evoqua
WATER TECHNOLOGIES

WALLACE & TIERNAN® CONTROL BOX FOR CHANGE-OVER UNITS CCU

INSTRUCTION MANUAL

Please note

Original manual!

Contents

1. Introduction

1.1 Documentation

1.1.1 Target groups

This instruction manual is intended to provide assembly, operating, and maintenance personnel with the information they need for running and servicing the control box CCU.

This instruction manual is intended for the operating personnel. It contains important information which will enable the operator to run the system in a safe, reliable, trouble-free, and economical way. Carefully observing these instructions will help to avoid dangers, reduce repair costs and down times, improve the system's reliability, and prolong its service life.

The entitled „Installation and commissioning“ and „Maintenance...“ chapters are intended exclusively for Evoqua-authorized technicians. These sections contain important information on assembling, configuring, and commissioning the system and on maintenance and repair work.

All persons working with the system must have read and understood the instruction manual, in particular the safety instructions it contains.

Please consult the table of contents to quickly find the information you require.

1.2 Conventions

Notes This Instruction manual contains a number of notes with different priorities marked with symbols.

Picto-gram	Note	Meaning
	*Danger!*	Danger to life and limb! If the situation is not handled properly, death or serious injury may be the result.
	*Caution!*	If this warning is not observed, medium or slight injury or damage to the equipment may the result.
	*Warning!*	Electrical hazard.
	*Note*	These notes assist in the operation of the system.

2. Safety

2.1 Intended use

The Wallace & Tiernan® control box for changeover units CCU has been designed to enable automatic changeover between two chemical supplies to ensure continuous supply. Chemical delivery is controlled by a 3-port motorised valve, or a pair of 2-port motorised or solenoid valves. A pressure switch, or gauge, is used to initiate changeover when the pressure falls to a preset level. The control box CCU will operate with several valve arrangements to provide changeover for a variety of chemicals in both pressure and vacuum systems.

The control box is not designed for applications other than those listed here - this is considered improper use!

Correct usage also includes reading this operating manual and complying with all the instructions it contains - in particular the safety instructions.

If the control box CCU is not used in accordance with these conditions, safe operation of the unit cannot be guaranteed. For any injury or damage to persons or property resulting from improper use, the operator and not the manufacturer of the control box CCU will be responsible!

2.2 Electromagnetic compatibility

Series “CCU” devices conform with the requirements of

- EN 50081-2 (EN 55022:1987 Class A/emitted interference) and
- EN 50082-2 (IEC 801-2, -3, -4/immunity to interference)

and are designed for use in industry sectors.

2.3 General safety instructions

Evoqua Water Technologies GmbH attaches great importance to the safety of all work relating to the system. This was already taken into account in the design of the system, by the integration of safety features.

Safety instructions

The safety instructions in this documentation must always be observed. These do not affect the validity of any additional national or company safety instructions.

Safety instructions printed on the system

All safety instructions attached to the system must be observed. They must always be complete and easily legible.

Technical standard

The system has been constructed using the best available technology and according to the accepted safety regulations. However, danger to the life and limbs of users or third parties or damage to the system or other property cannot be ruled out if the system, if the system is used by unqualified persons. Installation and maintenance, as well as any work that is not described in this operating manual may only be performed by authorized personnel.

Personnel

The operator of the overall system must ensure that only authorized and qualified technicians can work on or with the system, and within their specified area of responsibility.

"Authorized and qualified personnel" include:

Operation

by the operator, by Evoqua or by personnel who have been trained and instructed by the service partner.

Electrical work

Authorized and qualified electrical technicians

Spare parts / components

The trouble-free operation of the system can only be guaranteed, if original spare parts and components are used in the combination described in this instruction manual. Otherwise there is a danger of malfunction or damage to the system.

Modifications and extensions

Never attempt to rebuild, modify or extend the system without written approval from the manufacturer!

Electrical power

During normal operation, the housing must remain closed.

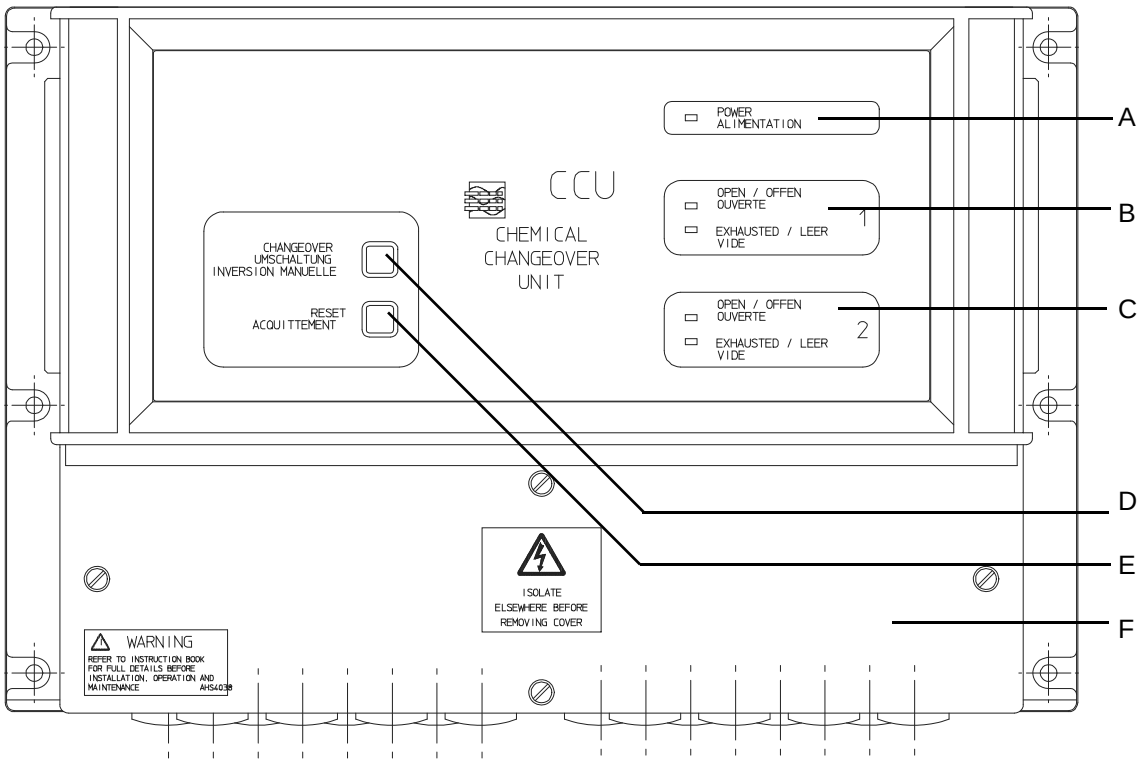
Connect cables in accordance with the terminal diagram.

Waste disposal

Ensure safe and environmentally-friendly disposal of agents and replaced parts.

3. Description

3.1 Design



A Display power supply
B Display valve 1
C Display valve 2
D Manual changeover
E RESET key
F Terminals box

3.2 Application

The control box for the Chemical Changeover Unit (CCU) has been designed to enable automatic changeover between two chemical supplies to ensure continuous supply. Chemical delivery is controlled by

- a 3-port motorised valve, or
- a pair of 2-port motorised valves or
- a pair of solenoid valves including an end-of-travel switch each.

One or two pressure switches, or gauge, are used to initiate changeover when the pressure falls to a preset level. The CCU will operate with several valve arrangements to provide changeover for a variety of chemicals in both pressure and vacuum systems.

3.3 Function

In the following description of operation ‘valve 1’ and ‘valve 2’ can refer to position 1 and position 2 for a single 3-port valve.

In normal operation valve 1 is open, and both Exhausted LED’s are off. When the chemical supply 1 is exhausted and the pressure switch triggers at the preset level, valve 1 will be closed then valve 2 opened. Exhausted LED 1 will be illuminated and alarm 1 set (relay de-energised) to indicate no reserve. At this point chemical supply 1 should be replaced, and the Reset button pressed to clear all alarms and Exhausted LED’s. When supply 2 is exhausted an automatic change will be made back to supply 1 by closing valve 2 then opening valve 1.

In the case where both chemical supplies become exhausted, both valves will be switched off, both alarms set and both Exhausted LED’s illuminated. In this condition pressing Reset will clear all alarms and Exhausted LED’s and open valve 1.

3.4 Technical Data

Mains supply	230 V (W3T166045)	1/N/PE AC 230 V ±10% 47 - 63 Hz
	115 V (W3T166080)	1/N/PE AC 115 V ±10% 47 - 63 Hz
External fuse		max. 6 A
Power consumption		20 VA + external load (valves + heating) max. load at 230 V: 700 VA max. load at 115 V: 350 VA
Relay contacts for potential free signal/alarm	max. voltage	250 V AC, 50 V DC
	max. current	2 A AC/DC
	max. power	500 VA AC, 100 W DC
Interlock relay for the ClO_2 generator plant	max. voltage	50 V AC, 50 V DC
	max. current	0.5 A AC/DC
	max. power	25 VA AC, 25 W DC
Digital inputs		for use with external potential free contacts only (contact pressure gauge, external start signal, gas monitoring system) voltage supplied by CCU: 24 V DC
Operation temperature		0° to +50°C
Storage temperature		-20° to +50°C
IP rating		IP 65
Dimensions		359 x 100 x 237 mm (w x d x h)
Weight		approx. 2.4 kg
EMC		complies with EN 50081-1 and EN 50082-2
Electrical safety		complies with EN 61010-1 safety class II, installation category II

4. Installation

Warning!

Danger due to incorrect connection!
For a safe and successful installation you need enough knowledge about the instruments and engines connected concerning their operation, electric data, signals, fusing, wiring as well as the applicable safety regulations. Touching of electric conductors that are not or not correctly insulated, or wrongly wired instruments, may cause severe injuries or death.
Therefore installation of the control box CCU may be carried out only by qualified and authorized personnel (e.g. electrician).
Wrongly connected instruments can be damaged or destroyed at switch-on or during operation.They also can cause the misfunction of other installations.
Take care that signal wires and mains wires are not crossed or in contact to the other.
Do not connect or disconnect wires under voltage.

4.1 Unpacking

- Check the packing material for damage.
- Report damages immediately to the transport company.
- If the unit has been damaged, contact the Evoqua subsidiary.
- Keep the packing material until the installation has been completely and successfully finished.
- After installation and commissioning hand-out the manual to the owner and the operator.

4.2 Mains supply

The control box CCU has been adjusted to the voltage specified in the order and order confirmation (230 V ac, or 115 V ac). Nevertheless check the voltage specified after unpacking, in any case before installing, whether it corresponds with your mains supply. If not, the voltage setting must be modified by an authorized electrician:

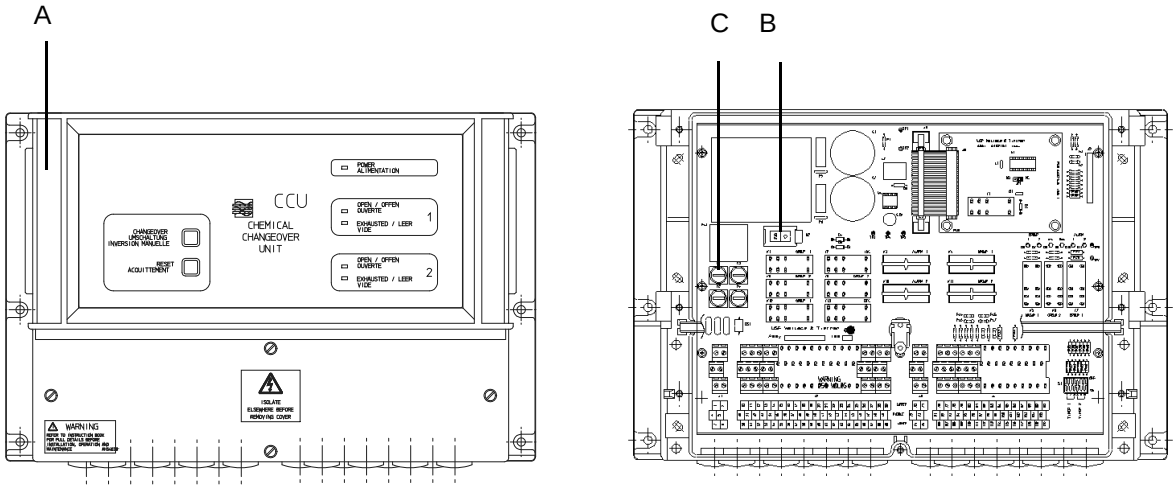
To modify the voltage setting:

1 Use a broad screw driver to press outside the left hinge of the cover. Tilt the cover to the right.

2 Move the selector switch to the desired position.

3 Check the fuses (refer to 3.4 Technical data).

4 Modify the type lable or replace.



A Hinge of the cover
B Selector switch
C Fuses

4.3 Location

The unit should be located in a well lit, damp-free environment but not exposed to direct sunlight. The enclosure is rated at IP65, and the unit can operate in an ambient temperature range of 0°C to 50°C.

The control box CCU enclosure is designed for wall-mounting as standard. It should be screwed to a wall or support using the six holes provided in the mounting flanges at each side of the enclosure (refer to the drawings enclosed).

4.4 Elecrrical connections

(refer to the wiring diagrams enclosed)

Warning!

Mains voltages can kill.
Ensure the mains supply is isolated elsewhere before making connections.
Only qualified and authorized personnel (e.g. electricians) are allowed to install the unit and to open the housing.
The unit must only be operated with the housing closed.
It must be connected to protection earth.
Modifications of the unit, that exceed what is described in this manual, are not allowed.

Note

Refer to the local regulations for electrical installations.

Note

Do not alter the settings of the DIP switches as long as the unit is connected to the mains.

1 Electrical connections are accessed by removing the four screws securing the terminal cover. The control box CCU enclosure is supplied with 16 cable entry positions, all fitted with blanking plugs.

