

# Bettis RTS

## 24 V Fail-Safe Power Supply Modification



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## Section 1: CM Fail-Safe

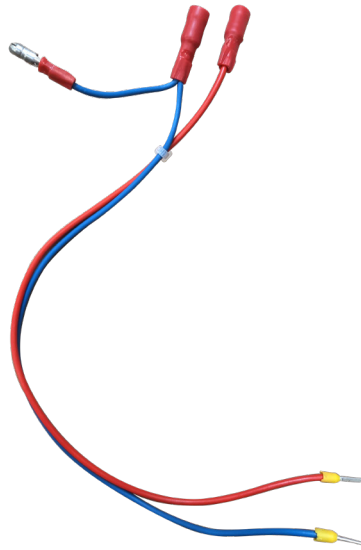
The following section describes the modification of an internal 24 V supply voltage to an external power supply using a CM standard actuator.

### 1.1 Supply

The scope of delivery includes a piece of harness.

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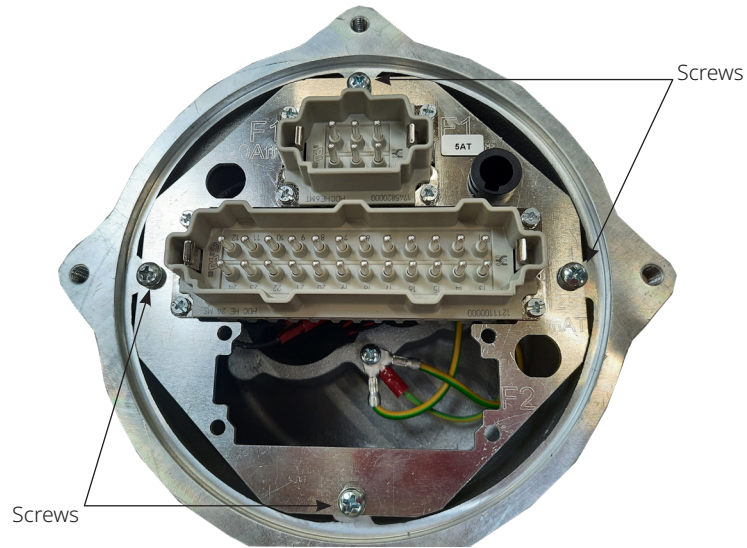
**Figure 1.**



## 1.2 Conversion

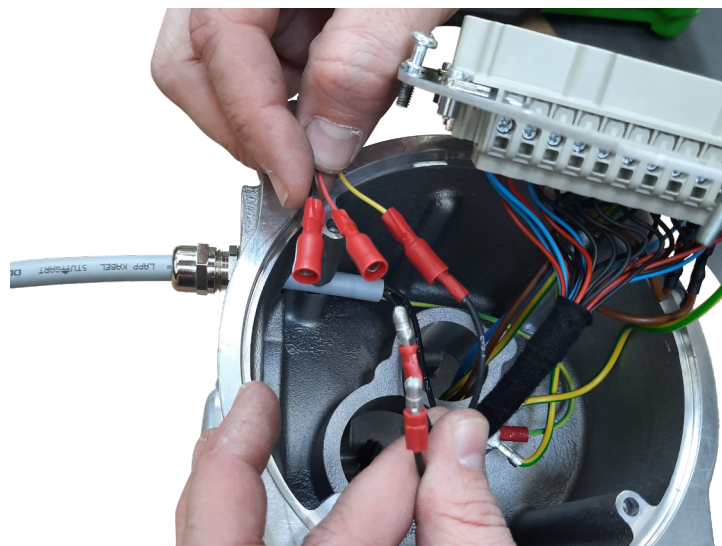
1. Before the conversion, the actuator has to be de-energized. To be able to lift away the connector plate, the four screws must be loosened, see Figure 2.

