| PONAR wadowice | **Controllable current amplifier type 21RE10D** | **WK 421 810** 05.2012 |
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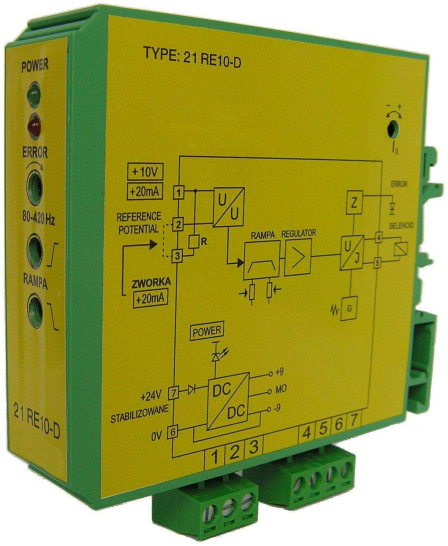
DATA SHEET - SERVICE MANUAL

## APPLICATION

Controllable current amplifier type **21RE10D** is used to control an operation of valves with proportional solenoids of corresponding electric parameters (directional valves, flow control, pressure valves etc.). Controller type **21RE10 D** is characterized by:

- high stability of output current
- voltage or current 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**.



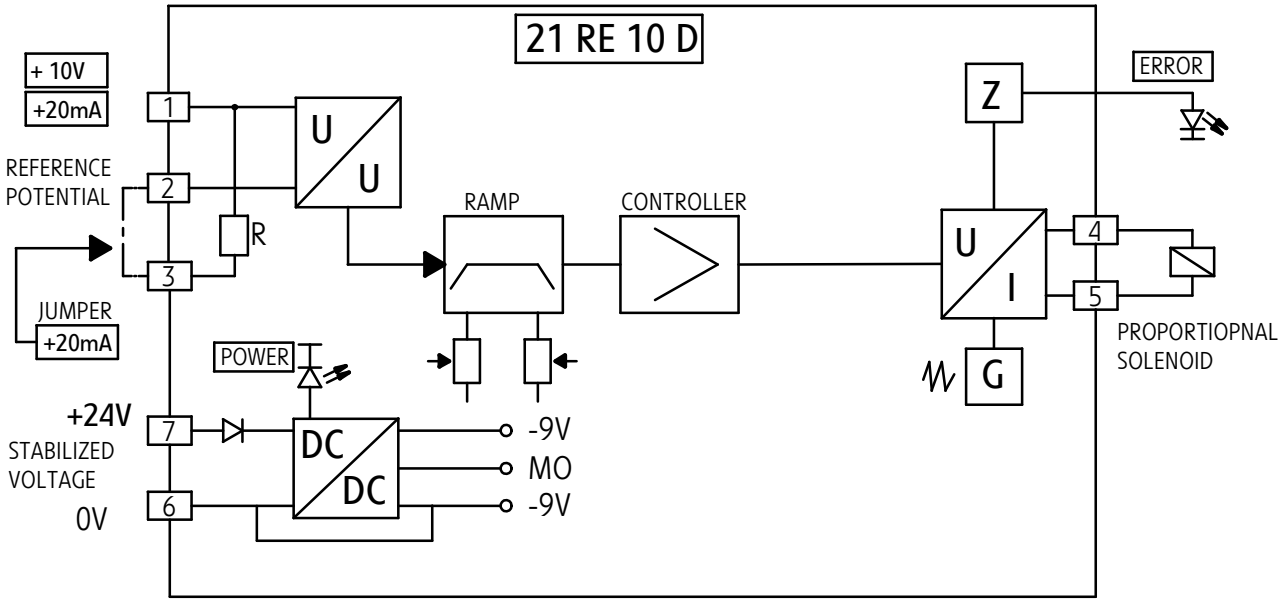

## DESCRIPTION OF OPERATION

The controller is stable current generator contolled via terminals **1** and **2** with voltage **0 – 10 V**, with voltage **0 - 20 mA** (with terminals **2** and **3** shorted). The circuit is supplied with **stabilized constant voltage 24 V** connected into terminals **7** (**+24V**) and **6** (**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 proportional solenoid must be connected to terminals **4** and **5**. The controller has an ability to regulate rising and falling of the output current by means of potentiometers on the frontal plate designated as **RAMPA**. It also has ability to change the frequency of bias current by means of 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) on the lateral plate (see OVERALL DIMENSIONS drawing). Maximum output current is always **1,44 A** greater than minimum current.

