

# LFP CONNECT USER MANUAL

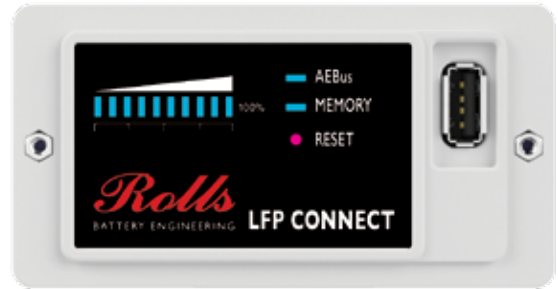
The logo for Rolls, featuring the word "Rolls" in a white, elegant cursive script font with a black outline, set against a red background.

BATTERY ENGINEERING

Installation, connection and configuration of  
Rolls LFP Connect gateway with Rolls LFP lithium models.

## TABLE OF CONTENTS

3	<b>1.0 SAFETY</b>
3	1.1 Warnings, Cautions and Notes
3	1.2 General Warnings
3	<b>2.0 OVERVIEW</b>
4	2.1 Physical Features
5	2.2 LFP Connect Cards
5	<b>3.0 INSTALLATION</b>
5	3.1 LFP Connect Card Installation
6	3.2 Wall Mount
6	3.3 Connecting LFP Connect to LFP Batteries
7	3.4 Connecting LFP Connect to Power Conversion Systems
7	<b>4.0 OPERATION</b>
7	4.1 Turning Power to LFP Connect and OFF
7	4.2 Power Cycling LFP Connect
7	4.3 Firmware Update
7	<b>5.0 TROUBLESHOOTING</b>
8	<b>6.0 SPECIFICATIONS</b>



LFP CONNECT

*Rolls*

## I.0 SAFETY

### 1.1 Warnings, Cautions and Notes

<b>▲ WARNING</b>
Death or Injury
<b>▲ CAUTION</b>
Equipment Damage
<b>▲ NOTE</b>
Additional Information

### 1.2 General Warnings

<b>▲ WARNING</b>
<p><b>HAZARD OF ELECTRICAL SHOCK AND FIRE</b> Connect only to Safety Extra Low Voltage (SELV) circuits and power sources. All wiring must be completed by qualified personnel to ensure compliance with applicable installation codes and regulations.</p> <p><b>Failure to follow these instructions will result in death or serious injury.</b></p>
<b>▲ CAUTION</b>
<p><b>HAZARD OF EQUIPMENT DAMAGE</b> Do not install LFP Connect outdoors. Do not connect any port of the LFP Connect to a network with power over Ethernet (POE) or to a public telecommunication network. Do not run CAT5 cables or other cables connected to LFP Connect through conduit that could be exposed to lightning strikes.</p> <p><b>Failure to follow these instructions will damage equipment.</b></p>

## 2.0 OVERVIEW

LFP Connect gateway unlocks the full potential of a Rolls LFP LiFePO4 battery by enabling the internal Battery Management System (BMS) to optimize the charge and discharge configurations of the world's best residential inverter chargers and solar charge controller systems.

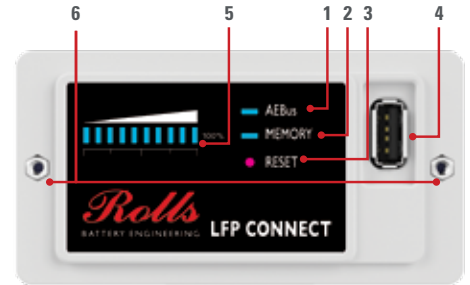
LFP Connect provides closed-loop communications for adaptive interaction between the Rolls LFP battery and power conversion electronics turning a good system into a great one with up to 25% improvement in 0% to 100% SOC recharge time.

LFP Connect enables remote display and reporting of battery system-level status through supported third party web portal and cloud monitoring services.

