INDEX

General information according the installation

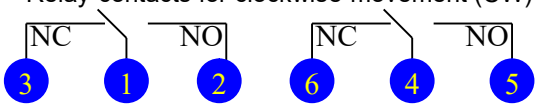
Depending on the type of rotator, 6 to 12 connections have to be made between the ERC and the rotor-controller. All connections are available on the ERC with screw-terminals.
The needed connections are in some cases available through an external connector at the rotor-controller. In this case the ERC might be put in an external housing.
In all other cases the connections have to be made inside the rotor-controller and the ERC may fit into the housing of the rotor-controller due to the small size of the ERC.
For some installations additional work has to be done inside the rotor-controller, like for example cutting or adding of wires. This will be explained in the individual installation-sheet of the rotor-controller.
Additional hints, e.g. setting of the function of the AUX-relay with the Service-Tool, have to be followed in order to make the function of a brake or speed-control work properly.
In the rotator-specific installation-sheets the connections to be made are shown with colour-coded and numbered dots. Those have to be connected with the corresponding screw-terminal on the ERC (e.g. BLUE1 in the schematics have to be connected to the terminal BLUE1 on the ERC).

The connections are:

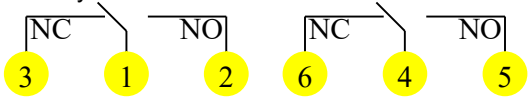
1 Rotor-feedback-voltage (positive voltage between 0..15V)

1 Reference for the rotor-feedback-voltage

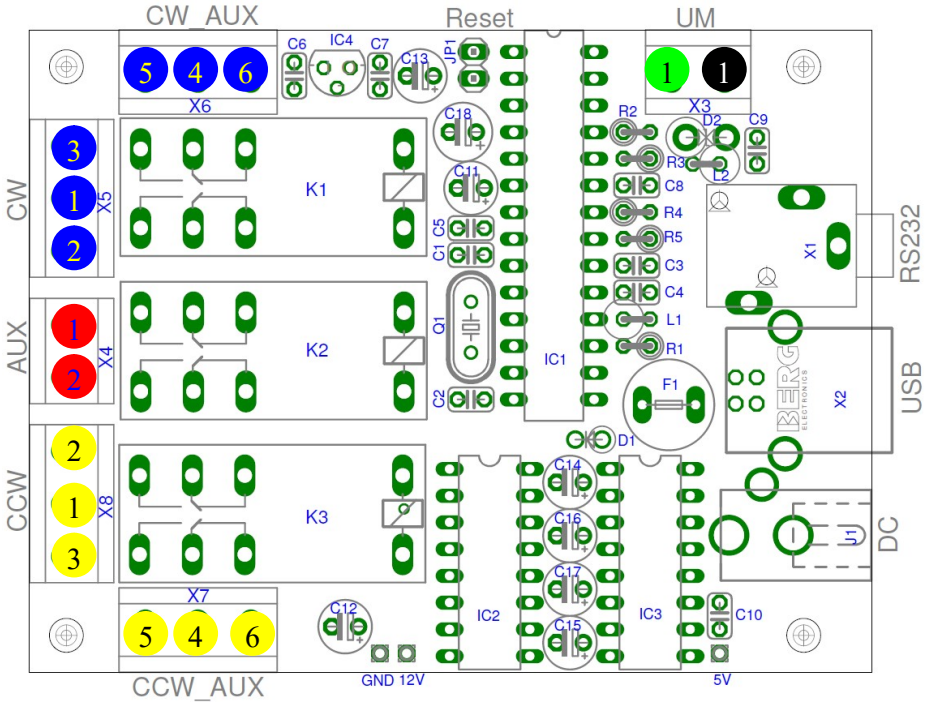
1 - 6 Relay-contacts for clockwise-movement (CW)



1 - 6 Relay-contacts for counterclockwise-movement (CCW)



1 - 2 Relay-contacts for a brake or speed-control (if applicable with your rotator).



Only tighten the screw-terminals lightly. If you tighten them too much, it may happen that the solder-pins share off!

Power-Supply for the ERC :

- Never use the internal power-supply of the rotor-controller to supply the ERC unless you are told to do so.
- The usage of the internal supply of the rotor-controller may have a negative influence on the indication-system of the rotor-controller or may overload/destroy the internal supply.
- For some rotor-controllers a separate power-supply (e.g. wall-mount) is needed, that is not connected to stations ground. You will find specific instructions in the individual installation sheet.

General Safety-Instructions

- Don't continue using the product if fit is damaged.
- Keep electronic assemblies and components away from children!
- Products that carry electric voltages must be handled by taking care about the valid instructions and regulations.
- If the product must be repaired, only use original spare parts! Using different parts may cause property damage and personal injury! The repair has only to be done by an expert!
- Before applying main-voltage the product must be securely build into a housing to provide protection against accidental contact!
- The installation has to be done by a skilled expert.
- Cables that carry dangerous voltages (e.g. main-voltage) must be installed according to the valid instructions and regulations. The needed safety-distances have to be maintained.
- Connection-cables have to be chosen according to the needed diameter.
- Before working on the product all supply-voltages have to be securely cut of.
- The product is designed to work in clean and dry areas inside buildings.
- Prevent the product of humidity, water and heat.
- Don't use the product in areas where explosive gases, vapour or dust are or may occur.

- Don't let the product fall or apply mechanical stress as the product may be damaged.

Follow the instructions in this installation-guide carefully. Ing.-Buero Alba de Schmidt cannot be held liable for damage of other equipment (e.g. rotor-control-boxes) due to wrong connections or handling.

Mechanical integration of ERC into a control-box

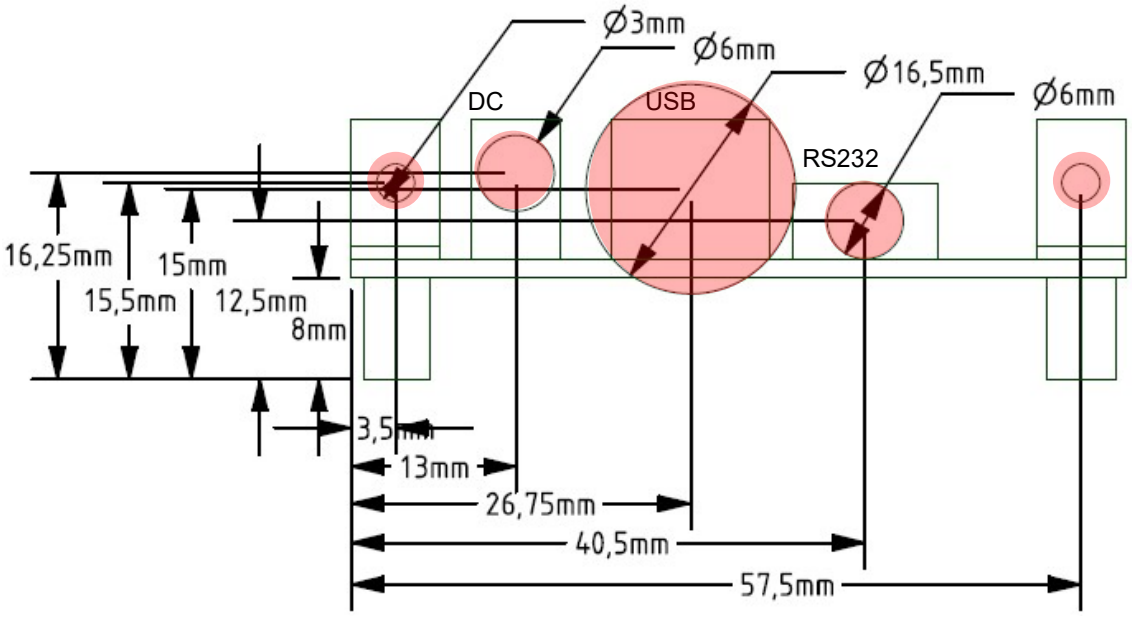
Due to its small size, the ERC can be mounted in many cases (not in all) inside a control-box. In this case the ERC has to be mounted that way, that the external connectors for DC and USB or RS232 are available from the outside of the control-box. There are 2 possible ways of mechanical integration:

Mounting to the back-panel of the control-box

Together with your ERC you receive 2 mounting-angles, which are to be used for back-panel-mounting. While choosing the place to mount the ERC, it needs to be taken care, that the bottom-side of the PCB has at least a distance of 8mm to anything below it and that the top-side of the PCB has at least a distance of 16mm to anything above it.
4 holes have to be made:

- 2 holes for the mounting-angles with 3mm
- 1 hole for the DC-connector with 6mm
- 1 hole for the USB-connector (only for USB-version) with 16.5mm
- 1 hole for the RS232-connector (only for RS232-version) with 6mm

It is recommended to drill the holes 0.2 – 0.4mm larger to compensate inaccuracies of the holes.

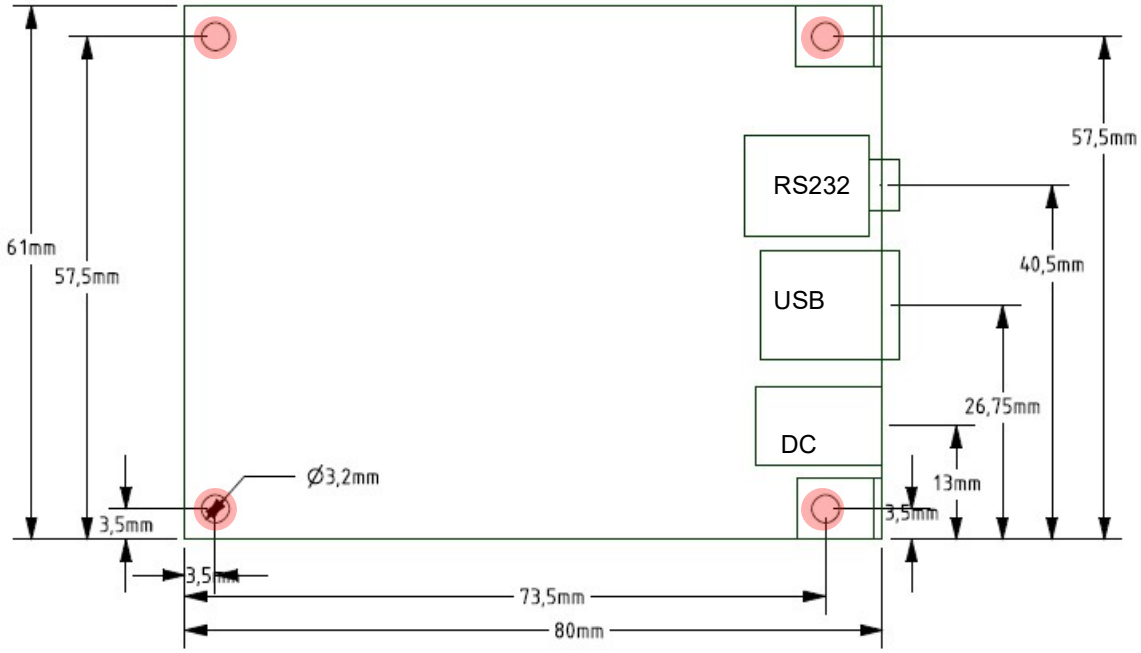


Mounting to a panel inside the control-box

Together with your ERC you receive 4 distance-bolts, which are to be used for panel-mounting inside the control-box. While choosing the place to mount the ERC, it needs to be taken care, that the bottom-side of the PCB has at least a distance of 8mm to anything below it and that the top-side of the PCB has at least a distance of 16mm to anything above it.
2 holes have to be made in the back-panel:

- 1 hole for the DC-connector with 6mm
- 1 hole for the USB-connector (only for USB-version) with 11mm
- 1 hole for the RS232-connector (only for RS232-version) with 6mm
- refer to the picture above for the position of that holes

4 holes with a diameter of 3.2mm have to be drilled on the panel to mount the PCB.
It is recommended to drill the holes 0.2 – 0.4mm larger to compensate inaccuracies of the holes.



Safety-Instructions for handling main-voltages

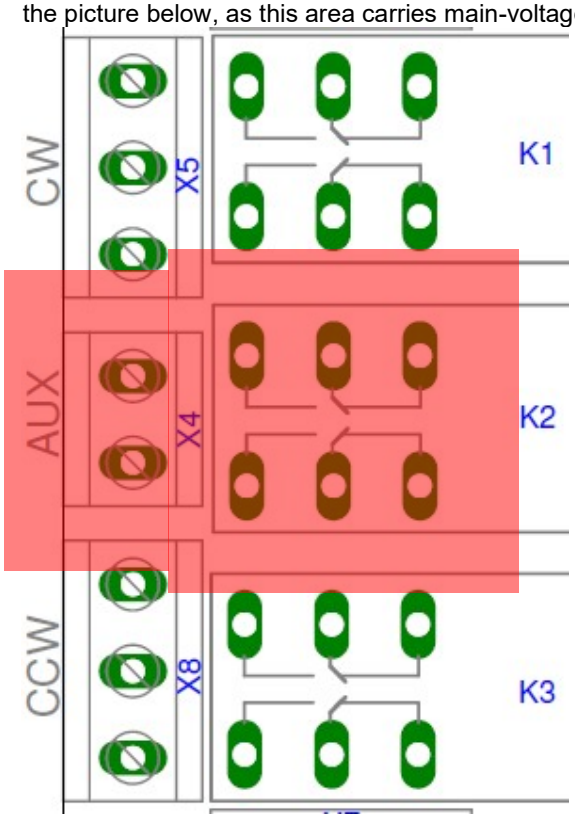
The following rotators use main-voltage (230 VAC or 115 VAC) for their brake-circuits:

- CDE/Hygain : HAM M - HAM II – HAM III – HAM IV – CD44 – CD45 – T2X – TR44
- WALMAR : ML, MU-1, MU-3, MH

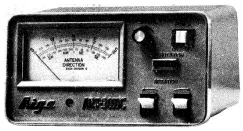
The design of the ERC is made to provide the needed safety-distances between the brake-circuit and the remaining part of the electronic circuit or the housing of the rotor-controller. These safety distances must be maintained also during installation of the ERC.

Take care about the following issues:

- Only use the wires and mounting materials provided with your ERC.
- The distance between the PCB and the housing is given by the mounting-bolts of 8mm delivered with the ERC and must not be reduced.
- The area between PCB and housing must be kept free, especially in the red marked area in the picture below, as this area carries main-voltage.

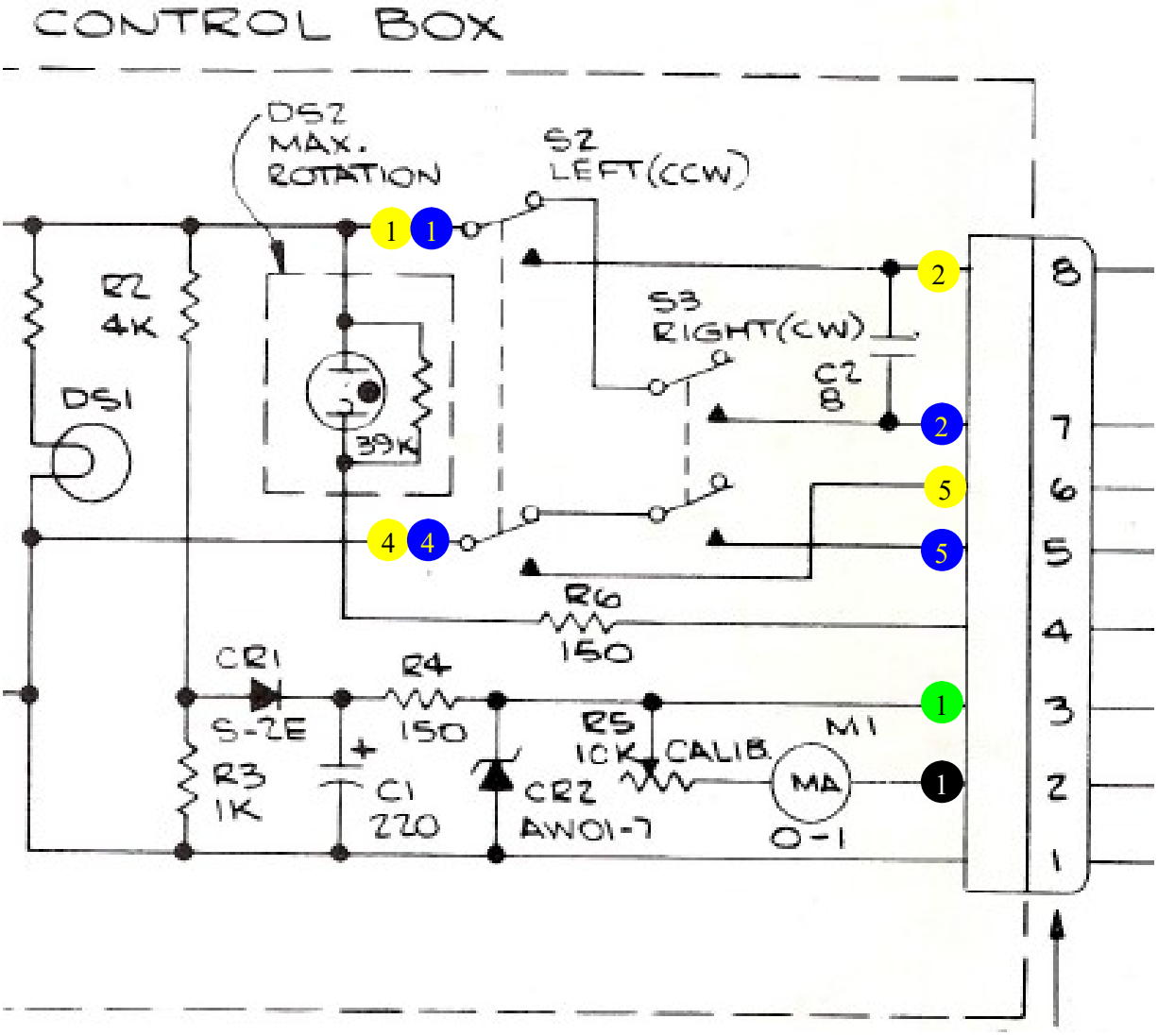


AIGA: ART-3000C



Rotor-specific information:

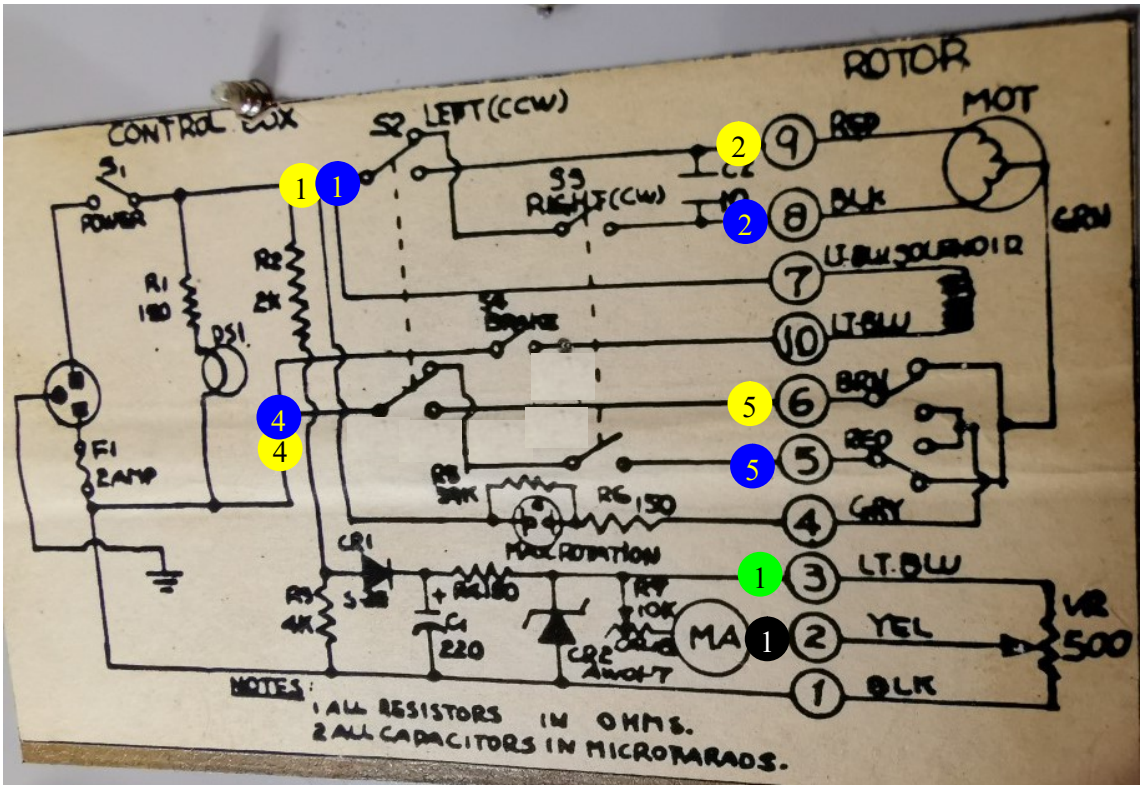
- Settings of AUX-relay: None



AIGA: ART-8000

Rotor-specific information:

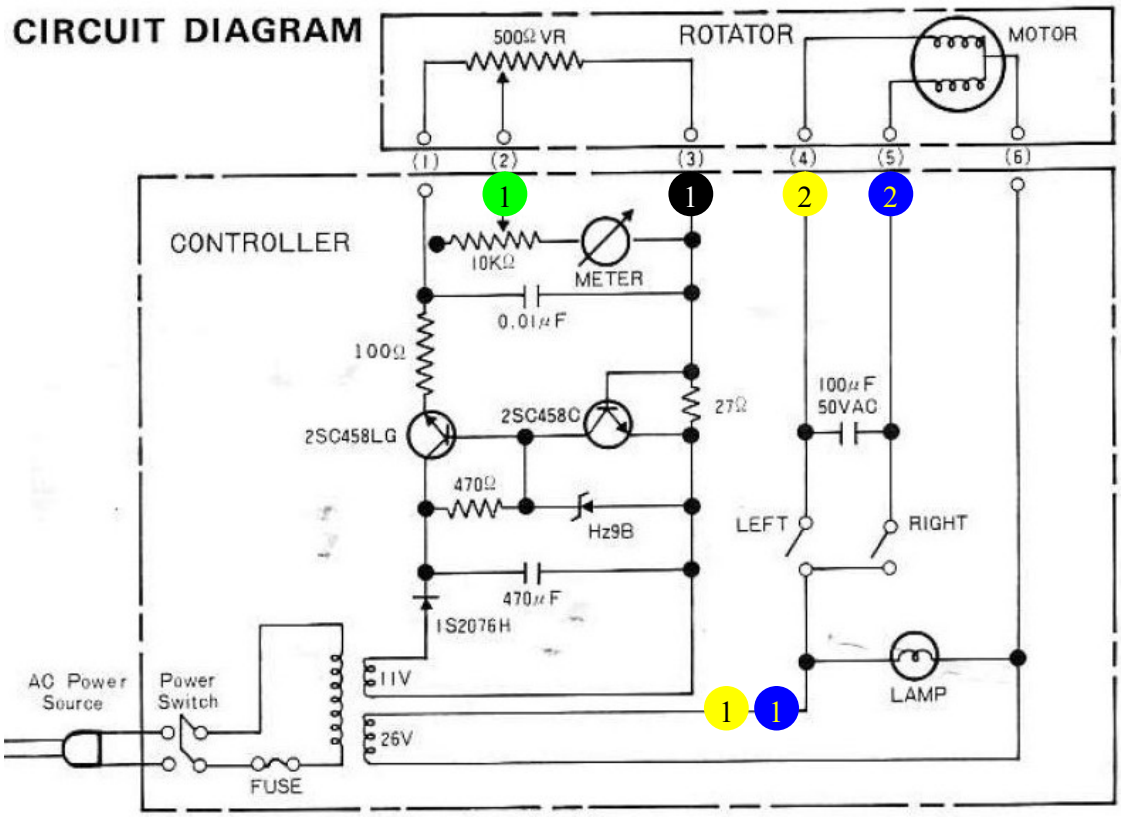
- Settings of AUX-relay: None



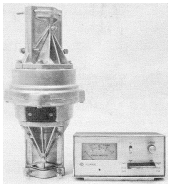
Alinco: EMR-400

Rotor-specific information:

- Settings of AUX-relay: NONE

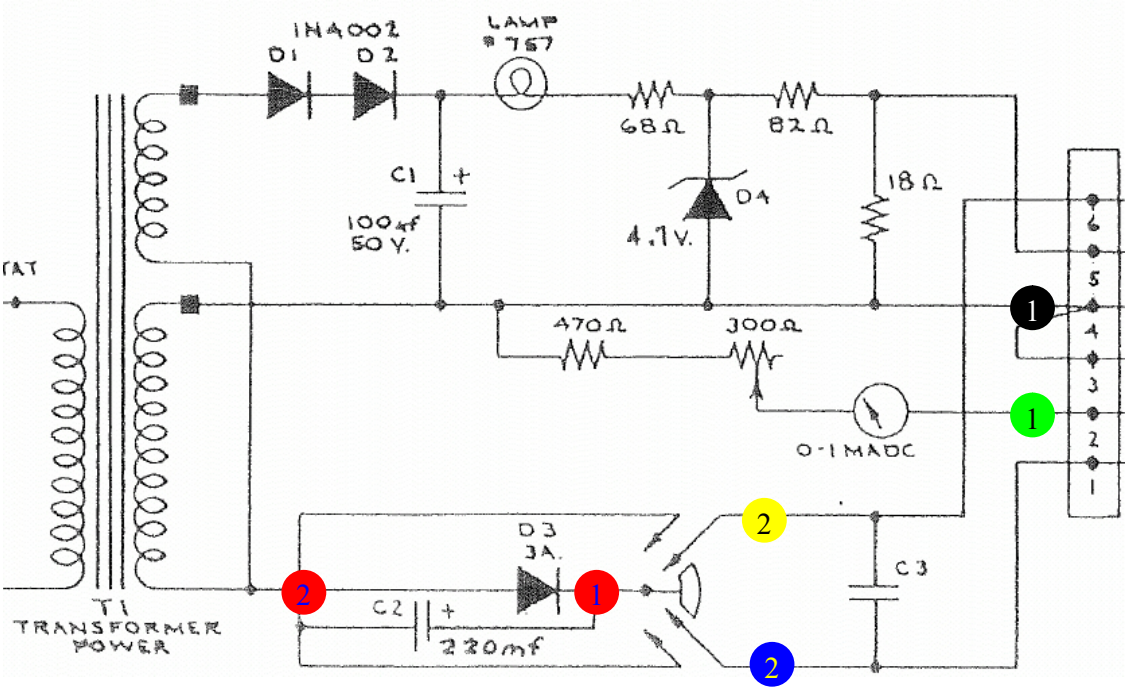


Alliance: HD73



Rotor-specific information:

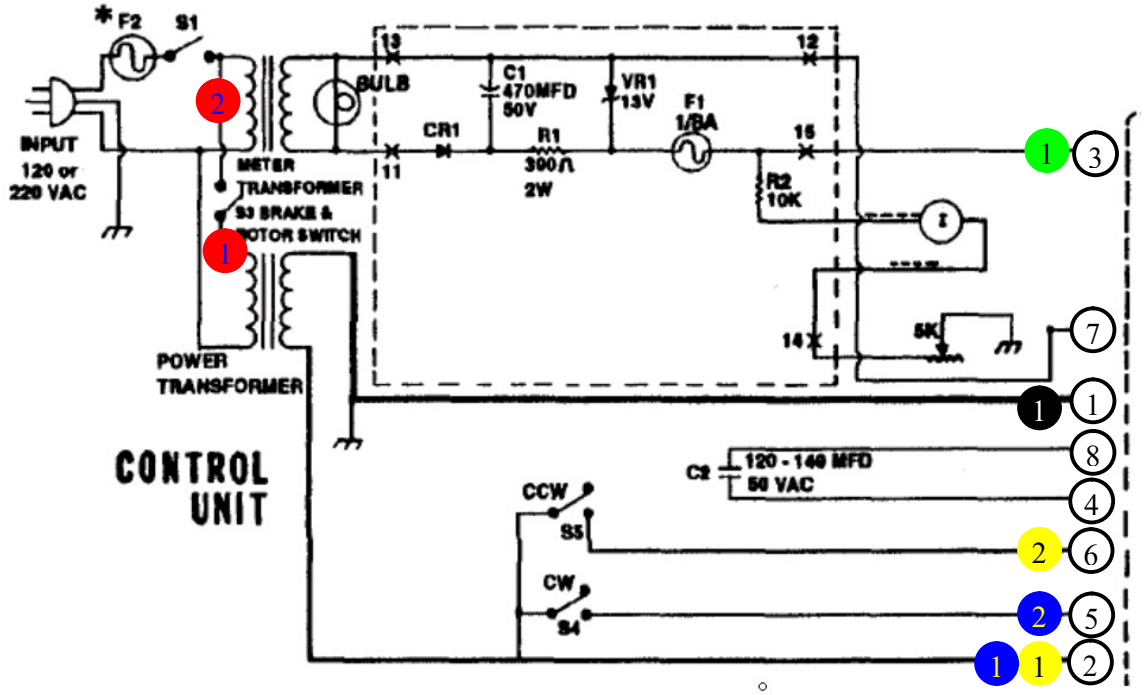
- Settings of AUX-relay: SPEED
- Make a bridge between 1 1 1 on the Rotor-Card



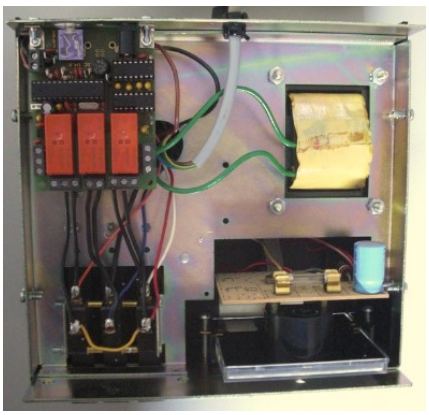
CDE/HyGain: HAM II – HAM III – HAM IV – CD44 – CD45 – T2X


Rotor-specific information:

- Settings in the Service-Tool (more information available by pressing the Help-button):
  - Function of AUX: BRAKE
  - Delay of AUX: 0..5000ms (time to engage brake); recommended setting 3000 to 5000



1 2 are in parallel to the BRAKE-paddle of the control-box and carry main-voltage.



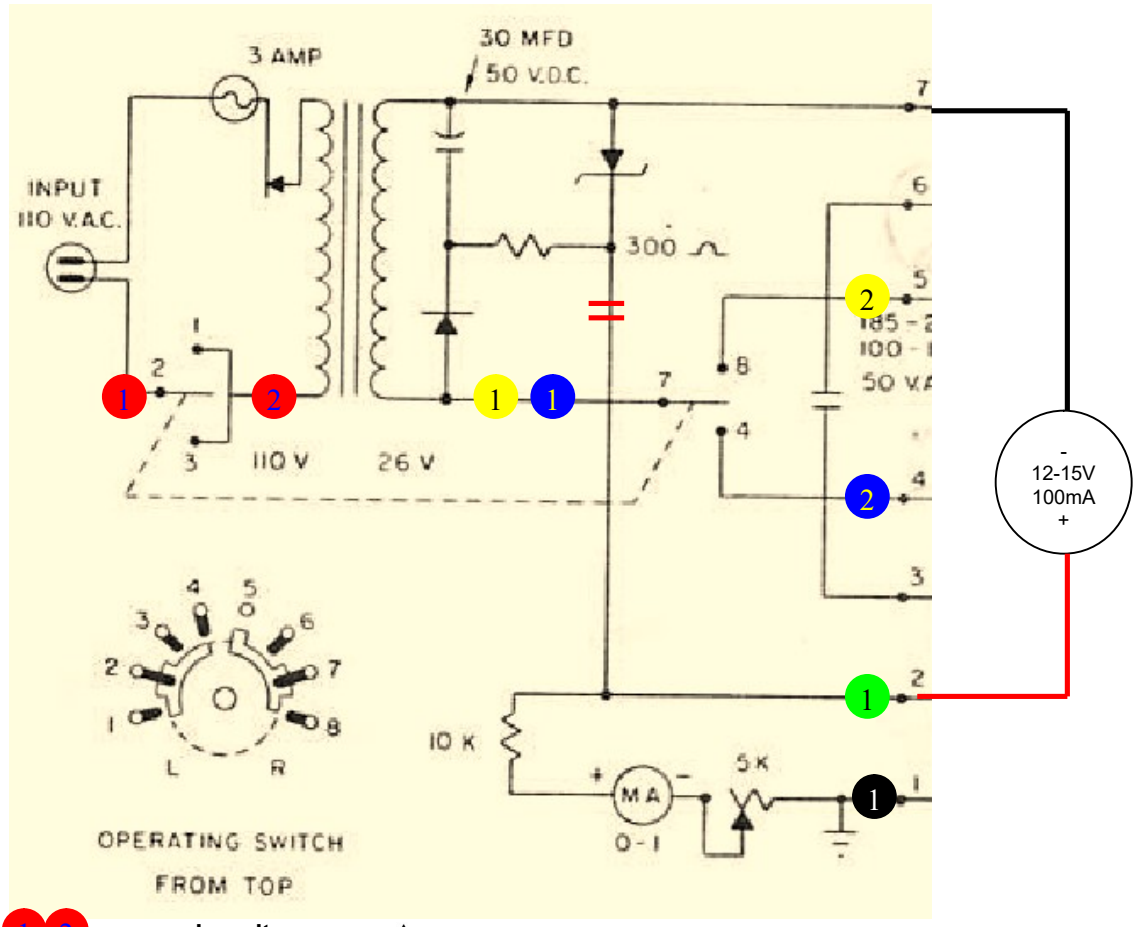
CDE : HAM M – TR44 (series 2 control-box)

Rotor-specific information:

- Settings of AUX-relay: BRAKE

Additional work:

This control-box uses the same transformer for motor-current and for the instrumentation section. We need to supply the instrumentation section permanently but cannot use the transformer of the control-box as this is going to be overheated when permanently supplied.
An external regulated DC-supply of 12-15V which is isolated from the ERCs supply (e.g. an extra wall-mount-supply) is to be added to the pins 2 (pos.) and 7 (neg.) of the control-box and the instrumentation section has to be isolated from the internal supply of the control box. Cut the connection where indicated with this symbol: ||



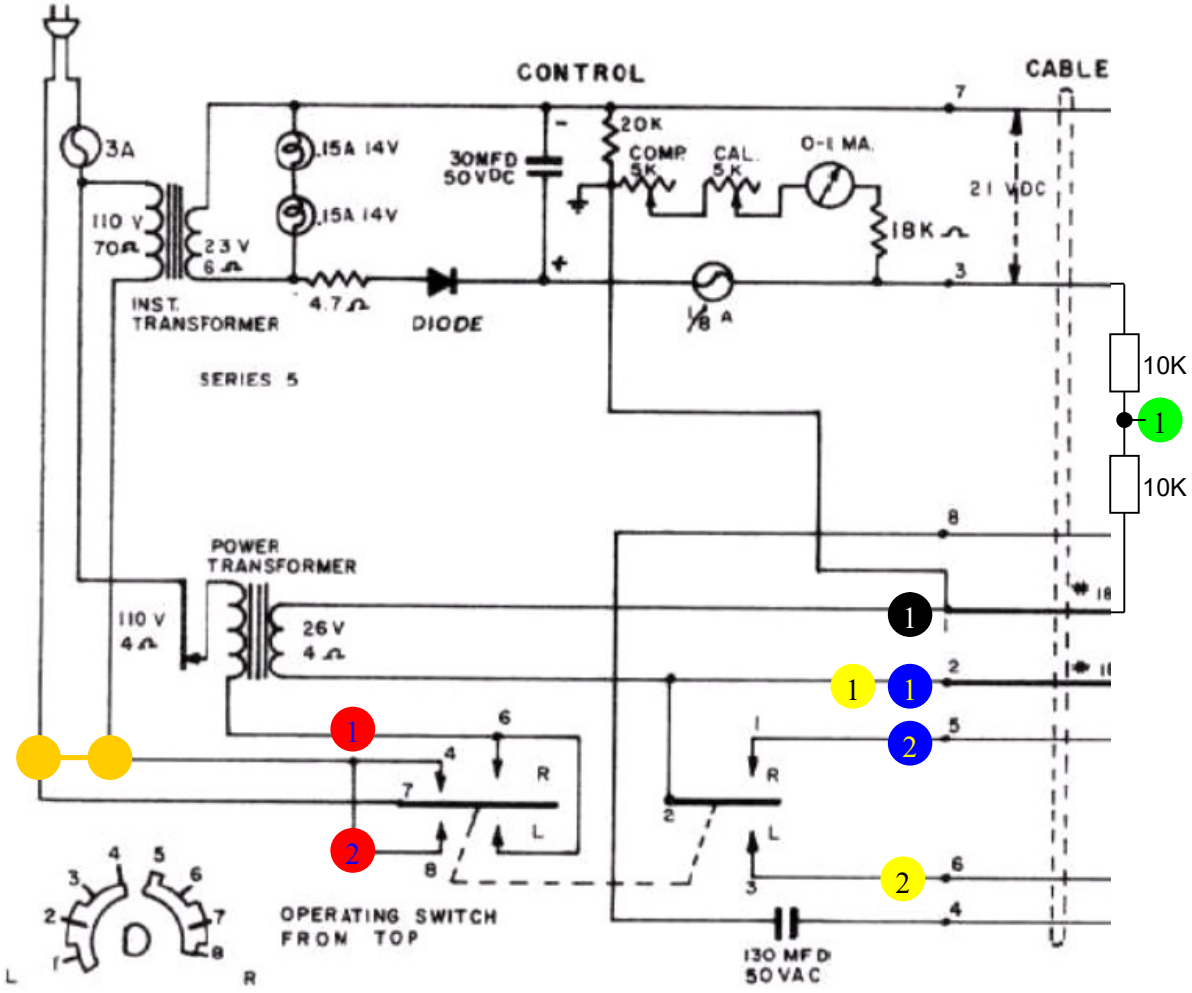
1 2 **carry main-voltage.**

CDE : HAM M – TR44 (series 3 control-box)

Rotor-specific information:

- Settings of AUX-relay: BRAKE

Additional work: A connection has to be made (orange connection in the schematics) in order to supply the instruments-transformer permanently with main-voltage. **Attention:** this cable is carrying main-voltage. Take care about proper isolation and positioning of the cable!
As the feedback-voltage is around 21Volts, a voltage divider made of 2 resistors 10K needs to be added.



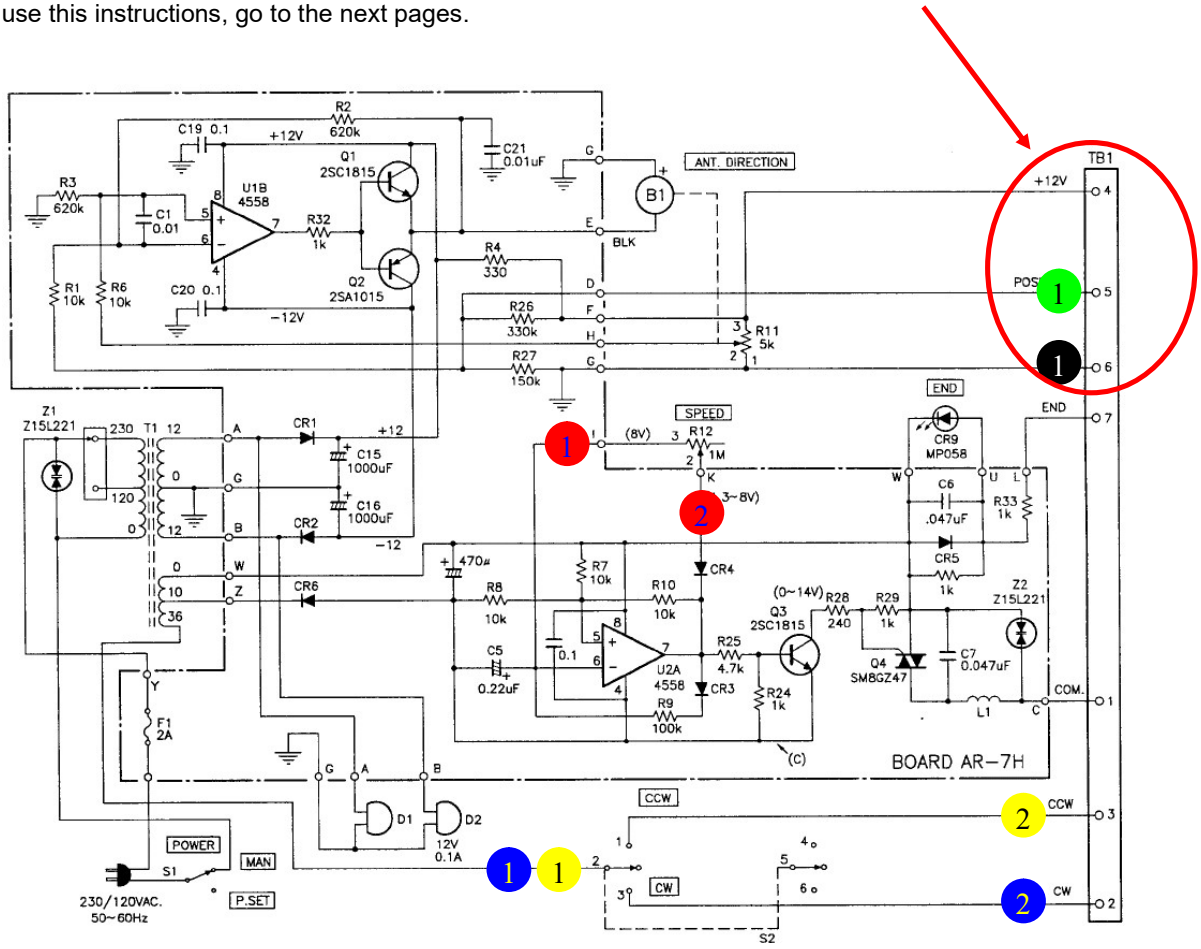
1 2 **carry main-voltage.**

Create : RC5-1 (AR-7H)

Rotor-specific information:

- Settings of AUX-relay: SPEED

There are alternative schematics of the RC5-1 out there which can be identified when looking to the terminals 4 and 6. If terminal 4 is not connected to +12V and terminal 6 is not connected to GND, don't use this instructions, go to the next pages.



