
User Manual

Rotary valve controller VC 1100



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2. DESIGNATED USE

The digital rotary valve controller VC1100 is used for precise controlling of rotary valves which work with a DC voltage of 0 – 24V, like for example the DV5000DFS valve. The VC1100 controls the airpressure on the material, and also the voltage to the rotary valve for setting the speed of the valve.

With the integrated precision airpressure regulator, the air pressure on the material can be set very exactly. There are two different airpressure outputs for the VC1100. One output is continuous air pressure, the second output is a pulsed airpressure, as long, as the rotary valve dispenses. An integrated digital pressure sensor at the inlet air gives an additional point for the process safety.

3. FOR YOUR SAFETY:

WARNING:

- If the VC1100 is used for other functions as in this manual described, it could come to personal or material damage. Use the VC1100 controller only to the functions, which are explained in this user manual. VIEWEG GmbH is not responsible for personal or material damages, which happen because of incorrect using and no designated use.



No designated uses are:

- Modifications at the VC1100, which are not recommended in this user manual.
- Using of defective or not compatible spare parts.
- Using of not allowed accessoires.

SAFETY PRECAUTIONS:

- The VC1100 works with 100 – 240V AC voltage. By touching the 100 – 240V AC voltage, there exists danger of life !! Because of this, the VC1100 must be disconnected from the AC input cable, before opening the housing. It is only allowed for authorized electrical experts to open the housing.
- Use the VC1100 only with the max. described and allowed power / settings.
- Always wear useful protection clothing.
- More details for using the dispensing material, please see the safety datasheets of the dispensing material.
- No smoking or fire by using flammable material.
- The VC1100 is only allowed for using inhouse.



4. TECHNICAL DATA

| | |
|----------------------|------------------------------------------------------------------------|
| Measurements | : 235 x 210 x 70mm |
| Weight | : 1,45kg |
| Powersupply: | : 85 – 264V AC 50/60Hz |
| Internal Voltage | : 24V DC |
| Voltage Rotary Valve | : 0 ... 24V DC (PWM) |
| Dispensetime | : 0,01 ... 999 sec. |
| Air Inlet | : 0 ... 7 bar (Display: digital) |
| Air Outlet | : 0 ... 4 bar (precise pressure regulator) - continuous - pulsed |
| Parameter display | : 128 x 64 Pixel graphical display |
| Programme | : 8 programs |

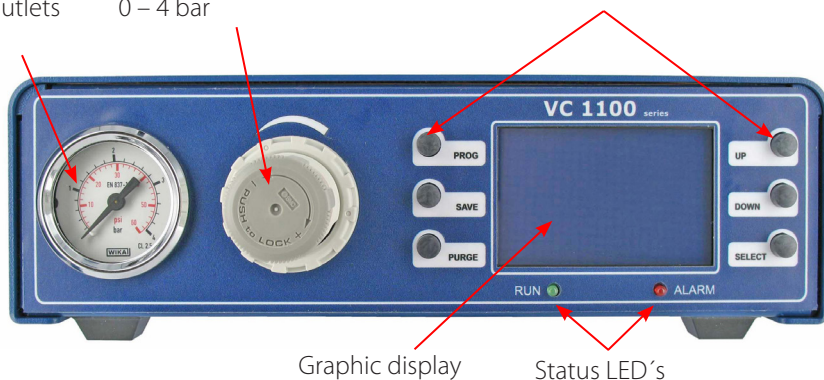
4.1 PARTS & DESCRIPTION

[Frontside]

