



TAIYO EXU-61A

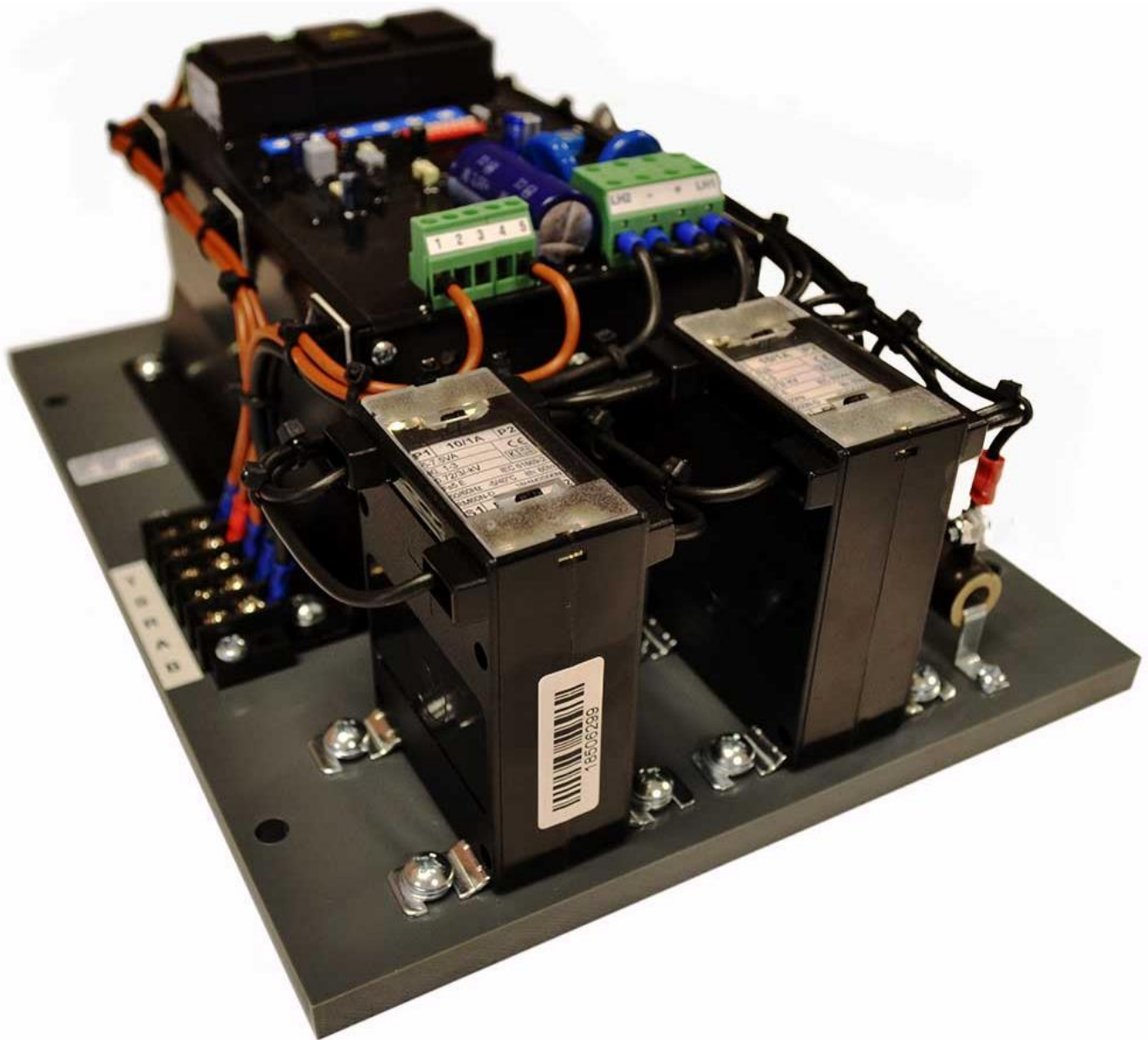
EMRI replacement for the TAIYO EXU-61A

Appendix V2.0

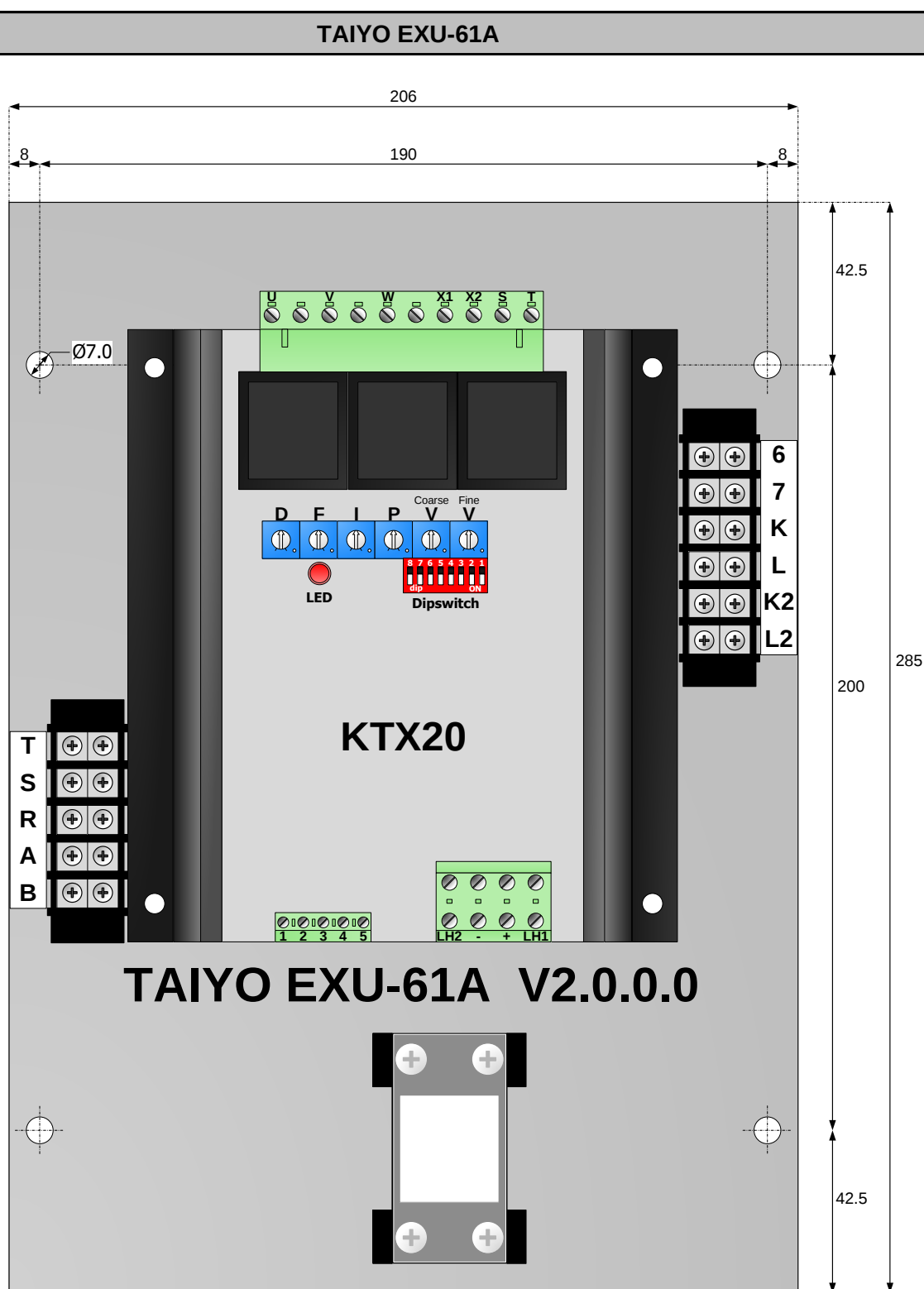


