

*Rolls*

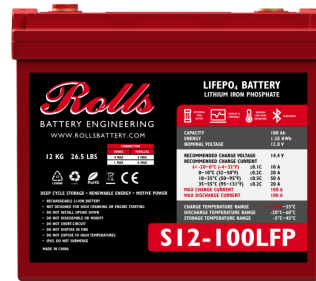
LITHIUM BATTERY RANGE

## R-SERIES



R12-100LFP

## S-SERIES



S12-100LFP

## GOLF & LIGHT EV



R48-105EV-LFP A

## S-SERIES 48V LFP ESS



S48-100LFP ESS

## CONTENTS

01. R-SERIES

08. GOLF & LIGHT EV

04. S-SERIES

10. S-SERIES 48V LFP ESS

## R - SERIES LFP

Rolls high performance 12V & 24V R-Series Lithium-Iron- Phosphate (LiFePO<sub>4</sub>) batteries provide a compatible drop-in SLA replacement with fast charging/discharging capability, compact case design, up to 48V connectivity, and are up to 50% lighter than equivalent lead-acid battery models.

Offered in popular GC2, G31, 4D & 8D case sizes with a range of capacity options, R-Series Motive Power LiFePO<sub>4</sub> batteries allow seamless SLA replacement in a wide range of industrial and recreational vehicles including golf carts, floor scrubbers and scissor lifts.

R-Series 36V & 48V LFP models may be connected up to 6 in parallel for increased capacity.

Rolls R-Series LFP models are backed by a 3-year warranty.

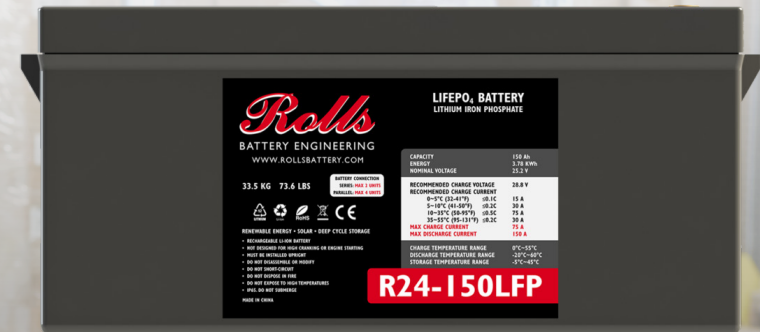
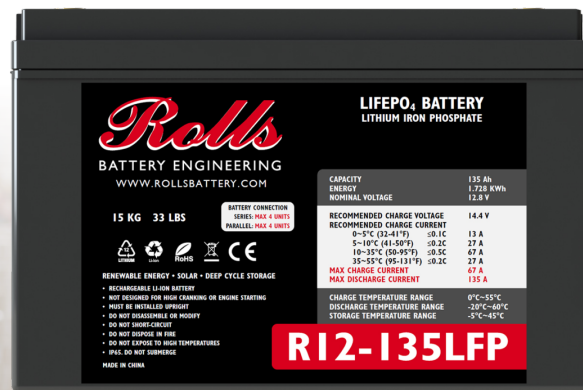
MODEL	VOLTAGE	RATED CAPACITY (Ah)	RATED CAPACITY (kWh)	TERMINAL TYPE	LENGTH MM	WIDTH MM	HEIGHT MM	WEIGHT KG
12 VOLT								
R12-100LFP	12.8V	100	1.28 kWh	M8	260mm	170mm	211mm	11.5kg
R12-135LFP	12.8V	135	1.728 kWh	M8	330mm	173mm	219mm	15kg
R12-150LFP	12.8V	150	1.92 kWh	M8	330mm	173mm	219mm	15.5kg
R12-200LFP	12.8V	200	2.56 kWh	M8	490mm	171mm	243mm	22kg
R12-300LFP	12.8V	300	3.84 kWh	M8	521mm	267mm	223mm	33kg
R12-450LFP	12.8V	450	5.76 kWh	M8	521mm	267mm	220mm	45kg
24 VOLT								
R24-50LFP	25.6V	50	1.28 kWh	M8	260mm	170mm	211mm	12kg
R24-100LFP	25.6V	100	2.56 kWh	M8	490mm	171mm	243mm	22kg
R24-150LFP	25.6V	150	3.84 kWh	M8	521mm	267mm	223mm	33.5kg
24 VOLT - FRONT TERMINAL								
R24-64LFP-FT	25.6V	64	1.64 kWh	FT	395mm	110mm	243mm	13kg
R24-72LFP-FT	25.6V	72	1.84 kWh	FT	552mm	110mm	288mm	16kg
R24-76LFP-FT	25.6V	76	1.95 kWh	FT	552mm	110mm	288mm	17kg
36 VOLT								
R36-52LFP	38.4V	52	2.00 kWh	M8	330mm	173mm	219mm	16.5kg
R36-60LFP	38.4V	60	2.30 kWh	M8	330mm	173mm	219mm	17kg
R36-65LFP	38.4V	65	2.50 kWh	M8	330mm	173mm	219mm	17kg
R36-100LFP	38.4V	100	3.84 kWh	M8	521mm	238mm	221mm	31kg
R36-120LFP	38.4V	120	4.61 kWh	M8	521mm	238mm	221mm	33kg
48 VOLT								
R48-32LFP	51.2V	32	1.64 kWh	M8	260mm	180mm	273mm	13.8kg
R48-35LFP	51.2V	35	1.79 kWh	M8	260mm	180mm	273mm	15kg
R48-90LFP	51.2V	90	4.61 kWh	M8	521mm	267mm	223mm	34kg
R48-105EV-LFP-A	51.2V	105	5.38 kWh	M8	404mm	324mm	250mm	45kg
R48-105EV-LFP-B	51.2V	105	5.38 kWh	M8	519mm	250mm	265mm	45kg