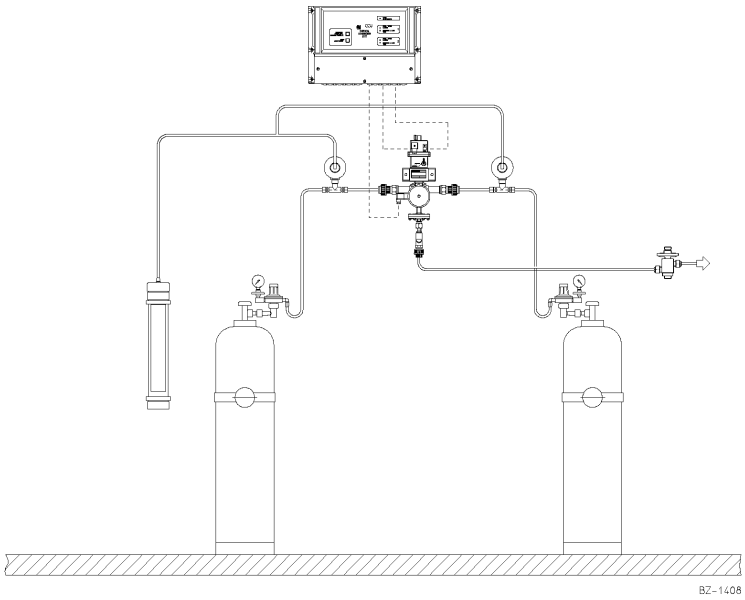
2 Blanking plugs should be removed, and PG11 cable glands fitted at all cable entry positions.

3 The local switched fuse unit should be fitted with a max 6 A fuse and must be earthed.

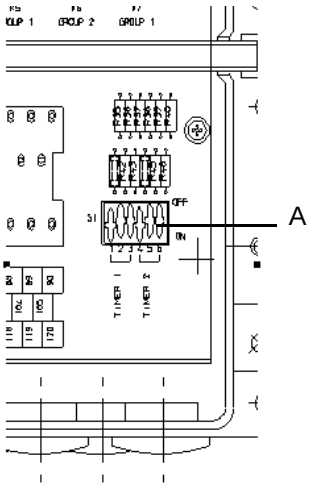
4.5 Connection to changeover units

4.5.1 CCU with V-015

(one 3-port-motor valve and one contact pressure gauge)



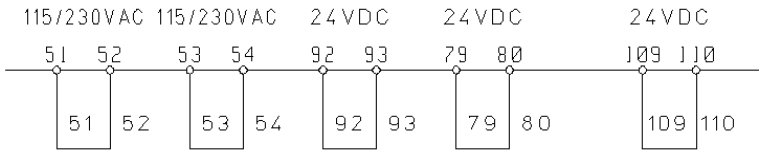
Starting from delivery in december 2002 the control box CCU is configured at the factory to fit to the changeover unit V-015.



1 The DIP switches (A) must be set as follows (to the right of the terminals box):

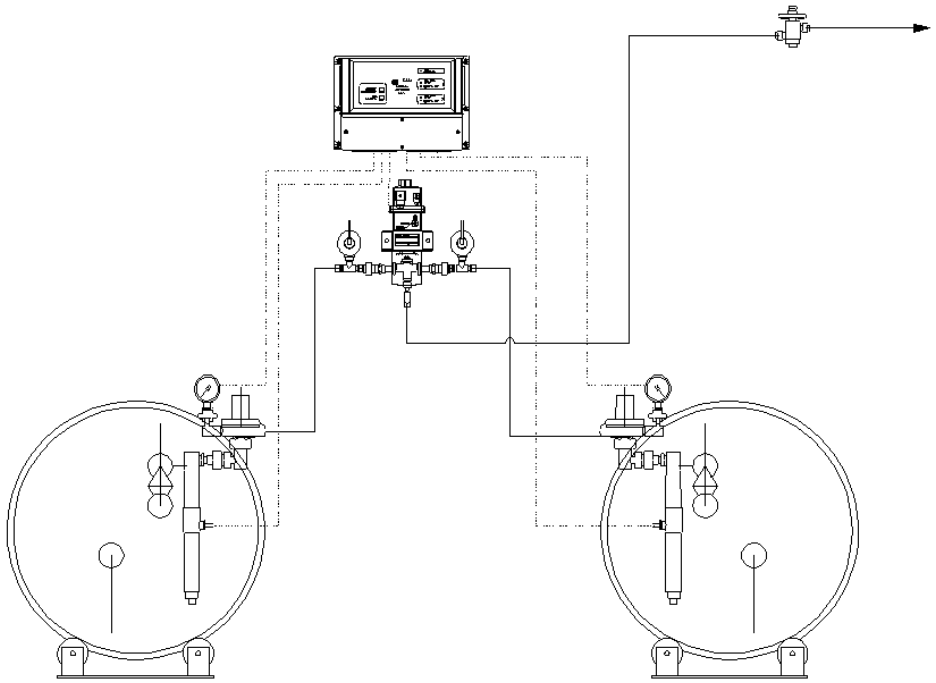
- S1_1 ON: only one contact pressure gauge is active. The emergency stop function is not available.
- S1_2 not used
- S1_3 not used
- S1_4 ON: contact pressure gauge makes contact when switching
- S1_5 not used
- S1_6 not used

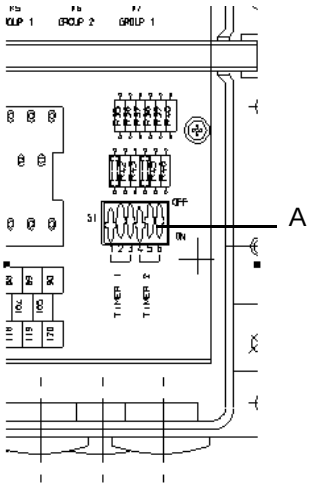
2 The following bridges must be set in the terminals box:



4.5.2 CCU with V-015 with depletion limiting device

(one 3-port-motorvalve and two pressure gauges)

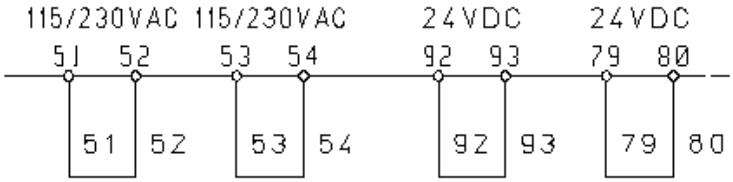




1 The DIP switches (A) must be set as follows (to the right of the terminals box):

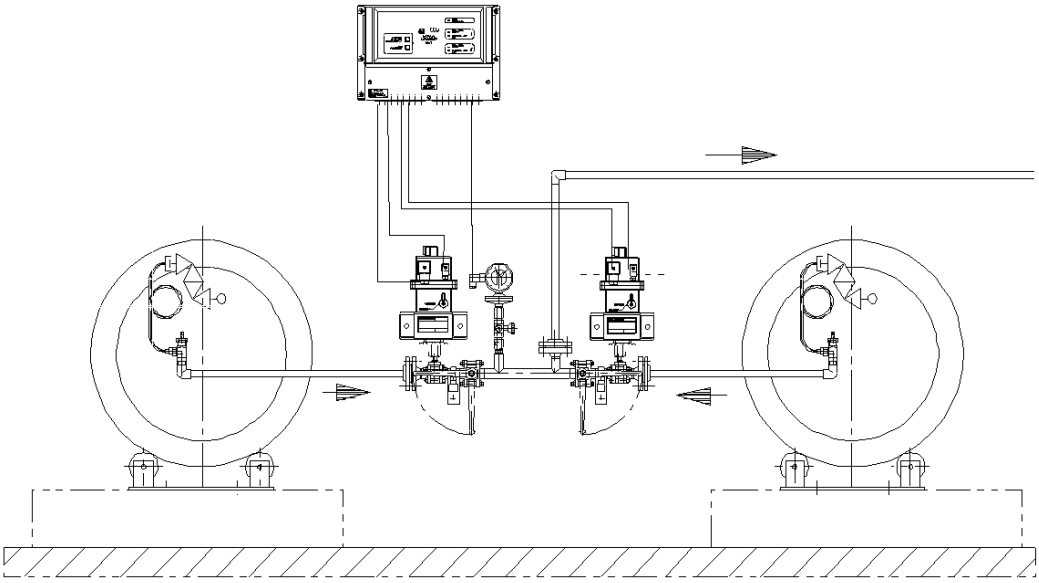
- S1_1 OFF: Two contact pressure gauges are active. The emergency stop function is not available.
- S1_2 not used
- S1_3 not used
- S1_4 ON: contact pressure gauge makes contact when switching
- S1_5 not used
- S1_6 not used

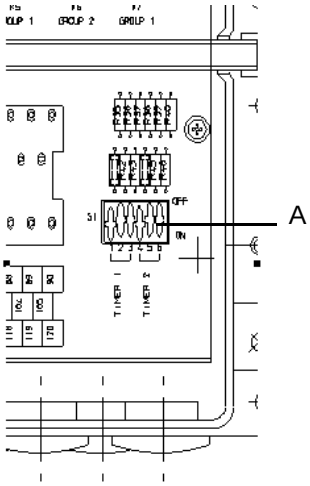
2 The following bridges must be set in the terminals box:



4.5.3 CCU with AU-015

(two 2-port-motor valves and one contact pressure gauge)

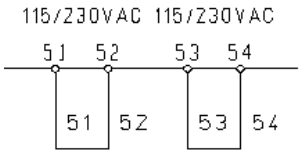


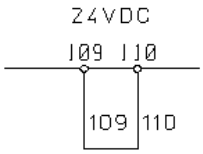


1 The DIP switches (A) must be set as follows (to the right of the terminals box):

- S1_1 ON: only one contact pressure gauge is active. The emergency stop function is available additionnally.
- S1_2 not used
- S1_3 not used
- S1_4 ON: contact pressure gauge makes contact when switching
- S1_5 not used
- S1_6 not used

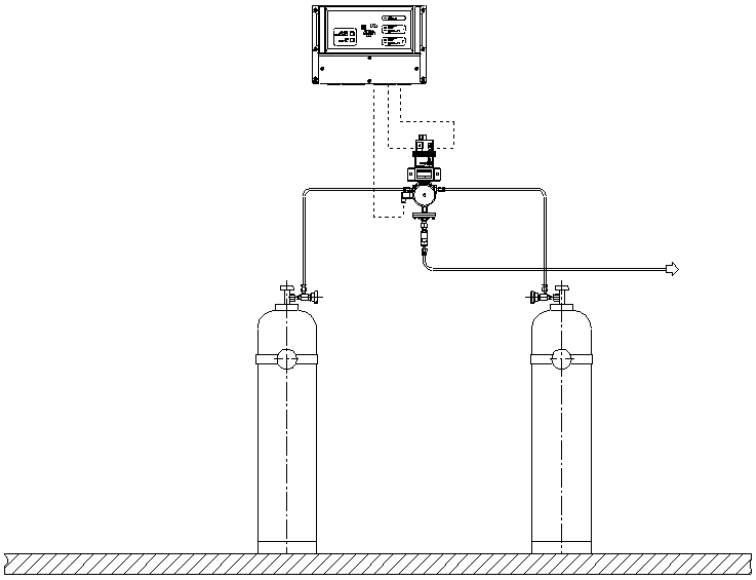
2 The following bridges must be set in the terminals box:

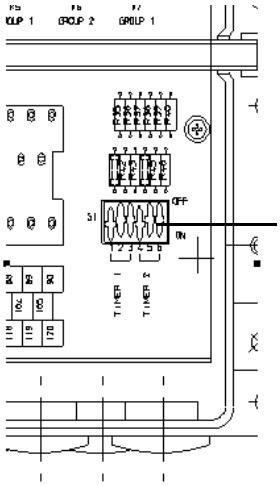




4.5.4 CCU with A-015

(one 3-port-motor valve and one contact pressure gauge)

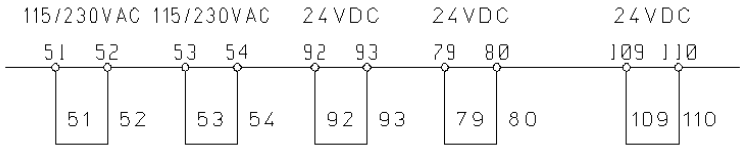




1 The DIP switches (A) must be set as follows (to the right of the terminals box):

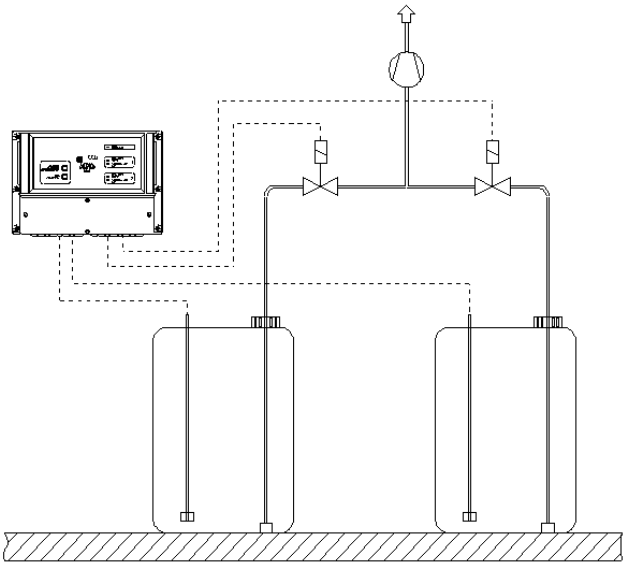
- S1_1 ON: only one contact pressure gauge is active. The emergency stop function is not available.
- S1_2 not used
- S1_3 not used
- S1_4 ON: contact pressure gauge makes contact when switching
- S1_5 not used
- S1_6 not used

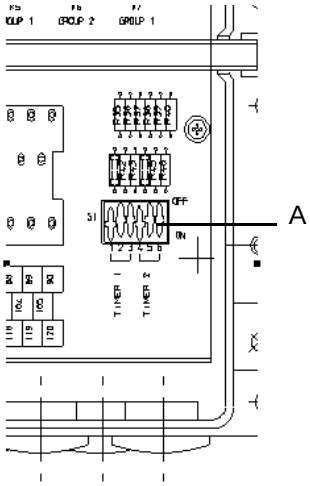
2 The following bridges must be set in the terminals box:



4.5.5 CCU with two solenoid valves

and two empty level switches

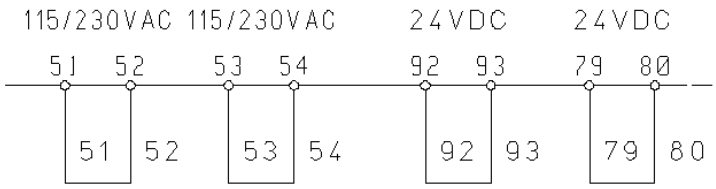




1 The DIP switches (A) must be set as follows (to the right of the terminals box):

- S1_1 ON: OFF: two empty level switches are active. The emergency stop function is not available.
- S1_2 not used
- S1_3 not used
- S1_4 ON: contact pressure gauge makes contact when switching
- S1_5 not used
- S1_6 not used

2 The following bridges must be set in the terminals box:



4.6 Digital inputs

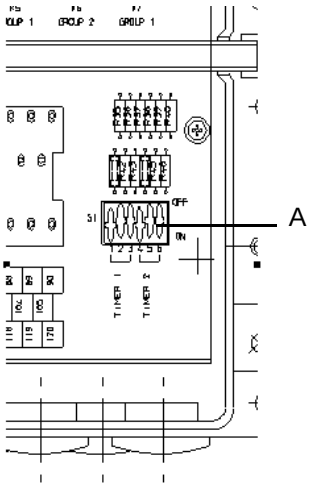
The control box CCU is fitted with two digital inputs to be connected to external potential free contacts.