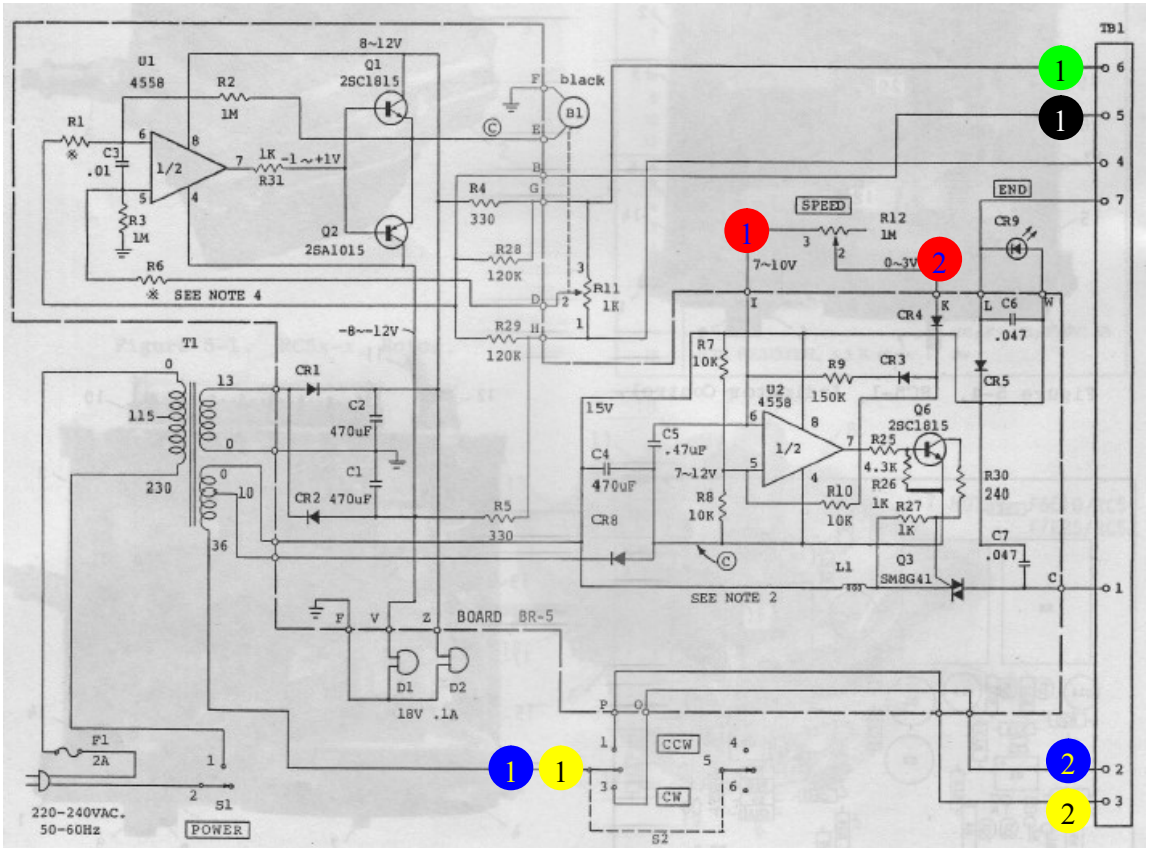
Create : RC5-1 (BR-5)

Rotor-specific information:

- Settings of AUX-relay: SPEED

As none of the terminals of the rotator-feedback-potentiometer is tightened to the ground of the rotor-controller, take care about the following issue:

- For ERC V4 **kits** only: Use a separate power-supply (e.g. wall-mount), that is not connected to stations ground.



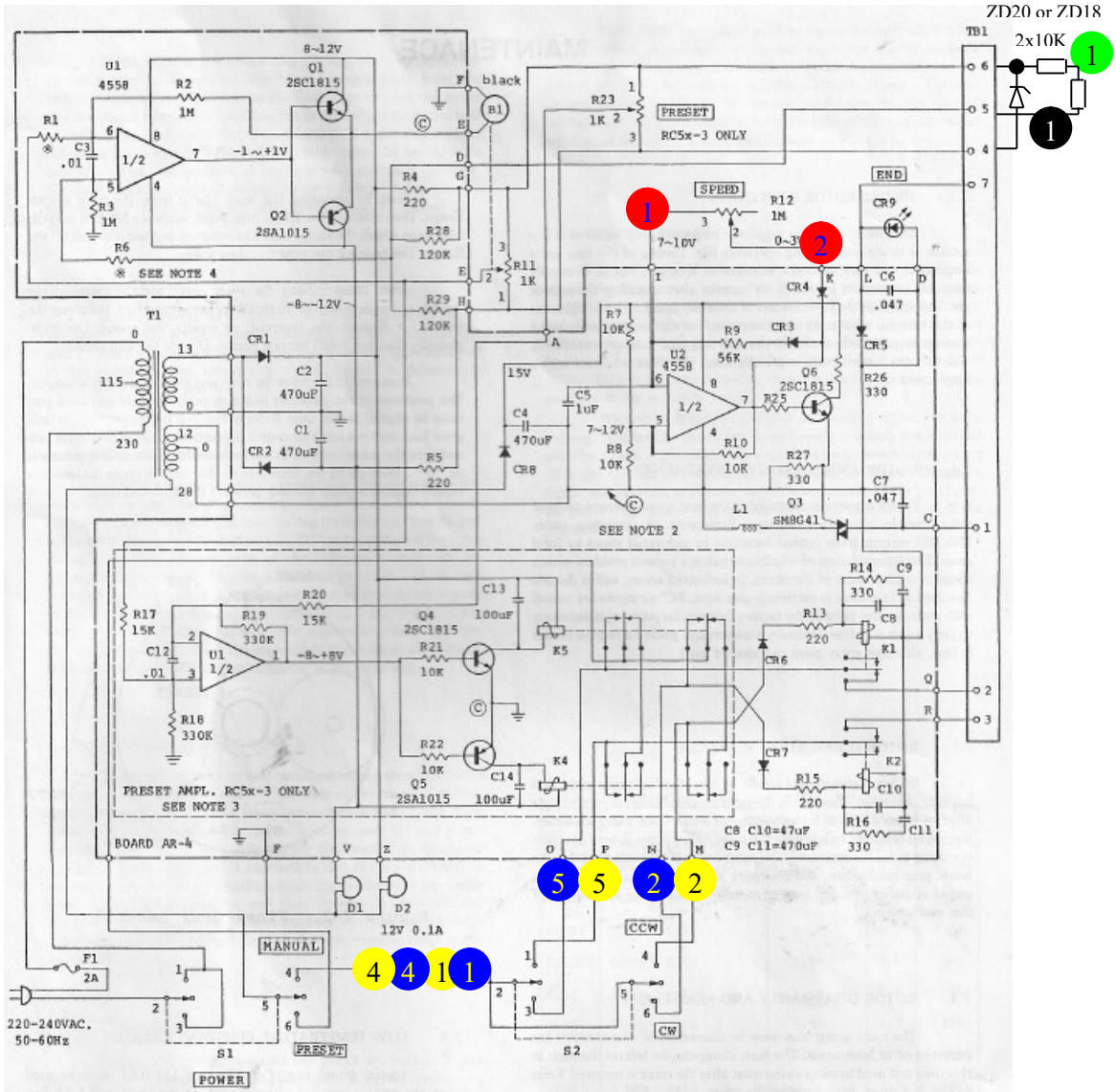
Create : RC5-1 (AR-4)

Rotor-specific information:

- Settings of AUX-relay: SPEED

As none of the terminals of the rotator-feedback-potentiometer is tightened to the ground of the rotor-controller, take care about the following issue:

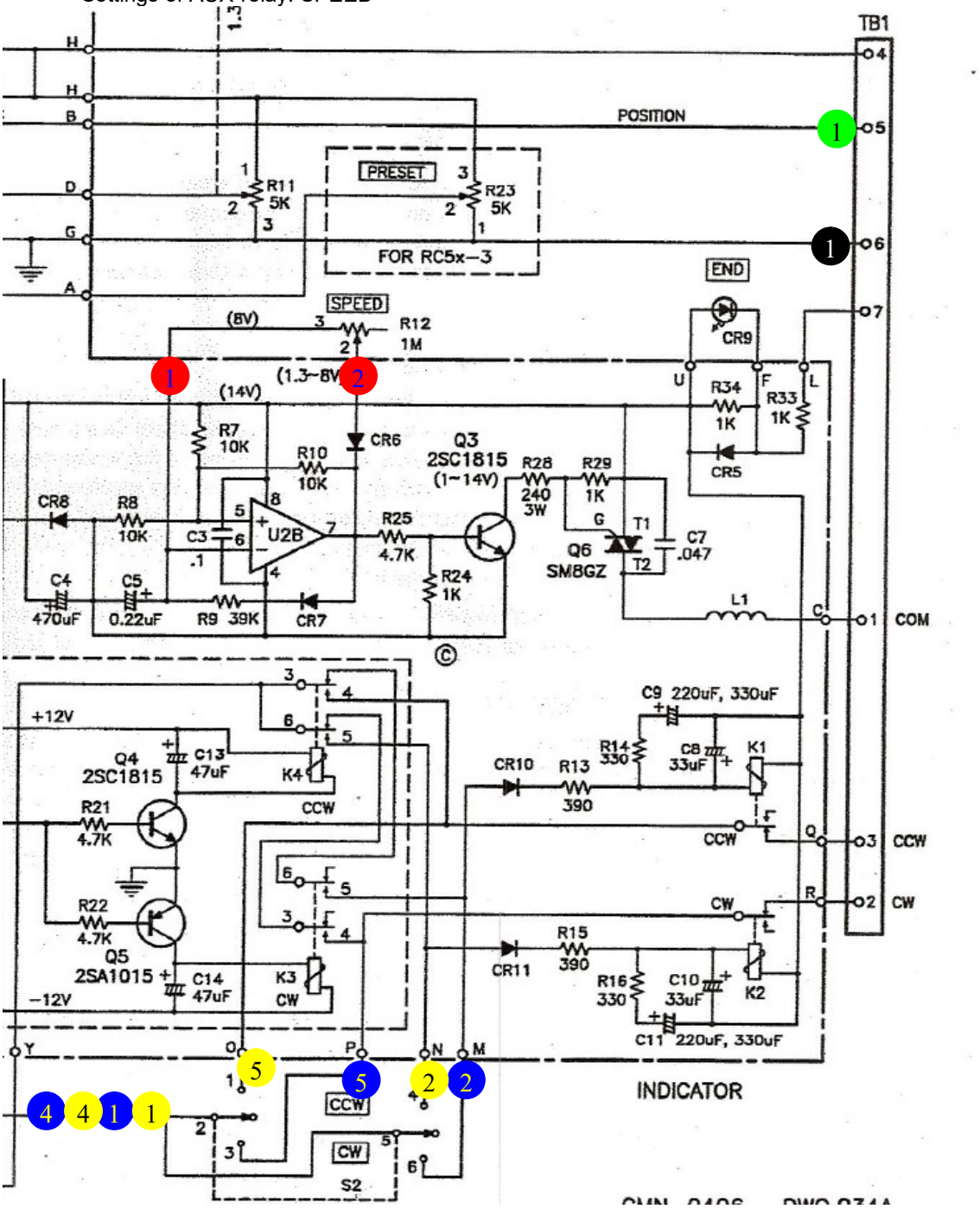
- For ERC V4 **kits** only: Use a separate power-supply (e.g. wall-mount), that is not connected to stations ground.
- An additional Z-Diode and 2 resistors need to be added.



Create : RC5-3 – RC5A-3 – RC5B-3 (AR-8H)

Rotor-specific information:

- Settings of AUX-relay: SPEED

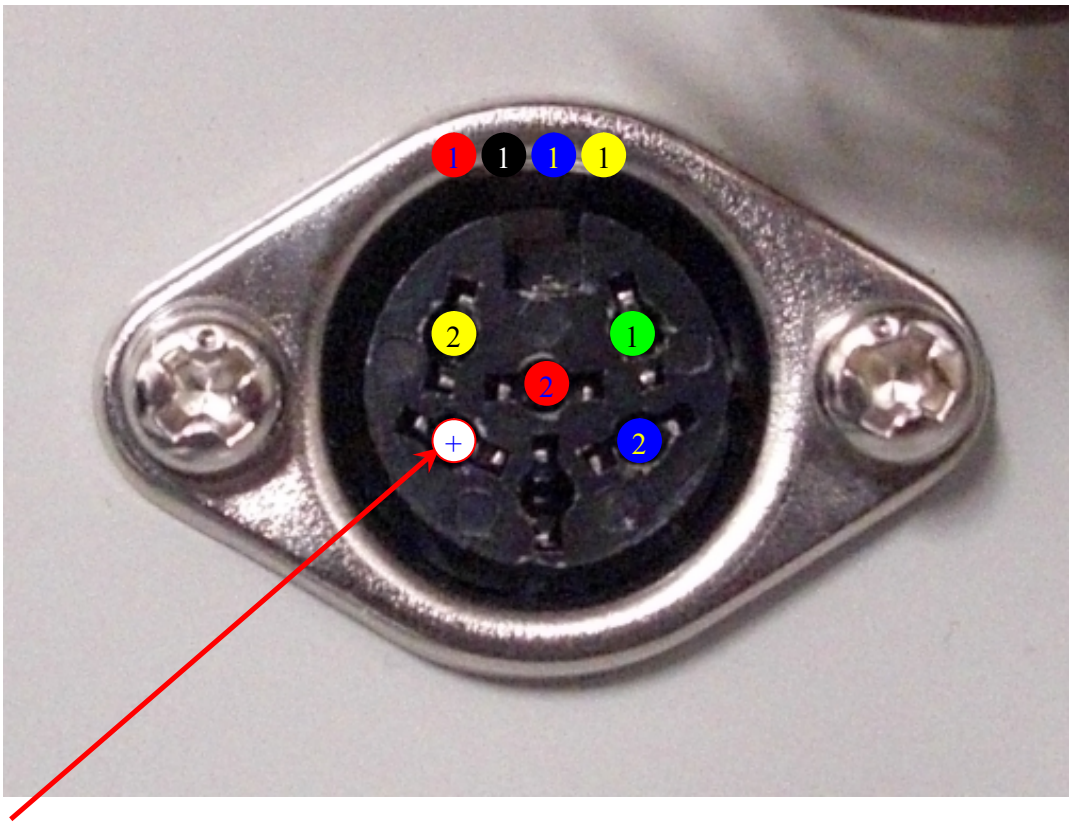


Create : RC5A-3-P – RC5B-3-P

Rotor-specific information:

- Settings of AUX-relay: SPEED REVERSE

Hint: The rotator only works with the remote-connector J1, if the switch S1 on the backside of the rotor-controller is in the lower position and if the switch on the front-panel is set to P.SET.



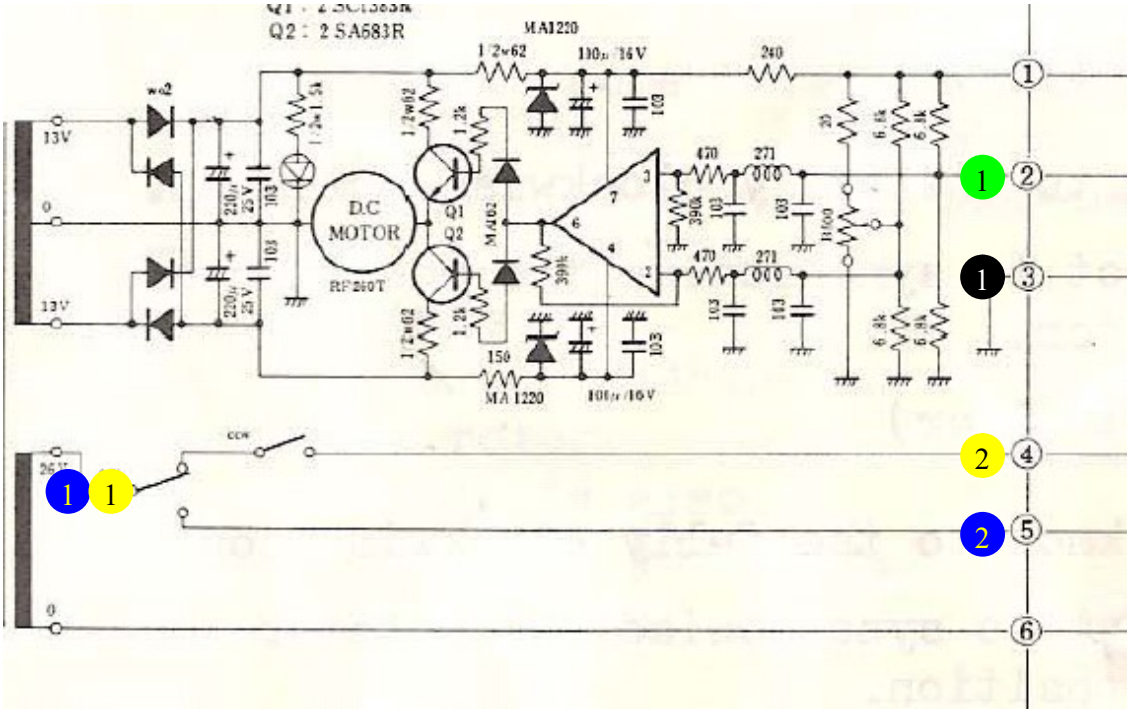
On this pin are +11V / 400mA available to supply the ERC
The connector is shown like this:

- looking from outside to the connector of the control-box
- looking on the solder-pins of the connector that fits into the control-box

Daiwa : DC-7011 (DR7500R - DR7600R)

Rotor-specific information:

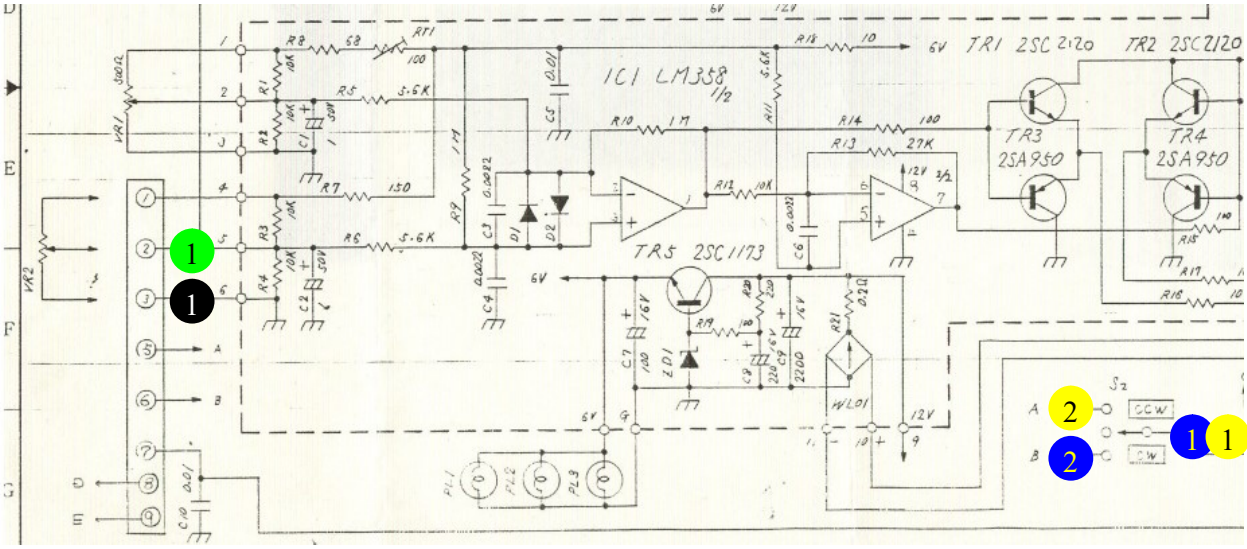
- Settings of AUX-relay: NONE



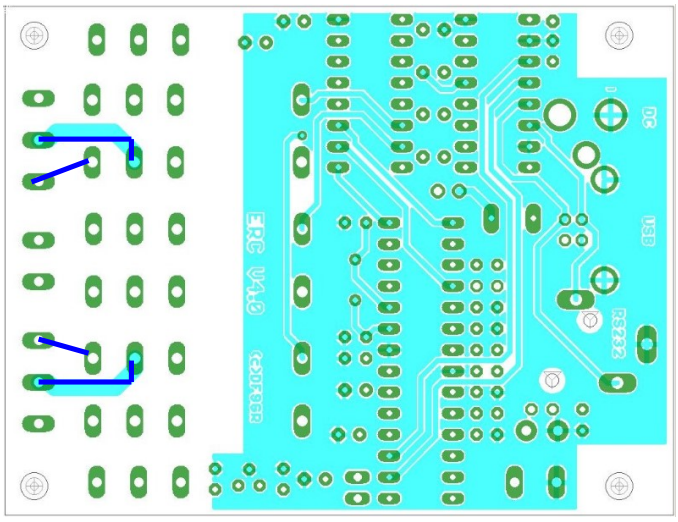
Daiwa : MR750

Rotor-specific information:

- Settings of AUX-relay: NONE
- In order to use the rotator with the ERC, the mode-switch of the controller has to be set to Manual, not Preset.



If you use your MR750 with **more than 2 motors**, 4 additional wires with 0,75 sqmm have to be soldered to the bottom of the PCB.

