

NEW



Automation module MA-03



Product description

MA-03 module is intended for control of signal towers of the WS-Ad series, using analog interfaces used in industrial automation systems. The module has a single control input. The input can operate in two modes: current loop or control signal. The control input is equipped with three terminals: current, voltage and control signal ground terminal. The current control signal is understood as a current loop of 4-20mA or 0-20mA. The voltage signal, on the other hand, is of 0-10V DC. MA-03 has ten outputs of the OC type, with a common rail (with included opto-isolators emitters). The module is also equipped with separate grounds for the supply and control signal. Depending on the input signal value, the user can easily define the levels for which the module output is activated (color or acoustic signal of the WS-Ad signal tower). The user can, for each of the 10 module outputs, define the LOW value of the control signal (value at which the given output of the module is activated - shorted to ground), as well as the upper value of the control signal (the value at which the module output is switched off - open). Hysteresis is the default value, and is at either 0.05mA or 0.05V. The settings for each output are stored in non-volatile memory of the device. In the case of a current control signal, it is possible to set a threshold with a resolution of 0.1mA, whereas for the analogue voltage control signal, such resolution is of 0.1V.

Technical data

Power supply	20-30V DC
Current consumption at 24V DC	Inactive outputs < 25mA, Active outputs < 60mA
Input type	0-10V DC, 0-20mA
Resolution of display data (voltage mode)	0,1V
Resolution of display data (current mode)	0,1mA
Accuracy	±10mV, ±0,05mA
Outputs number	10
Outputs type	Transistor OC (separated from control circuits)
Sampling frequency of the input signal	2,9kHz
Refresh rate on the display data	45Hz
Ingress protection	IP20
Working temperature range	-25°C ÷ 55°C
Max. cross-section	2,5mm ²
Weight/Dimensions	~125g/50x75x45mm



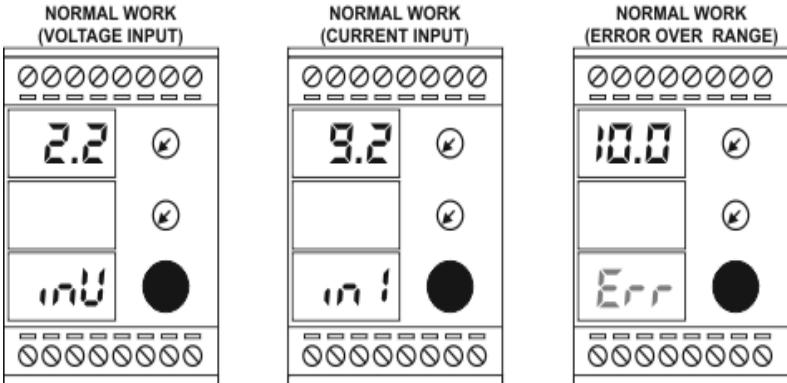
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Construction

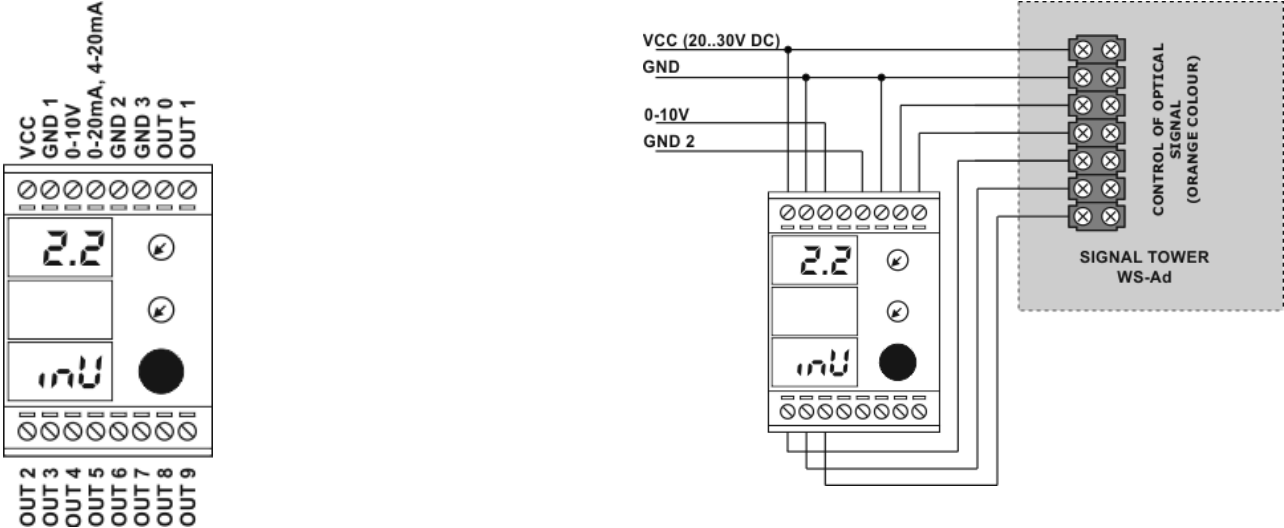
The module casing is made of ABS plastic, the casing shape design allows for direct mounting of the module on a DIN rail. MA-03 module is equipped with two terminal blocks, consisting of eight tracks each. Connection terminals of the module are located on the front panel of the casing, which facilitates the device wiring. The user interface is implemented using three 7-segment LED displays, two potentiometers and the select button. Thanks to such a solution, the interface is maximally simplified. During normal operation of the module, the upper display shows the value of the signal at the control input, the lower display shows the input mode (current or voltage). At the time when the input signal goes outside the range, the error is indicated by the message "Err", the upper display shows the maximum value, the outputs are disabled. When the input operates in the 4-20mA standard, values below 4mA (damage to the loop) are also indicated by the error message "Err".

Fig 1.1 Working mode of module MA-03



The user can program the mode of operation of the device input (current or voltage) and threshold values for individual outputs. After programming the device, the changes are stored in non-volatile memory.

Connection diagram



Attention! GND1-ground supply, GND2-ground of control signal, GND3-opto-isolators emitters OC outputs

