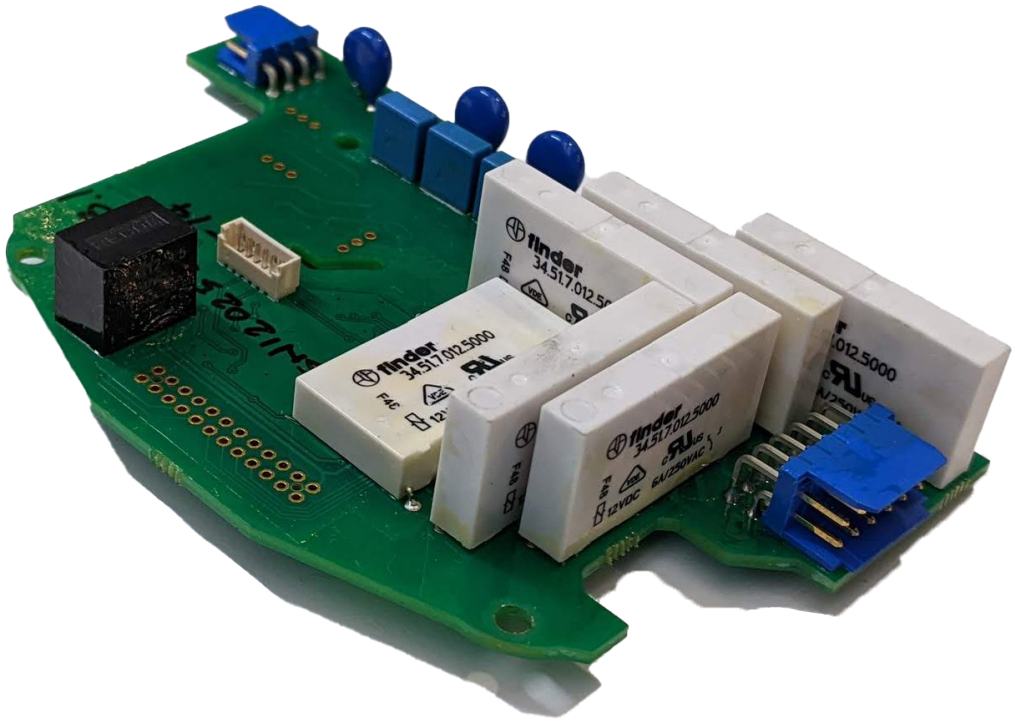
Installation, Operation and Maintenance Manual
VCIOM-15746-EN Rev. 2
January 2024

Bettis RTS Relay Board (RP3E6A)

Electric Actuator



BETTIS™

EMERSON™

This page intentionally left blank.

Table of Contents

This page intentionally left blank.

Section 1:Tools

⚠ WARNING

Remove all power supplies before doing the exchange. Always act with caution during the exchange!

- Needle nose pliers
- Screw driver phillips
- Screw driver flat
- Allen key 5
- Socket wrench 5

Figure 1.

Section 2: Material

- 1x RP3E6A board
- 1x Wiring harness CSC01K22
- 2x Oval-head screw with phillips head ISO 7045H M3x16 ST
- 1x Hexagon nut DIN 934 M3
- 1x Oval-head screw with phillips head M3x16 PA
- 3x Stand-off 8 mm
- 2x Fiber disc DIN522 M2.5
- 1x Tag for cable terminals #30-45
- 1x Installation instructions item

Figure 2.