## R-SERIES SAFETY & CERTIFICATION

- Built-in Battery Management System (BMS)
- Cylindrical LiFePO4 cells (UL1642)
- IEC62133 (cell), IEC62619(cell), ROHS (cell)
- UN38.3 (cell/pack)
- CE system certification
- IP65 Rating

## R-SERIES FEATURES

- Cylindrical LiFePO4 cells
- Standard-size (BCI) ABS container for easy VRLA AGM replacement
- Lightweight, compact design with standard M8 terminal
- Fast charge/discharge performance
- Battery Management System (BMS) for balanced charging & protections
- Bluetooth connectivity & dedicated Rolls LFP Connect App
- Connect in series for 48V system configuration with up to 4 parallel strings, and up to 6 in parallel with no series connection
- 6000 cycles @ 80% DOD, 3000 cycles @ 100% DOD
- 3 year warranty



# R - SERIES LFP

BMS PROTECTIONS	
Short-Circuit Protection	
Over-Voltage Protection	
Low-Voltage Protection	
Over-Current Protection	
Low-Temperature Protection	
Over-Temperature Protection	
Balance Protection	

OPERATING TEMPERATURE RANGE	
CHARGE	0°C (32°F)~55°C (131°F)
DISCHARGE	-20°C (-4°F)~60°C (140°F)
STORAGE	-5°C (23°F)~45°C (113°F)

CONNECTION		
MODEL	SERIES	PARALLEL
12V MODELS	4	4
24V MODELS	2	4
36V MODELS	1	6
48V MODELS	1	6

- Connect up to 6 batteries in parallel, if no series connection is used
- If series connected, a maximum of 4 batteries may be connected in parallel
- Can be connected in series up to 48V

\*Refer to Rolls R-Series & S-Series Drop In LFP Battery Operating Manual for detailed instructions.



## S - SERIES LFP

Adding to the performance, features and operating protections of the R-Series LFP models, the new S-Series 12V, 24V & 48V LFP drop-in replacements incorporate a number of additional features and capabilities including an integrated screen with controls, visual state-of-charge indication, external fuse access and heating for cold temperature operation.

