PONAR wadowice	Digital current controller type 30RC20D		WK 430 340
	9 up to 36 VDC	up to 3,0 A	04.2016

DATA SHEET - OPERATION MANUAL

APPLICATION

Digital current controller type **30RC20D** is used for controlling the operation of hydraulic proportional valves without a position sensor (e.g. type **USAB6**, **USAB10**). It can be used for controlling proportional solenoids of other hydraulic devices that have proper electric parameters.

FEATURES OF THE CONTROLLER

- broad range of supply voltage
- possibility of selection of the controlling signal (current or voltage)
- large 4-digits LED display - easy to read parameters
- displays current value of the current flowing through the solenoid or the controlling signal
- independent adjustment of ramp times of increase and decrease
- broad range of ramp time settings
- construction based on microprocessor
- great stability of the output current
- possibility of adjustment of the output current
- adjustable dither frequency
- protection of the input from change of polarization
- electronic protection from short-circuits
- mounting on DIN rail acc. to EN 60715

TECHNICAL DATA

Supply voltage	stabilized 9 up to 36 V DC
Controlling signal	0 up to 10 V or 0 up to 5V or 4 up to 20mA or ±10V
Ramp time (rising, falling)	0 up to 99,5 s
Minimum output current	0,0 up to 2,99 A
Maximum output current	0,2 up to 3,00 A
Dither frequency	40 up to 450 Hz
Linearity	1 %
Allowable operating temperature range	-40° up to +80 °C
Dimensions (length x width x height)	76 x 59 x 43 mm
Weight	0,1 kg

NOTE:
Waste electrical and electronic equipment is classified as a hazardous waste. It must be taken to a collection point for used electrical and electronic equipment. Disposing it into municipal waste is not allowed.

SETTING UP PROCEDURE

NOTES:

- Before attempting to configure the parameters one should set up the right type of the controlling signal "**in**", appropriate for the system. **As a standard, the controlling signal** (**parameter** "**in**") **is set up at 10** (voltage signal 0 -10V)
- Applying an incorrect input signal for the set up type of the controlling signal at the controller can be detrimental to the device and can result in an error and a message "**ERROR**".

SETTING UP:

1. After switching power supply on, the display will show the value of the output current of the solenoid (A or B), or value of the provided signal (voltage or current). The decimal point will start to flash (the speed of flashing of the decimal point is specified in PARAMETERS AND RANGES section)
2. Turn the „SELECT" knob to enter into adjustment mode. The adjustment mode is signalized by displaying the appropriate abbreviation for a given parameter.
3. After choosing the parameter, which we want to change, one should rotate the knob ADJUST clockwise or counter-clockwise, to select the correct value.
4. In order to change another parameter, one should turn the SELECT knob again, choose a parameter, and follow the instructions of the point 3.
5. The controller at the time of being set up is fully functional, the entered changes of parameters are performed on-the-fly.
6. In order to save new settings in the memory of the controller and go back to the normal mode of work, one should wait 100 seconds or turn the SELECT knob to choose the parameter SA (SAVE SETTINGS), and then, turn the ADJUST knob from 0 to 2.
7. After saving the settings, the display will show the value of the output current or the value of the provided signal (depending on the set up parameter "di"), the decimal point will be flashing.
8. If we do not want the new settings to be saved, one should disconnect the controller from the supply voltage, within the time of 100 seconds.
9. In order to restore the factory default settings, one should rotate the SELECT knob and choose the parameter "rFP", and then turn the ADJUST knob from 0 to 10, up to resetting the display.
   NOTE: for the point 9, after restoring the factory default settings, one may need to re-set the controlling signal „in".