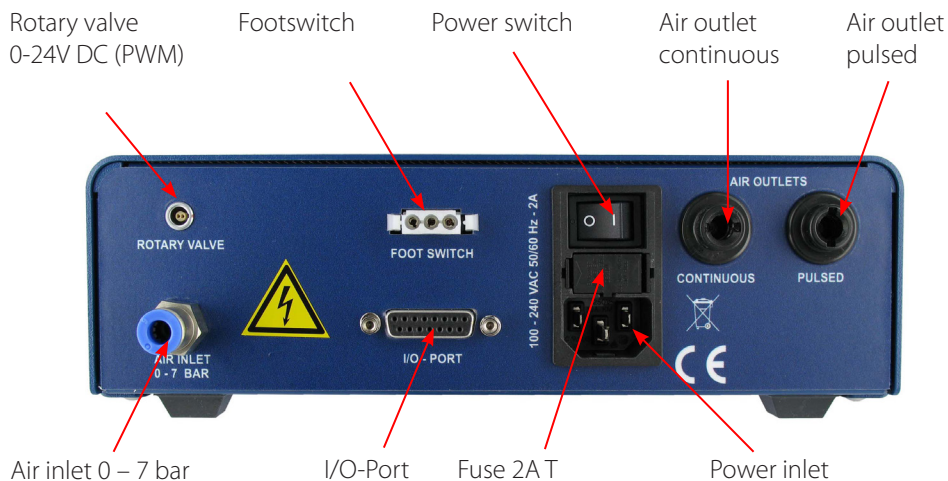
Pressure gage
for air outlets

Precise pressure regulator
0 – 4 bar

Operating keys



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**5. SHIPMENT:**

- VC1100 Controller
- Power Inlet cable
- Tube for Air Inlet
- User Manual

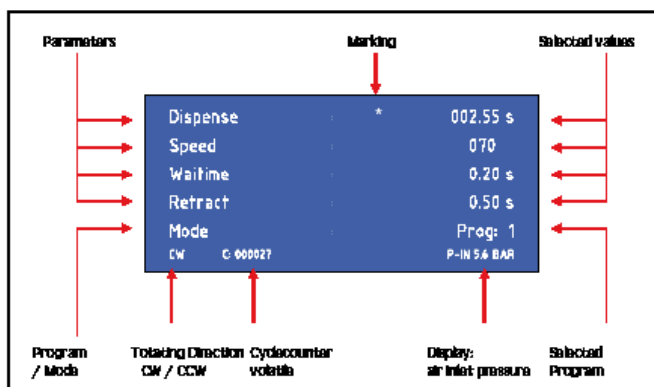
6. START OPERATION:

- Connect the power inlet cable to the Power inlet connector on the backside.
- Connect the Air Inlet tube from the compressor to the Air Inlet at the backside of the VC1100.
- Connect the Footswitch (opt.: – P/N 562032) or the dispense cable of the dispense robot to the Footswitch connector on the backside of the VC1100 and connect also the cable of the rotary valve to the responsible connector of the VC1100 controller.
- Depending on your application, use the continuous or pulsed air outlet for the air supply of the material reservoir. Adjust the air outlet pressure with the pressure regulator on the frontside of the VC1100. A typical air pressure is less than 2 bar for standard applications with a rotary valve. If material comes out of the tip, without dispensing with the rotary valve, please reduce the air pressure on the material reservoir.

- Switch the VC1100 on. The display shows the initialisation and the installed software version. After 5 sec, the display switches automatically to the standard screen and is ready for operation
- Check the pressure input (e.g. P-IN: 5.6 bar) in the display to be sure, that the air input pressure is connected.

7. OPERATION:

7.1 Display: (values can be different)



7.2 Status LED's

Below the display are the status-LED's of the VC1100.

RUN: The RUN LED lights, during the motor of the rotary valve is running. Independent to the rotation direction.

ALARM: The ALARM LED lights, during the following conditions:

- Pressure alarm is active
- Motorcurrent overload (only active for speed >50)
- External alarmsignal on the I/O-Port



7.3 Operating keys :



PROG => switches to the next program



SAVE => saves the actual parameters.

Press the SAVE key for 2 sec. and select the wanted program with the UP / DOWN keys and press SAVE again to store the parameters. If no different program is selected, the parameters get automatically saved in the actual program.



PURGE => starts the dispensing procedure.



UP => increases the selected value.



DOWN => decreases the selected value



SELECT => Moves the marking to the next display line.

8. PARAMETER:

- **Select mode**

Pressing the PROG key switches to the next program and to manual mode

Manual: In this mode, the dispense time get not saved and the rotary valve dispenses as long as the dispense signal is activated on one of the following possibilities: footswitch / purge key / I/O-start.

After dispensing, the dispense time starts again at 0.00 sec.

