

## **JAGUAR CUB INVERTER INSTRUCTIONS**

The inverter drive should be installed in a clean well-ventilated area; if there is difficulty accessing the keypad from its installed location Power Capacitors Ltd can supply a Remote Control Station (RCS) with large Stop/Start - Forward/Reverse – Speed Potentiometer controls in a durable enclosure that can be safely installed on your machine. The RCS is supplied with a two metre length of cable.

If you have purchased the RCS as well as the inverter, please follow the dedicated RCS instructions in conjunction with this sheet.

The factory default settings for a new Jaguar CUB inverter are for local keypad operation using the Start/Stop buttons and the potentiometer or up/down buttons for control of frequency.

- Connect the dual-voltage motor configured in "Delta" for operation at 220-240V 3 phase to the terminals marked U – V – W & Earth (Ground "G") using a length of screened cable.
- Connect the input single phase power Live-Neutral & Earth 230 Volts 50Hz to L1/L – L2/N & Earth (Ground "G"). **DO NOT CONNECT TO TERMINAL MARKED N-.**
- Test the drive operation using the keypad.
- A new inverter is supplied with factory default settings for maximum frequency (50Hz), minimum frequency (0Hz), and acceleration and deceleration times (6 seconds). The factory default settings appear in the IMO instruction manual supplied and can be changed as follows.
- **ENSURE NO CONNECTIONS ARE MADE TO THE TERMINALS MARKED "P+" and "N-". THESE TERMINALS ARE FOR BRAKING RESISTOR CONNECTION ONLY AND WILL CAUSE MAJOR DAMAGE TO THE DRIVE.**

### **"Local" Keypad and Potentiometer Operation**

The Jaguar CUB inverter can be programmed to operate in a number of ways. This section explains how to operate the inverter using the keypad for start and stop functions and the potentiometer to vary the motor speed. The parameters listed below are just a few of those available to change to obtain the best results from the inverter for your particular application. We have included, where appropriate, the factory default setting and a brief description of the parameter's function.

There are a number of parameters that require changing for the inverter to function with the keypad and potentiometer. The parameter menu is accessed as follows (ensure the inverter has power and that the motor has stopped)

- Press the PRG/RESET Key - this will change the display to **1.F\_\_**. Pressing the up/down arrow at this point will access other menus such as **1.P\_\_**.
- Once you have selected the correct menu, press the FUNC/DATA Key
- The display will change, for example, to **F00** (or the last parameter setting that was changed). By pressing the up and down arrows on the keypad, the display will change accordingly. Once the required parameter has been found press the FUNC/DATA button to

access this parameter - the display will change to the value currently set within this parameter

- To amend the parameter value, press the up and/or down arrow to change the value, then press the FUNC/DATA button to save this change.

This will bring you back to the parameter menu - so if you need to amend further parameters repeat accordingly. To leave the parameter menu completely press the PRG/RESET button again. We suggest that you set parameters P02, P03 and F11 to match the data from the motor rating plate.

**Parameter P02** - This is where you input the kW rating of the motor

**Parameter P03** – This is where you input the full load current of the motor at 220-240V (usually the higher of the two current ratings on the motor plate)

**Parameter F11** - This sets the thermal overload to operate at between 20% and 135% of the inverter current rating. This again should be set to the full load current of the motor at 220-240V (usually the higher of the two current ratings on the motor plate)

**Parameter F37** – This should be set to 2 to ensure that the above three parameters function correctly.

#### **Parameter F01 - Drive Input for Frequency**

This tells the drive what input to expect. The factory default is 4 and for Keypad/Potentiometer control this is the required value. If the drive does not respond to pressing keys on the keypad, check that this value is 4.

#### **Parameter F02 - Drive Input for Direction**

This tells the drive in which direction to run. The factory default is 2. Should the motor be running in the wrong direction instead of swapping cables over you can change this setting to 3.

#### **Parameter F03 - Maximum Output Frequency**

This parameter sets the maximum frequency. The factory default is 50Hz. Customers can change this to any value from 0 to 400Hz. Note that most motors are only designed to operate at a maximum of 60Hz. Note also that parameter **F15** will also need amending if the factory default is changed.

#### **Parameter F07 - Acceleration Time**

This setting determines the time taken for the motor to attain the frequency selected by the potentiometer in a controlled "acceleration ramp". The factory default is 6 seconds. If set to 0.00 the drive defaults to 0.01.

#### **Parameter F08 - Deceleration Time**

This setting determines the time taken for the motor to stop in a controlled "deceleration ramp". The factory default is 6 seconds. If set to 0.00 the drive defaults to 0.01 - DC Injection braking is available by setting parameter **F22** - please consult IMO instruction manual.

#### **Parameter F15 - Maximum Frequency Limit**

This sets the maximum upper limit the potentiometer will turn to. The factory default is 70Hz. If this is set higher than the value in parameter **F03**, parameter **F03** takes precedent.

#### **Parameter F18 – Frequency Bias (Minimum Frequency)**

This sets the lower limit the potentiometer will turn to. The factory default is 0Hz. The value to be set here is the percentage of the maximum frequency set via **F03/F15**. For example, if the maximum frequency is set at 50Hz and you wish the minimum frequency to be 10Hz, parameter **F18** should be set at 20%. If, using the same example, the maximum frequency is set at 60Hz; the **F18** parameter would be set at 16.67% to achieve a minimum frequency of 10Hz.

### **Values shown on Keypad Display**

When the motor is running the display will show either frequency or current supplied by the drive this can be toggled using the FUNC/DATA button. The display flashes when the motor is not running.