PARAMETERS AND RANGES

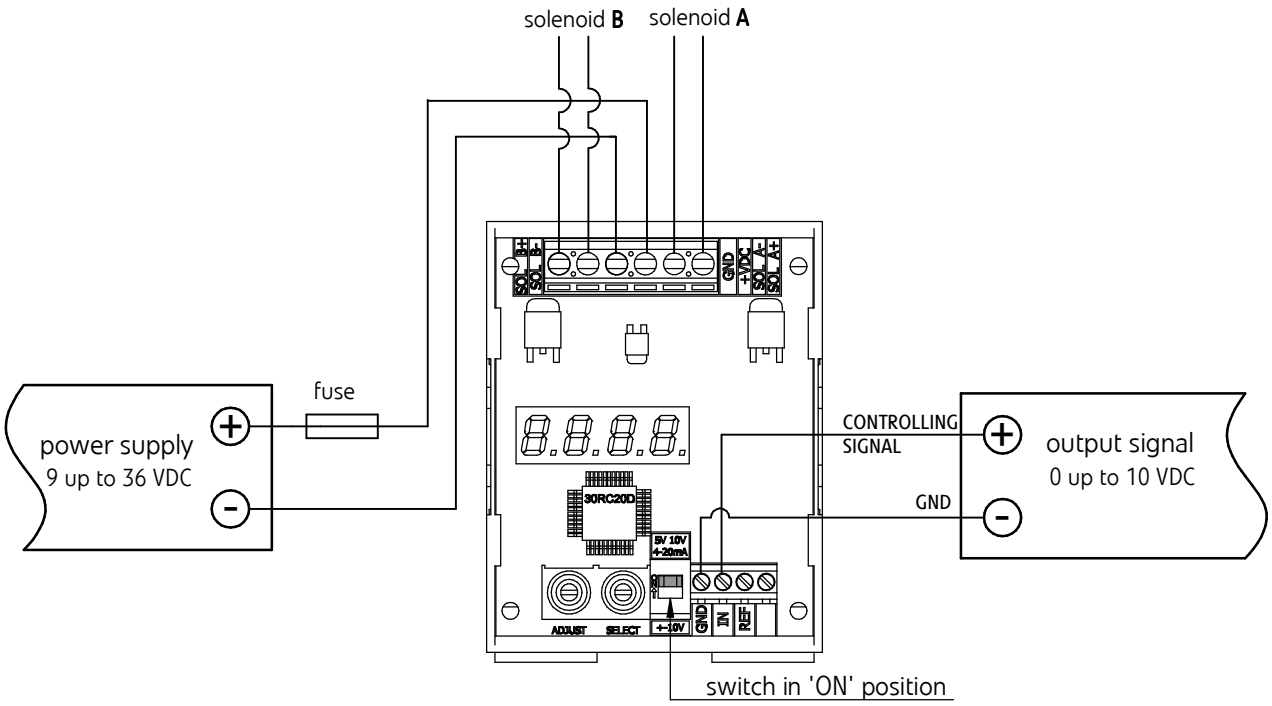
A Hi: Solenoid A **HIGH**, maximum output current, **0,20 up to 3,00** [**A**] *
A Lo: Solenoid A **LOW**, minimum output current, **0,00 up to 2,99** [**A**] *
ArUP: Solenoid A **RAMP UP**, ramp rising - time of increasing of the output current; **0,0 up to 99,5** [s]
Ardn: Solenoid A **RAMP DOWN**, ramp falling - time of falling of the output current; **0,0 up to 99,5** [s]
b Hi: Solenoid B **HIGH**, maximum output current, **0,20 up to 3,00** [**A**] *
b Lo: Solenoid B **LOW**, minimum output current, **0,00 up to 2,99** [**A**] *
brUP: Solenoid B **RAMP UP**, ramp rising - time of increasing of the output current; **0,0 up to 99,5** [s]
brdn: Solenoid B **RAMP DOWN**, ramp falling - time of falling of the output current; **0,0 up to 99,5** [s]
Cdb: **COMMAND DEADBAND**, immunity area to the controlling signal, **0 - 5** [**%**]
JC: **JOYSTICK CALIBRATION / INPUT OFFSET COMPENSATION**, adjustment of the switching point between the solenoid A and B; as default, 50% of the input signal; adjustment range **40 - 60** [**%**]
dFr: **DITHER FREQUENCY** (PWM), **40 up to 450** [**Hz**]
in: **INPUT SIGNAL SELECTION**; **5** (0 - 5V) or **10** (0 - 10V) or **420** (4 - 20 mA) or **-10** (±10V) requires changing of the switch position
di: **DISPLAYED SIGNAL**; setting up of the displayed value; **0** - voltage controlling signal [V] or current [mA]
1 - output current [A], flashing decimal point at the display indicates current mode of the display:
- quick flashing of the decimal point, several times a second, indicates "**di**" = 0
- slow flashing of the decimal point, one time a second, indicates "**di**" = 1
- no flashing or no decimal point, the display is in SET UP mode.