Rolls S-Series LFP models are backed by a 5-year warranty.

MODEL	VOLTAGE	RATED CAPACITY (Ah)	RATED CAPACITY (kWh)	BCI	TERMINAL TYPE	LENGTH MM	WIDTH MM	HEIGHT MM	WEIGHT KG
12 VOLT									
S12-100LFP	12.8V	100	1.28 kWh	24	M8	266mm	177mm	235mm	12kg
S12-135LFP	12.8V	135	1.728 kWh	31	M8	332mm	171mm	227mm	15.5kg
S12-150LFP	12.8V	150	1.92 kWh	31	M8	332mm	171mm	227mm	16kg
S12-200LFP	12.8V	200	2.56 kWh	49	M8	505mm	185mm	243mm	23kg
S12-300LFP	12.8V	300	3.84 kWh	8D	M8	522mm	268mm	240mm	34kg
24 VOLT									
S24-50LFP	25.6V	50	1.28 kWh	24	M8	266mm	177mm	235mm	12.5kg
S24-100LFP	25.6V	100	2.56 kWh	49	M8	505mm	185mm	243mm	23.5kg
S24-150LFP	25.6V	150	3.84 kWh	8D	M8	332mm	268mm	240mm	34.5kg

Product measurements & weights are calculated based on sample data. Height includes terminal & fuse holder. To enable fuse and case access, battery maximum dimensions have increased. However, product footprints match the R-Series equivalent case sizes. Individual specifications are subject to vary due to the manufacturing process.



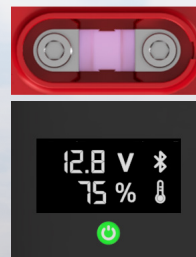
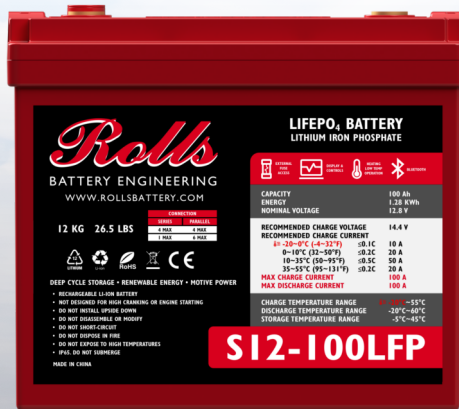
## S-SERIES SAFETY & CERTIFICATION

- Built-in Battery Management System (BMS)
- Cylindrical LiFePO4 cells (UL1642)
- IEC62133 (cell), IEC62619(cell), ROHS (cell)
- UN38.3 (cell/pack)
- CE system certification
- IP65 Rating

## S-SERIES FEATURES

R-Series LFP voltage, capacity, features & operating protections, plus;

- Display with visual state-of-charge (SOC) indicator & integrated controls
- Internal heating for  $-20^{\circ}\text{C}(-4^{\circ}\text{F})\sim 0^{\circ}\text{C}(32^{\circ}\text{F})$  charging
- Bluetooth connectivity & dedicated Rolls LFP Connect App
- External fuse access
- Connect in series for 48V system configuration with up to 4 parallel strings, and up to 6 in parallel with no series connection
- 6000 cycles @ 80% DOD, 3000 cycles @ 100% DOD
- 5 year warranty



- Display & Integrated Controls
- Visual State-of-Charge (SOC)
- External Fuse Access
- Internal Heating

## S-SERIES LFP

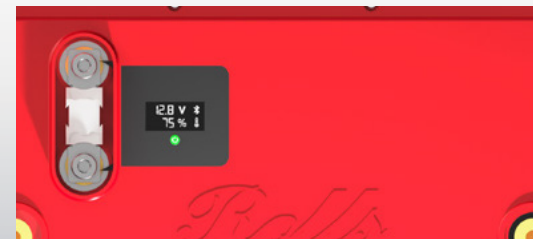
BMS PROTECTIONS	
Short-Circuit Protection	
Over-Voltage Protection	
Low-Voltage Protection	
Over-Current Protection	
Low-Temperature Protection	
Over-Temperature Protection	
Balance Protection	

