Controllable current amplifier type 30RE 21, 32RE 21

WK 495 774
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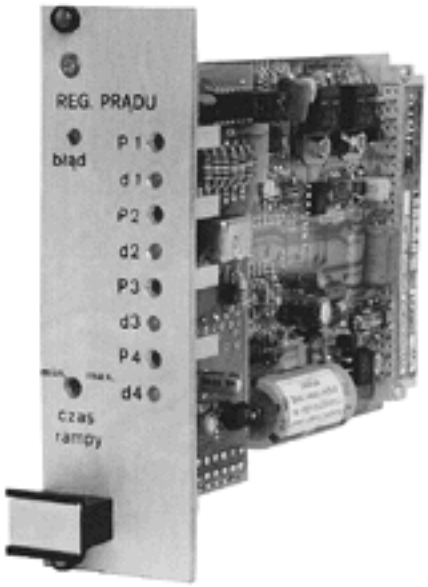
APPLICATION

Controllable current amplifier type 30RE21 serves to control 3-position proportional hydraulic directional valves type USEB 6 with position sensor. Amplifier type 32RE21 serves to control 3-position proportional directional valves type USEB10 with position sensor.



Main characteristics:
- output current control
- high stability of output current due to feedback loop at end stapes
- adjustment of pulse rise and decay time
- system for quick transition through zero
- generator 2,5 kHz and demodulator at supply of offset sensor
- board construction to Eurocard
- joint type 811064 at output
- optimal control in the whole range of operation
- from internal programmer
- by external voltage +/- 9V towards mass
- by external voltage +/- 10 V non-potential

DESCRIPTION OF OPERATION

d1-d4 - signaling of set value feeding

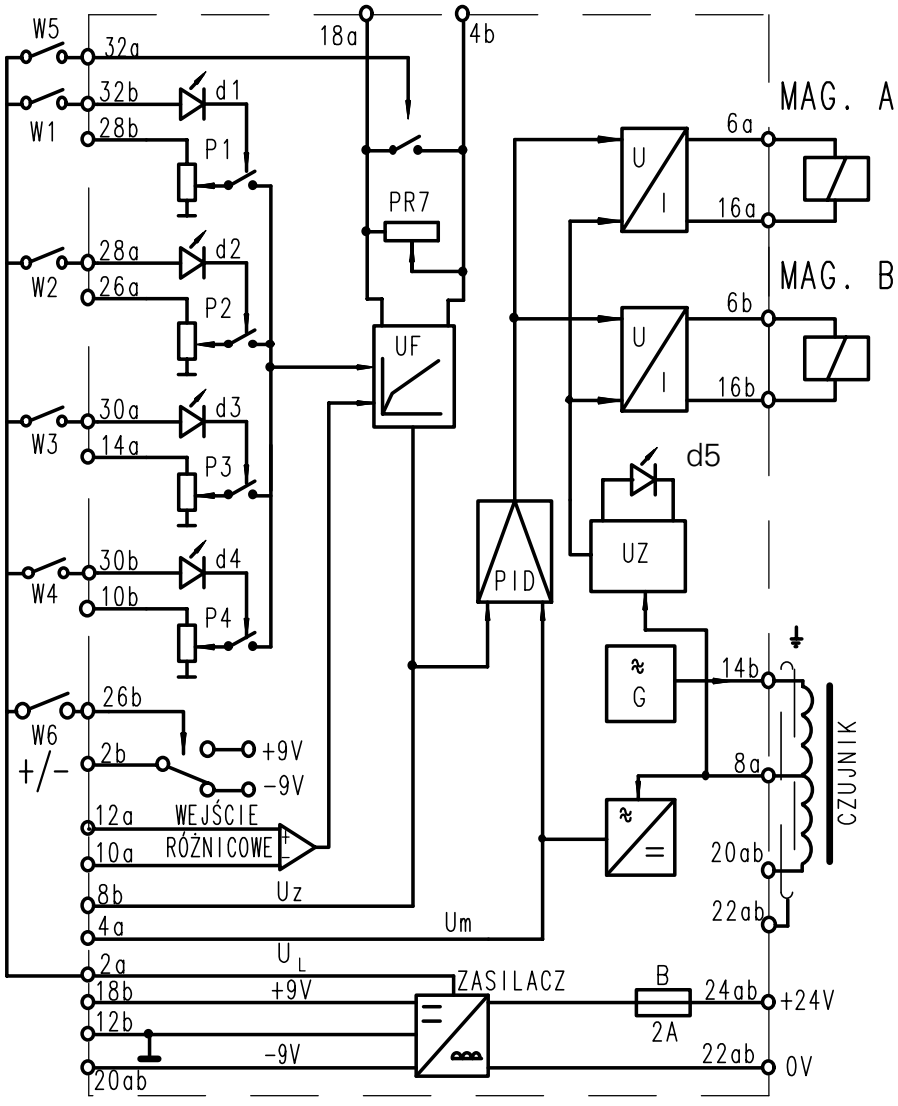
d5 - signaling of break in supply of offset detector

