

# RACK INTEGRATIONS

## 19" LAB RACK & FLIGHT CASE INTEGRATIONS



POSITIVE PROBLEM SOLVING **+=**

Your chosen ETPS power system can be fitted into a lab rack or ruggedised flight case on locking castors. Integrations are available for any 19" rack mounting model.

A range of options are possible to enhance user safety, such as additional contact protection and earth bonding of metal parts to a copper earth bar. Emergency stops are available for compatible models. Multiple power systems from ETPS can be fitted into the same enclosure. It is also possible for existing units to be retrospectively integrated into new racks on request. Additional free space and shelving can be specified for the build, should you also want to mount your own equipment into the same enclosure.

- + Ruggedised Flight Cases Available**
- + 4× Locking Castors for Mobility**
- + Enhanced Contact Protection**
- + Earth Bonding Option**
- + Optional AC & DC Cables**
- + Cable Storage**

### CONTENTS

Standard Features	2
Options Table	2
Form Factor	3
Cables	4
Interfaces and Control	5
Safety and Protection	5
Mechanical	7

	LAB RACK	FLIGHT CASE
Non Standard Heights on Request	✓	✓
Non Standard Depths on Request	✓	✓
Locking & Swivel Castors	✓	✓
Unit Mounted Into Enclosure	✓	✓
Removable Front & Rear Doors	OPTIONAL	✓
Locking Ventilated Rear Door	✓	×
Shock & Vibration Mounts	×	✓
Top & Bottom Cable Entry	✓	×

## OPTIONS TABLE

### OPTIONS

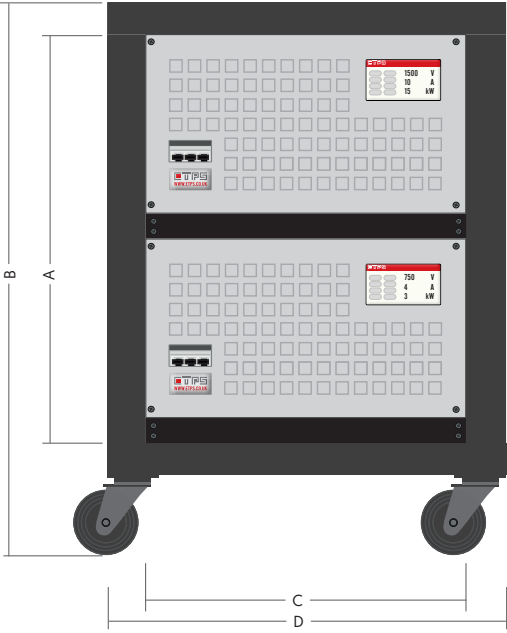
CODE	DESCRIPTION
<b>FORM FACTOR AND ENCLOSURES</b>	
/LR9U	Integration into a small 9U lab rack
/LR18U	Integration into a medium 18U lab rack
/LR30U	Integration into a large 30U lab rack
/LRXU	Integration into a lab rack of user defined height and depth
/FC10U	Integration into a small 10U flight case
/FC16U	Integration into a medium 16U flight case
/FC28U	Integration into a large 28U flight case
/FCXU	Integration into a flight case of user defined height and depth
<b>CABLES</b>	
/ACCABLE	AC cable and plug
/DCCABLE	DC cable set
/DCSOCKET	DC sockets
<b>INTERFACES AND CONTROL</b>	
/SCREEN	Integrated monitor to operate standard and optional GUIs (compatible systems only)
<b>SAFETY AND PROTECTION</b>	
/STOP	Panel mounted stop (compatible systems only)
/ESTOP	Panel mounted emergency stop (compatible systems only)
/SI	Interface for connection to external safety/stop system (compatible systems only)
/VLI	Passive DC voltage level indicator with adjustable threshold
/BOND	Frame, supports and blanking panels bonded to earth bar on bottom rear of frame
<b>MECHANICAL</b>	
/FD	Lockable mesh front door, preventing access to the system while in use (lab racks only)
/RD	Hinged ventilated rear door (included as standard for lab racks)
/RP	Fixed ventilated rear panel
/BRUSHSTRIP	Brush strip for cable access
/SHELF	Additional shelves pre-installed to mount equipment into the enclosure
/DRAWER	Accessory drawer, 1U to 4U available
/HOOK	Winding hook for cable storage

