

Smart LEX Battery System

Exista
POWER SUPPLIES



- Lithium Ionen Battery System

P1 12V 3300mAh

P2 12V 6600mAh

P3 12V 9900mAh

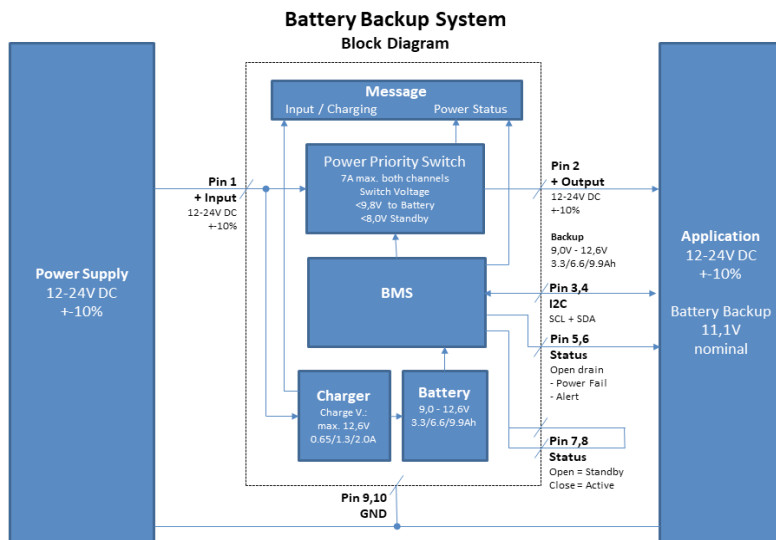


highest efficiency, technical know how, flexibility

Lithium Ionen Battery System

Long life time Battery Power System

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Your Benefits

- High flexibility - through modular applications
- Maximum operational reliability - through integrated battery management,
- Long life time - 10 years battery life time under regular conditions
- Compact design - in DIN rail or desktop housing
- Integrated charging and communication function
- Custom configurations possible

Quality Standard

The battery systems are subject to strict quality inspections. They are certified to UN38.3 „transport regulations for lithium batteries“ and CE. Tests include, altitude simulation, thermal test, vibration, and drop test.

Battery Management System (BMS)

Batteries in Lithium-Ion technology must be constantly monitored electronically to ensure the safe use and protect the cells from damage. This function takes the battery management system (BMS).

Maximum safety and long-term availability

through continuous self tests and intelligent electronic management.

- Measurement of the cell voltage, temperature and cell current
- Monitoring of the safe operating condition
- Shutdown when exceeding the maximum values
- Enable data logging to a later diagnosis
- Align the state of charge of the cells by „intelligent balancing“
- Enables the extraction of the maximum energy while preserving battery life

Communication function

Transmission of the system state through I2C interface.

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Technical Data

General

Application	Power fail system
Kapazität typical	3300 / 6600 / 9900 mAh
Input Voltage	12.0V - 24.0V DC +-10%
Output Voltage Normal	12.0V - 24.0V DC +-10%
Output Voltage Battery	9.0V - 12.6V DC
Input current Normal	max. 7.0A
Input current Charging	max. 0.65A / 1.3A / 2.0A
Output current Normal	max. 7.0A
Output current Battery	max. 2.0A / 2.0A / 4.0A
Power Switch [usv]	Include
BMS	Include
Charger	Include
Charging cycles	max. 300 within 10 years
Lifetime	min. 10 years
Class	IP20
Working temperature	0°C - +50°C
Communication	I2C interface
Certification	UN 38.3 CE, RoHS

Housing

DIN rail system

Size [LxBxH]

48 x 89 x 80 mm [3300mAh]
48 x 89 x 80 mm [6600mAh]
67 x 89 x 80 mm [9900mAh]

