Smart Glass Control Solutions

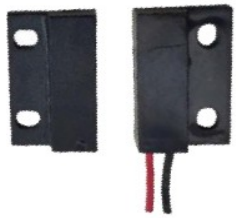
- Basic functions and expanded functions
- Function descriptions and wiring methods
- Precautions during installation

















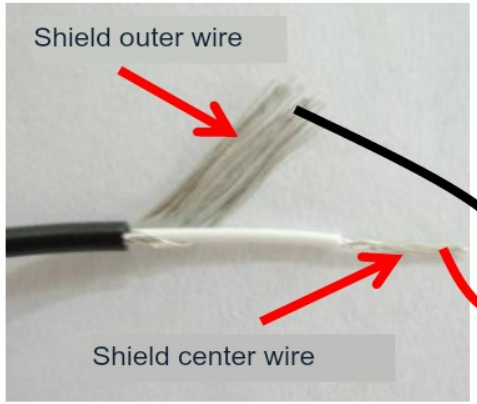
Notes 1

- The live and neutral input voltage must be customized to the local mains standard.
- The output voltage must match the factory configuration of the smart film.
- This solution applies to all standard company power supplies from 20W to 500W.
- All expanded functions build on the basic functions; the O/F port and RF remote provide dual control.
- Always cut the power before installation.
- After installation, ensure the power supply or controller is not enclosed by cable mesh, metal conductors or large metal surfaces; otherwise wireless control may be affected.
- For the shielded wire mentioned in this solution, follow the wiring diagram below — never reverse the connections.

Shielded wire



Wiring diagram





Notes 2

- 5–20W: plug-in power supply



- 30–100W: terminal-block input



- 200–500W: AC plug input



- For 5–20W, plug directly into the live and neutral mains and connect the output to the glass. The low-voltage switch method in this document is not applicable; other expansion methods are fine.

- In the three power supplies at left, the red circles mark the input ports. They apply to all live/neutral disconnect wiring methods in this document; only the connector types differ.

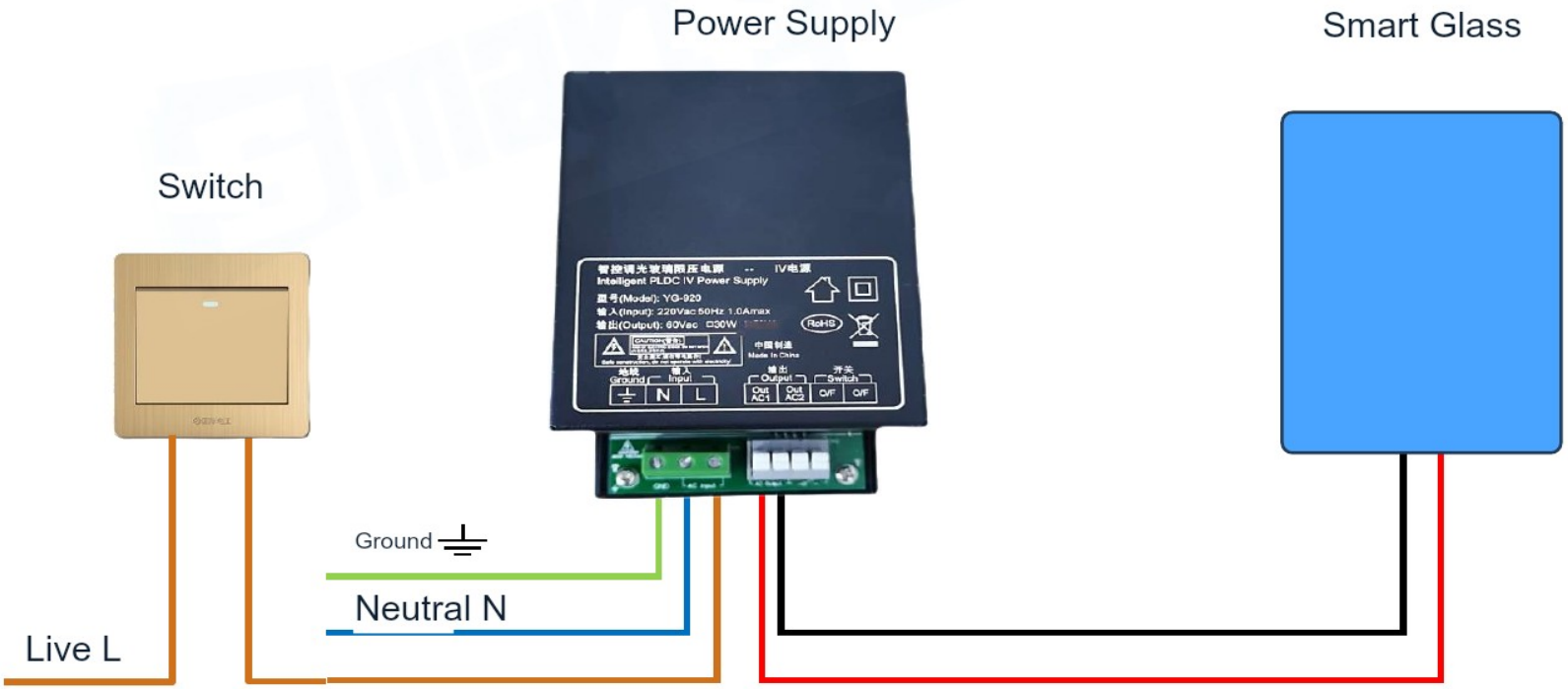
- 200–500W output terminal definitions:



- Output 1 and Output 2 are the two electrodes of the smart film. Because of the high power, each electrode has two terminals to increase current capacity. When wiring, connect only one terminal for Output 1 and one for Output 2.

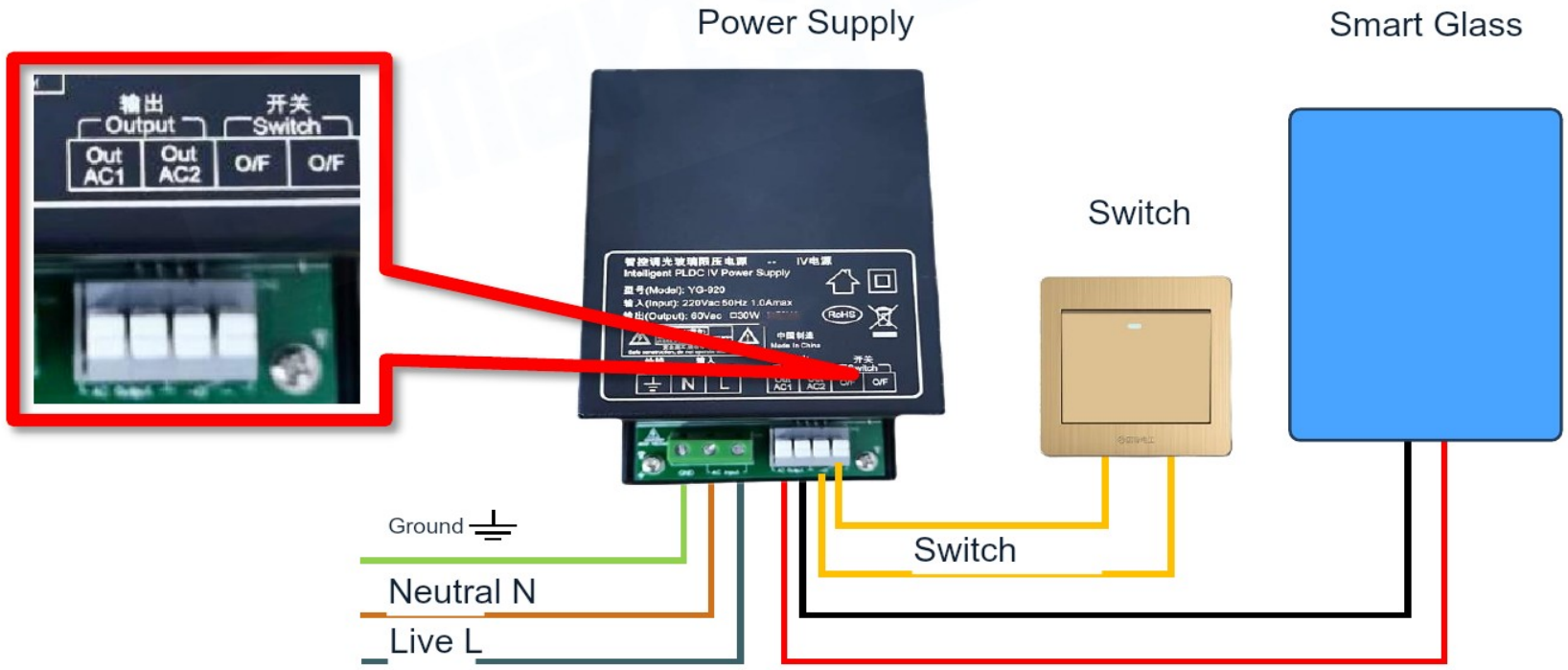
Basic Function 1 — Mains-Wire Control

- Basic function: A wall switch toggles a group of smart glass between clear and frosted.
- Control principle: Disconnect the mains supply.