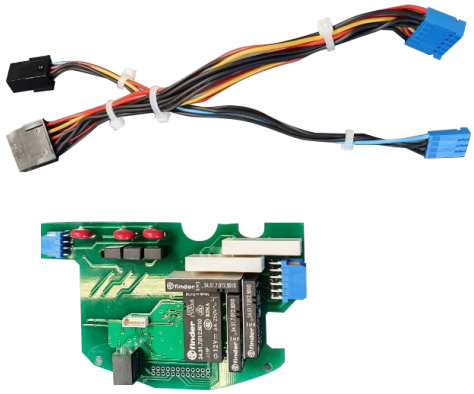
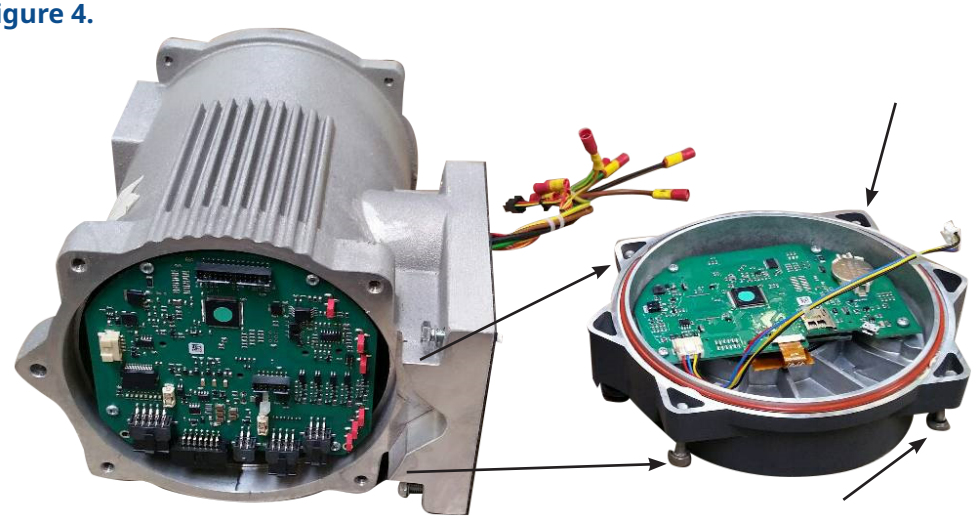


Figure 3.

Section 3: Installation

Unscrew the 4 hexagon socket screws from the cover and remove it carefully. Mind the connection cable between display and logic board.

Figure 4.

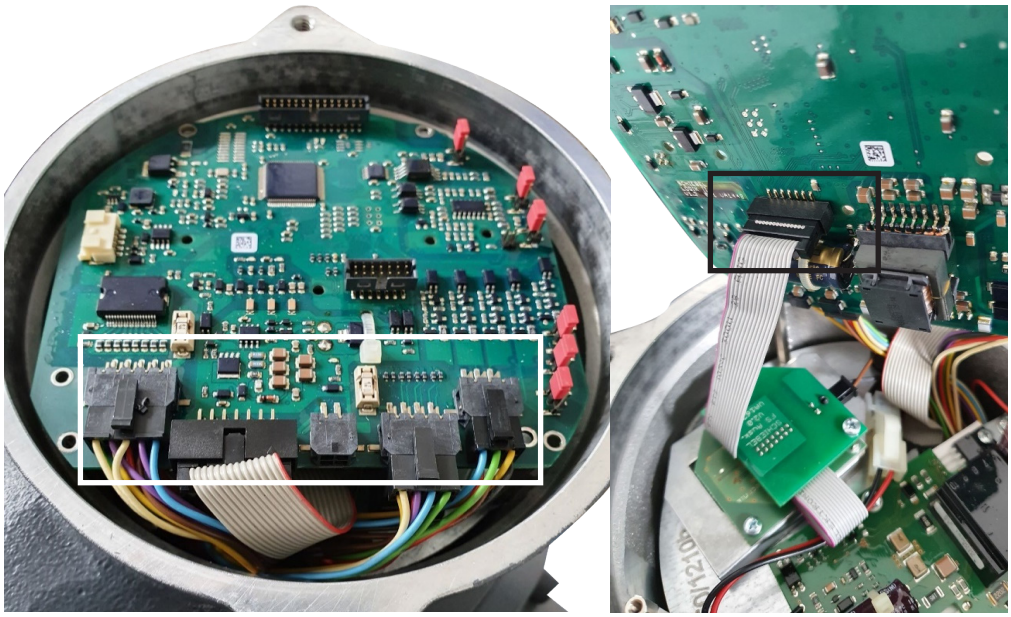


Unscrew the 4 cross recessed screws from the existing logic board and afterwards, tilt it carefully to you.

