REVISIONS

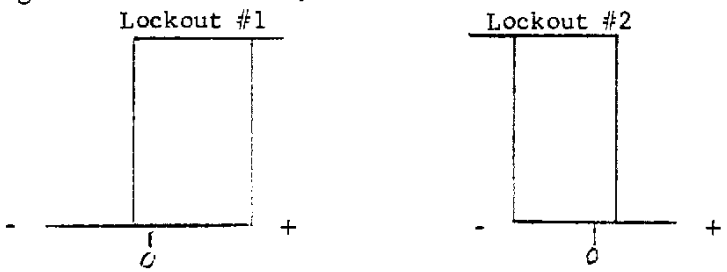
1.0 SCOPE

These procedures are suggested for the production testing of the subject card. Its performance capabilities are covered in Engineering Specification 224X309BA.

2.0 INSTRUCTIONS

2.1 Adjust deadband and zero with a 6.3V AC signal applied between Tab 29 and common using the procedures given in Engineering Specification 224X309BA. Seal both pots with tape or equivalent.

2.2 Check lockouts with signal input of 6.3V AC as in 1 above. Use oscilloscope with X-Axis driven by summing junction voltage as when setting deadband and zero.



2.3 Check C788 by connecting Tab 25 to common. Excursions on output and summing junctions with the 6.3V AC input should decrease but not disappear.

2.4 Check for leakage in output stage by replacing 1.5K load resistor from Tab 11 to common with a 150K resistor.

2.5 Check SCR781 by connecting Tab 18 to common through a 33K ohm resistor. The voltage at Tab 7 should decrease to approx. 1.0 volt and remain at that voltage after removing the 33K ohm resistor from common.

2.6 Check controlled sequence shutdown operation as described in Engineering Specification 224X309BA, section 3.6.

3.0 CONDITIONS

3.1 Room Temperature.
3.2 Supply voltages ±20V DC ± 0.1V.
3.3 Load resistor Tab 11 to common 1.5K except for a leakage test.
3.4 Two 6.8K resistors connecting Tab 19 to common and Tab 21 to common.
3.5 Connect Tab 8 to common with a 470 ohm 2W resistor and connect a 330 ohm 2W resistor from Tab 8 to the +20V DC power supply.
3.6 Lockouts #1 and #2 loaded with 1.5K resistors from Tab 3 to common and Tab 2 to common.

4.0 REQUALIFICATION

Requalify the card to the specification on the following schedule: Every 200 cards or every 6 months, whichever occurs first.

PRINTS TO
5D(BW)
5E(BW)
5K(BW)
5L(BW)
5P(BW)
5QC(2BW)
5R(BW)

REV NO. 0

224X309BA

CONT ON SHEET 2 SH NO. 1

TITLE
DRIVER COORDINATION SV200R
ENGINEERING SPECIFICATION

FIRST MADE FOR 193X226BAG01

REVISIONS

1.0 SCOPE

This specification covers the performance capabilities of the driver coordination card, 193X226BAG01. It is a multi-function card for reversing three-phase half wave drives. Functions included are:

1.1 Amplification of an error signal to provide a positive output signal with either polarity of error.

1.2 Provision of two lockout signals which are a function of error polarity.

1.3 Logic to prevent change of state of the lockouts until the current feedback signals allow the transition.

2.0 ADJUSTMENTS

The following potentiometer adjustments should be made under the conditions specified in part 2.1.

2.1 A. DC supply voltages +20V ± 0.05 V and -20V ± 0.05V to common. +20 (27,28) COM (22,23) -20 (13,14)

B. Loading resistor (1.5K) connected between Tab 11 and common.

C. Two 6.8K resistors on current feedback inputs. (Tab 19 to common and Tab 21 to common.)

D. Connect a 470 ohm 2W resistor from common to Tab 8 and a 330 ohm 2W resistor from Tab 8 to the +20V DC supply. This will apply approx. 12V to Tab 8. +12DC TO TAB 8

E. Connect 1.5K resistors on both lockout outputs (Tab 2 to common and Tab 3 to common).

F. Initial potentiometer settings.

P781 Zero -- Midrange
P782 Deadband -- Midrange

2.2 Apply 6.3V AC, 60 Hz through a 10K ohm resistor to Tab 26 (reference to common) and observe the output voltage on Tab 11 with a scope with the horizontal axis driven by the summing junction voltage, Tab 26. Adjust the zero and deadband potentiometers (P781 and P782) to get the display indicated in Figure 1. Both potentiometers will have to be adjusted alternately to achieve the proper adjustment. Figures 2 and 3 give the symptoms of improper adjustments.

Scope Set on X Y

Tech 2.215

3.0 PERFORMANCE

This card should perform as follows after initial adjustment and while exposed to the conditions specified in Section 4.0.

3.1 Voltage Gain: For an output of 6 volts at Tab 11, the error voltage at Tab 26 should be between .20V and .35V or between -.20V and -.35V. The difference between the positive error and negative error for a 6 volt output should be no more than .10.

3.2 Linearity: 5% variation from a straight line from 0 to 6V output.

3.3 Deadband should not exceed 0.10V max. (See Figure 4)

3.4 With positive error the output voltage on Tab 11 should switch off with 0.8V ± 0.2V applied to Tab 21. With a negative error the output voltage should switch off with 0.8V ± 0.2V applied to Tab 19. Temperature drift 0 to -80 mv/15°C.