Material

Aluminum

Color

Aluminium nature

Weight

370 / 500 / 700 gr

Options

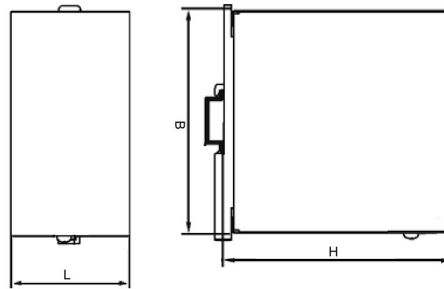
Certification UL

Size [mm]

LxBxH: 48 x 89 x 80 [3300mAh]

LxBxH: 48 x 89 x 80 [6600mAh]

LxBxH: 67 x 89 x 80 [9900mAh]



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Size [mm]



Input Voltage [V]



Output Voltage Bat. [V]



Capacity [mAh]



Articel No:



48 x 89 x 80

10.8V - 26.4V DC

11.1V DC

3300mAh

LEX-BAT-33148-AI-1

48 x 89 x 80

10.8V - 26.4V DC

11.1V DC

6600mAh

LEX-BAT-66248-AI-1

67 x 89 x 80

10.8V - 26.4V DC

11.1V DC

9900mAh

LEX-BAT-99367-AI-1

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Electrical Characteristics

Item	Content	Criteria [each cell]		
		3300mA	6600mA	9900mA
Over Charge Protection	Over charge detection voltage	4.20±0.05V		
	Detection delay time	1.0±0.5S		
	Over charge release voltage	4.10±0.050V		
Over Discharge Protection	Over discharge detection voltage	2.95±0.05V		
	Detection delay time	2±0.5S		
	Over discharge release voltage	3.10±0.05V		
	Shut down voltage	2.95±0.05V		
Over Current Protection	Maximum Continuous Current	1.0A	1.0A	1.0A
	Over current detection current	4.0A ±1A	4.0A ±1A	4.0A ±1A
	Detection delay time	1.0±0.5S		
Short Circuit Protection	Detection condition	Exterior short circuit		
	protection	YES		
	Release condition	Cut short circuit		
Interior Resistance	Main loop electrify resistance	≤100mR		
Current consumption	static power consumption	≤1000uA		
	power consumption of over-discharge protection	≤350 uA		
	Shut down current consumption	≤10 uA		
	NTC	R-L50-10KR-B3435±1% -50° to +90°	-	

PIN Function

PIN	Description	Function
1	+ Input	Input for Charging and Application Main Power
2	+ Output	Output Power from Power supply or battery backup
3	SCL	Communication Interface I2C Clock line
4	SDA	Communication Interface I2C Data line
5	Power Fail	Power Fail Signal (0-3.3V max) Power Fail = 0 [low level] Power Normal = 1 [high level]
6	Alert	Alert Signal (0-3.3V max) Battery Electric Quantity < 15% = 0 [low level] Battery Electric Quantity ≥ 15% = 1 [high level]
7	Active / Shutdown	PIN7 and PIN8 bridging: - Battery is ACTIVE - All functions available
8		Pin7 and Pin8 open: - Battery is STANDBY - MCU under hibernation - battery cannot output - charging function available
9	GND	GND
10	GND	

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LED Indicator Function

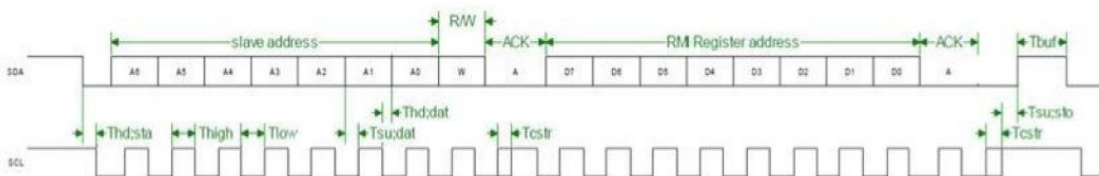
LED	Description	Function	LED Status
1	- External power supply - Battery charging indication	Power Fail	OFF
		Normal Power, internal battery voltage $\geq 11.1V$	ON
		Normal Power, internal battery voltage $< 11.1V$	Flashing
2	- Battery output indication	Standby	OFF
		Active: Battery voltage $< 9V$	OFF
		Active: Battery voltage $> 9V$ and battery electric quantity < 15	Flashing
		Active: Battery electric quantity $\geq 15\%$	ON

