

UV Reactor Modification Procedure When Replacing 4 kW Power Unit with 8 kW Power Unit

<Note>

“Appendix A” and “Appendix B” mentioned in the main text are included in the kit that was provided with your initial purchase of the modified parts.

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1. Overview

This document describes the modification procedure on the UV reactor side when replacing a 4 kW power unit with a 8 kW power unit in the ballast water management system.

2. Applicable product

Ballast water management system with 4 kW power unit specification

3. Feature of modification

During the initial replacement of the 8 kW power unit, preparation for subsequent replacements will also be carried out simultaneously. This preparation simplifies the modification of the second and subsequent power units.

4. Content of modification

First time: Change of UV lamp position, Replacement of UV lamp No. sticker,

Change to 8 kW terminal block, Change of wiring connection

From the second unit onwards: Change of wiring connection

5. Tools and parts required

Please prepare the following tools and parts for the modification.

Table 1: Tools and parts required

Name	Part code	Quantity	Note
Standard tool set			
Screwdriver			
Precision screwdriver			
UV lamp No. sticker	A014-165-3001-0	1	First time only (two of each: 1 to 9, A,B,C)
8 kW terminal block (motor side)	0000-AA8-5025-0	1	First time only
8 kW terminal block (opposite side)	P10000161294-00	1	First time only



8 kW terminal block (motor side)



8 kW terminal block (opposite side)

6. Preparation for modification

Make sure that the main breakers of the source panel and control panel are turned off.

Also, shut off power supply to the source panel.

7. Modification procedure

Change the position of the UV lamp and replace the terminal block of UV reactor with the 8 kW specification.

(1) Removal of UV reactor cover

Remove the covers on both the motor side and the opposite side of the UV reactor.

*The explosion proof type cover is heavy (30 kg) and must be protected against falling.

Lift it up with a chain block.

(2) Replacement of UV lamp No. sticker First time only

Replace all the UV lamp No. stickers attached to the tube plate of the UV reactor according to the Appendix A.

*In case of six UV lamps specification, it is not necessary to replace the stickers.

*There are 12 UV lamp number seals, including numbers 1 to 9 and letters A, B, C.

Please discard any unused stickers.

(3) Change of UV reactor terminal block (motor side) First time only

a) Disconnect the wiring for the UV lamp and power supply from the existing 4 kW terminal block of the UV reactor.

b) Remove the terminal block and end cap from the 4 kW rail, leaving the rail alone.

Discard the removed terminal block and end cap. The 4 kW rail will be reused.

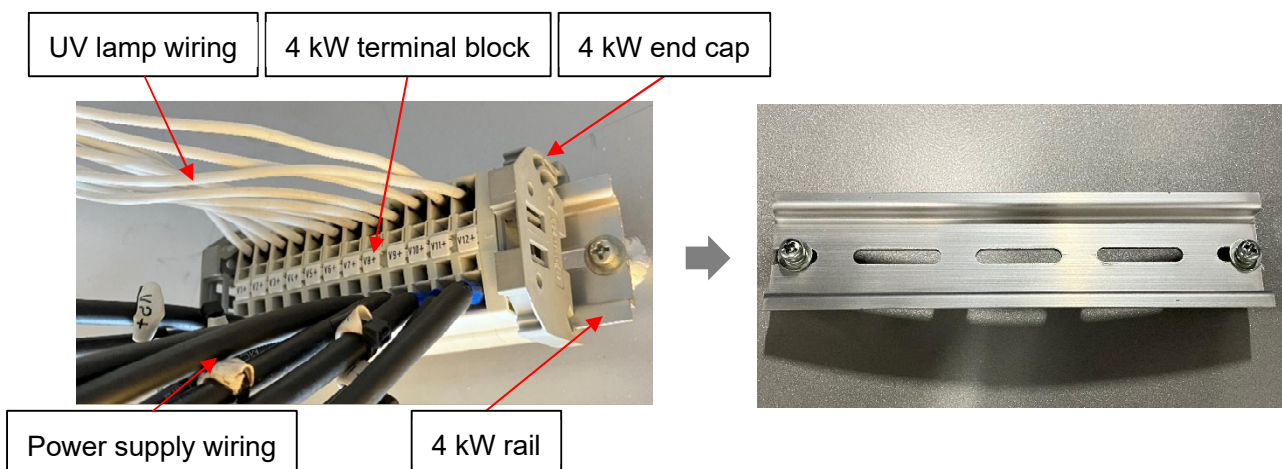


Figure 1: Removal of existing 4 kW terminal block (motor side)

c) Remove the 8 kW rail from the supplied 8 kW terminal block.

Please discard the 8 kW rail as it will not be used.