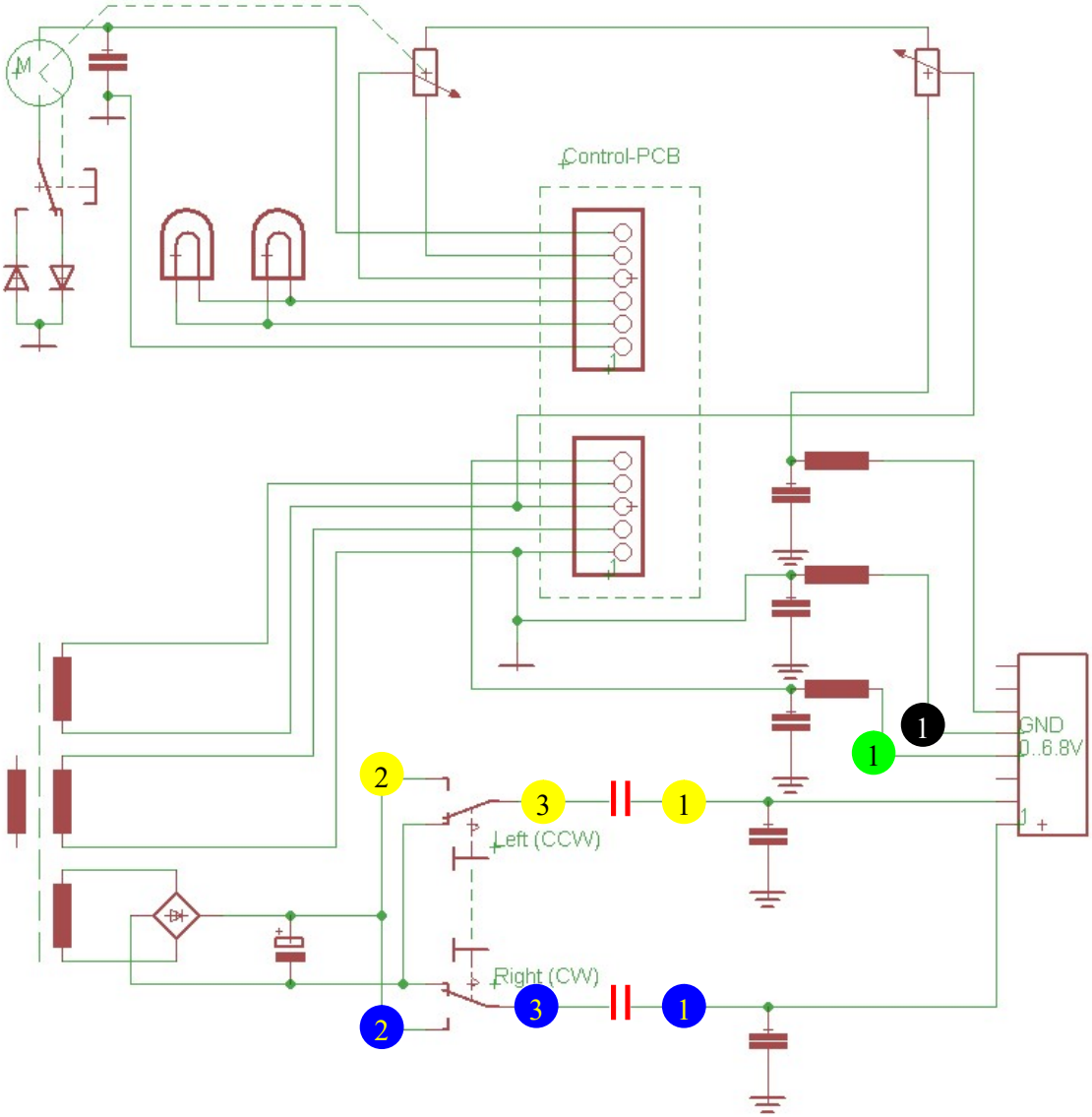


Emotator : 105 TSX

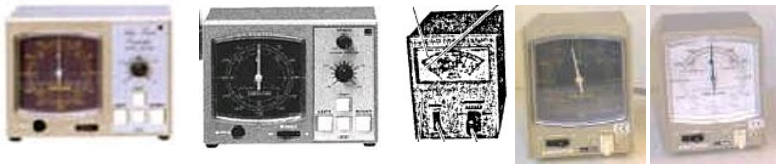
Rotor-specific information:

- Settings of AUX-relay: NONE

Additional work: The 2 connections to the center-points of the switches „Right“ and „Left“ have to be cut. Refer to the symbol || in the schematics.

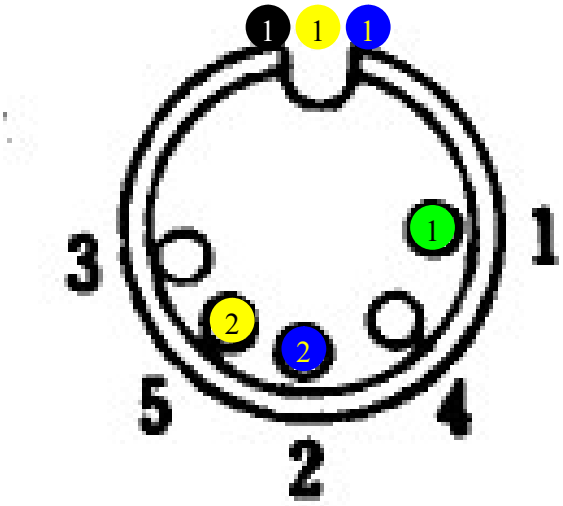


Emotator : 747 SRX – 750FXX – 1200 FXX – 1300 MSAX – 1800 FXX



Rotor-specific information:

- Settings of AUX-relay: NONE



The connector is shown like this:

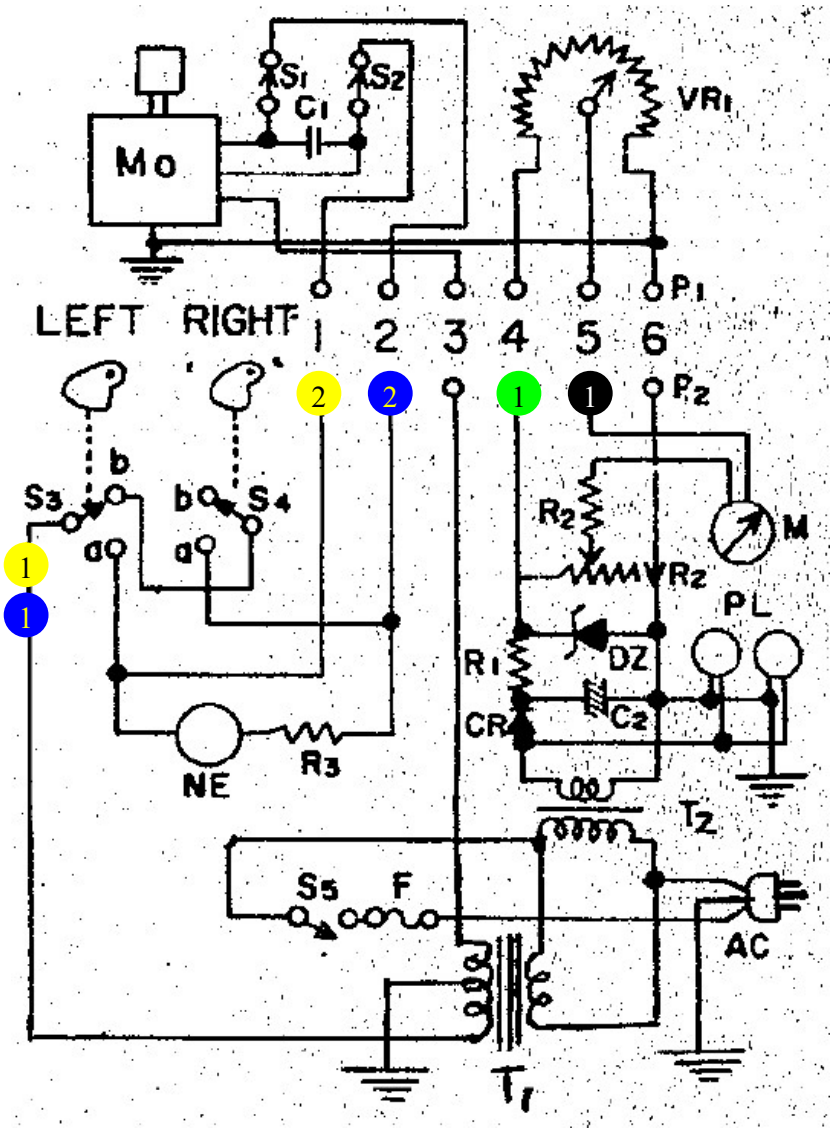
- looking from outside to the connector of the control-box
- looking on the solder-pins of the connector that fits into the control-box

Emotator : 502 CXX

Rotor-specific information:

- Settings of AUX-relay: NONE

For ERC V4 **kits** only: As none of the terminals of the rotator-feedback-potentiometer is tightened to the ground of the rotor-controller, use a separate power-supply (e.g. wall-mount) for the ERC, that is not connected to stations ground.

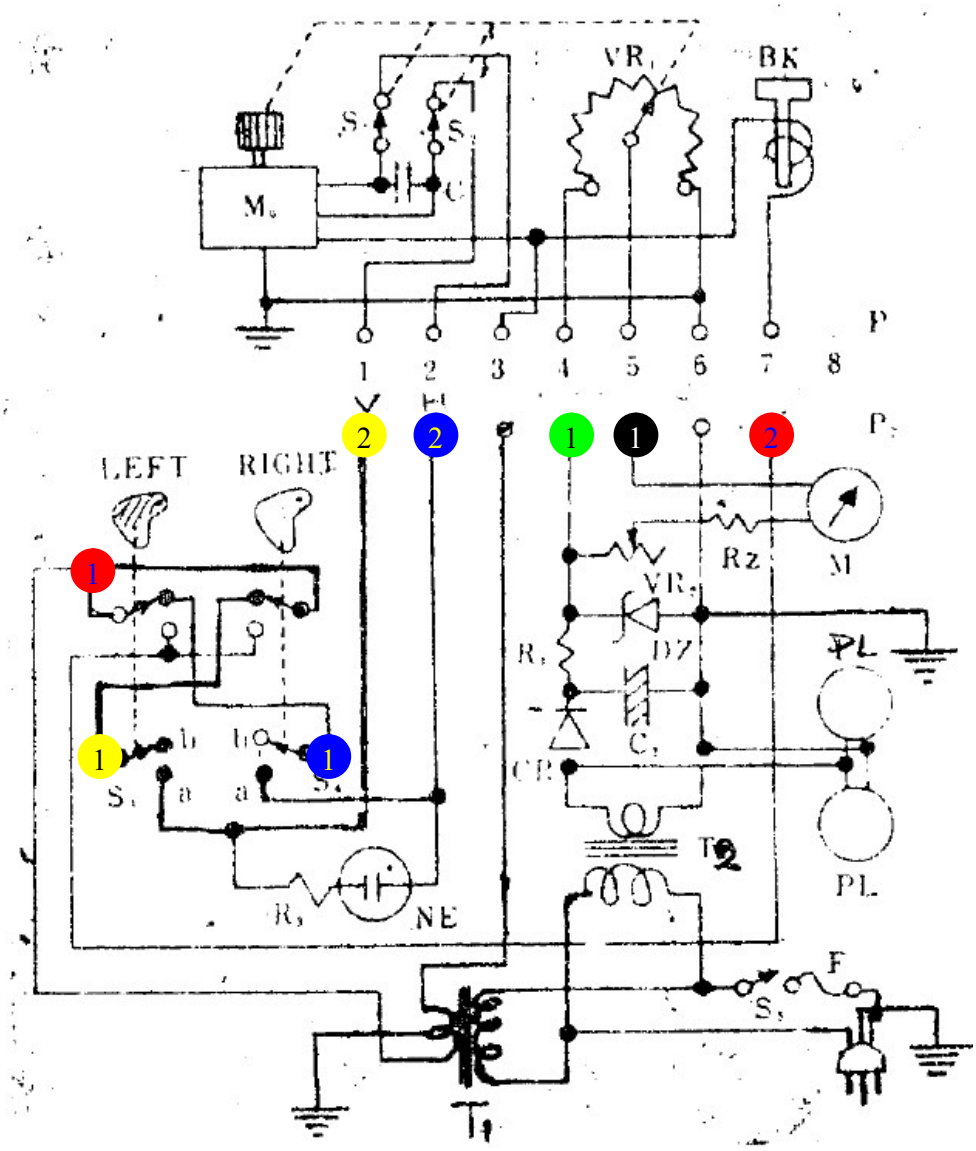


Emotator : 1102MXX – 1103MXX

Rotor-specific information:

- Settings of AUX-relay: BRAKE

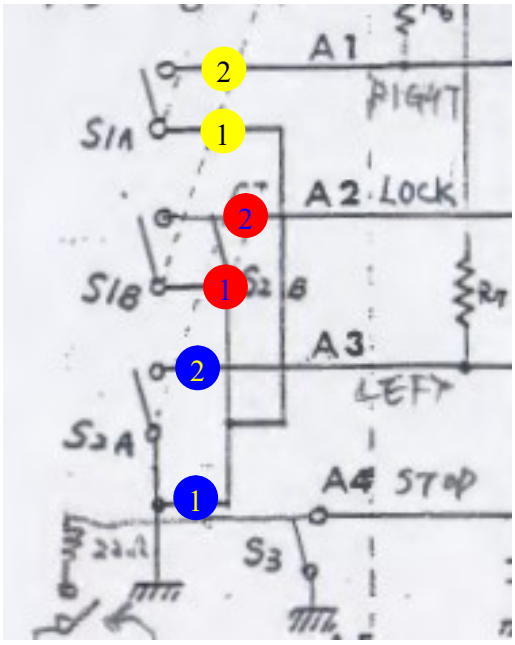
For ERC V4 **kits** only: As none of the terminals of the rotator-feedback-potentiometer is tightened to the ground of the rotor-controller, use a separate power-supply (e.g. wall-mount) for the ERC, that is not connected to stations ground.

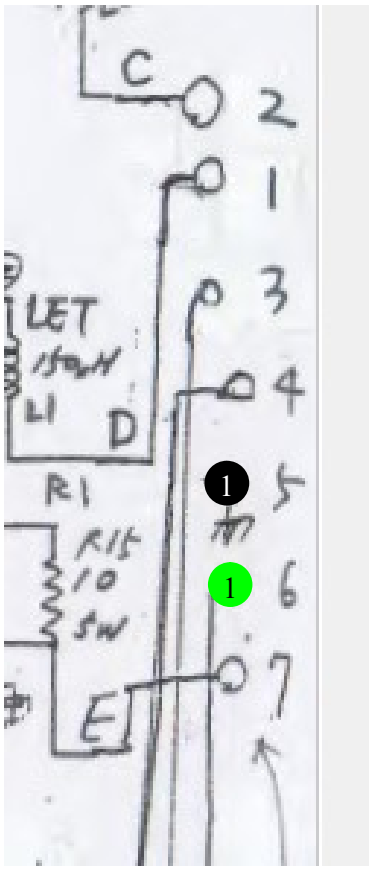


Emotator : 1103MSAX

Rotor-specific information:

- Settings of AUX-relay: BRAKE

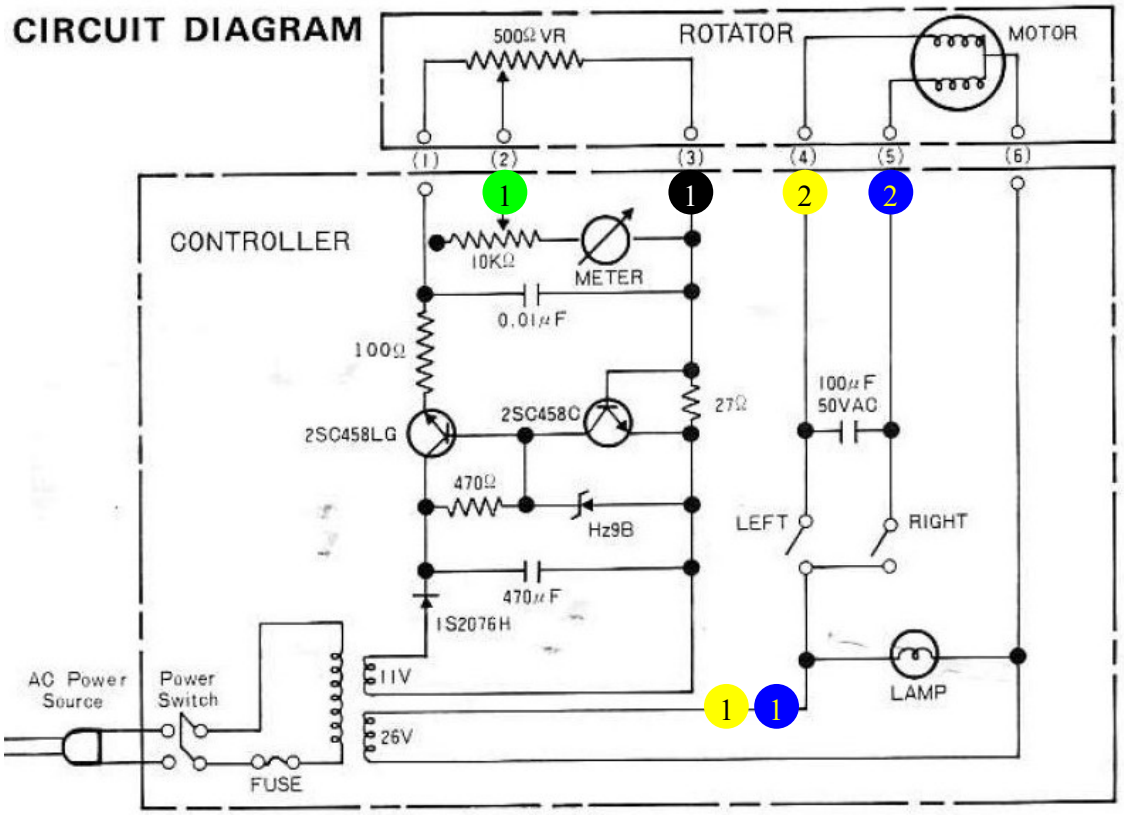




Fukner : Commander 400

Rotor-specific information:

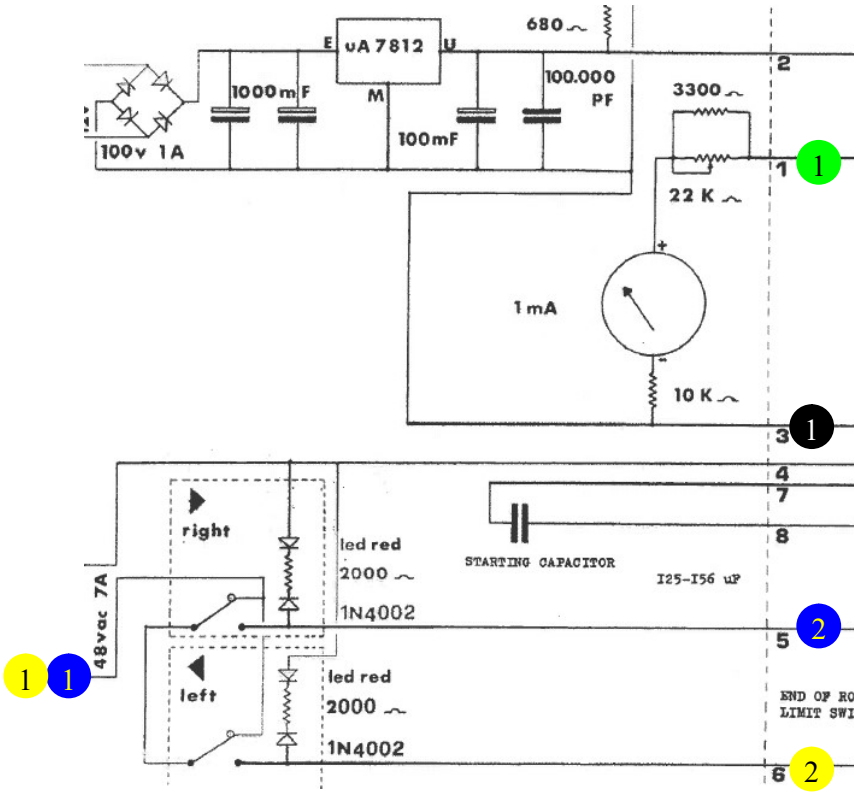
- Settings of AUX-relay: NONE



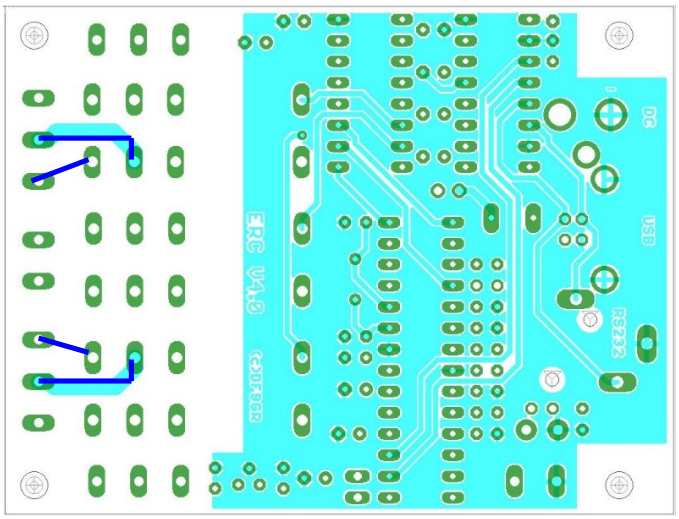
Giovannini : GE 1000/T – GE 1500/T 48V

Rotor-specific information:

- Settings of AUX-relay: NONE



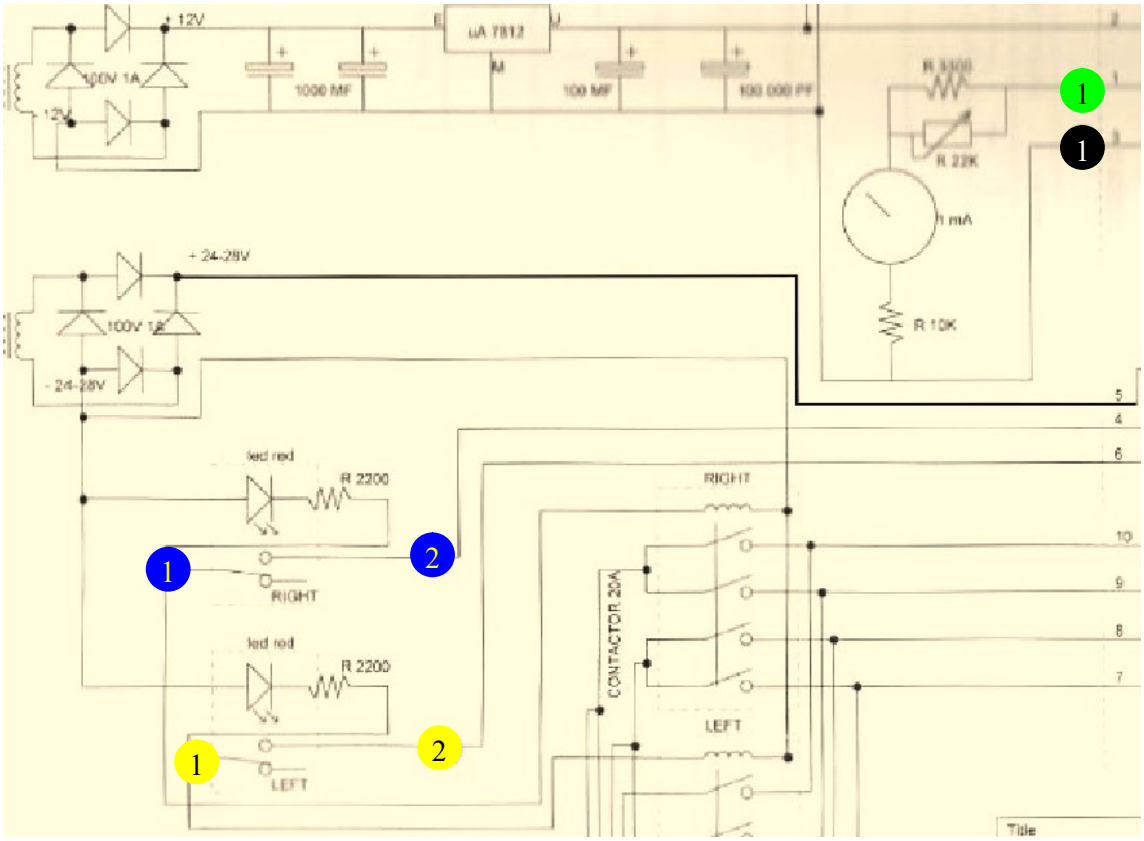
Additional Work: To carry the higher current, 4 additional wires with 0,75 sqmm have to be soldered to the bottom of the PCB.