SA: **SAVE SETTINGS**, saving the settings, see SETTING UP PROCEDURE, point 6
rFP: **RESET FACTORY PARAMETERS**, restore of factory default settings, see SETTING UP PROCEDURE, point 9
Err: **ERROR DETECTION STATE**, state of detected errors, short-circuits, detection and protection against reverse polarisation.
"**Err**" = **0**; no errors
"**Err**" = **1**; exceed output current (possibly caused by a short-circuit at the coil)
"**Err**" = **2**; controlling current exceeding 20 [mA], at the controlling by current of 4-20 [mA] or inappropriate type of controlling signal.
Clr: **CLEAR ERROR**, deletion of errors; in order to delete errors, one should turn the knob ADJUST from 0 up to 10.

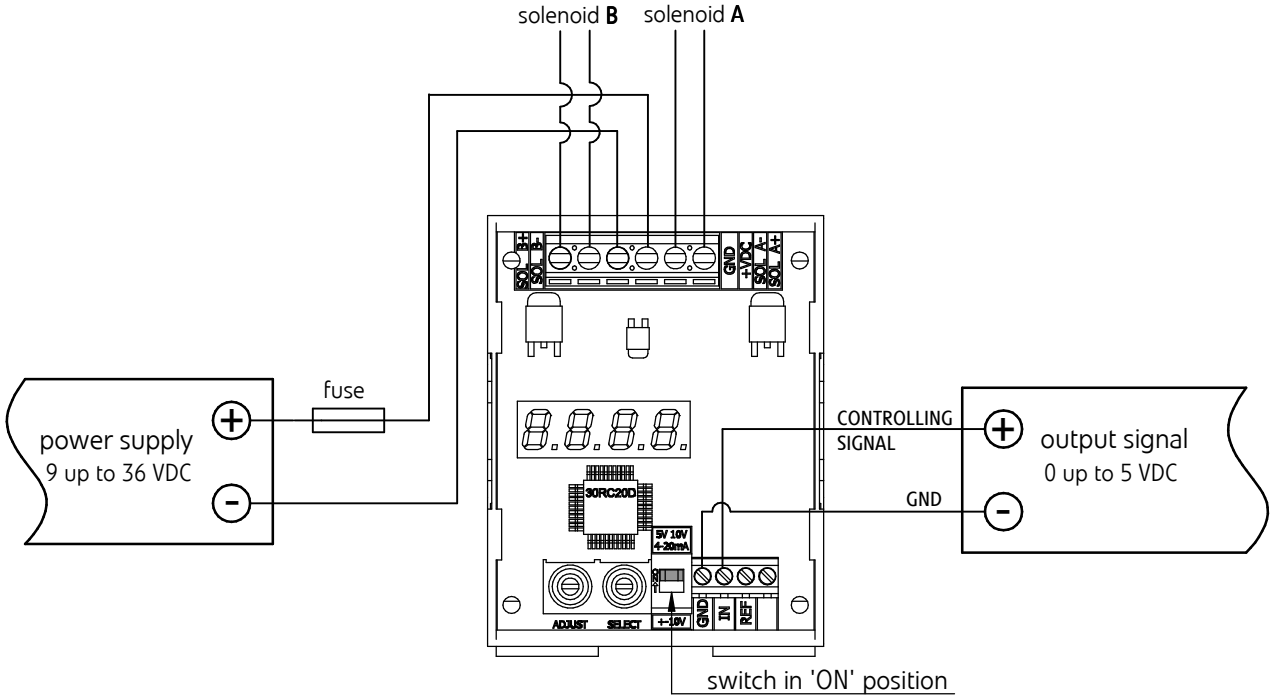
*** When setting up the maximum and minimum current** (**parameter Hi and Lo**) **one should remember that the set up maximum current** (**parameter Hi**) **should be higher from the value of the set up minimum current** (**parameter Lo**).