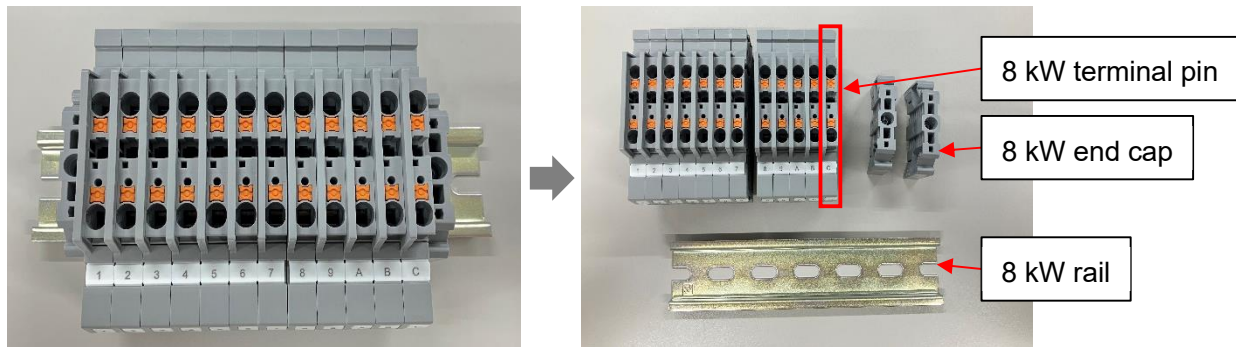


Figure 2: Removal of rail from 8 kW terminal block

d) Attach the terminal pins (corresponding to the number of UV lamps for the 8 kW terminal block, using pins 1 to 8 for the eight UV lamps specification) and the 8 kW end caps (at both ends) to the 4 kW rail.

Refer to the following conversion table for the correspondence between the existing 4 kW terminal numbers and the new 8 kW terminal numbers.

*The unused 8 kW terminal pins can be kept as spare parts for future use.

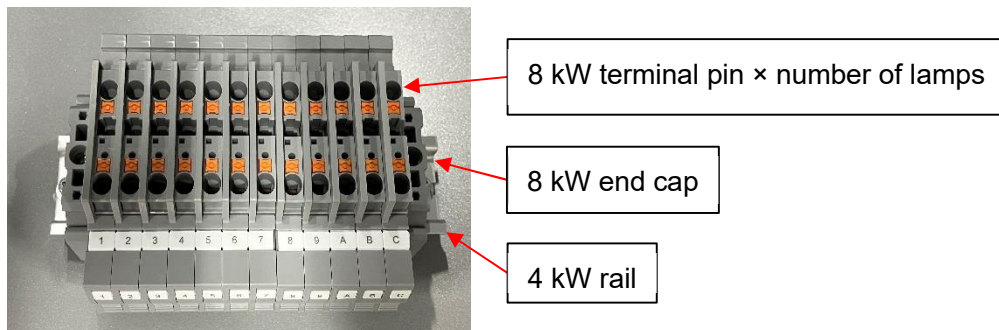


Figure 3: 8 kW terminal block and end caps

Table 2: Terminal number conversion table

Terminal block	Terminal number											
4 kW	V1+	V2+	V3+	V4+	V5+	V6+	V7+	V8+	V9+	V10+ or VA+	V11+ or VB+	V12+ or VC+
↓												
8 kW	1	2	3	4	5	6	7	8	9	A	B	C

(4) Change of UV reactor terminal block (opposite side) First time only

- a) Disconnect the wiring for the UV lamp and power supply from the existing 4 kW terminal block of the UV reactor.
- b) Remove the UV lamp terminal block and end cap on the UV lamp terminal block side from the 4 kW rail, leaving only the sensor terminal block, end cap on the sensor terminal block, and the rail. Discard the removed UV lamp terminal block and the end cap.

*If the workability is poor, remove the sensor wiring.