## 2.1 Physical Features

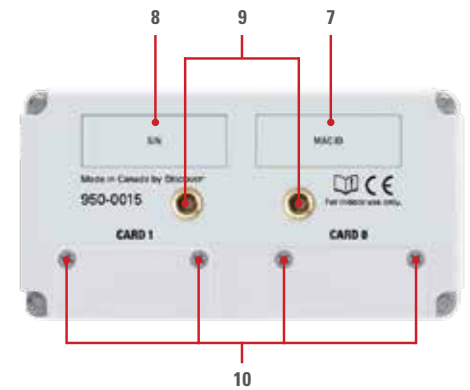
### LFP CONNECT FRONT FACE

1	AEBus	Solid Green LED: Communicating with Devices on AEBus.
2	Memory	Default: OFF, Flashing Green LED: Communicating with USB Thumb Drive, Solid Green LED: Safe to remove USB Thumb Drive.
3	Reset	Pinhole used to power cycle LFP Connect.
4	USB	USB Host used for thumb drive to load Firmware into LYNK.
5	SOC	10 Blue LEDs: Battery bank state of charge, Single LED Race Sequence: Power, but no AEBus detected.
6	Mounting Screws	M3 screws used to mount LFP Connect to surface mount bracket or wall faceplate (Included).



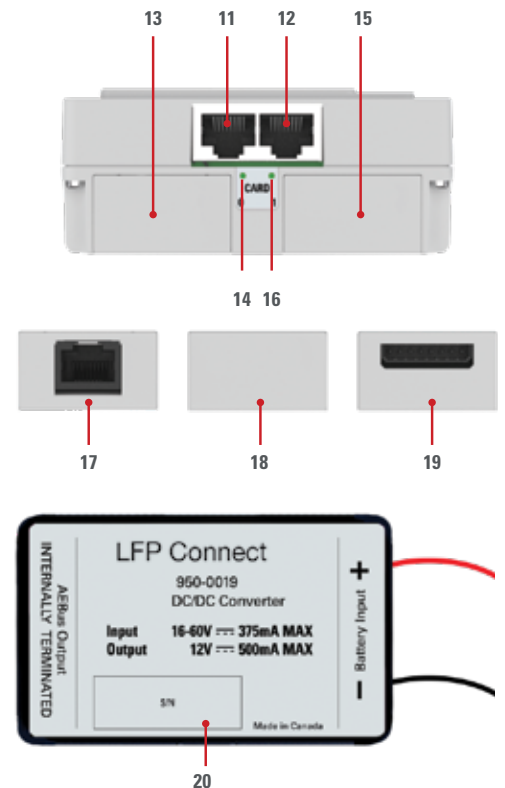
### LFP CONNECT BACK FACE

7	MAC Address	Unique MAC Address.
8	Serial Number	Unique serial number.
9	DIN Rail Hardware Receptacles	Threaded receptacles accept 6-32 screws to secure optional 35mm DIN Rail hardware.
10	Edge Card Cover Screws	Screws to secure covers.