AVR I

TAIYO EXU-61A



AVR II



Product information

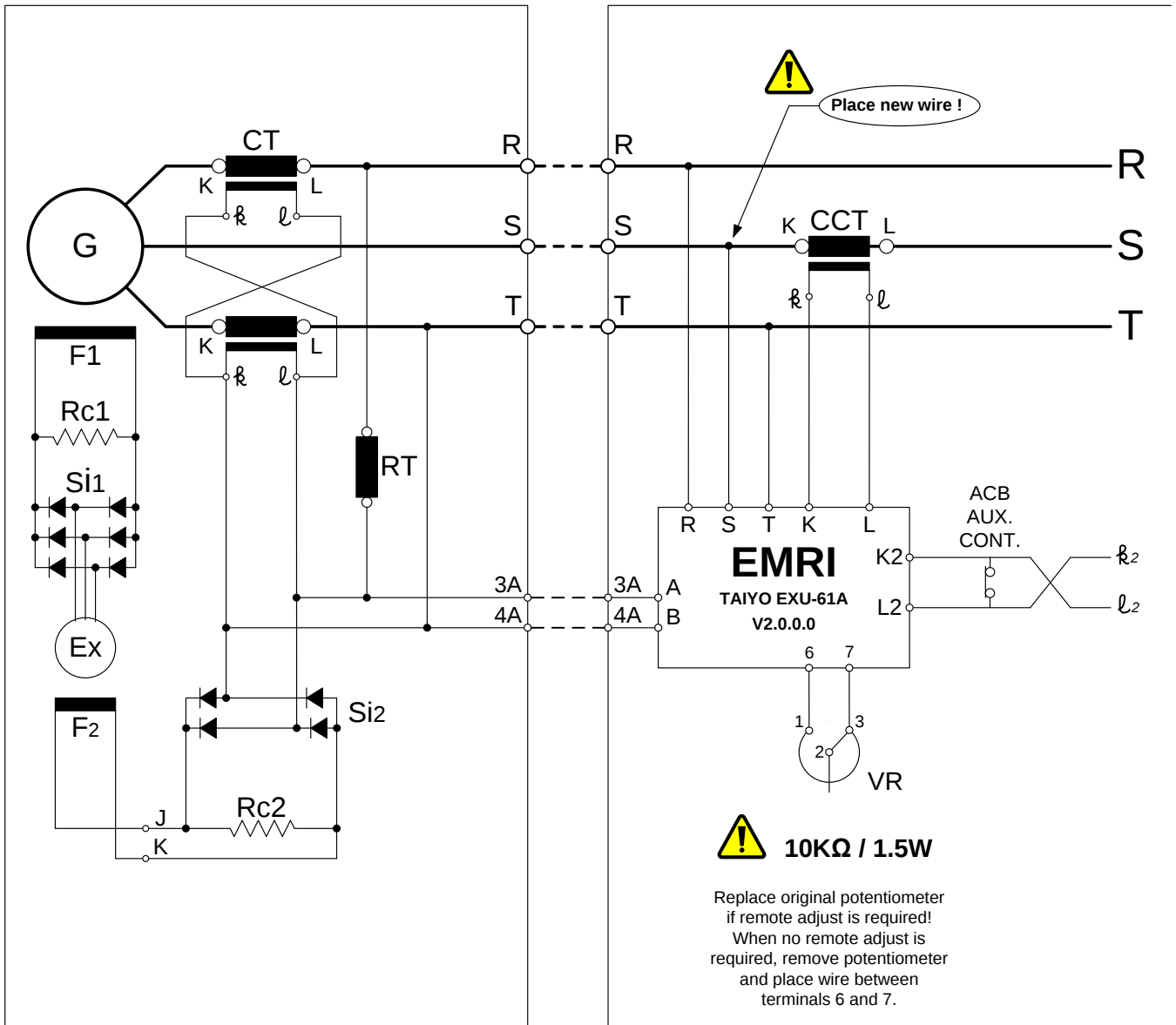
- Measurements : in mm. (LxWxH = 285 x 206 x 115 mm)
- Weight : +/- 3.8Kg.
- Mounting : 1:1 ORIGINAL TAIYO EXU-61A.
- Wiring diagram : See page 4,7,8 & 9.

