

Valve Control VC 3

operation manual



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Warning

Incorrect setting may result in damage to connected valves and the device itself!!!

Parameters

Accuracy: +/- 5%. The device has two independent adjustable channels, 6-pin connector and two independent non-regulated channels with 3-pin connector.

a. Power supply

The device is powered 110 V / 230 V AC, 50 Hz.

b. Output voltage

The device provides control of analog valves connected to 6-pin connector.

Output voltage

- +24V DC up to 4 A and
- +/- 15V DC up to 2 A

In addition, direct switching valves can be controlled via the cable "G". 3-pin output jack with 24VDC 1.5A.

c. Voltage and current range

6-pin connector:

1. 0 - 5 V
2. 0 - 10 V
3. ± 5 V
4. ± 10 V
5. ± 10 mA up to 100 Ohm
6. ± 20 mA up to 100 Ohm
7. ± 40 mA up to 100 Ohm
8. ± 400 mA up to 25 Ohm
9. ± 1200 mA up to 5 Ohm
10. 0 - 10 mA up to 100 Ohm
11. 0 - 20 mA up to 100 Ohm
12. 4 - 20 mA up to 100 Ohm
13. 0 - 40 mA up to 100 Ohm
14. 0 - 400 mA up to 25 Ohm
15. 0 - 800 mA up to 5 Ohm
16. 0 - 1600 mA up to 5 Ohm
17. 0 - 2400 mA up to 5 Ohm
18. 0 - 4000 mA up to 5 Ohm

Control elements

4 lines are available on the display for each of two channels:

- channel, type number („**TYPE**“)
- output range („**RANGE**“)
- feedback („**Feedb**“), absolute or relative display and range
- output („**Value**“), absolute or relative display and range



Before a text of „**TYPE**“ the next lines can be displayed:

- **SYN** synchronization of channels or devices (you watch the section "Synchronization")
- **ERROR** the Error (you watch the section "Malfunctions")

„**Step**“ button is used to select parameter for setting:

- type, according to table
- current or voltage range
- show in the absolute or relative form
- feedback

Cursor „**→**“ is set opposite to the required parameter. The parameter can be set by means of „**Set**“ button.

„**Enable**“ button switches on / off the output. The output status is shown by red LED as well as a range line background (green - if output is on). Output „**Value**“ is adjusted by means of potentiometer.

Pressing and holding of „**Enable**“ button of «A» channel more than 3 seconds results in channels synchronization. Detailed description is provided in Section „Synchronization“.

Potentiometer is adjusted according to selected range:

	To the left until stoppage	To the right until stoppage
0 - 5 V:	0 V	5 V
± 10 V:	-10 V	+10 V
± 20 mA:	-20 mA	+20 mA
4 - 20 mA:	4 mA	+20 mA
± 1200 mA:	-1,2 A	+1,2 A

The average position of the potentiometer is always in the middle of the range.



Before switching on, check correctness of potentiometer setting according to the selected parameters!

Operating procedure

1. Connect the device to power source.
2. Turn on the device using switch on the rear panel.
3. Connect the necessary adapter to output connectors of the device.
4. Press „**Step**“ button and select „**Type**“.
5. Use „**Set**“ button, select the type number according to the table.
6. Select „**Range**“ by pressing „**Step**“ button.
7. Select the desired range by pressing „**Set**“ button.
8. Select „**Feedback**“ by pressing „**Step**“ button.
9. Set absolute or relative display by pressing Set absolute or relative display by pressing „**Set**“ button.
10. Set the feedback range by pressing „**Set**“ button.
11. Move to the next parameter by pressing „**Step**“ button.
12. Set absolute or relative value display by pressing „**Set**“ button.
13. Set the initial position of the potentiometer, e.g., 0.0.
14. Click „**Enable**“ to switch on the output which will be indicated by the red LED and the range line background will be green.
15. Adjust the output value using the potentiometer.
16. Press the button „**Enable**“ again to turn off the output, the LED goes out. Wait until green range line background disappears on the display.

When the output is enabled, no parameter changes can be made.

Outputs 24 V (3-pin connector) does not depend on the output status and controlled by „**Enable**“ button.

Synchronization

It is possible to control 2, 3 or 4-analogous valves at the same time.

To synchronize two devices (simultaneous control of 3 or 4 valves), they should be connected with cable that plugs into TRS jack (mini-jack 3.5 mm) on the rear panel. It is required to use a cable, which only comes as a set to the device!



Set parameter in «A» channel, press and hold „Enable” button more than 3 seconds until the sound signal. „SYN” will be displayed in all the synchronized channels.