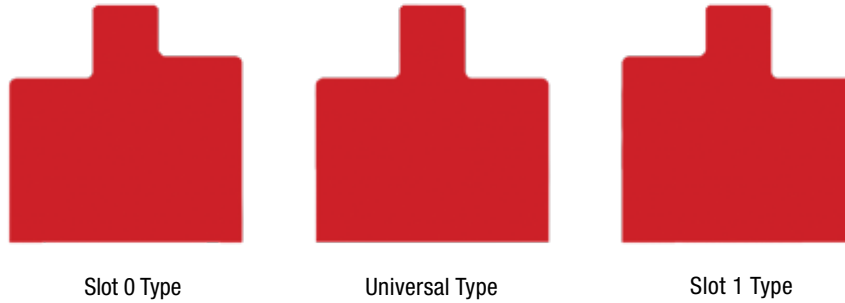


### LFP CONNECT BOTTOM FACE

11	AEBus	RJ45 Port for CAT5 cable to connect to AEBus network. This is a terminated connection.
12	Ethernet	Future Functionality.
13	LFP Connect Card Slot 0	Slot for universal or Slot 0 LFP Connect Cards.
14	LFP Connect Card Slot 0	Solid Green LED: Communication connection good.
15	LFP Connect Card Slot 1	Slot for universal or Slot 1 LFP Connect Cards.
16	LFP Connect Card Slot 1 Communication Status	Solid Green LED: Communication connection good.
17	LFP Connect Card Cover RJ45	Cover to be used with LFP Connect Cards populated with RJ45 ports.
18	LFP Connect Card Cover Blank	Cover to be used when no LFP Connect Card is present.
19	LFP Connect Card Cover Phoenix	Cover to be used with LFP Connect Cards populated with Phoenix ports.
20	DC-DC AEBus Power Converter	Converts nominal DC voltage (24-48V) of Rolls LFP Battery to nominal DC 12V to power LFP Connect.



## 2.2 LFP Connect Cards



LFP Connect Cards come in specific shapes and will only fit into the specified slot type.

- Slot 0 type will only work in LFP Connect Card Slot 0.
- Slot 1 type will only work in LFP Connect Card Slot 1.
- Universal type will work in either LFP Connect Card Slot 1 or 0.

### ▲ NOTE

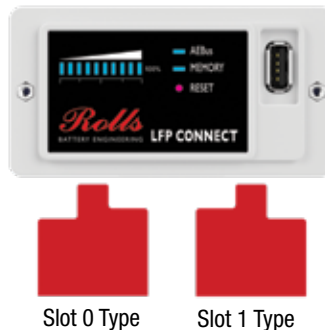
The LFP Connect Card type to be used is determined by the brand of power conversion equipment. LFP Connect Cards are sold separately.

## 3.0 INSTALLATION

Choose a clean, dry, easily accessible indoor location. All the communication ports on the LFP Connect are accessible from the bottom of the device when mounted on a wall or DIN rail. Clearance of at least 50 mm (2 inches) below the device is needed to allow for the bend radius of cables connected to the LFP Connect.

### 3.1 LFP Connect Card Installation

With LFP Connect disconnected from all devices insert the LFP Connect Card in the correct slot. Ensure it is firmly seated into the internal connecting slot. Replace covers after mounting LFP Connect Card.

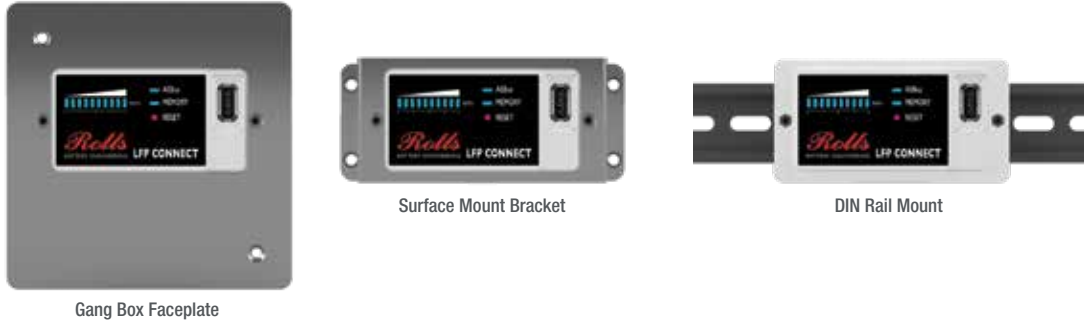


### ▲ NOTE

If LFP Connect Card is in the wrong slot, it will not function.  
If LFP Connect Card is not firmly seated, it will not function.

### 3.2 LFP Connect Mounting Options

A Wall Faceplate, for use with a gang box, and a Surface Mount Bracket are included. The gang box is not included. Place the LFP Connect behind the mount, insert M3 screws through the holes into threaded inserts on the face of LFP Connect and secure. Secure all cables to prevent them from becoming damaged. Two threaded inserts on the back of LFP Connect can be used to attach a 35mm DIN Rail mounting clip. DIN Rail hardware is not included.



