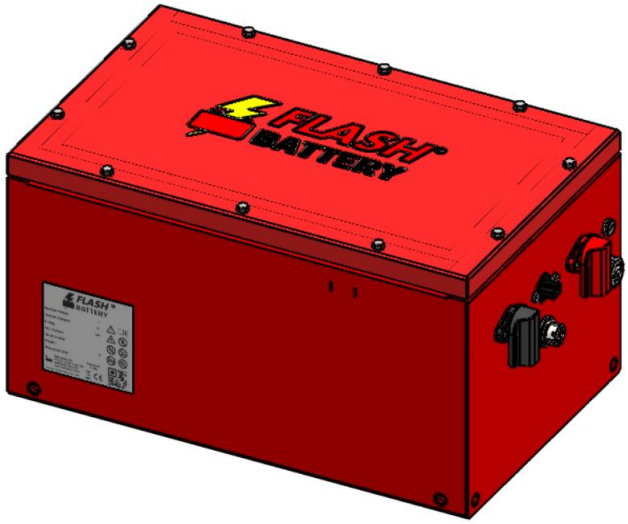
GENERAL INFORMATIONS	
Product Code	KBP0521001



1 Basic Informations

Nominal voltage	51.2	**V**
Nominal capacity	105	**Ah**
Chemistry type	LFP - Lithium iron phosphate (LiFePO4)	**-**
Maximum voltage	59.2	**V**
Minimum voltage	44	**V**
Discharge current	Constant: 105	**A**
Single Battery or system	Peak (t 60sec.): 210	**A**
Max. charging current	50	**A**
Depth of Discharge (DOD)	80	**%**
Max. regen voltage	56	**V**
Max regen Current	210	**A**
Total energy	5.38	**kWh**
Available energy (@80% DOD)	4.30	**kWh**
Operative temperature	-10°C / +45°C	
Self-discharge	3% / month @25°C	
	18% / month @50°C	

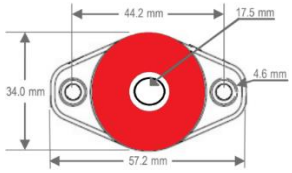
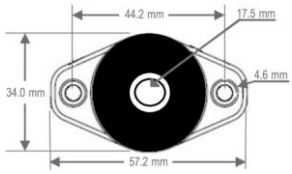
The working temperatures indicates a range within which the battery operates most efficiently not a working limit.

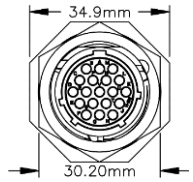
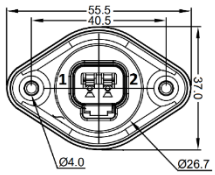
2 Mechanical Specifications

MECHANICAL DATASHEET						
Dimensions	L	510	**mm**		Material	Simple carbon steel
	W	320	**mm**		RAL	3002 - RED
	H	275	**mm**		External finish	Paint
Estimated weight*		55	**Kg**		IP grade	IP65

**Real weight will be indicated in User Manual.*

3 Connectors Specifications

POWER INTERFACES (KBP Side)			
Image	ID	Model	Use
	A	Rebling RED	Charge/Discharge
	B	Rebling BLACK	Charge/Discharge

SIGNALS INTERFACES (KBP Side)			
Image	ID	Model	Use
	D	Amphenol Ecomate 19P	Signals
	C	Amphenol AT-2	CAN Line

4 Devices included & Settings

OPTIONAL INCLUDED
Heating system

SETTINGS				
Baud rate CAN 1 (NOT isolated,Charger)			250	kbps
Termination CAN 1 (NOT isolated)	X	Yes		
		No		
Baud rate CAN 2 (isolated, *Vehicle*)			250	kbps
Termination CAN 2 (isolated)		Yes		
	X	No		
Battery Node ID			0x00	
Controller Node ID			-	
Battery Charger communication protocol			Zivan RE	
Working priority in Charge Mode			Charge	

