

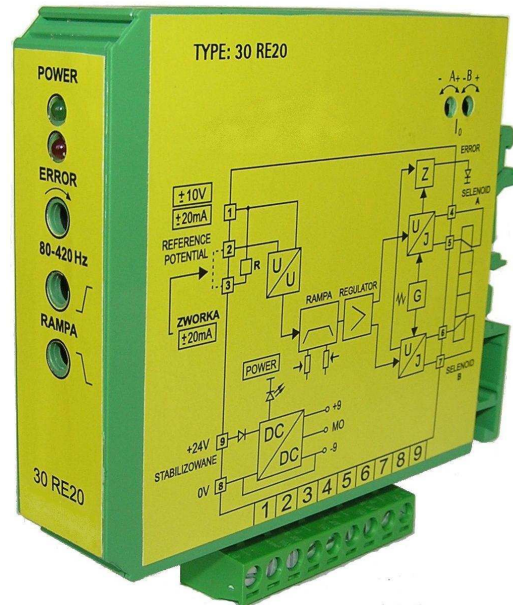
APPLICATION

Controllable current amplifier type **30RE20D** is used to control an operation of proportional directional valves type **USAB 6** and **USAB 10**.

It can be also used to control an operation of other valves with proportional solenoids with corresponding parameters.

The controller is characterized by:

- high stability of output current
- voltage or current controlled differential input (non-potential)
- independent linear regulation of ramp time
- regulated bias current frequency
- housing mounted on 35 [mm] rail with accordance to EN 60715



DESCRIPTION OF OPERATION

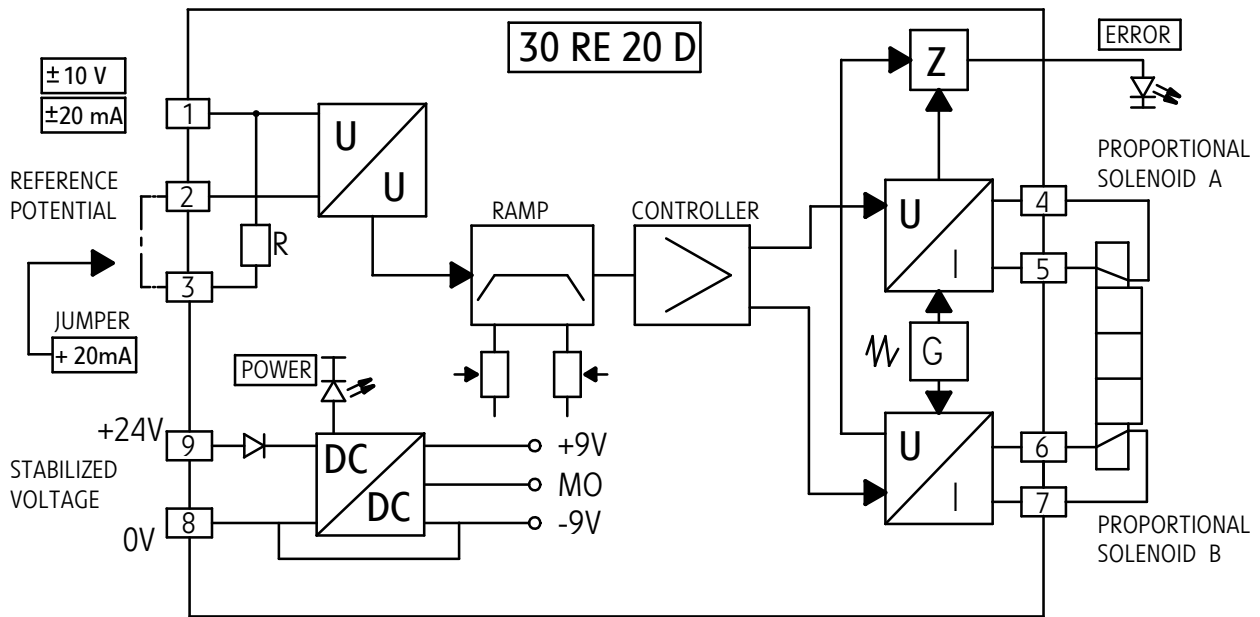
The controller is a stable current generator controlled via terminals 1 and 2 with voltage -10 to 10 [V] or with current -20 to 20 [mA] (with terminals 2 and 3 shorted). Selection of corresponding solenoid is done by changing polarization of control signal. Negative values control solenoid A, positive values control solenoid B. The circuit is supplied with stabilized constant voltage 24 [V] connected into terminals 9 (+24V) and 8 (0V) – power supply is indicated by green LED on the frontal plate (POWER). The controller is equipped with electronic protection with failure signaling – red LED on the frontal plate (ERROR).