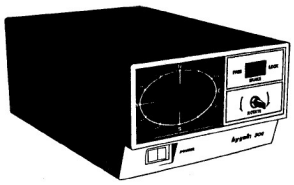
Giovannini : GE 1500/T 230V

Rotor-specific information:

- Settings of AUX-relay: NONE

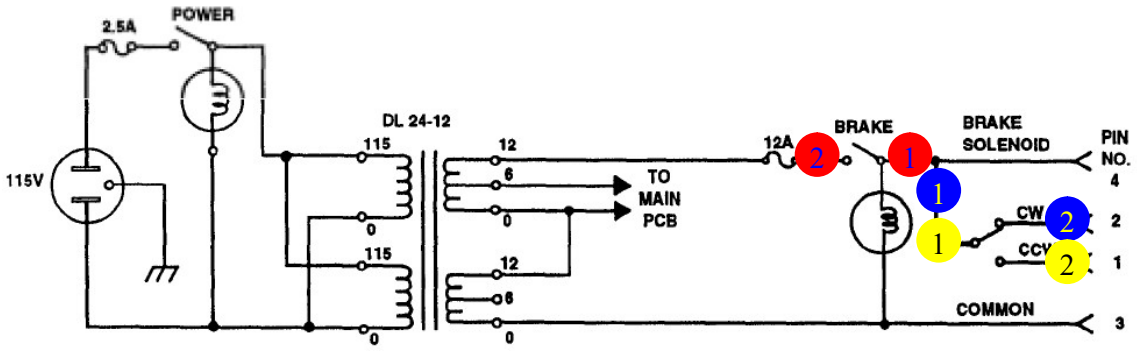


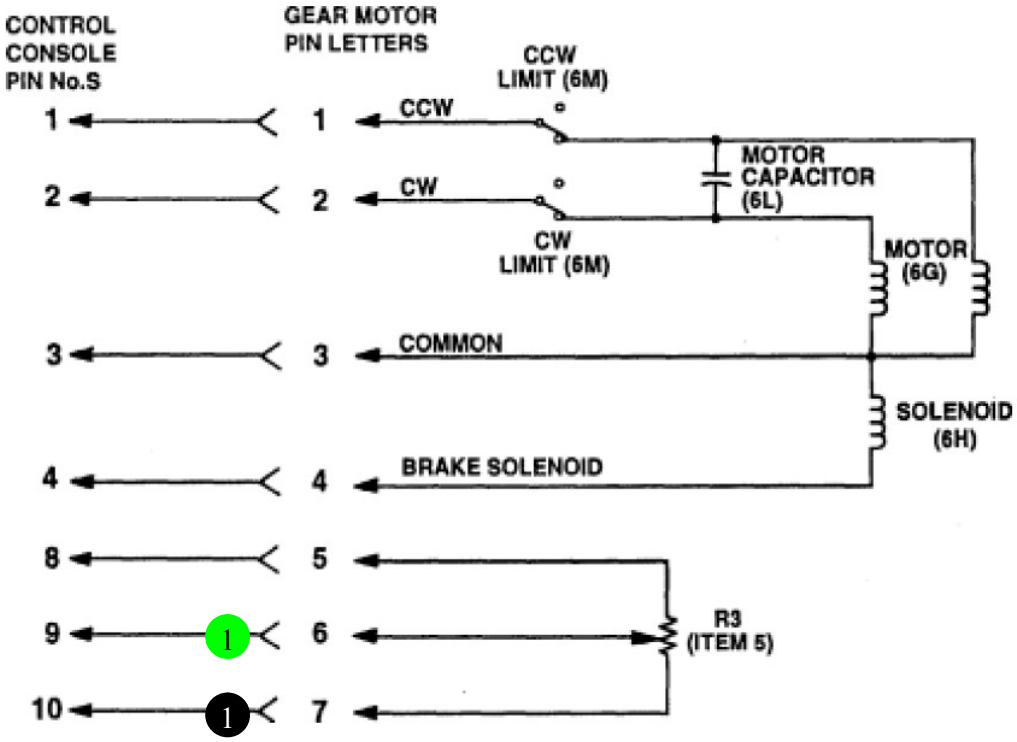
HyGain : HDR-300A



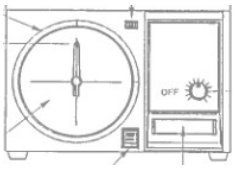
Rotor-specific information:

- Settings of AUX-relay: BRAKE



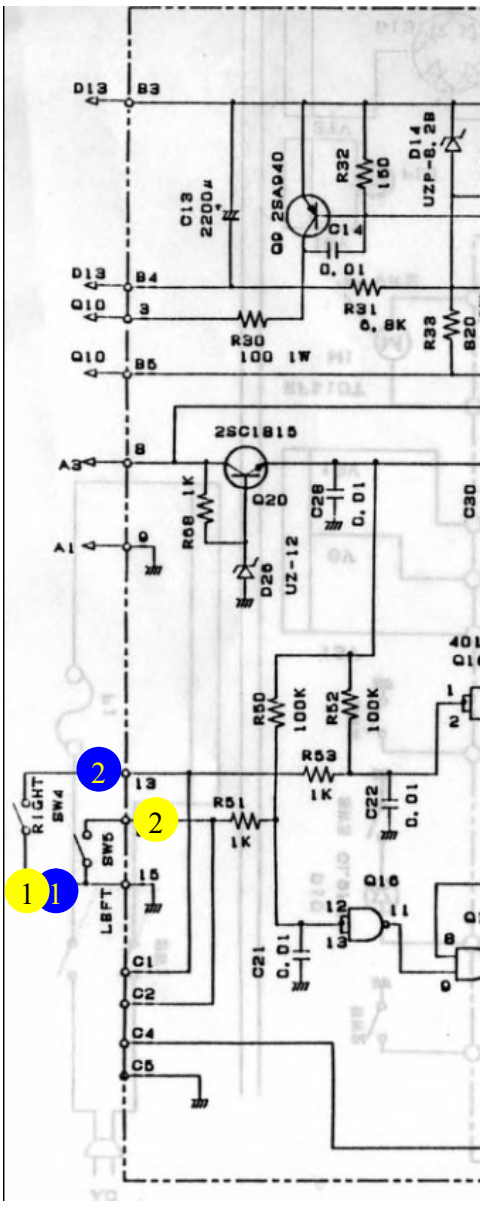


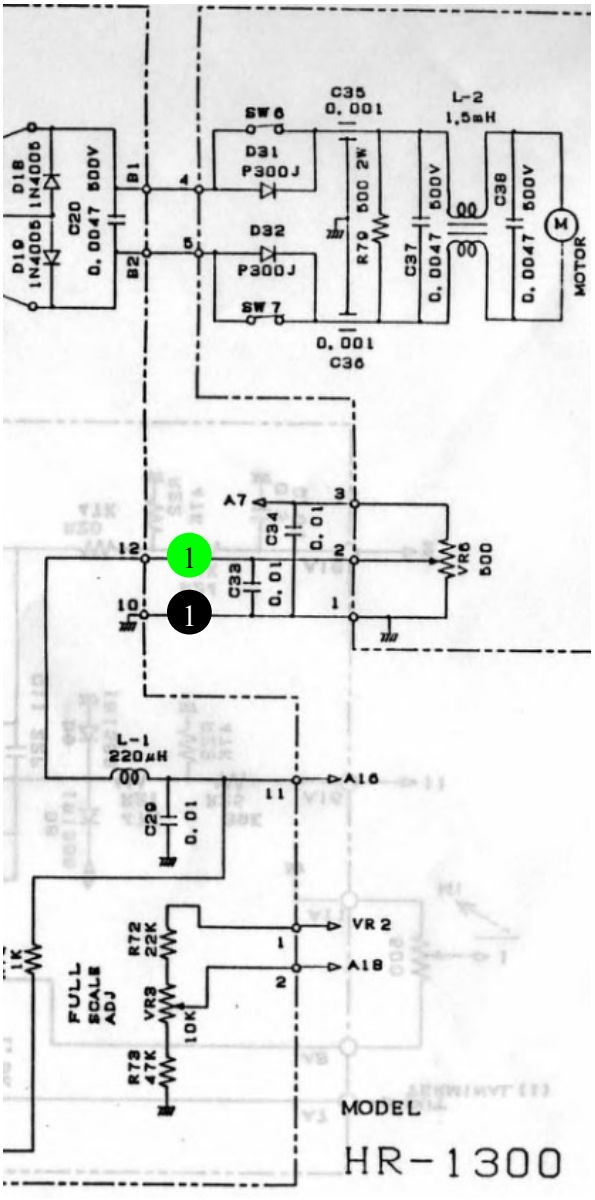
Kenpro : HR-1300



Rotor-specific information:

- Settings of AUX-relay: NONE

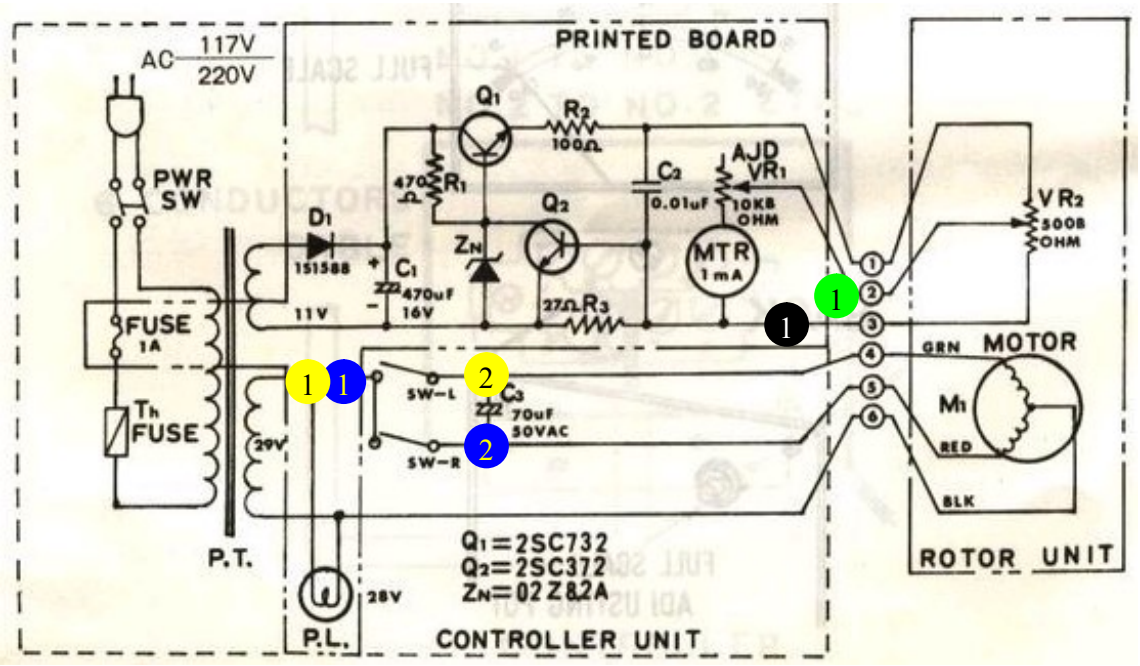




Kenpro : KR-400

Rotor-specific information:

- Settings of AUX-relay: NONE

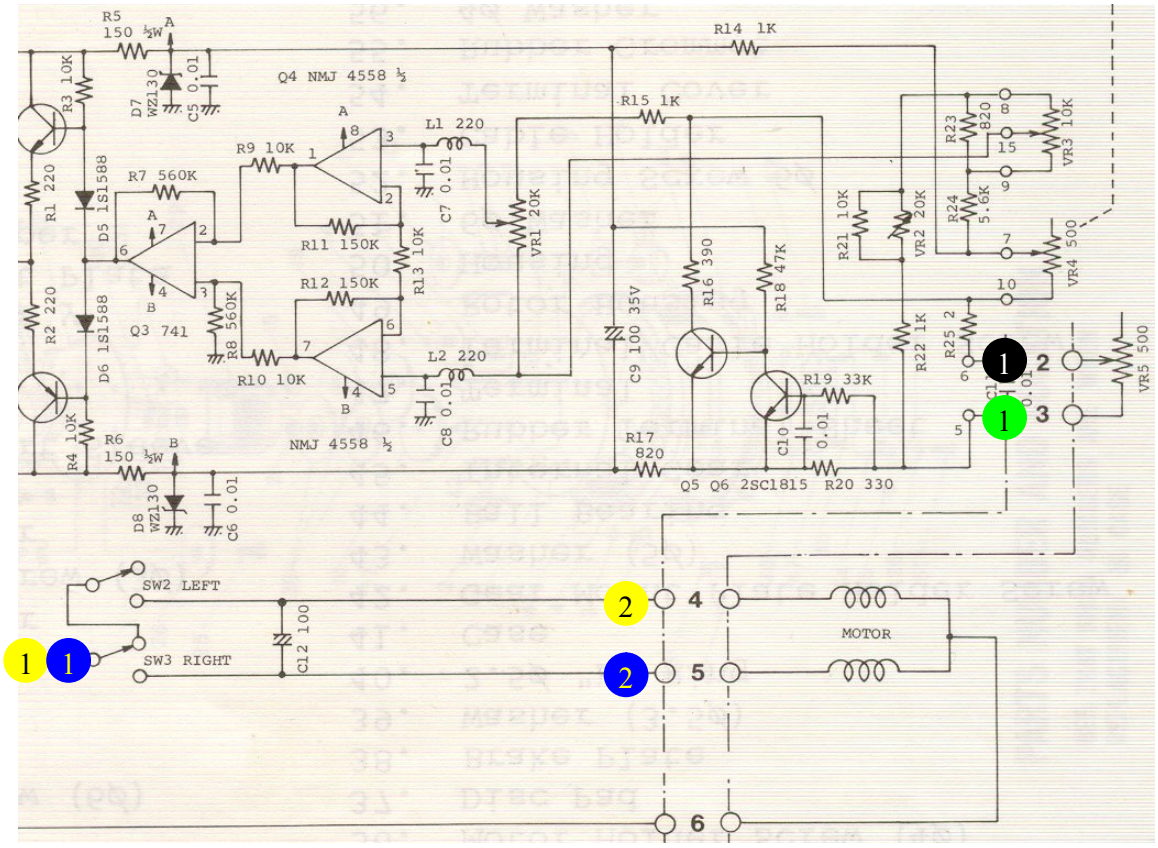


Kenpro : KR-400RC

Rotor-specific information:

- Settings of AUX-relay: NONE
- Extended Calibration needed

For ERC V4 **kits** only: As none of the terminals of the rotator-feedback-potentiometer is tightened to the ground of the rotor-controller, use a separate power-supply (e.g. wall-mount) for the ERC, that is not connected to stations ground.

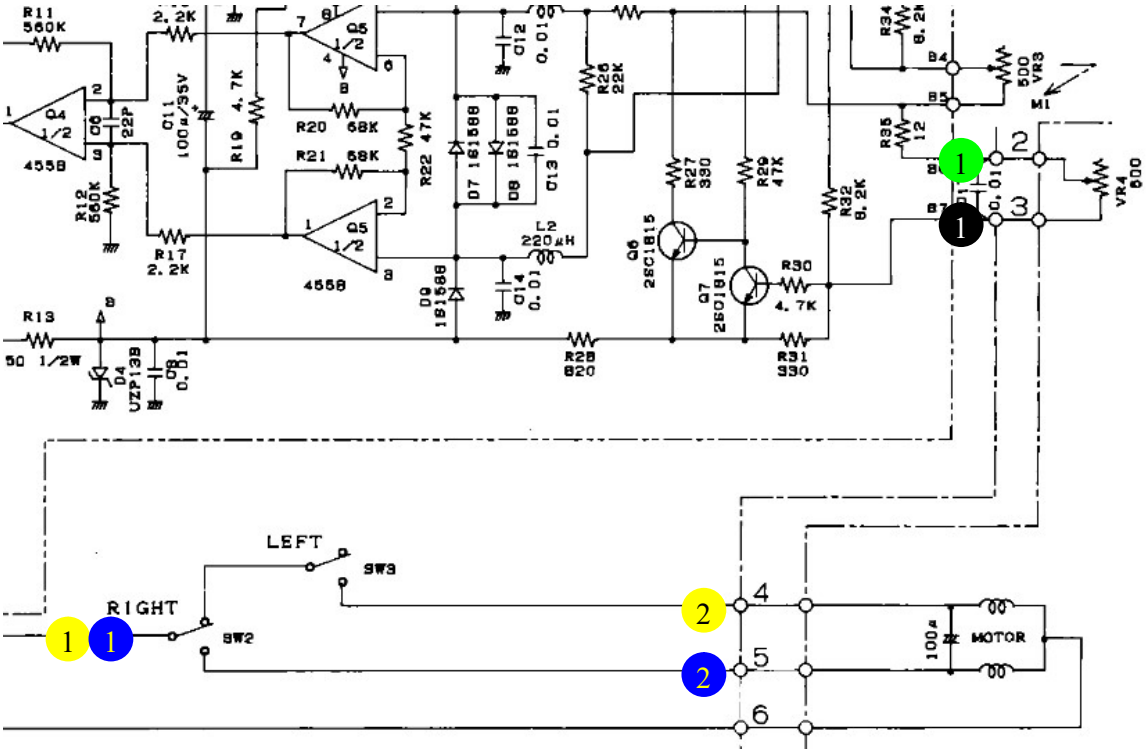


Kenpro : KR-450XL – KR-650XL

Rotor-specific information:

- Settings of AUX-relay: NONE
- Extended Calibration needed

For ERC V4 **kits** only: As none of the terminals of the rotator-feedback-potentiometer is tightened to the ground of the rotor-controller, use a separate power-supply (e.g. wall-mount) for the ERC, that is not connected to stations ground.