Figure 5.

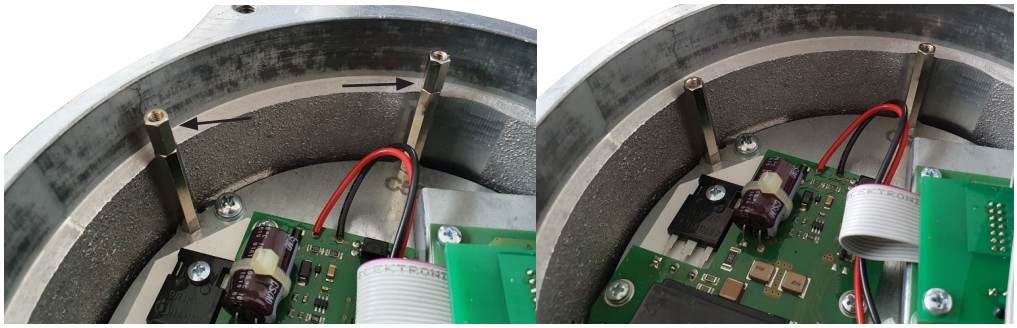
Remove carefully the connected cables: ribbon cable and 6-, 8- and 10-pole plugs (see Figure 6, left image). Afterwards, you can remove the logic board from the control unit and disconnect the second ribbon cable on the back (see Figure 6, right image).

Figure 6.



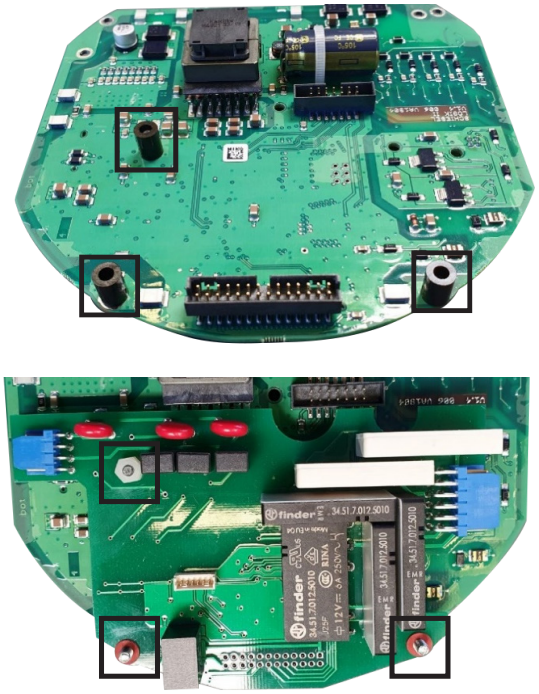
Remove the two steel spacers (marked with the black arrows in Figure 7) in the housing.

Figure 7.



Place the 8 mm plastic spacers on the relay board as shown in the top image of Figure 8. Insert the M3x16 steel screws through the holes next to the multi-pin connectors in the logic board as shown in the bottom image of Figure 8. Then line up the screws with the plastic spacers in the relay board and secure the screws with the red lock plates. For the third hole, use the plastic screw M3x15 and secure it in place with the plastic nut.

Figure 8.

