USER MANUAL

Triple Output

Programmable DC Power Supply

Model LPS 305B-TC

Ver1.0 / MAR, 2013 / LPS 305B-TC

Safety Information

Please review the following safety precautions before operating our instrument.

General information

Please do not install replacement parts in the instrument, or perform any unauthorized modification. Please send the instrument to B+K Precision Taiwan's maintenance department for maintenance and for ensuring its security features.

Please refer to the manual for specific information on warnings or precautions to avoid personal injury or instrument damage.

The instrument does not have parts that the users can replace or perform maintenance by themselves. If maintenance service is required, please contact our company's trained service personnel.

Security regulation

To prevent electric shock, a non-authorized personnel is strictly prohibited to open the instrument. Additionally, use in life support systems or any other device with security requirements is strictly prohibited. We are not liable for any direct or indirect, financial damage or profit loss that might occur when using the instrument.

Safety symbols and terms

Warning

This product should only be used as intended. Users must be trained in electrical safety procedures and proper use of the instrument. Users must be protected from electric shock and contact with hazardous live circuits. Please observe the following precautions before using this product to avoid any instrument damage.

Notes

It reminds the user of some operating procedures, practices, conditions and other matters that may result in instrument damage or data loss.


Connect it to safety earth ground using the wire recommended in the user manual.


The symbol on an instrument indicates that the user should refer to the operating instructions located in the manual


High voltage danger

Certification and Quality Assurance

LPS 305B-TC programmable DC power supply fully meets all of the technical specification in the manual.

Warranty

B+K Precision Taiwan Inc. warrants to the original purchaser that its products and component parts thereof, will be free from defects in workmanship and materials for a period of **one year** from the date of purchase. During this year, B+K Precision Taiwan will, without charge, repair or replace, at its option, defective product or component parts under normal operation.

B+K Precision Taiwan Inc., does not take the repair-free responsibility to any one of the following situations; and will charge repair fee in accordance with the maintaining situation:

(1) The product is not sold directly by B+K Precision Taiwan Inc.'s formally authorized distributor.

(2) Because the irresistible calamity or force majeure, which may attribute to the user who has not followed the User Manual to operate or caused by user's fault, such as malfunction or damage made from improper operation or others.

(3) User dismantles, repairs, repacks the product, or installs additional accessories without B+K Precision Taiwan Inc.'s permission or authorization, which cause trouble or damage of the product.

(4) User incorrectly or improperly repairs the product.

(5) User uses his or her own software or interface.

(6) Unauthorized modification or improper usage of the product.

(7) User operates, assembles or repairs the product in environments and locations outside the allowable ambient environment and location.

(8) User uses his or her own equipment or installs his or her own circuitry causing damages.

(9) The instrument's model number or serial number has been modified, erased, removed, or made illegible.

(10) Damages caused by accidents, including but not limited to lightning strike, water damage, fire, abusive use, negligence, etc.

Within warranty period, the user should be responsible and cover respective expense to transport the troubled or damaged product to B+K Precision Taiwan Inc. or the place which B+K Precision Taiwan Inc. specify. B+K Precision Taiwan Inc. will bear the expense in delivering the fixed product back to user. User shall cover for any transporting insurance from the insurance company alone. If the product is returned from countries for maintenance other than the original country, the customer should pay for the round-trip freight, duties, and all associated fees.

Notice

The contents of this manual are subject to change without notice.

Introduction

B+K Precision LPS 305B-TC offers three clean, reliable outputs for general purpose applications. It delivers 0-30.5V on two outputs and 0-5.5V on one output. Each output can be operated independently, and can be connected in series or parallel to produce larger voltage or current required. Excellent stability, high precision, and high resolution (up to 10mV/1mA) are features that make LPS305B-TC ideal for R&D, schools, and production lines. The main features are as follows:

- Programmable triple outputs
- Simultaneous display of triple output voltage and current
- Low ripple, low noise
- 27 store memory and recall function
- VFD display
- 1/2 2U compact size
- Digital encoder knob and keypads function Key
- Output on/off control
- LVP, OVP and OTP protection
- Optional RS232 (IT-E121) and USB (IT-E122) interface