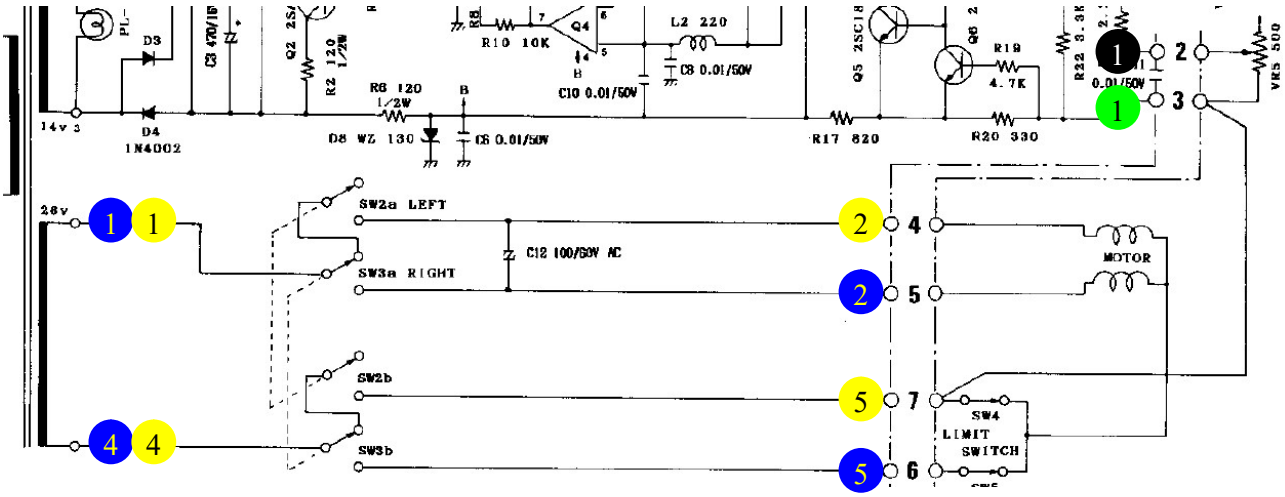


Kenpro : KR-600RC

Rotor-specific information:

- Settings of AUX-relay: NONE
- Extended Calibration needed

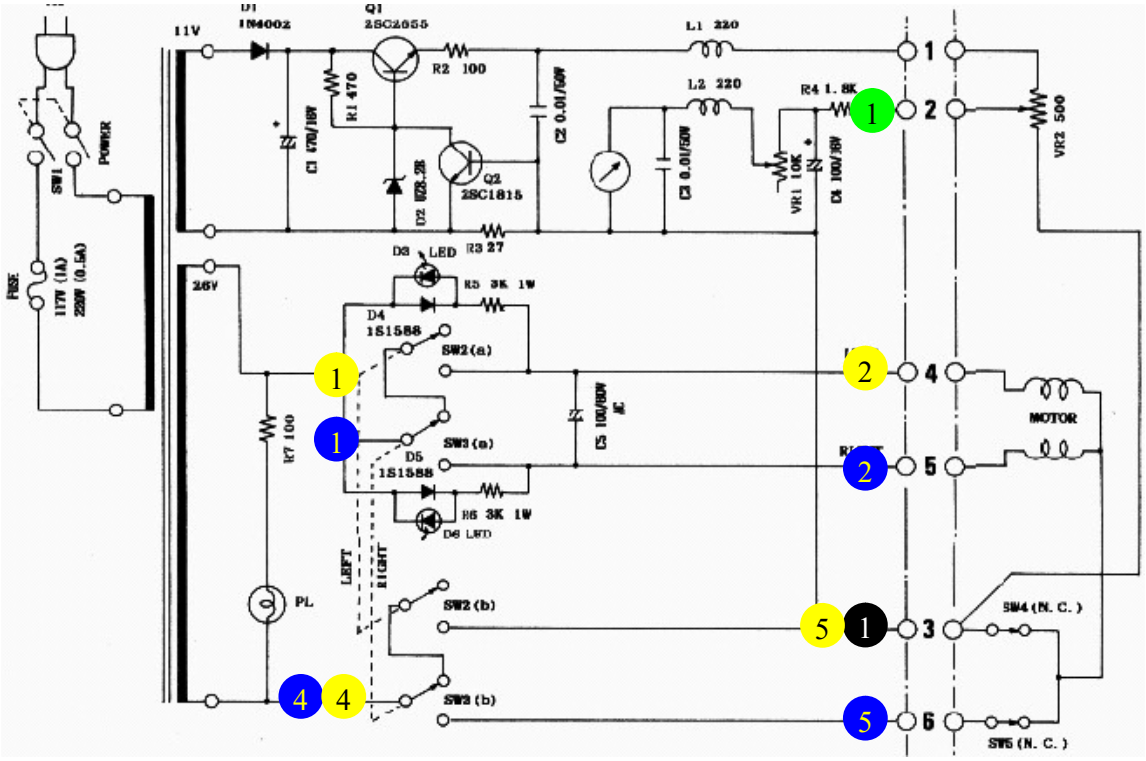
For ERC V4 **kits** only: As none of the terminals of the rotator-feedback-potentiometer is tightened to the ground of the rotor-controller, use a separate power-supply (e.g. wall-mount) for the ERC, that is not connected to stations ground.



Kenpro : KR-600S

Rotor-specific information:

- Settings of AUX-relay: NONE

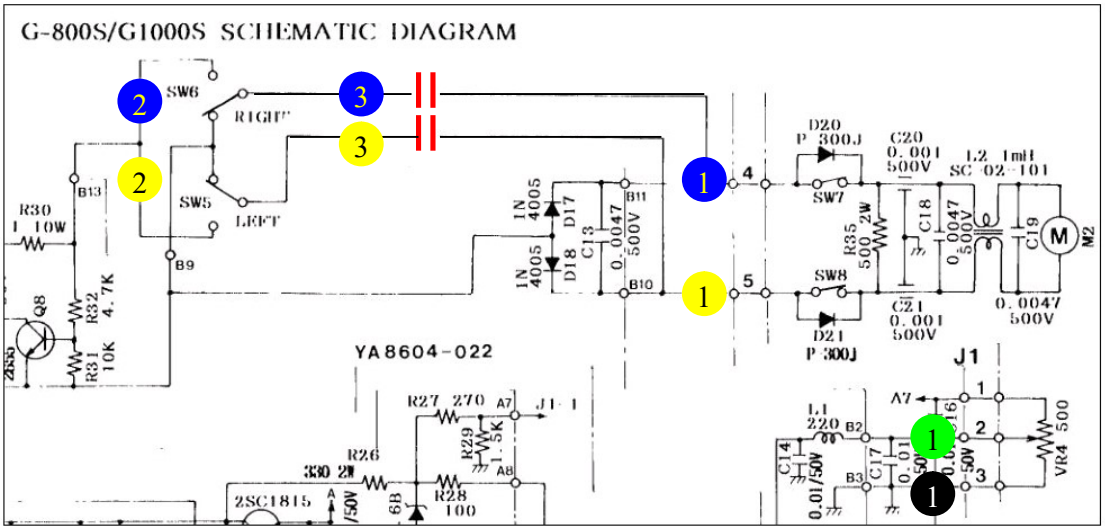


Kenpro : KR-800 – KR-800S – KR-1000

Rotor-specific information:

- Settings of AUX-relay: NONE

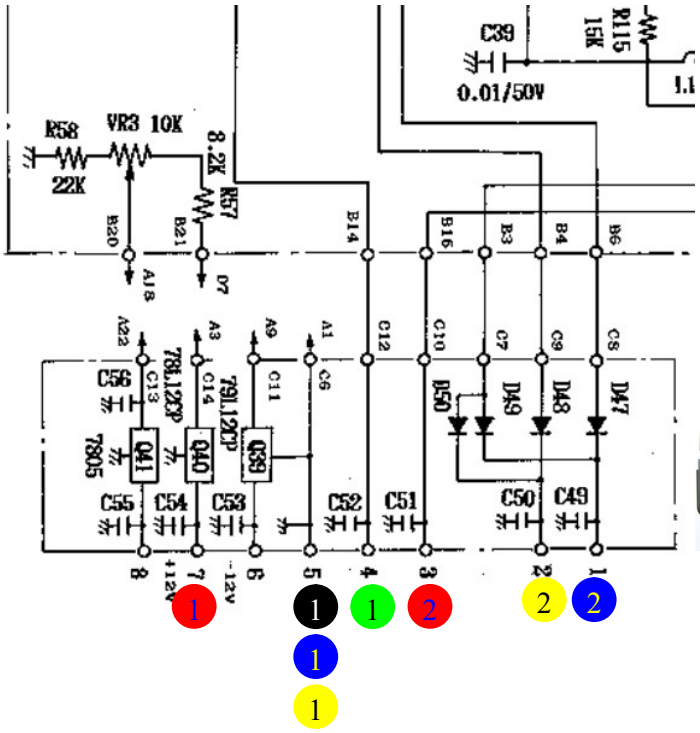
Additional work: The 2 connections to the center-points of the switches „Right“ and „Left“ have to be cut. Refer to the symbol || in the schematics.

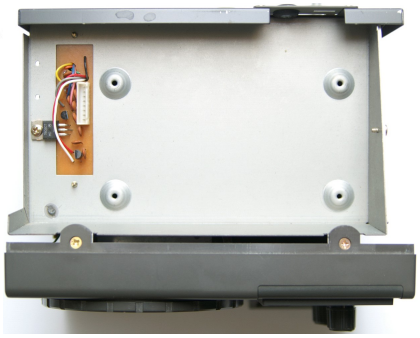


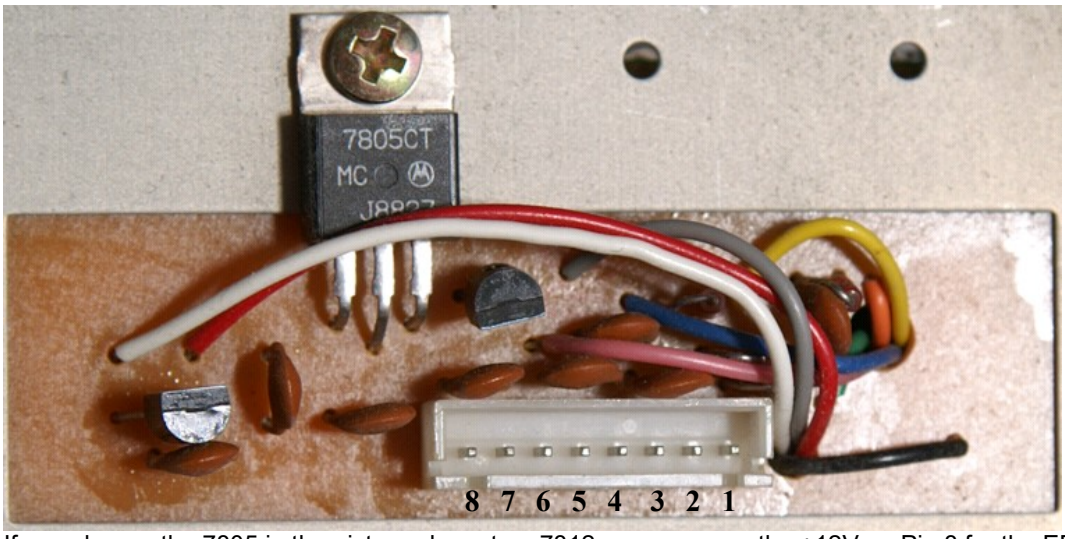
Kenpro : KR-800SDX

Rotor-specific information:

- Settings of AUX-relay: SPEED







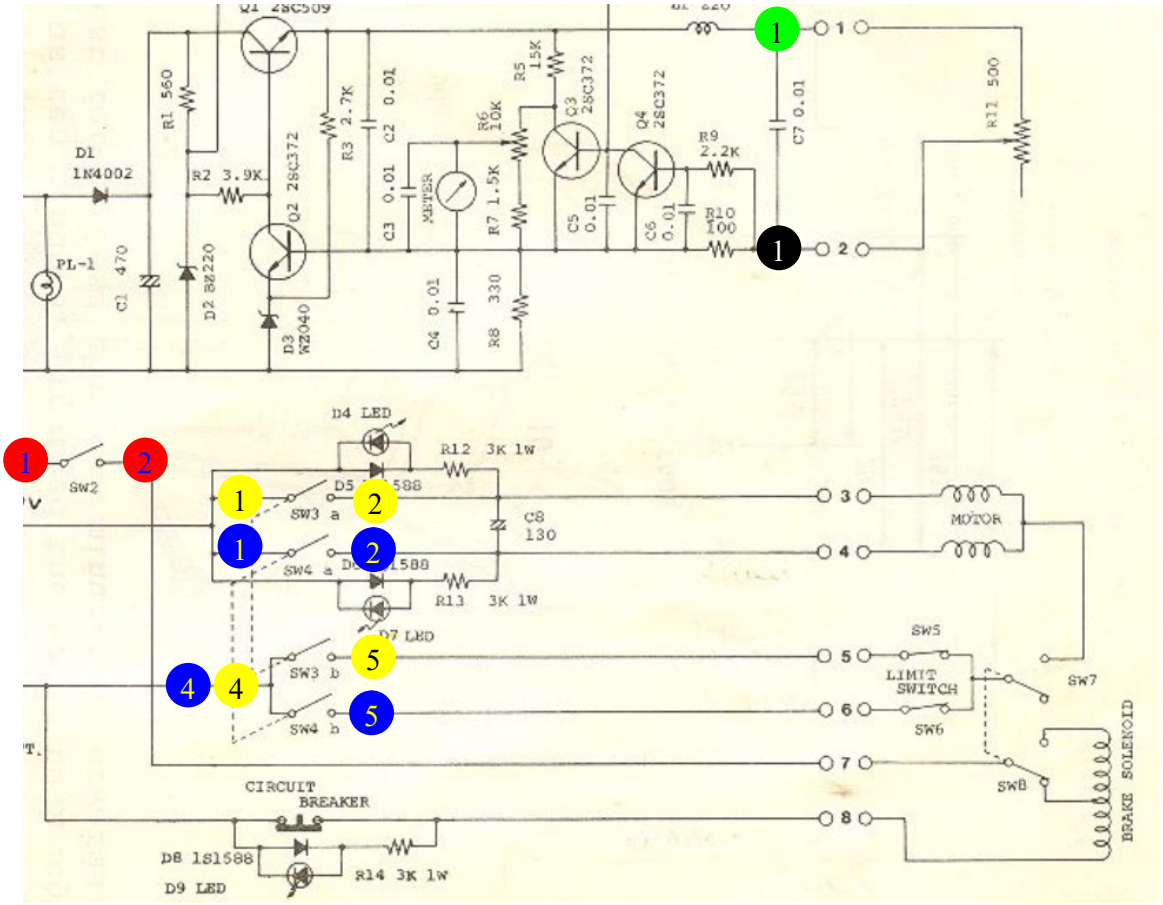
If you change the 7805 in the picture above to a 7812, you may use the +12V on Pin 8 for the ERC.

Kenpro : KR-2000

Rotor-specific information:

- Settings of AUX-relay: BRAKE
- Extended Calibration needed

For ERC V4 **kits** only: As none of the terminals of the rotator-feedback-potentiometer is tightened to the ground of the rotor-controller, use a separate power-supply (e.g. wall-mount) for the ERC, that is not connected to stations ground.

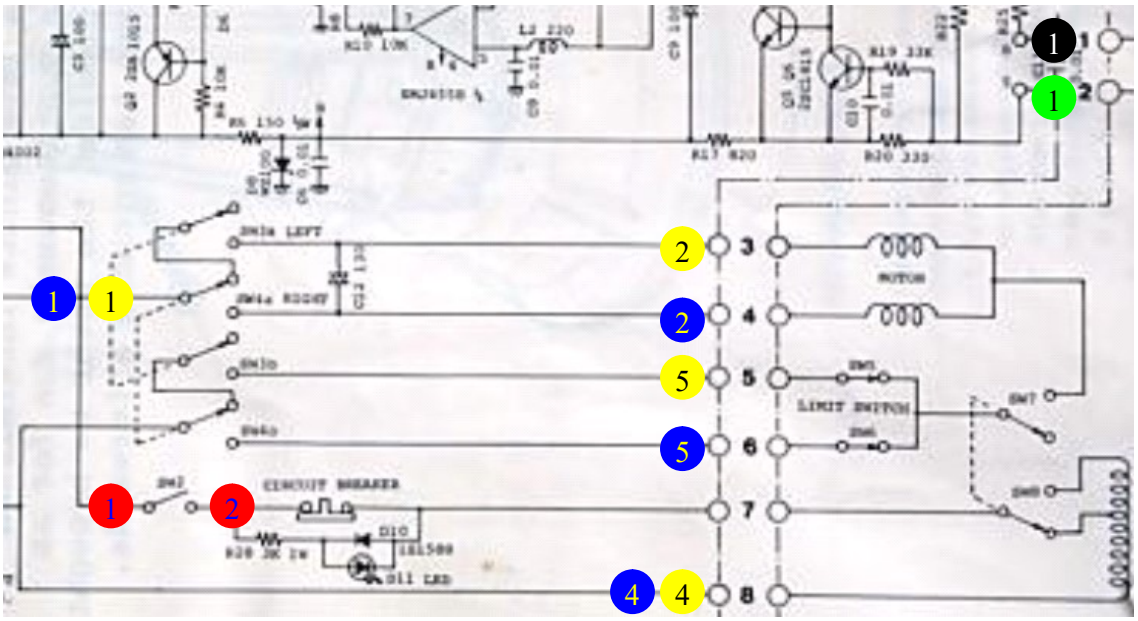


Kenpro : KR-2000RC

Rotor-specific information:

- Settings of AUX-relay: BRAKE
- Extended Calibration needed

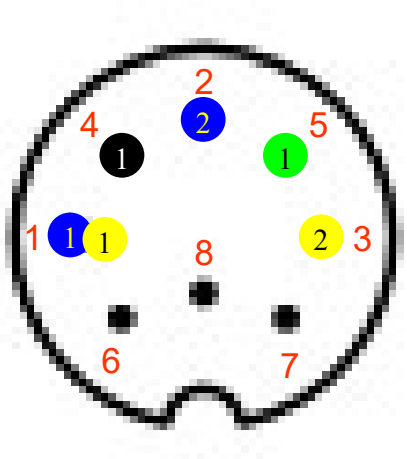
For ERC V4 **kits** only: As none of the terminals of the rotator-feedback-potentiometer is tightened to the ground of the rotor-controller, use a separate power-supply (e.g. wall-mount) for the ERC, that is not connected to stations ground.



Orion : OR-2300

Rotor-specific information:
- Settings of AUX-relay: NONE

Hint: In order to use the rotator via the remote-connector, the mode-switch of the controller has to be set to Preset, not Manual.

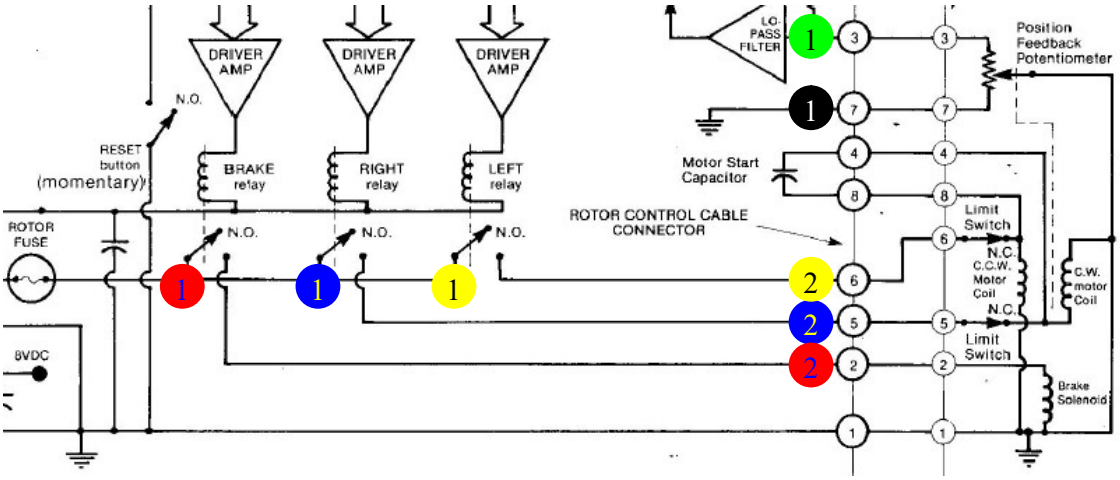


The connector is shown like this:
- looking from outside to the connector of the control-box
- looking on the solder-pins of the connector that fits into the control-box

PROSEARCH PSE-x

Rotor-specific information:

- Settings of AUX-relay: BRAKE

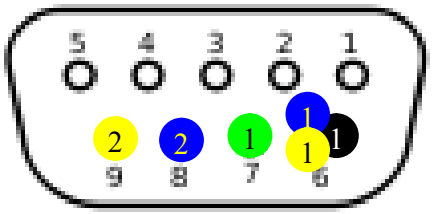


RED1, BLUE1, YELLOW1 has the same connection and can be bridged at the ERC terminal clamps.

PRO.SIS.TEL: Model A

Rotor-specific information:

- Settings of AUX-relay: NONE



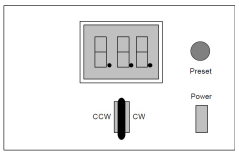
D-SUB9 female of control-box

Make a connection between 1 , 1 and 1 on the ERC and go only with 1 cable to the connector.

The connector is shown like this:

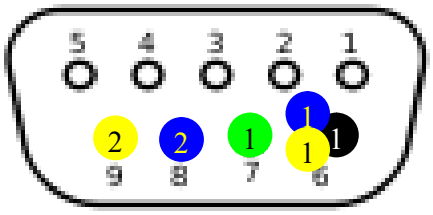
- looking from outside to the connector of the control-box
- looking on the solder-pins of the connector that fits into the control-box

PRO.SIS.TEL: Model B



Rotor-specific information:

- Settings of AUX-relay: NONE



D-SUB9 female of control-box

Make a connection between 1 , 1 and 1 on the ERC and go only with 1 cable to the connector.