Output and “A” channel potentiometer control are performed by „Enable” button. If output is on, „RANGE” line is displayed on green background.



To switch off synchronization, press and hold „Enable” button more than 3 seconds until the sound signal.

When connection is broken between the devices, outputs are switched off automatically and the inscription on the display indicates the connection is broken.



For resynchronization, devices must be turned off and the fault must be removed.

Malfunctions

If errors are detected during operation (e.g. relay is not turned off due to burning of contacts), **"ERROR"** is displayed on a red background in the relevant channel.



In this case, turn the power off and on again, if the error does not disappear - the device needs to be repaired.

Lists of valves

Valve manufacturer: **Hydac and Wickers**

Rev. 7 (June, 2017)

Valve	N	Volt	Range	Feedback	Valve-type	Adaptor	Note
WSM06020ZR-01*C*24DG	1	24V				G	Connect to (3p)
KBDG5V 7 33C170N EX M2 PE7 H1 10	1	24V	4-20mA	± 10 V	4	B	
KBDG5V 7 33C170N EX M1 PE7 H1 10	2	24V	+/-10V	± 10 V	4	B	
KBDG5V 7 33C170N EX M2 PH7 H1 10	3	24V	4-20mA	± 10 V	2	B	
KBDG5V 7 33C170N EX M1 PH7 H1 10	4	24V	+/-10V	± 10 V	2	B	

Valve manufacturer: **Moog**

Rev. 7 (June, 2017)

Valve	Volt	Range	Feedback	Valve-type	Adaptor	Note
D633-D634 xxxxx VSM2	24 V	± 10 V	4-20 mA	4	B	
D633-D634 xxxxx V SX2	24 V	± 10 mA	4-20 mA	4	B	
D630 Series	24V	± 20 mA		8	C	
D660-D665 xxxxx V SX0	± 15 V	± 10 mA	4-20 mA	3	B	
D660-D665 xxxxx V SM0	± 15 V	± 10V	4-20 mA	3	B	
D660-D665 xxxxx V SX2	24V	± 10 mA	4-20 mA	2	B	
D660-D665 xxxxx V SM2	24V	± 10V	4-20 mA	2	B	
D670-675-5xxxSD2xx	24 V	± 10V	± 10V	2	B	
D670-675-5xxxSX2xx	24 V	± 10mA	4-20 mA	2	B	
D670-675-5xxxSE2xx	24 V	4-20 mA	4-20 mA	2	B	
D765 xxxxx SA0	± 15 V	± 10V	± 10 V	3	B	
D765 xxxxx SX0	± 15 V	± 10 mA	± 10 V	3	B	
D680-685xxxxxSM2xx,SA2xx-SD2xx-ST2xx	24V	± 10 V	4-20mA	2	B	Feedb +/-10V,0-10V
D680-685xxxxxSX2xx	24V	± 10 mA	4-20mA	2	B	
G761-3605 S63 JOGM5 VBL	24V	± 20 mA	-	8	C	
J079-B272A	± 15 V	± 10 mA	± 10 mA	3	B	
J079-100-200 Series	± 15 V	± 10V	± 10 V	3	B	
D640	± 15 V	± 10 mA	± 10 V	3	B	
D640	± 15 V	± 10 V	± 10 V	3	B	
G631 Q	24V	± 20mA		8	C	
G631 R	24V	± 40mA		7	C	
D730	24V	± 20mA		8	C	
D730	24V	± 40mA		7	C	
D661K-664KMH	24V	± 10V	4-20mA	4	B	
D661K-664KXH	24V	± 10mA	4-20mA	4	B	
D661K-664KMZ	24V	± 10V	4-20mA	4	B	
D661K-664KXZ	24V	± 10mA	4-20mA	4	B	
D791,D792-XXXXXSA0P	± 15 V	± 10V	± 10V	3	B	
D791,D792-XXXXXSX0P	± 15 V	± 10mA	± 10mA	3	B	
D791,D792-XXXXXSA2O	24V	± 10V	4-20mA	4	B	
D791,D792-XXXXXSX2O	24V	± 10mA	4-20mA	4	B	

Valve manufacturer: Parker

Rev. 7 (June, 2017)