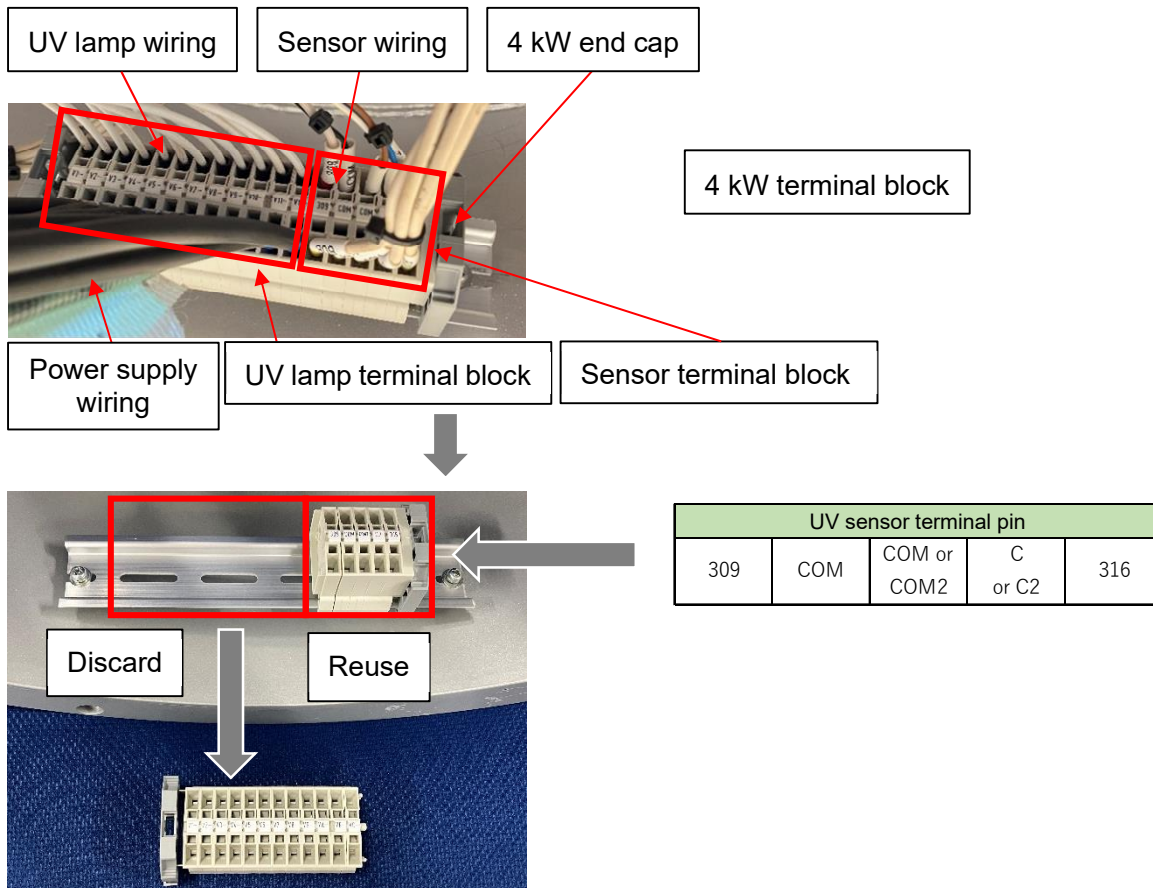


Figure 4: Disassembly of existing 4 kW UV lamp terminal block (opposite side)

- c) Remove the UV lamp terminal block and end caps from the supplied 8 kW rail.

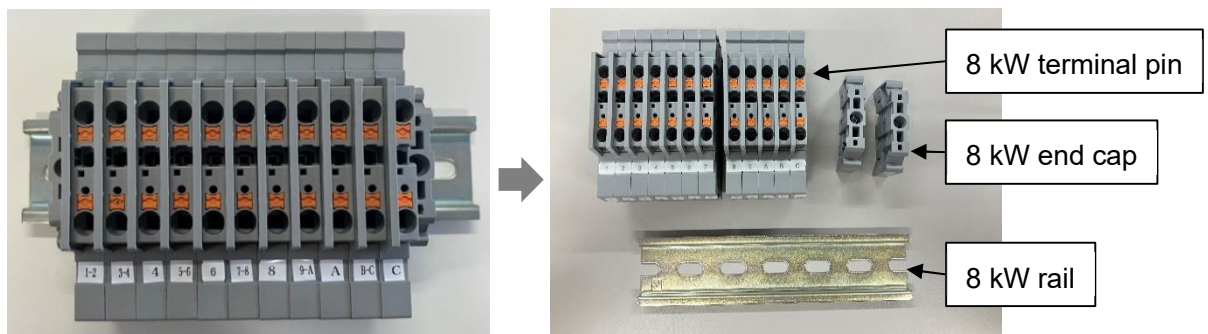


Figure 5: Removal of UV lamp terminal block and end caps from 8 kW terminal block

d) Attach the 8 kW terminal pins (number of lamps minus one) and 8 kW end caps (at both ends of the 8 kW terminal block) to the 4 kW rail.

Refer to the table below for the new 8 kW terminal number.

*The unused 8 kW terminal pins can be kept as spare parts for future use.

*If the 8 kW terminal block protrudes from the rail, move the sensor terminal pins to the edge.

