

M-OUT-4s configuration guide

Document number: PO-096-EN Version: 5.0 Date of publication: October 9, 2024

Introduction

The M-OUT-4s module is equipped with voltage analogue outputs that allow it to integrate with devices that have voltage control inputs compatible with 0 - 10V DC, 1 - 10V DC, or 0 - 5V DC standards.

This allows the module to control, among others.:

- · light fixtures,
- · recuperators,
- · inverters, etc.

The module's four outputs allow independent control of four receivers; the outputs can accept values from 0 - 10V DC. With this module it is possible, for example, to make the supply power dependent on the temperature received from the heating zone.

Configuration in Ampio Designer

Device parameters

To change the device parameters, enter the device settings (cog icon) and select the *Parameters* tab on the left. In the subtab *Curve value* it is possible to set the control for each channel separately.



The output can be controlled in a linear fashion in several different ways. Furthermore, the start and end of the control do not have to be 0 and 100% either (select any value from the range 0-255). After the change, send the new parameters to the device.



Device monitor

The current values can be viewed and set in the Functions tab, 0-10V output sub-tab.

Flag	8-bit flag	16-bit flag	Diagnostics	0-10V output		
NUMBI	ER DE		LOC		VISUAL	
1				\$		÷
2				\$		Ð
3				٢	○	Ð
4				¢		÷

Conditions

Logical conditions can be created both from output values and to control outputs. Detailed function parameters are set by clicking on the cog icon on the dark background.

TRIGGERS	OUTPUT TYPE	INPUT NUMBERS	FUNCTION	ACTOR	OUTPUT TYPE	OUTPUT NUMB	0		Ū
Create condition				— 🕑 Create	function		Value (0-255)	<u>^</u> 1	Step (1-255)
M-OUT-4s	0-10V output	≎ [± 1. 😑 1 🛛 × 🕑 × Sin	nple \Rightarrow	M-OUT-4s	0-10V output	≎ <u>:1.×</u> ₽	× Simple	0 Set	• 🙆 🧔

Configuration in Smart Home Configurator*

*from January 2024, the Smart Home Configurator software is no longer being developed. It is recommended to use it only in substantiated instances.

Device monitor

The M-OUT-4s module is configured in the Ampio Smart Home configurator. In order to check if the module is working correctly, open the *Device monitor*. There, you can also activate the outputs and name them. To save your changes, click *Save names*.

The condition-MAC: 00006A7A/LOC: 00006A7A ver: 5.0.0.4951		×
The condition-MAC: 00006A7A/LOC: 00006A7A ver: 5.00.4951	€ Cet names Save Names	×

Apart from the simple on/off information, in the *Output values* tab you can also define a value per output within the range of 0-255 (which corresponds to 0-10V).

The condition-MAC: 00006A7A/LOC: 00006A7A ver: 5.0.0.4951		×
Inputs/Outputs Output values Hags Bin F8 Flags lin 8bit Linear outputs: Image: Second seco		
	Close	

Flags in this module work in exactly the same fashion as it is the case with all the other Ampio system modules.

Device parameters

Next, go to the *Device parameters* tab. Open *Outputs*, where you can define the value to which selected devices will be set after power supply is reset.

🔳 Dev	■ Device parameters-MAC: 00006A7A/LOC: 00006A7A ver: 5.0.0.4951 - □ ×							
OL OL	OUTPUTS 📑 FLAGS Bin F FLAGS Lin8 🗹 Curves							
Initial	values of outpu	its:						
1	VALUE	~ <u>98</u>	0255	2 VALUE	~ 53	0255	;	
3	VALUE	~ 174	0 255	4 VALUE	~ 80	0 255	i	
,								
	📩 Load	đ	O Set defau	t			📩 Send	

The initial values can also be defined for selected flags in the *FLAGS Bin* and *FLAGS Lin8* tabs. The *Curves* tab provides options for specifying how an output should be activated. Select the control range - for some devices a range between, e.g. 20% and 80% is advantageous. Then, select one curve from the list - this will allow the output to be activated more smoothly. Available curves are: *line, logarithmic, sine, tangent,* and *arc tangent*. After confirming, you will see a graph corresponding to the setting. Once this stage of configuration is completed, click on *send to device*.

