TECO 7300 CV Inverter

Quick Start Supplement

This guide is to assist you in installing and running the inverter and verify that it is functioning correctly for it's main and basic features.

For detailed information and if there are any doubts please refer to the instruction manual.

Step 1	Supply & Motor connection

1) Ensure that the Inverter & the motor have the correct KW power and voltage ratings.
   Motor full load amps must not exceed the Inverter rating.

2) Unscrew & lift terminal cover,
   Ensure that the supply & Motor cables are connected Correctly prior to power up.

3) For single phase supply, use L1& L3 **(N) .** For three phase units Terminals L1,L2&L3.

4) Connect motor cable to terminals T1,T2 &T3.
   (Swap two leads If motor runs in reveres direction).

5) Connect supply Earth and the motor Earth to the drive Earth terminal.

Note:-

I) For correct Installation and wiring refer to instruction manual pages 0-1 through 1-3 and 3-1 to 3-8.

II) Check inter-connections according to the diagram on page 3-12 & 3-13 of the Instruction manual.

Step 2 — Apply power to the drive

1) The display will flash on showing the supply voltage briefly.
   220V or 400V as appropriate.

2) Then the display will read **05.00** while Flashing. (Default Frequency).
   HZ/RPM LED will be On.
   FWD LED will be flashing.

Step 3 — CV Control Modes

This inverter has three control modes.

1. General Purpose Vector mode. ***Default Factory Settings***
2. VT(Variable Torque) Vector mode. ***Fan& Pump Applications***
3. V/f mode. ***Voltage/Frequency mode.***

Note 1:- If you are to connect a motor and use the inverter to run the motor then you should ensure that the correct control mode is selected for the application.

Note 2:- When vector modes 1or 2 is selected then you should carry out an auto-tune function.
This is an static operation (No movement).
This function will obtain the necessary parameters from the motor which are used by the Inverter software to optimise the performance of the motor under the **vector mode** control.

Refer to the following sections in this user guide:-

- How To alter Parameters
- Auto-tune Function
- Parameter List

Step 4 — Run from keypad without a load connected to the motor

Press **RUN/STOP** KEY to run.
The frequency will ram up to **5.0** Hz **or** the user **pre-set** frequency and according to the default acceleration ramp time.

Press **RUN/STOP** key to stop.
The frequency will ramp down to zero according to default decel ramp time.

Step 5 — To alter frequency from keypad

Use the Arrow keys ▲ ▼ to alter the digits to the required frequency.

eg. 50.0 HZ then use **RUN/STOP** key to start/ stop.

How to alter parameters

1. To alter parameters:- Press the **DSP/FUN** key,
   until the first parameter group 0-00 is displayed.
   Least significant digit will be flashing.

   Then use the arrow keys to select a parameter then

   ▲▼<

   alter the setting of the parameters as per **basic quick start parameter list**.

   Note:- For full parameter list refer to the instruction manual.

2. To save each parameter change, press **READ/ENTER** key.

3. Press **DSP/FUN** key to return to the parameter list again and select the next parameter to alter and so on until all changes complete.

   Pressing the **DSP/FUN** key repeatedly will scroll through various displays (Menus) such as parameters, Current, volts etc.

   Further information displays can be made available for scrolling by setting display parameters 4-00 to 4-05. See Instruction manual.

Auto Tune.

Non TECO Motors Only.

1. Ensure that the control mode parameter 0-00 is set to:-
   0000 (General purpose Vector) or
   0001 (Variable torque i.e Fan & Pump application).

2. Enter the values for parameters 0-01 to 0-05. (Motor name plate data).

3. Ensure that the motor is stationary.

4. Set 0-06 to 0001 (Enable Auto tune.) Default is 0000.

5. Press Read /Enter Key.

6. The display will show **AT** and the Auto tune will takes place.
   Note there will be no movement (Static function).

   Motor parameters required for optimasing the motor performance will be loaded into inverter parameter group14. (14.0 – 14.4).

7. Inverter is now ready for operation.

Quick Start Parameter List

Basic Parameter list:-

Mode Selection:-

Parameter	Default Value	Description
0-00	0000	0000 Vector General Purpose 0001 Vector Variable torque 0002 V/f Also refer to parameter Group 10.

Vector Mode:-

Parameters to be entered for Vector modes only.