The input 1 must always be connected to a contact making sensor that initiates the changeover procedure (e.g. a contact pressure gauge in the common gas line).

The input 2 can be used for

- a second contact making sensor (e.g. a second contact pressure gauge for separate gas lines) or
- an external contact to start the emergency stop function (e.g. the gas monitoring system GMS plus: both stop valves are closed in case of a gas alarm (only for CCU with AU-015).

Set the DIP switch S1 (A) at the right side of the terminals box accordingly:



- S1_1 ON: Only one contact making sensor is used to initiate changeover. The emergency stop function is available via input 2 (factory setting).
  S1_1 OFF: Two contact making sensors are used to initiate changeover. The emergency stop function is not available.
- S1_2 not used
- S1_3 not used
- S1_4 ON: The sensor makes contact to initiate changeover (factury setting)
  S1_4 OFF: The sensor opens the contact to initiate changeover
- S1_5 not used
- S1_6 not used

Emergency stop function (only for CCU with AU-015)

If only one contact making sensor is connected, a remote emergency stop signal can be connected to the input 2, e.g. the alarm contact of the gas monitoring system GMS.

If this alarm occurs, both valves will be closed or the 3-port valve moved to the center off position, the two potential free contacts "TANK 1 EMPTY" and "TANK 2 EMPTY" are released and all the LEDs flash (except POWER LED).

As soon as the remote shutdown signal is not active any more, press the RESET key to quit the alarm.

If neither the remote stop signal nor the second contact pressure gauge is used, connect a wire link between the terminals 109 and 110 of the input.

4.7 Position signal of the valves

The following four position signals (potential free end-of-travel switches) are necessary:

- valve 1 open: terminals 77 + 78
- valve 1 closed: terminals 92 + 93
- valve 2 open: terminals 107 + 108
- valve 2 closed: terminals 79 + 80

The switches must be of the "make contact" type.

For a 3-port ball valve or for solenoid valves with an end-of-travel switch each, the inputs "valve 1 closed" and "valve 2 closed" are not used. Therefore connect a wire link between the terminals 92+93 and 79+80.

In this case the solenoid valves only need to be fitted with an end-of-travel switch to signal the position "valve 1 open" and "valve 2 open".

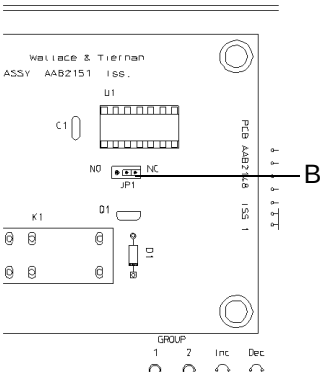
4.8 Signal and alarm contacts

The control box CCU has the following signal and alarm contacts:

- 2 x potential free contact "TANK 1 EMPTY":
  The contact opens when the sensor makes contact, as long as the valve 1 is open and the inhibit timer is not active (also see chapter 5.1).
- 2 x potential free contact "TANK 2 EMPTY":
  The contact opens when the sensor makes contact, as long as the valve 2 is open and the inhibit timer is not active.
- 1 x potential free contact "TANK 1 OPEN":
  The contact closes when the valve 1 is open.
- 1 x potential free contact "TANK 2 OPEN":
  The contact closes when the valve 2 is open.
- 1 x potential free interlocking contact "ClO_2 system":

The contact opens (or closes, depending on the setting of JP1) during the changeover procedure. It switches the ClO_2 system, connected to the gas supply, into the external STOP mode. This prevents the ClO_2 system from chlorine supply failure during the changeover.

The jumper JP1 is situated on a special board below the display on the right side. To set the jumper open the cover (refer to chapter 4.2) and place the jumper as follows:



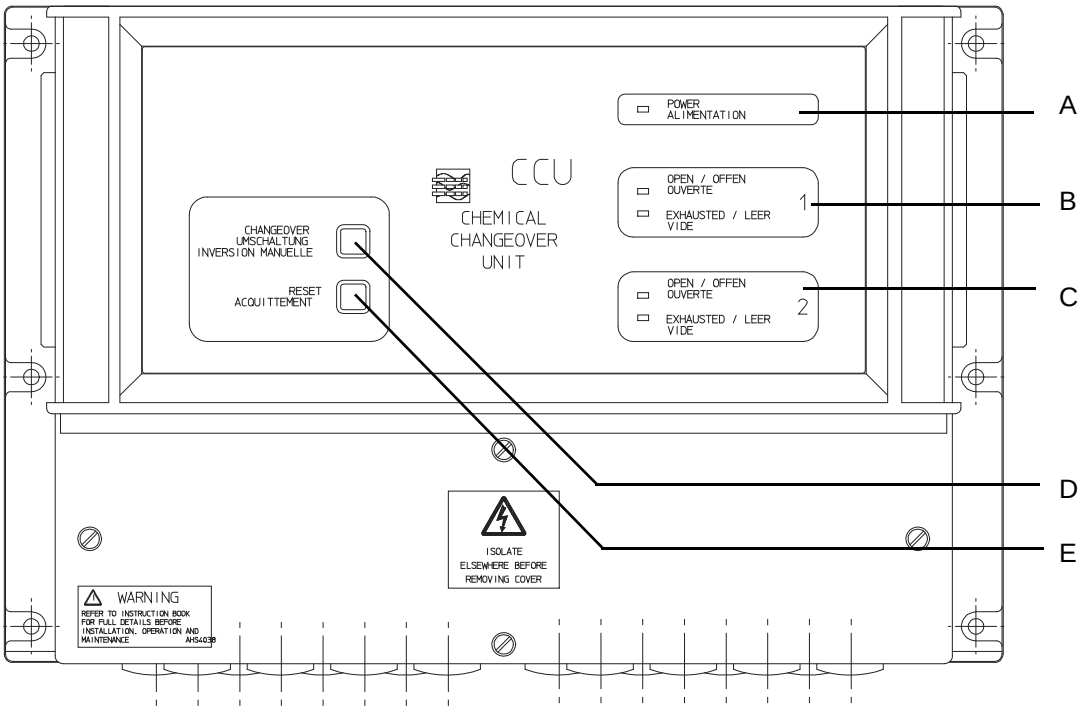
- NC: Contact "ClO_2 system" opens during the time the gas supply is interrupted (factory setting).
- NO: Contact "ClO_2 system" closes during the time the gas supply is interrupted.

4.9 Heater supply

The terminals L50 / N30 / PE10 are designed to connect a valve heater or similar to the mains supply (230 or 115 V ac). There is no switch, but the output is fused by F3 and F4.

5. Operation

5.1 Display and key pads



A Display power supply
B Display valve 1
C Display valve 2
D Manual changeover
E RESET key

Note

In the following description the words "valve 1" and "valve 2" can also mean the positions 1 or 2 of a single 3-port ball valve.

- POWER: Green LED. indicating that the power is switched on to the control box CCU.
- CHANGEOVER: Push button, initiates a change to the reserve supply. This key will have no effect if the reserve supply is exhausted.
- RESET: Push button, cancels any alarms and extinguishes corresponding Exhausted LED's. If both EXHAUSTED LED's are illuminated valve 1 will open after pressing Reset.

- OPEN 1: Green LED, indicates that valve 1 is fully open. This indicator will flash if a valve change is in progress, valve 2 is no longer fully open, and valve 1 is intended to be opened.
- EXHAUSTED 1: Red LED, illuminated if the pressure switch is activated while valve 1 is open, and the inhibit timer is not active. Alarm 1 is set (relay de-energised) and valve 1 closed when Exhausted 1 is illuminated.
- OPEN 2, EXHAUSTED 2: correspondingly

Caution!

Press the keys only with your fingers, not with hard or sharp items like pencils etc. You could damage the key pads.

5.2 Commissioning

Warning!

The control box CCU has no mains switch. It is operating as soon as the mains voltage is connected. The mains voltage can also be present at the terminals and the connected valves.

Commissioning procedure:

1 Connect two full tanks and test the system for leaks (also refer to the manuals of the connected plant).

2 Switch-on the mains.

After switching-on (or after a power failure) the control box CCU will restore the previous state before the power was last removed. A 60 second changeover inhibit timer will be started on power up.

If the control box CCU is powered up while the Reset key is held down the system will enter the following reset state:

- No alarms
- Valve 1 open, valve 2 closed
- Inhibit timer started (60 seconds)

This facility can be used to put the unit into a known state the first time it is powered up.

5.3 Changeover monitoring

When the sensor makes contact, the changeover procedure starts. Simultanously the "Inhibit time" (60 sec.) starts. During this time no further changeover procedure can take place. After these 60 sec. the (normal undisturbed) changeover procedure will be finished and the full tank will be in operation.

If a valve has not reached the end position within this time (no end position signal, no pressure at the contact) both valves will be closed, both potential free contacts open and both EMPTY displays are illuminated.

1 After having checked the reason for this malfunction press the RESET key to open the valve 1 and to quit the EMPTY message.

5.4 Replace the tank

Tank 1 is empty, the red LED EMPTY 1 is illuminated. The valve 1 closes, the valve 2 opens. The green LED OPEN 2 is illuminated.

1 Refer to the safety regulations concerning the handling of the chemicals (e.g. wearing a breathing mask).

2 Close the empty tank 1 and remove it.

3 Connect a full tank with a new gasket.

4 Check for leaks. Open the tank valve.

5 Press RESET to quit the EMPTY signal.

Tank 2 correspondingly.

Note

The next automatic changeover can take place only if the RESET button has been pressed.

5.5 Manual changeover

1 Press the changeover key.
Pressing the key again will cancel the changeover procedure.

5.6 Stopping the supply

Warning!

Danger due to chlorine gas/sulphur dioxide!
Take care not to trap liquid gas or liquid between the valves. In case of rise of temperature the expanding liquid could crack a valve.

When stopping the supply release the pressure from the lines. In case of gas supply it is necessary to have the gas control unit operational. Example: CCU with AU-015 changeover unit:

1 Set the contact at the pressure gauge to "0".

2 Close both tank valves. Let the gas control unit suck away the gas in the lines until the pressure has dropped to "0".

3 Close a stopvalve downstream of the changeover unit and check whether the pressure gauge remains at "0". If the pressure should rise again, the tank valve is not tight. Open the stop valve again.

4 Press the RESET key. Let the gas control unit continue until the pressure has dropped to "0".

5 Check the tank valve for leaks (refer to step 3).

6 Close the auxiliary valves.

7 Close the stop valves and the test valve at the pressure gauge.

8 Readjust the contact of the pressure gauge at 1.5 bar (g).

9 Switch-off the CCU.

10 Stop the gas control unit.

Note

Befor dismantling one of the ball valves stop the supply as described above. Open and close the ball valves several times as soon as the pressure gauge for this branch has dropped to "0" (to prevent gas from remaining in the valve).

5.7 Symptoms table

For the repair of failures knowledge of the installation is necessary in any case. When “electrician only” is marked, search and repair of failures may be carried out only by qualified and authorized personnel, e.g. electricians; the informations and especially the warnings in the installation manual have to be followed! For all other symptoms refer to Evoqua service..

Fault	Cause	Remedy
Green LED POWER not illuminated.	no mains voltage	Check the mains and the external fuse.
	fuse in the CCU blown	Check the setting of the mains voltage, check the fuses F1 and F2, refer to chapter 4.2 (electrician).
	power supply of the CCU defective	Have the CCU repaired in the factory.
Changeover did not take place although tank was empty. Both EMPTY lights are illuminated.	no pressure at the contact pressure gauge	Tank valve closed, tank empty.
	RESET not pressed after changing of the tank	Press RESET.
	fuse F3 or F4 blown	Check the valves and wiring, replace the fuse.
	wire bridges not set according to the application	Set the wire bridges (electrician, refer to 4.5).
	DIP switches in the terminal box not set according to the application	Set the DIP switches (electrician, refer to 4.5).
All LEDs are flashing (except POWER).	external "emergency-Stop"-signal	Check the stop signal, press RESET.
	wire bridges not set according to the application	Set the wire bridges (electrician, refer to 4.5).
	DIP switches in the terminal box not set according to the application	Set the DIP switches (electrician, refer to 4.5).