Chapter 1 Quick Start

1.1 The front panel and rear panel description

1.1-1 Front panel

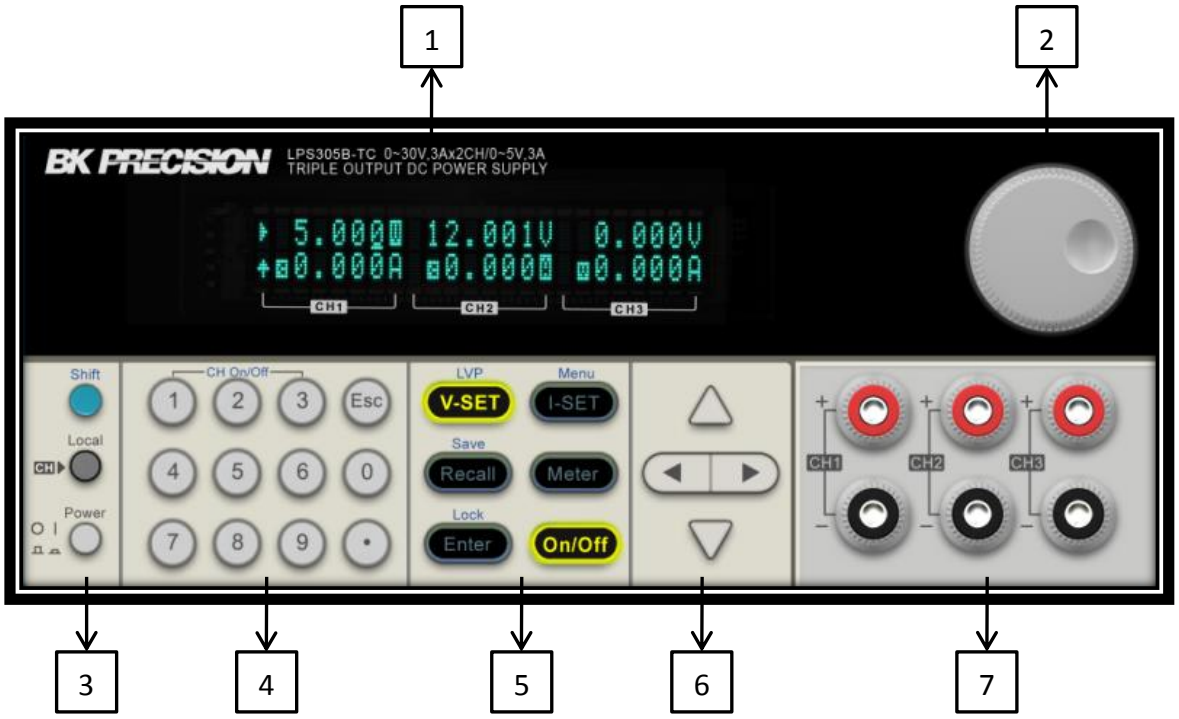


Figure 1-1

1 VFD display

2 Rotary knob

3 Power Switch, Local and Shift keys

4 Numerical and “Esc” keys

5 Function keys

6 Cursor position keys

7 Output terminals

1.1-2 Rear panel

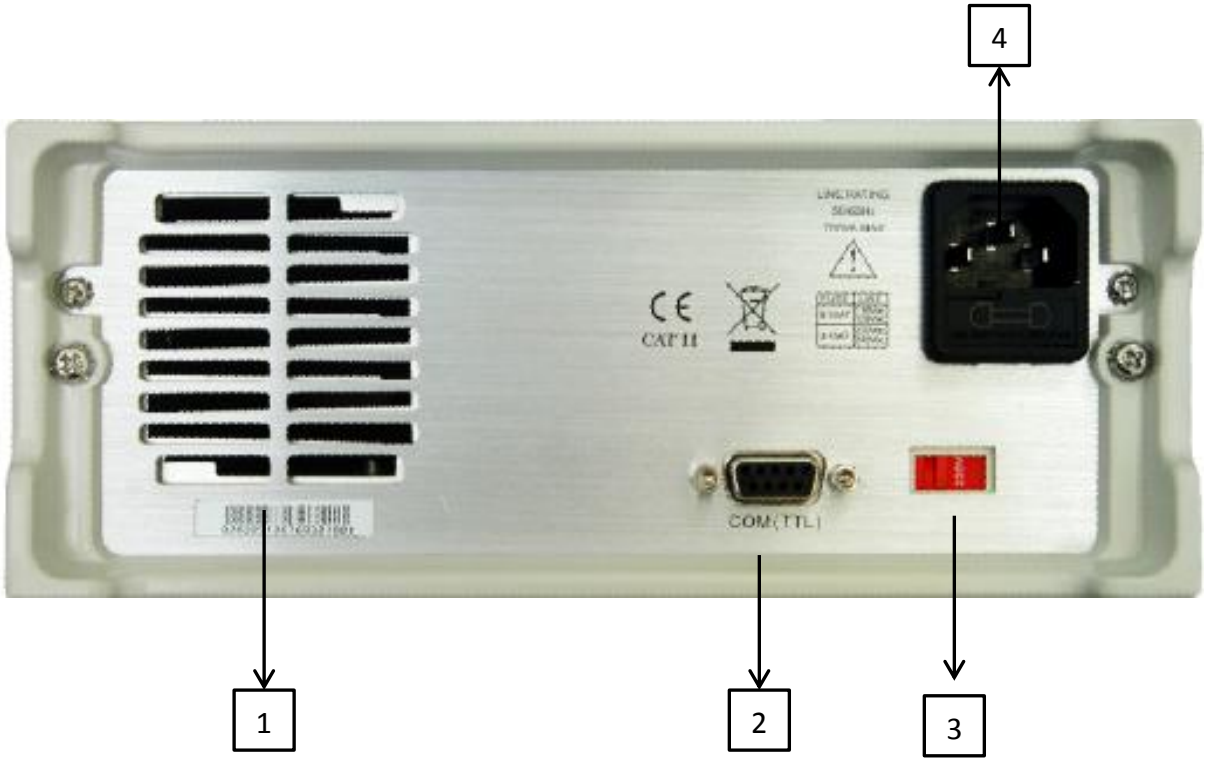


Figure 1-2

1 Ventilation holes

2 TTL connector port

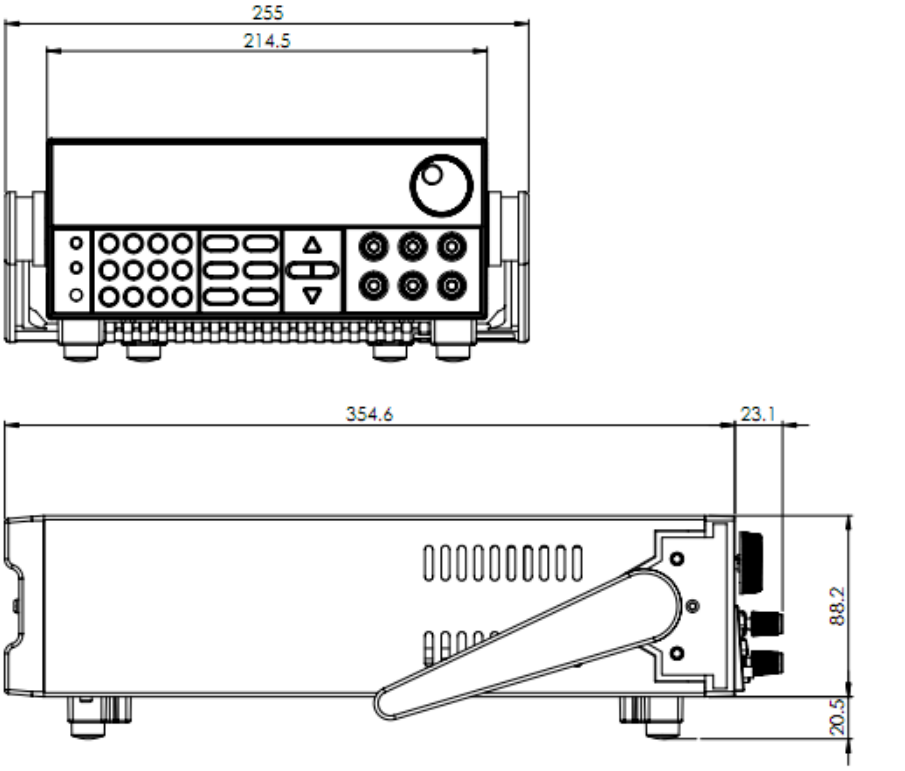
3 110V/220V AC Power selection switch

4 AC power inlet and Fuse compartment

Note: The TTL connector port is not the same as a RS232 interface. Please do not connect directly to RS232 port on PCs to avoid damage to the unit. This connector port can only be used with B+K Precision Taiwan's optional interfaces.

1.1-3 Dimension

The dimension of LPS305B-TC is as shown in the figure below:



Unit：millimeter （mm）

Figure 1-3

1.2 Preliminary Check

The following steps will help you verify that the power supply is ready for use.

1.2-1 Check the list of supplied items

Verify that you have received the following items with your power supply. If anything is missing, please contact B+K Precision Taiwan.

1. Power cord
2. User manual
3. Test report

1.2-2 Connect the power cord and turn on the power supply

After power up, the instrument will automatically perform a self-test routine. In the event that there is no response when you turn on the power supply, refer to 1.2-5 for additional information.

1.2-3 System self-test

After power on, the front-panel display with automatically perform a self-test and the following should be displayed:

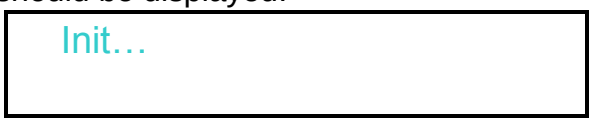


Figure 1-4

Followed by:

Figure 1-5

The first row is the output voltage for channels 1-3, and the second row is the output current of each channel. ▼ pointing at CH1 means that you can set the current and voltage value of Channel 1. To switch to other channels, press the Local key.

In case the self-test routine is not successful, you may see one of the following VFD displays:

If EEPROM is damaged, the following will be displayed:

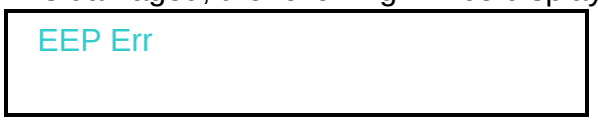


Figure 1-6

If the last operation data which should be stored in the EEPROM is lost, you will see:

Figure 1-7

During channel scan, the following will be displayed:

Figure 1-8

When checkout for one channel failed, you will see:

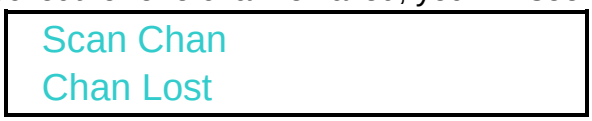


Figure 1-9

When the calibration data of one or more channels is lost, you will see:

Figure 1-10

If the factory calibration data of one or more channels is lost, you will see:

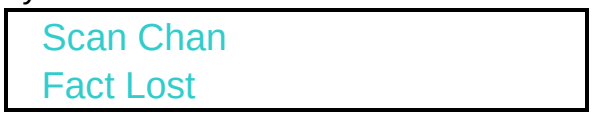


Figure 1-11

1.2-4 Output verification

The following procedures verify that the power supply outputs the correct voltage and current levels and properly responds to entries from the front panel.

Voltage Output Check

The following steps verify basic voltage functions without load.

1) Press Power key to turn on the power supply
2) Press On/Off key to enable the output

   Note: When Meter key is not lit, the power supply is in SET mode, which means that the VFD displays the set values for voltage and current. When the key is lit, then the power supply is in METER mode, the actual voltage and current will be displayed on the VFD.
3) Check that the front-panel voltmeter properly responds to numerical key entries. Enter a different voltage value and wait a few seconds until the METER mode activates. Verify that the actual output value voltage is identical to the set value. Also verify that the displayed current value is close to 0A.
4) Make sure that the voltage can be adjusted from zero to the maximum rated value.
5) Check the other two channels by the same method.

Current Output Check

The following steps verify the basic current functions by shorting the power supply's output.

6) Press Power key to turn on the power supply
7) Press On/Off to disable the output, ensure that the output is OFF (as shown in Figure 1-5)
8) Connect the (+) and (-) output terminals of channel 1 with a short, insulated test lead. Use a wire size sufficient to handle the maximum current.
9) Adjust the voltage value to 3V
10) Press On/Off to enable the output
11) Adjust the current: Enter a different current value, wait until the instrument is in METER mode then make sure that the displayed current value (actual output value) is the same

as the set value.

12) Make sure that the current can be adjusted from 0 to the full rated value
13) Disable the output and then remove the test lead
14) Check the other two channels by the same method.

1.2-5 If the power supply does not turn on

Use the following steps to help resolve the problems you might encounter when turning on the instrument.

1) Verify that there is AC power applied to the power supply

Verify that the power cord is firmly plugged into the power receptacle on the rear panel of the power supply. Make sure the power outlet you are using is working properly and verify that the power supply is turned on.

2) Verify the power-line voltage setting

Make sure the voltage selector switch is set according to the present line voltage (110VAC or 220VAC). Change the voltage setting if it's not correct.