CONNECTION		
MODEL	SERIES	PARALLEL
12V MODELS	4	4
	1	6
24V MODELS	2	4
	1	6

- Connect up to 6 batteries in parallel, if no series connection is used
- If series connected, a maximum of 4 batteries may be connected in parallel
- Can be connected in series up to 48V

\*Refer to Rolls R-Series & S-Series Drop In LFP Battery Operating Manual for detailed instructions.

OPERATING TEMPERATURE RANGE	
CHARGE	*-20°C (-4°F)~55°C (131°F)
DISCHARGE	-20°C (-4°F)~60°C (140°F)
STORAGE	-5°C (23°F)~45°C (113°F)



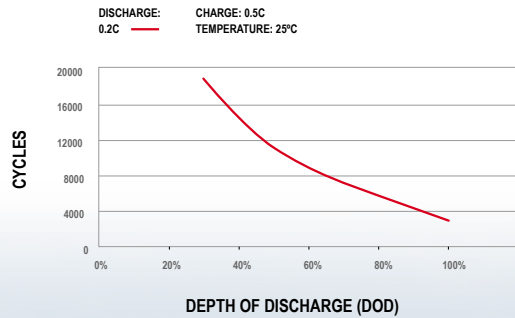


# R-SERIES & S-SERIES LFP - FEATURES & BENEFITS

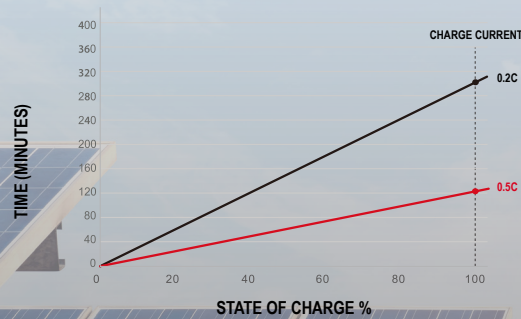


## R - SERIES & S - SERIES LFP

### CYCLE LIFE VS DEPTH OF DISCHARGE @ 25°C



### CHARGE TIME 0.2C / 0.5C @ 25°C



FEATURES	R-SERIES LFP	S-SERIES LFP
Built-in BMS with Operating Protections	•	•
Cylindrical Cells	•	•
Improved construction with high current busbar		•
Up to 4 x Series (48V configuration)	•	•
Up to 4 x Parallel	•	•
Up to 6 x Parallel (no series connection)	•	•
Max Continuous Charge / Discharge (.5C / 1C)	•	
Max Continuous Charge / Discharge (1C / 1C)		•
Bluetooth	•	•
Dedicated App	•	•
Integrated Display & Controls		•
Visual SOC Indicator		•
Heating		•
External Fuse Access		•
Removable Cover*		•
Warranty: 36 Months   3-Years	•	
Warranty: 60 Months   5-Years		•

# R48-105EV-LFP A

Rolls high performance R48-105EV-LFP A offers a compact 48V 105Ah battery suitable for golf carts, utility vehicles and automated guided vehicles. Easy installation with minimal modification, quick charge to increase productivity, zero maintenance, light weight, high quality and fully certified LiFePO4 cells.

MODEL	VOLTAGE	RATED CAPACITY (Ah)	RATED CAPACITY (kWh)	BCI	TERMINAL TYPE	LENGTH MM	WIDTH MM	HEIGHT MM	WEIGHT KG
48 VOLT									
R48-105EV-LFP A	51.2V	105	5.38 kWh	-	M8	404mm	324mm	250mm	45kg

Product measurements & weights are calculated based on sample data. Individual specifications are subject to vary due to the manufacturing process.

