

# Small programmable controller MKA 120

» for cooking, baking and kettle units

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CONTROLS for  
FOODTECHNOLOGY

## » OVERVIEW



The controller **MKA 120** is suitable for **cooking, baking, kettle units and much more**. The device is freely adjustable, flexible and can be adapted for many applications.

The controller has **2 temperature measurement inputs** and **3 potential free output relays**. The controller regulates the **temperature for heating or cooling**. **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 output relays. 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 120 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**.

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 adjusted. **Max.99 steps total, but max.30 programs selectable, 1 manual program**
- Easy and systematic adjustment of configuration data
- **Programmable processes**
- **3x potential-free relay outputs, programmable**
- **2x galvanically isolated analogue inputs** programmable as: PT100 (three-wire connection with automatic line compensation), all thermocouples (according to standard DIN EN 60584) like type K: NiCr-Ni, Pt100 or digital inputs
- **Mini USB connection** (mini-USB Port for programming, configuration and firmware update)
- **4x 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 at 00h : 01min up to 99h : 59min 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**
- **RS485** for connection to a PC via **additional board ZS4**
- Possibility of networking for visualisation and recording according to HACCP with **aditec-VisuNet**

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## » TECHNICAL DATA

General data						
Dimensions	(HxWxD) 96 x 96 x 68 mm		With WP frame (HxW) 138 x 138 mm			
Mounting dimensions (recess size)	(HxW) 90 x 90mm		Mounting depth with terminals: 63 mm			
Material	Robust stainless steel housing (1.4016)		Ideal for use in the food industry			
Own weight	ca. 500 g					
Operating temperature	-20 to +65°C					
Storage temperature	-50 to +75°C					
Protection class	IP65 according to EN 60529					
Electrical data						
Power supply	85~260VAC / 50 - 60 Hz		Optional: 18-36VDC			
Residual ripple	5%					
Current consumption	Min. 36 mA at 85 VAC					
	Max. 58 mA at 260 VAC					
Power consumption	Max. 9,5 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 <sup>2</sup>			
Connection for dig./analogue inputs	Removable terminals in Push-in-technology (spring terminals)		Min. 0,14 mm <sup>2</sup> - max. 1,5 mm <sup>2</sup> wire cross-section with 10 mm wire end sleeves			
2x analogue inputs						
Sensor	Type	Additional settings	Measuring area	Measuring unit	Accuracy	Ambient temperature effect
E1 + E2	Pt100	-	-100... 500 °C (-148... 932 °F)	°C / °F	≤ 0,1%	≤ 100ppm/°C
	Type K: NiCr-Ni	-	-200...1372 °C (-328...2501 °F)	°C / °F	≤ 0,4%	≤ 100ppm/°C
	Type J: Fe-CuNi	-	-210...1200 °C (-346...2192 °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 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
Increment	D1 - D4	Up to 3 Hz (180 pulses/Min) Number of pulses -9.999...30.000		variable		
TFG80H	-	0...100 % relative humidity		%		
Adjustable nominal value limitation via code						
2x digital inputs						
D1, D2	Via analogue inputs, 30 pulses/min (0,5 Hz)		Adjustable			
3x relay outputs						
K1, K2, K3	Potential free contacts, switching capacity 250V AC, 4A		3 change-over contacts			
3x serial interfaces						
1	Mini-USB					
1	LAN		Optional: additional board ZSL			
1	RS485		Optional: additional board ZS4			

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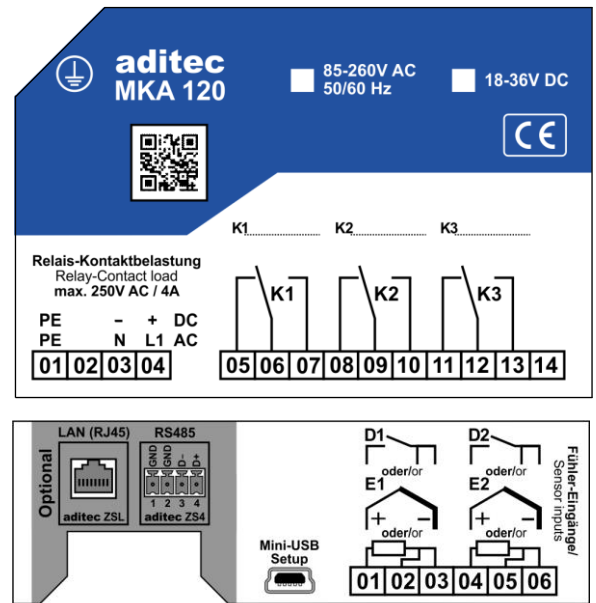
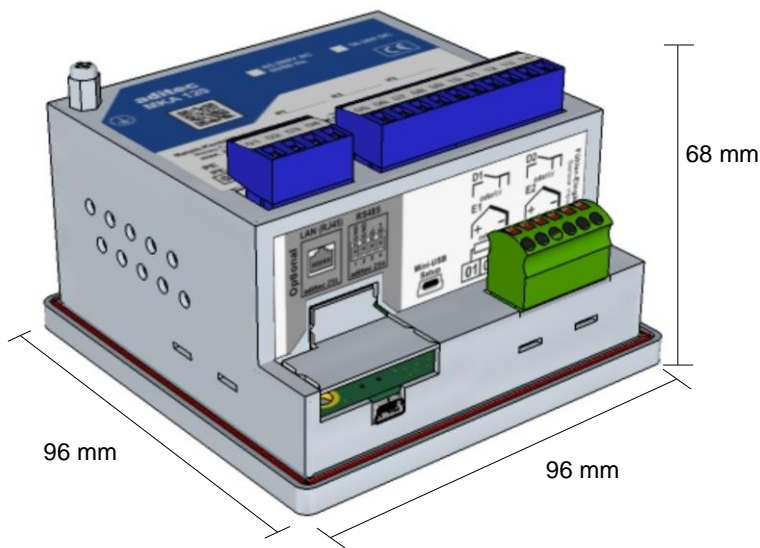
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## » TECHNICAL DATA

### Galvanic isolation

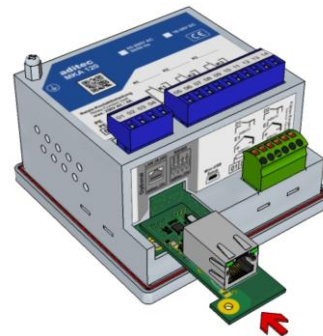
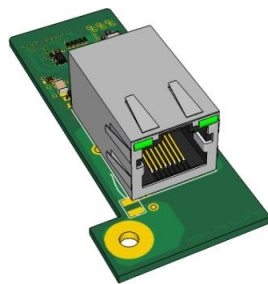
Mains input 85~264VAC/120~370VDC	4 kVAC/1min	<b>Optional:</b> Power input 18-36VDC -> 2,5kV test 1 minute and 1mA max.
Sensor inputs (analogue inputs)	1 kV	
Serial interfaces: - USB (mini) - LAN - RS485	----- 1,5 kV 1 kV	<b>Optional</b> <b>Optional</b>

## » DIMENSIONS + CONNECTION DIAGRAM



## » ADDITIONAL BOARDS / OPTIOS SUITABLE FOR SUBSEQUENT INSTALLATION

**ZSL:**  
ADDITIONAL BOARD  
ETHERNET



**ZS4:**  
ADDITIONAL BOARD  
RS485

