2 analogue outputs
4…20mA/0…10V

▶ **ZAV21**
Additional board
2 analogue outputs +
1 vacuum sensor
freely adjustable



▶ **ZSC**
additional board CAN
(MKA 800 from SW V00.11 and from HW 09/21)



▶ CAN-Modules
for subsequent expansion via ZSC

▶ 1 x MR 6

▶ 1 x MAE 24

▶ 1 x MD 12

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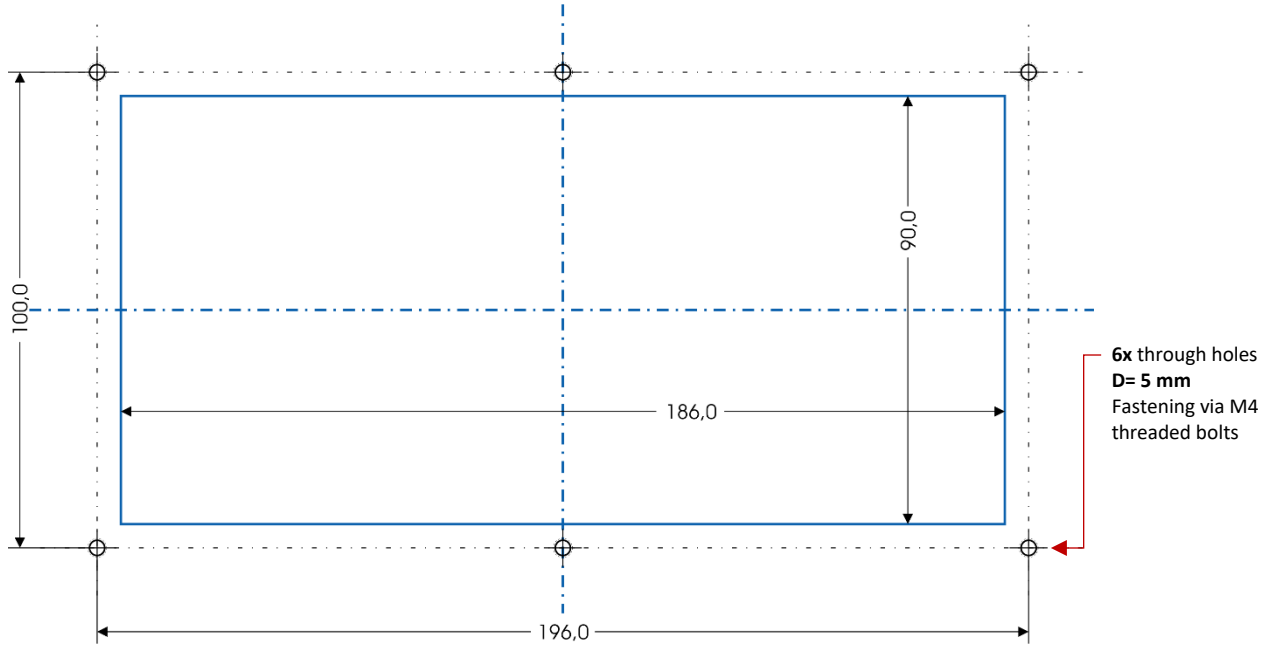
» CUT OUT



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