

# TECO L510s Inverter

## Quick Start Guide

This guide is to assist you in installing and running the inverter and verify that it is functioning correctly for its 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(L) & L3(N) on units which have 3 supply terminals.
- 4) Connect motor cable to terminals T1, T2 &T3.  
(Swap two leads if motor runs in reverse direction).
- 5) Connect supply Earth and the motor Earth to the drive Earth terminal.

#### Note:-

*1) For detailed installation and wiring refer to the Instruction manual.*



<b>Step 2</b>	<b>Apply power to the drive</b>
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Apply power to the drive, the display will briefly show the supply voltage 220V followed by 

5.00
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 flashing.

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

<b>Step 3</b>	<b>Test run from keypad</b>
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Press **RUN KEY** to run.

The frequency will ramp 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.

<b>Step 4</b>	<b>To alter frequency from keypad. (Default setting).</b>
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Use the Arrow keys   and **< / ENT**

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 .										
<p>1) Ensure that you have carried out installation &amp; wiring requirements as per previous page before you proceed.</p> <p>2) For remote potentiometer OR remote 2-10V / 0-10V dc signal use the following terminals:</p> <table data-bbox="197 589 1189 696"><tr><td>Terminal 10V.</td><td>The supply provided for use with the potentiometer.</td></tr><tr><td>Terminal AVI.</td><td>Potentiometer wiper connection.</td></tr><tr><td>Terminal AGND.</td><td>0Vdc.</td></tr></table> <p>For 0-20mA / 4-20mA signals use the following terminals:</p> <table data-bbox="197 772 1189 842"><tr><td>Terminal ACI.</td><td></td></tr><tr><td>Terminal AGND.</td><td>0Vdc.</td></tr></table>		Terminal 10V.	The supply provided for use with the potentiometer.	Terminal AVI.	Potentiometer wiper connection.	Terminal AGND.	0Vdc.	Terminal ACI.		Terminal AGND.	0Vdc.
Terminal 10V.	The supply provided for use with the potentiometer.										
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Terminal AGND.	0Vdc.										
Terminal ACI.											
Terminal AGND.	0Vdc.										

Step 2	Remote mode Run				
<p>1) Connect remote start switch if required according to diagram in the instruction manual.</p> <table data-bbox="185 1160 687 1229"><tr><td>Terminals +24V &amp; S1</td><td>(Forward run)</td></tr><tr><td>Terminals +24V &amp; S2</td><td>(Reverse run)</td></tr></table> <p><b>Note: For Frames 3&amp;4</b></p> <p>For PNP ( Positive Voltage switching) Using +24VDC Need a shorting link between Terminals COM &amp; SC</p>		Terminals +24V & S1	(Forward run)	Terminals +24V & S2	(Reverse run)
Terminals +24V & S1	(Forward run)				
Terminals +24V & S2	(Reverse run)				

Step 3	Check/ verify and alter parameters
<p>Check / verify and alter parameters for remote start &amp; remote frequency as necessary before you proceed. Parameters 00-02 &amp; 00-05</p> <p><i>See quick start parameter list &amp; How to alter parameters.</i></p>	

**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 = 1

The frequency will ramp up to the **frequency** set by one of the following selections according to the set acceleration ramp time:-

- Potentiometer on the keypad Parameter 00-05 = 1
- External voltage input AVI. Parameter 00-05 = 2
- External current input ACI. Parameter 00-05 = 3

- 2) **To Stop.** De-activate the remote run switch.

The frequency will ramp down to zero and according to the decel ramp time.

**How to alter parameters using the keypad**

- 1) To alter parameters:- Press the **MODE** key, until the first parameter 00-00 is displayed.
- 2) Then use the arrow keys **</ENT ▲ ▼** to select the parameter required then Press and hold the **</ENT** until the preset value is displayed
- 3) Use the **▲ ▼** and **</ENT** 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 and hold the **</ENT** until the word **END** is displayed.
- 5) Use **</ENT ▲ ▼** key to select the next parameter to alter and follow steps 2 to 4 until all changes are complete.
- 6) Pressing the **MODE** 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.

<b>【0】 :Disable display</b>	<b>【1】 :Output Current</b>
<b>【2】 :Output Voltage</b>	<b>【3】 :DC voltage</b>
<b>【4】 :Temperature</b>	<b>【5】 :PID feedback</b>
<b>【6】 :AVI</b>	<b>【7】 :ACI</b>



## Basic Quick Start Parameter List

Parameter	Default	Range	Note
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	0	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	0	0-2	Start mode:- 0: Keypad 1: Remote 2: Communication
00-05	0	0-6	0: Keypad 1: Potentiometer on keypad 2: External AVI analogue signal 3: External ACI analogue signal 4: External up/down frequency control 5: Control by Communication method 6: PID output
07-09	0	0-1	Stop method:- 0: Decel to stop 1: Coast to stop
02-01	**A	**A	Motor overload protection
13-08	00000		Set to factory setting. 1250: 50HZ system. 1360: 60HZ system.

