



1336 PLUS Custom Language Module Installation/Replacement

EN930 – Programmable DC Bus Trip Level
(with Digital Input Control Activation)

Introduction

This publication will guide you through installation (or replacement) of a 1336 PLUS Custom Language Module.



ATTENTION: The Custom Software supplied in the Language Module differs from the standard 1336 PLUS product offering. Attempting to run this Custom Software without full understanding of the “Special Considerations” (see below) could result in unpredictable and/or hazardous conditions.

Custom Software EN930 differs from the standard 4.03 firmware in the following ways:

- Parameter 241, [DC Bus Drop] – The default DC bus trip level for standard firmware is approximately 81%. Parameter 241 allows the DC bus trip level to be programmed from 19% to 50%, where 19% equals 81% in the standard firmware. For example: If desired trip level is 70%, set [DC Bus Drop] to 30%.

Important: Minimum bus level automatically adjusts depending upon the value of [DC Bus Drop].

- Terminal 26 of TB3 (Control Interface Board) has been redefined to allow enabling or disabling of the programmable DC bus trip level.
 - Disabled (default) The DC bus trip level can be programmed between 19% and 50%.
 - Enabled The default value of 19% (81% DC bus level) is active and cannot be programmed.



ATTENTION: This drive contains ESD (Electrostatic Discharge) sensitive parts and assemblies. Static control precautions are required when installing, testing, servicing or repairing this assembly. Component damage may result if ESD control procedures are not followed. If you are not familiar with static control procedures, reference A-B publication 8000-4.5.2, “Guarding Against Electrostatic Damage” or any other applicable ESD protection handbook.



ATTENTION: To avoid a shock hazard, assure that all power to the drive has been removed before proceeding with the following procedure. In addition, verify that the DC bus has discharged by measuring across the “+DC” and “-DC” terminals of TB1 with a voltmeter. The voltage should be 0.0VDC.

Special Considerations for EN930 Firmware

EN930 firmware allows the percent DC bus voltage pre-charge level to be adjusted. This provides limited control over the threshold where the output of the motor must be cut off and a pre-charge function performed.

Standard 1336 PLUS firmware is set at about 81% of the DC bus value. Though this adequately protects the drive from pre-charge inrush and associated voltage transients, it can interfere with normal operation while running on a generator or a power line that suffers from frequent voltage dips or disturbances. To help combat pre-charge dropout, the EN930 firmware has the ability to adjust the pre-charge dropout point between 81% and 50% (approximate) of the DC level.

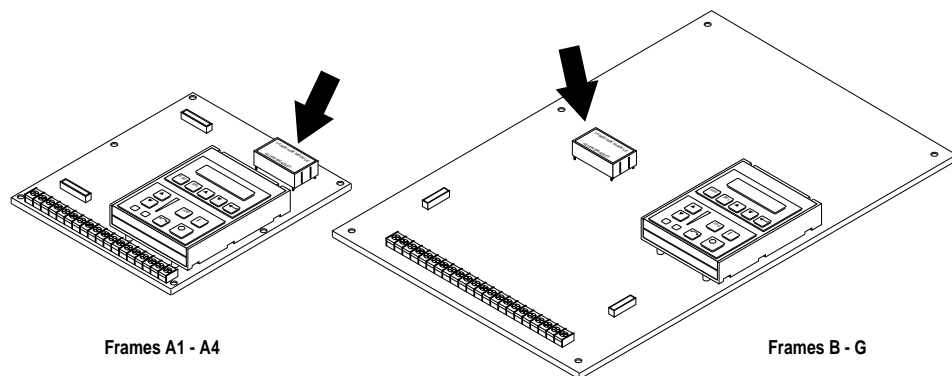
While running from a generator power source, the user may find that although the generator output voltage RMS value is correct, the wave shape is distorted due to the type of load. This distortion or “flat topping” of the waveform will result in a lower DC voltage level in the drive (since the drive DC bus will track close to the peak voltage of the input line). Typically, this is due to the high source impedance of the generator. While running on generator power where the generator is closely matched in size to the drive load, inrush or pre-charge should not be a concern. In this case the high impedance of the generator will limit inrush current.

While running on generator power, improved performance will be achieved, without risk of an inrush problem by lowering the pre-charge level. However, if the system is run from the utility with a backup or standby generator, inrush could be an issue with the lower pre-charge level. For this reason, an input is made available so that the pre-charge level can be switched between the set level of 81% and the adjustable level between 50% and 81% of the DC bus. This will allow the drive to protect against inrush while on utility power and better performance while on generator power.

Users may also find that using the adjustable pre-charge level while on utility power will give some added ride-through for slight line disturbances. It must be stated that the pre-charge level should only be set as low as necessary to achieve good performance. The user must understand that as the source impedance drops, the inrush will become greater. The pre-charge level should be set higher as the source impedance moves lower.