**Figure 2. Plug Sheet**



2. Tilt the connector plate on its side, disconnect cable 1 and cable 2, see Figure 3.

**Figure 3. Unplug Cable 1 and Cable 2**

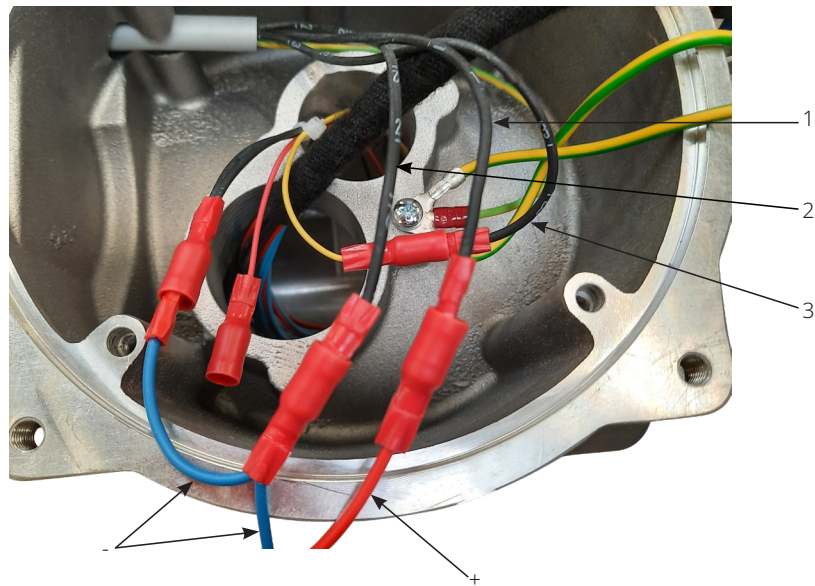


3. Now, take the cable harness included in the delivery and connect it as follows:
  - Cable 1 to + (red)
  - Cable 2 on - (blue)
  - Remaining black cable on - (blue)

**⚠ CAUTION**

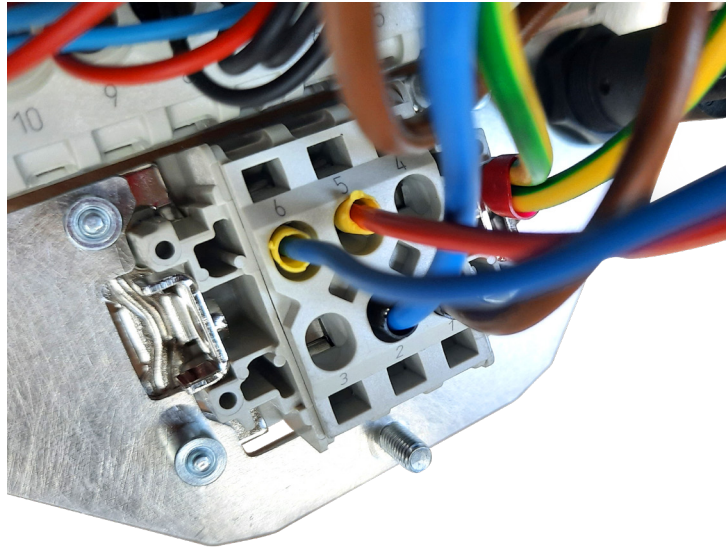
Cable 3 is not unplugged, so it remains connected as found in the actuator (see Figure 4).

**Figure 4. Cable Connection**



4. Connect the cable harness to the 6-pin connector as follows, see Figure 5.
  - + (red) on 5
  - - (blue) on 6

**Figure 5. Plug Connection**



5. Stow the cables in the gap and reattach the connector plate to the housing with the four screws.



## Section 2: exCM Fail-Safe

This section describes the conversion of an internal 24 V supply voltage to an external voltage supply using an exCM actuator.

### 2.1 Supply

The scope of delivery includes the following components:

- 4x Terminal label (24, V, +, -)
- 1x Wire end ferrule
- 2x Heat shrink tubing

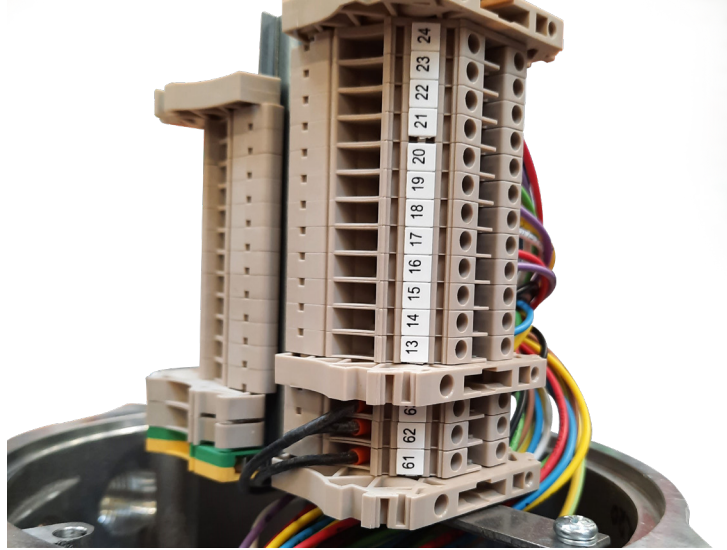
**Figure 6.**



## 2.2 Conversion

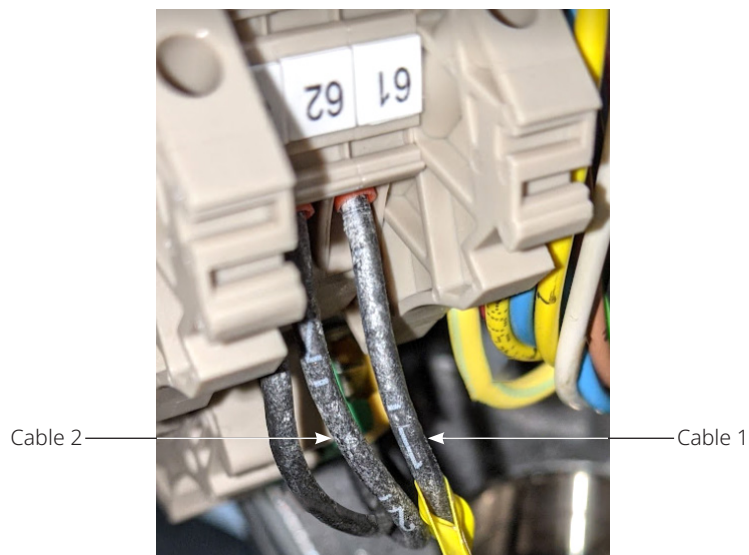
1. Before rebuilding, the actuator has to be de-energized. Unscrew the cover from the actuator to allow access to the terminal blocks, see Figure 7.

**Figure 7. Connection**



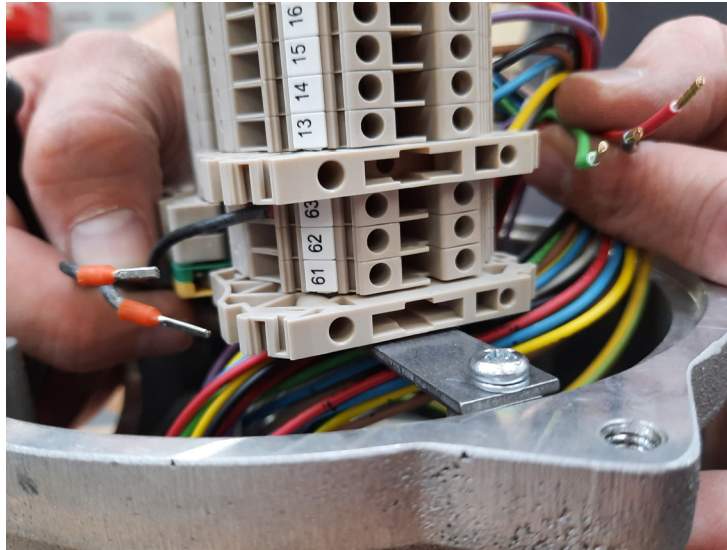
2. Identify cable 1/cable 2 on terminal 61 and 62, see Figure 8.

**Figure 8. Cable 1/Terminal 61 and Cable 2/Terminal 62**



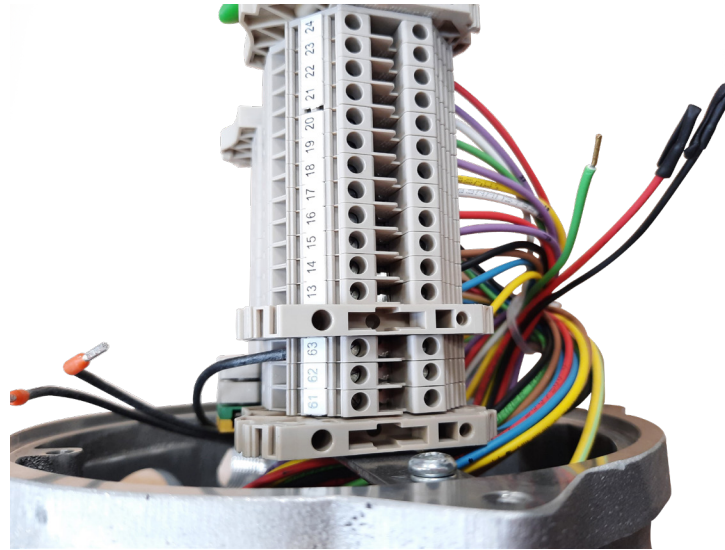
3. Disconnect the cables connected to terminals 61 and 62 on both sides, see Figure 9.
  - (Black cable 1/Black cable 2) on left
  - (Green/Black/Red) on right