**Note:- For Full Parameter List see the Instruction manual**

# Control Modes & Auto Tune

L510s provides two main 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
<b>01-00</b>	1/4	1-7	1= General Purpose. 50 Hz. System 4= General Purpose. 60Hz. System For full list of preset patterns set by 01-00, refer to the manual.  7= Customized V/f. Set parameters 01-01 to 01-09.

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

- 1) Set the motor parameters highlighted below in Group 2 from motor name plate data.
- 2) Ensure that the motor is connected correctly then,
- 3) Enable auto tune function by setting parameter 02-07= 1 ( auto tune Enable).

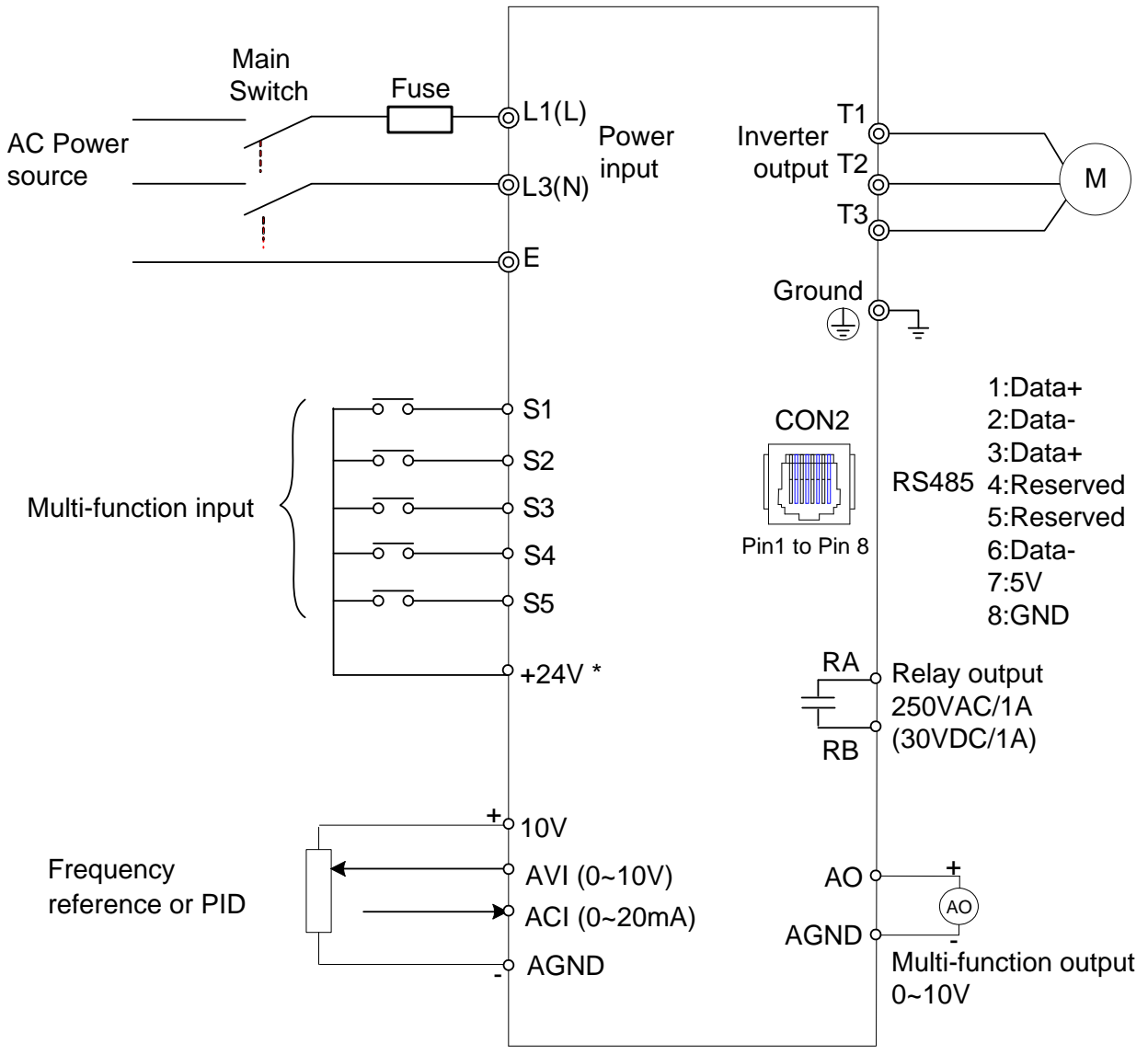
Auto tune type is Static. No rotation of the motor.