The protection functions when:

- control system is damaged
- input control voltage is too high
- circuit of solenoid is broken
- resistance of solenoid is too high

The first solenoid (A) of proportional valve type **USAB 6** or **USAB 10** must be connected to terminals 4 and 5, the second solenoid (B) must be connected to terminals 6 and 7. The controller has an ability to regulate rising and falling of the output current by means of potentiometers on the frontal plate designated as RAMP. It also has an ability to change the frequency of bias current by means of the potentiometer on the frontal plate. Factory setting of minimum output current is 10% (160 mA). This parameter may be regulated by means of potentiometer 8 and 9 on the lateral plate (see *OVERALL DIMENSIONS* drawing). Maximum output current is always 1,44 [mA] greater than minimum current

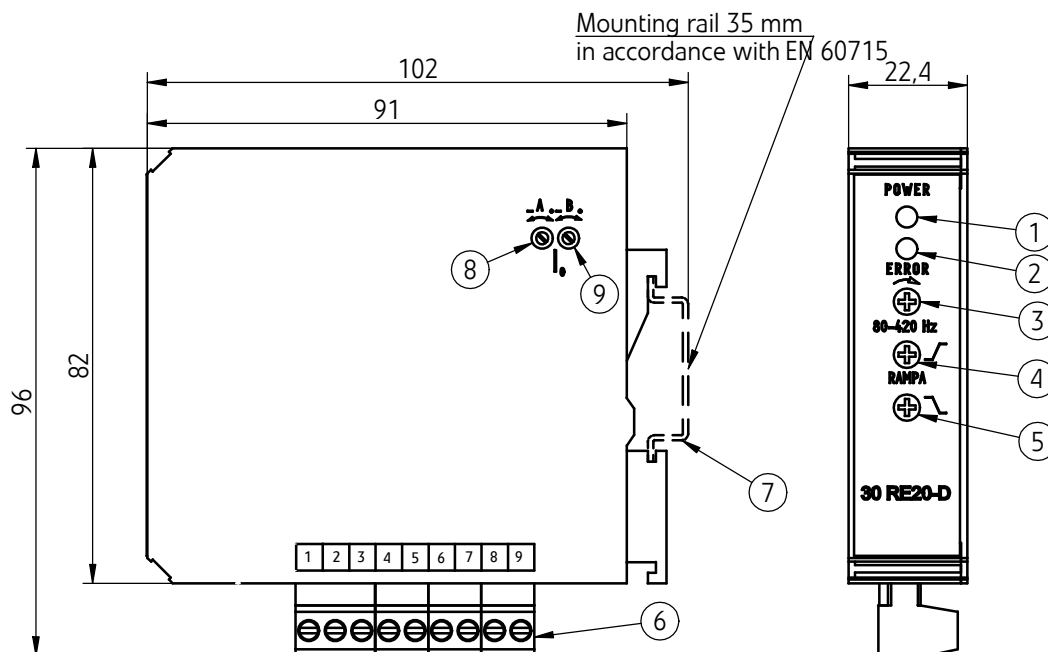
BLOCK DIAGRAM



TECHNICAL DATA

Supply voltage	24 [V] <u>stabilized</u>
Control voltage or current	-10 do +10 [V] lub -20 do +20 [mA] (terminals 2 and 3 shorted)
Ramp time (rising, falling)	0-5 seconds
Minimum output current	160 [mA] at set value of zero
Maximum output current	1,6 [A] at set value of maximum
Frequency of bias current	80 - 420 [Hz]
Housing insulation	IP 20 (EN 60529)
Permissible operating temperature	0 - 50 [°C]
Mounting method	Rail 35 x 7.5 x 1 [mm] (EN 60715)
Dimensions (L x H x W)	102 x 96 x 22,4 [mm]
Weight	0,12 [kg]

OVERALL DIMENSIONS



1	Green LED power supply (POWER)
2	Red LED failure (ERROR)
3	Potentiometer for regulation of frequency of bias current
4	Regulation of current rising
5	Regulation of current falling
6	Connection terminals (see table below)
7	Mounting rail 35 mm in accordance with EN 65715
8	Regulation of minimum current for solenoid A
9	Regulation of minimum current for solenoid B

CONNECTION OF TERMINALS

TERMINAL	DESCRIPTION
1	Control voltage +10 V or current +20 mA
2	Reference potential
3	Jumper with terminal 2 when controlled by current
4	Proportional solenoid A
5	
6	Proportional solenoid B
7	
8	Supply voltage 0 V stabilized
9	Supply voltage +24 V stabilized

HOW TO ORDER

The amplifier should be ordered according to the below coding.

30RE20D	*
----------------	----------

Further requirements in clear text (to be agreed with the manufacturer e. g. adapted for low temperature)
--

ASSEMBLY AND APPLICATION REQUIREMENTS

Wiring and regulation may be done when disconnected from the power supply.

Distance from radio devices should be greater than 1m.

Control signal cable should be shielded.

Cables of solenoid to mustn't be laid down together with signal cables.

Current amplifier **30RE20D** must be wired to directional valve and control terminals in accordance with block diagram.

PONAR Wadowice S.A.
ul. Wojska Polskiego 29
34-100 Wadowice
tel. +48 33 488 21 00
fax. +48 33 488 21 03
www.ponar-wadowice.pl