Parameter	Default Value	Description
0-01	400V	Motor voltage rating as appropriate 400 OR 220V.
0-02	** A	Motor rated Current (Amps)
0-03	** KW	Motor rated Power (KW)
0-04	** RPM	Motor rated Speed (RPM)
0-05	** HZ	Motor rated Frequency (HZ)
0-07	*** V	Supply AC input voltage. 220V:- 200V-240V 440V:- 380V –480V

V/f Mode:-

Parameters to be considered for V/f mode.

There are 18 **preset** v/f patterns 9 for 50 HZ and 9 for 60HZ system.

On a 50 HZ supply system any of patterns 0-9 can be selected depending on application

- General purpose
- Hight starting torque
- Constant torque
- Decreasing torque

Refer to Instruction manuals for these selections.

User setable V/f is available for specific applications and experienced users.

Set parameter 10-0 to 18 (Programmable v/f mode).

and Set Parameters 10-4 to 10-9 as required

10-0	00 - 18	00 General Purpose V/f mode. For 50 HZ supply system. 09 General Purpose V/f mode. For 60 HZ supply system. 18 Programmable V/f setting . *For V/f patterns 00- 17 refer to the instruction manual.*
10-1	0.0 – 30 %	Torque Boost Gain % V/f mode only
10-2	-----	Motor no load current. Neede for calculation of slip freq boost . See manual.
10-3	0.0 – 100%	Motor rated slip compensation.
10-4	50.0 –400.00 Hz	Max output Frequency. HZ
10-5	0.0 – 100%	Max output frequency Voltage.
10-6	0.1- 400.00 Hz	Medium Frequency. Hz
10-7	0.0 – 100%	Medium Frequency Voltage.
10-8	0.1- 400.00 Hz	Minimum Output frqeuency.Hz.
10-9	0.0 – 100%	Minimum Output Voltage.
0-02	** A	Motor rated Full load Current. Amps
0-07	*** V	Supply AC input voltage. 220V:- 200V-240V 440V:- 380V –480V

Parameter	Default Value	Description
Run Source. Select the Run (Start/Stop) method		
1-00	0000	0000 Run Source. Key pad 0001 Remote Run/Stop 0002 Communication 0003 Built in PLC
Frequency (Speed) Command source		
1-06	0000	0000 Keypad using keys to alter frequency. 0001 Potentiometer on keypad. 0002 External potentiometer or Analog Signal 0003 Up/Down frequency control . Using terminals S1-S6 0004 Communication.
3-00	0.01-400.00	Frequency Upper Limit (HZ)
3-01	0.00-400.00	Frequency Lower Limit (HZ)
3-02	0.1-3600.0	Accel Time (secs)
3-03	0.1-3600.0	Decel Time (secs)
15-6	1110	Reset to factory setting for 50 HZ system

CV Keypad & Display

LED Indicator Functions:-

LED	Description	Parameter	Note
SEQ	Remote Run / Stop	1-00 = 1	
FRQ	Remote Frequency (Speed) Ref.	1-01 = 1	
FWD	FWD Direction	——	On in run. Flashes in Stop
REV	REV Direction	——	On in run. Flashes in Stop
HZ/RPM	Speed display	——	
FUN	Menu & Parameter display	——	
VOLT	Output Volts Display	4-01 = 1	
AMP	Motor Current Display	4-00 = 1	

Note:- HZ/RPM, FUN, VOLT & AMP indicators are for LED display types only.

Remote speed reference and Remote run

Step 1	Remote mode wiring

1. Ensure that you have carried out installation & wiring requirements as per steps 1 & 2 of the quick start programming guide on previous page before you proceed.
2. Check the position of SW1,2&3 on the control board.

SW1. Down position. PNP (24VDC Positive switching inputs).
SW2 & SW3. Up position. (0-10 V DC selection for Analog inputs).

SW2 = 0-10Vdc or 4-20ma for **VIN** input terminal.
SW3 = 0-10Vdc or 4-20ma for **S6** input terminal

3. Connect remote potentiometer and Remote start switch as required according to the connection diagram. 3-12
   Refer to pages 3-12 & 4-23 of the Instruction manual.

Step 2	Remote mode Run

Power up. The display will flash on showing the supply voltage briefly. 220V or 400V as appropriate.

Step 3	Check/ verify and alter parameters

Check / verify and alter parameters for remote start & remote frequency as necessary before you proceed. Parameters 1-00 & 1-06
See quick start parameter list & How to alter parameters.

