

Allen-Bradley 1352C-Plus 103 Control Card Replacement and Installation Guide

Kit Instructions

103 Card Replacement

The 103 Control Card Replacement Kits are available to provide an easy method of changing a malfunctioning 103 Control Card. The replacement kits are available for all kVA ratings for **SERIES C** 1352 Drives only.

This kit includes the latest revision control card, three sets of firmware chips that must be installed (select from these firmware chips the ones that match what is on the malfunctioning control card), a wrist strap and this publication entitled “103 Control Card Replacement and Installation Guide.”



ATTENTION: Servicing Industrial Control Equipment can be hazardous. Severe injury or death can result from electrical shock, burn, or unintended actuation of controlled equipment. Recommended practice is to disconnect and lockout control equipment from power sources, and release stored energy, if present. Refer to **National Fire Protection Association Standard No. NFPA70E, Part II** and (as applicable) **OSHA rules for Control of Hazardous Energy Sources (Lockout/Tagout) and OSHA Electrical Safety Related Work Practices** for safety related work practices, including procedural requirements for lockout-tagout, and appropriate work practices, personnel qualifications and training requirements where it is not feasible to de-energize and lockout or tagout electric circuits and equipment before working on or near exposed circuit parts.

Parts Included in This Kit

The following is a list of parts included with the 103 Control Card kit.

#507725	103 CON CARD
#507723	D17 Scalar 3.03E
#507724	D18 Scalar 3.03E
#507720	D17 Vector With Blocks 3.05E
#507719	D18 Vector With Blocks 3.05E
#507718	D17 LGU 3.04D
#507717	D18 LGU 3.04D

Control Card Replacement Procedure

The following steps should be adhered to when changing the printed circuit cards:



ATTENTION: The CMOS circuits utilized on the control cards can be destroyed by static charges generated by friction of materials made of synthetic fibers. Use of damaged circuit cards may also damage related components.

1. Remove power by opening the disconnect switch and verify with a meter that all circuits are voltage free.
2. Carefully detach all ribbon cables, noting their location and orientation and whether the connectors were properly seated.
3. Remove small metric mounting hardware with a screwdriver taking care not to drop associated washers into other circuits of the drive.
4. Lift out the circuit board and check the replacement board before attempting installation. Install the new board by replacing the mounting hardware and reinserting the connectors located on the new board.

IMPORTANT: The grounded wrist strap **MUST** be used when replacing circuit cards and firmware to guard against static discharge damage to the boards.

5. Transfer the new EEPROMS D17 & D18 to the corresponding locations on the new control card using an I.C. removal / insertion tool for CMOS circuits.
6. In order to retain the application software program, it will be necessary to transfer the existing EEPROM D16 to the new card.

NOTE: If the new EEPROM D16 is left in the replacement control card, it is important that you observe item "8" when first applying power.

7. Transfer the matching card and its spacers from the malfunctioning board to the replacement control board by removing the four mounting screws from behind the card and reinstalling them in the proper location on the replacement card. Be sure to attach the X-2 connector firmly into its socket and latch the connector tabs.
8. When reapplying power to the drive after installing a new control card, you must wait at least 2 minutes after the red LED on the control card lights before interrupting power or adjusting parameters. If you choose to use the new EEPROM D16 which was supplied with the card, you must wait at least 3 to 4 minutes after the LED lights. If power is interrupted, the process restarts.

IMPORTANT: It is important to calibrate both the DC Bus Voltage and Current Measurement following replacement of the control card utilizing the following procedures.

Calibration of the DC Bus Voltage Measurement

To calibrate the DC Bus voltage measurement, adhere to the following steps:

1. Check P65 SAMI_AC_RATEDVOL to make sure it corresponds to the input voltage to the drive.
2. With the DC bus charged, carefully measure the DC voltage between the “+” and “-” bus bars at the top of the inverter unit.
3. Enter the measured value into P258 UCMEASURED_ON_BUS in volts.
4. Set value of P260 FIND_UC_OFFSET to “1”.
5. After P260 is set to 1, re-check the value of P257 UCVOLTAGE which should be automatically corrected to the value you entered into P258.
6. P260 will reset itself to zero after calibration is completed.
7. The new offset computed by the calibration program will appear in P261 UCOFFSET.
8. If the value of P257 still is not the same as the value measured from the DC bus ($\pm 10\%$) or if P260 does not automatically reset to zero, proceed to the Bulletin 1352C Installation, Maintenance and Troubleshooting Manual for DC voltage measurement hardware.
9. Remember to save new values to EEPROM by setting P8 value to “1” for 1 minute.

Calibration of the Current Measurement



ATTENTION: The CMOS circuits utilized on the control cards can be destroyed by static charges generated by friction of materials made of synthetic fibers. Use of damaged circuit cards may also damage related components.

IMPORTANT: The largest current measurement error the program can self-correct is $\pm 5\%$.

1. Set the value of P190 CURRENTOFFSET to zero.
2. If the value of P219 IR or P220 IS is within $\pm 10\%$, it is not necessary to perform the following potentiometer calibrations. Set P190 back to a value of “50” and consult the Bulletin 1352C-5.0 Installation, Maintenance and Troubleshooting Manual.
3. If the value of P219 or P220 is not within $\pm 10\%$, the following adjustments are needed:
 - a) Adjust potentiometer R12 on the control card until P219 is as close to zero as possible.
 - b) Adjust potentiometer R13 on the control card until P220 is as close to zero as possible.
 - c) Reset the value of P190 to “50”.
4. Remember to save new values to EEPROM by setting P8 value to “1” for 1 minute.



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