

FF-803-WA (10-76)
PRINTED IN U.S.A.

REV NO. 0 224X429AA CONT ON SHEET 3 SH NO. 2	TITLE HOIST CARD, 193X547AAG01 ENGINEERING SPEC & TEST INSTRUCTIONS FIRST MADE FOR
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2.02 Polarity Detection

The voltage at tab 23 will switch to +17V +2V for a CEMF (or FDR) voltage of $-.33V \pm .05V$ and to -17V + 2V for a CEMF (or FDR) voltage of $+.33V \pm .05V$. With tab 23 negative, FET switch T3 is open such that the hoist current control amplifier output, OA2(7) is biased off. With tab 23 positive, FET switch T2 is open to provide an off bias signal to the lower current control amplifier on the Lower Card.

2.03 Standby Field Adjust

With CFB = CEMF = 0 the SFA potentiometer has an adjustment range of 75% to 100% of the nominal field current as set by FMAX on the MFC card.

2.04 Field Weakening by Armature Voltage (CEMF)

The field can be adjusted by the MFH potentiometer to a minimum level of 20% with CEMF = -5V and the potentiometer set CCW.

2.05 Field Strengthening by Armature Current (CFB)

If the CFB signal during hoisting exceeds a preset bias level, the voltage at tab 6 will go negative to strengthen the field as a function of armature current.

Field strengthening can be adjusted to occur from 80% to 100% of rated current (CFB = -2.5V) by adjusting the Hoist Bias potentiometer, HB, from fully CCW to fully CW.

When the bias level is reached, a 12% (.3V) increase in the magnitude of CFB will result in a 100% additional increase in the field current reference. Or when operating at a minimum field strength of 20%, an increase of 10% in armature current will increase the field to 100%.

If tab 5 is connected to tab 6, a current change of 23% will result in a 100% additional field reference, or the field will increase from 20% to 100% by a 19% (.47V) increase in the CFB signal magnitude.

If tab 5 is connected to common a current change of only 6.5% will provide a 100% additional field current reference, or the field will increase from 20% to 100% for a 5% (.13V) increase in the magnitude of the CFB signal.

During regenerative hoist operation, when CFB is positive, a bias signal is applied, forcing the voltage at OA2(7) to $+.6V \pm .1V$ such that the field cannot be strengthened.

2.06 Operating Conditions

Power supply: $+20V \pm .1V$
 Temperature: 0 to $+75^{\circ}C$
 Humidity: 24 hrs in 90% relative humidity at $40^{\circ}C$
 Voltage to ground: 600V

2.07 The power supply requirements will be mA at +20V and mA at -20V.

REVISIONS

AW (BW)
 5B (8) M
 5D (CD)
 5E (3) BK
 5R (2) BW
 PRINTS TO

MADE BY H. O. Loberg <i>[Signature]</i> 12/13/78 ISSUED <i>[Signature]</i> 1/25/78	APPROVALS <i>[Signature]</i>	DCM&G SVPO Erie, PA	DIV OR DEPT. LOCATION 224X429AA CONT ON SHEET 3 SH NO. 2
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REV NO. 3	TITLE	CONT ON SHEET	SH NO.
224X429AA	HOIST CARD, 193X547AAG01 ENGINEERING SPEC & TEST INSTRUCTIONS	FL	3
CONT ON SHEET FL SH NO. 3	FIRST MADE FOR		

3.0 TEST INSTRUCTIONS	REVISIONS																		
<p>The following describes the recommended test procedure for the Hoist Card.</p> <p>Preset all potentiometers to the fully CCW positions.</p> <p>Connect a 10K resistor from tab 28 to common.</p> <p>Connect tab 9 to tab 10.</p> <p>Apply power to the card.</p> <p>Apply inputs and verify voltage measurements as indicated.</p> <p>3.01 Inputs: CEMF(25) = +.4V, CFB(17) = CFB(24) = +5V \pm1V</p> <p>Outputs:</p> <table><tr><td>Tab 23:</td><td>-17V \pm2V</td></tr><tr><td>Tab 28:</td><td>\pm.01V</td></tr><tr><td>Tab 27:</td><td>-9.8V \pm1V</td></tr><tr><td>Tab 30:</td><td>\pm.01V</td></tr><tr><td>Tab 6:</td><td>\pm.01V</td></tr><tr><td>Tab 13:</td><td>+4.5V \pm.1V</td></tr></table> <p>3.02 Inputs: CEMF(25) = +.4V, CFB(17) = CFB(24) = +5V \pm1V</p> <p>a) With +9.7V at tab 21, tab 13 should measure -10V \pm.5V Apply -20V to tab 3. The voltage at tab 13 should measure +.5V \pm.1V. (Remove inputs)</p> <p>b) With +18V at tab 29, tab 13 should measure -10.3V \pm.5V</p> <p>c) With +20V at tab 14, tab 13 should measure -4.8V \pm.5V</p> <p>3.03 Reduce CEMF until the tab 23 voltage switches to +17V \pm2V. The CEMF voltage should measure -.30V \pm.10V. Tab 28 should be at -9.8V \pm1V. Tab 27 should be at \pm.01V.</p> <p>3.04 Inputs: CEMF(25) = -5.0V, CFB(17) = CFB(24) = 0, (Tab 26 open)</p> <p>Outputs:</p> <table><tr><td>Tab 30:</td><td>+5.1V \pm.3V</td></tr><tr><td>Tab 6:</td><td>\pm.01V</td></tr><tr><td>Tab 13:</td><td>0 to -1.1V</td></tr></table> <p>3.05 Inputs: CEMF(25) = -5.0V Reduce the CFB voltage applied to tabs 17 and 24 until voltage at tab 6 starts going negative. The CFB voltage should measure -1.9V \pm.2V</p> <p>3.06 Inputs: CEMF(25) = -5.0V Reduce the CFB voltage until the voltage at tab 6 measures -10V \pm.1V. The voltage at CFB should be -1.9V to -2.4V.</p> <p>3.07 Apply 10V to tab 8. Tab 10 should measure -10V \pm.2V.</p> <p>3.08 Inputs: FDR(26) = -5.0V, CFB(17) = CFB(24) = 0, (Tab 25 open)</p> <p>Outputs: Tab 30: +5.1V \pm.3V Tab 6: \pm.01V Tab 13: 0 to -1.1V</p>	Tab 23:	-17V \pm 2V	Tab 28:	\pm .01V	Tab 27:	-9.8V \pm 1V	Tab 30:	\pm .01V	Tab 6:	\pm .01V	Tab 13:	+4.5V \pm .1V	Tab 30:	+5.1V \pm .3V	Tab 6:	\pm .01V	Tab 13:	0 to -1.1V	<p>Chg 3.02 b) +15V 2/18/82</p> <p>Chg output Tab 13 4/9/80 Chg 3.04, 3.08 Chg 3.02 b) 2/16/84</p> <p>1</p> <p>AW (BW)</p> <p>5B (8) M</p> <p>5D (CD)</p> <p>5E (3) BK</p> <p>5R (2) BW</p> <p>PRINTS TO</p>
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