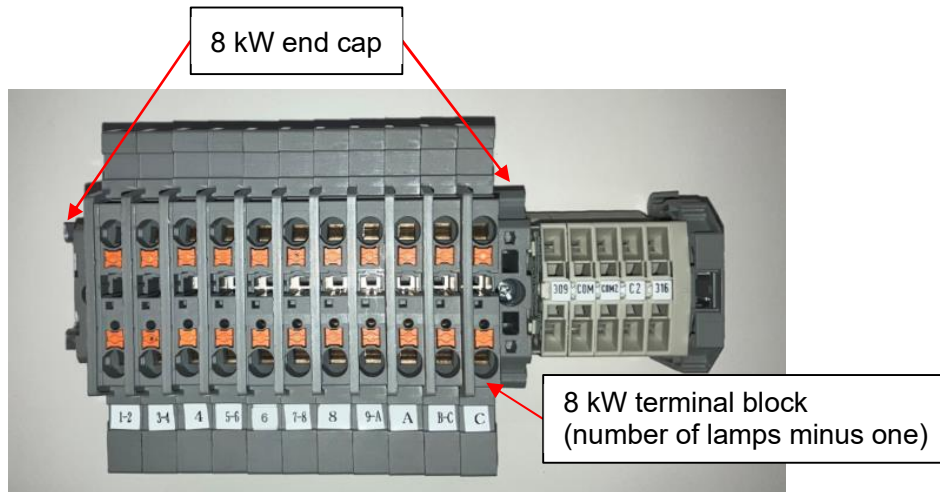


Figure 6: 8 kW terminal block and end caps

Table 3: 8 kW terminal number

Terminal block	Terminal number										
8 kW	1-2	3-4	4	5-6	6	7-8	8	9-A	A	B-C	C

Attach the terminal pins (number of lamps minus one) in order from left to right.

Example: For eight UV lamps specification, attach the seven pins from left to right, numbered 1-2 through 8. Four pins of 9-A to C are not used.

<Motor side>

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- Diagram illustrating the connection of 8 kW UV lamps to the DPYC-2.5 terminal block.
- UV lamp connections:**
- | UV lamp | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|-----------|---|---|---|---|---|---|---|---|---|----|----|----|
| UV lamp 1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
- 8 kW UV lamp terminal block:**
- Connect according to the number of UV lamps to be installed.
- Source panel labels:**
- *UJL-1
 - *UJL-2
 - *UJL-3
 - *UJL-4
 - *UJL-5
 - *UJL-6
 - *UJL-7
 - *UJL-8
 - *UJL-9
 - *UJL-10
 - *UJL-11
 - *UJL-12
- *SP (Source panel)

b) Connect the wiring from the source panel to the 8 kW terminal block.

<Opposite side>

- a) Connect the wiring to the 8 kW terminal block according to the wiring diagram in Appendix B.

For the UV lamp numbers, check the UV lamp No. stickers after the replacement.

The number of terminals used for the 8 kW UV lamp wiring is reduced from two to one due to the change from the conventional parallel connection to the series connection. Therefore, the single-numbered terminals will not be used for each additional 8 kW power unit replacement.

- b) If the sensor wiring has been disconnected, reconnect it back to its original configuration.

There is no change in the terminal connection of the sensor section.

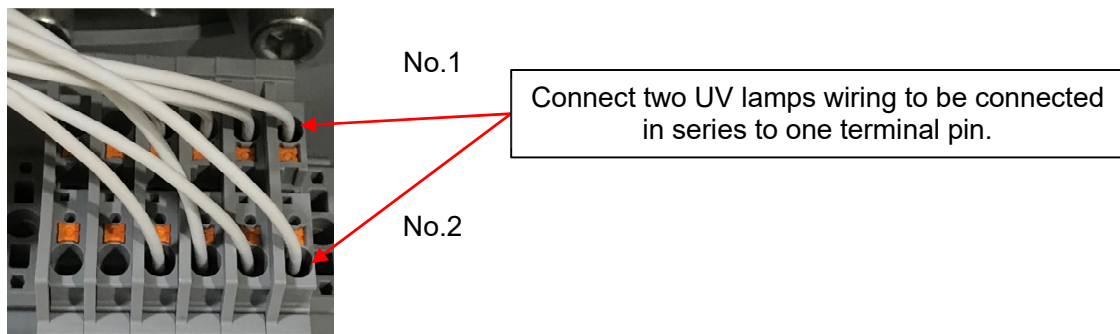


Figure 8: Series connection of UV lamp wiring (opposite side)

- c) Wrap insulation tape around the disused power supply wiring leading from the source panel to the inside of the UV reactor to prevent electric shock.

It is not necessary to remove the wiring from the UV reactor gland to close the gland opening.