## STANDARD DIMENSIONS

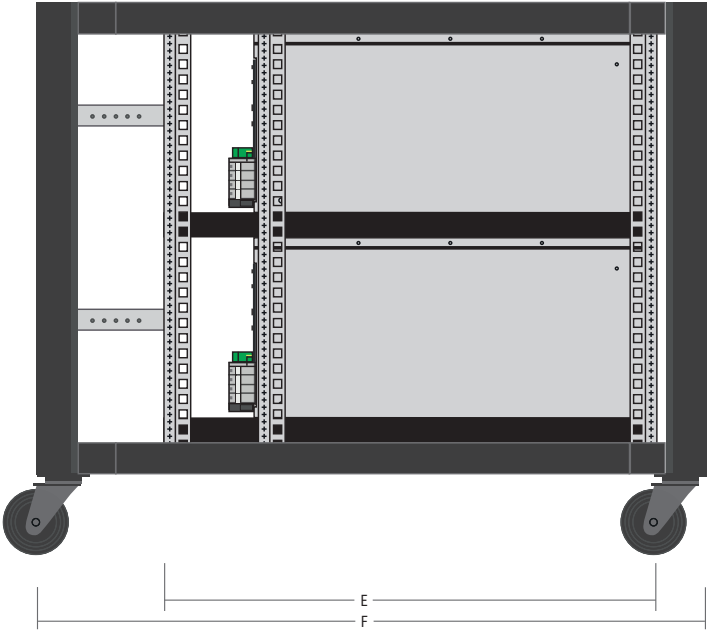
DIMENSION	LAB RACKS			FLIGHT CASES		
	/LR9U	/LR18U	/LR30U	/FC10U	/FC16U	/FC28U
A (Internal Rack Height)	9U	18U	30U	10U	16U	28U
B (External Enclosure Height)	820mm	1220mm	1780mm	730mm	1000mm	1540mm
C (Internal Rack Width)	19"	19"	19"	19"	19"	19"
D (External Enclosure Width)	600mm	600mm	600mm	600mm	600mm	600mm
E (Internal Rack Depth)*	720mm	720mm	720mm	760mm	760mm	760mm
F (External Enclosure Depth)	1000mm	1000mm	1000mm	1150mm	1150mm	1150mm

\* Dependant on product

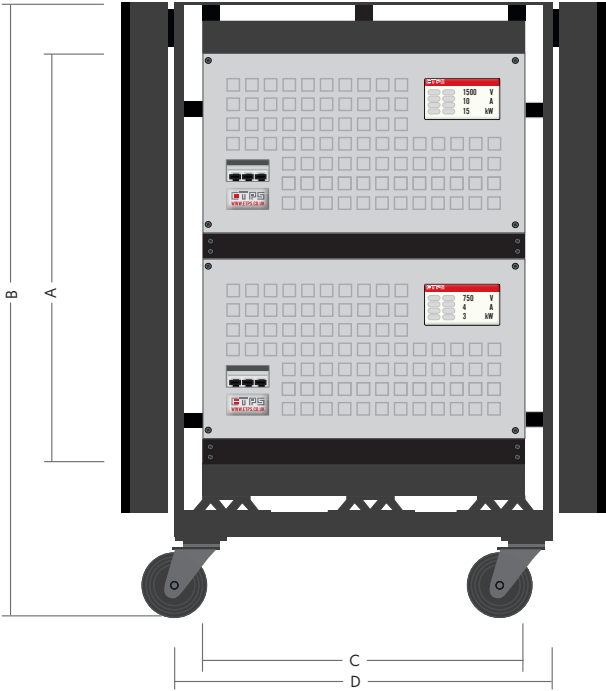
The standard dimensions of the lab rack and flight case integrations can be found in the table. If you require custom dimensions, please let us know.