- Note 1: A remote is not recommended with this method.
- Note 2: When switching with this method, leave the O/F port unconnected.
- Note 3: Never connect any live circuit to the O/F port — only dry contacts, otherwise the board will burn out.
- Accessories: 86-type panel switch (usually supplied by the customer).
- Wiring diagram:



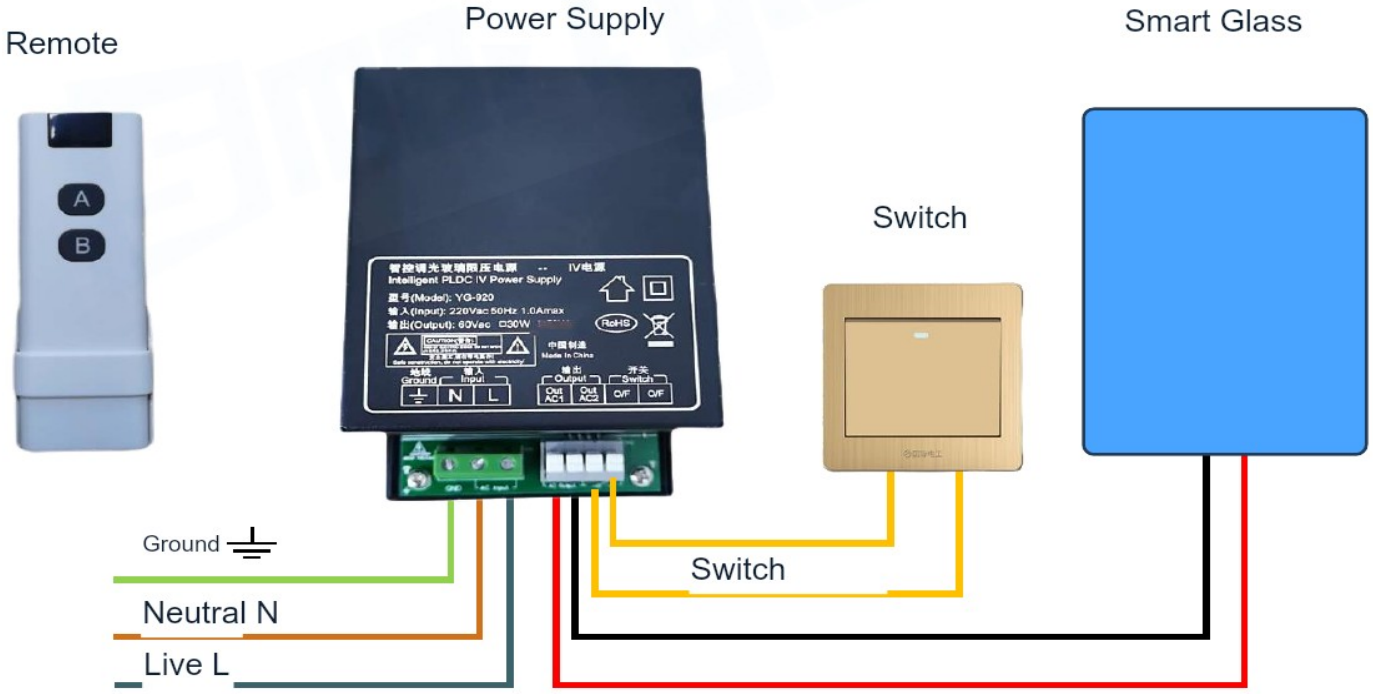
Basic Function 2 — Low-Voltage Wire Control

