TECO E510 Inverter

Quick Start Guide

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) Ensure that the supply & Motor cables are connected Correctly prior to power up.

3) For single phase supply, use L1& L3 **(N)** on units which have 3 supply terminals.
   On units with two supply terminals L1&L2, connect live to L1 and Neutral to L2.

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 detailed installation and wiring refer to the Instruction manual.



Step 2	Apply power to the drive

Apply power to the drive, the display will briefly show the supply voltage 220V followed by **05.0** flashing.

This is the default (factory set) frequency.
If the unit has been used previously then it will show the last frequency programmed.

Step 3	Test run from keypad

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

Step 4	To alter frequency from keypad. (Default setting).

Use the Arrow keys ▲ ▼ and **READ/ENTER**

To alter the digits to the required frequency.
eg. 50.0 HZ then use **RUN** and **STOP** keys to start/ stop.

Remote speed reference and Remote run

Step 1	Remote mode wiring. Speed reference and Run signals.

1) Ensure that you have carried out installation & wiring requirements as per step1 quick start guide on previous page before you proceed.

2) For analogue signal type. 2-10V or 0-10V dc. Use the terminal AVI.

For analogue input type 0-20mA or 4-20 mA.dc. Use the terminal ACI.

.Connect remote potentiometer OR remote 0-10 vdc signal as required.
to terminals AVI.
Terminal 10Vdc is the supply provided for use with the potentiometer.
Terminal AVI for potentiometer wiper connection.
Terminal GND is 0Vdc.

3) Connect remote start switch if required according to diagram in the instruction manual.
Use terminals +24Vdc & S1 (Forward run).
Use terminals +24Vdc & S2 (Reverse run)
+24Vdc is the common terminal for PNP type inverters.
COM (0Vdc) terminal is common for the NPN type inverters.

Step 2	Remote mode Run

1) Power up.
Display will read the frequency from one of the following according to the Connection made to AVI terminal. Set parameter 00-05 =00-02
a) Remote external potentiometer
b) Remote 0-10VDC analog signal.

Step 3	Check/ verify and alter parameters

Check / verify and alter parameters for remote start & remote frequency as necessary before you proceed. Parameters 00-02 & 00=05

See quick start parameter list & How to alter parameters.

Step 4	**RUN using remote speed reference.(Potentiometer,0-10vdc or 4-20ma**)

1) To run. Activate the remote run switch connected to terminals S1 (FWD) or S2 (REV) as required,. Parameter 00-02=00-01

The frequency will ram up to the **frequency** set by one of the following:-

- Speed potentiometer on the keypad . Parameter 00-005=1
- External potentiometer. Parameter 00-05 = 2
- **A**nalog signal (0-10v dc or 4-20ma) Parameter 00-05 = 3 or 4
- and according to the set acceleration ramp time.

2) **To Stop.** De-activate the remote run switch.
The frequency will ramp down to zero and according to decel ramp time.

How to alter parameters using the keypad

1) To alter parameters:- Press the **DISP/FUN** key, until the first parameter 00-00 is displayed.

2) Then use the arrow keys ▲ ▼ to select the parameter required then Press **READ / ENTER** key to read the preset value.

3) Use the ▲ ▼ and **< / RESET** keys to alter the setting of the parameters as per **basic quick start parameter list**.

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

4) To save each parameter change, press **READ / ENTER** key then the word **END** will be displayed.

5) Use ▲ ▼ key to select the next parameter to alter and follow steps 2 to 4 until all changes are complete.

6) Pressing the DISP/FUN key repeatedly will alternate the display between the **preset frequency** (flashing display) and the last parameter accessed or other selectable displays 0 to 7 when selected by parameter 12-00 according to the table below.