CONNECTION DIAGRAMS

Connection of external controlling signal
„**in**" set up to **10**



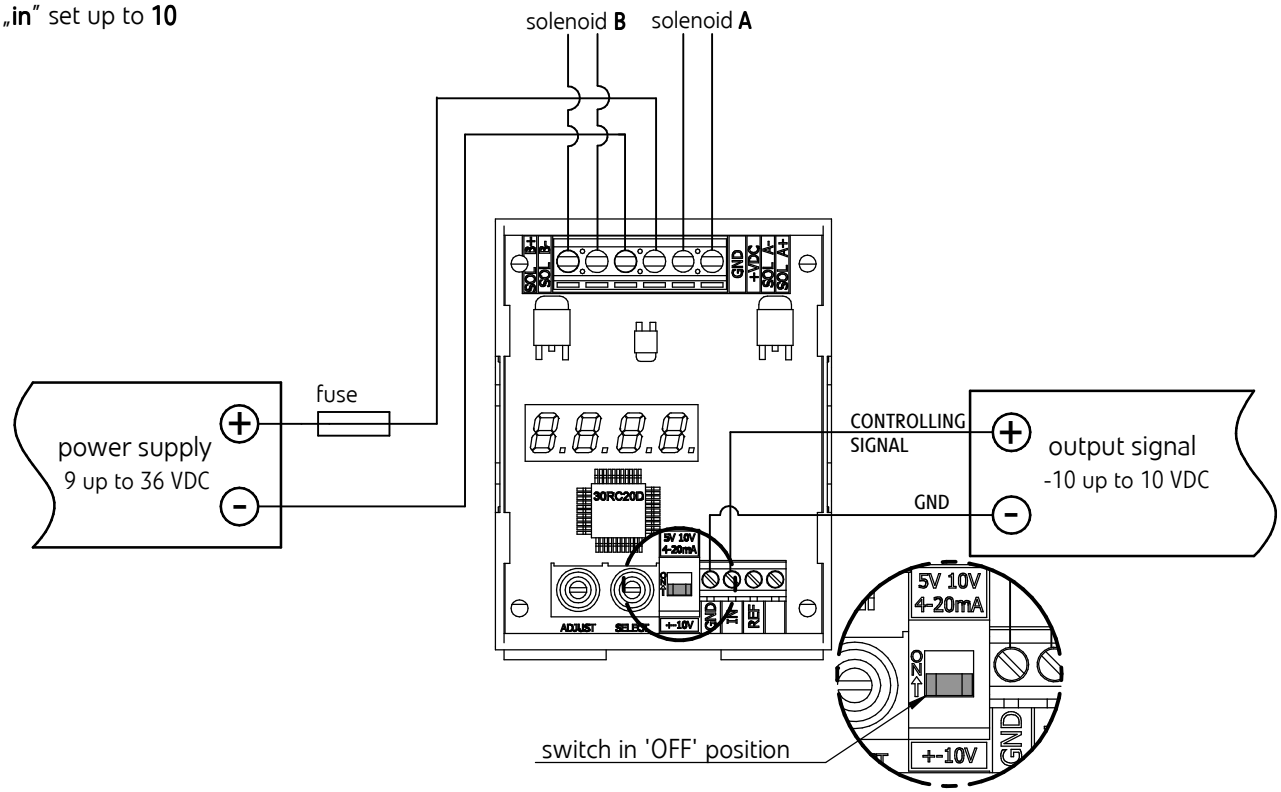
Connection of external controlling signal
„**in**" set up to **5**



