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S11 APPLICATION GUIDELINE 7.3

FM Terminal Calibration

Introduction

The signal output from the FM terminal is an analog voltage signal. The FM terminal can be calibrated by using a current & voltage calibrator or by using the built-in inverter fixed outputs. This guideline will outline how to properly calibrate the FM terminal using the S11's fixed outputs.

The FM terminal has 18 different items that can be displayed on a meter. Refer to pageE-11 of the S11 Instruction Manual under function FMSL for a complete listing. For the meter, use either a full-scale 0-1mA ammeter or full-scale 0-7.5 Vdc (or 10Vdc-1mA) voltmeter. Switching to 0-20mAdc (4-20mAdc) current input can be made by turning the FM slide switch to the I position. See Fig. 2.0 for meter connections. When switching to 4-20 mAdc current input, make adjustments using F691 (analog output gradient) and F692 (analog output bias).

Connections

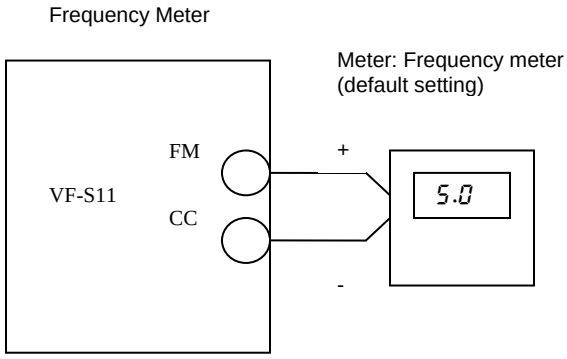

Fig. 1.0

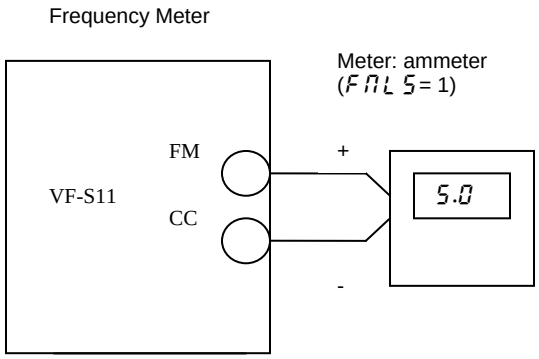

Fig. 2.0

Connect the drive to a fluke meter as shown in Fig. 1.0. Insure the FM selector switch on the control board is set to output **V** for voltage. Then set the fluke meter to read Dc voltage. Use the programming below to control the run frequency of the inverter. When FMSL = 15 the inverter's FM terminal will output a voltage that corresponds to the drive running at 60 Hz. If you programmed the drive to a 60 Hz setting then the meter should read about 10 Vdc while it is running at 60 Hz. If the meter does not read 10 Vdc then scroll to the FM parameter and increase/decrease until the meter reads 10 Vdc.

Perform the same test as above but set FMSL = 16. When FMSL = 16 the inverter's FM terminal will output a voltage that corresponds to the drive running at 30 Hz. The meter should then read 5

Vdc. If the meter does not read 5 Vdc then scroll to the FM parameter and increase/decrease until the meter reads 5 Vdc.

The final step is to calibrate the zero point. Decrease the drive to 0 Hz and confirm that the inverter's FM terminal is outputting 0 Vdc. The meter should then read 0 Vdc. If the meter does not read 0 Vdc then scroll to the FM parameter and increase/decrease until the meter reads 0 Vdc.

Programming

Parameter	Description	Default Value	New Value
FMSL	Meter Selection	0	15 Fixed output (output current: 100%) 16 Fixed output (output current: 50%)
FM	Meter Adjustment	-	-

Once the meter adjustment has been completed, set FMSL to the desired value and verify correct operation.

Revision History

Rev.	Date	Written/Revised By	Approved By	Description
7.3	6/23/2011	Joshua Austin	Eric Houg	Formatting. Revised to incorporate document control requirements.