E Device parameters-MAC: 00006A7A/LOC: 00006A7A	ver: 5.0.0.4951	_		×
OUTPUTS FLAGS Bin F8 FLAGS Lin8	es			
Curves of linear outputs:	1			_
Output no.: 1	Output no.: 2 Curve type			
	No data V			
Range [%]:				
0 100				
Output no.: 3	Output no.: 4			
Curve type	Curve type			
Range [%]:				
0 100				
	11			
Load C→ Set defaul	t		📩 Sen	d

Conditions

When creating conditions in Smart Home configuration, you can establish dependencies from the M-OUT-4s module. Dependencies can be created from the output's status, output's value, or output's flag. If you want to check whether an output is switched on, or not, tick the appropriate output in the *Inputs/Outputs* tab (Binary value outputs).

The condition-MAC: 00006A7A/LOC: 00006A	7A ver: 5.0.0.4951		Х
The definition of forcing information	. Warning!!! in this window, we only mark what w	we want to respond to.	
Tinputs/Outputs Output values	Flags Bin F8 Flags in 8bit Binary value outputs: Act Constraint of the scription Act Act Act Act Act Act Act Ac	Features Type of logical operation: (AND) all Type of condition: Basic function Basic function Duration countdown <0,1 - 25,5> s Count conditions appearances up to 255 Condition status change Basic with negation Maximum pulse time <0,1 - 25,5> s Long duration of condition (0,1 - 167772,15s)	
	Binary value outputs:	Type of logical operation: (AND) all Type of condition: Basic function Duration countdown <0,1 - 25,5 > s Count conditions appearances up to 255 Condition status change Basic with negation Maximum pulse time <0,1 - 25,5 > s Long duration of condition (0,1 - 167772,15s) Image: Condition status change Condition status change Basic with negation Maximum pulse time <0,1 - 25,5 > s Long duration of condition (0,1 - 167772,15s) Conditions the status change Save Names	

If you would like to ascertain whether the selected output has reached its set value (e.g. 100), you can do that in the *Output values* tab.

The condition-MAC: 00006A7A/LOC: 00006A7A ver: 5.0.0.4951		Х
The definition of forcing information. Warning!!! in this window, we only mark what we want to	o respond to.	
🙃 Inputs/Outputs 🖓 Output values 📘 Flags Bin F 8 Flags lin 8bit	Features	
Linear outputs:	Type of logical operation: (AND) all Type of condition: Basic function]
	Get names X Save Names Accept Close	

Device reactions

As a reaction to any condition, you can select one of various functions that can be controlled by M-OUT-4s' outputs. In the figure below, on the left side, there is an overview of current values, which can be edited to test the reaction of a given output.

Device reaction_MAC: 00006A7A/LOC: 00006A7A ver. 5.0.0.4051	~
Definition of module working mode:	^
Outputs Binary flags F8 Lin. 8bit flags 🛠 Events	
Image: constraint of the second se	Function: Temporary Operation: Toggle Delay time [0 -167772.15] s: 0 00:00:00,00 Time of duration, (0 - permanent) [0 -167772.15] s: 0 Permanent Value to set Value [0255]: Speed [1255]: 255 255
Cet names	Close

In the same window, on the right side, there is a list of functions that can be selected for a given condition, as well as the function parameters. Due to the fact that the module's outputs can not only be switched on/off, but also accept values in the range of 0-255, a lot of configuration possibilities are available.

For example, you can get a value from the source device (first part of the condition), calculate it and set the calculated value on M-OUT-4s' output.

In the figure below, an 8-bit value is downloaded, number 1 (e.g. 1 output) selected, data type prescaler is left on default, and the value in the converter is multiplied by 2. Saturation limits the value to the range of 20 to 200. This means that if the input returns 0, the output will receive 20 (the *minimum* limit). With an input returning 30, the output will take the value of 60. With an input returning 220, the output will take the value of 200 (the *maximum* limit).

Device reaction-MAC: 00006A7A/LOC: 00006A7A ver: 5.0.0.4951	×
Definition of module working mode	
Vouputs Binary flags 8 Lin. 8bit flags X Events	
1 Description 2 Description 3 Description	Function:
I Read Read Read Read	Rewrite value
- 0 + - 0 +	
	Operation:
4 Description	Advanced \checkmark
Read	Behavior when condition is not met:
- 0 +	No change \checkmark
	Input data type:
	8 bit 🗸
	Input data number:
	1 ~
	Data type prescaler:
	Value without prescaler
	Data converter:
	Besult=[Data] * 2 / 1 + 0
	Limit output value (saturation):
	See an Annual Marchard
Z Get names	Close

Once the condition is created, it is necessary to confirm it and send it to device.