3) Verify that the correct power-line fuse is installed

If the fuse is damaged, please replace it according to the table below.

Model	Fuse Spec
LPS 305B-TC	Fuse 3.15A (220V AC)
	Fuse 6.30A (110V AC)

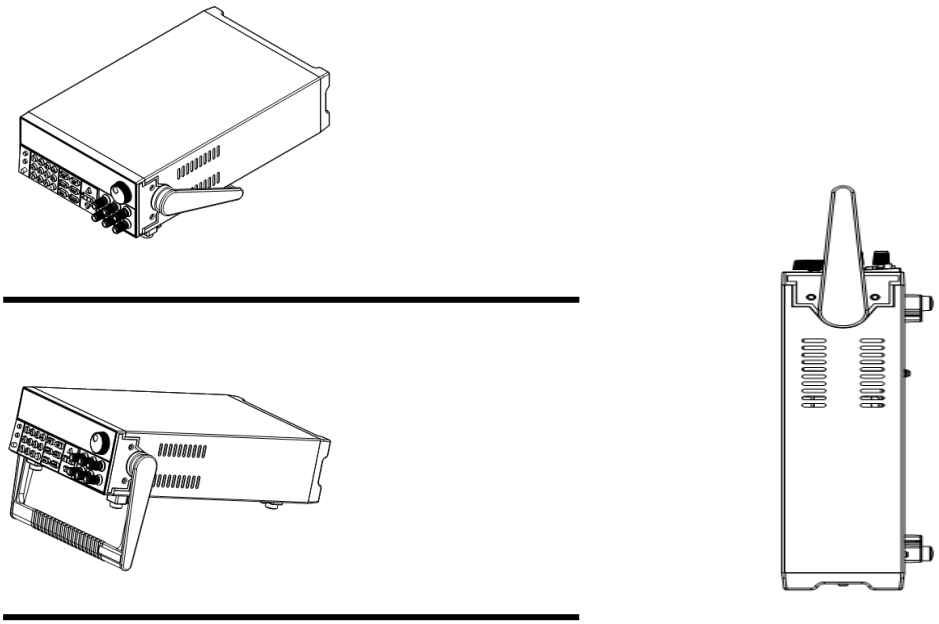
Table 1-1

1.2-6 How to replace the fuse

Open the small plastic cover below the power supply's input socket on the rear panel with a screwdriver, you should see the fuse already in it. Please replace using a fuse according to the specification shown in the table above.

1.2-7 How to adjust the carrying handle

To adjust the position, grasp the handle by the sides and pull outwards to rotate the handle. Once you have reached the desired position, push the handles in. There are three possible configurations, as shown below:



Benchtop Configurations **Hand Carry Configuration**

Figure 1-12

Chapter 2 Specification

2.1 Specifications

Parameters		LPS305B-TC
Output Ratings (0 °C - 40 °C)	Voltage	0~30.5V×2，0~5.5V×1
	Current	0~3A×2，0~3A×1
Load Regulation (% of output+offset)	Voltage	≤0.02%+4mV
	Current	≤0.2%+3mA
Line Regulation (% of output+offset)	Voltage	≤0.01%+3mV
	Current	≤0.2%+3mA
Programming Resolution	Voltage	10mV
	Current	1mA
Readback Resolution	Voltage	10mV
	Current	1mA
Programming Accuracy (Within 12 months) (25 °C ± 5 °C)	Voltage	≤0.06%+20mV
(% of output+offset)	Current	≤0.2%+10mA
Readback accuracy (25 °C ± 5 °C)	Voltage	≤0.06%+20mV
(% of output+offset)	Current	≤0.2%+10mA
Ripple and Noise	Normal Mode Voltage	≤1mVrms/5mVp-p
	Normal Mode Current	≤6mArms
Temperature Coefficient (0 °C ~ 40 °C)	Voltage	250ppm/°C
(% of output+offset)	Current	250ppm/°C
Readback Temperature Coefficient	Voltage	250ppm/°C
(% of output+offset)	Current	250ppm/°C
Series Accuracy	Voltage	≤0.5%+30mV
	Current	≤0.2%+15mA
Parallel Accuracy	Voltage	≤0.2%+30mV
	Current	≤0.2%+25mA
Memory	Save/Recall	27 sets
Dimensions	214.55mm(W) x 88.2mm(H) x 354.6mm(D)	
Weight	7.4 kg	

Table 2-1

2.2 Supplemental Characteristics

Recommended Calibration Interval
1 year

AC Input Ratings (selectable via switch on the rear panel)
Option 01: 220V AC ± 10%, 47 to 63 Hz
Option 02: 110V AC ± 10%, 47 to 63 Hz

Max input power

Model#	LPS305B-TC
Power	750VA

Table 2-2

Cooling
Fan cooled

Operating Temperature
0 to 40 °C for max rated output

Storage temperature
-20 to 70 °C

Environmental conditions
Indoor use only, max humidity 80%, no condensation.

Chapter 3 Front-Panel Operation

So far we have covered the quick start chapter which briefly introduced the front panel operation and how to check basic voltage and current functionality. This chapter describes in detail how to operate the instrument manually via the front-panel keys.