I2C Communication

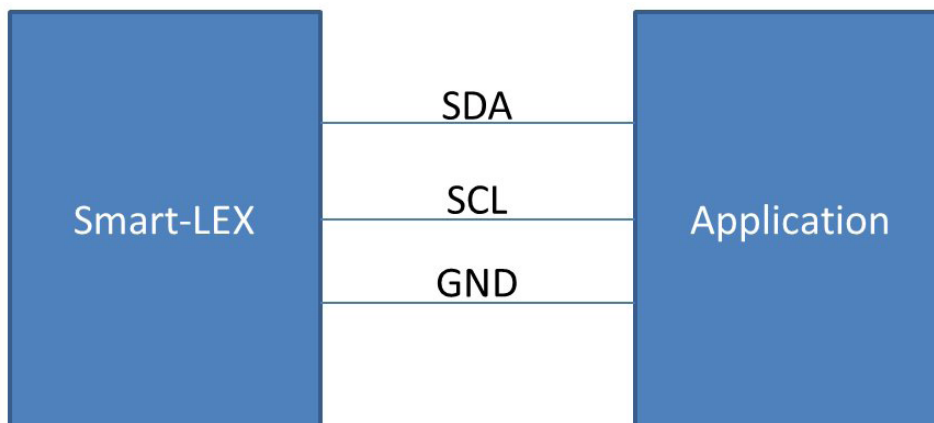
- Slave / MCU operating voltage 3.3V [max 3.6V]
- IO Withstand the maximum voltage 3.6V
- Maximum transmission speed 100Kbps
- Msb first high and low

I2C Wave form

- Thd:30uS
- Read time interval is greater than 2ms



I2C Communication Layout



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I2C Transfer Content Definition

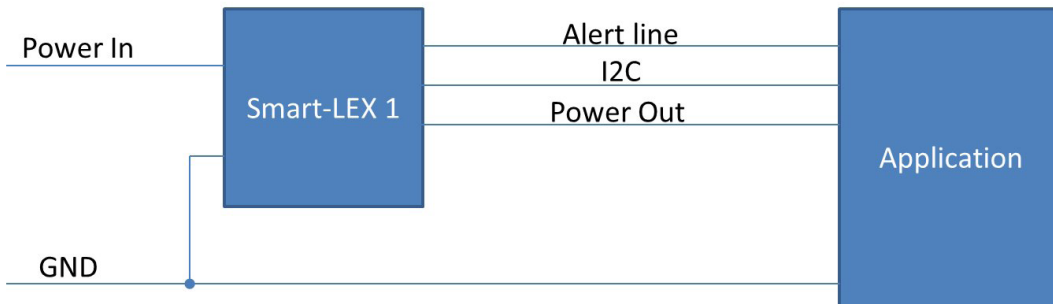
No:	Item	Content	Value	Note	
0	Byte0	Address + Write	0x52	Address 0x52, Write Command	
1	Byte1	Command	0x05	Command	
2	Byte2	Address+ Read	0x53	Address 0x52, Read Command	
3	Byte3	Bit0	-	0	Reserve
		Bit1	-	0	Reserve
		Bit2	-	0	Reserve
		Bit3	AE Hardware protection: Over-current protection, over-voltage protection, over-charged protection, ...	0 1	Normal Alarm
		Bit4	OCD Over-current protection	0 1	Normal Alarm
		Bit5	OCC Over charging current protection	0 1	Normal Alarm
		Bit6	LV Over-discharge protection	0 1	Normal Alarm
		Bit7	HV Over-charged protection	0 1	Normal Alarm
4	Byte4	Bit0	LTC1 Low temperature charging alarm, 5°C	0 1	Normal Alarm
		Bit1	LTC2 Low temperature charging alarm, 0°C	0 1	Normal Alarm
		Bit2	HTC1 High temperature charging alarm, 50°C	0 1	Normal Alarm
		Bit3	HTC2 High temperature charging alarm, 55°C	0 1	Normal Alarm
		Bit4	LTD1 Low temperature discharging alarm, -10°C	0 1	Normal Alarm
		Bit5	LTD2 Low temperature discharging alarm, -20°C	0 1	Normal Alarm
		Bit6	HTD1 High temperature discharging alarm, 60°C	0 1	Normal Alarm
		Bit7	HTD2 High temperature discharging alarm, 65°C	0 1	Normal Alarm
5	Byte5	Bit0	CVUV Discharging MOS status, discharging MOS	0 1	Prohibit Enable
		Bit1	CVOV Charging MOS status, charging MOS	0 1	Prohibit Enable
		Bit2	Charging / Discharging	0 1	Charging Discharging
		Bit3	SS There is no FLASH DATA in the system, and always be 0	0	No Flash data
		Bit4	CAL There is no OUTSIDE in the system and always be 0	0	No Outside
		Bit5	-	0	Reserve
		Bit6	VDQ	0 1	Electric quantity constant Electric quantity updated
		Bit7	ENPCHG Pre-charge MOS-enabled	0 1	Prohibit Enable
6	Byte6	Day	0x20	0x01 to 0x31	
7	Byte7	Month	0x07	0x01 to 0x12	
8	Byte8	Year [HB]	0x20	0x00 to 0x99	
9	Byte9	Year [LB]	0x17	0x00 to 0x99	
10	Byte10	Article [HB]	0x92	0x00 to 0x99	
11	Byte11	Article [MB]	0x03	0x00 to 0x99	
12	Byte12	Article [LB]	0x14	0x00 to 0x99	
13	Byte13	Checksum		= Byte3+Byte4+...+Byte12 [Modul 256]	