Type	N	Volt	Range	Feedback	Valve-type	Adaptor	Note
D*1FE**C**B0*	1	24 V	± 10 V	± 10 V	4	B	
D*1FE**C**E0*	2	24 V	± 20 mA	± 10 V	4	B	
D*1FE**C**S0*	3	24 V	4...20 mA	4...20mA	4	B	
D*1FE**C**B7*	4	24 V	± 10 V	± 10 V	2	B	
D*1FE**C**E7*	5	24 V	± 20 mA	± 20 mA	2	B	
D*1FE**C**S7*	6	24 V	4...20 mA	4...20mA	2	B	
D*1FE**C**B5*	7	24 V	± 10 V	± 10 V	2	B	
D*1FE**C**E5*	8	24 V	± 20 mA	± 20 mA	2	B	
D*1FE**C**S5*	9	24 V	4...20 mA	4...20mA	2	B	
D*1-3FB***F0*	10	24 V	± 10 V	± 10 V	4	B	
D*1-3FB***G0*	11	24 V	± 20 mA	± 20 mA	4	B	
D*1-3FB***S0*	12	24 V	4-20 mA	4-20 mA	4	B	
D*1-3FB*0C**J**	13	24 V	0..1,6 A	-	1	A	
D*1-3FB***W5*	14	24 V	± 10 V	± 10 V	2	B	
D*1-3FB***W5*	15	24 V	4-20 mA	4-20 mA	2	B	
D*1FH***B0*	16	24 V	± 10 V	± 10 V	2	B	
D*1FH***E0*	17	24 V	± 20 mA	± 10 V	2	B	
D*1FH***S0*	18	24 V	4-20 mA	± 10 V	2	B	
D*1FP***B0**	19	24 V	± 10 V	± 10 V	4	B	
D*1FP***E0**	20	24 V	± 20 mA	± 10 V	4	B	
D*1FP***S0**	21	24 V	4-20 mA	± 10 V	4	B	
D*1FP***B7**	22	24 V	± 10 V	± 10 V	2	B	
D*1FP***E7**	23	24 V	± 20 mA	± 10 V	2	B	
D*1FP***S7**	24	24 V	4-20 mA	± 10 V	2	B	
D*1FP***B5*	25	24 V	± 10 V	± 10 V	2	B	
D*1FP***E5*	26	24 V	4-20 mA	± 10 V	2	B	
D*1FP***S5*	27	24 V	± 10 V	± 10 V	2	B	
D3W***JW***	28	24 V	0-1,6 A		1	A	
D*1VW***JW*	29	24 V	0-1,6 A		1	A	
D30FP***B0**	30	24 V	± 10 V	± 10 V	4	B	
D30FP***E0**	31	24 V	± 20 mA	± 10 V	4	B	
D30FP***S0**	32	24 V	4-20 mA	± 10 V	4	B	
D30FP***B7**	33	24 V	± 10 V	± 10 V	2	B	
D30FP***E7**	34	24 V	± 20 mA	± 10 V	2	B	
D30FP***S7**	35	24 V	4-20 mA	± 10 V	2	B	
D30FP***B5**	36	24 V	± 10 V	± 10 V	2	B	
D30FP***E5**	37	24 V	± 20 mA	± 10 V	2	B	
D30FP***S5**	38	24 V	4-20 mA	± 10 V	2	B	
D1FV***0*F0**	39	24 V	± 10 V		4	B	
D1FV***0*G0**	40	24 V	± 20 mA		4	B	
D1FV***0*S0**	41	24 V	4-20 mA		4	B	
D1FV***0*W5**	42	24 V	± 10 V		4	B	
D1FV***0*W5**	43	24 V	± 20 mA		4	B	
D1FV***0*W5**	44	24 V	4-20 mA		4	B	
RE06M*T***F0	45	24 V	± 10 V		4	B	
RE06M*T***R0	46	24 V	4-20 mA		4	B	

Valve manufacturer: Rexroth

Rev. 7 (June, 2017)

