

1. Products covered by this installation instructions

SP48-29-50S-C, SP48-29-100S-C, SP48-22-80S-C, SP48-22-80-C, SP48-22-100S-C,
SP48-33-100S-SC, SP48-33-100-SC

2. Notice and warnings



Read the manual!

- ▶ When installing the product, follow the User Guide or Quick Installation Guide every time.
- ▶ When working with connection of the battery power poles, use tools with insulated handles.
- ▶ Remove rings, wristwatch and articles of clothing with metal parts that may come into contact with the battery terminals.
- ▶ Only use Incell provided CAN 2.0 Cable and Bus Terminators.



Electrical Hazard

- ▶ The batteries are supplied in a charged condition and are capable of extremely high short circuit currents. Take care to avoid short-circuiting terminals of opposite polarity. Accidental shorting of terminals or cables can result in severe electrical arcing, causing burns and electric shock to nearby personnel.
- ▶ This Battery Module is available only in parallel applications. Do not use in serial applications.!
- ▶ Systems that are not in use shall be turned off.



Warning: Risk of fire, Battery explosion hazard

- ▶ Do not disassemble.
- ▶ Do not intentionally short circuit the Battery Module.
- ▶ Do not expose or use the Battery Module in temperatures higher than what is specified for the product.

3. First aid measures

▶ General information:

The following first aid measures are required only in case of exposure to interior battery components after damage of the external battery casing.

Undamaged, closed cells do not represent a danger to the health.

▶ After inhalation

Ensure of fresh air. Consult a physician.

▶ After contact with skin

In case of contact with skin wash off immediately with plenty of water. Consult a physician.

▶ After contact with eyes


Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Seek medical treatment by eye specialist.

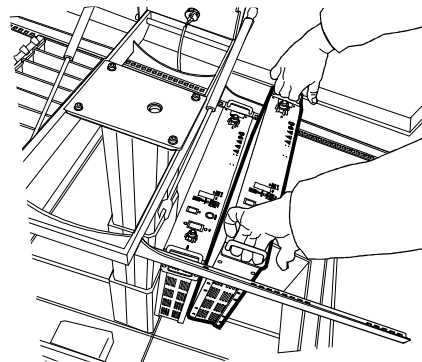
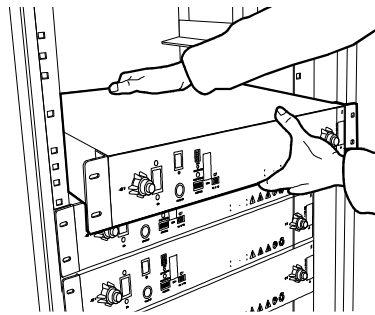
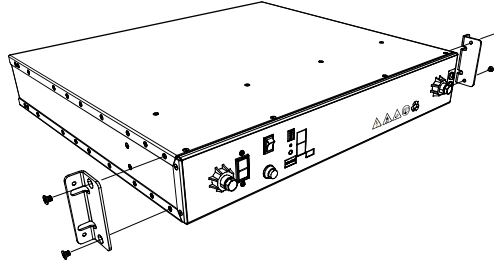
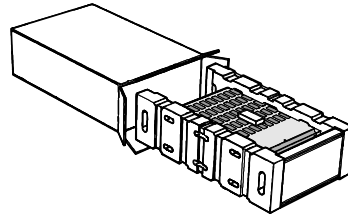
▶ After ingestion

Drink plenty of water.

