



LABOR – ASTER

INDUSTRIAL AUTOMATION



AMPLIFIER TO ELECTRO-VALVE TM-25LP and TM-200LP TYPE WZM-MFAC - edition 08.08.2014

- The amplifier converts input voltage signal to output current source current:

U_E control voltage	-10V	0 V	+10 V
I_{out}	10 mA	10 mA	170 mA
Extreme values of I_{out} are possible to set by outer ZERO, SPAN potentiometers	5 mA	5 mA	210 mA

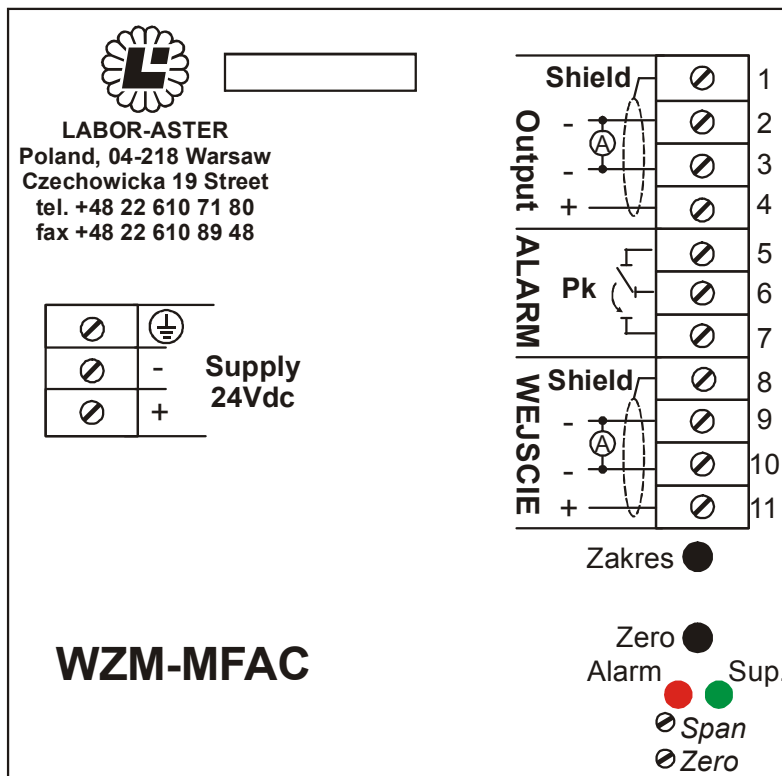
- Full galvanic separation between input, output and supply circuits.
- For input signals $U_E(-10V, +0,1V)$ ALARM signal is switched off.

BASIC TECHNICAL PARAMTERS:

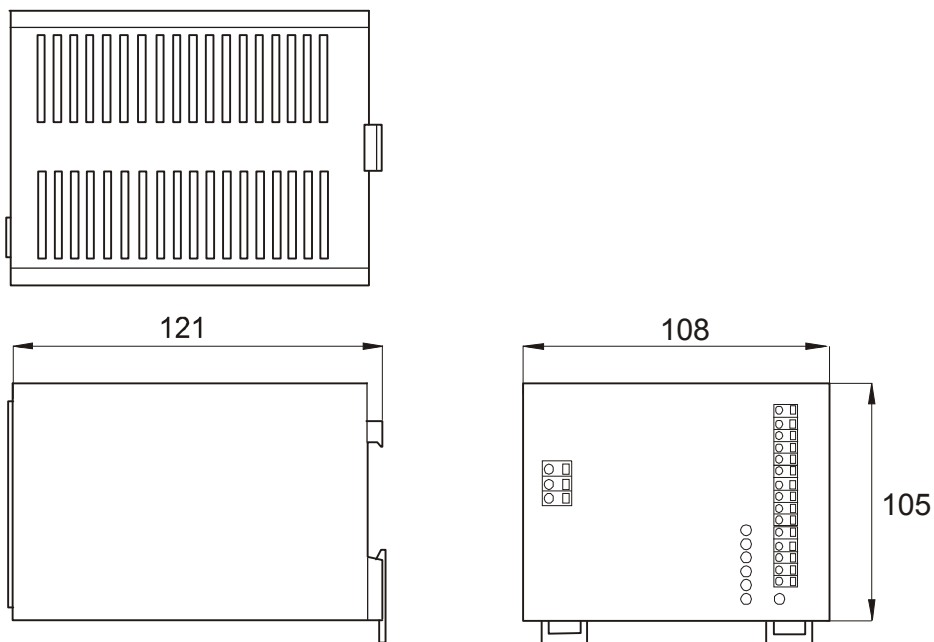
Input signal "IN":	- typically 0 V ÷ +10 V
input resistance	- 2,5 k Ω
Output signal	- $I_{OUT} = 10mA \div 170 mA$
current limiter	- 210mA (or as agreed)
load resistance	- 0 ÷ 34 Ω
valve's coil inductance	- Valve coil resistance in temperature 25°C: $R_{coil} \approx 26\Omega$ For $T_{amb} = 80^\circ C$: $R_{coil} \approx 32\Omega$ Connection line resistance (Cu 2,5mm ² 0,08 Ω/m) < 2 Ω (25m)
Supply voltage	- 24 Vdc, $I = 100mA$
Indication of supply	- green LED
Temperature alarm – inside	- LED red. Switched on when $T > 62^\circ C$, off when $T < 57^\circ C$
Amplifier processing error alarm	- LED red. Switched on when >5%, off when <4%
Binary alarm output	- Diverter relay
Alarm switched on when: (no supply) or (temperature alarm) or (amplifier error)	- contact 5,6 closed – alarm on - contact 6,7 closed – alarm off $U_{max} = 250V_{ac, dc}$ $I_{max} = 1A$
Processing accuracy:	- for $\Delta R_{load} = (20\Omega - 40\Omega)$ $\Delta J (170mA) = 0,02 mA/\Omega$ change J from change $R_{load} = 0,012\%/ \Omega$
calibration accuracy	- $\pm 0,5 \%$
impact of supply voltage changes	- $\pm 0,1 \%$
impact of ambient temperature changes	- $\pm 0,02 \%/ ^\circ C$
Frequency band (3 dB)	- 100 Hz
Potentiometer "ZERO" regulation	- at least +5mA ÷ +20 mA
Potentiometer "SPAN" regulation	- at least $\pm 20 mA$ (width 150÷190mA)
Voltage isolation test	- 1,5 kV
Housing for mounting on TS35	- width 108mm, height 105mm, depth 121mm
Ambient temperature: operation	- 5 ÷ 50 $^\circ C$
storage and transport	- -25 ÷ +60 $^\circ C$

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Note: Output current measurement without breaking the output circuit with usage of terminals “2, 3” can be done with ammeter with resistance $R < 1\Omega$.



Operation position – according to the arrow on the side wall of the housing. It provides correct operation of gravity cooling through the perforations on the upper and lower wall of the housing. Amplifier mounting must provide distance of 50mm from top and bottom from other devices and cable trays.

Operating

After connecting of the executive valve calibration of the device should be done. By setting 0V voltage with a adjustable voltage reference source and measuring the current in executive circuit set the required minimal control current by “ZERO” potentiometer. Then with the maximal control 10V by “SPAN” potentiometer set the maxima current. By switching the adjustable voltage reference source 0V – 10V check the current flowing and correct the range if needed. With the minimal control press “ZERO” button for 1 sec. Then with the maximal control press “SPAN” button. Each time you press (saving) causes the red LED lights up for about 5 sec and blocking reactivation.

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