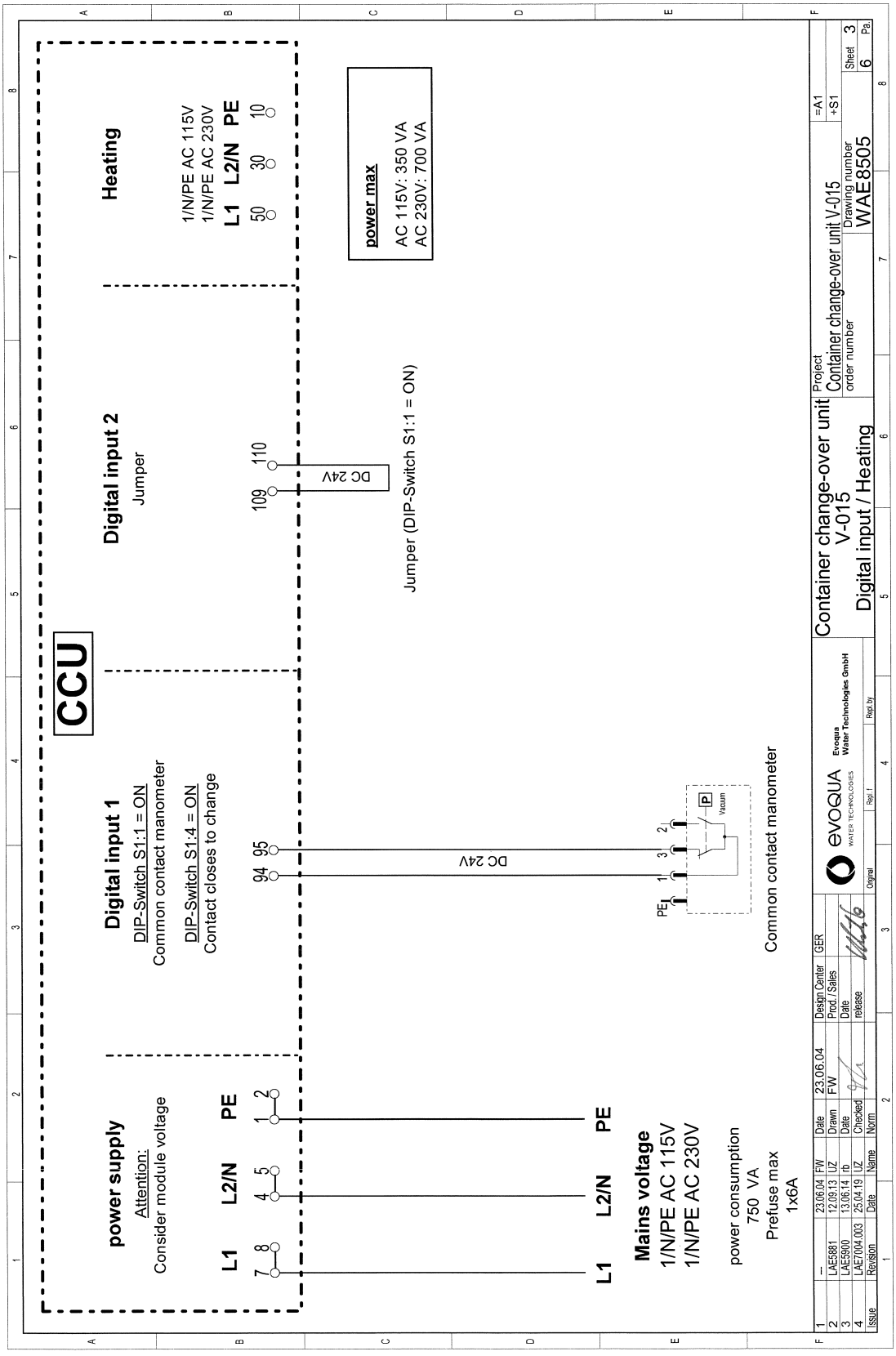
5.8 Maintenance

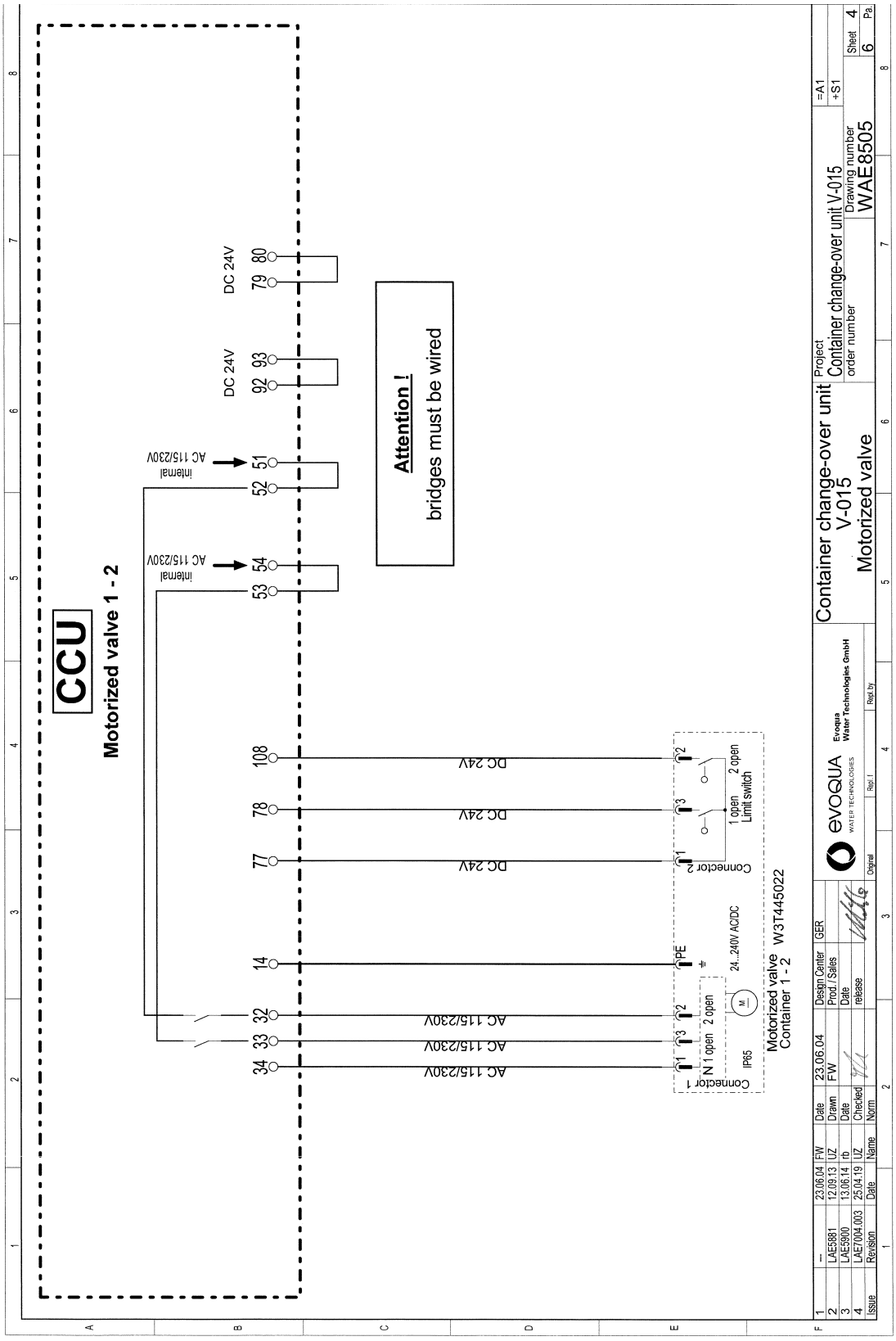
The control box CCU is free of maintenance.

Concerning the valves and the other parts of the supply refer to the separate manual.