3.1 Front-panel Operation Overview

- The power supply is shipped from the factory ready for front-panel operation Set mode. At power-on, the power supply will automatically enter the Set mode and the instrument can be controlled via the front panel keys and knob. THE VFD will display the set voltage and current.
- The power supply enters remote mode as soon as a valid remote command is received via the communication connector in the rear. Switching to remote mode does not impact the supply's output parameters. In remote mode, front-panel operation is disabled and only Meter and Local buttons are enabled. If the power supply is in remote mode, pressing the (Local) key allows you to revert to manual mode.
- The output of power supply can be enabled/disabled from the front panel by pressing the On/Off key. When you turn on the output, the VFD will display the state and voltage/current of each channel. "CC" represents constant current mode, and "CV" represents constant voltage mode. **When output is in OFF mode, the VFD will have no indicators of CC or CV mode.**
- The VFD displays operation states and error information. "" means the power supply is in remote mode. When front-panel keys are locked, Enter key will be lit. For more details, please refer to "3.3 VFD Description."
- The knob can be used for modifying parameters at Set mode or selection in menu operation.
- When V-set, I-set, Recall, Meter or On/Off keys are lit, they are selected for setting. Pressing (Shift) and Recall (Save), Recall key will flicker, and you may enter a number to specify memory location.
- When V-SET/I-SET keys are lit, the following conditions will enable the cursor position to flash:
  1. Pressing V-SET/I-SET buttons again
  2. Adjusting the knob
  3. Pressing arrow keys

Note:

If there is no operation on the front panel within 5 seconds, the cursor position will

cease to flash automatically. You can also disable the cursor by pressing the ESC key.

3.2 Panel Description

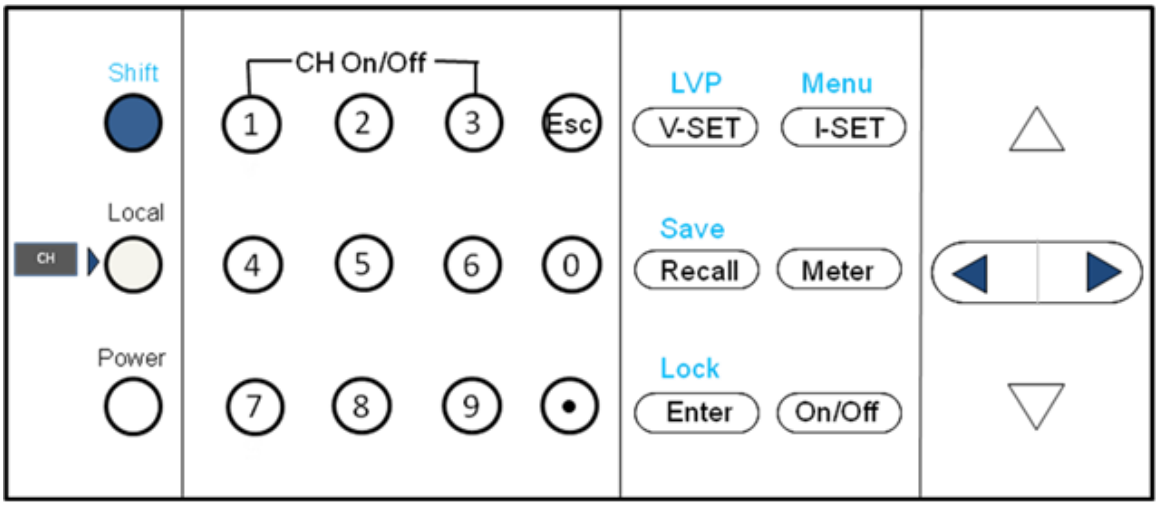


Figure 3-1

0～9	Numerical keys. With Shift key, keys 1~3 can be used to control the output state of each of the 3 channels. (Note: In key Lock mode, this function is disabled.)
Esc	Jump out of the current setting or menu item
(Shift)	Modifier key
(Local)	Switch to Local operation mode from Remote mode or switch to different channels
(Power)	Power on/off the power supply
V-set /LVP	Set the voltage or Shift+V-SET to set LVP value
I-set /Menu	Set the current or Shift+I-SET to enter Menu operation
Recall /Save	Save or recall setup in memory locations
Meter	Switch the display between Set value and Actual value
Enter /Lock	Confirm the selection or setting / Shift+Enter to Lock the front keys
On/Off	Control the output state of each channel
◀ ▶	Right/Left arrow key, move the cursor or scroll through the menu items
△ ▽	Up/down arrow key, increase or decrease the setting value
(Shift)+1,	Turn on the output of corresponding channel regardless of

(Shift)+2, (Shift)+3	whether you are in Menu operation or Meter mode

Table 3-1

3.3 VFD Description

CC	Constant current mode
CV	Constant voltage mode
	Remote control operation
	Indicates that shift button has been pressed
	Indicates the channel currently selected
SEr	Serial connection mode
PAr	Parallel connection mode
trAC	Tracking mode

Table 3-2 Explanation of annunciators on the display

3.4 Menu Description

Press (Shift)+ I-set (Menu) to enter menu operation. The flashing parameter indicates the current selected setup. Use the ◀ ▶ keys to change the setup, and △ ▽ keys to scroll through the menu items. Press Enter key to enter the selected menu function. Press Esc key to jump out of the Menu.

Note: Both pressing Enter and ▽ keys allow you to access the next menu item, however pressing Enter key saves the selected setup, while pressing ▽ key does not.

3.5 Panel Operation

3.5-1 Channel operation

When V-set or I-set key is lit, press (Local) key to switch between the three

channels.

3.5-2 Output On/Off setting

Pressing On/Off key toggles the output state of all 3 channels of the power supply. If the output state is ON, pressing this key will turn the output state to Off. If the output state is Off, pressing the key will turn the output state to On.

To control channels individually, press (Shift)+ 1 , (Shift)+ 2 , (Shift)+ 3 corresponding to each channel. (Shift)+ 1 controls the output state of the first channel, (Shift)+2 controls the output state of the second channel, (Shift)+3 controls the output state of the third channel.
When the power supply is in remote mode, you can set the output state by sending SCPI command (OUTPut: ON | OFF). The On/Off operation does not affect other parameters.

Note: The On/Off key controls the output state of all 3 channels simultaneously.
If you want to control the output state of each channel, press (Shift)+1/2/3 keys individually.

3.5-3 Set Voltage

There are three ways to change the voltage value:

Method 1: Press (Local) to select channel, press V-set, then enter a numerical value followed by Enter.

