

# Valve Control VC 2a

Operating manual  
Release June 2017



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### Revision number

**Rev. n.m:** n = Revision of manual,  
m = Revision of valve list

## 1. Hazard note

**Faulty setting may lead to irreparable damage of the valves connected.**

**Please note, that releasing the push button „Enable“ in fact shuts off the output, but does not reset the preset set point. Thereby, with activating the push button „Enable“ again, the maximal set point can be switched to the valve connected !**

**The permissible deviation of the set current from the set point is max. + 5%.**

**The feedback measuring accuracy is + 5%.**

## 2. Performance characteristics

The unit is equipped with two independent channels, each provided with a 6- and a 3-pole output socket. The performance characteristics described below apply to each channel.

### a. Supply voltage

The valve tester Valve Control VC 2a is supplied with 115 / 230 V<sub>AC</sub>.

### b. Output voltages

For energizing of valves through the 6-pole output socket, the VC 2a provides the voltages

- +24V<sub>DC</sub> for maximal 4 A and
- +/- 15 V<sub>DC</sub> for maximal 2 A.

Additional simple valves can be operated by adaptor „A“ with +24 V<sub>DC</sub> / 4 A.

At the 3-pole output socket a voltage of +24 V<sub>DC</sub> for maximal 1,5 A is provided.

### c. Voltage and current set points

The following set point ranges are available on the 6-pole output socket of VC 2a:

1. 0 .- 5 V
2. 0 - 10 V
3. +/- 5V
4. +/- 10 V
5. +/- 10 mA an 500 Ohm
6. +/- 20 mA an 300 Ohm
7. +/- 40 mA an 200 Ohm
8. +/- 400 mA an 25 Ohm
9. +/- 1200 mA an 5,4 Ohm
10. 0 - 10 mA an 500 Ohm
11. 0 - 20 mA an 500 Ohm
12. 4 - 20 mA an 500 Ohm
13. 0 - 40 mA an 300 Ohm
14. 0 - 400 mA an 25 Ohm
15. 0 - 800 mA an 20 Ohm
16. 0 -1600 mA an 5,4 Ohm
17. 0 - 2400 mA an 5,4 Ohm
18. 0 - 4000 mA an 4 Ohm

### 3. Operating elements and displays

Each channel possesses a four-line display for operator guidance and for setting the parameters of the 6-pole output socket.



Above each output socket is an „**Enable**“ push button located, for activation of the corresponding output. The output will be activated 1 s after pushing the button „**Enable**“. This will be indicated by a red LED on the left side, respectively beneath the associated push button. The set point for the analog output is adjusted by the potentiometer „**Value**“.

The last by „**Enable**“ activated set point is stored and ready for use at the next power on of the VC 2a .

The potentiometer takes effect over the complete mechanical rotation angle according to the selected range:

- 0 - 10 V: min (left limit stop) 0V and max (right limit stop) 10V
- +/- 20 mA min (left limit stop) -20mA and max (right limit stop) +20mA
- 4 - 20 mA: min (left limit stop) 4mA and max (right limit stop) +20mA

That means, the middle position of the potentiometer corresponds to the middle value of the selected range.

The push button „**Step**“ selects the parameter to change. The selected parameter is marked with „>“. The value of the parameter is changed by the push button „**Set**“.

<b>Parameter</b>	<b>Value</b>
- Valve	Circuit logic 01 – 13
- Range	the type of set point
- Feedback-display	absolute or percentage
- Feedback-range	0 / 4 -20 mA, 0-10 V
- Set point-display	absolute or percentage

## 4. Brief instruction

1. Make sure, that the unit ist powered **off**. (Main switch at the back side)
2. Connect the **main plug** to power (Supply voltage 230 or 115 V<sub>AC</sub>)
3. **Power up** the unit on at the back side.
4. Connect the required **extensions** to the appropriate output sockets
5. The parameter "**Valve**" should be selected by power on
6. If not, activate the parameter "**Valve**" by pressing the push button "**Step**".
7. Select the circuit logic according the table (see 7. „Supported valves“) with the push button "**Set**"
8. Select parameter "**Range**" with the push button "**Step**"
9. Select the value for the range with "**Set**"
10. Select "**Feedback**" with "**Step**"
11. Select display of either absolute or per cent values
12. Select "**Feedback**" range with "**Step**"
13. Set the feedback parameter using the „**Set**“ key as appropriate for the selected valve.
14. Select "**Value**" with the key "**Step**"
15. Switch over between absolute and per cent values with "**Set**" for displaying the setpoint
16. Check / adjust the set point at the potentiometer
17. Activate the push button "**Enable**" to power up the valve. The red LED will light up immediately, but the output is increased at an internal ramp of 1 s up to the set point.
18. Change the set point at the potentiometer to move the valve
19. To switch off the valve, you push the button "**Enable**" again. The red LED turns off and the output is ramped down to zero within 2 s. After that the relays for the output will be disconnected.