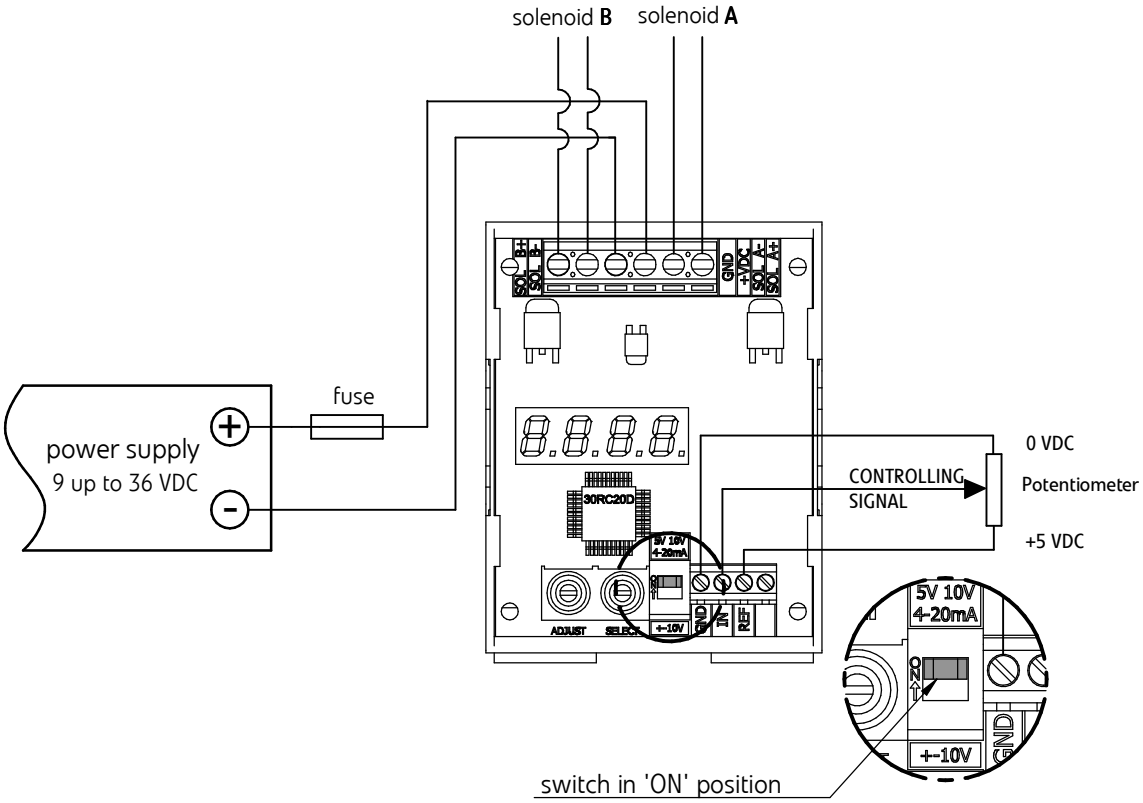
UWAGA: Dla sygnału sterującego 0-5 VDC oraz 0-10 VDC zaleca się stosowanie niezależnego przewodu zerowego zasilania i sygnału sterującego (w celu ograniczenia spadku napięcia na długich przewodach).