Step 4	Remote mode Run Continued

Then the display will read the frequency from one of the following according to the selection made via parameters.

a) potentiometer on the keypad
b) remote potentiometer
c) Remote 0-10VDC analog signal. flashing.

HZ/RPM LED will be On.
FWD LED will be

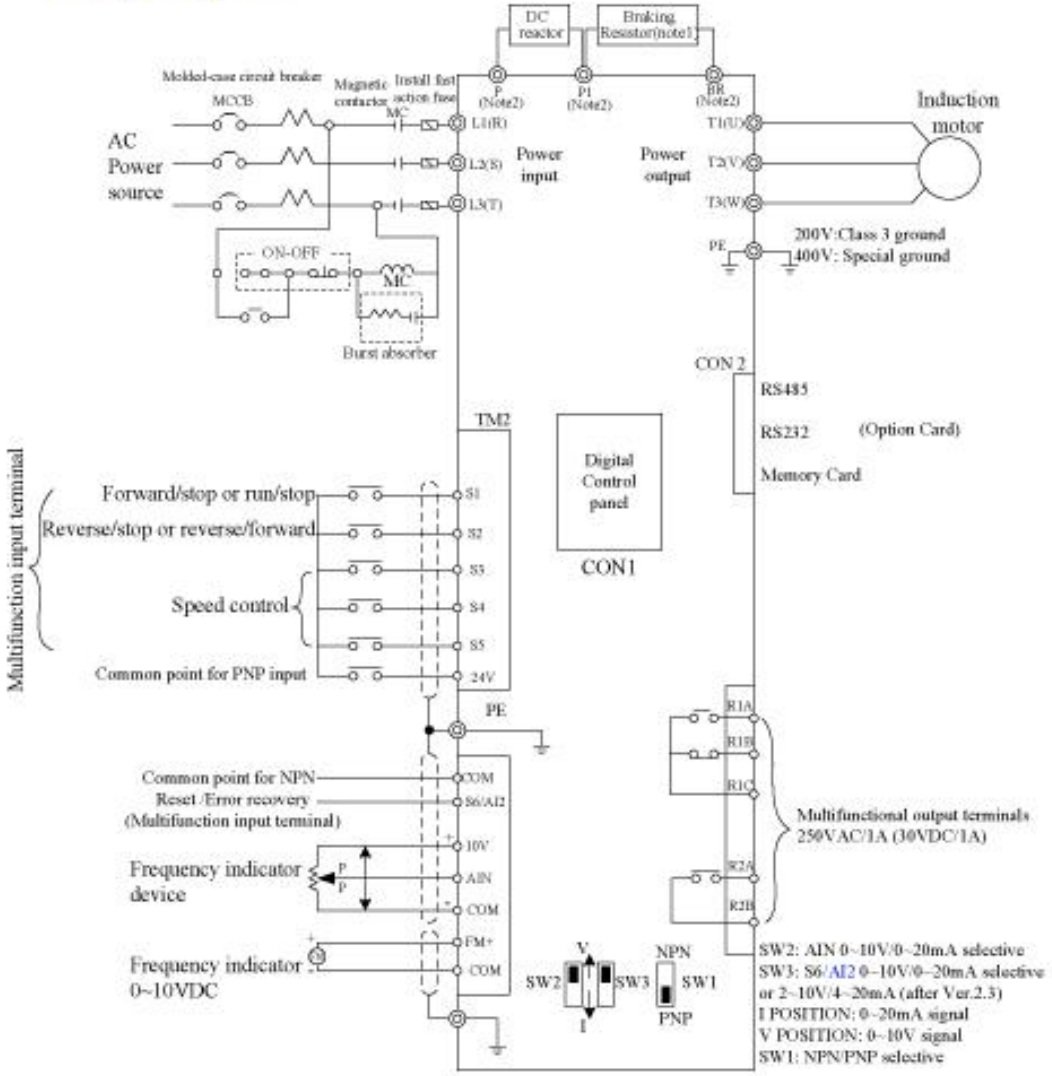
Step 5	Remote mode Run Continued

1. Press **RUN/STOP** KEY to run. **FWD** LED lights on continuously. The frequency will ram up to the set frequency according to the set accel time.

2. Press **RUN/STOP** key to stop. **STOP LED** starts flashing. The frequency will ramp down to zero according to default decel ramp time. **STOP** LED Lights on continuously.