【0】:Disable display 【1】:output Current
【2】:output Voltage 【3】:DC voltage
【4】:Temperature 【5】:PID feedback
【6】:AVI 【7】:ACID
【8】: Count



Basic Quick Start Parameter List

Parameter	Default	Range	Note
00-00	0	0-1	0: V/F control mode 1: Vector mode (SLV)
00-14	10.0	0.1~3600.0	Acceleration time in Secs
00-15	10.0	0.1~3600.0	Deceleration time in Secs
00-04	000	0-2	0: Forward/Stop-Reverse/Stop 1: Run/Stop-Reverse/Forward 2: 3-Wire Control Mode-Run/Stop
00-12	50/60Hz	0.01~650.00	Max frequency limit.
00-13	0.0	0.00~649.00	Min frequency limit
00-02	00-00	0-2	Start mode:- Keypad = 00-00 Remote = 00=01 Communication = 00-02
00=05	00-00	0-6	00-00 = keypad 00-01= Potentiometer on keypad 00-02= External AVI analogue signal 00-03= External ACI analogue signal 00-04 =External up/down frequency control 00-05= control by Communication method 00-06=PID output
07-09	000	0-1	Stop method:- 00-00 = Decel to stop 00-01= Coast to stop
02-01	**A	**A	Motor overload protection
13-08	000		Set to factory setting. 1150 = 50 HZ system. 1160 = 60HZ system