PROG 1-7: If one of the programs 1 – 7 is selected, the VC1100 dispenses as long as the value of the dispensetime is saved. It is independent how long the dispense signal is activated on one of the following possibilities: footswitch / purge key / I/O-start.

This mode should be selected, if the rotary valve should always dispense for the same time.

- **Set the dispense time:**

The dispense time can be selected with the UP / DOWN keys. The dispense time can be set from 0,01 ... 999.99 sec.

- **Set the rotation speed:**

The rotation speed of the rotary valve can be selected in linear steps.

The value from 001 ... 100 is related to the rotary valve voltage 0 ... 24V.

- **Set the Wait time:**

The Wait time is the pause time between end of dispensing and starting the retract of the rotary valve. This value is limited to max. 5 sec.

- **Set the Retract:**

The Retract is the time, which the rotary valve moves in the inverted direction to the dispense direction. With this function, dropping of material out of the dispense tip, after finishing the dispense procedure can be prohibited. This value is limited to max. 5 sec.

- **Cycle counter:**

The cycle counter counts the dispensing procedures after switching ON the VC1100 controller. The memory of the cycle counter is volatile and get reseted to 000000 after switching OFF the VC1100.

- **Rotation Direction:**

The rotation direction of the rotary valve be selected in both directions. The selected direction is shown in the display:

| | |
|-----------------------|------------------------------------|
| CW: Clockwise | => spindle moves clockwise |
| CCW:Counter clockwise | => spindle moves counter clockwise |

The rotation direction can be selected in the SERVICE MENU (see chapt. 8)

- **Keylock:**

By pressing SAVE + PRG the same time, a keylock for the VC1100 can be activated. An activated keylock is shown in the display (lower right hand corner) with the symbol:

By pressing SAVE + PRG again, the keylock can be deactivated.

9. SERVICE MENU: (press UP + DOWN keys during initialisation)

9.1 Display:



9.2 Settings:

- Language:**
Pressing UP / DOWN keys switches between english and german language.
- Direction:**
Pressing UP / DOWN keys switches between CW / CWW rotating direction for the rotary valve:
CW: Clockwise => spindle moves clockwise
CCW: Counter clockwise => spindle moves counter clockwise
- P-Unit:**
Pressing UP / DOWN keys switches between PSI and BAR as unit for the digital displayed pressure.
- P-Alarm:**
By pressing the UP / DOWN keys, the value for the low pressure alarm-limit can be selected. If the input pressure is lower than the selected limit, the VC1100 controller switches to ALARM mode and no new dispensing procedure is possible, as long as the input pressure is less than the selected limit.
- Service:**
Servicecounter – not resetable

10. Electrical Connections

10.1 Rotary Valve:

| | | |
|-------------------|-------------|---------------------------------------------|
| type: | | LEMO connector female 2-pol: EGG.00.302.CLL |
| pins: | Pin 1 (red) | 0-24V rotary valve |
| | Pin 2 | 0V (GND) rotary valve |
| mating connector: | | LEMO connector 2-pol. FGG.00.302.CLAD35 |

10.2 Footswitch:

| | |
|-------|-------------------------------------------------|
| pins: | connections between Pin 1 + 3 starts dispensing |
|-------|-------------------------------------------------|

10.3 I/O-Port:

| | |
|-------|---------------------------------|
| type: | 15-pol. SubD female 2-doublerow |
| pins: | see following chart |

| Pin no. | Input / Output | Description | Comment: |
|---------|----------------|-------------|-----------------------------|
| 1 | -- | Reserved | Reserved |
| 2 | -- | GND | GND |
| 3 | -- | 24V DC | 24V DC |
| 4 | Output | BUSY | Dispensing procedure active |
| 5 | -- | GND | GND |
| 6 | Input | START | Startet Dosiervorgang |
| 7 | Input | PRG1 | Programmselect Bit #1 |
| 8 | Input | PRG3 | Programmselect Bit #3 |
| 9 | -- | Reserved | Reserved |
| 10 | -- | Reserved | Reserved |
| 11 | Output | READY | Ready Signal |
| 12 | Output | ERROR | Error Signal |
| 13 | Input | REMOTE | Remote active |
| 14 | Input | ERROR-IN | External Error input |
| 15 | Input | PRG2 | Programmselect Bit#2 |