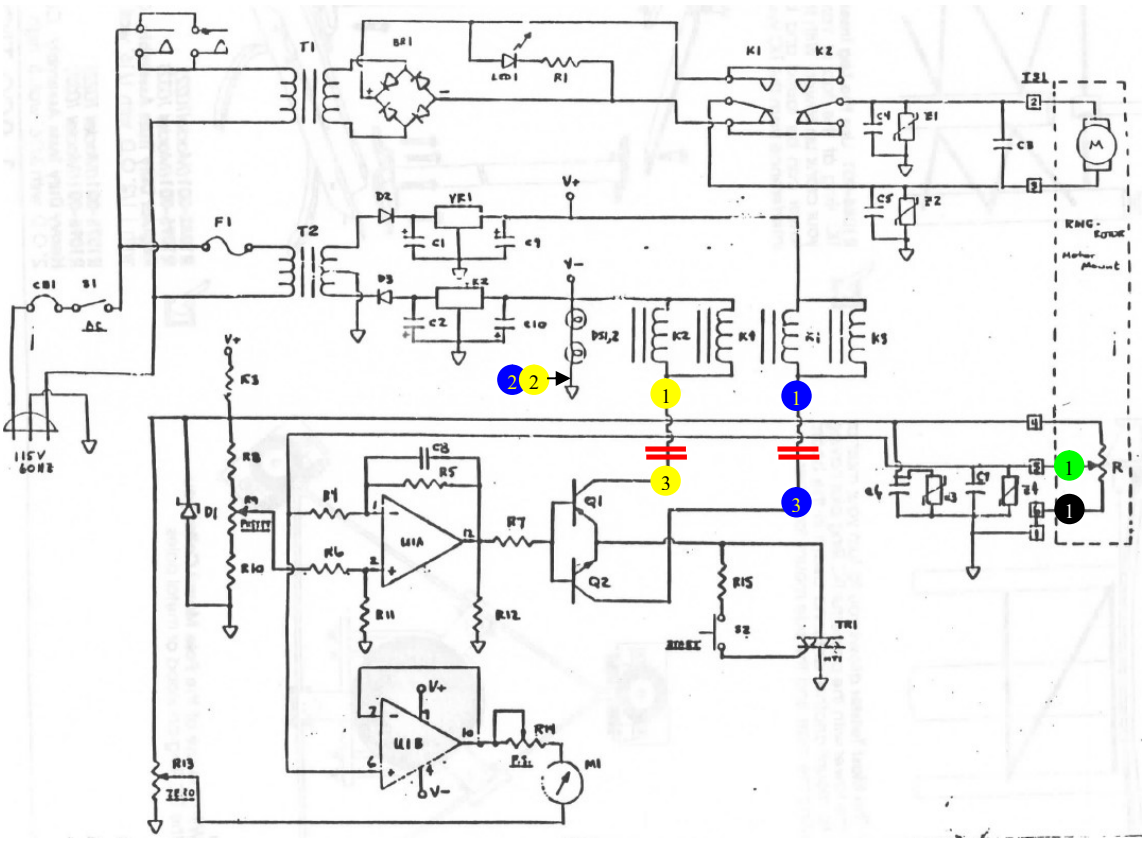
The connector is shown like this:

- looking from outside to the connector of the control-box
- looking on the solder-pins of the connector that fits into the control-box

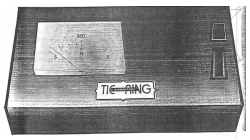
TIC GEN Modell 2100B/C

Rotor-specific information:

- Settings of AUX-relay: none
- Don't press the start-button of the preset-function when the rotor is controlled by the ERC
- Cut the connection where indicated with this symbol: ||

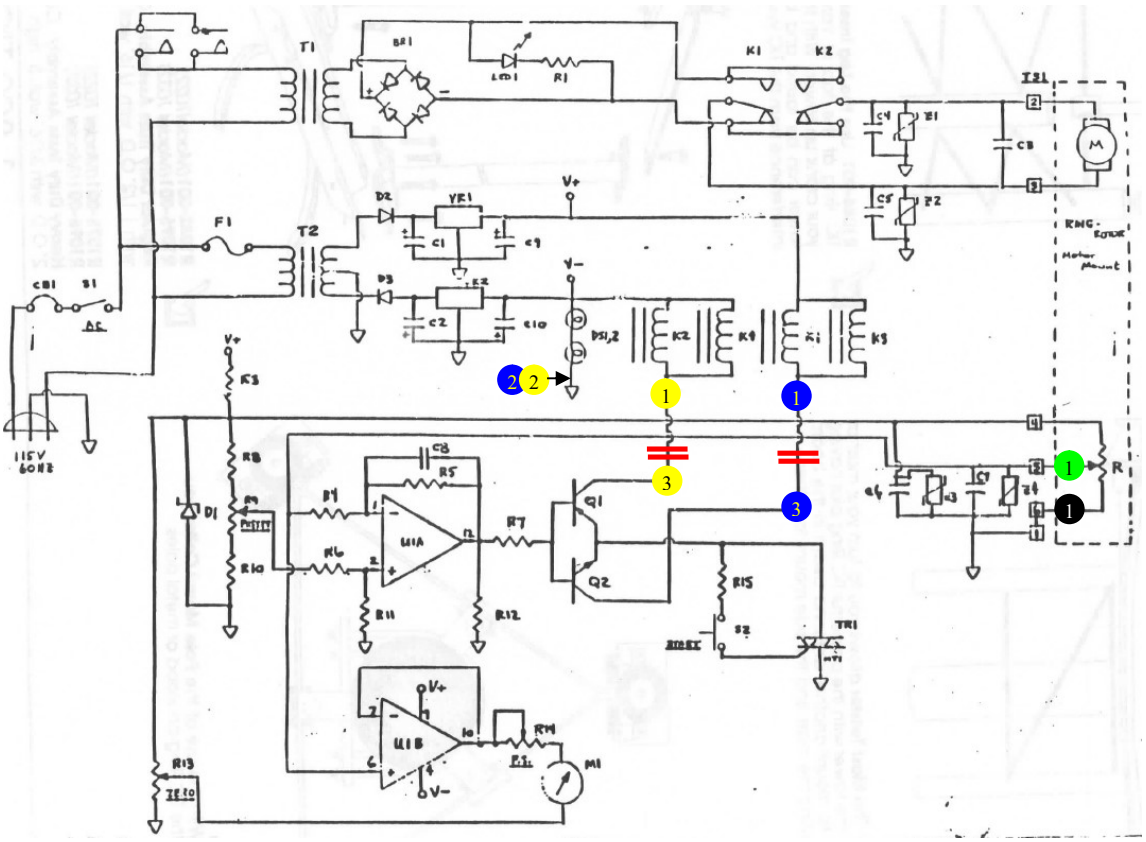


TIC RING Modell 2020



Rotor-specific information:

- Settings of AUX-relay: none
- Don't press the start-button of the preset-function when the rotor is controlled by the ERC
- Cut the connection where indicated with this symbol: ||



Walmar : ML, MU-1, MU-3, MH

Rotor-specific information:

- Settings of AUX-relay: BRAKE

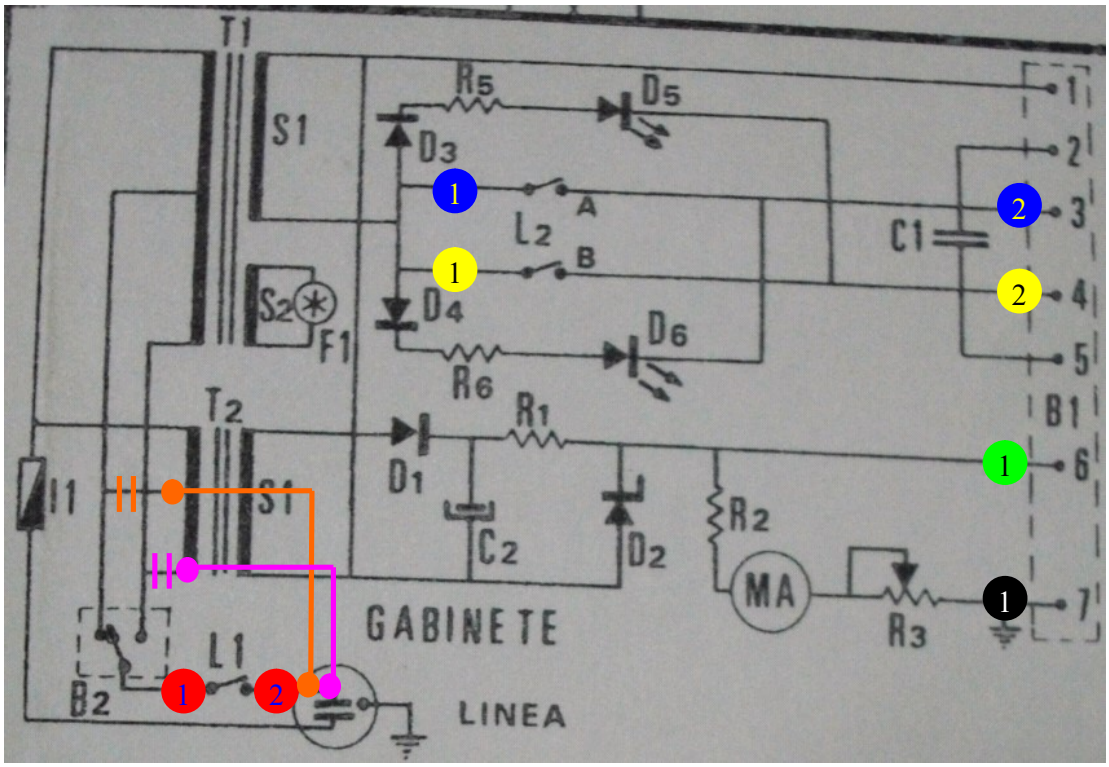
Additional work: The connection to the instrumentation-transformer has to be made permanent.

If your main-voltage is 230V:

- cut the wire to the instrumentation-transformer (Refer to the pink symbol || in the schematics)
- add a new wire (pink)

If your main-voltage is 115V:

- cut the wire to the instrumentation-transformer (Refer to the orange symbol || in the schematics)
- add a new wire (orange)

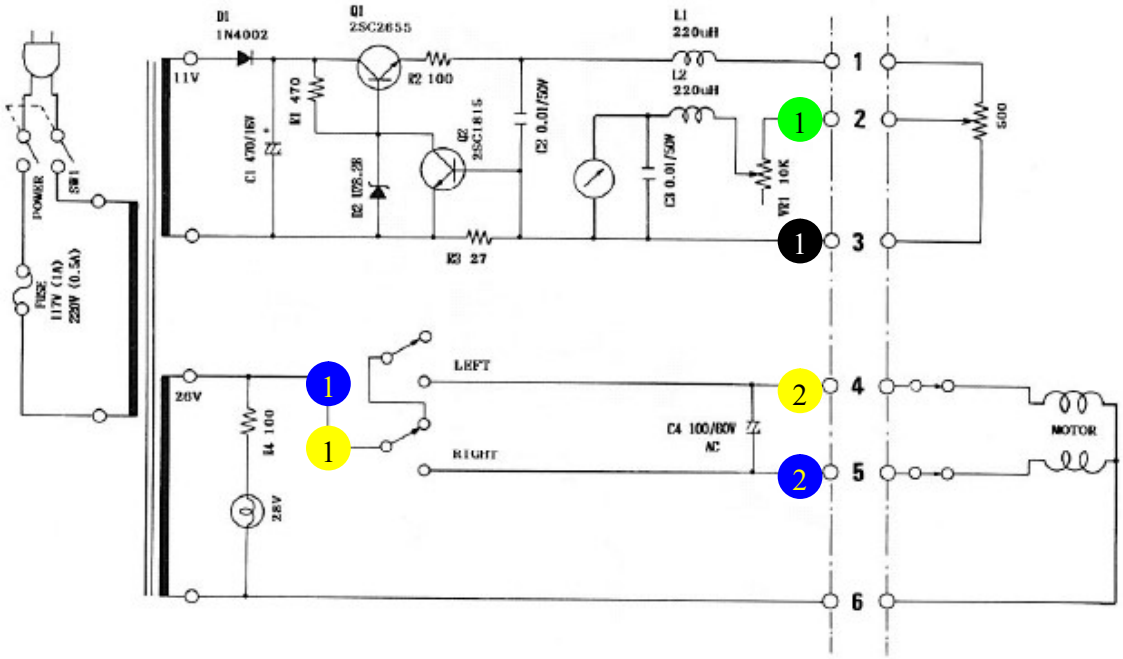


1 2 **carry main-voltage.**

Yaesu : G-400

Rotor-specific information:

- Settings of AUX-relay: NONE

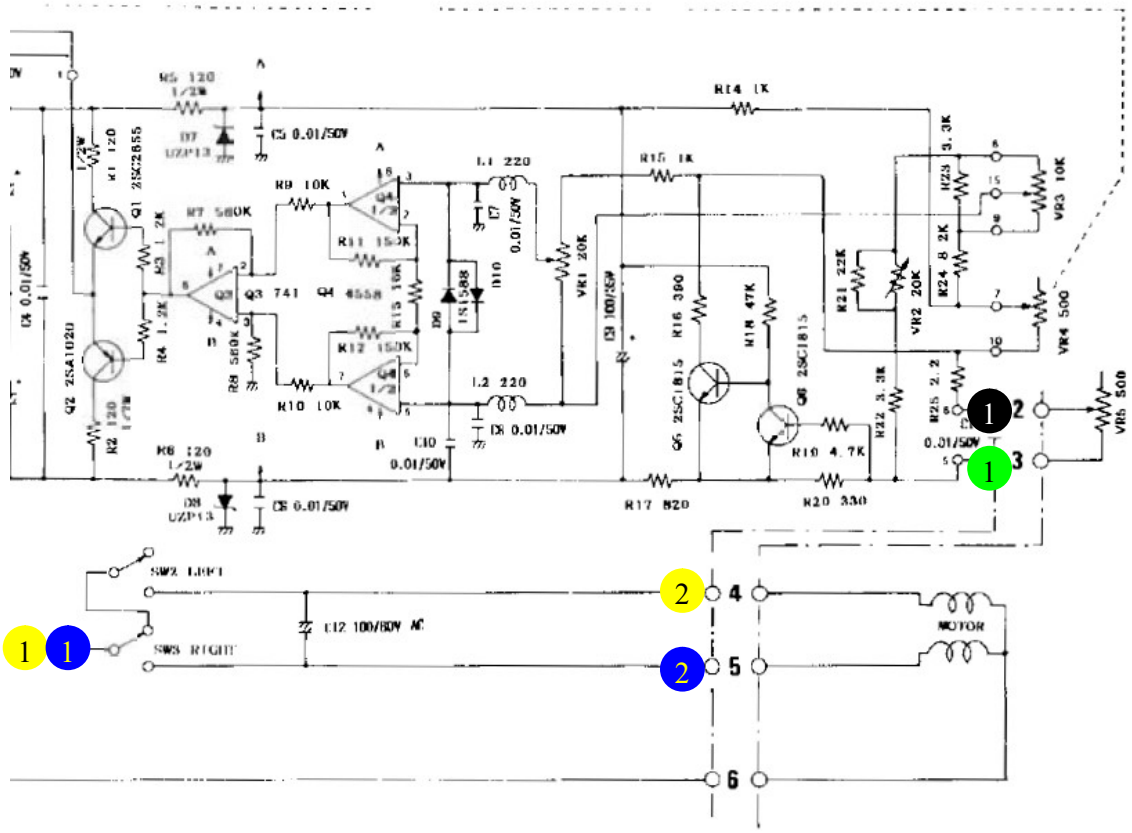


Yeasu : G-400RC

Rotor-specific information:

- Settings of AUX-relay: NONE
- Extended Calibration needed

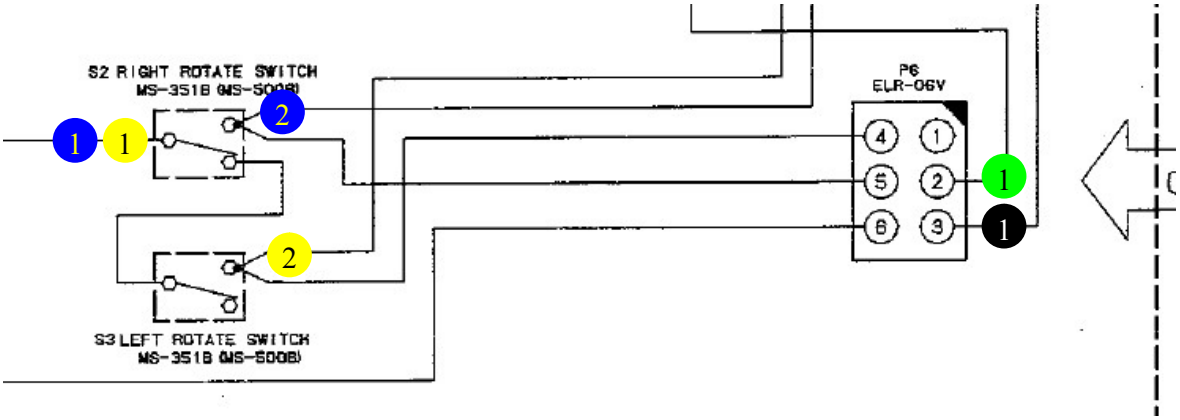
For ERC V4 **kits** only: As none of the terminals of the rotator-feedback-potentiometer is tightened to the ground of the rotor-controller, use a separate power-supply (e.g. wall-mount) for the ERC, that is not connected to stations ground.



Yaesu : G-450A/C – G-650A/C – G-1000C

Rotor-specific information:

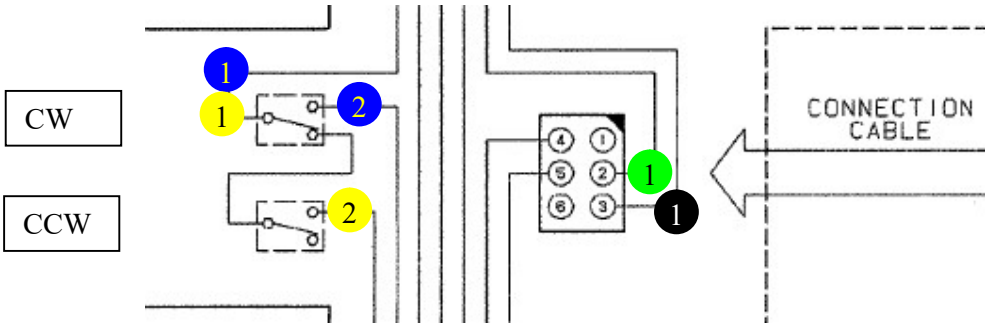
- Settings of AUX-relay: NONE
- Extended Calibration needed



Yaesu : G-450ADC/CDC

Rotor-specific information:

- Settings of AUX-relay: NONE
- Extended Calibration needed

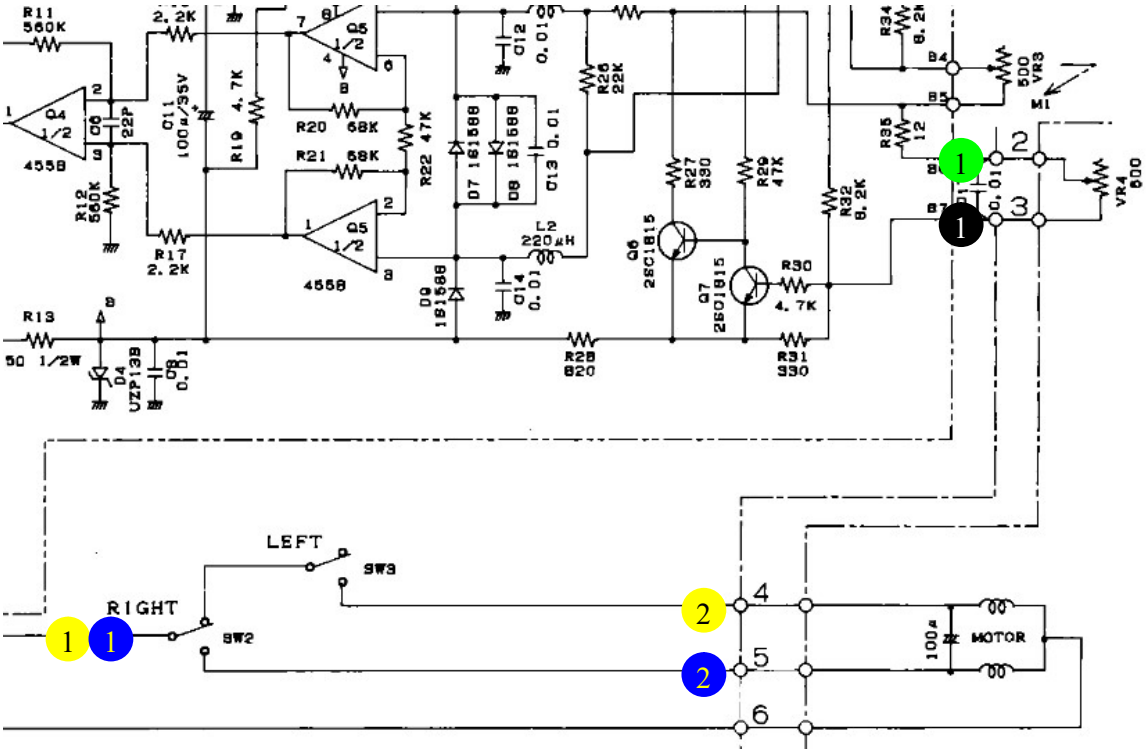


Yaesu : G-450XL – G-650XL

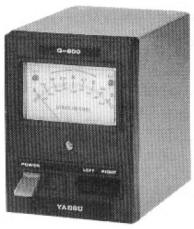
Rotor-specific information:

- Settings of AUX-relay: NONE
- Extended Calibration needed

For ERC V4 **kits** only: As none of the terminals of the rotator-feedback-potentiometer is tightened to the ground of the rotor-controller, use a separate power-supply (e.g. wall-mount) for the ERC, that is not connected to stations ground.