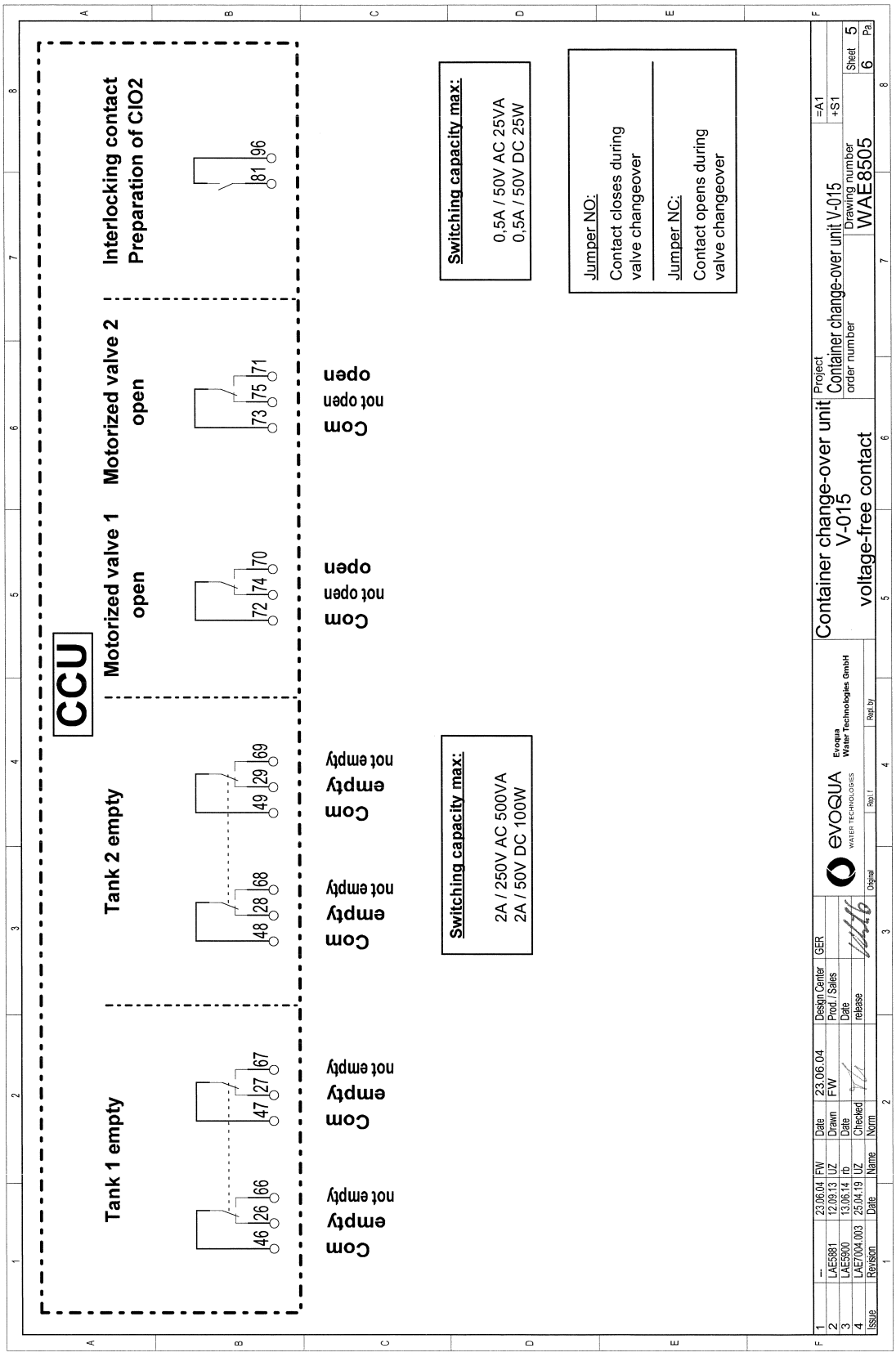
6. Wiring diagrams

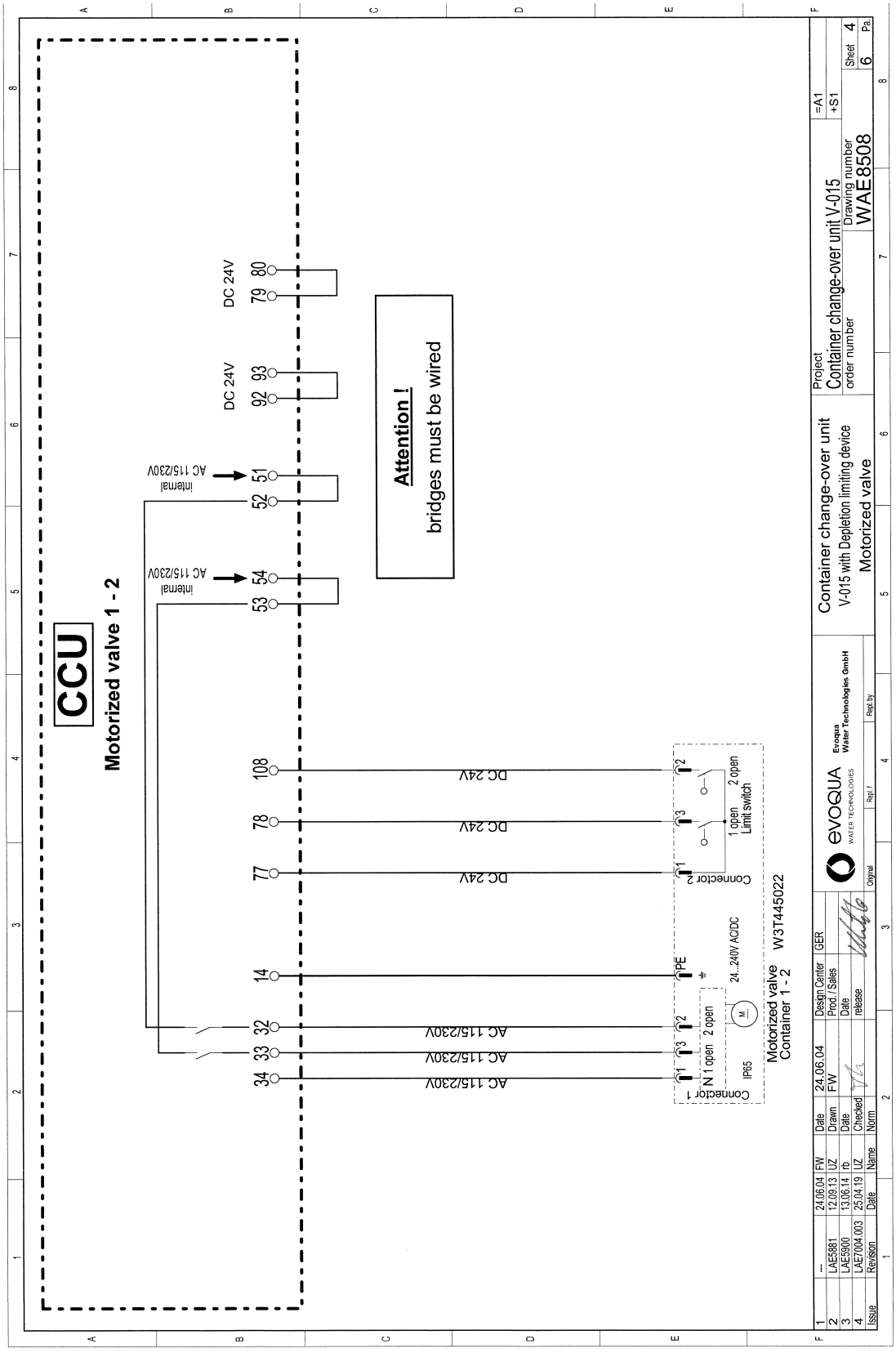
6.1 CCU with V-015

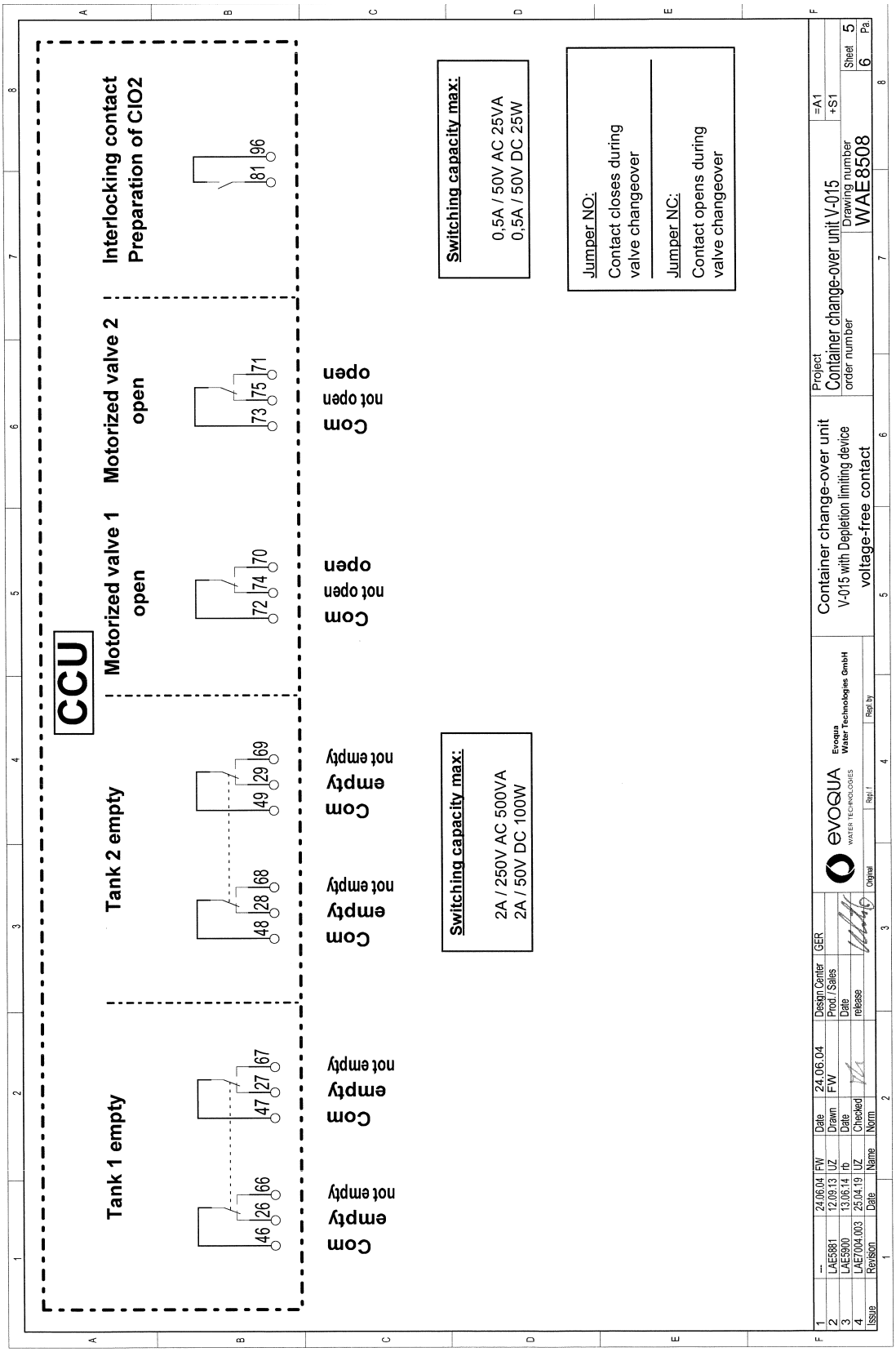



CCU
Motorized valve 1 - 2
Attention !
bridges must be wired
DC 24V
AC 115/230V
internal
Container change-over unit V-015
Motorized valve
Motorized valve Container 1 - 2 W3T445022
Connector 1
Connector 2
1 open
2 open
Limit switch
24...240V AC/DC
IP65
PE
N
Evoqua Water Technologies GmbH
WAE8505

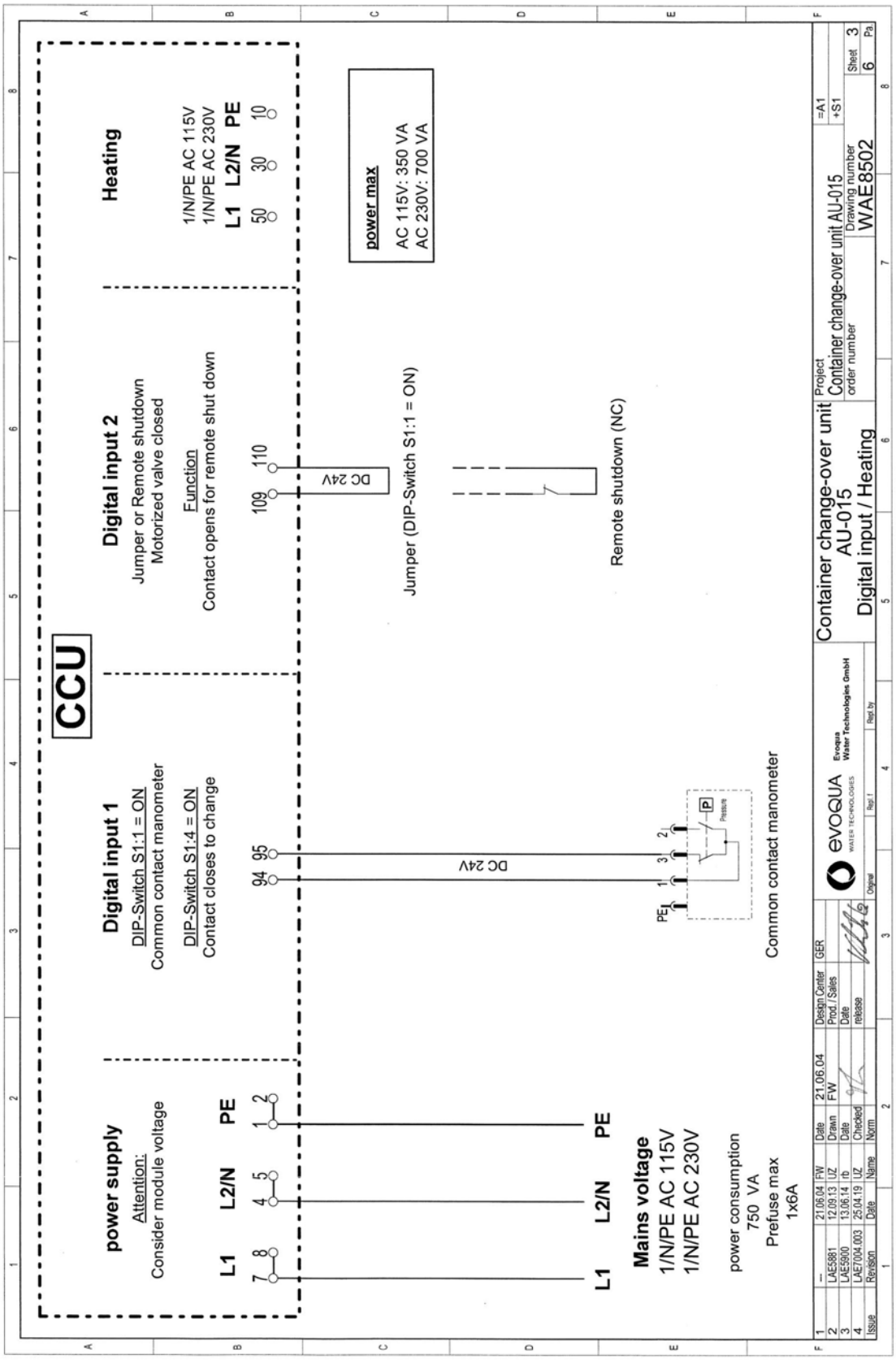
6.2 CCU with V-015 with depletion limiting device

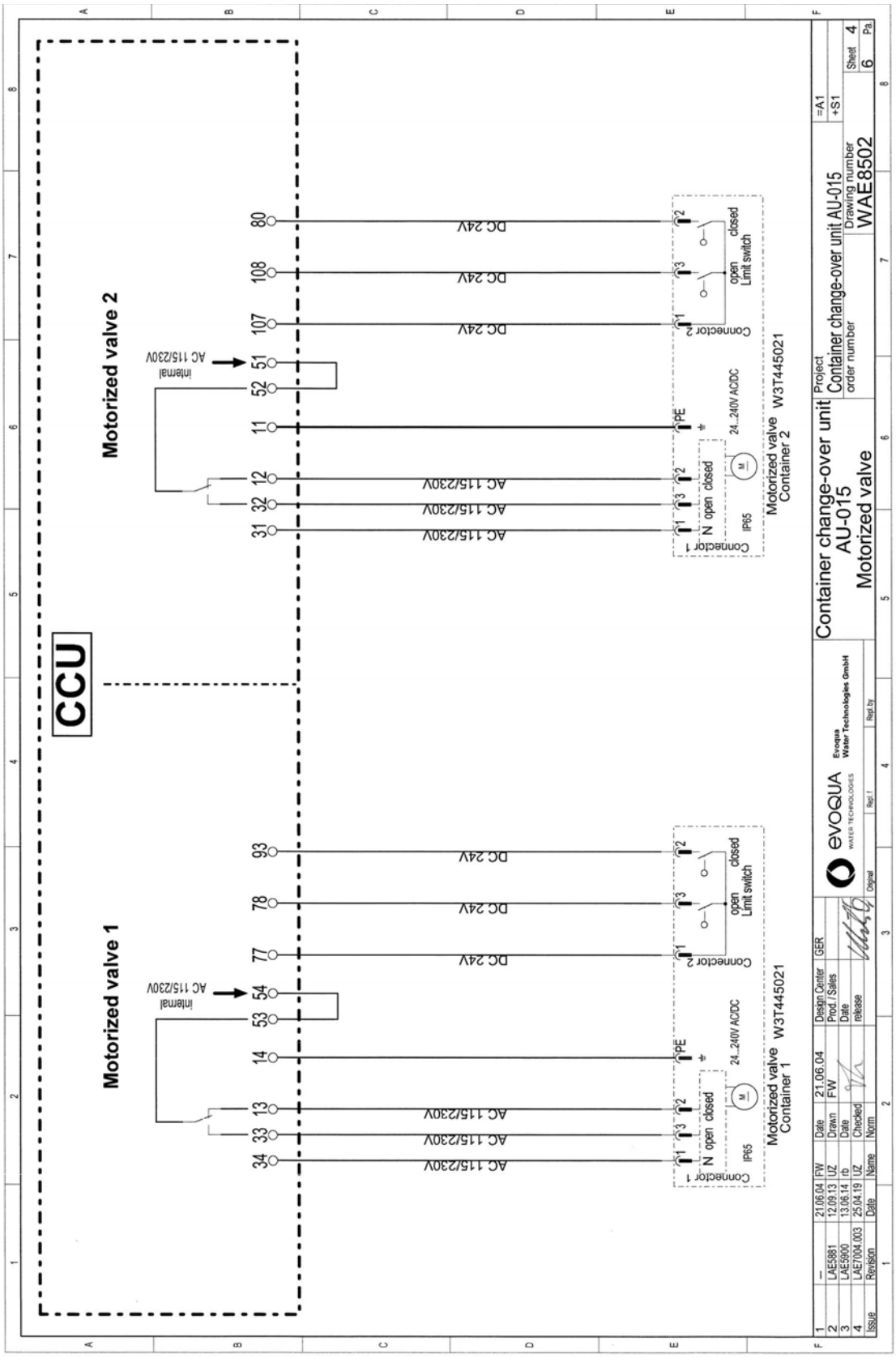


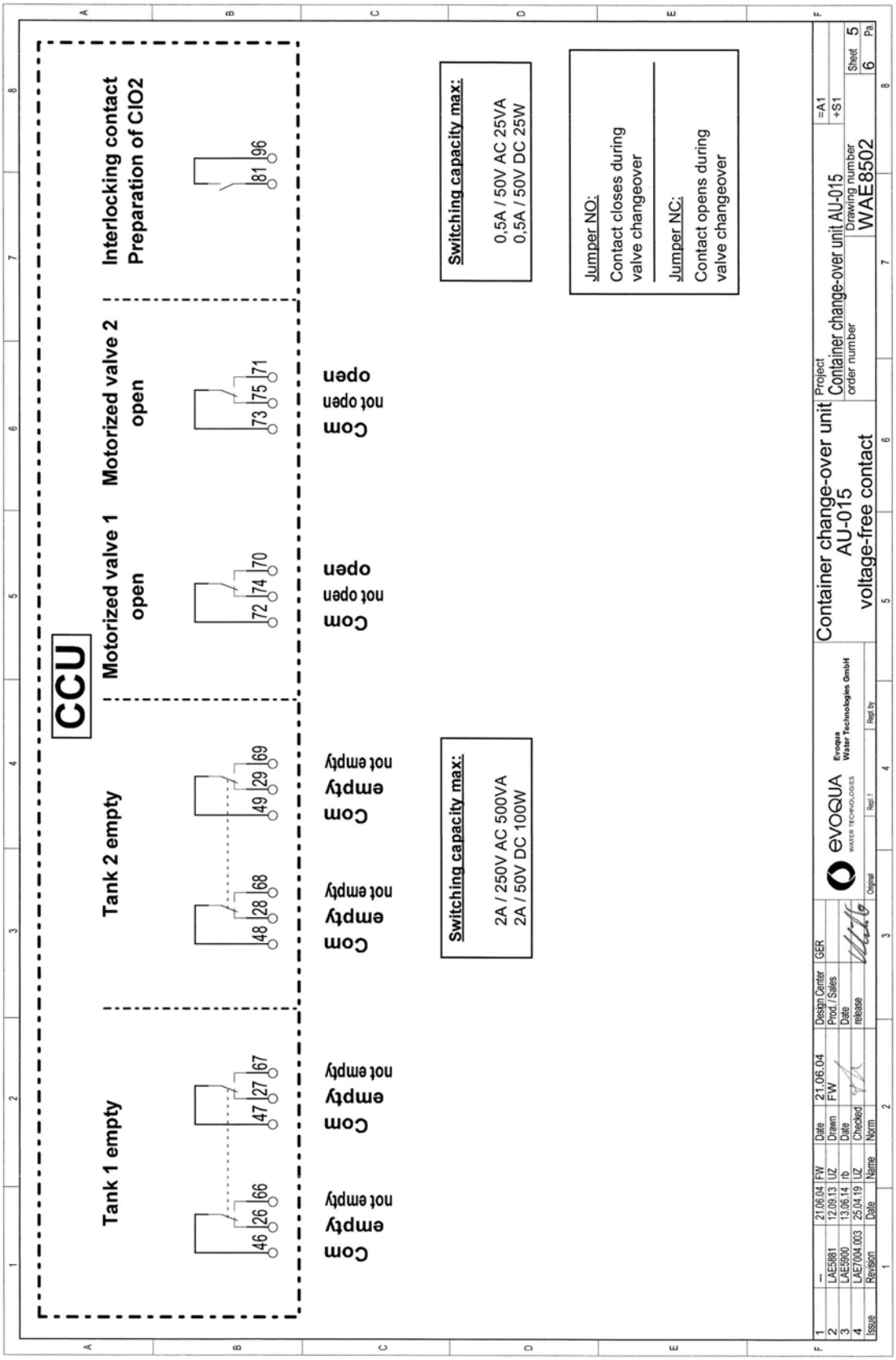

CCU
Motorized valve 1 - 2
Attention !
bridges must be wired
DC 24V
AC 115/230V
internal
Container change-over unit
V-015 with Depletion limiting device
Motorized valve
Container change-over unit V-015
WAE8508
Eroqua Water Technologies GmbH
evoqua WATER TECHNOLOGIES
Connector 1
Connector 2
1 open
2 open
Limit switch
24...240V AC/DC
IP65
Motorized valve
Container 1 - 2
W3T445022