- Basic function: A wall switch toggles a group of smart glass between clear and frosted.
- Control principle: An internal chip senses the low-voltage signal from the switch.
- Note 1: A remote can be added with this method.
- Note 2: Route the orange wire in a separate cable duct.
- Note 3: Never connect any live circuit to the O/F port — only dry contacts, otherwise the board will burn out.
- Accessories: 86-type panel switch (usually supplied by the customer).
- Wiring diagram:



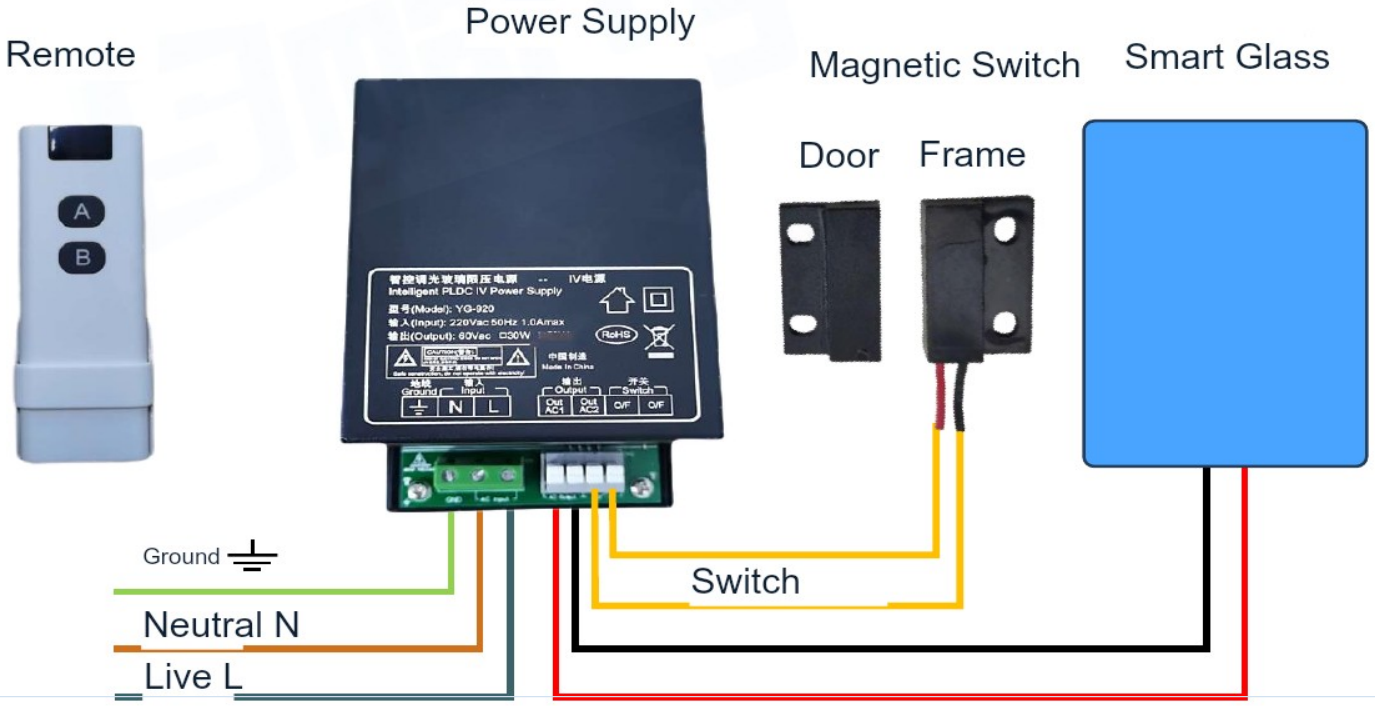
Extended Function 1 — Remote Control

- Basic function: A remote and a wall switch both control a group of smart glass (dual control).
- Control principle: 433.92MHz RF remote + low-voltage wire control.
- Note 1: Do not operate the remote within 3s of power-on. Range is 10 m.
- Note 2: A backup disconnect switch on the mains is recommended; do not use it for routine control.