CONNECTION DIAGRAMS

Connection of external controlling signal
„**in**" set up to **10**

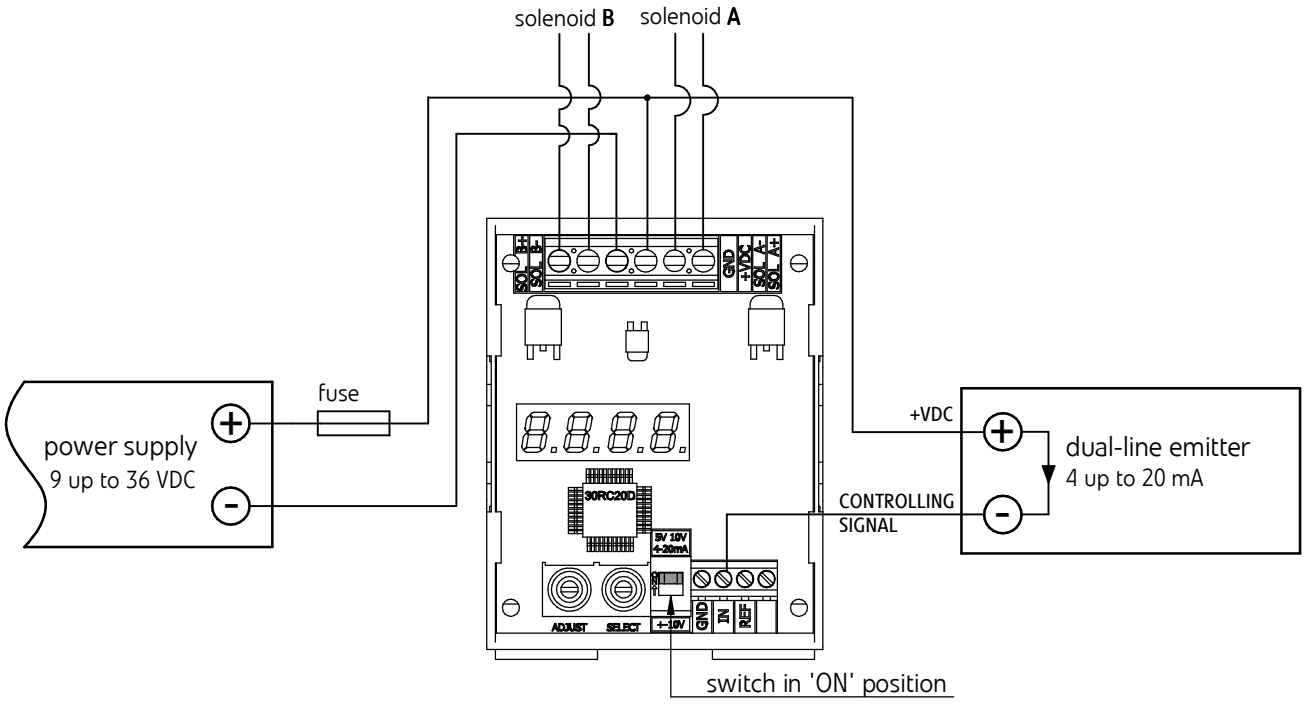


Connection of potentiometer
„**in**" set up to **5**

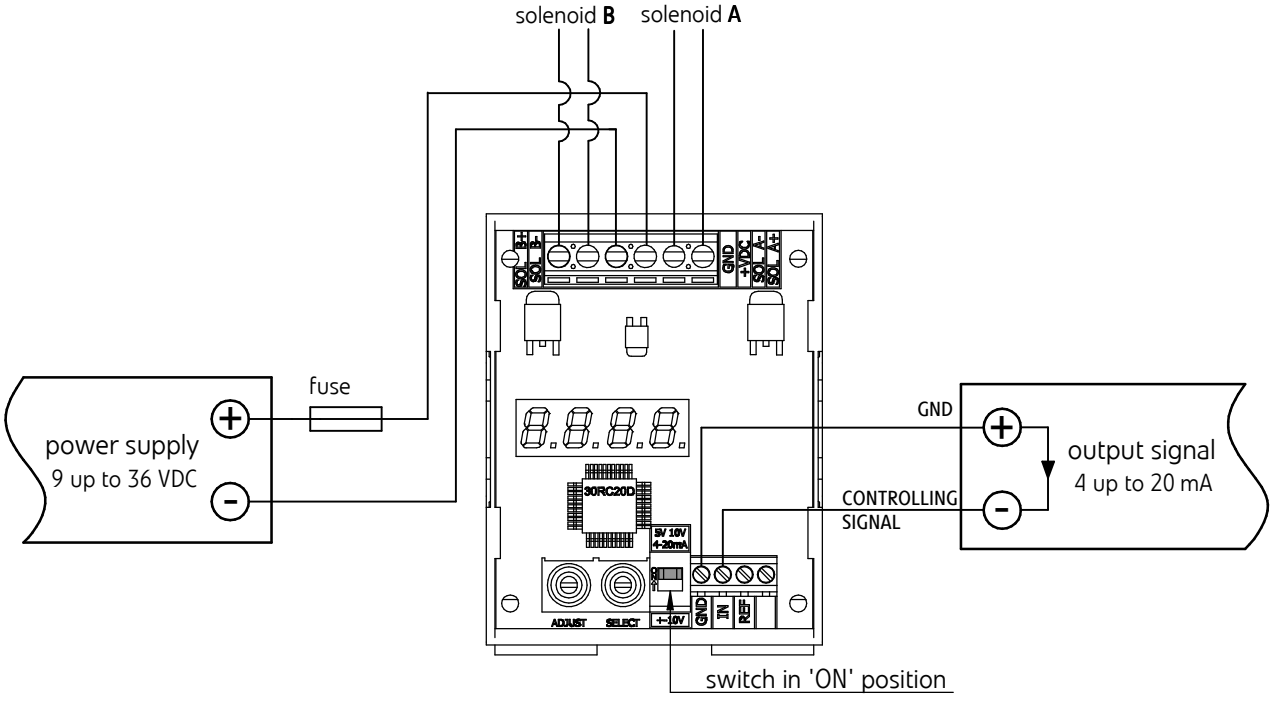


CONNECTION DIAGRAMS

Connection of emitter of a dual-line current loop of the controlling signal
"**in**" set up to **420**