Note:- For Full Parameter List see the Instruction manual

Control Modes & Auto Tune

E510 provides two control modes
Select the relevant control mode for the application, using parameter 00-00 Control mode.
Default control mode is V/f.
V/f can be used for most applications specifically multi-motor
or applications where auto tune is not successful
or when a customized v/f pattern may be required.

Several V/f patterns are available selectable by parameter 01-00.
Select the appropriate V/f pattern based on the application load type and the motor base frequency of 50 or 60 Hz.
For selections of the V/f patterns . Refer to the instruction manual.

For Vector modes SLV is used for obtaining best performance from a motor.

V/f Mode Parameters:-

Parameter	Default	Range	Note
01-00	F	0-18	0= General Purpose. 50 Hz. System 9= General Purpose . 60Hz. System For full list of preset patterns set by 01-00, refer to the manual. 18= Customized V/f. Set parameters 01-01 to 01-09.

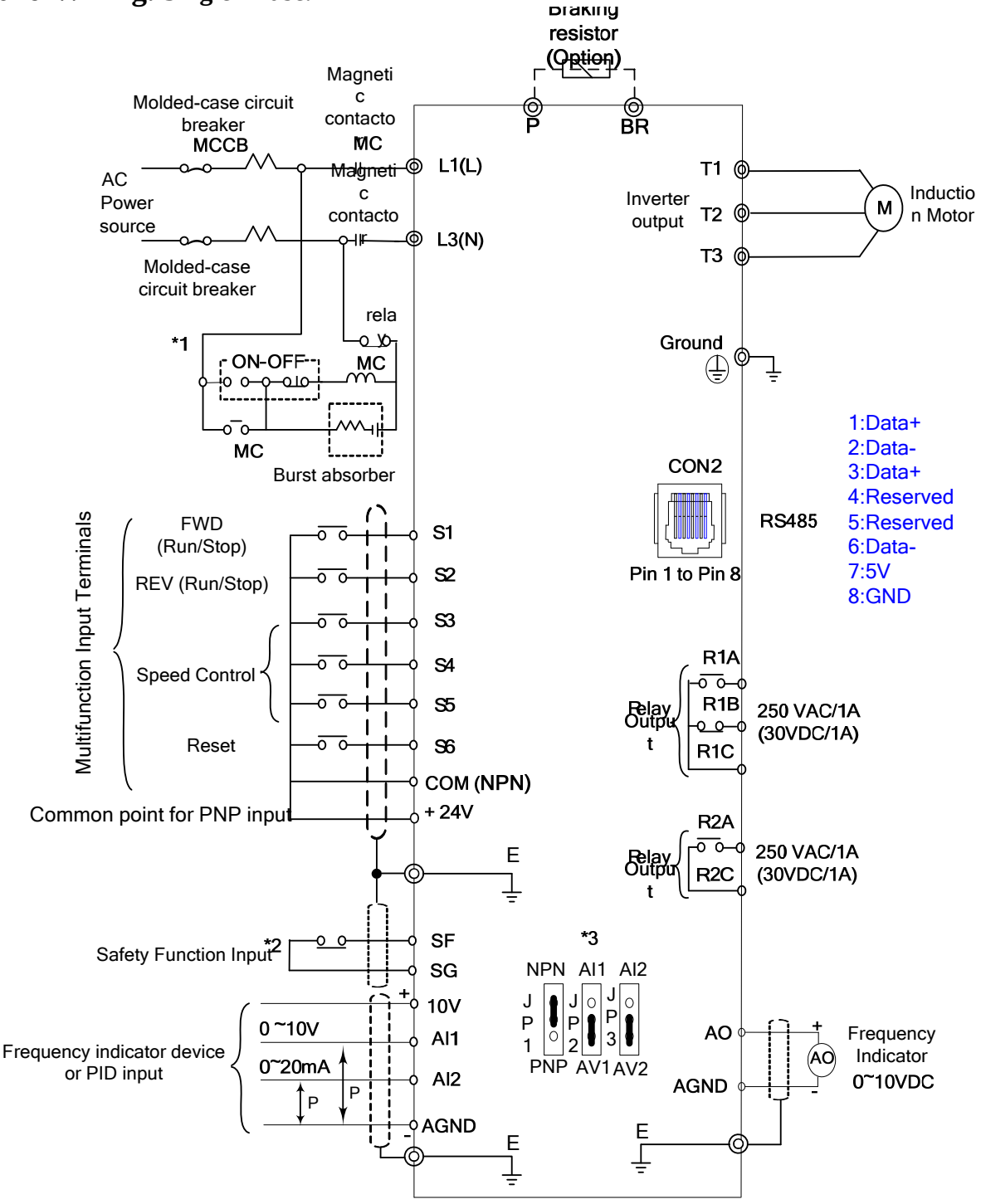
SLV (vector) mode set parameters in parameter Group 2 .