While the output is activated, no changes at the general settings can be done.

The 24 V switching output (3-pole output socket) is independent of the above settings. It is switched on or off exclusively by means of the associated "**Enable**" key.

## 5. Pin assignment of the 6-pole output socket

The 6-pole output socket has the following configuration:

1. +24 V<sub>DC</sub> power supply (maximal 4 A)
2. depending on the circuit logic
3. depending on the circuit logic
4. depending on the circuit logic
5. depending on the circuit logic
6. Feedback

## 6. Pin assignment of the 3-pole output socket

The 3-pole output socket has the following configuration:

1. +24V<sub>DC</sub> power supply (maximal 1,5 A)
2. GND
3. PE



## 7. Supported valves

Manufacturer: **Rexroth**

Valve	VC2a						
	Type	Volt	Range	Feedback	Valvetype	Adaptor	note
3DRE(M) xxx / xxx G24 K4		24 V	0-1,6 A	-	1	A	
3DREE 16P/ xxx G24 K31 V		24 V	0-10 V	-	7	B	
3DRE(M)E xxx / xxx G24 K31 A1		24 V	0-10 V	-	7	B	
3DRE(M)E xxx / xxx G24 K31 F1		24 V	4-20mA	-	4	B	
3DRG P 6X/ xxx G24 K6 V		24 V	0-800 mA	-	9	B	
4WE xxxxxxxxxxG24 K4		24V	-	-	-	B	Connect support (3p)
4WEH xxxxxxxxxx G24 K4		24V	-	-	-	B	Connect support (3p)
4WRA xxxxx -2X/ G24 K4 / V		24 V	0-2,4 A	-	1	A	max current is 2.5A
4WRAE xxx-2X/G24 K31/ F1 V		24 V	4-20mA	-	5	B	
4WRDE xxxxx -5X/ 6L 24 E K9 / M		24 V	± 10 V	± 10V	2	B	
4WRDE xxxxx -5X/ 6L 24 K9 / M -280		24 V	± 10 mA	± 10mA	2	B	
4WRE xxxxx -2X/ G24 K4 / V		24 V	0-1,6 A	-	1	A	max current is 1.8A
4WREE xxxxx -2X/ G24 K31 / A1		24 V	0-10 V	± 10V	7	B	
4WREE xxxxx -2X/ G24 K31 / F1		24 V	4-20 mA	4-20mA	4	B	
4WRGE xxxxx -1X/315 G24 E K31 C1 M		24 V	± 10 mA	± 10mA	2	B	
4WRKE xxxxx -3X/6E G24 ET K31 F1 / D3 MR		24 V	4-20 mA	4-20 mA	4	B	
4WRPEH xxx G24KO/ A1		24 V	± 10 V	± 10V	7	B	
4WRPEH xxx G24KO/ F1		24 V	4-20 mA	4-20mA	4	B	
4WRSE xxxxx -3X/ G24 K0 / A1		24 V	± 10 V	± 10V	7	B	
4WRTE xxx-4X/ xx G24 K31/ A1		24 V	± 10 V	± 10V	7	B	
4WRTE xxx -4X/ xx G24 K31/ F1		24 V	4-20 mA	4-20mA	4	B	
4WRZ xxxxxxxxxxxx G24 N9 ET K4 / D3 V		24 V	0-1,6 A	-	1	A	
4WRZE xxxxxxxxxxxx G24 N9 K31 F1 / D3 V		24 V	4-20 mA	-	5	B	
4WS2E M 10 -5X/ 60 B 11 T 315 K31 E V		24 V	± 20 mA	-	8	B	
4WSE2E D 10 -5X/ 90 B 13 - 315 K31 E V		± 15 V	± 10 mA	± 10mA	3	B	
4WSE3EE xxxxx B 8 T 315 Z9		± 15 V	± 10 mA	± 10V	3	B	
4WSE3EE xxxxx B 8 - 315 K9		± 15 V	± 10 mA	± 10V	3	B	
DBETE-6X/200Y G24 K31 A1		24 V	0-10 V	-	7	B	
DBETE-6X/200Y G24 K31 F1		24 V	4-20 mA	-	5	B	
DRE(M) xxx / xxx G24 K4		24 V	0-800 mA	-	1	A	
M - 3SE xxxxxxxxxx G24 K4		24 V	-	-	-	B	Connect support (3p)
ZDRE xxx / xxx G24 K4		24 V	0-1,6 A	-	1	A	
FESE63 CA-30/1800LKOB1M		24 V	0-10 V	0-10 V	2	B	
FESE63 CA-30/1800LKOG1M		24 V	4-20 mA	4-20 mA	13	B	