CCU
Tank 1 empty
Tank 2 empty
Motorized valve 1 open
Motorized valve 2 open
Interlocking contact Preparation of ClO2
46 26 66
47 27 67
48 28 68
49 29 69
72 74 70
73 75 71
81 96
Com empty
not empty
Com not open
open
Switching capacity max:
2A / 250V AC 500VA
2A / 50V DC 100W
Switching capacity max:
0,5A / 50V AC 25VA
0,5A / 50V DC 25W
Jumper NO:
Contact closes during valve changeover
Jumper NC:
Contact opens during valve changeover
Container change-over unit
V-015 with Depletion limiting device
voltage-free contact
Container change-over unit V-015
Drawing number WAE8508
Sheet 5
6
EVOQUA WATER TECHNOLOGIES
Evoqua Water Technologies GmbH

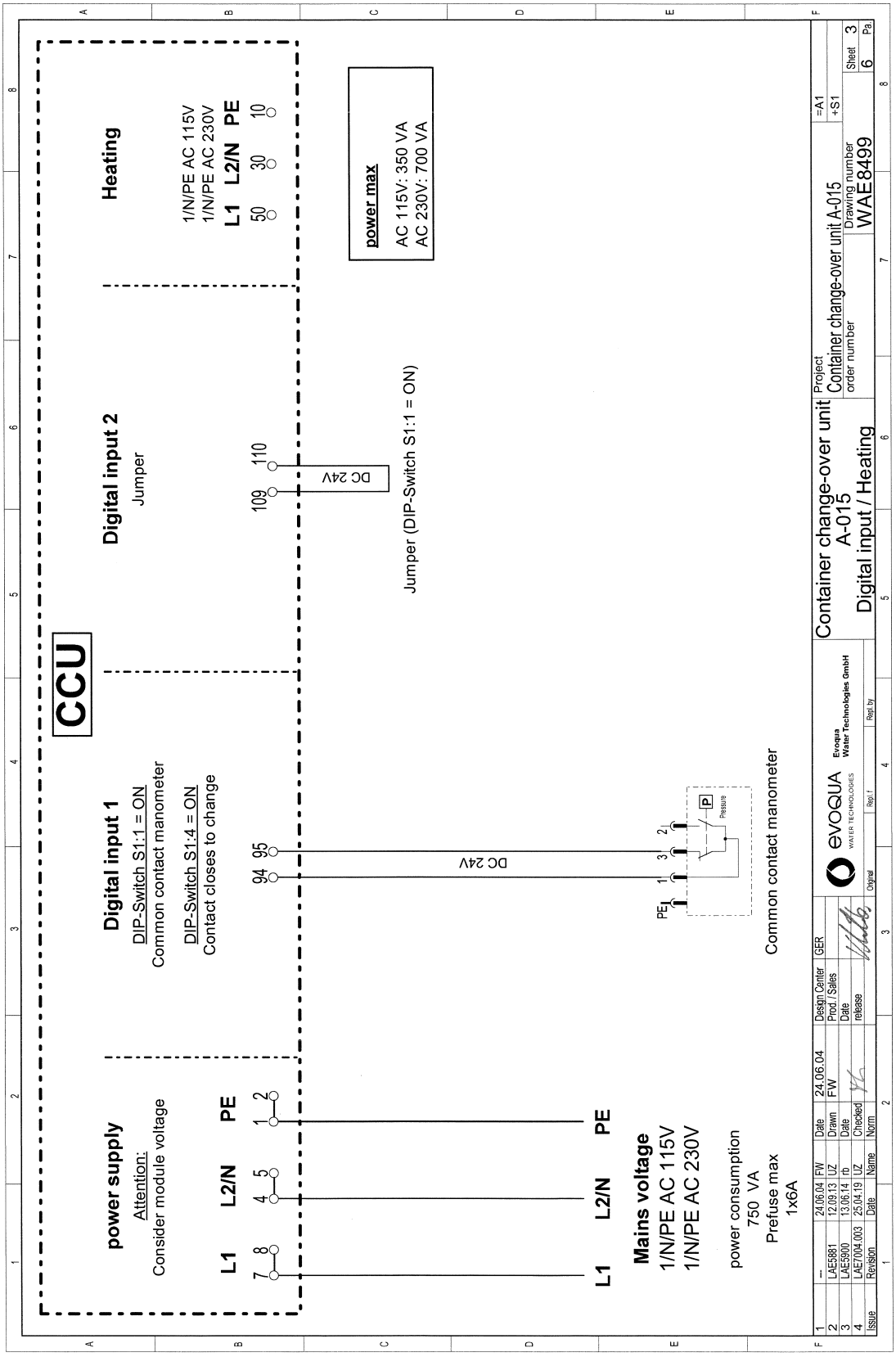
6.3 CCU with AU-015

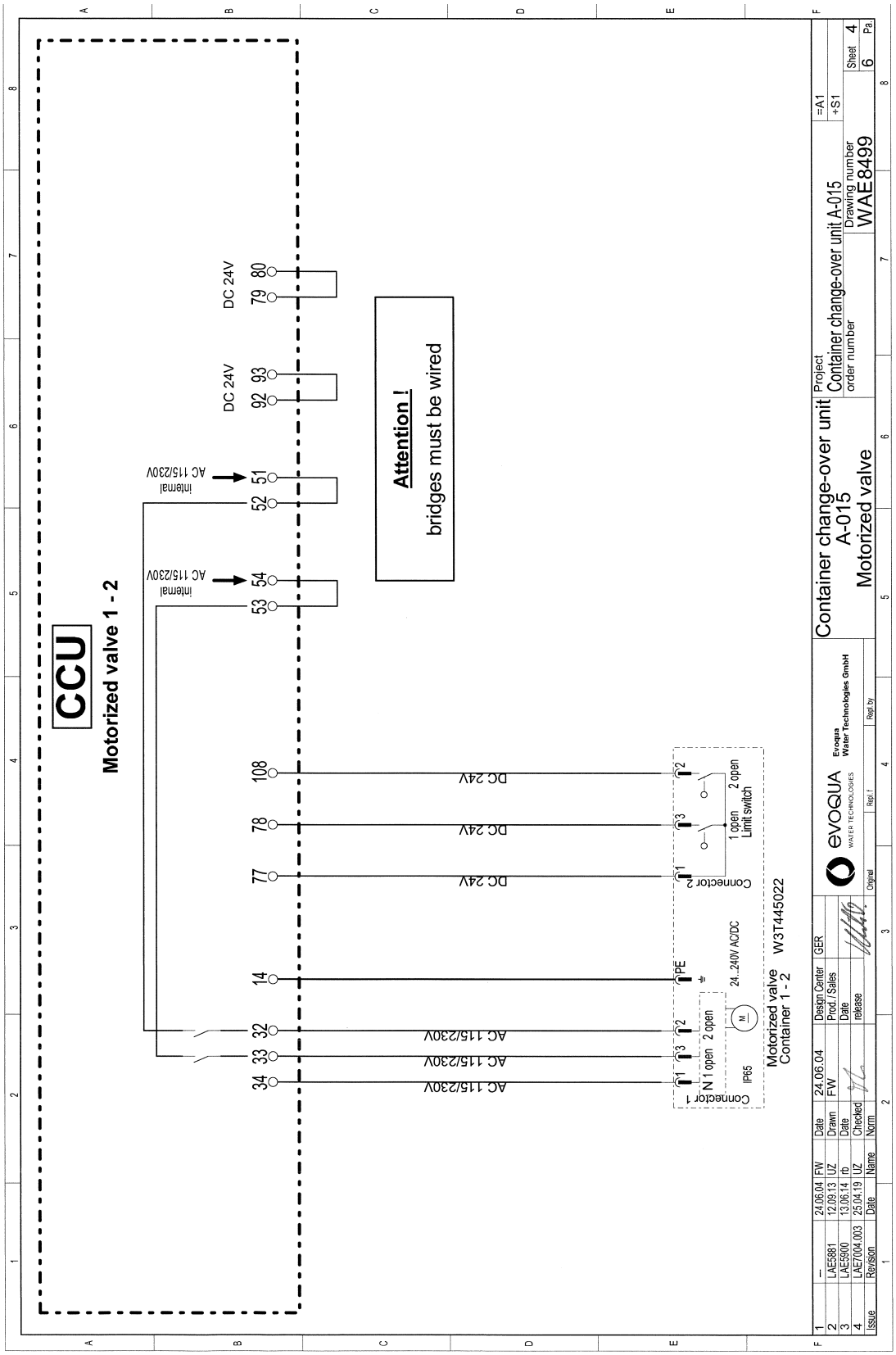


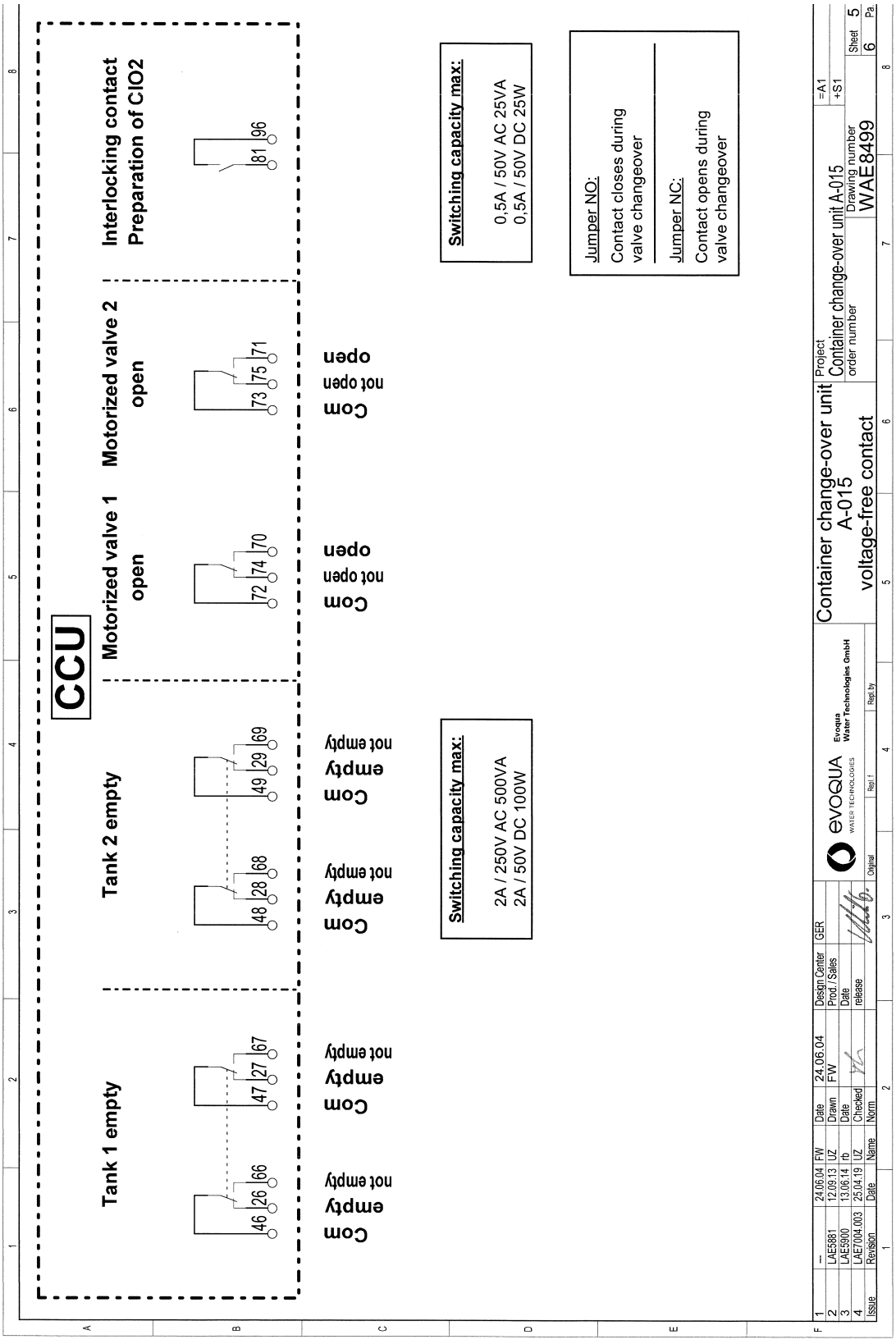

CCU
Motorized valve 1
Motorized valve 2
internal
AC 115/230V
Motorized valve Container 1
Motorized valve Container 2
W3T445021
Connector 1
Connector 2
N open closed
PE
24...240V AC/DC
IP65
open closed
Limit switch
DC 24V
AC 115/230V
Container change-over unit AU-015
Motorized valve
Container change-over unit
Project
order number
Drawing number
WAE8502
EVOQUA WATER TECHNOLOGIES
Evoqua Water Technologies GmbH
Design Center
Prod. / Sales
Date
release
Original
Repl. f.
Repl. by
Sheet 4
Pa 6