Method 2: Press V-set, then press ◀ ▶ keys to move the cursor position and adjust the voltage value using the knob. Press Esc or Enter to exit.

Method 3: Press V-set, then press ◀ ▶ keys to move the cursor position and adjust the voltage value using △▽ keys. Press Esc or Enter to exit.

Note: When output is at off state and Meter is at on state, the rotary knob and △▽ keys cannot be used to adjust the voltage and current.

3.5-4 Set Current

There are three ways to change the current value:

Method 1: press (Local) to select channel, press I-set then enter a numerical value followed by Enter.

Method 2: Press I-set, then press ◀ ▶ keys to move the cursor position and adjust the current value using the knob. Press Esc to exit.

Method 3: Press I-set, then press ◀ ▶ keys to move the cursor position and adjust the current value using △▽. Press Esc to exit.

3.5-5 Save and Recall Operation

You can store up to 27 different setups in memory locations 1 through 27. They are divided into three groups, each group containing nine different setups. Each setup consists of a voltage value, current value, and a maximum output voltage value.

Press (Shift)+Recall(Save) followed by a number key to save the current operating state to non-volatile memory.

Press Recall+number keys 1 to 9 to recall operating state assigned to this location.

You can also use the SCPI command(*SAV、*RCL) to save and recall.
When Save operation is done, there will be a corresponding display to indicate successful or failed operation. For Recall operation, display will only show failed operation.

Note: The power supply doesn't support Save/Recall operation when in Series, Parallel or Tracking mode. If you use Save/Recall function during Series, Parallel, or Tracking mode, VFD will display INV OPEr(invalid operation), reminding the user of wrong input. If parameters recalled do not exist, the current value position on VFD will display ----, and then resume to previous display after 2 seconds.

3.5-6 Limit Voltage Protection (LVP)

Limit voltage protection is the maximum voltage value set by the user for each channel. Press (Local) button to select the channel, then press (Shift)+V-set(LVP), and the VFD will display LVP with flashing values beneath it. You can use number keys, arrow keys, and the knob to enter the LVP value. Press Esc to exit the operation. After setting a LVP value, whenever user sets a voltage value above the LVP, the instrument will automatically jump to the LVP value.

3.5-7 Key lock function

Press (Shift) + Enter (Lock) to lock the front panel keys. At this point, Enter key will stay lit. Using this function will disable all keys except ①, ②, ③, On/Off, Meter , ◀ ▶ arrow keys, and (Local) key.

Note: Pressing the ①, ②, ③, On/Off keys will allow you to control the output state of the channels without the use of a (Shift) key. Pressing ◀ ▶ arrow keys and (Local) key will allow you to switch between channels.

3.5-8 Protections

Over Temperature Protection (OTP)

If the internal temperature of the power supply exceeds 85°C, the instrument will protect itself by automatically turning the power OFF. When this happens, you will hear a buzz sound with the following VFD display.

OVER HEAT

Figure 3-2

Over Voltage Protection (OVP)

OVP may be triggered at the event of an internal error, wrong operation, or excessive external voltage. Once over voltage is detected, the user will hear a buzz sound, and the output will be turned off automatically. At this point, the VFD will display “OVP” in the voltage value position and “- - - -“ at current value position. The OVP value is 0.1V higher than the existing LVP value set.

3.6 Menu Item Descriptions

Press (Shift)+I-set (Menu) to enter menu operation.

Menu Items		
OUt	Set output states	
	OFF	Sets output to Off at power on.
	LASt	“Remember” the output state before the last power off
bEEP	Set key sound	
	OFF	Disable key sound
	ON	Enable key sound
bAUd	Set baud rate	
	4.8	Baud rate 4800
	9.6	Baud rate 9600
	38.4	Baud rate 38400
GrP	Select memory group for Save function	
	GrP1	Save to group1

	GrP2	Save to group2
	GrP3	Save to group3
COUP	Configure ouput mode between CH1 and CH2	
	OFF	Channel 1 and 2 outputs independently
	Ser	Configure for series operation
	Par	Configure for parallel operation
trAC	Set the tracking mode for CH1 and CH2	
	OFF	Disable tracking function
	ON	Enable tracking function

Table 3-3

Out

This item sets the output On/Off state at power up. If you select “Last”, the power supply will save the output state prior to the last power off and revert to that state at power up. If you select “Off”, the output state is always “Off” when the power supply is turned on. The recommended setting is “Off.”

Beep

This item enables or disables the beep key sound. When enabled, you will also hear two beep sounds when the output switches between CV and CC mode.

BAUD

This item configures the baud rate for serial communication. Possible values are 4800, 9600, and 38400. When operating the power supply in remote mode, make sure that you configure identical baud rate settings for the power supply and the computer.

Grp

This parameter sets the memory groups for Save/Recall operation. The non-volatile memory location is divided to three groups: Grp1, Grp2 and Grp3. Each group can save nine different setups. The user can save up to a total of 27 different setups.

COUP

This parameter configures the connection mode of CH1 and CH2. The possible setups in the menu include OFF, SEr(Series), and PAr(Parallel). LPS 305B-TC only supports Series/Parallel mode for CH1 and CH2 in menu operation. When the mode has been selected, the VFD will display “SEr” or “PAr” under CH2. At these modes, the user only needs to set the total voltage and current on one channel, the power supply can distribute the voltage and current to the two channels automatically.

Note: When configuring for series or parallel mode, the user must wire the terminals externally to match the configuration (See Figure 3-5 and 3-7). The power supply does not automatically connect the appropriate terminals internally based on the configuration selected.

Note: After configuring the instrument for series or parallel operation, the output state of CH1 and CH2 will automatically be set to OFF and the voltage value will be 0V. Therefore, the user would have to set the parameter again after reconfiguration. Additionally, Save and Recall functions will be disabled. However, the voltage, current, and output states of CH3 will not be affected by the Series or Parallel mode selection.