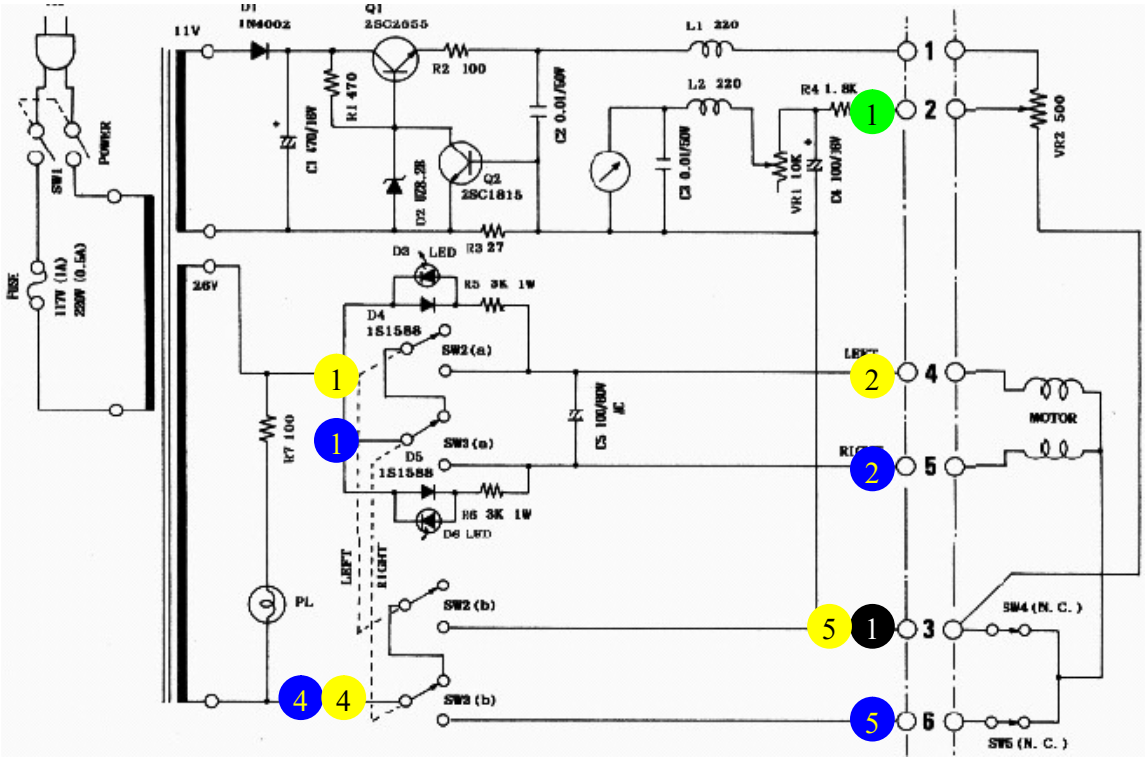


Yeasu : G-600



Rotor-specific information:

- Settings of AUX-relay: NONE

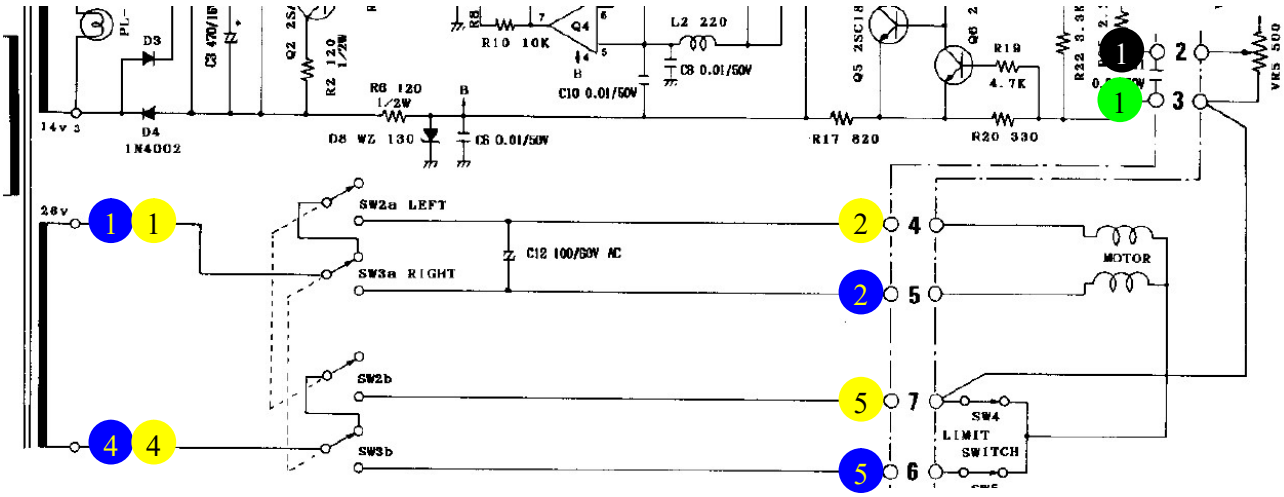


Yaesu : G-600RC

Rotor-specific information:

- Settings of AUX-relay: NONE
- Extended Calibration needed

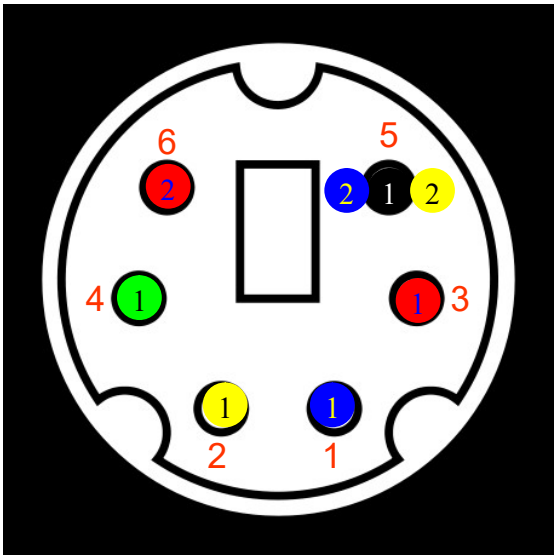
For ERC V4 **kits** only: As none of the terminals of the rotator-feedback-potentiometer is tightened to the ground of the rotor-controller, use a separate power-supply (e.g. wall-mount) for the ERC, that is not connected to stations ground.



Yaesu : G-800DXA/C – G-1000DXA/C – G-2800DXA/C

Rotor-specific information:

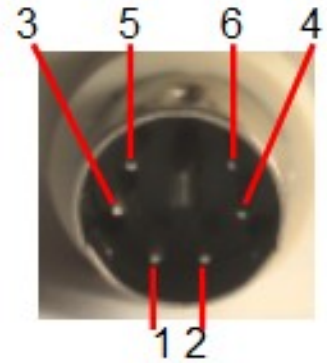
- Settings of AUX-relay: SPEED



The connector is shown like this:

- looking from outside to the connector of the control-box
- looking on the solder-pins of the connector that fits into the control-box

These are the pins looking to the male-connector of the cable with 6-pin Mini-DIN

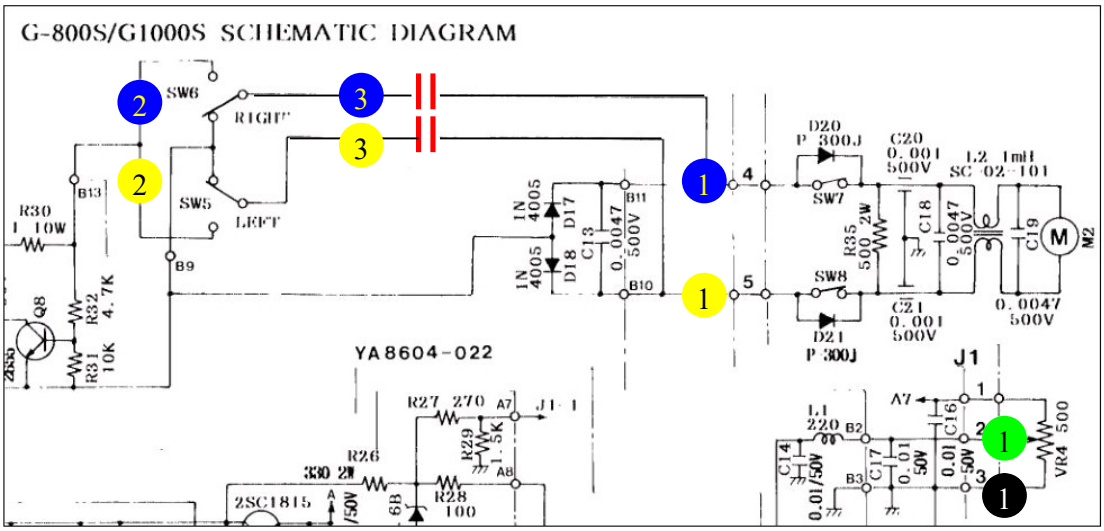


Yeasu : G-800S – G-1000S

Rotor-specific information:

- Settings of AUX-relay: NONE

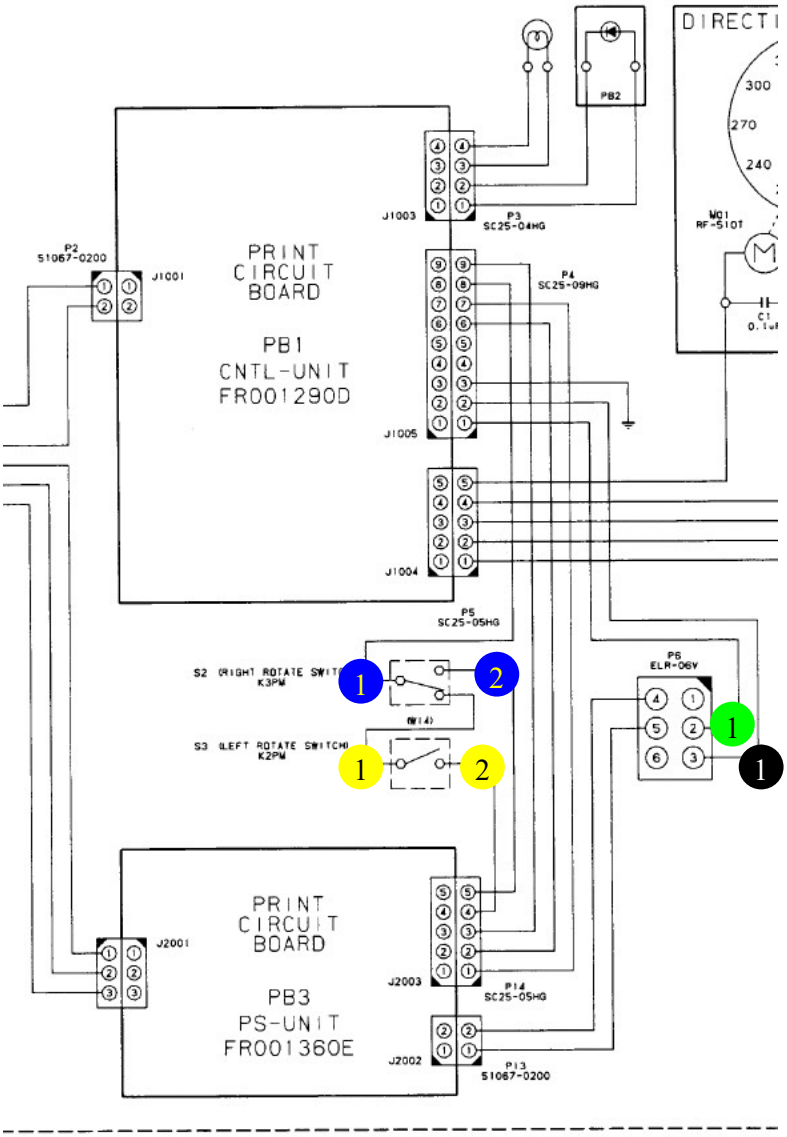
Additional work: The 2 connections to the center-points of the switches „Right“ and „Left“ have to be cut. Refer to the symbol || in the schematics.



Yeasu : G-800SA – G-1000SA

Rotor-specific information:

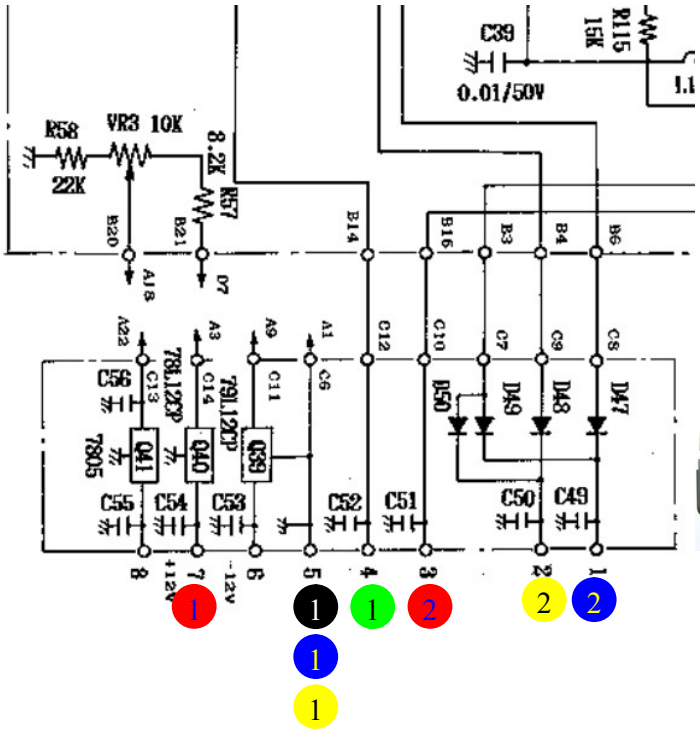
- Settings of AUX-relay: NONE
- Extended Calibration needed

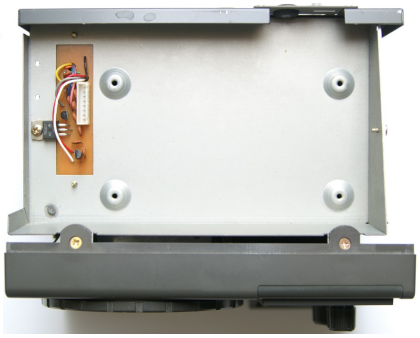


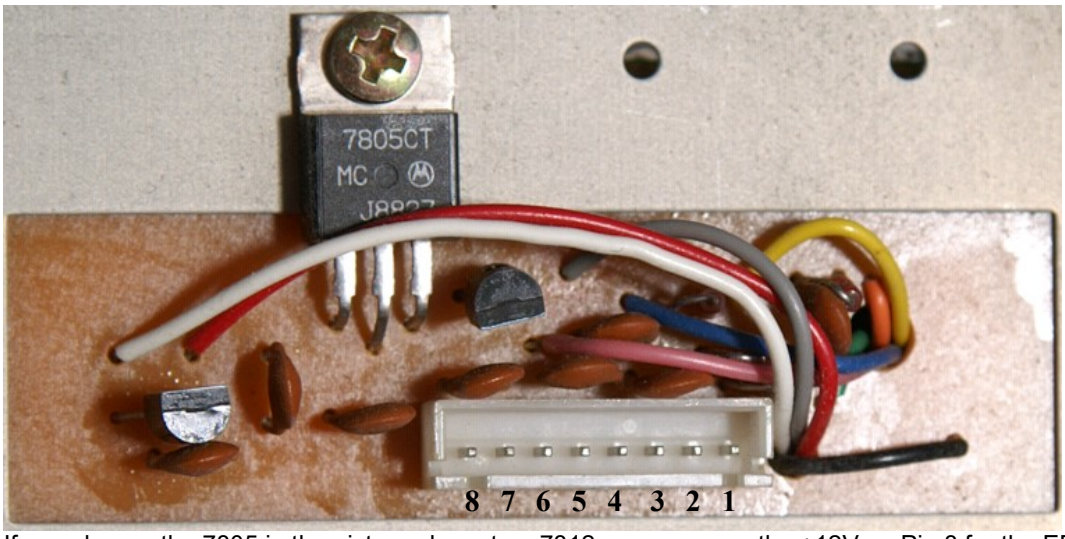
Yaesu : G-800SDX – G-1000SDX – G-2700SDX – G-2800SDX

Rotor-specific information:

- Settings of AUX-relay: SPEED







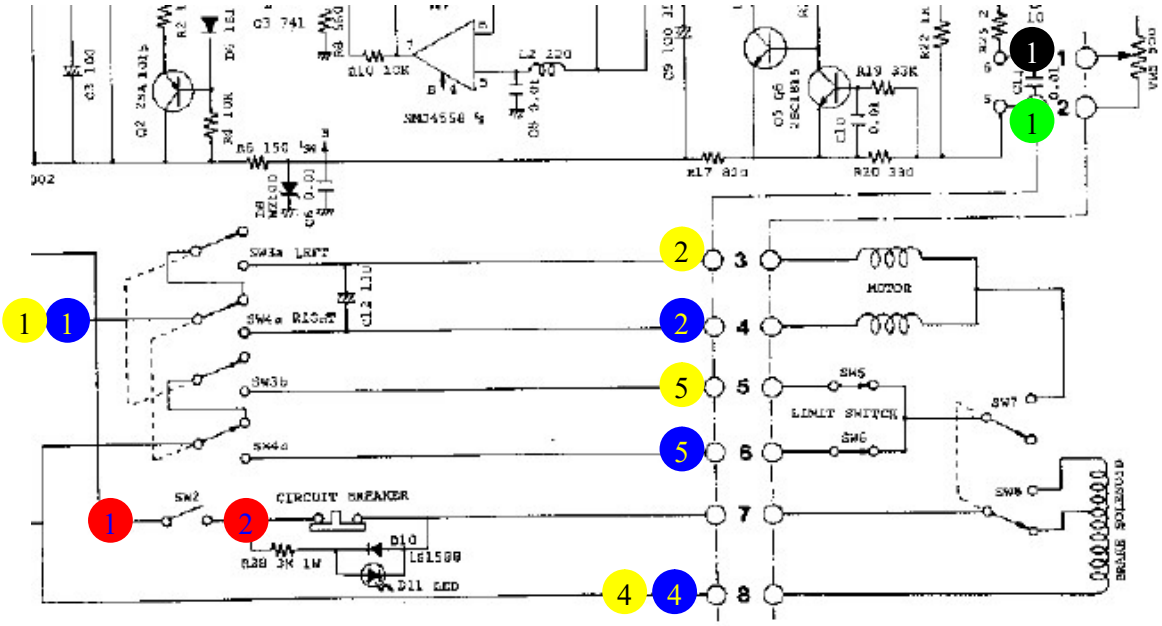
If you change the 7805 in the picture above to a 7812, you may use the +12V on Pin 8 for the ERC.

Yaesu : G-2000RC

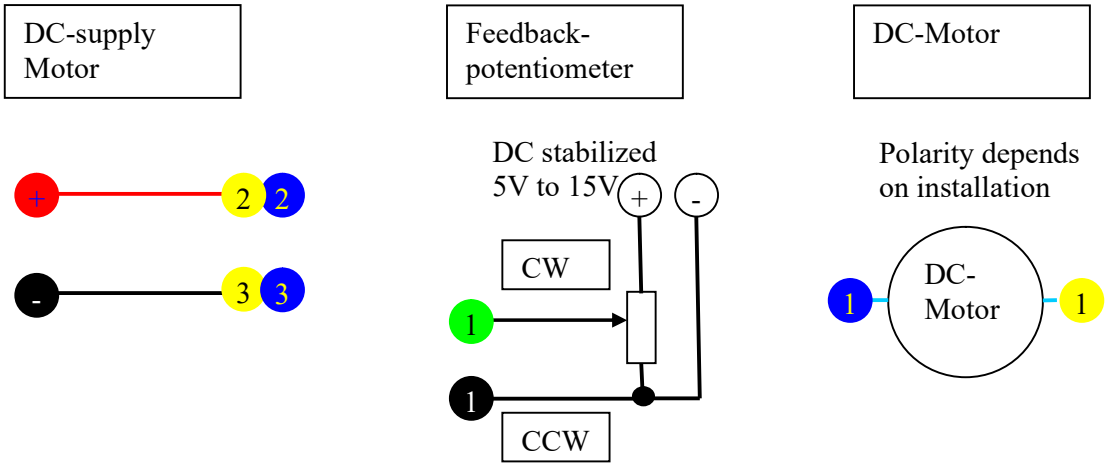
Rotor-specific information:

- Settings of AUX-relay: BRAKE
- Extended Calibration needed

For ERC V4 **kits** only: As none of the terminals of the rotator-feedback-potentiometer is tightened to the ground of the rotor-controller, use a separate power-supply (e.g. wall-mount), that is not connected to stations ground.



HOMEBREW : DC-Rotator



HOMEBREW : AC-Rotator