Installation/Replacement

1. Remove and lock-out all incoming power to the drive. Remove the drive cover.
2. Using the figure below, locate the Language Module for your drive and note orientation.

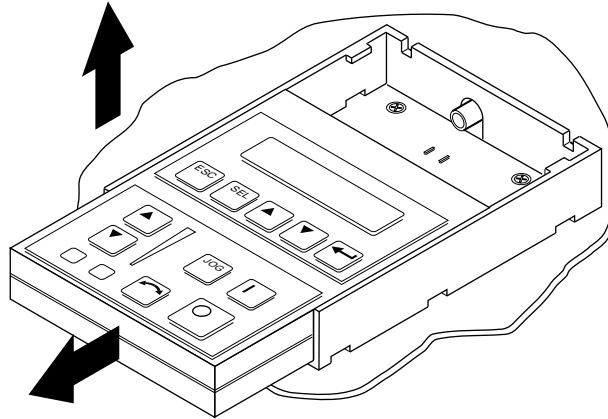


Frames A1 - A4

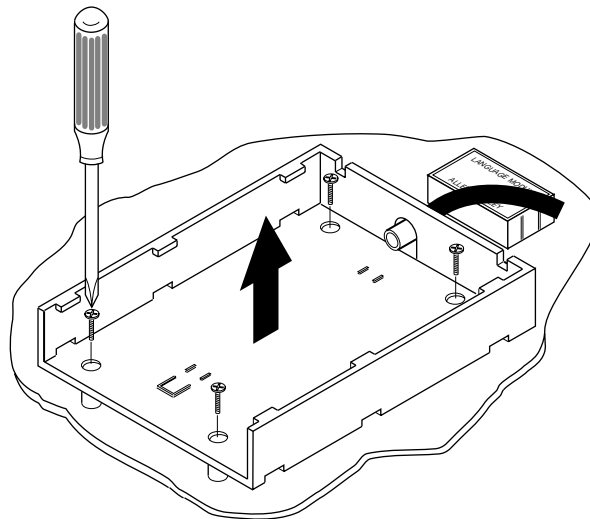
Frames B - G

3. On 0.37-3.7 kW (0.5-5 HP) drives, the HIM and cradle must be removed before proceeding.

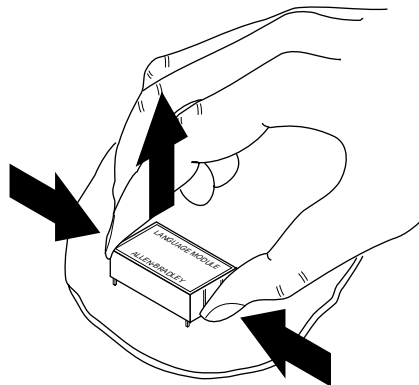
- a. To remove the HIM, slide it down and out of its cradle.



- b. Remove the cradle by taking the 4 corner screws out. Position the cradle and attached cable out of the way.

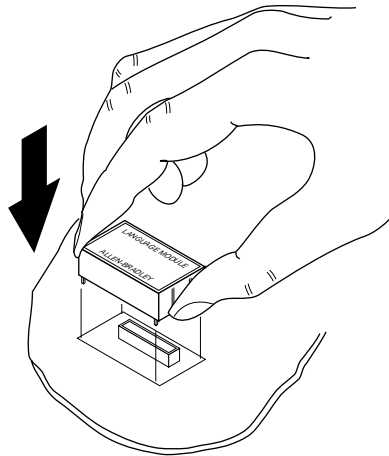


4. Remove the module by squeezing the sides - in, and pulling outward. Discard module.

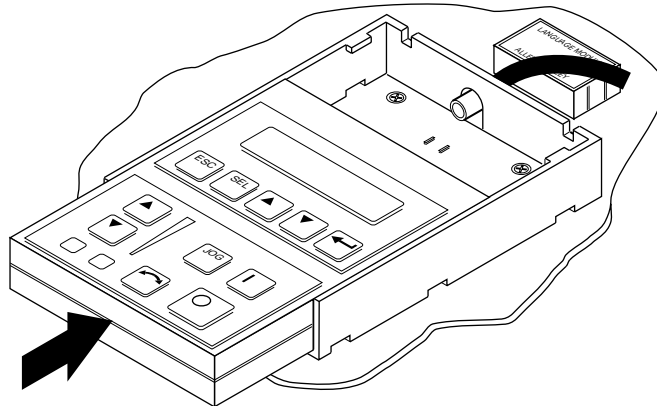


5. Position the new Custom Language Module on the Main Control Board, using the silk screen outline on the board as a guide.

6. Carefully align the module connector with the Main Control Board connector. Firmly press the module onto the board until fully seated. The module will “snap” (lock) in place.



7. Replace HIM and cradle (if removed). Replace drive cover and restore power to the drive. An F53, F54 or F66 fault will occur. Reset parameters to the factory default values – then, clear the fault by pressing the Stop key or cycling power. The drive may now be programmed as required.



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