3.5 Wiring diagram 7300CV series inverter

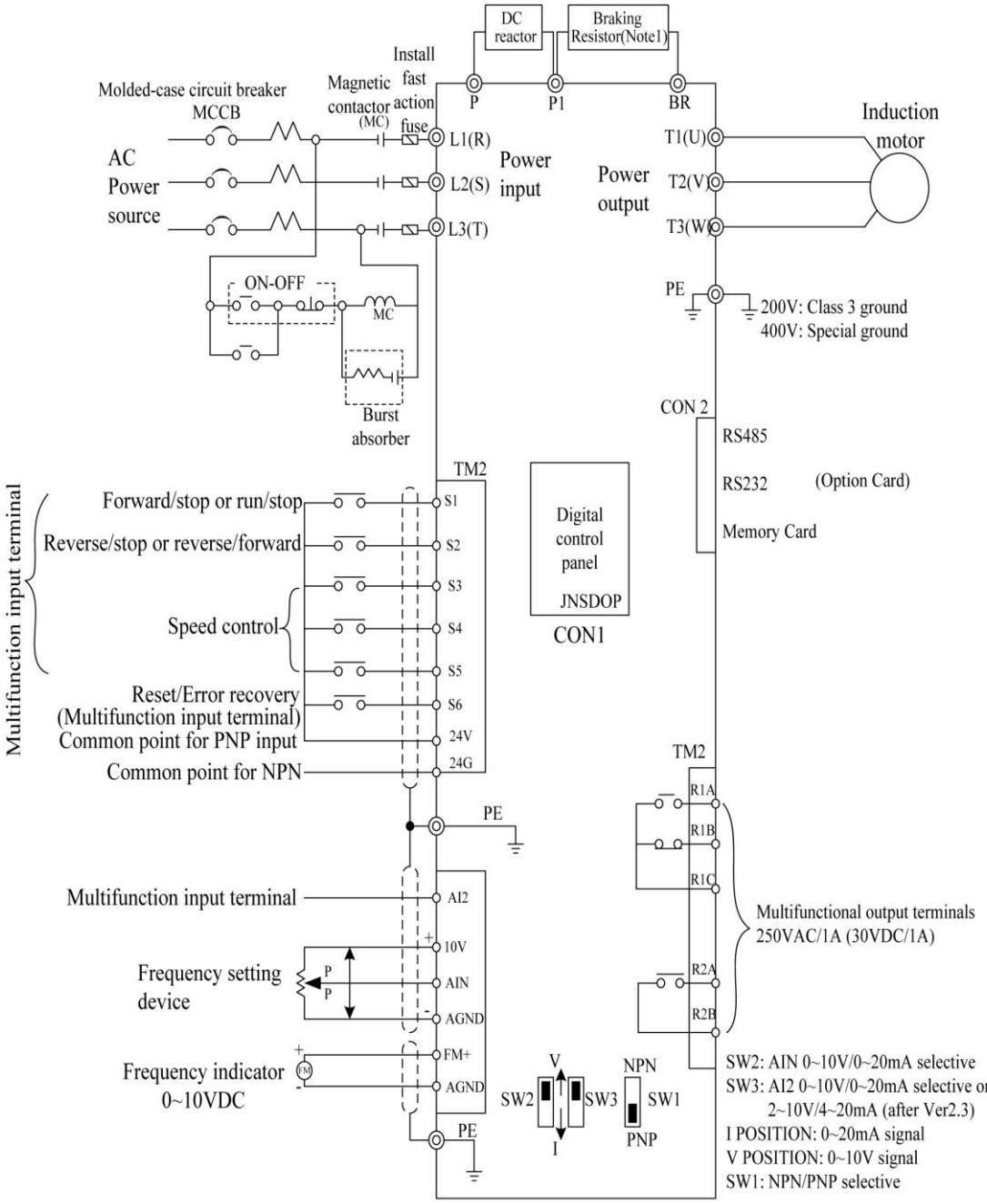
Wiring diagram I:



Note 1: Please refer to description of main circuit terminals (P1, BR) and specification of braking resistor for value selection.

Note 2: Above wiring diagram refers for 0.4~1.5KW at 220V and 0.75~1.5KW at 440V only.

Wiring diagram II:



Note 1: Please refer to description of main circuit terminals (P1, BR) and specification of braking resistor for value selection.

Note 2: Above wiring diagram refers for 2.2~30KW at 220V and 2.2~55KW at 440V only.