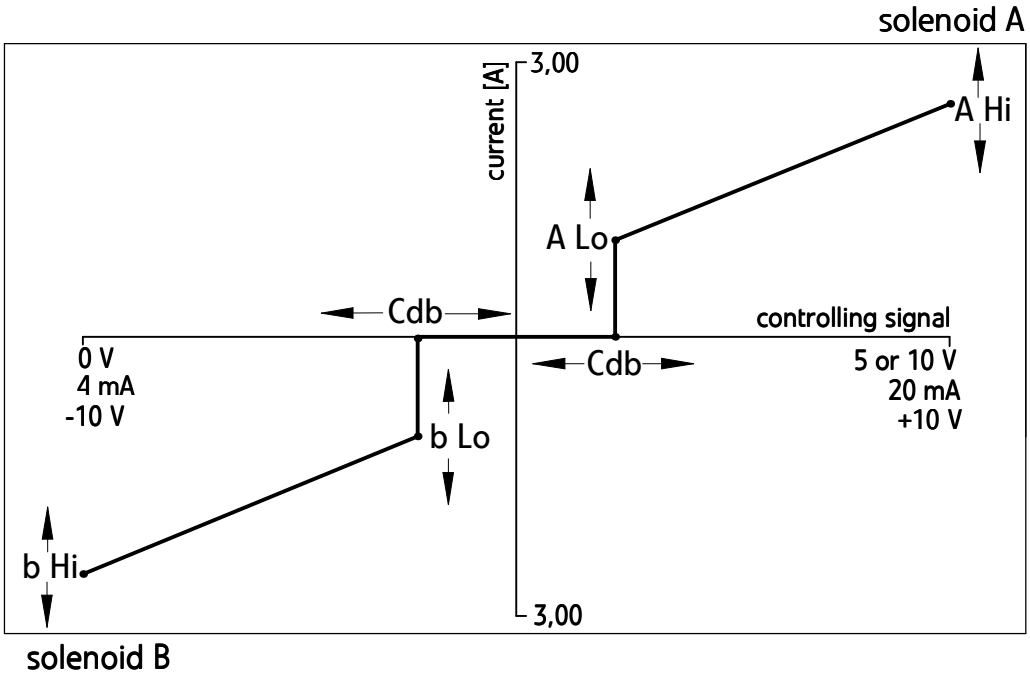


Connection of external controlling signal
„**in**" set up to **420**

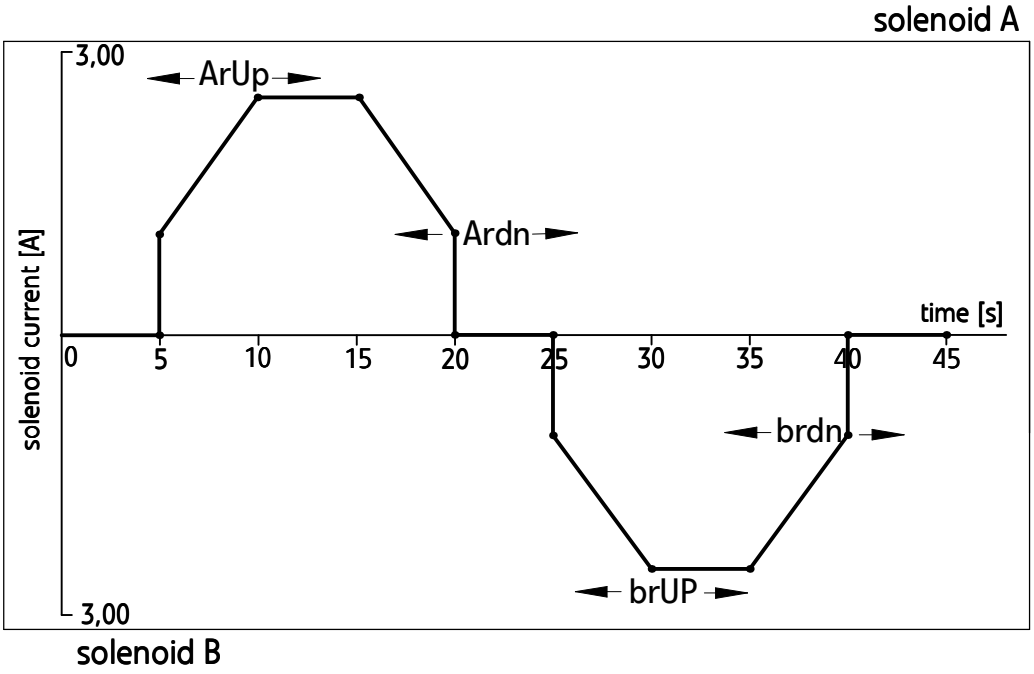


SAMPLE SETTING DIAGRAMS

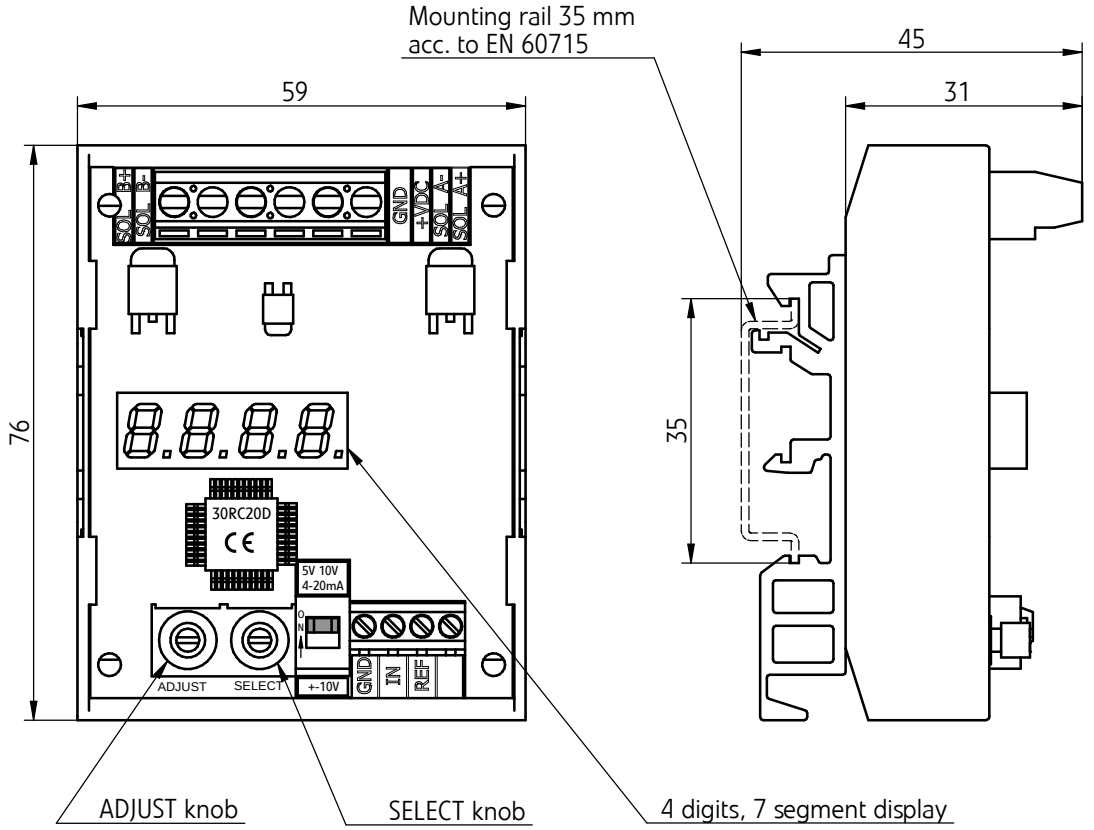
Adjustment of maximum current **Hi** and minimum **Lo**
Adjustment of immunity area **Cdb**
for solenoids **A** and **B**



Adjustments of rising and falling ramp for solenoids **A** and **B**



OVERALL DIMENSIONS



HOW TO ORDER

The controller must be ordered in accordance to the coding provided below.

30 RC20 D	⋆

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

The product is compliant with the requirements of the European Directive of Electromagnetic Compatibility (EMC) 2004/108/EC
Emission: EN 61000-6-4: 2007
Resistance: EN 61000-6-2: 2005, EN 61000-4-2, EN 61000-4-4, EN 61000-4-6

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