**Power Factor Controller RVT**

**Quick start**

Installation

Step 1: Slide the RVT (a) perpendicularly to the capacitor bank cubicle (b).
Step 2: Rotate the RVT to insert it into the capacitor bank cubicle.

Note: cut-out dimensions are 138x138 mm.

Step 3: Insert the mounting bracket (c) in the corresponding fixation holes (d) of the RVT.
Step 4: Pull the mounting bracket backwards.
Step 5: Turn the screw (e) into the mounting bracket and tighten until the RVT is secured in place.

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**Commissioning**

Before commissioning (both auto and guided), please make sure that:
- RVT is unlocked (both soft and hardware lock)
- RVT is in SET mode
- CTs are properly connected

Parameters to set

<table>
<thead>
<tr>
<th>Parameter to set</th>
<th>Guided commissioning</th>
<th>Auto commissioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1Ph/3Ph (CT and voltage connection type)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Phase rotation only</td>
<td>X</td>
<td>O</td>
</tr>
<tr>
<td>CT ratio before phase shift</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>CT redirection</td>
<td>X</td>
<td>O</td>
</tr>
<tr>
<td>Phase shift</td>
<td>X</td>
<td>O</td>
</tr>
<tr>
<td>PT ratio (for MV banks)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>V Nominal</td>
<td>X</td>
<td>O</td>
</tr>
<tr>
<td>ON-Delay</td>
<td>X</td>
<td>O</td>
</tr>
<tr>
<td>OFF-Delay</td>
<td>X</td>
<td>O</td>
</tr>
<tr>
<td>Output status and size</td>
<td>X</td>
<td>O</td>
</tr>
<tr>
<td>Q step (minimal step size)</td>
<td>X</td>
<td>O</td>
</tr>
<tr>
<td>C/k (start current)</td>
<td>X</td>
<td>O</td>
</tr>
<tr>
<td>Target cos φ</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

X: manual setting required; O: auto setting

1. Start screen, click “Settings”
2. Click commissioning
3. Click automatic
4. Click OK
5. Click OK
6. Select type of connection
7. Click OK
8. Lock or unlock the “Bank settings” and press OK
9. Click OK
10. Input CT scaling: 50
11. Click OK
12. Click OK
13. Click OK
14. Click OK
15. Click OK
16. Click OK
17. Click OK
18. Click OK
19. Click OK
20. Click OK
21. Automatic commissioning completed

More information in detailed manuals.
Wait for the delay time between switching and/or the check that the CT's short-circuit bridge are.

Check that the CT's short-circuit bridge is.

Check capacitor and contactor connections.

Check capacitor currents for each phase.

Check and start the Auto commissioning again.

Check capacitor and contactor connections.

Check capacitor currents for each phase.

Check sequence and reactive power per output.

The type of connection defines the ways of RVT measuring current and voltage. RVT allows eight different types of connection topologies based on the type of installation and number of current and voltage transformers:

**RVT and RVT12**

<table>
<thead>
<tr>
<th>Type 1</th>
<th>Type 2</th>
<th>Type 3</th>
<th>Type 4</th>
<th>Type 5</th>
<th>Type 6</th>
<th>Type 7</th>
<th>Type 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1Ph-L1L1</td>
<td>1Ph-L1L1</td>
<td>1Ph-L1L1</td>
<td>1Ph-L1L1</td>
<td>1Ph-L1L1</td>
<td>1Ph-L1L1</td>
<td>1Ph-L1L1</td>
<td>1Ph-L1L1</td>
</tr>
</tbody>
</table>

1: one CT connection 2: two CTs connections 3: three CTs connections

LN: V measurement between L and N; LL: V measurement between phases 1: one V measurement; 3: three V measurements

1Ph: single phase network (L-N or L-L); 3Ph: three phase network

**Troubleshooting**

The controller is connected but nothing on display. Check the voltage setting and the fuses.

The controller does not switch on or off steps although there is a considerable variable inductive load. Check that the controller is in automatic mode. Check setting of phase shift and C/k. Check the CT short-circuit bridge is removed.

The controller does not seem to activate any steps. Wait for the delay time between switching and/or the power outage delay time.

The preset power factor is not achieved. At low or no load, a low power factor can correspond to a very small reactive current. The corresponding capacitor steps are too large for compensation. If the average cos φ over a period of time is too low, the preset cos φ may be increased.

All capacitors are switched on although the required reactive power is relatively low. Check setting of phase and C/k values.