CONNECTION DIAGRAM I

Connection diagram with EMRI AVR

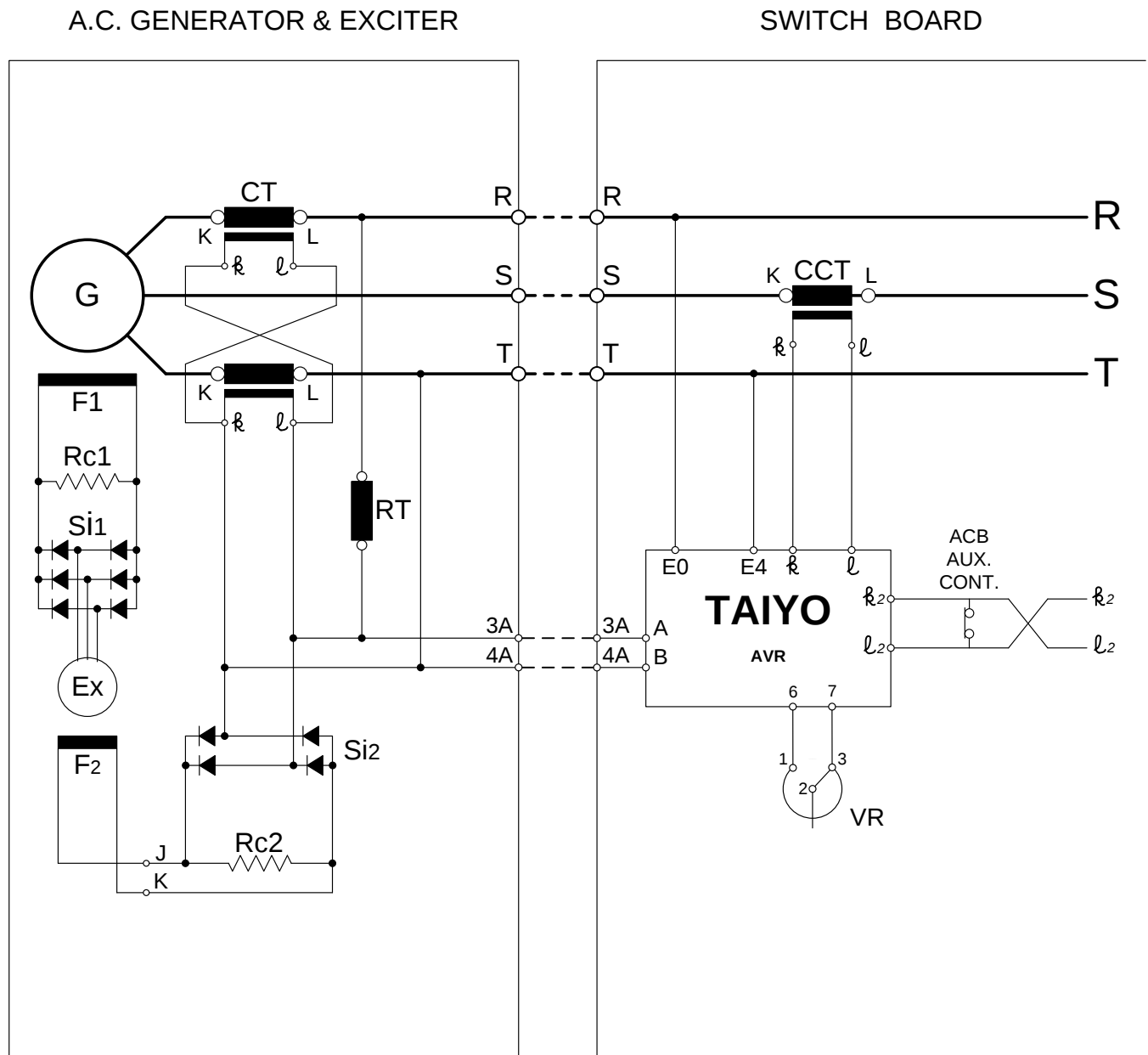
A.C. GENERATOR & EXCITER

SWITCH BOARD



CONNECTION DIAGRAM II

Connection diagram with TAIYO AVR



CONVERSION INSTRUCTIONS I

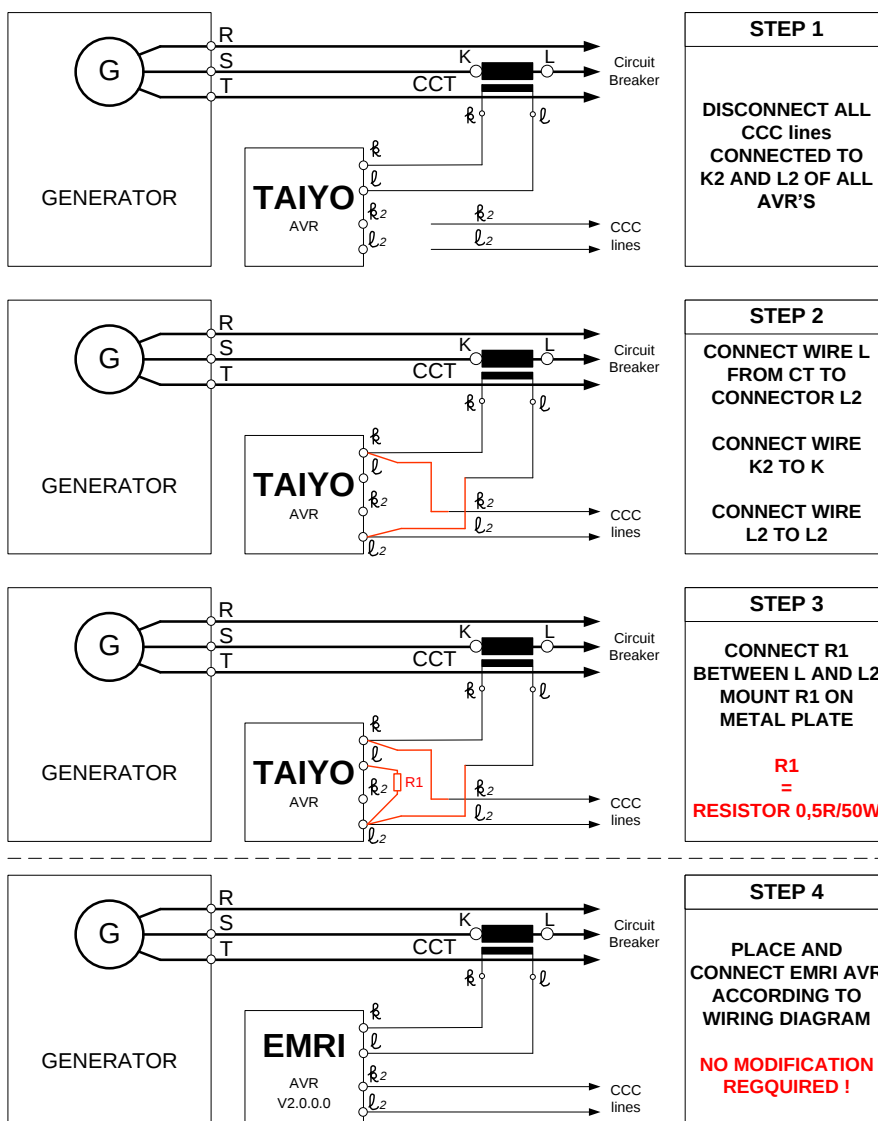
Conversion instruction for genuine TAIYO AVR