Off

This setting turns off series or parallel operations for CH1 and CH2. Press Enter to confirm this selection, the VFD will display “OFF SUCC.” Below you may find the connection diagram for Off state.

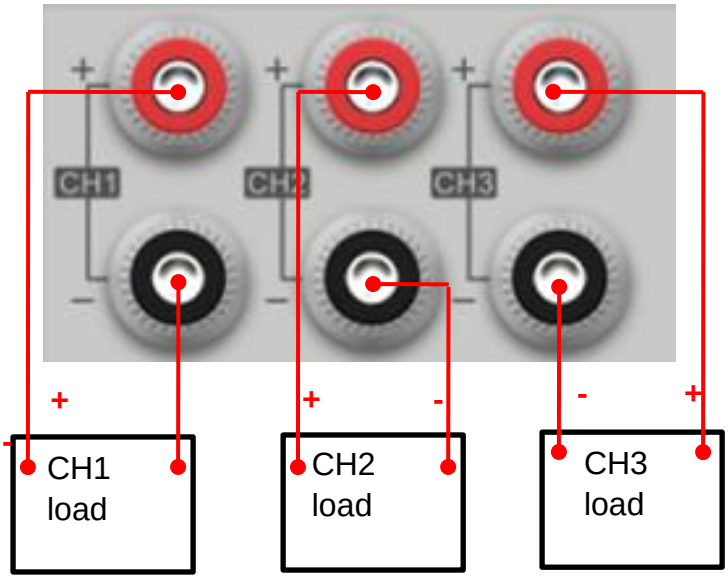


Figure 3-3 Connection diagram for Off states

Ser (Series mode)

This function configures the connection of CH1 and CH2 to serial mode in menu operation. To select series mode, press (Shift) + I-set to access the Menu and use the △▽ keys to enter the “COUP” subpage. Use ◀ ▶ to select “SEr,” and press Enter to confirm. The VFD wil display “SEr SUCC” followed by the display below after 2 seconds

(under Output Off state and in Meter selected mode). To exit menu selection, simply press Esc.

Figure 3-4

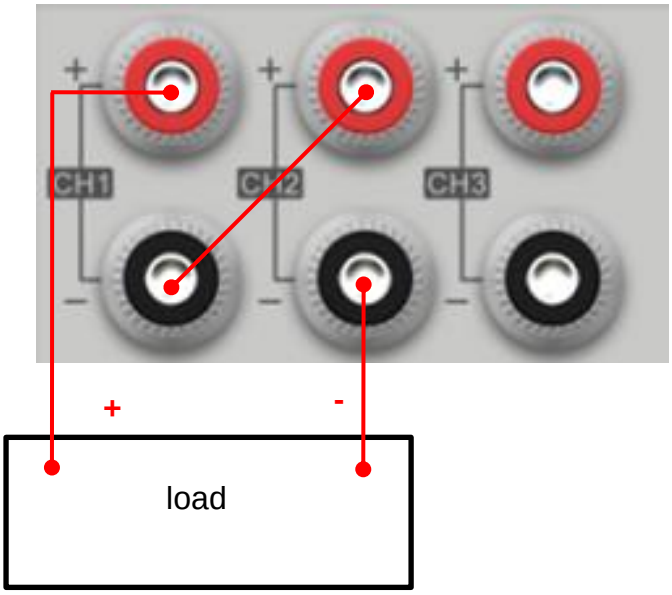


Figure 3-5 Wiring diagram for Series mode

Par (Parallel mode)

This function configures the connection of CH1 and CH2 to parallel model. To set parallel mode, press (Shift) + I-set to access the Menu and use the △▽ keys to enter the "COUP" subpage. Use ◀▶ to select "PAr," and press Enter to confirm. The VFD wil display "PArA SUCC" followed by the display below after 2 seconds (under Output Off state and in Meter mode). To exit menu selection, simply press Esc.

Figure 3-6

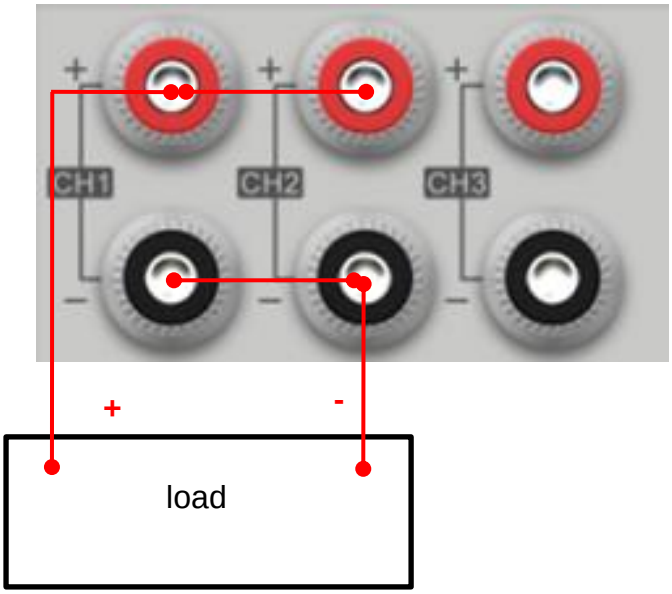


Figure 3-7 Wiring diagram for Parallel mode

Default settings for Series and Parallel connection

After selecting series function, CH1 and CH2 will be set to default values automatically, 0V and 3.1A. The same applies to selecting parallel function, default values are 0V and 6.2A.

Limit voltage for Series and Parallel connection

If limit voltage of CH1 and CH2 are set as 20V, 25V before series or parallel connection:
The voltage range will be 45V (sum of the two channels) after connect in series.
The voltage range will be 20V (min value of the two channels) after connect in parallel.