P1 - P4 - adjustment of programmable set values

PR7 - adjustment of pulse rise out decay time 0,05-5s

W1-W4 - unstable switches of set value

W5 - stable switch of pulse rise and decay time



DESCRIPTION OF OPERATION

Controllable current amplifier type **30RE21** (**32RE21**) must be supplied with the voltage **24V** full waved rectified to contacts: pole /**+**/ to contact **24ab**; /**0**/ to contact **22ab**. From supply voltage via constant-voltage regulator stabilized voltage **+/- 9V** at contacts: **18b** (**+9V**) ; **12b** (**0V**) ; **20ab** (**-9V**) is achieved. Please, take care that measurement "**0**" (contact **12b**) is higher by **9V** than supply voltage "**0**" (contact **22ab**).

The electronic keys with unstable switches **W1**÷ **W4** must be used to program set value. They should be correlative that is when one key is switched on then the rest keys are automatically switched off. The specified values are set by means of potentiometers **P1**÷**P4**, whereas switching on the key is signalized by a specified light **d1**÷ **d4** on the front plate.

The set value can also be sent by matching amplifier from non-potential inputs **10a** and **12a** with voltage **0** ÷ **±10V**.

In order to program the rise and decay time of the set value at step control. The potentiometer **PR7** is applied.

It is possible to break this adjustment by means of the switch **W5**.

An additional change - over switch can be connected to terminals **18a** and **4b**, or the contacts of a transmitter permitting a ramp shorting independently of the switch **W5**. In case of need to set times of the ramp beyond the plate, an additional potentiometer can be connected to terminals **18a** and **4b** (**PR7** set at maximum).

The switch **W6** changes the polarization of voltage **9V** at the terminal **2b**. The two switches **W5** and **W6** must be independent of each other and stable.

As required, after connecting, voltage with changing polarization from the terminal **2b** or voltage with constant polarization from the terminals **18b** (**+9V**) or **20ab** (**-9V**) can be used to supply potentiometers **P1** ÷ **P4**.

When connecting care should be taken, that current-carrying capacity of terminals: **2b**; **18b**; **20ab** cannot exceed **10mA**. The amplifier has also a system for error signaling, which controls voltage from the offset detector and in case of break interlocks the end stages. At the same time the diode **d5** lights.

Negative control voltage operates the solenoid connected to contacts **6a** and **16a** and positive control voltage operates the solenoid connected to contacts **6b** and **16b**.

Controllable current amplifier type **30RE21** (**32RE21**) should be connected to directional valves and control switches in accordance with block diagram. Lines to directional valves should not be connected together with lines of control signals. The amplifier can be connected only dead. To measure the set value a meter can be connected to contacts: **12b** - measurement "**0**"; **8b** - set value and **4a** - real value correspondingly.