5 System Functioning

FUNCTIONALITIES
DISCHARGE It necessary to close the DISCH.MODE (pin A) on the COM MODE V+ (pin B) of the signals connector (D) to power on the Battery and enable the discharge of the MASTER unit. When Battery is powered on, it starts to send information to the machine on the CAN line. It is mandatory to monitor the **STOP** signal (refer to CAN protocol specification for details). The Battery can raise the STOP signal to protect itself from extreme situations (very low value of Status Of Charge, high temperature value, low voltage value), when it happens the machine has to cut the power absorption within 30s, if this will not happen the Battery will open main contactor. Machine can prevent this final event following the **Power Reduction Ratio** signal on CAN line. Through this signal [0-100%] the Battery continuously suggests to the machine if a limitation of the nominal power absorption is needed. The Battery can also receive regeneration current during discharge mode. Regeneration current must be managed through the **Recovery Reduction Ratio** signal [0-100%] on CAN line which provides the percentage of recovery current allowed. There is also a bit **(AUX Generator Enable)** that helps to manage regeneration, this bit is raised when Recovery Reduction Ration is >75%. It's anyway important to limit the regeneration current when the voltage reaches the max value. **CHARGE** To charge the Battery follow these steps: • Connect the Battery to the Battery Charger • Connect the Battery Charger to the dedicated CAN line • Power on the Battery Charge The Battery Charger will start to communicate with the Battery through CAN line, it will power on the Battery that is now able to start charging phase. During charging phase, the STOP signal is raised on the CAN line. The entire charging process is managed between the Battery and the Battery Charger. PLEASE ALWAYS REFER TO USER MANUAL FOR OTHER DETAILS ON BATTERY WORKING MODES. USER MANUAL WILL BE ANNEX TO THE BATTERY. ***Note: using the battery outside the operating characteristics described in this document or removing the warranty seals will invalidate the agreed warranty conditions (24 months + 2 months for installation).***

4 General Information

Handling	Handling must be performed using the devices supplied (eyebolts or brackets). Refer to the Mechanical file attached.
Fixing	The battery should be fixed using the threaded insert or the brackets indicated in the Mechanical file.
Positioning	The battery must be leveled (±5°) with the top up. Avoid direct exposure to sunlight, heat sources or elements. Batteries are not to be stacked temporary or permanently.
Ventilation (if it is present)	If present, a ventilation system requires additional aspects to be considered while housing the battery: **Spacing:** The vents spout requires a 5-10cm distance from surrounding surfaces and filter spouts requires 4-5cm. **Reach:** Filters needs to be replaced each 3 months, or monthly if required hence, the spouts should be easily accessible. **Housing:** The housing should allow the battery to cycle air by exchanging it with the outer environment. Ensure that the airflow is not looping inside the housing and the intake air quality is good and fresh.
Flash Parallel (if it is present)	**Flash Parallel configuration:** The Instructions for configuration of the system, are available on *SM0000049_Flash Parallel SW Installation Guide* (attached with SDF documents) **External MCR:** follow the electrical connections present on SCL wiring diagram
Cleaning	The battery does not require any special cleaning. **In any case, do not use pressurized water jets directly on connectors and terminals.**
Disconnection	The disconnection sequence must be followed to preserve the battery. The sequence described below reduces the risk of damage due to excessive potential differences. 1. Disconnect the communication cables. 2. Disconnect the power connections.
Normal activity	The battery should be fully recharged at least once a week. Please note that full charging ensures complete cell balancing.
Full discharge	Charging at working temperatures is recommended if the battery is discharged, SOC (0%). Partial charging at least above the SOC reduction limit is recommended to reactivate battery functions. Contact only qualified personnel for further assistance if the battery does not switch on because it is completely discharged.

ACCESSORIES AND COUNTERPARTS

Counterparts_Power and Signal Interfaces (Machine Side)

CONNECTOR	CODE CONSTRUCTOR	CODE FLASH BATTERY	QUANTITY
(D-E) Cabl. Segnal. Add. Ecomate 19P M-Superseal 6P F		Wiring code : P14241	1
(E) Conn. Superseal 6P M	Connector code: 282108/1	Connector code: C12302	1
	Contact code : 183036-1	Contact code : C12304	6
	Wire seal code : 281934-4	Wire seal code : C12305	6
(A2-B2) REMA DIN320 PLUG	50mmq connector code : 95500-01	50mmq connector code : C12344	1
	AUX1 contacts code: 75596-00	AUX1 contacts code: C12374	1
(A3-B3) Conn. ANDERSON SB50 GRIGIO	Connector code: 6319G1	Connector code: C12777	1
DISPLAY	Code Display : Display D100 Flash Battery 125Kbps	Code Display : F02003	1
	Connector code: 39-01-2060	Connector code: C12219	1
	Contact code: 39-00-0038	Contact code: C12250	6

THE COUNTERPARTS ARE NOT INCLUDED IN THE BATTERY SUPPLY AND THEY MUST BE ORDERED SEPARATELY

APPENDIX

STP0000001_SCL_001
STP0000001_00_MEC_00
[STD]KCP002_REV.022_CAN Messages – CUSTOMER
[STD]KCP002_BBS2Vehicle_rev15.dbc
[STD]KCP001EN_REV.005_BBS-CAN protocol specifications
[STD]KER001EN_REV.030_BBS-Error List

APPROVAL

Rev number	001		
Flash Battery date	09/01/2025	Customer date	
Flash Battery reference	**Alan Pastorelli**	Customer reference	