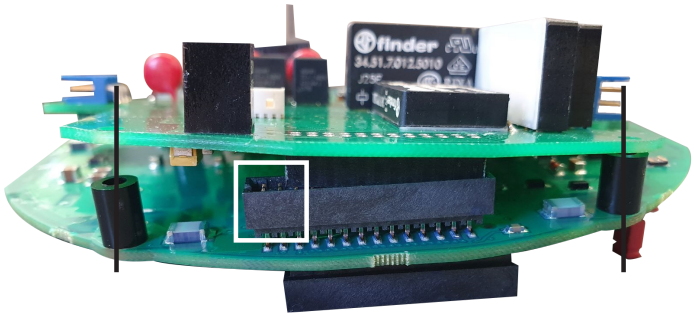


Connect the relay board with the multi-pin connector from the logic board.

⚠ WARNING

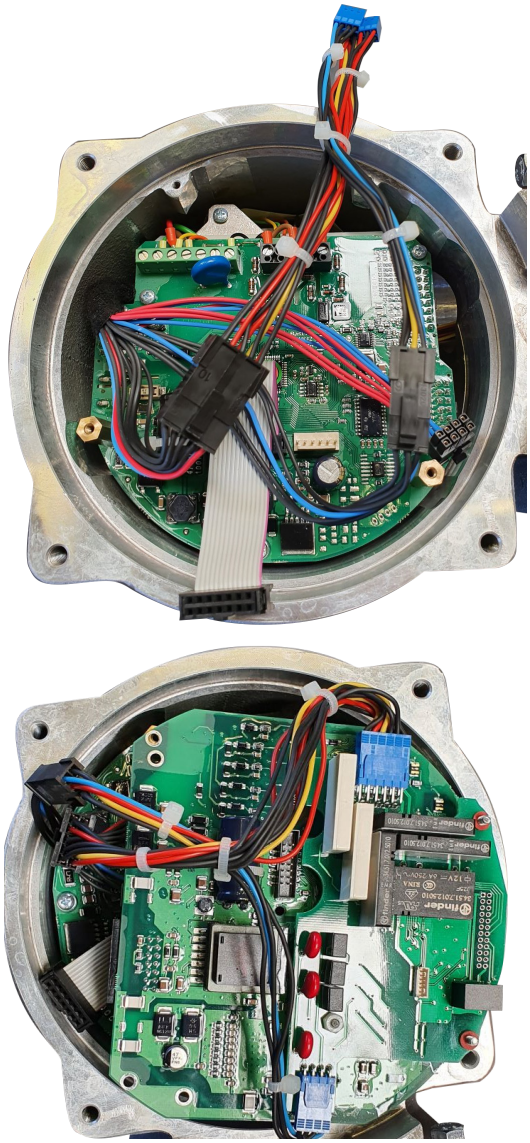
The four pins on the left side must remain disconnected (see Figure 9).
The orientation of the mounting holes on both the logic and relay boards plus the spacers must be aligned as shown in Figure 9.

Figure 9.



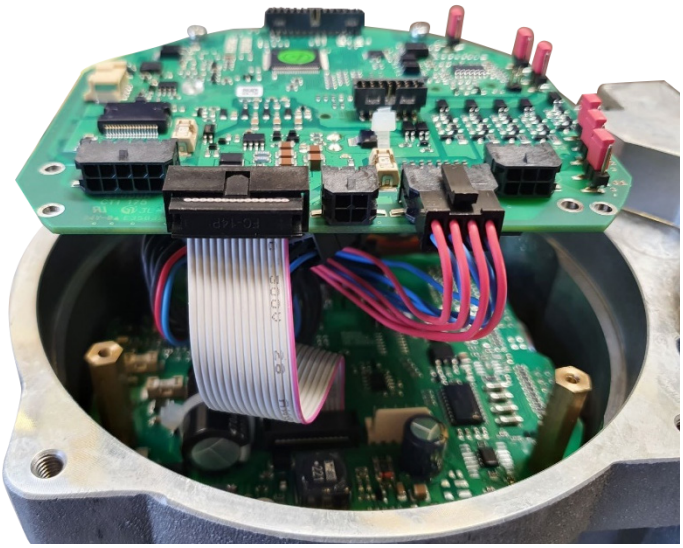
Connect the 10- and 6-pole connectors to the adapter cables, then connect the blue connectors of the adapter cables to the corresponding connectors on the relay board.