CCU
Tank 1 empty
Tank 2 empty
Motorized valve 1 open
Motorized valve 2 open
Interlocking contact Preparation of ClO2
Com empty not empty
Com not open open
46 26 66
47 27 67
48 28 68
49 29 69
72 74 70
73 75 71
81 96
Switching capacity max:
2A / 250V AC 500VA
2A / 50V DC 100W
Switching capacity max:
0,5A / 50V AC 25VA
0,5A / 50V DC 25W
Jumper NO:
Contact closes during valve changeover
Jumper NC:
Contact opens during valve changeover
Container change-over unit AU-015
voltage-free contact
Project
Container change-over unit AU-015
order number
Drawing number
WAE8502
=A1
+S1
Sheet 5
6 Pa
evoqua WATER TECHNOLOGIES
Evoqua Water Technologies GmbH
Design Center GER
Prod./ Sales
Date
release
Original
Repl. f
Repl. by
21.06.04 FW
12.09.13 UZ
13.06.14 fb
25.04.19 UZ
Date
Drawn
Date
Checked
Norm
Name
Revision
Issue
LAE5881
LAE5900
LAE7004.003

6.4 CCU with A-015




CCU
Motorized valve 1 - 2
Attention !
bridges must be wired
DC 24V
AC 115/230V
internal
Container change-over unit A-015
Motorized valve
Container change-over unit A-015
WAE8499
Motorized valve
Container 1 - 2
W3T445022
Connector 1
Connector 2
1 open
2 open
Limit switch
24...240V AC/DC
IP65
PE
N
DC 24V
AC 115/230V


CCU
Tank 1 empty
Tank 2 empty
Motorized valve 1 open
Motorized valve 2 open
Interlocking contact Preparation of ClO2
46 26 66
47 27 67
48 28 68
49 29 69
72 74 70
73 75 71
81 96
Com empty
not empty
Com not open
open
Switching capacity max:
2A / 250V AC 500VA
2A / 50V DC 100W
Switching capacity max:
0,5A / 50V AC 25VA
0,5A / 50V DC 25W
Jumper NO:
Contact closes during valve changeover
Jumper NC:
Contact opens during valve changeover
Container change-over unit A-015
voltage-free contact
Container change-over unit A-015
Drawing number WAE8499
Sheet 5
6
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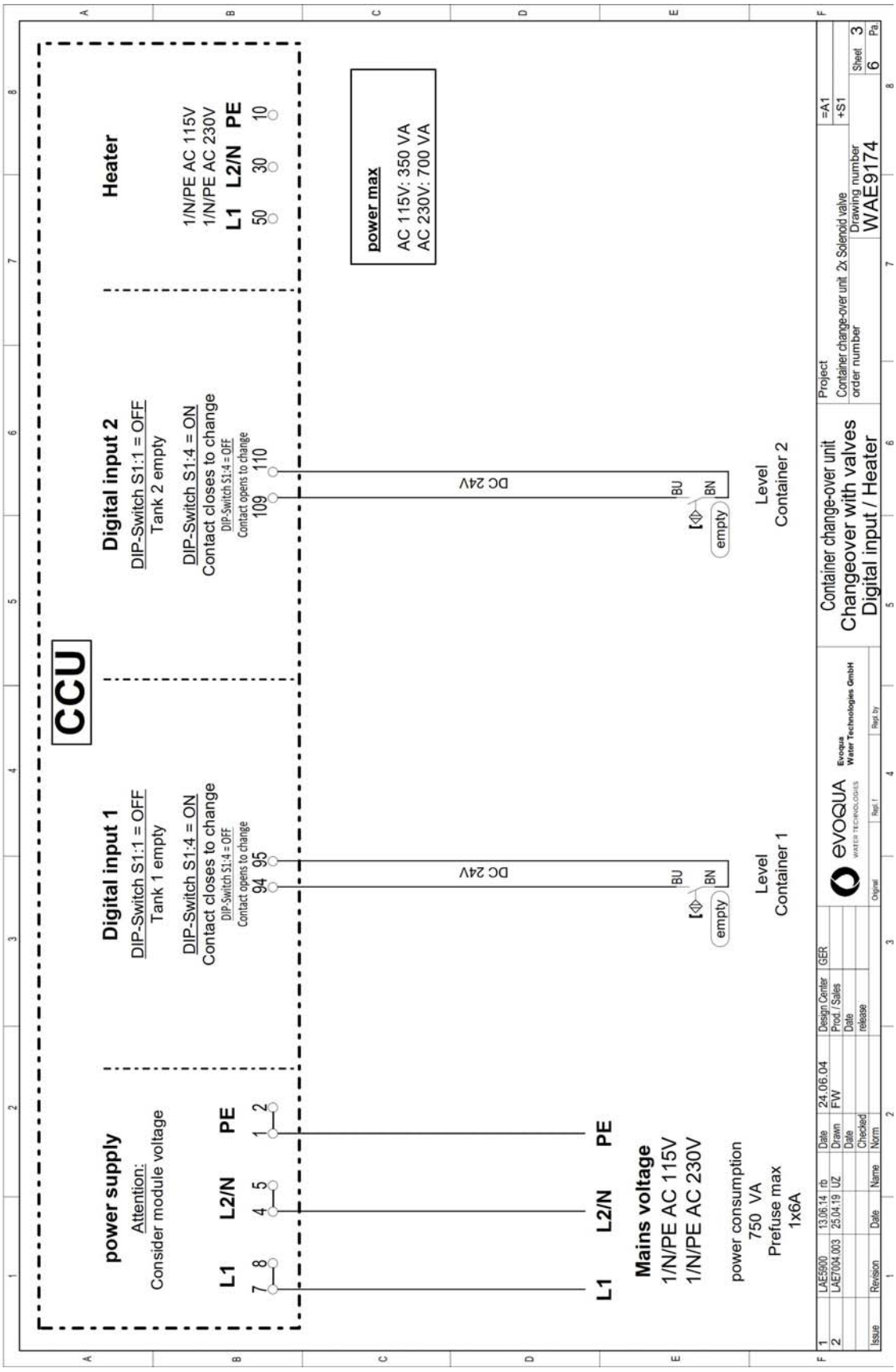
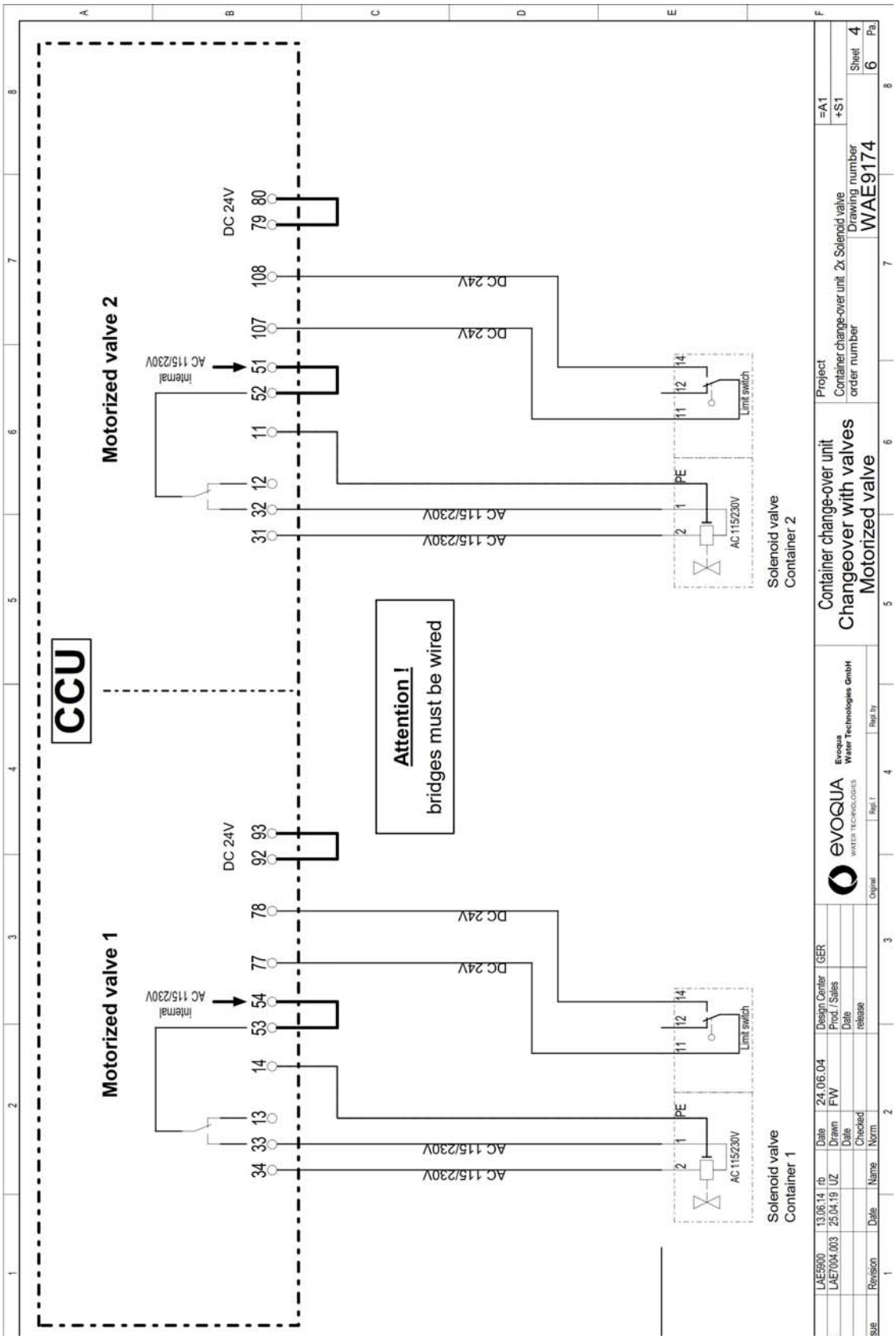
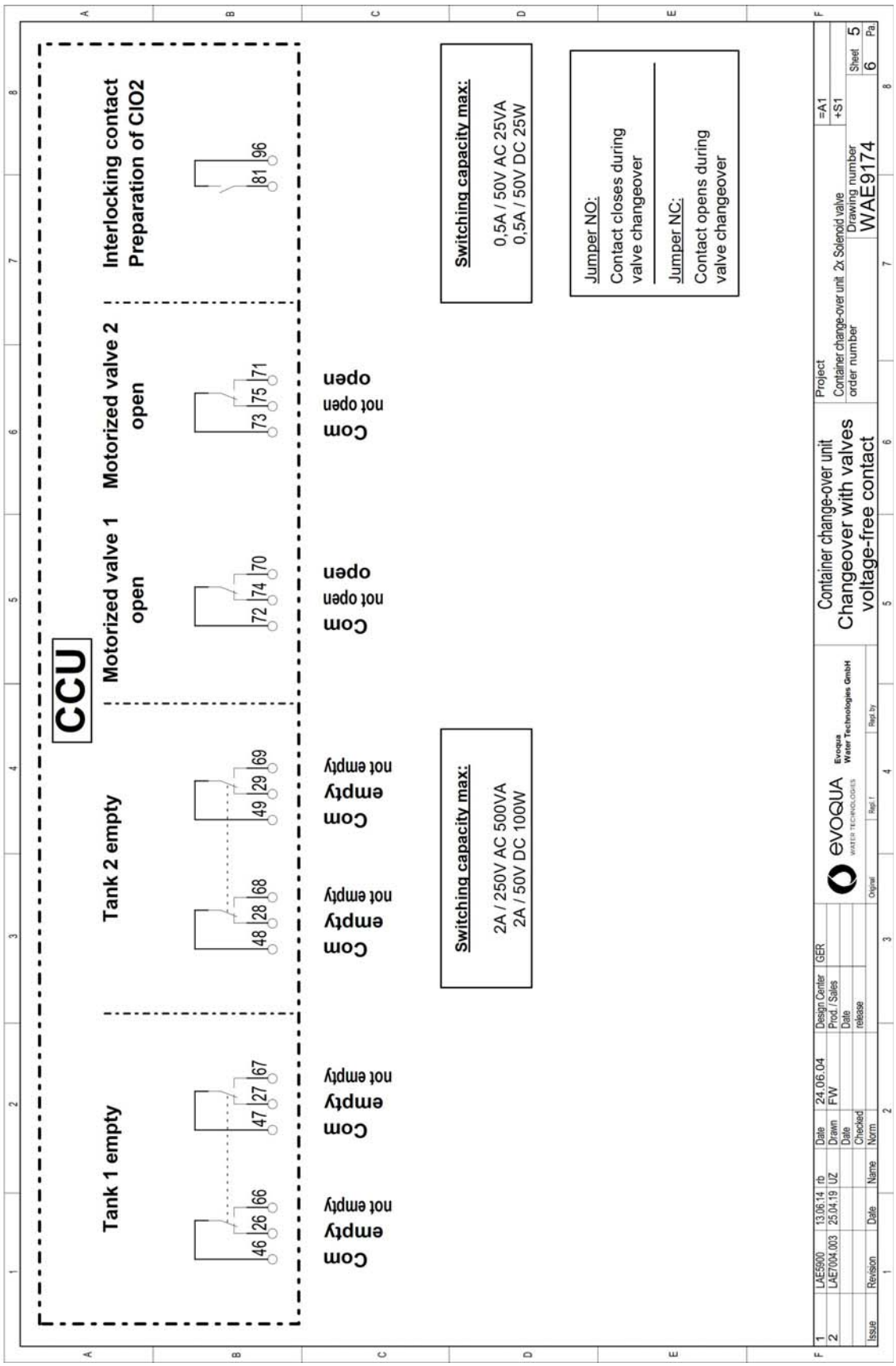
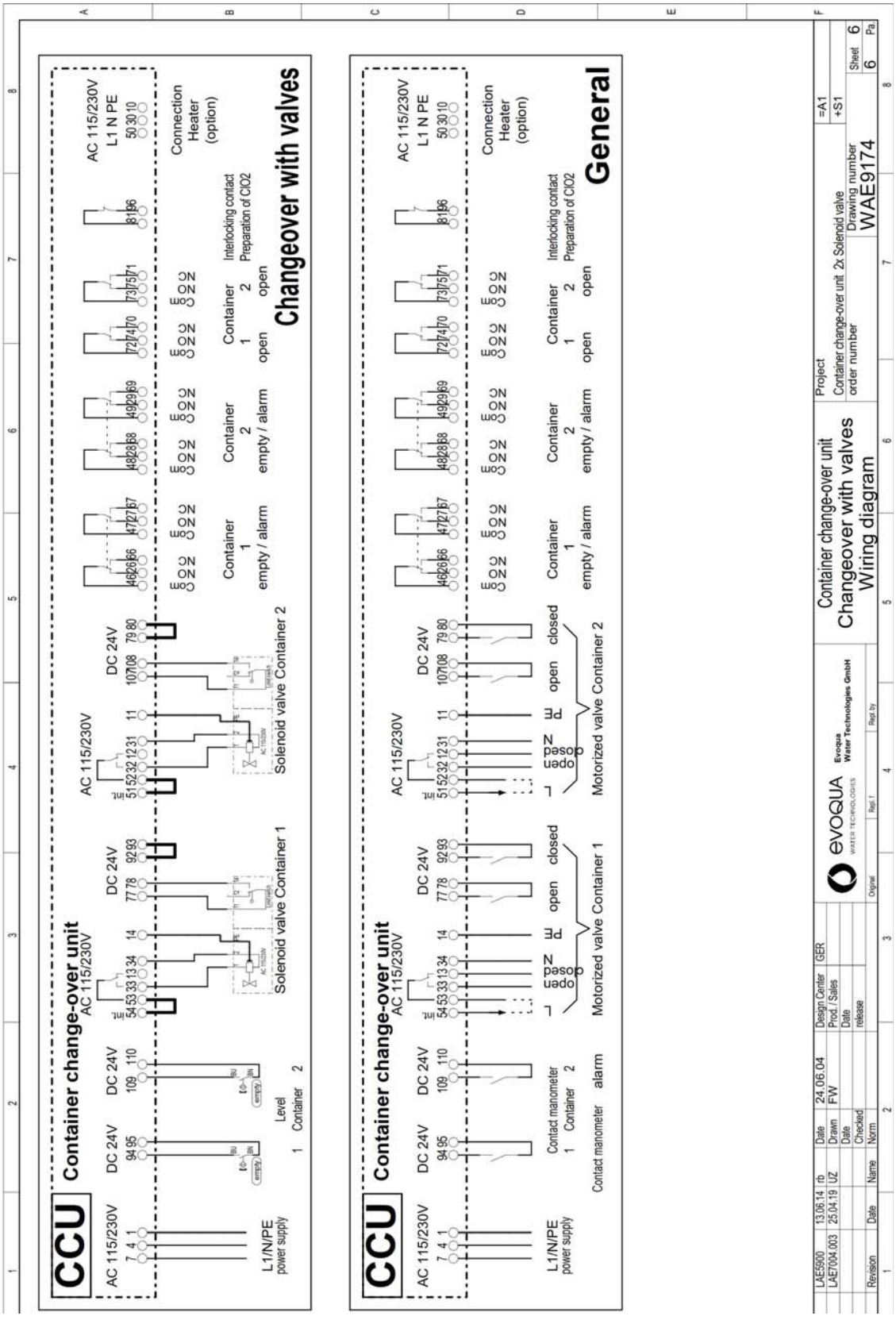
Evoqua Water Technologies GmbH