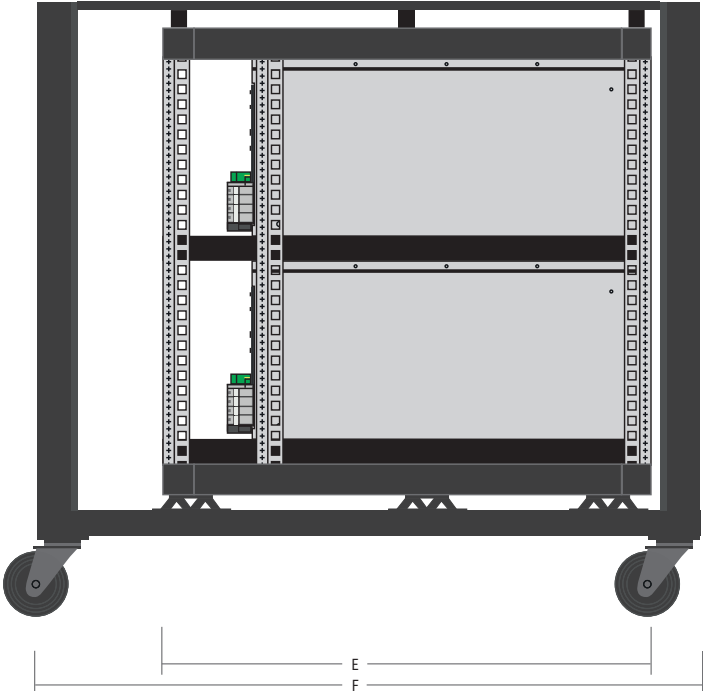
FRONT OF LAB RACK



SIDE OF LAB RACK



FRONT OF FLIGHT CASE



SIDE OF FLIGHT CASE

## HIGHLIGHTED OPTIONS

### AC INPUT CABLE AND PLUG (/ACCABLE)

The below 5-pin plugs can be installed with your chosen power system. As standard, cables are supplied with 5m length. Please let us know if you require a different length of cable. On request 4-pin and 3-pin plugs can be specified.

- + CEE-16A-5M
- + CEE-32A-5M
- + CEE-63A-5M
- + CEE-125A-5M



AC INPUT CABLE

### DC CABLE SET (/DCCABLE)



DC CABLE SETS

DC cables can be provided to suit the size, connection type and distance of the power system and DUT.

### DC SOCKETS (/DCSOCKET)

A variety of DC sockets can be fitted according to requirements for quick and easy deployment.



DC SOCKETS



DC SOCKET

## HIGHLIGHTED OPTIONS

### INTEGRATED SCREEN FOR GUIs (/SCREEN)

A screen can be integrated into 19" cabinets, which allows the standard and optional GUIs to be viewed and controlled locally.

Different sizes, interfaces, options for touch screen and ruggedisation available.

Optional GUIs for select DC systems:

- + Battery Simulation
- + Capacitor Simulation
- + Battery/Electric Drive Cycling
- + Function Generator
- + Solar Array Simulation
- + Fuel Cell Emulation with AAP

Optional GUIs for select AC systems:

- + Grid Simulation with Fourier Tool
- + RLC Load
- + Current Control
- + Grid Impedance Emulation
- + EMC Testing



CABINET WITH SCREEN

# SAFETY AND PROTECTION

## HIGHLIGHTED OPTIONS

### PANEL MOUNTED STOP (/STOP)

For stopping of the machine or system during regular operation. It shuts down the system in a controlled manner, allowing it to be restarted easily. Only available for compatible systems.



PANEL MOUNTED STOP

## HIGHLIGHTED OPTIONS

### PANEL MOUNTED EMERGENCY STOP (/ESTOP)

Each 19" enclosure can be fitted with a red local emergency stop button mounted on the front of the cabinet. A panel will be fitted in each cabinet where the emergency stop is cabled to the safety interface of each module within the enclosure. Only available for compatible safety rated systems.