- Note 3: The orange-wire input can work with the remote or be left open; route it in a separate duct.
- Note 4: Never connect any live circuit to the O/F port — only dry contacts, otherwise the board will burn out.
- Accessories: Remote, 86-type panel switch.
- Wiring diagram:



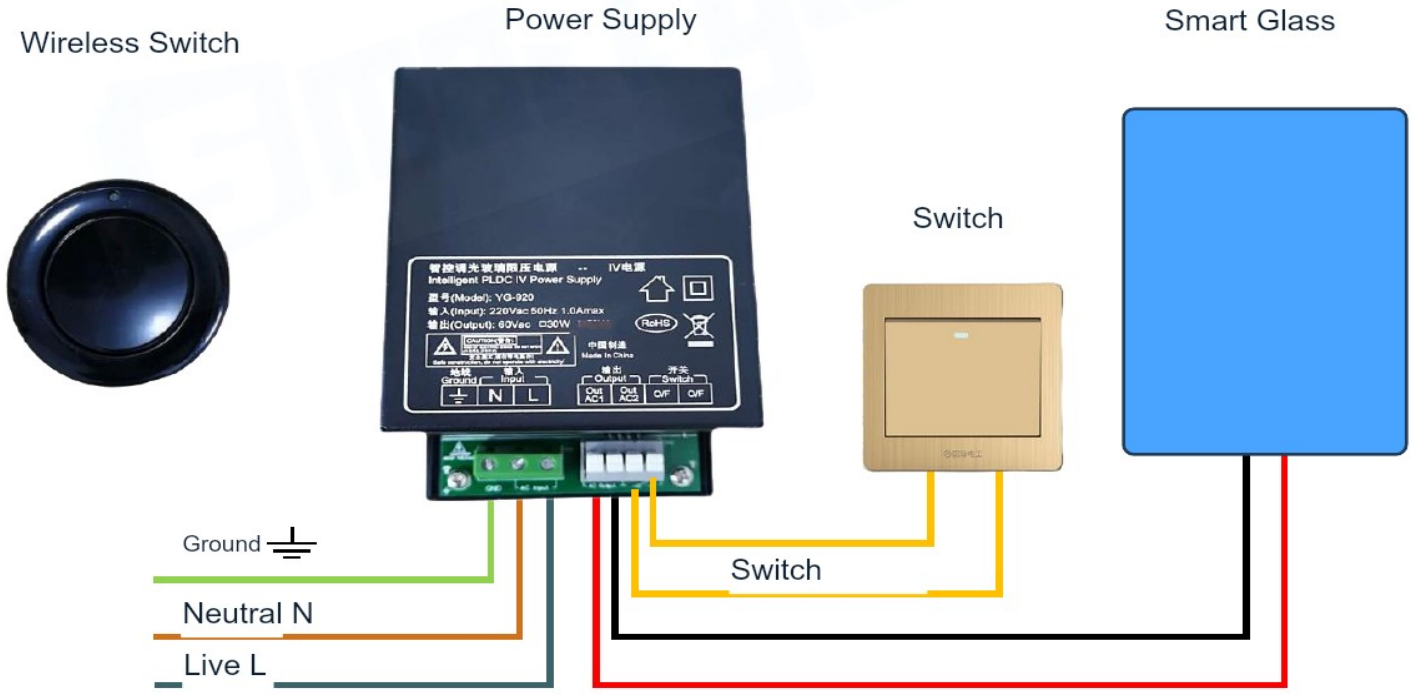
Extended Function 2 — Magnetic Control

- Basic function: A door magnetic sensor toggles a group of smart glass between clear and frosted.
- Control principle: Magnetic switch; the chip detects when the two probes approach or separate.
- Note 1: A remote is not recommended with this method.
- Note 2: Align the probes: gap <5 mm is the sensing zone, >5 mm is outside it.
- Note 3: Route the orange wire in a separate cable duct.
- Note 4: Default: frosted when the door is closed, clear when open.
- Accessories: Remote, magnetic switch (normally used alone without a remote).
- Wiring diagram:



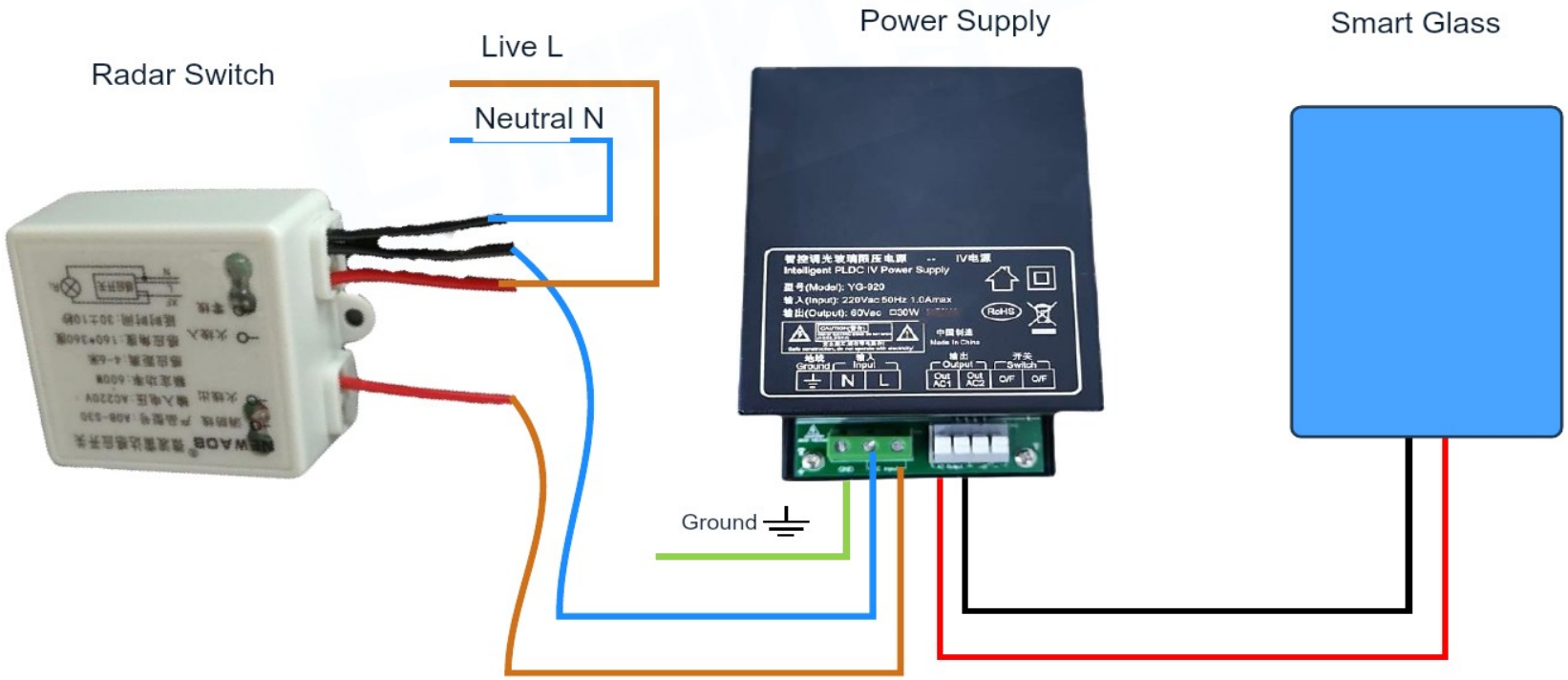
Extended Function 3 — Keyhole Remote Control