Figure 10.



Connect both ribbon cable and 8-pole connector with the logic board after installing the logic + relay board back to the control (two small screws for original installation will remain). Take care of possible damage of cables or other parts.

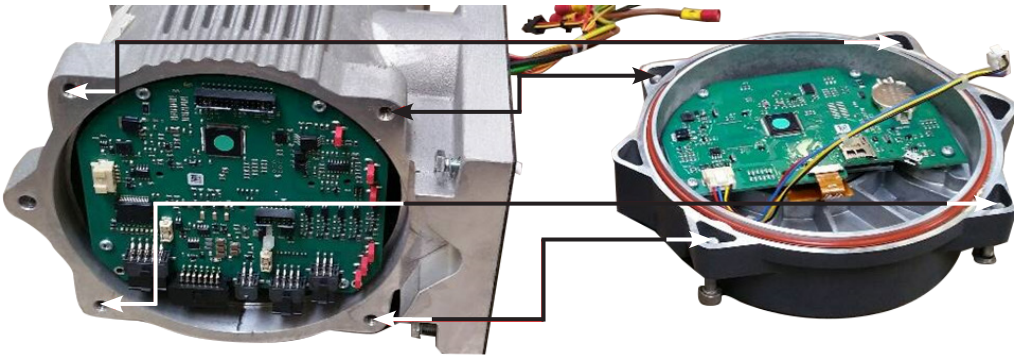
Figure 11.



Connect cable between display cover and logic board. Perform a Firmware update before installing display cover on the unit. This update is important for the following programming steps (use FW version display 1507, logic 219, or higher). For a detailed description on how to preform a firmware update, please refer to separate manual.

During display cover installation, pay attention to the O-ring which must sit correctly between cover and housing and fix it with the 4 hexagon socket screws.

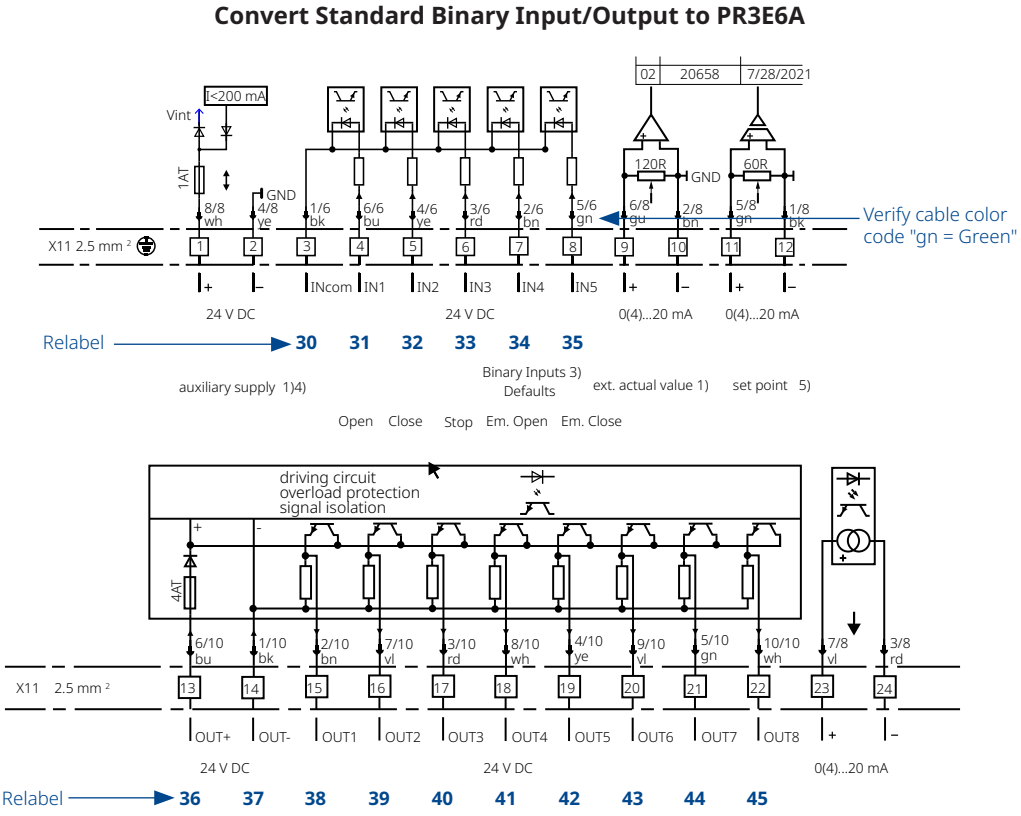
Figure 12.