After Auto tune is completed successfully ( no errors) the motor stator & resistance values will be stored automatically in parameters 02-08 & 02-09.

No.	Description	Range	Factory Setting	Unit
<b>02-00</b>	Motor No Load Current	----	motor nameplate	A
<b>02-01</b>	Motor Rated Current (OL1)	----	motor nameplate	A
<b>02-03</b>	Motor Rated Speed	----	motor nameplate	Rpm
<b>02-04</b>	Motor Rated Voltage	----	motor nameplate	Vac
<b>02-05</b>	Motor Rated Power	0~22.0	motor nameplate	kW
<b>02-06</b>	Motor Rated Frequency	0~599.0	motor nameplate	
<b>02-07</b>	Motor Auto Tuning	0: Disable 1: Static auto tuning	0	
<b>02-08</b>	Stator Resistor Gain	0~600	Rating related value	
<b>02-09</b>	Rotor Resistor Gain	0~600	Rating related value	

# Standard wiring

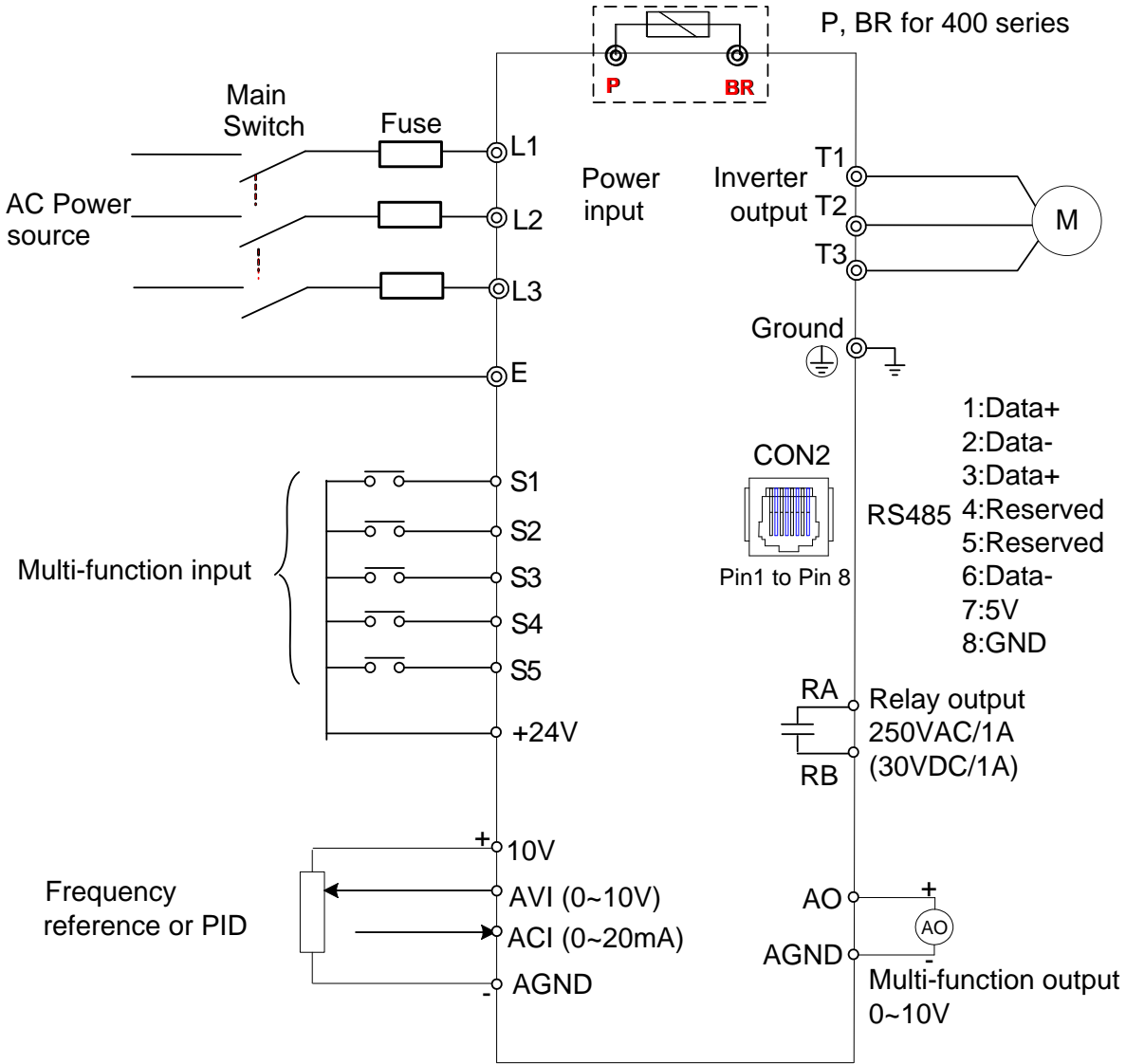
Single phase (PNP input)  
 Frames 1&2 ( 0.4~2.2KW)