**Figure 9. Terminals 61 and 62**



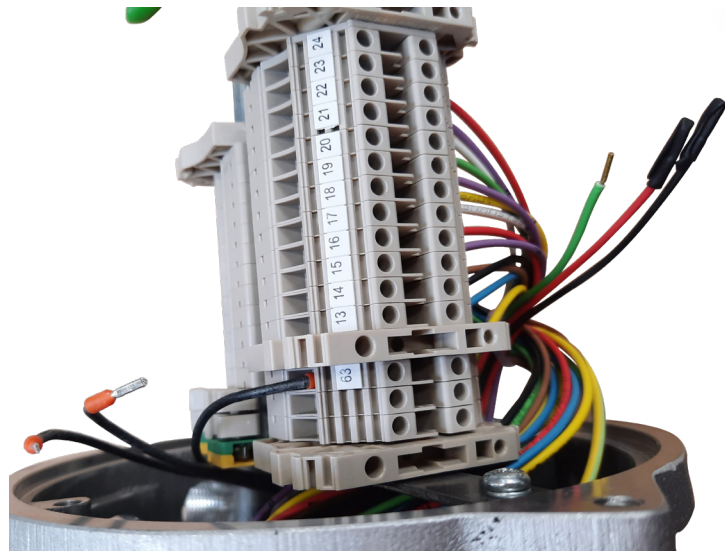
4. Insulate the ends of the black and the red cable with the included heat shrink tubing, see Figure 10.

**Figure 10. Heat shrink tubing**

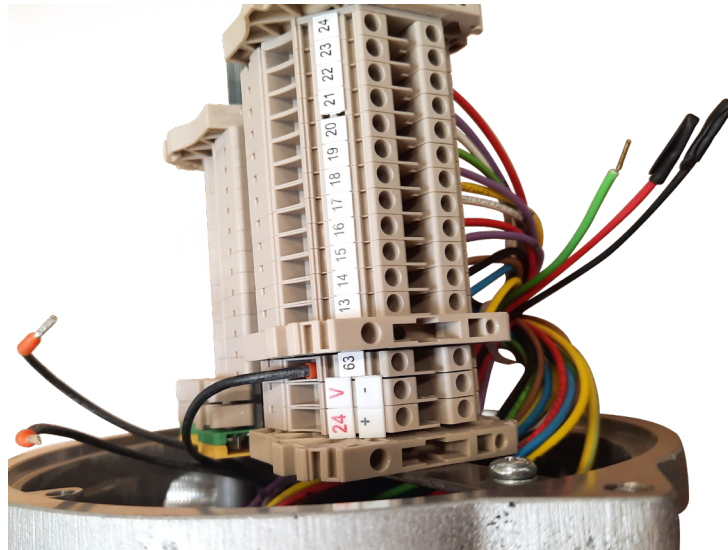


5. Remove the terminal labels (61 and 62), see Figure 11 and replace them with the ones supplied. Observe the correct placement, see Figure 12.

**Figure 11. Remove label**

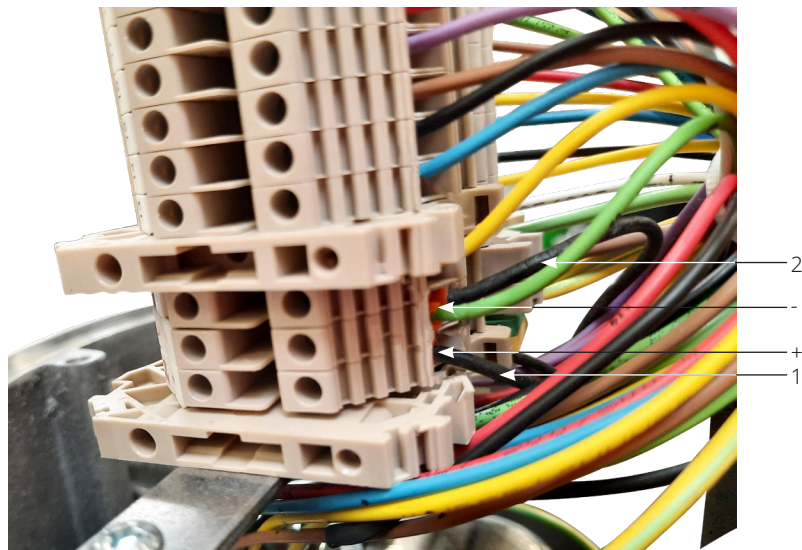


**Figure 12. Attach label**



6. Crimp the enclosed ferrule onto the green cable, lead cable 1 and cable 2 to the other side of the terminal blocks, stow the insulated cables in the underneath of the terminal blocks.
7. Connect the cables as follows, see Figure 13:
  - Cable 1 and the crimped green cable to +
  - Cable 2 on -
8. After connecting the 24 V voltage, the cover can be mounted again, and the actuator can be put into operation.