EMERGENCY STOP

### INTERFACE FOR CONNECTION TO EXTERNAL SAFETY / STOP SYSTEM (/SI)

An additional D-sub 9 pin interface is provided to enable connection to an additional safety system for shutting down the system from an external trigger. Only available for compatible systems.

### VOLTAGE LEVEL INDICATOR (/VLI)

A VLI can be built into the cabinet, which shows whether the DC bars are energised. The VLI is connected across the output bars and is passively powered by the energy present.

Therefore, an indication is available to the user even if the power system is shut down or the power generation is off. The VLI is a useful safety feature particularly in test systems where the DUT has significant energy storage capabilities.



VLI



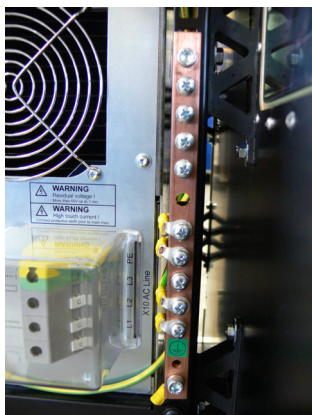
VLI

The VLI is mounted at the rear of the cabinet across the overall system's DC bars. An LED is fitted to the front panel of the system and indicates if the VLI is measuring above the adjustable threshold of 15-100Vdc, which can be set by request prior to delivery. In the example above, the LED is set to remain lit when the voltage is above a default of 20Vdc.

The VLI is limited to systems operating from 0 to 1500Vdc.

## HIGHLIGHTED OPTIONS

### BONDING OF FRAME (/BOND)



CABINET BONDING

Cabinet bonding is available. The main sections of the frame, shelves and unit cases are connected to an earth bar at the rear of the rack. Additional connections are available for DUT or other equipment.

## MECHANICAL

## HIGHLIGHTED OPTIONS

### LOCKABLE FRONT DOOR (/FD)



OPEN FRONT DOOR



CLOSED FRONT DOOR

A lockable ventilated front door is available, preventing unauthorised access to the power system while in use.

### HINGED VENTILATION REAR DOOR (/RD)



HINGED REAR DOOR

Provides contact protection to guard against accidental contact of terminals. Only available for flight case integration, included as standard for lab racks.

## HIGHLIGHTED OPTIONS



### FIXED VENTILATION REAR PANEL (/RP)

Provides additional contact protection whilst ensuring airflow. The panel must be physically removed to access terminals, and is often used in conjunction with a brush strip for cable entry.



### BRUSH STRIP (/BRUSHSTRIP)

Provides access to input and output cables.



FRONT BRUSH STRIP



REAR BRUSH STRIP



### ADDITIONAL SHELVES (/SHELF)



SHELF AS CABLE TRAY



ADDITIONAL SHELF INSTALLS

Extra shelves can be fitted ready for additional equipment to be installed, or as simple cable trays.

## HIGHLIGHTED OPTIONS



### ACCESSORY DRAWER (/DRAWER)

Lockable draws are available on the front of the enclosures providing simple storage of documents and small accessories. 2U, 3U and 4U versions are all possible. A 1U variant is also available without a lock.



ACCESSORY DRAWER



### WINDING HOOK (/HOOK)

For added convenience, a hook is included to hang the cabling.



CABLE STORED ON A HOOK



“  
WE ARE  
POSITIVE  
PEOPLE  
”

ETPS engineer electronic power supply and testing systems. Our problem solving skills provide the spark of innovation to some of the world's leading technology brands.



Tel: +44 (0) 1246 452909  
Sales: 0800 612 95 75  
sales@etps.co.uk  
www.etps.co.uk

ETPS Ltd  
Unit 14, The Bridge  
Beresford Way, Chesterfield  
S41 9FG



POSITIVE **PROBLEM SOLVING**