The following procedure describes modification for the application of the EMRI EXU-61A in a powerplant combined with TAIYO EXU-61A.

The procedure is required since CCC impedance of mutal AVR's do not match.

The modification of the CCC circuit must be performed in the following structured safe sequence.

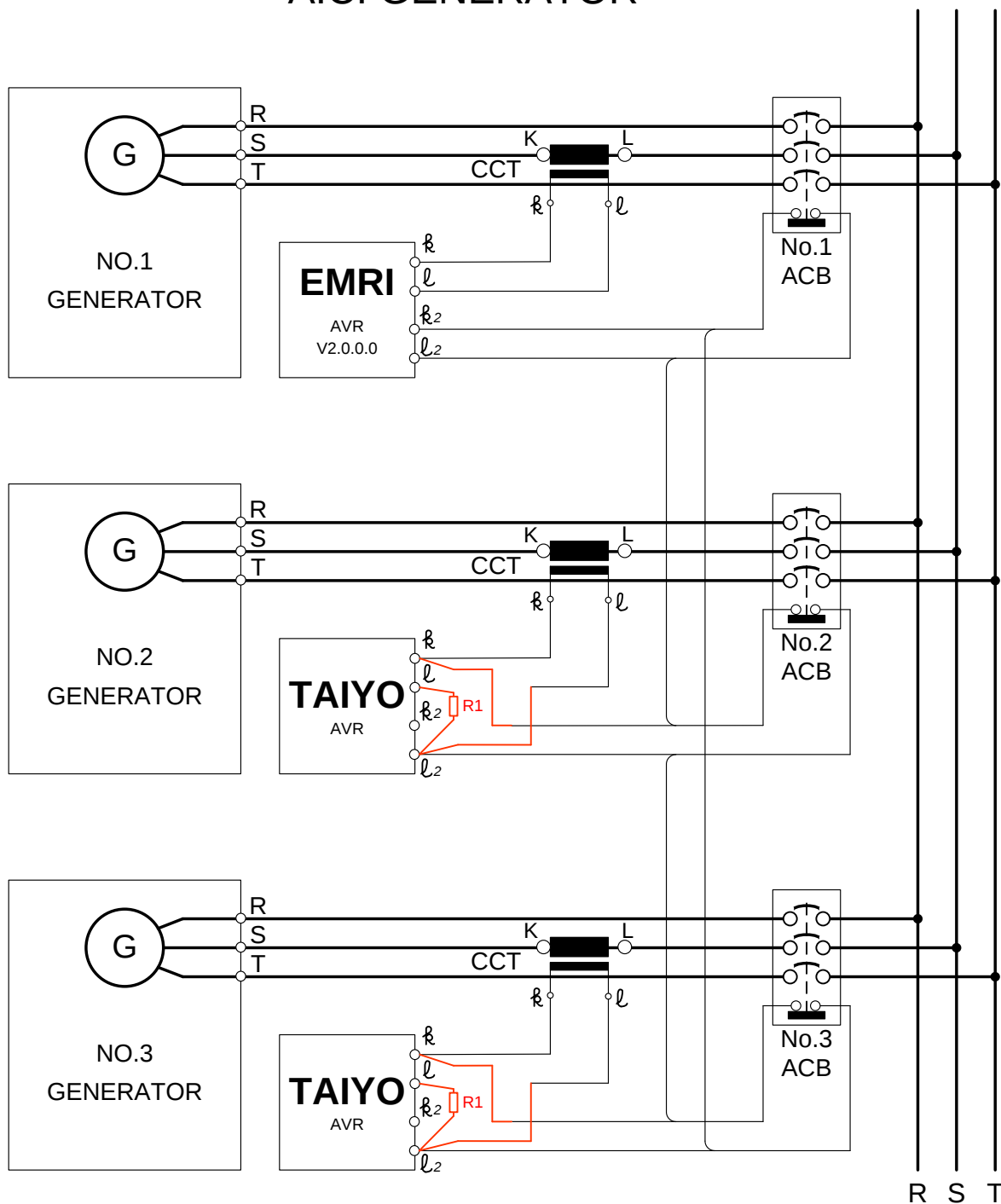
- A) Note the no-load voltage of the generator which you are going to use during modification.
- B) Bring the load to one AE generator or the port generator. This generator will be modified last.
- C) Stop all generator to be modified.
- D) Perform STEP 1 on the active generator. Disconnect the wires K2 and L2 of the generator feeding the bus. The bus voltage will drop slightly.
- E) Perform the STEP 1-3 for all generators with a TAIYO AVR.
- F) Install an EMRI AVR as STEP 4 on the generator where the AVR requires replacement.
- G) Start and test each generator and adjust the no load voltage equal to the voltage of step A.
- H) Perform an open and close synchronization with one generator.
Upon close of the CB of the new generator on the bus, open the generator of step B.
- I) Modify the generator of step B according to step E.
- J) All generators are ready for use.