6.5 CCU with two solenoid valves

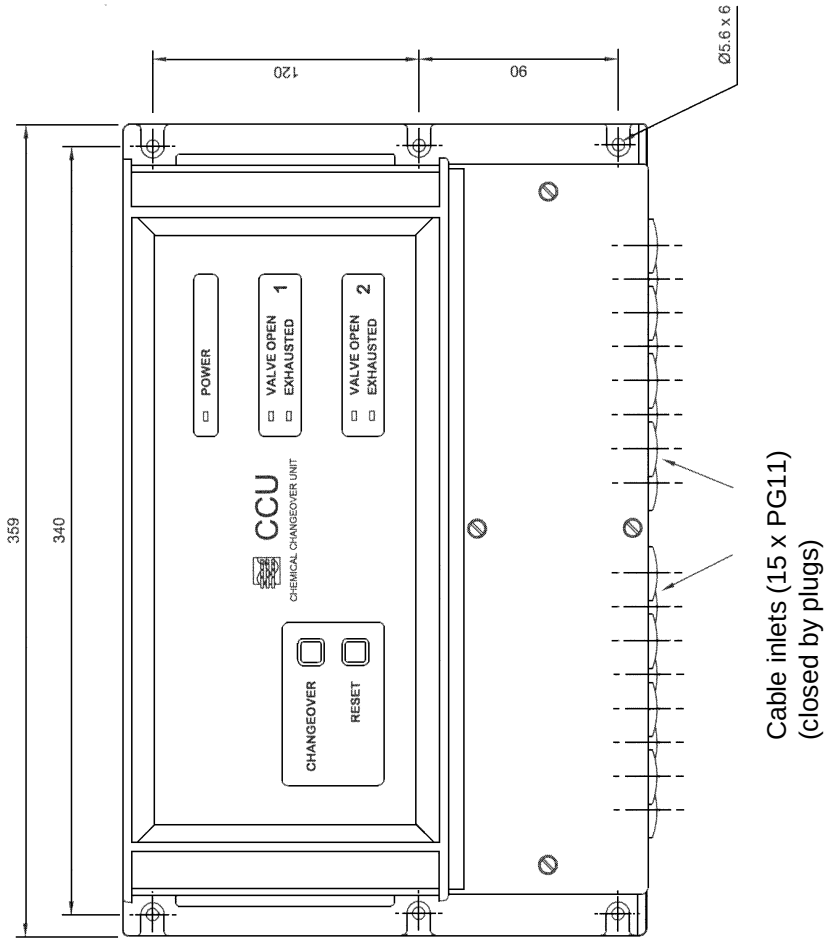


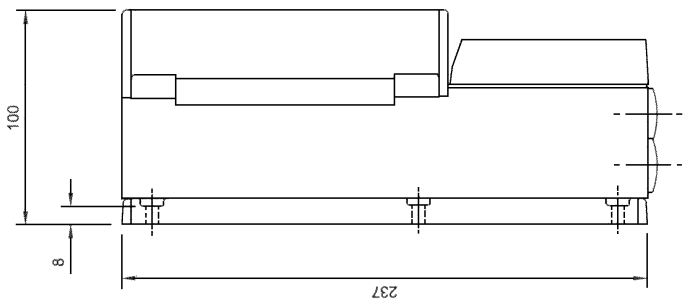

CCU
Motorized valve 1
Motorized valve 2
DC 24V
AC 115/230V
internal
Limit switch
AC 115/230V
Solenoid valve Container 1
Solenoid valve Container 2
Attention !
bridges must be wired
Container change-over unit
Changeover with valves
Motorized valve
Container change-over unit 2x Solenoid valve
WAE9174
=A1
+S1
Sheet 4
6 Pa
evoqua
Evoqua Water Technologies GmbH


CCU
Tank 1 empty
Tank 2 empty
Motorized valve 1 open
Motorized valve 2 open
Interlocking contact Preparation of ClO2
Com
not empty
empty
not open
open
46 26 66
47 27 67
48 28 68
49 29 69
72 74 70
73 75 71
81 96
Switching capacity max:
2A / 250V AC 500VA
2A / 50V DC 100W
Switching capacity max:
0,5A / 50V AC 25VA
0,5A / 50V DC 25W
Jumper NO:
Contact closes during valve changeover
Jumper NC:
Contact opens during valve changeover
Container change-over unit
Changeover with valves voltage-free contact
EVOQUA WATER TECHNOLOGIES
Evoqua Water Technologies GmbH
Project
Container change-over unit 2x Solenoid valve
order number
Drawing number
WAE9174
=A1
+S1
Sheet 5
6 Pa


CCU
Container change-over unit
AC 115/230V
Changeover with valves
Solenoid valve Container 1
Solenoid valve Container 2
Level
Container 1 2
L1/N/PE
power supply
AC 115/230V
DC 24V
AC 115/230V
Connection Heater (option)
Interlocking contact Preparation of ClO2
Container 1 2
open open
Container 1 2
empty / alarm empty / alarm
CCU
Container change-over unit
AC 115/230V
General
Contact manometer
Container 1 2
Contact manometer alarm
Motorized valve Container 1
Motorized valve Container 2
Container change-over unit
Changeover with valves
Wiring diagram
Evoqua Water Technologies GmbH
Project
Container change-over unit 2x Solenoid valve
order number
Drawing number
WAE9174
=A1
+S1
Sheet 6
6 Pa
LAE5900 13.06.14 rb
LAE7004.003 25.04.19 UZ
Date 24.06.04
Drawn FW
Checked
Norm
Design Center GER
Prod. / Sales
Date
release
Original
Revision
Name
Date

7. Drawing


120
90
Ø5.6 x 6
359
340
POWER
VALVE OPEN
EXHAUSTED
1
VALVE OPEN
EXHAUSTED
2
CCU
CHEMICAL CHANGEOVER UNIT
CHANGEOVER
RESET
Cable inlets (15 x PG11)
(closed by plugs)


100
8
237

8. Declaration of conformity

EVOQUA WATER TECHNOLOGIES

EG-Konformitätserklärung
EC Declaration of Conformity
Déclaration CE de conformité

No. MAE1400

Ausgabe/*issue*/**édition** 05

Hersteller/*Manufacturer*/**Constructeur:**	Evoqua Water Technologies GmbH
Anschrift/*Address*/**Adresse:**	Auf der Weide 10, D-89312 Günzburg
Produktbezeichnung: *Product description:* **Description du produit:**	W3T166045 – Behälterumschalter (CCU) *W3T166045 – CHEMICAL CHANGEOVER UNIT (CCU)* **W3T166045 - Coffret de commande pour inverseur automatique**

Das bezeichnete Produkt stimmt in der von uns in Verkehr gebrachten Ausführung mit den Vorschriften folgender europäischer Richtlinien überein:
The product described above in the form as delivered is in conformity with the provisions of the following European Directives:
Le produit désigné est conforme, dans la version que nous avons mise en circulation, avec les prescriptions des directives européennes suivantes :

2014/30/EU Richtlinie des Europäischen Parlaments und des Rates vom 26. Februar 2014 zur Angleichung der Rechtsvorschriften der Mitgliedstaaten über die elektromagnetische Verträglichkeit.
Directive of the European Parliament and of the Council of 26 February 2014 on the approximation of the laws of the Member States relating to electromagnetic compatibility.
Directive du Parlement européen et du Conseil du 26 février 2014 relative au rapprochement des législations des Etats membres concernant la compatibilité électromagnétique.

2014/35/EU Richtlinie des Europäischen Parlaments und des Rates vom 26. Februar 2014 zur Angleichung der Rechtsvorschriften der Mitgliedstaaten betreffend elektrische Betriebsmittel zur Verwendung innerhalb bestimmter Spannungsgrenzen.
Directive of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits.
Directive du Parlement européen et du Conseil du 26 février 2014 concernant le rapprochement des législations des Etats membres relatives au matériel électrique destiné à être employé dans certaines limites de tension.
CE-Kennzeichnung / *CE marking* / **Marquage CE**: 2017

Ersteller : SR
Ausgabe : 24.02.2014
Dokument: VD130-1_CE_Konformitätserklärung.doc

Evoqua Water Technologies GmbH
Auf der Weide 10
89312 Günzburg
Deutschland

Tel.: +49 (8221) 904-0
Fax: +49 (8221) 904-203
www.evoqua.com

Seite 1 von 2

Die Konformität mit den Richtlinien wird nachgewiesen durch die Einhaltung der in der Nachweisdokumentation aufgelisteten Normen.
Evidence of conformity to the Directives is assured through the application of the standards listed in the relevant documentation.
La conformité avec les directives est assurée par le respect des normes listés dans la documentation technique correspondante.

Benannte Person für technische Unterlagen:
Authorized person for the technical file:
Personne désignée pour la documentation technique:

Name / *name* / **nom:** Evoqua Water Technologies GmbH

Adresse / *address* / **adresse:** Auf der Weide 10, D-89312 Günzburg

Günzburg, den / *the* 2017-MARCH-30
Evoqua Water Technologies GmbH

i.V. Klaus Andre — Technischer Leiter / *Director Engineering* — Unterschrift / *signature* / **signature**

i.V. Helmut Fischer — Leiter QM / *Quality Manager* — Unterschrift / *signature* / **signature**

Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinien, ist jedoch keine Beschaffenheits- oder Haltbarkeitsgarantie nach §443 BGB. Die Sicherheitshinweise der mitgelieferten Produktdokumentation sind zu beachten.
This declaration certifies the conformity to the specified directives but does not imply any warranty for properties. The safety documentation accompanying the product shall be considered in detail.
La présente déclaration atteste de la concordance avec les directives citées, elle n'offre cependant pas de garantie quant à la nature ou la durabilité selon l'article 443 du code civil allemand. Les consignes de sécurité de la documentation du produit fournie sont à respecter.

Dokument: VD130-1_CE_Konformitätserklärung.doc Seite 2 von 2

Wallace & Tiernan® Products worldwide

Australia
+61 1300 661 809
info.au@evoqua.com

Canada
+1 905 944 2800
wtoe.can@evoqua.com

China
+86 21 5118 3777
sales.cn@evoqua.com

France
+33 1 41 15 92 20
wtfra@evoqua.com

Germany
+49 8221 9040
wtger@evoqua.com

Singapore
+65 6559 2600
sales.sg@evoqua.com

UK
+44 300 124 0500
info.uk@evoqua.com

USA
+1 800 524 6324
wt.us@evoqua.com

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Auf der Weide 10, 89312 Günzburg, Germany

+49 (8221) 904-0 www.evoqua.com

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W3T163111 Issue 06-0320