Section 4: Terminal Block Relabeling

The final step of the installation process includes removing old labels on the terminal block (binary inputs #3 to #8 and binary outputs #13 to #22), and inserting new ones (high voltage discrete inputs #30 to #33 and dry contact outputs #34 to #45). Refer to Figure 13.

Figure 13.



During the relabeling, make sure labels match the color code of terminal block cables. Refer to Table 1.

Table 1.

Standard CM	Color Code	Original Terminal #	Cable #	Function	Relay pin and N.C/N.O	CM + Relay RP3E6A	Change Terminal #	No Change Terminal #
"+"	wh	1	1	"+"		wh		1
"-"	ye	2	2	"-"		ye		2
INCM	bk	3	3	COM		bk	30	
IN1	bl	4	4	INI		bl	31	
IN2	ye	5	5	IN2		ye	32	
IN3	rd	6	6	IN3		rd	33	
IN4	br	7	7	O1	CM	br	34	
IN5	gn	8	8	O1	NC	gn	35	
"+"	bl	9	9	"+"		bl		9
"-"	br	10	10	"-"		br		10
"+"	gn	11	11	"+"		gn		11
"-"	bk	12	12	"-"		bk		12
Out+	bl	13	13	O1	NO	bl	36	
Out-	bk	14	14	O2	CM	bk	37	
O1	br	15	15	O2	NC	br	38	
O2	vl	16	16	O2	NO	vl	39	
O3	rd	17	17	O34	CM	rd	40	
O4	wh	18	18	03	NO	wh	41	
O5	ye	19	19	04	NO	ye	42	
O6	vl	20	20	O56	CM	vl	43	
O7	gn	21	21	O5	NO	gn	44	
O8	wh	22	22	O5	NO	wh	45	
"+"	vl	23	23	"+"		vl		23
"-"	rd	24	24	"-"		rd		24

Section 5: Programming

For programming, request download of SMARTTOOL2 through your Sales Representative.

After the successful installation and registration, connect with the actuator. Use the Wizard and choose function “Uninstall Extension Kit” and press “Apply” (see Figure 14).

Then, select items 3 and 4 from the list to uninstall “Standard Bin.Input: 5x Standard Binary Inputs” and “Standard Bin.Outputs: 8x Standard Binary Outputs” (see Figure 15).

Figure 14.