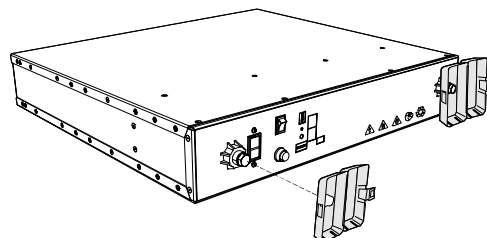
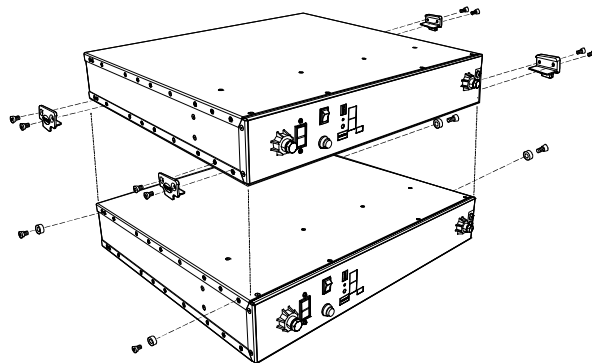
Call a physician immediately.

4. Installation

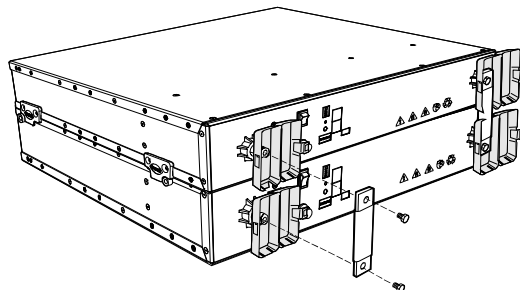
1. Unpack the product. Check that all ordered parts are included in the delivery and take care of the packaging material.  Do not unpack the product in warehouse and transport without package to site.
2. Before installing the unit to any rack, ensure the correct position of the mounting brackets, front, mid or rear depending on your specific requirements.
The mounting brackets shall be installed to the side of the unit using the attached M5 X 6mm screws.
Handles can as an option be mounted on the brackets for easier handling of the product.
3. Fit the batteries into the rack, fasten the Battery unit to the 19/23" rail



4. If the batteries are to be placed on top of each other without racks or rails, INCELL Stacking Kit should be used.
5. Mount the contact protectors on the + and – terminals on each battery.

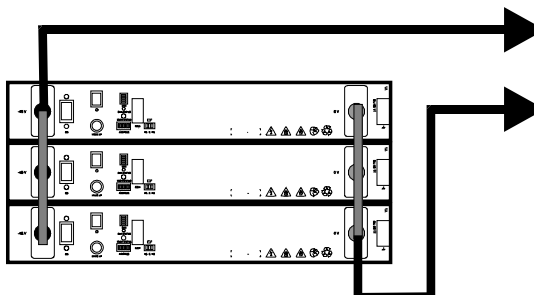


6. Use the DC Bus bars on positive and negative terminal to connect two or more batteries into one battery group. The Incell Bus bars are fitted for installation with no space between the battery units. For installation with other distances, use cabinet specific Bus bars or cables.



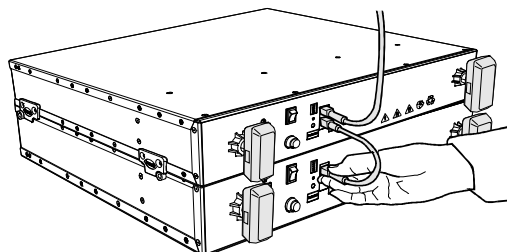
7. Connect battery cables from the power system (charger) to the battery group; -48V to battery -48V at the top of the group, positive cable to the 0V terminal on the bottom battery.

(Make sure the Battery Circuit Breaker is in the OFF position)



8. Attach the communication cable between all the batteries. Cable contains CANbus for internal communication and MODbus for external communication.

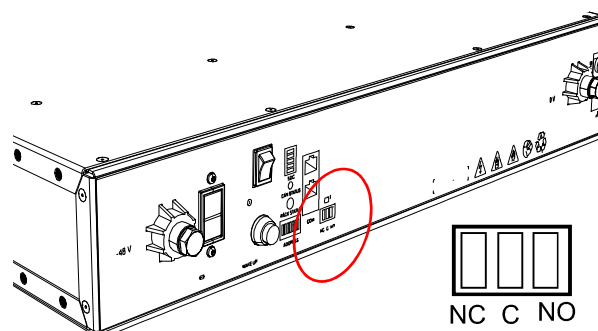
Mount BUS TERMINATOR on the last battery.