Valve	N	Volt	Range	Feedback	Valve-type	Adaptor	Note
3DRE(M) xxx / xxx G24 K4	1	24 V	0-1,6 A	-	1	A	-
3DRE(M)E xxx / xxx G24 K31 A1	2	24 V	0-10 V	0-10V	4	B	-
3DRE(M)E xxx / xxx G24 K31 F1	3	24 V	4-20 mA	0-10V	4	B	-
3DRG P 6X/ xxx G24 K6 V	4	24 V	0-800 mA	-	6	B	-
4WE xxxxxxxxxxxx G24 K4	5	24 V	1,6 mA	-		G	Connect to (3p)
4WEH xxxxxxxxxxxx G24 K4	6	24 V	1,6 mA	-		G	Connect to (3p)
4WRA xxxxx -2X/ G24 K4 / V	7	24 V	0-2,4 A	-	1	A	-
4WRAE xxx-2X/G24 K31/ A1 V	8	24 V	± 10 V		4	B	-
4WRAE xxx-2X/G24 K31/ F1 V	9	24 V	4-20 mA		4	B	-
4WRDE xxxxx -5X/ 6L 24 E K9 / M	10	24 V	± 10 V	± 10V	2	B	-
4WRDE xxxxx -5X/ 6L 24 K9 / M -280	11	24 V	± 10 mA	± 10mA	2	B	-
4WRE xxxxx -2X/ G24 K4 / V	12	24 V	0-1,6 A	-	1	A	-
4WREE xxxxx -2X/ G24 K31 / A1	13	24 V	± 10 V	± 10V	4	B	-
4WREE xxxxx -2X/ G24 K31 / F1	14	24 V	4-20 mA	4-20mA	4	B	-
4WRGE xxxxx -1X/315 G24 E K31A1 M	15	24 V	± 10 V	± 10 V	4	B	-
4WRGE xxxxx -1X/315 G24 E K31C1 M	16	24 V	± 10 mA	± 10mA	4	B	-
4WRKE xxxxx -3X/6E G24 ET K31A1 / D	17	24 V	± 10 V	± 10 V	4	B	-
4WRKE xxxxx -3X/6E G24 ET K31F1 / D	18	24 V	4-20 mA	4-20 mA	4	B	-
4WRKE xxxxx -3X/6E G24 ET K31A5 / D	19	24 V	± 10 V	± 10 V	2	B	-
4WRPEH xxx G24KO/ A1	20	24 V	± 10 V	± 10V	4	B	-
4WRPEH xxx G24KO/ F1	21	24 V	4-20 mA	4-20mA	4	B	-
4WRSE xxxxx -3X/ G24 K0 / A1	22	24 V	± 10 V	± 10V	4	B	-
4WRSE xxxxx -3X/ G24 K0 / F1	23	24 V	4-20 mA	4-20 mA	4	B	-
4WRTE xxxxx-4X/ xx G24 K31/ A1	24	24 V	± 10 V	± 10V	4	B	-
4WRTE xxx -4X/ xx G24 K31/ F1	25	24 V	4-20 mA	4-20mA	4	B	-
4WRTE xxxxx-4X/ xx G24 K31/ A5	26	24 V	± 10 V	± 10 V	2	B	-
4WRZ xxxxxxxxxxxx G24 N9 ET K4 / D3	27	24 V	0-1,6 A	-	1	A	-
4WRZE xxxxxxxxxxxx G24 N9 K31 A1 / D	28	24 V	± 10 V		4	B	-
4WRZE xxxxxxxxxxxx G24 N9 K31 F1 / D	29	24 V	4-20 mA	-	4	B	-
4WS2E M 10 -5X/ 60 B 11 T 210 K31 E	30	24 V	± 40 mA	-	5	B	-
4WSE2E D 10 -5X/ 90 B 9 - 315 K31 E	31	± 15 V	± 10 V	± 10 V	3	B	-
4WSE2E D 10 -5X/ 90 B 13 - 315 K31 E	32	± 15 V	± 10 mA	± 10mA	3	B	-
4WSE3E16 xxxxx 7 15K31 A1	33	± 15 V	± 10 V	± 10V	3	B	-
4WSE3E16 xxxxx 7 15K31 C1	34	± 15 V	± 10 mA	± 10 mA	3	B	-
4WSE3EE xxxxx B 8 315 K9V	35	± 15 V	± 10 mA	± 10V	3	B	-
4WSE3EE xxxxx B 9 315 K9V	36	± 15 V	± 10 V	± 10 V	3	B	-
DBET-6X/200G24 K4 V	37	24 V	0-1,6 mA	-	1	A	-
DBETE-6X/Y200Y G24 K31 A1	38	24 V	0-10 V		4	B	-
DBETE-6X/Y200Y G24 K31 F1	39	24 V	4-20 mA		4	B	-
DRE(M) xxx / xxx G24 K4	40	24 V	0-800 mA	-	1	A	-
DRE(M)E xxx / xxx G24 K31	41	24 V	0-10 V		4	B	-
M – 3SE xxxxxxxxxxxx G24 K4	42	24 V	0-1,6 A	-	-	G	Connect to (3p)
ZDRE xxx / xxx G24 K4	43	24 V	0-1,6 A	-	1	A	-
ZDRE xxx / xxx G24 K31 A1	44	24 V	0-10 V	0-10V	4	B	-
ZDRE xxx / xxx G24 K31 F1	45	24 V	4-20 mA	0-10V	4	B	-
FESE63 CA-30/180LKOB1M	46	24 V	0-10 V	0-10V	2	B	-
FESE63 CA-30/180LKOG1M	47	24 V	4-20 mA	0-10V	2	B	-

Urgent lists of valves can be downloaded on the website:
<http://www.support4service.de/downloads.html> .

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