**Figure 13. Terminal assignment**



# Section 3: Parameter Settings

**NOTE:**

To be able to complete this step, EMERSON RTS training level 325 is required.

1. Connect actuator over Smarttool (Expert/Admin license is required).
2. Open Adjust Wizzard and go to Config tab.

**Figure 14.**

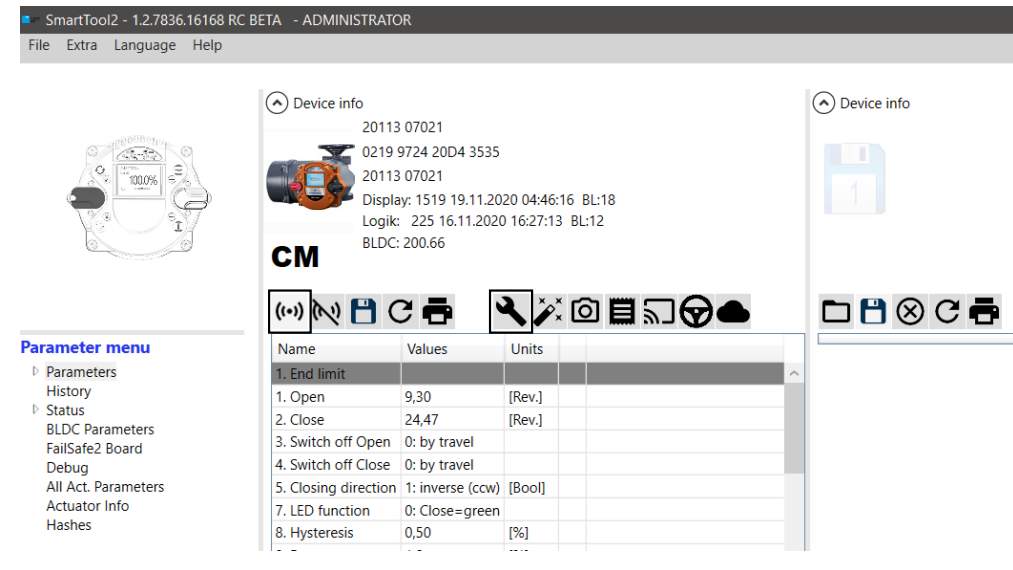


Figure 15.

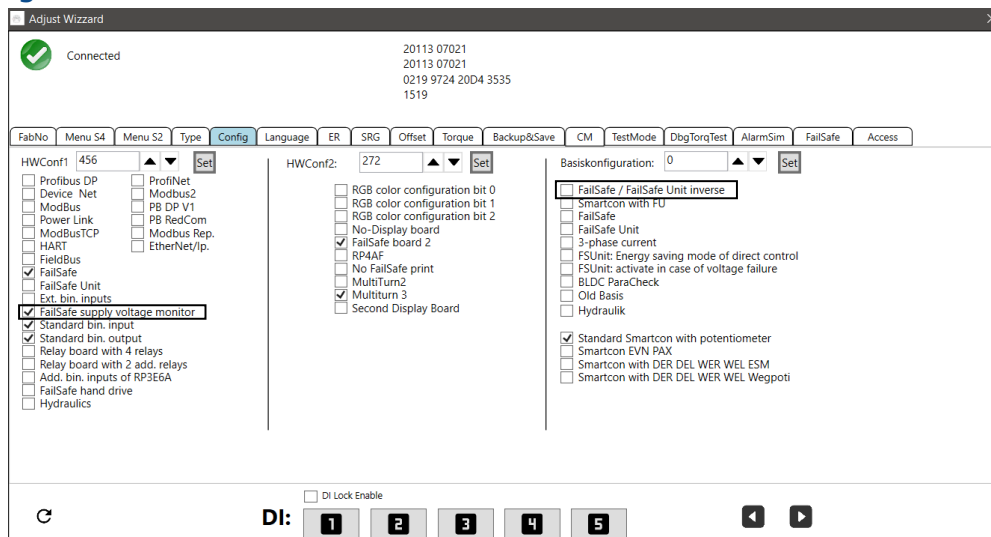


Table 1.

Fail-safe supply voltage monitor (HW Config.1)	Fail-safe/Fail-safe unit inverse (Basis configuration)	Fail-safe trigger in case of failure
X	0	Main power: yes Failsafe power: yes Auxillary supply: no
0	X	Main power: no Failsafe power: yes Auxillary supply: no
0	0	Main power: no Failsafe power: yes Auxillary supply: only when main power is missing
X	X	Main power: yes Failsafe power: yes Auxillary supply: no



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