9. Set the address to all the batteries according to figures to the right:

	Pin	1	2	3	4	5	6	7
Battery 14	Up		2	3	4			
	Down	1				5	6	7
Battery 13	Up	1		3	4			
	Down		2			5	6	7
Battery 12	Up			3	4			
	Down	1	2			5	6	7
Battery 11	Up	1	2		4			
	Down			3		5	6	7
Battery 10	Up		2		4			
	Down	1		3		5	6	7
Battery 9	Up	1			4			
	Down		2	3		5	6	7
Battery 8	Up				4			
	Down	1	2	3		5	6	7
Battery 7	Up	1	2	3				
	Down				4	5	6	7
Battery 6	Up		2	3				
	Down	1			4	5	6	7
Battery 5	Up	1		3				
	Down		2		4	5	6	7
Battery 4	Up			3				
	Down	1	2			4	5	6
Battery 3	Up	1	2					
	Down			3	4	5	6	7
Battery 2	Up		2					
	Down	1		3	4	5	6	7
Battery 1	Up	1						
	Down		2	3	4	5	6	7

10. For dry contact alarm, use INCELL 125-00059, contact female. The alarm can be configured as NO or NC. All Battery modules need to be connected daisy chained.



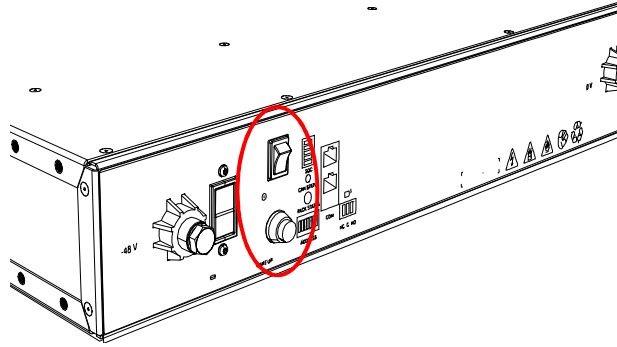
11. Set system voltage according to the chart to the right.

Product name	Charging voltage	
	Float charge	Hybrid/cyclic
SP48-29-50S-C	54,6V	52,0V
SP48-29-100S-C	54,6V	52,0V
SP48-22-80S-C	54,6V	52,0V
SP48-22-80-C	58,8V	56,0V
SP48-22-100S-C	54,6V	52,0V
SP48-33-100S-SC	54,6V	52,0V
SP48-33-100-SC	58,8V	56,0V

12. Start the battery

Make sure the Battery Circuit Breaker in the system is set to ON.

- a. Set all the "POWER" buttons on the system to "ON (1)"
- b. Press "WAKE UP" button on battery (any battery) for 5 seconds, this will start the battery and automatically start the other batteries.



Now the green LED should be lit on all the batteries.

5. LED Indicators and Troubleshooting

SOC LED Bar
5 LEDs on Reported SOC \geq 80% 4 LEDs on 80% > Reported SOC \geq 60% 3 LEDs on 60% > Reported SOC \geq 40% 2 LEDs on 40% > Reported SOC \geq 20% 1 LED on Indicates that the AFE is turned on and 20% > Reported SOC. If the LED is remains lit once the battery has been shut down perform a manual restart and shut down."
"COM status" LED Blue, communication warning. Black (not lit), no communication warning
"Pack Status" LED Green, Normal operation Blinking green, Charge-stop balancing mode Red, Any error condition preventing discharge (DSG alarm) White, Severe internal fault preventing start-up and communication Black (not lit), Shut down or waking up

Problem	Cause	Actions
Blue LED lit on one or several battery modules	CAN communication failure	Check switches, cables and connections
Red LED lit on battery module	No backup power available from battery module	Check circuit breaker and SOC LEDs.
White LED lit on battery module	Internal failure	Call support.

6. Notes

For further information, see the SP48 User Guide, 315-00003.