TRAC (sync output setting)
This track function sets CH1 and CH2 in synchronous mode. You may first set a proportion to which you want CH2 to track CH1. When change is being made to one of the parameters (voltage/current) of CH1, the same parameter of CH2 will change accordingly in proportion.

For example, set voltage/current of CH1 and CH2 as follows. CH1: 4V/1A ; CH2: 8V/2A. Press (Shift) + I-set to access the Menu, and press ▽ to select trAC, the VFD will

display as follows:

Figure 3-8

Select “ON” by pressing ▶ key followed by Enter and the VFD will display “trAC SUCC.” After two seconds later, the system will automatically exit the Menu.

When output is off and in Meter status, VFD will display:

Figure 3-9

In setting status, if voltage of CH1 is set as 2V, voltage of CH2 will automatically sync to 4V in proportion. To turn off the track function, simply set the TRAC function under menu to OFF status.

Note: If either the voltage/current of CH1/CH2 is set to zero before turning on the track function, the voltage/current synchronization of CH2 to CH1 will be ignored. To verify that you have properly selected the track function, you may check if Figure 3-9 displays under Meter on status and output is turned off. When track function is not turned on, letters “trA” will not appear in display.

Note: The track function is bound by the LVP (Limit Voltage Protection) value set by the user.

Power Supply Information

To display information of your DC Power Supply, press (Shift) + keys, and the following information will appear on your display (Press ◀ ▶ keys to navigate through the pages) :

1) **Model # and Software Version**
   INFO
   LPS 305b 1.XX

2) Serial Number information

INFO SN

XXXX XXXX XXXX

3) Calibration Date

INFO - - - 1

XXXX XX XX

4) Calibration Time

INFO - - - 2

XX XX XX

Chapter 4 Communication between Power Supply and PC

4.1 Communication module introduction

The DB9 connector (Figure 4-1) in the rear panel of the power supply provides a TTL level signal. It can be connected to a standard PC interface via IT-E121 (RS232 to TTL) or IT-E122 (USB to TTL) isolated communication module. This chapter describes what connection is needed to control the output of the power supply via the computer.

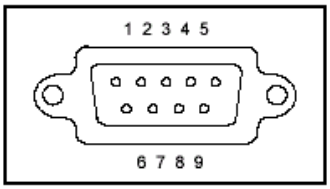


Figure 4-1

Note: Please do not connect your computer to LPS 305B-TC with standard 9 Pin RS232 cable, it may cause damage to the power supply.

4.1-1 IT-E121 communication module (RS232 to TTL)

The DB9 interface connector on the rear panel of LPS 305B-TC power supply provides a TTL voltage level interface. Use the communication module (IT-E121) along with a standard RS232 straight-through cable to connect DB9 interface connector of the power supply to the RS232 interface connector of the PC.

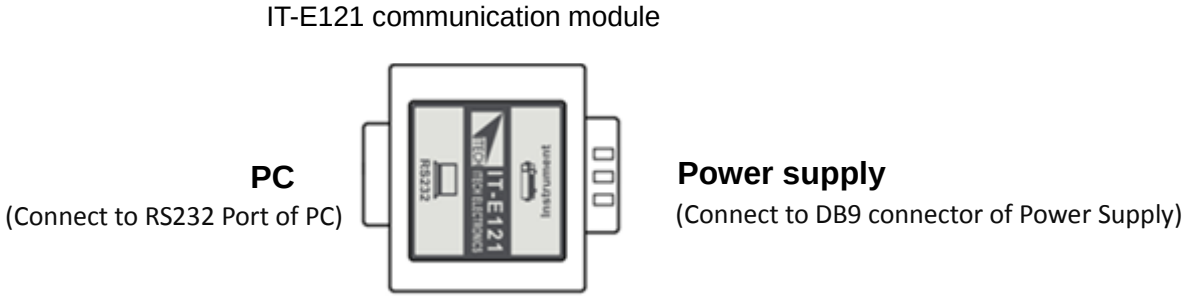


Figure 4-2

4.1-2 IT-E122 communication module (USB to TTL)

The DB9 interface connector on the rear panel of LPS 305B-TC power supply provides a TTL voltage level interface. Use IT-E122 communication module along with a standard USB straight-through cable (one end is B connector, and the other end is A connector) to connect

DB9 interface connector of power supply to the USB interface connector of PC.

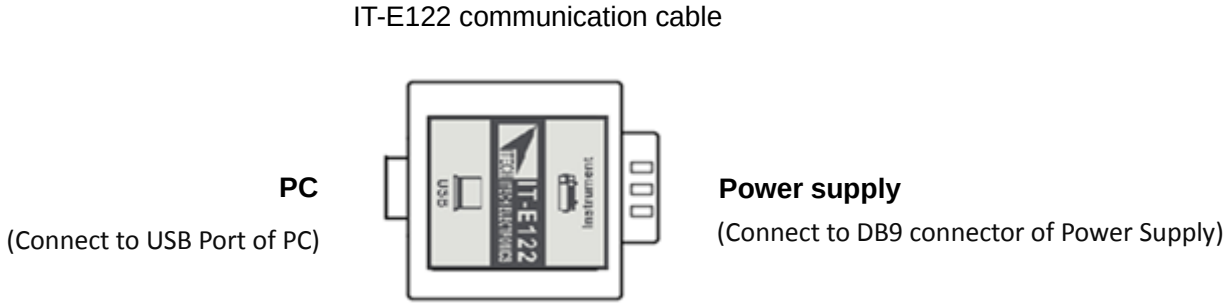


Figure 4-3

4.2 Communication between Power Supply and PC

Using IT-E121 or IT-E122, you may connect the DB9 interface connector of LPS 305B-TC to RS232 or USB interface connector of PC for remote control. Before putting the instrument into remote operation, please make sure that the baud rate on the power supply and PC side are identical, otherwise communication would not be possible.

Baud rate (4800, 9600, 38400) can be selected under Menu.

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