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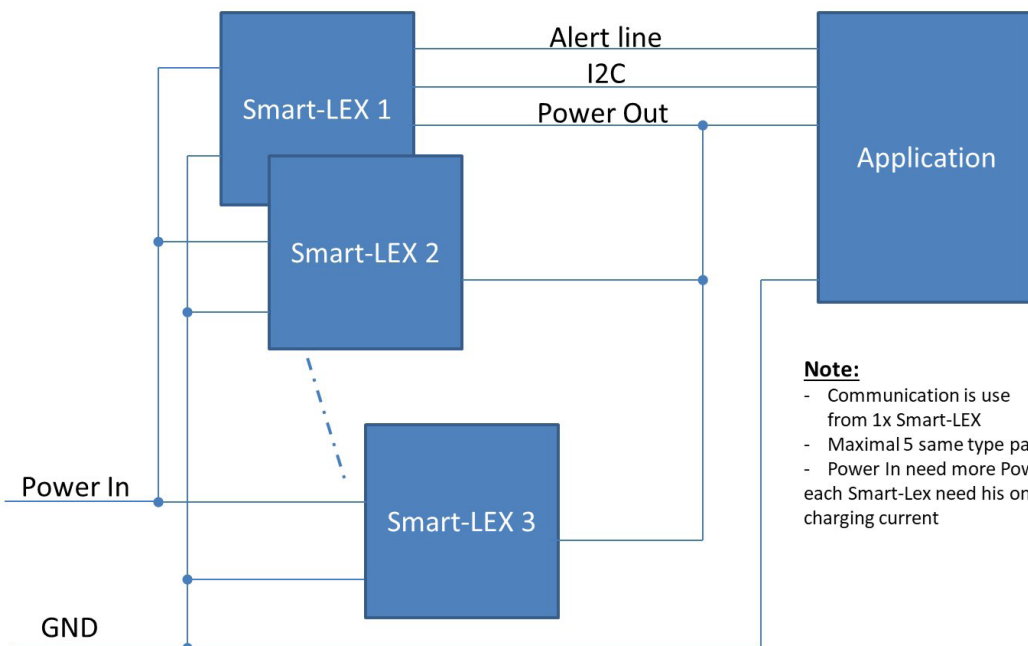
Standard Application



