## CHEAT SHEET

### OVERVIEW

The following procedure is a supplement to other documentation supplied with this equipment and will guide the user in properly wiring the J1000 and motor. It will also allow the installer to check motor direction and correct if necessary.

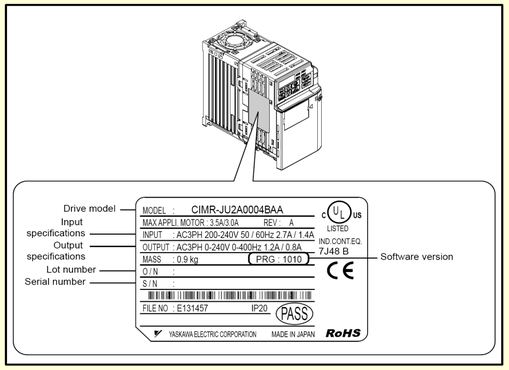
**Danger: *Improper wiring can and will cause bodily harm as well as damage to the equipment***

When installing the system be sure to follow good wiring practices and all applicable codes. Ensure that the mounting of the various components are secure and that the environment, such as extreme dampness, poor ventilation etc. will not cause system degradation.

***Please read this sheet and the Quick Start Guide (TOEPC71060626) provided with the J1000 thoroughly before attempting any installation.***

## Step 1 J1000 Model Identification and Mounting

**To make sure you received the correct model it is essential to verify the J1000 nameplate with your order; and make sure that the drive has the correct rating so it can be used with your motor. Please check the nameplate information as shown in the example below.**




- Check that the available power meets the ***input power*** requirements.
- Ensure that the ***output power*** from the VFD is compatible with the motor requirements.
- In the case of systems with multiple VFDs follow this procedure for each VFD and motor connected.

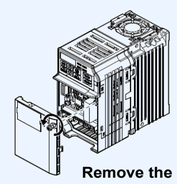
### Mounting the J1000

The mounting of the J1000 is extremely important regarding environment and accessibility. Depending on your system, there are various models available and therefore the mounting dimensions (footprint) may be different. Because the mounting procedure is fairly extensive, it is beyond the scope of this document, the user is referred to the J1000 Quick Start Guide (Manual No. TOEPC71060626) received with the J1000, ***Section 2 Mechanical Installation***. Match up the model that you received and follow the procedure described in the manual to ensure a safe and functional installation. In the case where the system has more than one J1000 refer to the proper clearances required for adequate ventilation. *Please pay particular attention to:*

- The clearances to be maintained around the enclosure for adequate ventilation.
- The environmental specifications such as avoiding excessive dampness, extreme temperatures, chemical exposure, corrosive areas etc. to avoid damage to the equipment and to maintain safety.

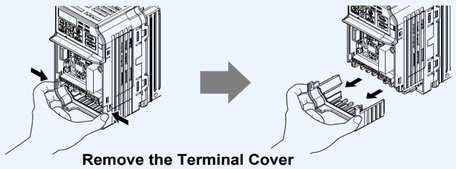
### Removing Protective Covers

Improper removal of the J1000 front cover and terminal cover can cause extensive damage to the J1000. To avoid damage to these items, please pay particular attention to the J1000 Quick Start Guide, Section 3.5, ***Protective Covers.***



IP20 / Open Chassis

Remove the Front Cover



Remove the Terminal Cover

## Step 2 Connect Motor and Line Power

***Fig.1 & 2*** below show the electrical connections for the input power and motor terminals for various J1000 Drive Models. Select the proper diagram for the single or three phase model you are installing ***(see Step 1)*** and ***WITH POWER OFF*** make the appropriate connections.
***Make sure to follow good wiring practices and all applicable codes. Ensure that the equipment is grounded properly as shown.***

**DANGER,** ***LETHAL VOLTAGES ARE PRESENT- Before applying power to the J1000, ensure that all protected covers are fastened and all wiring connections are secure. After the power has been turned OFF, wait at least five minutes until the charge indicator extinguishes completely before touching any wiring, circuit boards or components.***