WIRING DIAGRAM I

Wiring diagram for Cross Current Compensation (1x EMRI + 2x TAIYO)

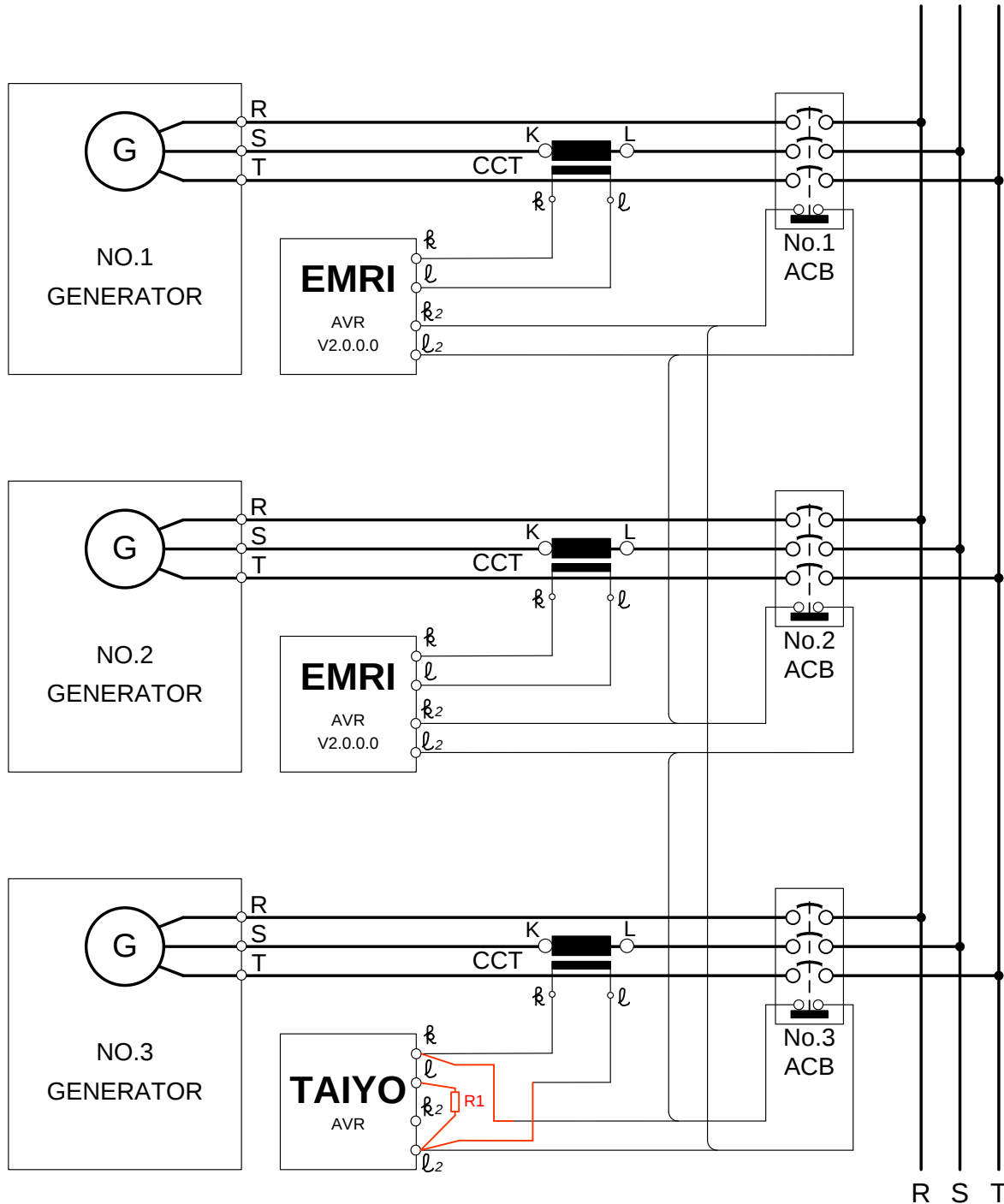
A.C. GENERATOR



WIRING DIAGRAM I I

