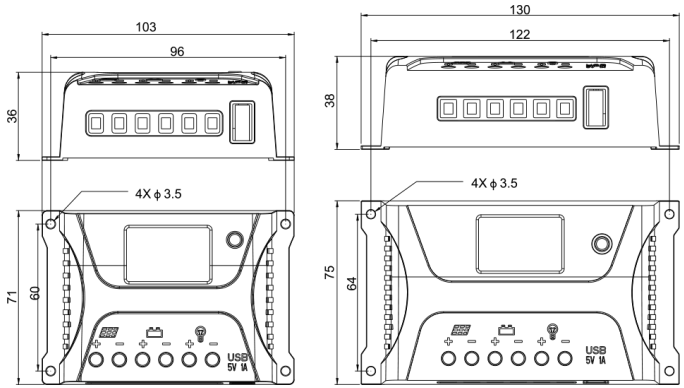
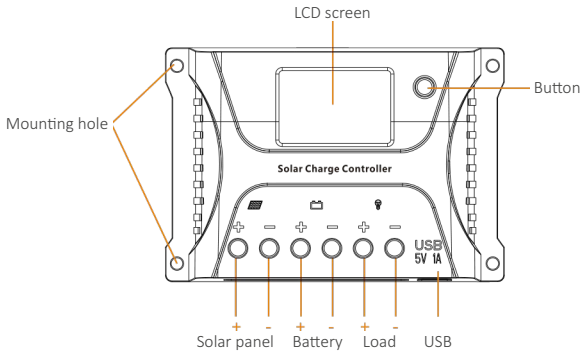
LK-SS2410/2420 Smart Solar Charge Controller



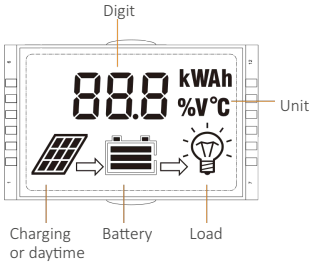
Feature

- 12V/24V system voltages recognized automatically
- A dot matrix graphic LCD screen
- An upgraded 3-stage PWM charging algorithm is adopted
- With temperature compensation employed, charging parameters can be adjusted automatically
- A wide range of load working modes
- Overcharge, over-discharge, overload and short-circuit protection

Front view



LCD screen



Symbol description

LCD icon	Indicated object	Status
	Daytime or charging	On
	Night	Off
	Load short circuit or overload	Quick flashing
	Load on	On
	Load off	Off
	Battery working	On
	Over discharge	Outline flashes only
	Over voltage	Flash

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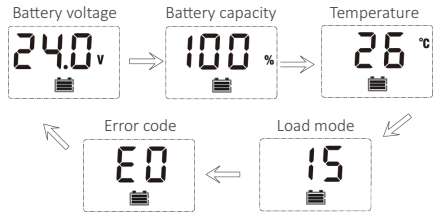
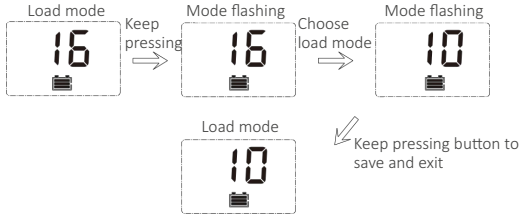
Screen menu

- Each interface automatically plays in a loop with an interval of 3 seconds



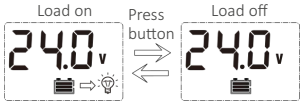
Menu setting

- Keep pressing button to enter the load mode setting, load mode flashes
- Press button to choose the mode you want
- Keep pressing button again to save and exit mode setting
- No operation in 10 seconds to exit automatically



Manual button

- The load mode is 15 (Manual mode), press button to change ON/OFF
- As load is soft start, the load icon will delay to display



Load mode

- Mode 0: Light control only. At night the load will output automatically. At daytime the load will stop output
- Mode 1-14: Light control + time control. At night the load will output automatically. The output time can be set from 1 to 14 hours
- Mode 15: Manual mode. To choose load on/off by button
- Mode 16: Debugging mode. If 6V with light signal, the load will be shut off. If 5V without light signal, the load will output
- Mode 17: Normally on. Load outputs all the time

Digit	Mode
00	Light control only
01-14	Light control + time control (1-14 Hours)
15	Manual mode (Default)
16	Debugging mode
17	Normally on

Error code

Code	Mode
E0	No error
E1	Battery over discharge
E2	Battery over voltage
E4	Load short circuit
E5	Overload
E6	Controller overheat

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Technical data

Model	SS2410	SS2420
Rated current	10A	20A
System voltage	12V/24V auto	
No-load loss	< 10mA/12V, < 10mA/24V	
Max solar input voltage	< 55V	
Max battery output voltage	< 35V	
Over voltage protection	17.0V, x2/24V	
Equalizing charging voltage	14.6V, x2/24V	
Boost charging voltage	14.4V, x2/24V	
Floating charging voltage	13.8V, x2/24V	
Charging recovery voltage	13.2, x2/24V	
Over discharge recovery voltage	12.6V, x2/24V	
Over discharge voltage	11.1V, x2/24V	
Equalizing charging interval	30 days	
Equalizing charging time	1 hour	
Boost charging time	2 hours	
Temperature compensation	-3.0mV/℃/2V	
Equalizing charging interval	Light control on 5V, x2/24V, Light control off 6V, x2/24V	
Light control judgment time	1 minute	
Operating temperature	-25℃~ +55℃	
IP protection class	Ip30	
Protection function	Solar panel short circuit and reverse-connection protection	
	Over-temperature, overload and short circuit protection	
Net weight	100g	160g
Dimension	103*71*36mm	130*75*38mm

Operation instruction

- Connect the battery. If the connection is correct, the controller screen lights up, otherwise check whether the connection is correct
- Connect the solar panel. If sunlight is present and strong enough (the solar panel voltage is greater than battery voltage), the sun icon on the LCD screen is on, otherwise, check whether the connection is correct
- Connect the load. Connect the load leads to the controller's load output terminals, and the current shall not exceed the controller's rated current
- As the controller generates heat during operation, it is recommended that the controller be installed in an environment with good ventilation conditions
- Choose cables with large enough capacity for connection, in case too much loss incurred on the lines causes the controller to misjudge
- The controller has a common positive pole inside. If grounding is needed, ground the positive pole
- It's important to fully charge the battery regularly. At least once full charging every month is recommended, and failure to do that may cause permanent damage to the battery. Only when in-flow energy outpaces out-flow energy can the battery be charged fully. Users shall bear this in mind when configuring the system
- Check whether the controller's each connection terminal is tightened securely, if not, it may suffer damage when there is excessive current

Troubleshooting

Symptom	Solution
LCD screen does not light up	Check the battery connection
Incomplete display or no renewal on LCD screen	The ambient temperature is too low and whether the display recovers when the temperature rises
No charging with sunlight present	Check whether the solar panel is correctly connected contact is good and reliable. Check whether the solar panel voltage falls below the battery voltage.
The battery icon flashes quickly, no output	System overvoltage. Check whether the battery voltage is too high
The battery icon flashes slowly, no output	The battery is over discharged will recover after recharged adequately
The load icon flashes quickly, no output	The load's power exceeds the rated value or the load is short-circuited. After the problem is solved keep pressing the button or wait until it recovers automatically
Other symptoms	Check whether wiring is sound and reliable, system voltage is correctly recognized

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