***WARNING DO NOT CONNECT ANY OF THE FOLLOWING TERMINALS TO EARTH GROUND***

***B1 B2 - +1 +2***

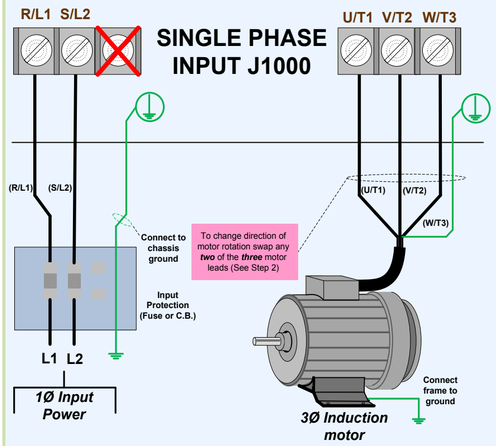



**Fig. 1: Input Power and Output Motor Electrical Connections for Single Phase Input J1000**

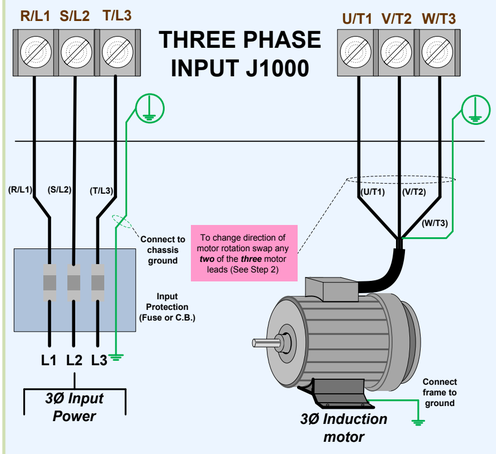



**Fig. 2: Input Power and Output Motor Electrical Connections for Three Phase Input J1000**

## Step 3 Check Motor Direction

In this step the motor is checked for proper direction and operation. This test is to be performed solely from the digital operator. Apply power to the J1000 after all the electrical connections have been made and protective covers have been re-attached. At this point, DO NOT RUN THE MOTOR, the Digital Operator should display as shown below in ***Fig. 3***.

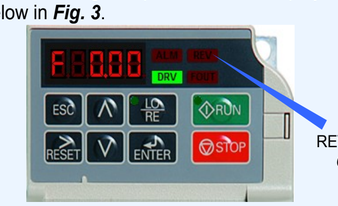



**Fig. 3 Digital Operator**

Next, press the LO/RE Key on the Digital Operator; the green LED should turn on.

Next, press the ▲ key on the Digital Operator once, then press the ENTER button.

Next, press the RUN key on the Digital Operator. The motor should now be operating at low speed running in the correct forward (clockwise) direction.

Next, press the STOP key on the Digital Operator.

***If motor rotation is not correct, then power down the J1000 Drive.***

**DANGER**

***After the power has been turned OFF, wait at least five minutes until the charge indicator extinguishes completely before touching any wiring, circuit boards or components.***

Using Safety precaution, and referring to ***Fig.1 or 2,*** swap any ***two*** of the ***three*** output leads to the motor (U/T1, V/T2 and W/T3). After the wiring change, repeat ***Step 3*** and recheck motor direction.

## Step 4 How to Change Parameters

This step shows how to access and modify a J1000 parameter as well as how to monitor J1000 signals such as output frequency and motor current. Make sure all protective covers have been re-attached and power is turned on. DO NOT RUN THE MOTOR.

### Access Parameter Menu and Change Parameter Value

J1000 Digital Operator power-up state →

Press the ▽ key once.

The digital operator shows the parameter menu (PAr) then press the ENTER key.

**Select Parameter Menu**

Press the RESET key to select the digit you would like to change. Next use the ▲ and ▽ keys to select the parameter group, sub-group or number

**Select Parameter**

Modify the parameter value using the ▲ and ▽ key and press the ENTER key to save the new value.

**Change Parameter Value**

### Monitor Motor Frequency and Motor Current

J1000 Digital Operator power-up state →

Press the ▲ key until the FOUT LED turns on. The display now shows the actual drive output frequency in Hz.

**Output Frequency**

Pressing the ▲ key again will show the motor output current. The 'A' behind the value means 'Amps'.

**Motor Current**

**Please refer to the technical manual on how to access other drive signals.**

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## Step 5 — Selecting Start/Stop and Speed Method

This step shows how to setup the sequence and reference method of the J1000. The sequence method determines how the J1000 drive receives its start and stop command and the reference method determines how the speed of the motor is controlled. Make sure all protective covers have been re-attached and power is turned on. DO NOT RUN THE MOTOR.

***This section may require you to change one or more J1000 parameters, please refer to Step 4 for a detailed explanation on how to change parameters.***

### SELECT SPEED METHOD — b1-01

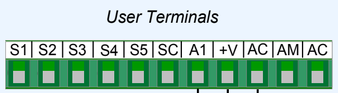
**1. Adjust motor speed / frequency from the Digital Operator**

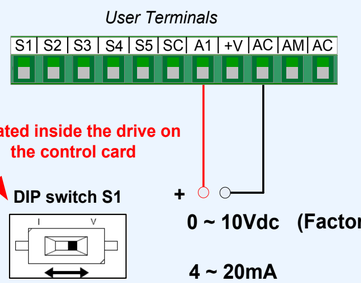
Go to parameter b1-01, Set Value to

To adjust frequency use the / keys and press to save.