Wiring diagram for Cross Current Compensation (2x EMRI + 1x TAIYO)

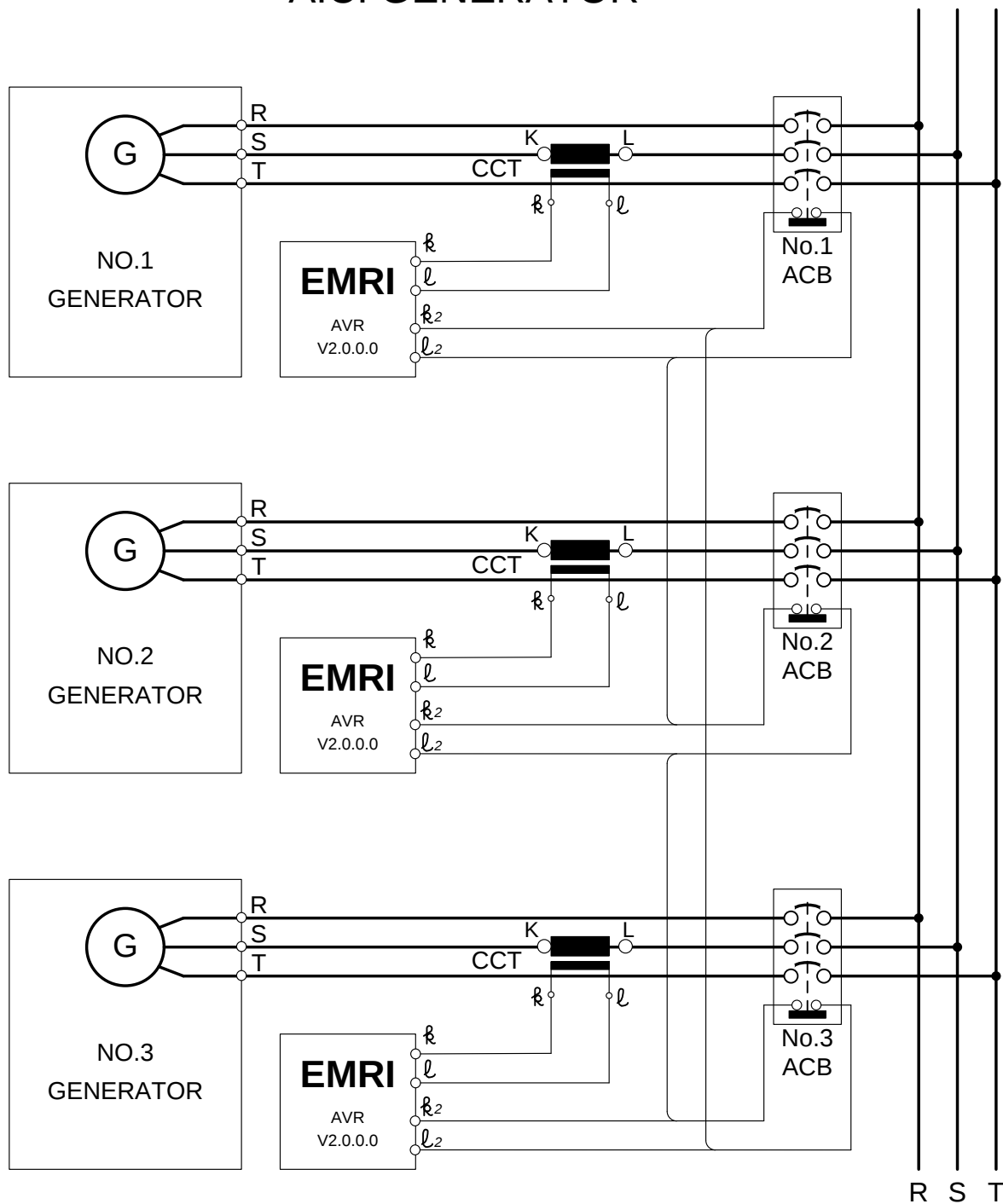
A.C. GENERATOR



WIRING DIAGRAM I I I

Wiring diagram for Cross Current Compensation (Only EMRI)