5D (BW)
5E (BW)
5K (BW)
5L (BW)
5P (BW)
5QC (2BW)
5R (BW)
PRINTS TO

3.5 With no signals on Tab 19 or 21, a positive error should produce a signal of about 5V on lockout #1 (Tab 3). A negative error should produce a signal of about 5V on lockout #2 (Tab 2).

3.6 In an IOC operation occurs with a positive signal on Tab 19 (21), lockout #1 (2) should be up (+5V) and lockout #2 (1) should be down (0 to 0.2V). Reducing the signal on Tab 19 (21) should cause lockout #2 (1) to go up when the voltage on Tab 19 (21) is decreased to 0.8 ± 0.2V. Temperature drift 0 to -80 mv/15°C.

+ Error Sig First Step (-) error sig Second Step

3.7 The voltage at Tab 7 should decrease to less than 2.0 volts when the voltage at Tab 18 is decreased from +20 volts to 19 ± 0.5 volts.

Tab 18 through a 33KΩ Resistor to com.

4.0 OPERATING CONDITIONS

This card should be capable of operating within the limits specified in Section 3.0 while exposed to the following conditions:

4.1 DC Supply Voltage: 19.9 to 20.1 volts. Power supply drain with 1.5K load: Plus supply 20 ma -28 ma; minus supply 4 ma.

4.2 Ambient Temperature: 10° to 65°C normal operating range. No irreversible damage to be caused by operation at 80°C max. ambient. Warm-up time is one minute.

4.3 Humidity: 24 hours in 90% relative humidity at 40°C.

4.4 Voltage to Ground: 600 volts.

4.5 Load Resistance: Nominal 1.5K ohms from Tab 11 to Tab 22 or 23 (common). Allowable range 1K ohms to 10K ohms.

5D (BW)
5E (BW)
5K (BW)
5L (BW)
5P (BW)
5QC (2BW
5R (BW)
PRINTS TC

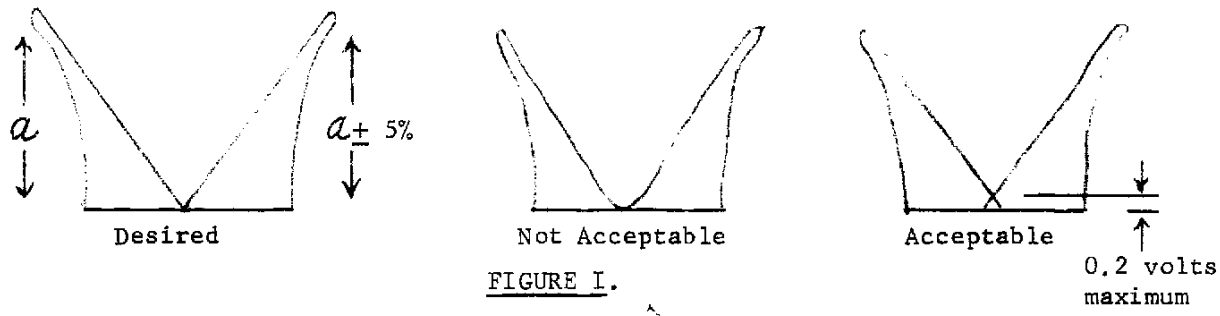


FIGURE I.

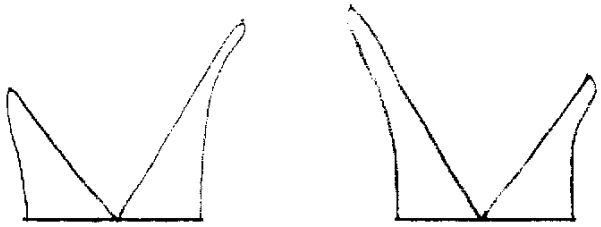


FIGURE 2. IMPROPER ZERO ADJUSTMENTS

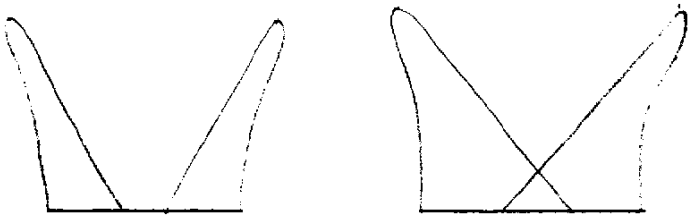


FIGURE 3. IMPROPER BEADBAND ADJUSTMENTS

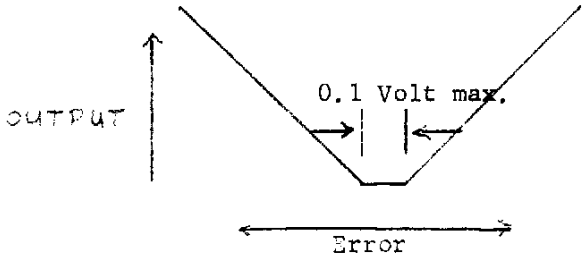


FIGURE 4.

5D (BW)
5E (BW)
5K (BW)
5L (BW)
5P (BW)
5QC (2BW)
5R (BW)
PRINTS TO