**Manufacturer: MOOG**

Valve	VC2a					
Type	Volt	Range	Feedback	Valvetype	Adaptor	note
D633- D634xxxxx <b>VSM2</b>	24 V	± 10 V	4-20 mA	<b>7</b>	<b>B</b>	
D633- D634xxxxx <b>VSX2</b>	24 V	± 10 mA	4-20 mA	<b>7</b>	<b>B</b>	
D630 Series	24 V	± 20 mA		<b>6</b>	<b>C</b>	
D640	± 15 V	± 10 mA	± 10 V	<b>3</b>	<b>B</b>	
D640	± 15 V	± 10 V	± 10 V	<b>3</b>	<b>B</b>	
D660-D665 xxxxxV SX0	± 15 V	± 10 mA	4-20 mA	<b>3</b>	<b>B</b>	
D660-D665 xxxxxVSM0	± 15 V	± 10 V	4-20 mA	<b>3</b>	<b>B</b>	
D660-D665 xxxxxV SX2	24V	± 10 mA	4-20 mA	<b>2</b>	<b>B</b>	
D660-D665 xxxxxVSM2	24V	± 10 V	4-20 mA	<b>2</b>	<b>B</b>	
G761-3605 S63 JOGM5 VBL	24V	± 20 mA		<b>11</b>	<b>C</b>	
J079-100-200	± 15 V	± 10 V	± 10 V	<b>3</b>	<b>B</b>	
D670-675-5xxxSD2xx	24 V	± 10 V	± 10 V	<b>2</b>	<b>B</b>	
<b>D670-675-5xxxSX2xx</b>	24 V	± 10 mA	4-20 mA	<b>2</b>	<b>B</b>	
D670-675-5xxxSE2xx	24 V	4-20 mA	-4-20 mA	<b>13</b>	<b>B</b>	
D765 xxxxx <b>SA0</b>	± 15 V	± 10 V	± 10 V-	<b>3</b>	<b>B</b>	
D765 xxxxx <b>SX0</b>	± 15 V	± 10 mA	± 10 V	<b>3</b>	<b>B</b>	
D685-685xxSM2-x	24 V	± 10 V	4-20 mA	<b>2</b>	<b>B</b>	
D685-685xxSX2-x	24 V	± 10 mA	4-20 mA	<b>2</b>	<b>B</b>	
G631 Q	24 V	± 20 mA		<b>11</b>	<b>C</b>	
G631 R	24 V	± 40 mA		<b>6</b>	<b>C</b>	
J079-100-200	± 15 V	± 10 mA	± 10 V	<b>3</b>	<b>B</b>	
J073	± 15 V	± 20mA		<b>11</b>	<b>B</b>	
730-100	24 V	± 20 mA		<b>11</b>	<b>C</b>	
730-230	24 V	± 40 mA		<b>6</b>	<b>C</b>	

**Manufacturer: Hydac - VICKERS**

Valve	VC2					
Type	Volt	Range	Feedback	Valvetype	Adaptor	note
WSM06020ZR-01*C*24DG	24 V	0-0,8 A		1	A	Connect at the 12-pin connector only ! Set „Range“ to 0-0,8 A !
KBDG5V 7 33C17ON EXM2PE7 H110	24 V	4-20 mA	4-20 mA	4	B	
KBDG5V 7 33C17ON EXM1PE7 H110	24 V	± 10 V	± 10 V	7	B	
KBDG5V 7 33C17ON EXM2PH7 H110	24 V	4-20 mA		13	B	
KBDG5V 7 33C17ON EXM1PH7 H110	24 V	± 10 V		2	B	