1) Set the motor parameters in Group 2 parameters from motor name plate data.
2) Ensure that the motor is connected correctly then,
3) Enable auto tune function by setting parameter 02-14= 1 (auto tune Enable).

Auto tune type is Static. No rotation of the motor.
After Auto tune is completed successfully (no errors) the motor stator & resistance values will be stored automatically in parameters 02-15&02-16.

Group 2 Parameters. Motor data & auto tune					
No.	**Description**	**Range**	**Factory Setting**	**Unit**	**Note**
02-00	Motor No Load Current	----		Amps(AC)	*4
02-01	Motor Rated Current (OL1)	----		A	*4
02-02	Motor rated Slip Compensation	0.0 ~ 100.0	0.0	%	*1
02-03	Motor rated speed	----		Rpm	*4
02-04	Motor rated voltage	----			
02-05	Motor rated power	----			
02-06	Motor rated frequency	----			
02-07	Motor number of poles.	2 ~16	4		
02-14	Auto Tune	0: Disable 1: Start Auto tune function.	0		
02-15	Stator resistance gain	----			
02-16	Rotor resistance gain	----			

Standard Wiring. Single Phase.



Indicates shield wire P Indicates twisted-pair shield wire

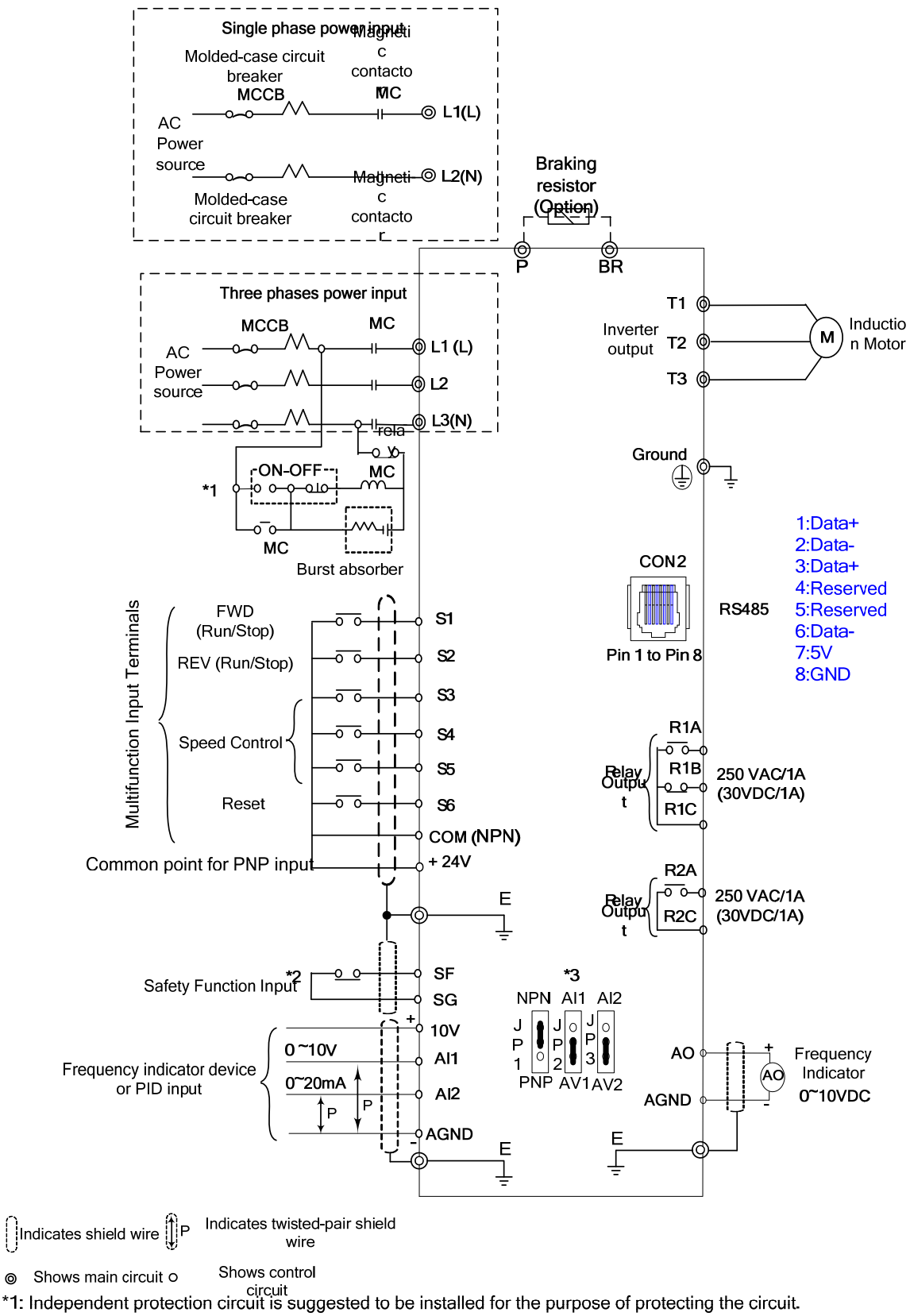
Shows main circuit Shows control circuit

*1: Independent protection circuit is suggested to be installed for the purpose of protecting the circuit.
*2: The jumper wire between SF and SG is removed, the inverter stops output.
*3: JP1:NPN/PNP select, JP2:AI1 0~10V/0~20mA select, JP3:AI2 0~10V/0~20mA select

Model:

200V: E510-2P5-H1F/ E510-201-H1F/ E510-202-H1F/ E510-203-H1F.

Single /Three Phase:



*1: Independent protection circuit is suggested to be installed for the purpose of protecting the circuit.
*2: The jumper wire between SF and SG is removed, the inverter stops output.
*3: JP1:NPN/PNP select, JP2:AI1 0~10V/0~20mA select, JP3:AI2 0~10V/0~20mA select

Model: 200V: E510-2P5-H/ E510-201-H/ E510-202-H/ E510-203-H