Note:

- Power In need more power
Smart-LEX charging current + application current

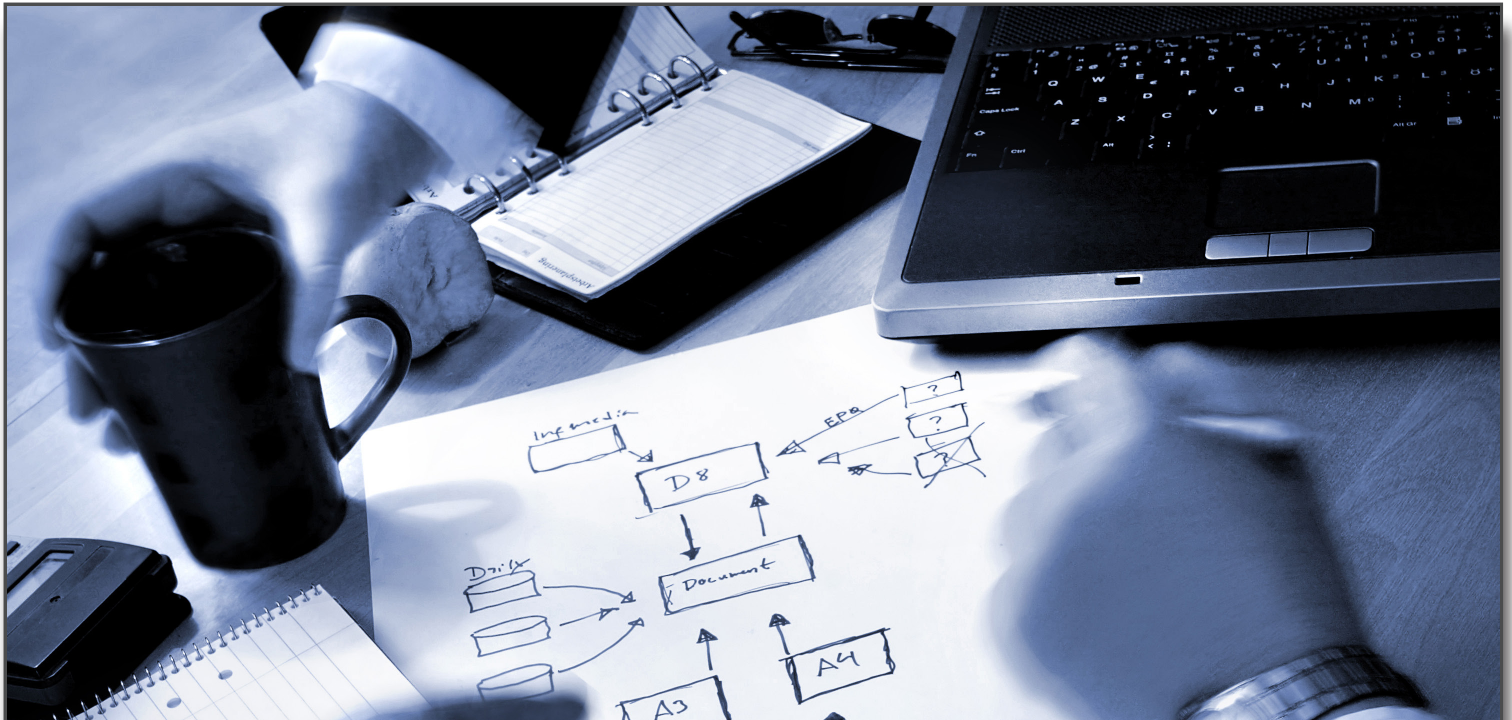
Parallel Application



Note:

- Communication is use from 1x Smart-LEX
- Maximal 5 same type parallel
- Power In need more Power each Smart-Lex need his one charging current

HIGH-END DESIGN



Arrange your free consultation

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