## SAFETY

- Prismatic LiFePO4 cells (UL1642) (UL2580)
- IEC62133 (cell), IEC62619(cell), UN38.3 (cell/pack)
- ROHS (cell), CE system certification, IP65 Rating

## DESIGN

- Standard-size (BCI) ABS container for easy VRLA replacement
- Fast charge/discharge performance
- Maintenance-free operation
- Bluetooth Connectivity & dedicated IOS & Android App

## BATTERY MANAGEMENT SYSTEM (BMS)

- Integrated hardware BMS inside
- Independent charge & discharge protection
- 48V surge current limits – 300A (30 sec), 500A (3 sec)
- Short-Circuit Protection, Over-Voltage Protection, Low-Voltage Protection, Over-Current Protection, Low-Temperature Protection, Over-Temperature Protection

Container (Outer)	METAL
Handles	Integrated Top Mount
Internal BMS Model	I6S200A
Expected Cycle Life	>6000 @ 80% DOD, >3000 @ 100% DOD
Series Connection	1 UNIT MAX
Parallel Connection	4 UNITS MAX



# R48-105EV-LFP B

## SAFETY

- Prismatic LiFePO4 cells (UL1642) (UL2580)
- IEC62133 (cell), IEC62619(cell), UN38.3 (cell/pack)
- ROHS (cell), CE system certification, IP65 Rating

## DESIGN

- Standard-size (BCI) ABS container for easy VRLA replacement
- Fast charge/discharge performance
- Maintenance-free operation
- Bluetooth Connectivity & dedicated iOS & Android App

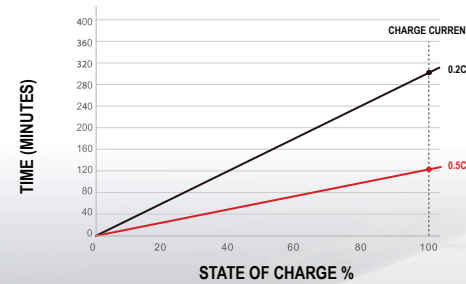
## BATTERY MANAGEMENT SYSTEM (BMS)

- Integrated hardware BMS inside
- Independent charge & discharge protection
- 48V surge current limits – 300A (30 sec), 500A (3 sec)
- Short-Circuit Protection, Over-Voltage Protection, Low-Voltage Protection, Over-Current Protection, Low-Temperature Protection, Over-Temperature Protection

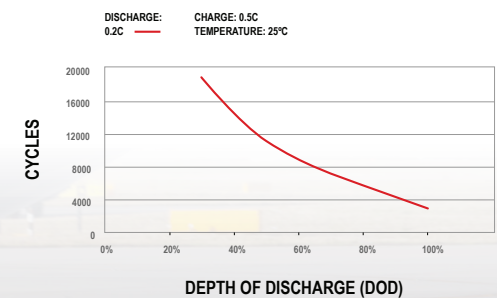
MODEL	VOLTAGE	RATED CAPACITY (Ah)	RATED CAPACITY (kWh)	BCI	TERMINAL TYPE	LENGTH MM	WIDTH MM	HEIGHT MM	WEIGHT KG
48VOLT									
R48-105EV-LFP B	51.2V	105	5.38 kWh	-	M8	519mm	250mm	265mm	45kg

Product measurements & weights are calculated based on sample data. Individual specifications are subject to vary due to the manufacturing process.

CHARGE TIME 0.2C / 0.5C @ 25°C



CYCLE LIFE VS DEPTH OF DISCHARGE @ 25°C



Container (Outer)	METAL
Handles	Integrated Top Mount
Internal BMS Model	I6S200A
Expected Cycle Life	>6000 @ 80% DOD, >3000 @ 100% DOD
Series Connection	1 UNIT MAX
Parallel Connection	4 UNITS MAX

## S-SERIES 48V LFP ESS

Rolls ULI973-certified high performance S48-100LFP ESS offers a compact 48V 100Ah energy storage solution in a 4U case design for installation in standard 19" racking systems. Featuring a customized BMS, primary and secondary operating protections, an integrated display & controls showing real-time state-of-charge and error indication, external breaker access, CAN BUS, RJ485 & PC Connectivity. For increased capacity, up to 16 units may be connected in parallel.