A.C. GENERATOR



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GENERAL INSTALLATION INFORMATION

Absolute Maximum Ratings

- The Absolute Maximum Ratings are those limits for the device that, if exceeded, will likely damage the device. Exceeding the absolute maximum ratings voids any warranty and/or guarantee.

Mounting

Mounting of the product should be done in such a way that:

- the absolute maximum ambient temperature rating of the product will never be exceeded.
- maximum cooling (direction of cooling ribs and direction of airflow) is achieved.
- Mounting no humid air can flow through the product or condensation occurs.
- dust or other materials or residue will not remain in or on the product.
- the maximum vibration is not exceeded.
- personal contact with persons is impossible.

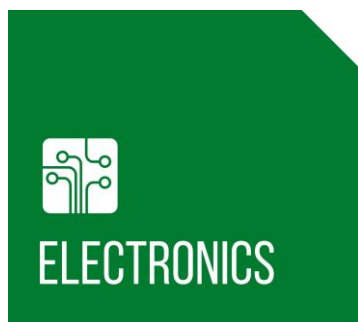
Wiring

- Diameter size of the wiring should be enough to carry the expected current. Wire insulation should be enough to withstand the expected operating voltages and temperatures.
- To improve EMC emission and immunity, care should be taken for the lay out of the wiring. This in respect to all wiring in the installation.
- Keep current carrying wires as short as possible.
- Keep wires carrying a total sum of zero Ampere close to each other, or in one single cable, E.g. R, S, T or k and l or 6 and 7.
- Avoid current carrying conductors next to sensing or control wiring. Especially current controlled by SCR's or PWM controlled transistors.
- If sensitive sensing signal cables need to be laid across distance along other cabling, shielded cable is preferred. Keep the shield as long as possible and the wiring outside the shield as short as possible. Do not solder or shrink the shield to a regular wire. Connect the original shield to ground at one side with an as large as possible contact surface.

Additional installation information

- When the product is supplied by means of a transformer, it should never be an auto-transformer. Auto-transformers react as voltage sweep up coil and may cause high voltage peaks.
- Standard fit capacitors or over-voltage suppressers across I1 (+) and K1 (-), or exciter field terminals inside the generator should be removed.
- When the product is supplied by means of a transformer, it should be able to carry at least the maximum expected current. Advisable is, to have a transformer which can carry twice the maximum expected current. Inductive loads make voltage sags and peaks into the secondary voltage of a transformer, from which the device may malfunction.
- It is not recommended to apply switches in dc outputs. It is preferred to use switches in the ac supply inputs of devices. In case it is unavoidable to have switches in the dc output of a device, action must be taken to avoid over voltage damage to the device due to contact arcing. Use a voltage suppressor across the output.
- It is not recommended to apply switches or fuses in the sensing lines. Defects can cause high voltage situations due to over-excitation.
- When using a step down transformer in medium or high voltage generators, the transformer should be three phase (if three phase sensing), and the transformer should be suitable for acting as a sensing transformer. If the transformer is unloaded, connect a resistor to avoid voltage waveform distortion.
- The phase relation from the generator to the AVR is important. Also when voltage transformers and/ or current transformers are installed.
- When using a step down or insulation transformer in the droop circuit, phase relation from the generator to the AVR is important.
- CT's wiring, connected to the AVR should never be grounded.
- Always disconnect electronic products, circuits and people before checking the insulation resistance (Megger check).
- Due to differences in generators impedance's, EMC behavior is not predictable. Therefore the commissioner / installer should be aware of proper and correct installation.
- Large, highly inductive, exciter stator windings can cause destructive high voltage peaks. Adding a resistor from 10 to 20 times the exciter stator field resistance reduces voltage spikes. If necessary filter can be fitted additionally. (e.g. snubber, RC-network)
- Upon problems during commissioning, faulty behavior or defects in the generator, consult the fault finding manual at our web site
- Some advises may be overdone or seem extraordinary, but since the electrical rules are the same everywhere, these advises are given.

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