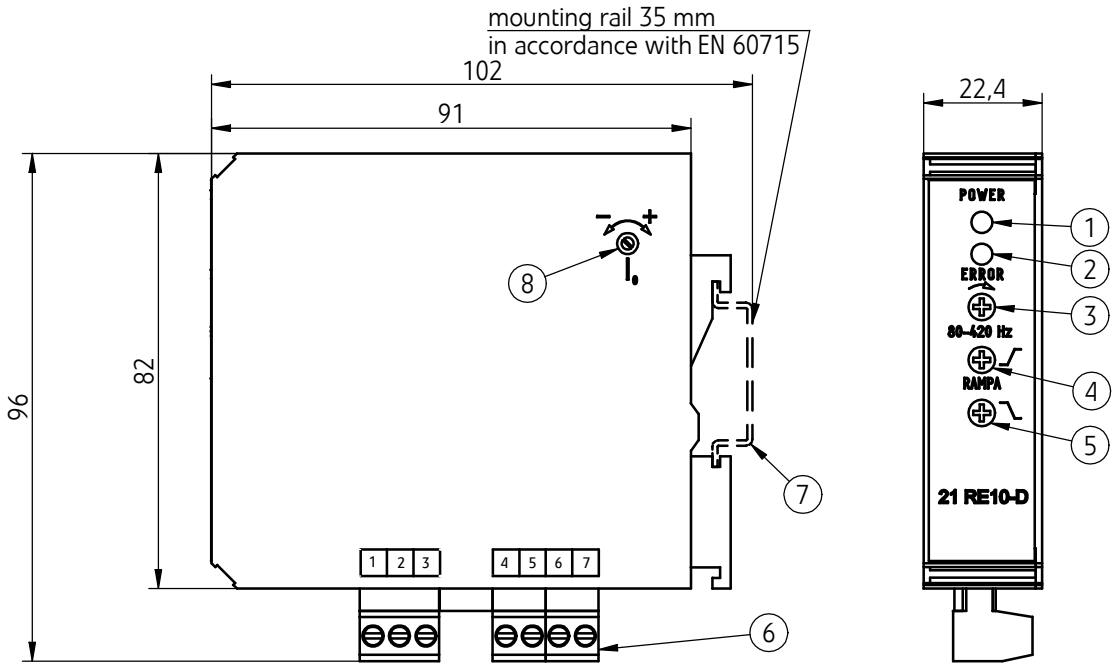
## BLOCK DIAGRAM




## TECHNICAL DATA

| | |
|---|---|
| **Supply voltage** | **24 V stabilized** |
| Control voltage or current | **0 - 10 V** or **0 - 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 (**factory setting 180 Hz**) |
| **Housing insulation** | **IP 20** (**PN - EN 60529: 2003**) |
| Permissible operating temperature | 0 - 50 [°C] |
| Mounting method | rail 35x7,5x1 mm (**EN 60715**) |
| Dimensions (L x H x W) | 102 x 96 x 22,4 [mm] |
| Weight | 0,11 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 (**$I_0$**) |

## 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 |
| 5 | |
| 6 | Supply voltage **0 V** stabilized |
| 7 | Supply voltage **+24 V** stabilized |

## HOW TO ORDER

The amplifier should be ordered according to the below coding.

| 21RE10D | * |
|---|---|

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 type **21RE10D** must be wired to proportional solenoid and control terminals in accordance with block diagram.

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