

# Module MAE 24

» Hardware module with 4 analogue inputs + 2 analogue outputs

## » OVERVIEW

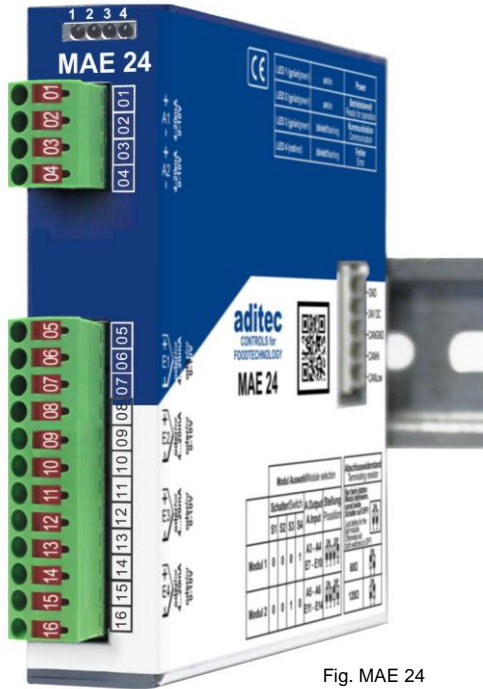


Fig. MAE 24

The MAE24 device is an analogue in/output module with a total of 6 channels (4 analogue inputs, 2 analogue outputs) and can only be used in combination with the aditec controllers MS 120, MS 220, MIC 900 and MIC 3000. The CAN-BUS interface is used for programming and communication with the basic unit. The module is designed for mounting on a DIN rail in control cabinets.



The MAE24 module can only be used in combination with the aditec controllers MS 120, MS 220, MIC 900 and MIC 3000!

## » FEATURES

- **4 universal analogue inputs**  
Can be programmed as: Pt100, all thermocouples conforming to DIN EN 60584 i.a. type K: NiCrNi, voltage 0-10V or power 0(4)-20mA.
- **2 analogue outputs**  
transposable between 0(4)-20mA and 0(2)-10V
- **1x CAN interface** for communication with the basic unit and for programming
- The module can be connected **centralised** (no wiring needed for communication) or **decentralised** (via cable connection) to the basic units MS 120, MS 220, MIC 900 or MIC 3000 in separate control cabinets.
- The basic units **MS 120 / MS220 have 6 analogue inputs + 2 analogue outputs**. With connection of **max. 2 MAE24 modules there are up to 14 inputs and 6 outputs available**.
- The basic units **MIC 900 / MIC 3000 have 6 analogue inputs** (with installed additional board ZE2: 8 analogue inputs and 2 analogue outputs). With connection of **max. 2 MAE24 modules there are up to 14 inputs and 4 outputs** (with installed additional board ZE2: 16 inputs and 4 outputs) **available**.

### OR:

The basic units **MIC 900 / MIC 3000 have 6 analogue inputs** (with installed additional board ZA2: 6 analogue inputs and 2 analogue outputs). With connection of **max. 2 MAE24 modules there are up to 14 inputs and 4 outputs** (with installed additional board ZA2: 14 inputs and 6 outputs) **available**.

## » LED STATUS DISPLAY

- **LED 1=** Power (lights up green)
- **LED 2=** Operation (lights up green)
- **LED 3=** Communication (flashes green)
- **LED 4=** Error (flashes red)

## » TECHNICAL DATA

General data		
Dimensions	22,5mm x 104mm x 106,5mm (W x H x D)	Without connection elements
Material	Robust stainless steel housing (1.4016)	Ideal for use in the food industry
Cooling	Passive (without fan)	
Own weight	Ca. 250 g	
Operating temperature	-20 to +65°C	
Storage temperature	-50 to +75°C	
Air humidity	35% - 80% (non-condensing)	
Atmosphere	Non-aggressive gases	
Protection class	IP20 according to EN 60529	
Electrical data		
Power supply	24V DC +25% -20%	
Residual ripple	5%	
Current consumption	Max. 130mA at 24V DC	
Power consumption	Max. 3,2W	When all inputs and outputs are fully used.

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Electrical data				
Wire cross-section	Min. 0,14 mm <sup>2</sup> max. 1,0 mm <sup>2</sup>	Stripping length 11 mm		
Braid with wire end sleeve	Min. 0,14 mm <sup>2</sup> max. 1,5 mm <sup>2</sup>			
Electrical safety	According to DIN EN 61010-1	Overvoltage category III		
Electromagnetic compatibility	Emitted interference: Class A for industrial use Interference immunity: For industrial requirements	According to DIN EN 61326-1		
Connections	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 10mm wire end sleeves		
4x analogue inputs				
Sensor	Type	Measuring range	Accuracy	Ambient temperature effect
E1 - E4	Pt100	-100... 500°C (-148... 932°F)	≤0,1%	≤100ppm/°C
	TFG80H	0...100 % relative humidity	≤0,6%	≤100ppm/°C
	P1000A	Potentiometer:1000Ω	≤0,12%	≤100ppm/°C
	Type K: NiCr-Ni	-200...1372°C (-328...2501°F)	≤0,4%	≤100ppm/°C
	Type T: Cu-CuNi	-200... 400°C (-328... 752°F)	≤0,5%	≤100ppm/°C
	Type B: Pt30Rh-Pt6Rh	250...1820°C (482...3308°F)	≤0,4%	≤100ppm/°C
	Type E: NiCr-CuNi	-200...1000°C (-328...1832°F)	≤0,4%	≤100ppm/°C
	Type J: Fe-CuNi	-210...1200°C (-346...2192°F)	≤0,4%	≤100ppm/°C
	Type N: NiCrSi-NiSi	-200...1300°C (-328...2372°F)	≤0,4%	≤100ppm/°C
	Type R: Pt13Rh-Pt	-50...1768°C (-58...3214°F)	≤0,4%	≤100ppm/°C
	Type S: Pt10Rh-Pt	-50...1768°C (-58...3214°F)	≤0,4%	≤100ppm/°C
	0(4)...20mA	0..20 mA with R <sub>ln</sub> = 200Ω	≤0,33%	≤100ppm/°C
	0(2)...10V	0-10V with R <sub>ln</sub> = 100kΩ	≤0,13%	≤100ppm/°C
	0...1V	0-1V with R <sub>ln</sub> = 100kΩ	≤0,1%	≤100ppm/°C
Sensor HC2	Depending on sensor type	≤0,1%	≤100ppm/°C	
<b>Expandable to a total of 14 inputs via max. 2 additional modules MAE24 in connection with the basic units MS 120, MS 220, MIC 900 or MIC 3000.</b>				
2x analogue outputs				
A1 - A2	0(2)-10V with R <sub>Last</sub> ≥ 1000 Ω or 0(4)-20mA with R <sub>Last</sub> ≤ 500 Ω	<b>Expandable to a total of 6 outputs via max. 2 additional modules MAE24 in connection with the basic unit MS 120 or MS 220.</b>  <b>A total of 6 outputs via ZA2 and max. 2 additional modules MAE24 in connection with the basic units MIC 900 or MIC 3000.</b>		
Galvanic isolation				
Mains input 24V DC	2,5 kV			
Analogue inputs/outputs	3,75 kV			

## » DIMENSIONS / CONNECTION DIAGRAM

