HAEHNE

Product Description

Amplifier Controller Combination MAC4.0

Special Features

- ❒ Amplifier with 2 voltage outputs
- ❒ Current output can be connected to either voltage outputs (Option C and N)
- ❒ PID-Controller with simple adjustment with pointer potentiometers
- ❒ Command signal input / influence of diameter change
- ❒ Smooth start and quick stop function
- ❒ Space saving standard housing
- ❒ Power supply and signal outputs galvanically isolated

Scope of Supply

- **Amplifier in DIN Rail Mount Enclosure**
- **Plug-in terminal blocks**
- **Standard** (Option U):
  2 voltage outputs, no current output

Versions

- **Option C:** 2 voltage outputs
  1 current output 4…20 mA
- **Option N:** 2 voltage outputs
  1 current output 0…20 mA

Additional Accessories

- **Option E:** Enlarged excitation supply 160 mA
- **Option F** (potentially explosive atmospheres):
  Use with safety barriers

Application

As a compact cost effective unit, the **MAC** is designed to provide a closed loop control function for strain gauge transducers (e. g. web tension measurement).
The MAC is optimized for use in electrical cabinets. There it can be DIN rail mounted or directly on a mounting plate.

The enclosure of the **MAC** contains an amplifier and controller.

The amplifier supplies the auxiliary power to the strain gauge transducers and conditions the output signals. Two voltage outputs with different filters are available.

The independend function of the current output (option C and N) can be connected either to the high or low dampened voltage output. The external use of as 10 Volts / 20 mA signal converter is also possible.

The PID components of the controller can be individually adjusted and also partially switched off. Additional adder and multiplier circuits enable the processing of other signals, e. g. diameter signal.

24 volts control signals can shut off the controller portion or gradually activate or deactivate the output signal.

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Controlsignal		Description of Functions
ISP	0 V	I portion switched off
	24 V	I portion active
RSF	0 V	Controller disabled (V_{14} = 0 V)
	24 V	Controller enabled (with smooth start)
RSP	0 V	Controller disabled(V_{14}) can be adjusted with level potentiometer)
	24 V	Controller enabled
RW	0 V	Roll change switched off
	24 V	Roll change switched active
COM		Common 0 Volts connection for 24 V control voltage

Dimensions in mm (terminal blocks incl.):
L × W × H: 100 mm × 105 mm × 110 mm

Ordering Data
MAC4.0-U
Option
Type

Ordering data option F:
Indicate the total resistance from measuring chain for option F (e. g. 350 Ohm):
MAC4.0-UF350

Technical Data		
Amplifier		
Strain gauge excitation supply	Voltage (V_4):	10 V
	Max. current:	60 mA
	Option E / Option F	160 mA
Zero adjust compensation voltage	(Relative to the voltage outputs)	- 25…0…+ 25 mV
Amplification	Adjustment range:	400…3200 V/V
	Standard factory adjustment:	667 V/V
Signal outputs	Voltage (V_2, V_3):	- 10…0…+ 10 V
	Min. load resistance:	5 kΩ
	Signal rising time (10…90 %)	V_2 filter 1: 7 ms…145 ms
		V_3 filter 2: 130 ms…4,8 s
Voltage/current converter		
Signal input	Voltage (V_6):	0…+ 10 V
Signal output	Current (I_1):	Option C: 4…20 mA,
		Option N: 0…20 mA
	Max. load resistance:	600 Ω
Controller		
Signal inputs	Voltage (V_8,V_9, V_{10},V_{11}, V_{12},V_{13}):	- 10…0…+ 10 V
	Voltage (ISP, RSF, RSP,RW):	24 V at terminal COM
Signal outputs	Voltage (V_{14}):	- 10…0…+ 10 V
	Min. load resistance (V_{14}):	5 kΩ
	Reference voltage (V_7):	10 V ± 0,5 %
Temperature range		0...60 °C
Terminal cross-section		AWG 22-12
Standard enclosure protection		IP 20
Power supply voltage *)	Voltage (V_5):	24 V DC, ± 10 %
	Current consumption (at 24 V):	appr. 150 mA
	Fine-wire fuse:	0,4 AT

*) The power supply voltage V_5 must be grounded. In the power supply loop the current of the supply voltage should not be exceed 2 Amps.

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