An optional Rolls LFP ESS Cabinet with fully integrated combiner boxes, top-mount connections, locking casters and modular construction for up to eight (8) 2U, 3U or 4U unit installation is also available.

MODEL	VOLTAGE	RATED CAPACITY (Ah)	RATED CAPACITY (kWh)	BCI	TERMINAL TYPE	LENGTH MM	WIDTH MM	HEIGHT MM	WEIGHT KG
48 VOLT									
S48-100LFP ESS	51.2V	100	5.12 kWh	4U	M8	555mm	442mm	173mm	50.5kg

Product measurements & weights are calculated based on sample data. Individual specifications are subject to vary due to the manufacturing process.



## SAFETY

- Cylindrical LiFePO4 cells [ITR26-70/40E 4Ah, 26700] (UL1642) (UL1973\*)
- IEC62133 (cell), IEC62619(cell), UN38.3 (cell/pack)
- ROHS (cell), CE system certification, IP54 Rating

\*Additional certifications may be required for systems larger than 20kWh

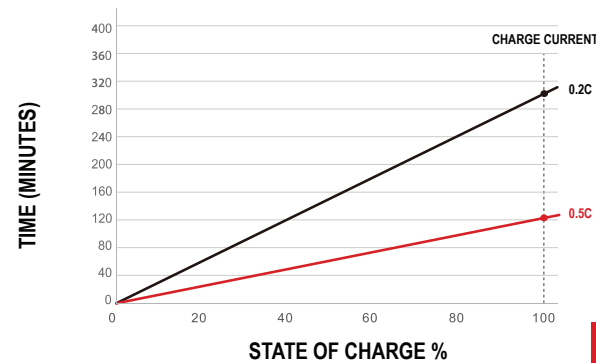
## DESIGN

- 19" 4U rack-compatible
- Up to 16 parallel connectivity
- Integrated screen & controls
- State-of-charge (SOC) indication
- CAN bus & RS-485 connectivity
- External breaker access
- Separate BMS breaker
- PC Connectivity
- Optional Rolls ESS modular cabinet (Install up to 8 units per cabinet)

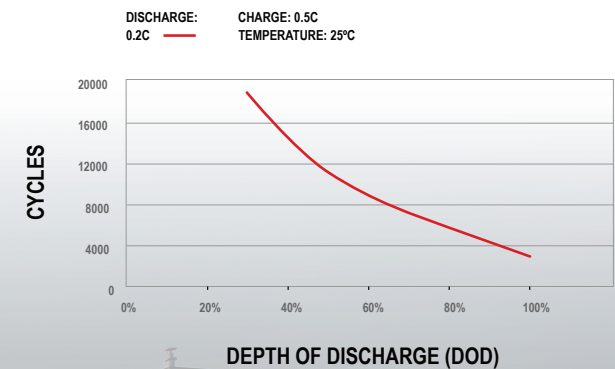
## BATTERY MANAGEMENT SYSTEM (BMS)

- Integrated hardware BMS inside
- Independent charge & discharge protection, secondary protection
- Short-Circuit Protection, Over-Voltage Protection, Low-Voltage Protection, Over-Current Protection, Low-Temperature Protection, Over-Temperature Protection

### CHARGE TIME 0.2C / 0.5C @ 25°C



### CYCLE LIFE VS DEPTH OF DISCHARGE @ 25°C





NOTES

---



---



---



---



---



---



---



---



---



---



---



---



---



---



---

Contact us:

Ecobat Battery  
5 Little Park Farm Road  
Fareham  
Hampshire  
PO15 5SJ

[sales@ecobat.com](mailto:sales@ecobat.com)

[www.ecobatbattery.com](http://www.ecobatbattery.com)

*Rolls*