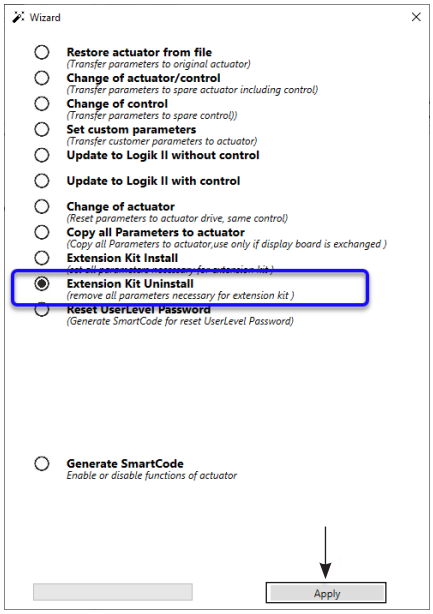
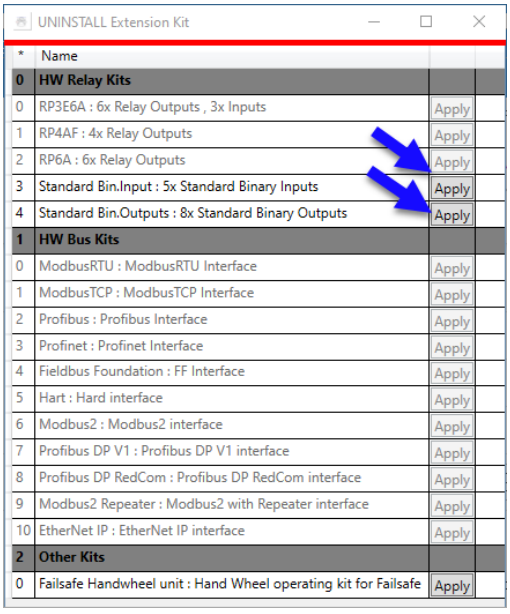
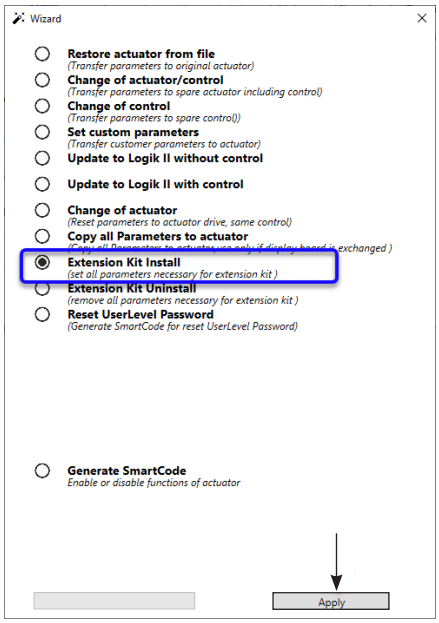


Figure 15.



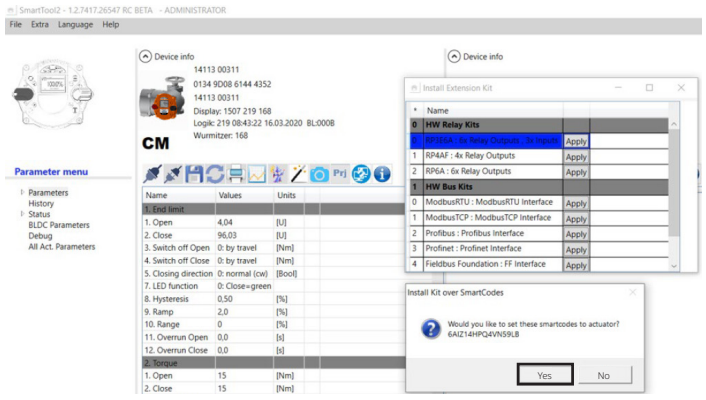
After successful uninstallation of the binary inputs and outputs, use the Wizard to choose the function “Extension Kit Install” and press “Apply”.

Figure 16.



At the line “RP3E6A: 6x Relay Outputs, 3x Inputs” press “Apply” and confirm the installation by selecting “YES”.

Figure 17.



After installation press the “Refresh Button”. In parameter group “9. Bin. Input” and “10. Relay”, you can define the functionality of the different relays.

NOTE:

Failure to uninstall the Binary input/output and the RP3E6A code may cause actuator analog input/output or other functions to not work properly.

www.emerson.com/bettis

BETTIS™

EMERSON™