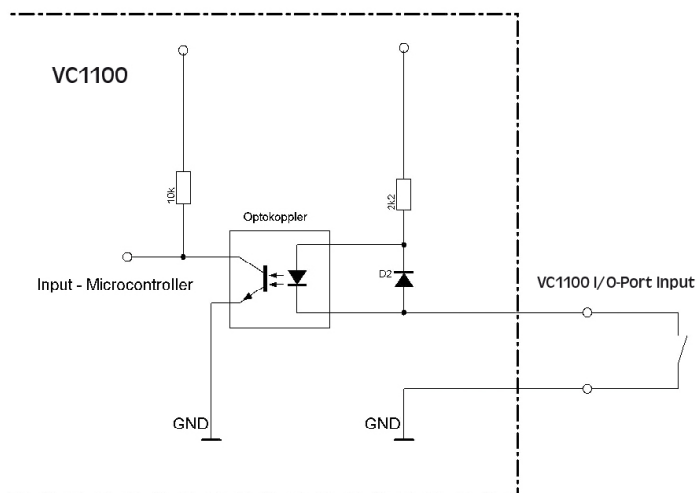
External selection of programs:

| Programm no. | PRG-Selectbit #1 | PRG-Selectbit #2 | PRG-Selectbit #3 |
|--------------|------------------|------------------|------------------|
| Manuell | 0 | 0 | 0 |
| Programm 1 | 1 | 0 | 0 |
| Programm 2 | 0 | 1 | 0 |
| Programm 3 | 1 | 1 | 0 |
| Programm 4 | 0 | 0 | 1 |
| Programm 5 | 1 | 0 | 1 |
| Programm 6 | 0 | 1 | 1 |
| Programm 7 | 1 | 1 | 1 |

10.4 Wiring Diagrams:

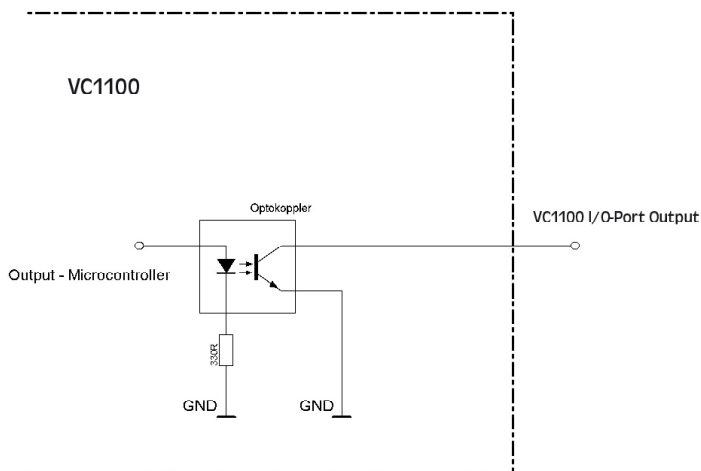
Digital Inputs:

A digital input is active, if the opto coupler is ON. If the opto coupler is connected to GND, the input is activated:



Digital Outputs:

if the digital output is active, the opto coupler is electroconductive.



11. Maintenance and cleaning

The VC1100 is maintenance free

Repairs should only be done by the manufacturer.

Clean the VC1100 controller only with a clean, smooth and dry cloth.

Do not use disolvent material to clean the VC1100 controller. The foil at the front- or backplate or the housing paintings can be destroyed.

12. Disposal



Dispose the product after the economic life-time according to the legal requirements.

13. Declaration of Conformity

CE DECLARATION OF CONFORMITY

- EG-Low Voltage directive 2014/35/EU
- EG-EMC directive 2014/30/EU

We, as manufacturer declare under our sole responsibility that the following product to which this declaration relates is in conformity with the following EG / EC directives:

Product: **Rotary valve controller**
Type: **VC 1100 Series**

Manufacturer: **VIEWEG Dosier- und Mischtechnik**
Gewerbepark 13
85402 Kranzberg
Germany
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The following european standards are used:

- DIN EN ISO 61000-6-3
- DIN EN ISO 61000-6-2



Till Vieweg, managing director

Kranzberg, 08.04.2016



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