**2. Start / Stop Control from external terminals (switch or relay contact)**

Go to parameter b1-01, Set Value to **(Factory Default)**



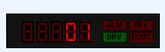



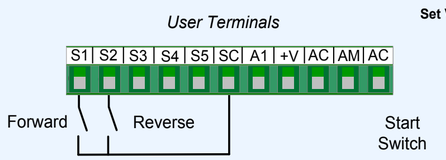

### SELECT START / STOP CONTROL METHOD — b1-02

**1. Start / Stop Control from Digital Operator**

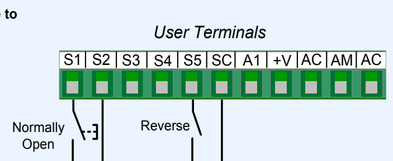
Go to parameter b1-02, Set Value to

**2. Start / Stop Control from external terminals (switch or relay contact)**

Go to parameter b1-02, Set Value to  **( Factory Default)**




**Wiring Diagram: 2-Wire Control**
**Use for maintained contacts**




**Wiring Diagram: 3-Wire Control**
**Use for momentary contacts**
**(Set Parameter A1-03 to 3330)**

***NOTE: It is beyond the scope of this document to program the J1000 drive for network communication control, please refer to the technical manual (SIEPC71060631) for this selection. A communication adapter is required for network communication.***

## Step 6 — Quick Start Parameters

The following table lists the general purpose application parameters as well as frequently asked questions.
***This section may require you to change one or more J1000 parameters, please refer to Step 4 for a detailed explanation on how to change parameters.***

### STANDARD APPLICATION PARAMETERS

| PARAMETER | DEFAULT VALUE | DESCRIPTION | COMMENTS |
|---|---|---|---|
| ***b1-01*** | 1 | Reference Source, Speed Control Method | 0 = Digital Operator (Adjust Motor Speed from keypad)<br>1 = Terminals (Speed Pot. / 0 – 10V / 4—20mA) |
| ***b1-02*** | 1 | Run Source / Start/Stop Control Method | 0 = Digital Operator (Start/Stop motor from keypad)<br>1 = Terminals (Start/Stop using external contact / switch) |
| ***b1-03*** | 1 | Stop Method Selection | 0 = Ramp to stop (Motor ramps down at stop command)<br>1 = Coast to stop (Motor freewheels at stop command) |
| ***b1-04*** | 0 | Reverse Operation | 0 = Allow motor to run in reverse direction<br>1 = Reverse direction prohibited |
| ***C1-01*** | 10.0 sec. | Acceleration Time | The time it takes to ramp up from 0 to maximum motor speed. |
| ***C1-02*** | 10.0 sec. | Deceleration Time | The time it takes to ramp down from maximum motor speed to 0. |
| ***C6-01*** | 1 | Normal / Heavy Duty | 0 = Normal Duty (Use for fan and pump applications)<br>1 = Heavy Duty (Use for conveyor, mixer, applications) |
| ***d1-01*** | 0.00 Hz | Frequency Reference | Frequency setting when speed is set from the keypad. |
| ***d2-01*** | 100.0 % | Frequency Upper Limit | Maximum motor speed allowed (e.g. 100 % = Max rpm) |
| ***d2-02*** | 0.0 % | Frequency Lower Limit | Minimum motor speed allowed (e.g. 100 % = Max rpm) |
| ***E2-01*** | * | Motor Rated Current | Motor nameplate current |
| ***L1-01*** | 1 | Motor Overload Selection | 0 = Disabled<br>1 = Standard Fan Cooled Motor<br>2 = Standard Blower Cooled Motor |
| ***L1-02*** | 1.0 min | Motor Overload Time | Sets the motor thermal overload protection time. |

### FREQUENTLY ASKED QUESTIONS

**Question:** How do I reset the drive back to factory default settings?

**Answer:** Go to parameter A1-03 and set value **2220** for 2 – wire control or **3330** for 3 – wire control
(Please refer to Step 5 for wiring diagram)

**Question:** How do I adjust the time it takes the motor to speed up or slow down?

**Answer:** Adjust the acceleration time parameter C1-01 and deceleration time C1-02.

**Question:** How do I prevent my drive from tripping on an **OV** fault (overvoltage) while my motor is ramping down?

**Answer:** Increase deceleration time parameter C1-02.

**Question:** How do I prevent my drive from tripping on an **OL1** fault (overload) while my motor is ramping down?

**Answer:** Verify motor rated current parameter E2-01 and motor overload parameter settings
L1-01 Motor overload selection, L1-02 Motor overload protection time.

**Question:** I want to run my motor above the nominal motor speed?

**Answer:** Increase the value of parameter E1-04 Maximum Frequency
**Warning:** Verify that the motor and system allow for this.

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