### 3.3 Connecting LFP Connect to AEBus

**▲ CAUTION**

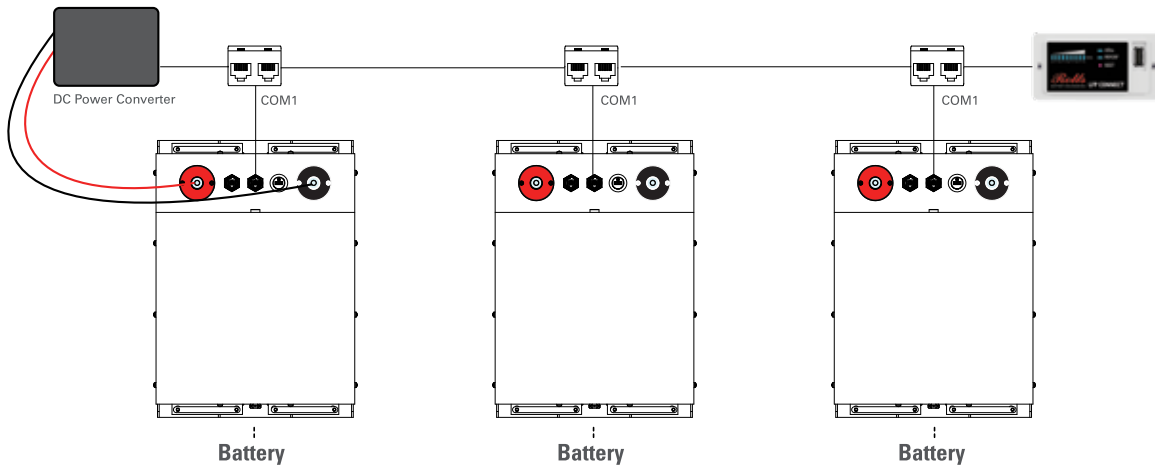
**HAZARD OF EQUIPMENT DAMAGE**

Do not connect a CAT5 cable from the AEBus network to the WAN or MODEM port of a network router. Turn OFF all devices before connecting cables or inserting an LFP Connect Card. Do not reverse the polarity of the DC power converter.

Failure to follow these instructions can damage equipment.

Using a CAT5 cable insert one end into the AEBus RJ45 port located on the bottom of LFP Connect. Insert the other end of the CAT5 cable into the AEBus port located on the battery. If there are multiple Rolls LFP batteries, series network them together and insert the end of the CAT5 from LYNK into the LFP Connect at the end of series network, as shown below.

LFP Connect requires a 12 volt power source. Connect the fly leads of the included DC-DC AEBus power converter to the positive and negative battery terminals of a Rolls LFP battery. Insert one end of a CAT5 cable into the RJ45 port of the DC-DC AEBus power converter and then insert the other end into the last AEBus Y-Connector, as shown below.



**▲ NOTE**

Both LFP Connect and the DC-DC AEBus power converter are internally terminated.

### 3.4 Connecting LFP Connect to Power Conversion Electronics

Instructions on networking with specific power electronics are found in the relevant LFP Connect Card Manual. Refer also to the specific power electronics guides for system configuration information.

▲ CAUTION	
<b>HAZARD OF EQUIPMENT DAMAGE</b>	
<ul style="list-style-type: none"><li>• Do not plug an AEBus RJ-45 cable terminator into the 10/100 Ethernet port of the LFP Connect.</li><li>• Do not connect a CAT5 cable from the 10/100 Ethernet port of the LFP Connect to the WAN or MODEM port of a network router.</li><li>• Turn OFF all devices before connecting cables or inserting an LFP Connect Card.</li></ul>	
Failure to follow these instructions will damage equipment.	
▲ NOTE	
Power electronics are not AEBus devices and should not be connected directly to AEBus.	

