

LABOR-ASTER

ZPM CURRENT SOURCE MODULE

INSTRUCTION MANUAL

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AC 083
QMS



Certyfikat nr QS/14/07



ISSUE March 2021

1. Introduction

The purpose of this instruction manual is to provide the users of ZPM CURRENT SOURCE MODULE with the general technical data of the device and to explain the basics of its functioning and operation. The installation and maintenance conditions, as well as procedures in case of failure are given.

2. Scope of supply, warranty

The device is dispatched to the recipient in individual and/or bulk containers together with the collective Warranty valid for 12 months. The manufacturer guarantees the service within the warranty period and afterwards at the head office.

Instruction Manual and copies of Compliance Statement come with the batch of devices in amounts agreed with the recipient.

3. Application

ZPM CURRENT SOURCE MODULE is designed to supply the direct current of determined range. The source current value is adjusted by a potentiometer. The output current value is shown on a built-in digital display. The device enables galvanic separation of output and supply circuits.

4. Technical data

Output current:	- 0.8...1.2 A
Load resistance	- 8...27 Ω
Supply voltage / current consumption	- 22...28 V _{DC} / 2.4 A at 24 V _{DC}
Accuracy class	- 0.2 %
Effect of supply voltage fluctuations	- 0.05%
Effect of load resistance fluctuations 10...28 Ω	- $\pm 0.15\%$
Temperature coefficient	- $\pm 0.02\%$ / °C
Parameters of Relay 1, Relay 2	- optorelays 250V / 200mA, R _{SHORT} = 10 Ω
Control Output 1, Control Output 2	- shunt 0,3 Ω $\pm 1\%$ for output current
Span adjustment	- $\pm 7.5\%$ with potentiometers
Display indication	- 0.80...1.20 ± 0.01
Galvanic separation	- separation of output and supply circuits
Isolation test voltage between circuits	- > 1.5 kV

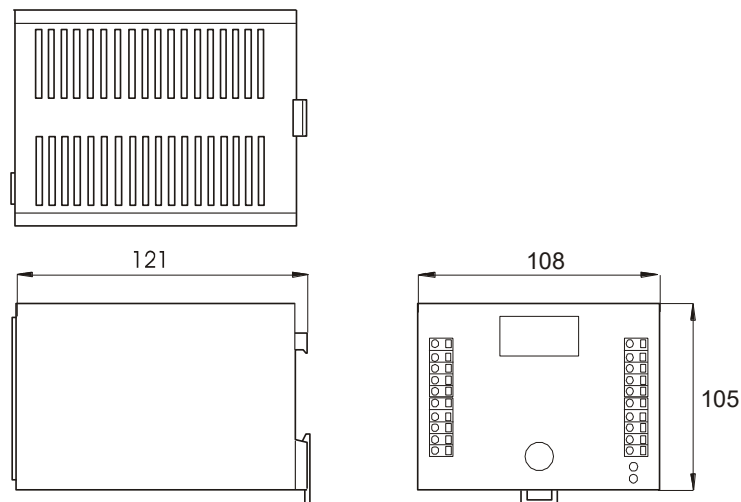
5. Technical characteristics

The device has two control outputs and dual supply input, that enable redundant connection of two voltage sources. Connection of proper supply 24V on terminals Supply1, Supply2 is indicated by shorting optorelays Relay1, Relay2. Set output current is measured by the device and presented on the display. Additionally are two voltage signals Control Output 1, Control Output 2 from 0,3 Ω shunt:

$$0,8A * 0,3\Omega = 240mV$$

$$1,2A * 0,3\Omega = 360mV$$

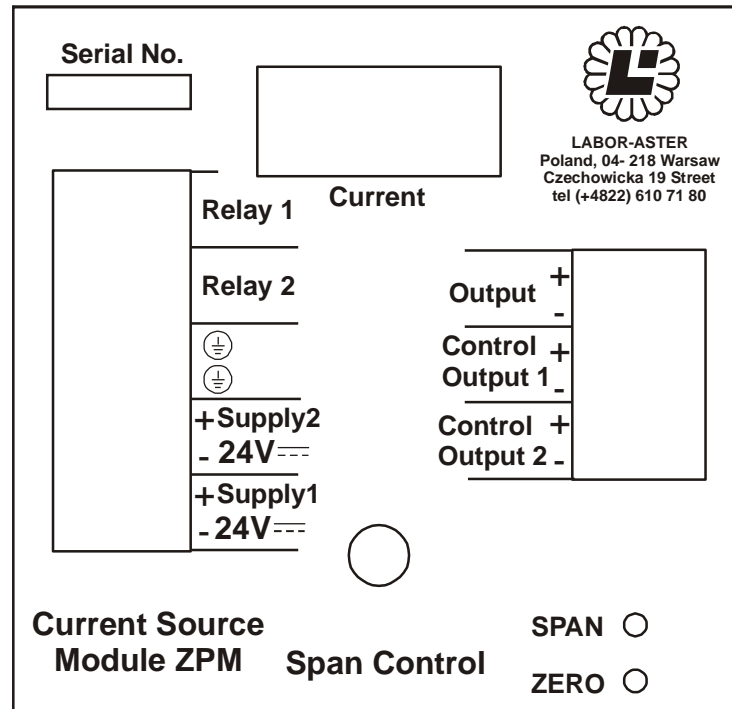
The device is placed in a steel sheet made, lacquer coated housing. The housing protection rate corresponds to IP20. See the figure on next page for housing look and dimensions (in mm).



Drawing of the housing

6. Installation, operating conditions

6.1. Assembling and connections



Labeling of connection terminals

The device is designed to be mounted on the standard 35 mm TS rail exclusively. The housing strip catch should be placed vertically. Allow a distance of at least 10 mm between the housing and neighboring device side-walls.

External terminals require copper cables with the wire diameter up to 2,5 mm. Wire endings should be protected with clam sleeves or twisted with no tin coating. Twisted cables for input and output circuits of signal lines and separate tracks for signal and feed lines are recommended. Cables tracks should cross under right angle. Twisted, shield cables are required for zones with high electromagnetic interference.

6.2. Normal operating conditions

Ambient temperature	- +5°C...+50°C
Relative humidity	- 30...80 %
Atmospheric pressure	- 80...120 kPa
Constant and variable magnetic field	- 0...400 A/m
Sinusoidal vibrations (within range of 5...80 Hz)	- up to 2 g
Ambient atmosphere	- dust and corrosive vapours free
Working position	- housing catch vertically
Warming up time	- 15 minutes

7. Settings and calibrations

According to customer specification the range of output current changes (0,8...1,2 A) is set by the manufacturer. The span range is subject to users adjustment within limits of $\pm 7,5\%$ and for 0,8 A and 1,2 A value. The ZERO and SPAN potentiometers are accessible via holes in the front panel and allow the adjustment of zero – point and range span respectively.

8. Usage, maintenance, service: examinations, repairs

8.1. Periodical survey

While normal working the device doesn't demand any special maintenance and settings corrections. Surveys should be carried on periodically according to the users control standards. During the survey external examination of the device condition is required. Wiring terminals and cramps should be controlled and fixed if needed. Attention should be paid to faultfinding falling into subsequent categories:

- mechanical damages
- loosening of electrical connections and fixing to the mounting board
- legibility and integrity of the rating plate

8.2. Non-periodical survey

In case of malfunction make sure that the voltage supply of the unit is in range of $22 \div 28 V_{DC}$. When the non-stabilized source of power is used make sure that the voltage supply value never drops below $22 V_{DC}$.

No repairs and interference into the electronic system of the device are permissible. Only the manufacturer or his representative are authorized to carry out repairs and examinations of the device.

9. Labeling and types of mounting

The device is labeled with type name: WZW and comes in one mounting only.

10. Packing, storage and transport

10.1. Packing

Individual packaging or bulk container are equally recommended, provided they prevent damages of the device during the transport. Indoor space, air temperature above $15^{\circ}C$ and relative humidity below 85% are required for packing of the device.

10.2. Storage

The devices should be stored in bulk containers. Indoor space, ambient atmosphere – free of corrosive vapors and substances, with temperatures ranging from $+5^{\circ}C$ to $+40^{\circ}C$ are required for storage of the devices.

10.3. Transport

Individual packaging or bulk containers are equally appropriate for transport. The packaging should prevent the translocation of the device during the transport. Air, sea and surface transport are suitable, provided the direct influence of atmospheric factors on the device is eliminated.

THE END