Manufacturer: **PARKER**

Valve	VC2a					
Type	Volt	Range	Feedback	Valvetype	Adaptor	Note
D*1FE**C**E0*	24 V	± 20 mA	± 10 V	7	B	
D*1FE**C**B7*	24 V	± 10 V	± 10 V	2	B	
D*1FE**C**E7*	24 V	± 10 V	± 10 V	2	B	
D*1FE**C**S7*	24 V	4-20 mA	4-20 mA	13	B	
D*1FE**C**B5*	24 V	± 10 V	± 10 V	2	B	
D*1FE**C**E5*	24 V	± 20 mA	± 20 mA	2	B	
D*1FE**C**S5*	24 V	4-20 mA	4-20 mA	13	B	
D*1-3FB*****F0*	24 V	± 10 V	-	7	B	
D*1-3FB*****G0*	24 V	± 20 mA	-	7	B	
D*1-3FB*****S0*	24 V	4-20 mA	-	4	B	
D*1-3FB*****W5*	24 V	± 10 V	-	2	B	
D*1-3FB*****W5*	24 V	4-20 mA	-	13	B	
D*1-3FB*0C**J	24V	0...1.6A		1	A	
D*1FP****G*B00	24 V	± 10 V	± 10 V	7	B	
D*1FP****G*E00	24 V	± 20 mA	± 10 V	7	B	
D*1FP****G*S00	24 V	4-20 mA	± 10 V	4	B	
D*1FP****G*B50	24 V	± 10 V	± 10 V	2	B	
D*1FP****G*E50	24 V	± 20 mA	± 10 V	2	B	
D*1FP****G*S50	24 V	4-20 mA	± 10 V	13	B	
D*1FP****G*B70	24 V	± 10 V	± 10 V	2	B	
D*1FP****G*E70	24 V	± 20 mA	± 10 V	2	B	
D*1FP****G*S70	24 V	4-20 mA	± 10 V	13	B	
D*1FH****NB0*	24 V	± 10 V	± 10 V	2	B	
D*1FH****NE0*	24 V	± 20 mA	± 10 V	2	B	
D*1FH****NS0*	24 V	<b>4-20 mA</b>	4-20 mA	13	B	<b>Although the valve setpoint is 4 – 20 mA !</b>
D3W***JW	24 V	0-1.6A		1	A	
D*1VW***JW	24 V	0-1.6A		1	A	
D30FP***B0	24 V	± 10 V	± 10 V	7	B	
D30FP***E0	24 V	± 20 mA	± 20 mA	7	B	
D30FP***S0	24 V	4-20 mA	4-20 mA	4	B	
D30FP***B7	24 V	± 10 V	± 10 V	2	B	
D30FP***E7	24 V	± 20 mA	± 20 mA	2	B	
D30FP***S7	24 V	4-20 mA	4-20 mA	13	B	
D30FP***B5	24 V	± 10 V	± 10 V	2	B	
D30FP***E5	24 V	± 20 mA	± 20 mA	2	B	
D30FP***S5	24 V	4-20 mA	4-20 mA	13	B	
D1FV***F0**	24 V	± 10 V		7	B	
D1FV***G0**	24 V	± 20 mA		7	B	
D1FV***S0**	24 V	4-20 mA		5	B	
D1FV***W5**	24 V	± 10 V		7	B	
D1FV***W5**	24 V	± 20 mA		7	B	
D1FV***W5**	24 V	4-20 mA		5	B	
RE06M*T***F0	24 V	0-10 V		7	B	
RE06M*T***R0	24 V	4-20 mA		5	B	

The latest version of supported valves is available as download from our website at <http://www.support4service.de/downloads.html>

Ingenieur- und Konstruktionsbüro Roland Schruff

Ewaldstraße 20a

D – 58089 Hagen

Telefon: +49 2331 – 306 20 64

FAX: +49 2331 – 306 23 27

Cell phone: +49 172 – 873 40 26

[www.iks-gbr.de](http://www.iks-gbr.de)

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