



smart battery solutions



Battery System

UniPower XL

Data sheet

Smart Battery Solutions GmbH
Lindigstraße 8a | 63801 Kleinostheim, Germany
Fon +49 (0) 60 27 - 99 08 130

[smart-battery-solutions.de](https://www.smart-battery-solutions.de)

General System Information

Identifier/ Name	UniPower XL	UniPower XL+	UniPower XL
Version	48V	48V high capacity	48V-LFP

Electrical data

Cell size	21700	21700	21700
Nominal cell voltage	3,6 V	3,6 V	3,2 V
Nominal cell capacity	5 Ah	5,8 Ah	3 Ah
Serial - Config	14	14	14
Parallel - Config	9	9	9
Nominal voltage	50,4 V	50,4 V	44,8 V
Nominal capacity	45 Ah	52,2 Ah	27 Ah
Nominal energy	2.268 Wh	2.631 Wh	1.210 Wh

Charging (without CAN)

End of charge voltage	58,8 V	58,8 V	51,1 V
Recommended charge current	15 A	8 A	8 A
Max. charge current	25 A	10 A	25 A
Charge temperature range	0-45 °C	0-45 °C	0-45 °C

Discharging

End of discharge voltage	42 V	42 V	28 V
Recommended discharge current			
Max. discharge current	90 A	67,5 A	81 A
Discharge temperature range	-20-60 °C	-20-60 °C	-20-60 °C

Mechanical data

Length	269 mm	269 mm	269 mm
Width	81 mm	81 mm	81 mm
Height	391 mm	391 mm	391 mm
Weight	12,2 kg	12,3 kg	11,6 kg
IP class	65	65	65

Energy density

volumetric energy density	266 Wh/l	309 Wh/l	142 Wh/l
gravimetric energy density	186 Wh/kg	214 Wh/kg	104 Wh/kg

Application

System Voltage	48 V	48 V	48 V
Communication	CAN	CAN	CAN
Connector type	Smart Connector	Smart Connector	Smart Connector
Connector pins	2 Power 10 Signal	2 Power 10 Signal	2 Power 10 Signal

Storage

Recommended temperature range	0-25 °C	0-25 °C	0-25 °C
Recommended state of charge	30-70 %	30-70 %	30-70 %

BMS Functionality

Undervoltage protection	Implemented	Implemented	Implemented
Overvoltage protection	Implemented	Implemented	Implemented
Short circuit protection	Implemented	Implemented	Implemented
Cell balancing	Implemented	Implemented	Implemented
Low energy standby	Implemented	Implemented	Implemented

Standards/ Approval

Transport Test	UN 38.3		
RoHS	compliant	compliant	compliant

General System Information

Identifier/ Name	UniPower XL	UniPower XL
Version	24V	36V

Electrical data

Cell size	21700	21700
Nominal cell voltage	3,6 V	3,6 V
Nominal cell capacity	5 Ah	5 Ah
Serial - Config	7	10
Parallel - Config	18	9
Nominal voltage	25,2 V	36 V
Nominal capacity	90 Ah	45 Ah
Nominal energy	2.268 Wh	1.620 WH

Charging (without CAN)

End of charge voltage	29,4 V	42 V
Recommended charge current	15 A	15 A
Max. charge current	25 A	25 A
Charge temperature range	0-45 °C	0-45 °C

Discharging

End of discharge voltage	21 V	30 V
Recommended discharge current		
Max. discharge current	90 A	90 A
Discharge temperature range	-20-60 °C	-20-60 °C

Mechanical data

Length	269 mm	269 mm
Width	81 mm	81 mm
Height	391 mm	391 mm
Weight	12,2 kg	9,7 kg
IP class	65	65

Energy density

volumetric energy density	266 Wh/l	190 Wh/l
gravimetric energy density	186 Wh/kg	167 Wh/kg

Application

System Voltage	24 V	36 V
Communication	CAN	CAN
Connector type	Smart Connector	Smart Connector
Connector pins	2 Power 10 Signal	2 Power 10 Signal

Storage

Recommended temperature range	0-25 °C	0-25 °C
Recommended state of charge	30-70 %	30-70 %

BMS Functionality

Undervoltage protection	Implemented	Implemented
Overvoltage protection	Implemented	Implemented
Short circuit protection	Implemented	Implemented
Cell balancing	Implemented	Implemented
Low energy standby	Implemented	Implemented

Standards/ Approval

Transport Test		
RoHS	compliant	compliant