Hydraulic directional valve type **USEB 6** (**USEB 10**) has one or two proportional solenoids which should be connected as follows:

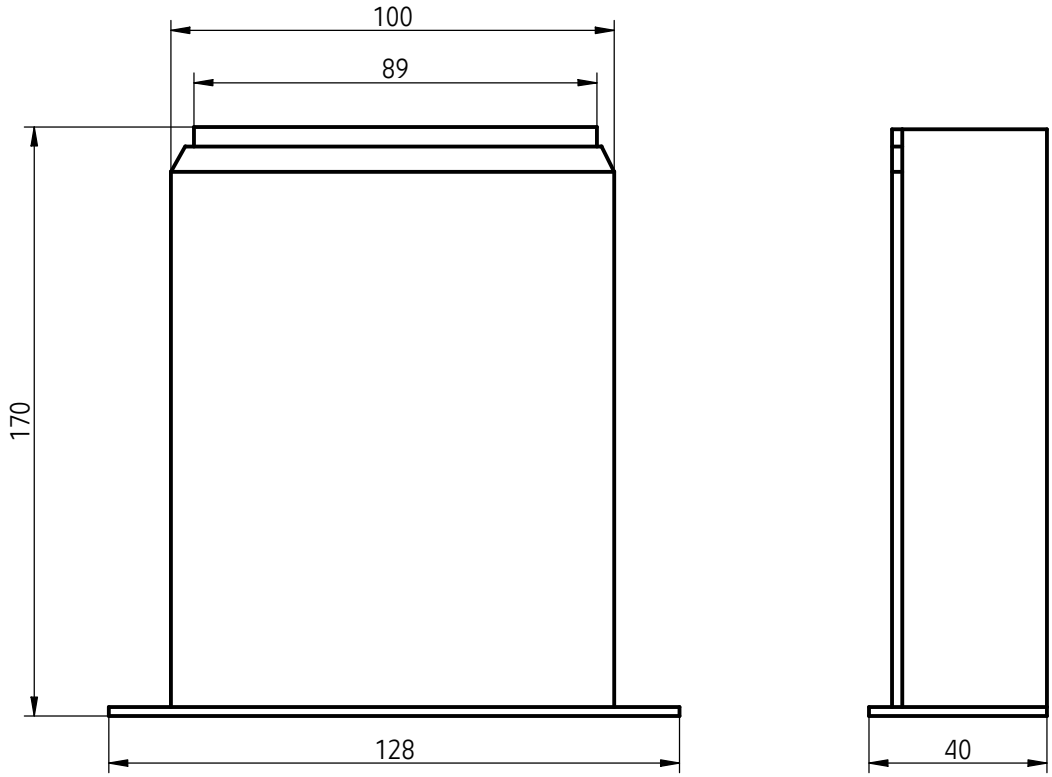
- solenoid **A** to terminals: **6a**; **16a**
- solenoid **B** to terminals: **6b**; **16b**

The inductive position sensor has three marked terminals. Terminal **1** should be linked to **8a**; terminal **2** to **20ab** and terminal **3** (ground mark) to **14b**. Each connection should be done by means of 3-conductor cable with a shield connected to **22ab**.

TECHNICAL DATA

Supply voltage (**full waved rectified/unstabilized**)	**24 V +/-10%**	
Power	30RE21	35VA
	32RE21	45VA
Max output current	**30RE21**	**1,6 A**
	32RE21	**2,2 A**
Control voltage	**0** up to **+/-10 V**	
Generator frequency	2,5 kHz	
Sensor connecting (cable length)	max 30 m at 100 pF/m	
Solenoid connecting (cable length)	1,5mm^2 up to 40m	
	2,5mm^2 up to 60m	
Operating temperature	0 - 50 °C	
Temperature error	0,05 %/ °C	
Hysteresis	1,5 %	
Weight	0,3 kg	

OVERALL DIMENSIONS



HOW TO ORDER

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Amplifier type
for directional valve type **USEB6** = **30RE21**
for directional valve type **USEB10** = **32RE21**

Version
with plug type **811064** = **W**

Series number
(10 -19) - installation and connection dimensions unchanged
series 10 = **10**

Additional requirements in clear text
(to be agreed with the manufacturer)

NOTES:

The amplifier should be ordered according to the above coding.
Coding example: 30RE20 W 10

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