## 200V Frames 1&2 models

**L510-2P2-SH1F-P / L510-2P5-SH1F-P / L510-2P7-SH1F-P /**  
**L510-201-SH1F-P / L510-202-SH1F-P / L510-203-SH1F-P**

**400V Three phase (PNP input)**  
**Frame 2 (0.75 ~2.2KW)**

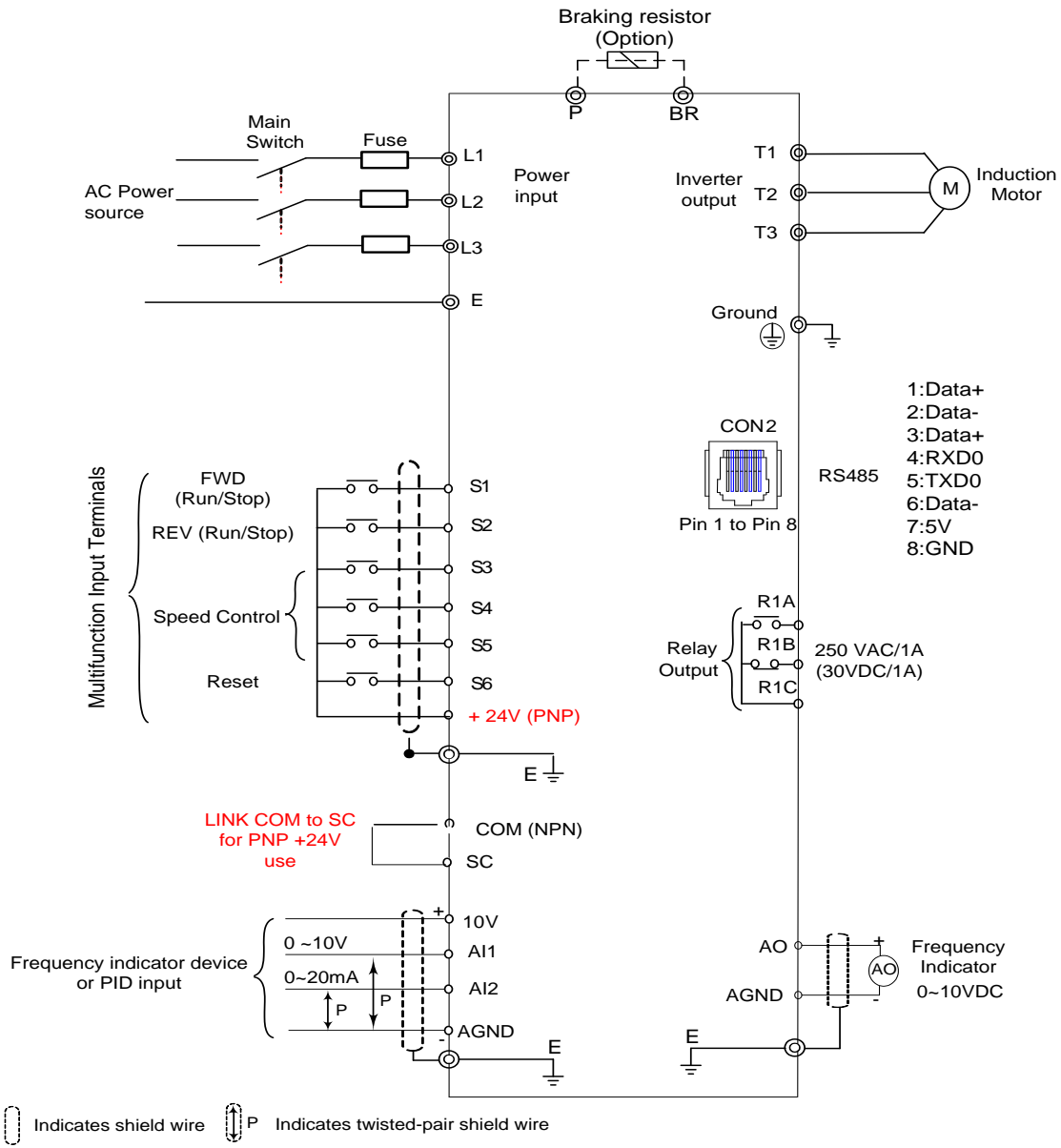


**400V Frame 2 models.**

**L510-401-SH3F-P / L510-402-SH1F-P / L510-403-SH1F-P**



**Three phase (PNP input).  
Frames 3&4 ( 3.7 ~11KW)**



**400V : Frames 3&4 models.  
L510-405-SH3F / L510-408-SH3F.  
L510-410-SH3F/ L510-415-SH3F.**