## 4.0 OPERATION

### 4.1 Turning Power to LFP Connect ON and OFF

To power up LFP Connect gateway, switch the Rolls LFP battery to ON. To turn off power to LFP Connect gateway switch the Rolls LFP battery to OFF.

### 4.3 Power Cycling LFP Connect

Use a pin to press and briefly hold the reset button on the front face of LFP Connect gateway.

### 4.4 Firmware Update

Refer to the Rolls Battery website ([www.rollsbattery.com](http://www.rollsbattery.com)) for the latest firmware. If an firmware update is require, ensure this is done by a qualified installer.

## 5.0 TROUBLESHOOTING

<b>Symptom</b>	AEBus LED is not on and SOC LEDs are scrolling
<b>Description</b>	Power is detected but there are no AEBus devices communicating
<b>Action</b>	Check all cables and connection and that other AEBus Devices are powered. Confirm that the network is properly terminated (Note that the DC-DC Power Conversion device and LFP Connect gateway unit are internally terminated).

## 6.0 SPECIFICATIONS

### Technical Specifications

<b>DEVICE NAME</b>	LFP Connect Gateway
Part Number	LFP Connect
<b>COMMUNICATION INTERFACE</b>	
AEBus	Connector: 1x RJ45 Supported Products: Up to 20 AEBus enabled Rolls LFP Batteries
Ethernet	Future functionality
Edge Card Slot x 2	Connector: Inverter Charger and Solar Charge Controller Specific Protocol: Inverter Charger and Solar Charge Controller Specific (RS232, RS485, CAN)
<b>DATA INTERFACE</b>	
USB 2.0 Host	Connector: USB-A Protocols: Mass Storage Device (firmware upgrade, configuration, data download)
<b>POWER SUPPLY (INCLUDED)</b>	
DC Output	12V DC 500 mA Max (6 Watt Continuous): RJ45 (AE Bus)
DC Input	16 - 60V DC 375 mA Max: (+) Red, (-) Black

### General Specifications

Weight	110 g
Dimensions (L x W x H)	95 x 50.5 x 40 mm (3.7 x 2.0 x 1.6 in)
IP Rating	IP20 (indoor use only)
Temperature	Operating: -20°C to 50°C (-4°F to 122°F) / Storage: -40°C to 85°C (-40°F to 185°F)
Mounting	Included: Wall mount faceplate, surface mount bracket Optional: DIN Rail 35 mm
Display Status LED	10 x State of Charge LEDs, 1 x AEBus connection LED, 1 x USB Status LED
Humidity	Operating: < 95%, non-condensing / storage: < 95%
<b>FEATURES</b>	
Firmware	Updates over local USB port.
Edge Card Slots	Up to two cards per LFP Connect gateway, one card per brand of compatible power conversion devices
Data logger	Future functionality
Internal Memory	1 GB flash
Programmable	Future functionality
<b>STANDARDS</b>	
Marking	Pending
EMC	Pending

*\*Specifications are subject to change without notice.*

### Compatibility and Available LFP Connect Cards

#### Victron Energy

Color Control GX & Venus GX enabled devices.  
Part # LFP-CCRD-VCTR  
Slot 0, Connector RJ45

#### SMA

Sunny Island 4.4M, 6.0H, 8.0H, 4548-US,  
6048-US.  
Part # LFP-CCRD-SMA  
Slot 0, Connector RJ45

#### Studer Innotec

Xcom-CAN compatible devices.  
Part # LFP-CCRD-STDR  
Slot 0, Connector RJ45

#### Schneider Electric

Xanbus enabled devices.  
Part # LFP-CCRD-XNBS  
Slot 0, Connector RJ45

#### Morningstar - Pending

TriStar MPPT 600V,  
TriStar MPPT 60V.  
Part # LFP-CCRD-MGSTR  
Slot 0/1, Connector Phoenix

#### MidNite - Pending

Part # LFP-CCRD-MDNT  
Slot 0/1, Connector RJ11

#### Outback Power - Pending

Skybox.  
Part # LFP-CCRD-OBS  
Slot 0, Connector RJ45