- Basic function: A wireless switch and a wall switch both control a group of smart glass (dual control).
- Control principle: 433.92MHz RF remote + low-voltage wire control.
- Note 1: Do not operate the wireless switch within 3s of power-on. Range is 5 m.
- Note 2: A backup disconnect switch on the mains is recommended; do not use it for routine control.
- Note 3: Route the orange wire in a separate cable duct.
- Note 4: Never connect any live circuit to the O/F port — only dry contacts, otherwise the board will burn out.
- Note 5: For bathroom use, install in a ventilated place to keep the circuit dry.
- Accessories: Keyhole wireless switch (pairing differs from the standard manual — consult technical support).
- Wiring diagram: wire control can be left unconnected



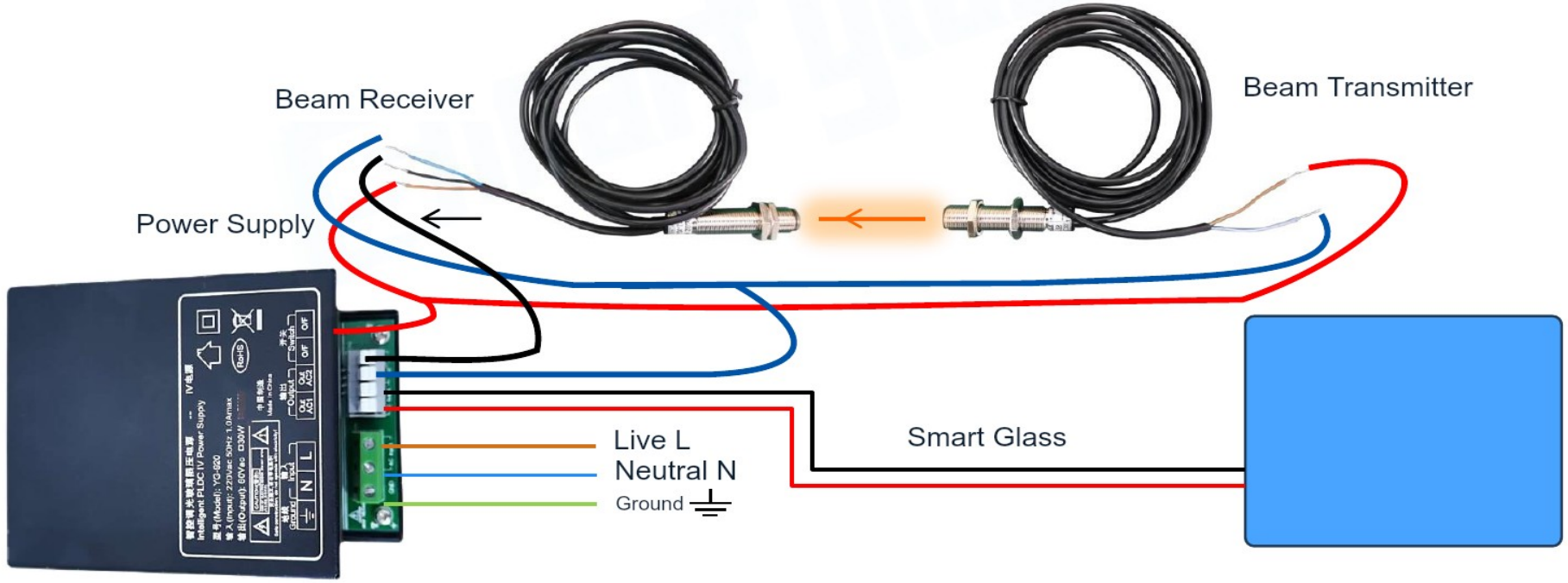
Extended Function 4 — Occupancy Sensor

- Basic function: An occupancy sensor toggles a group of smart glass between clear and frosted.
- Control principle: IR or microwave sensing; movement keeps the trigger active, otherwise it times out.
- Note 1: IR has a sensing angle and cannot penetrate walls; radar can. Hold time is adjustable.
- Note 2: With microwave, avoid moving objects in the sensing area, or the glass cannot be turned off.
- Note 3: Default: clear when occupied, frosted when empty (custom logic can be reversed).
- Note 4: Never connect any live circuit to the O/F port — only dry contacts, otherwise the board will burn out.
- Accessories: Occupancy sensor (IR and radar use the same wiring).
- Wiring diagram: wire control can be left unconnected



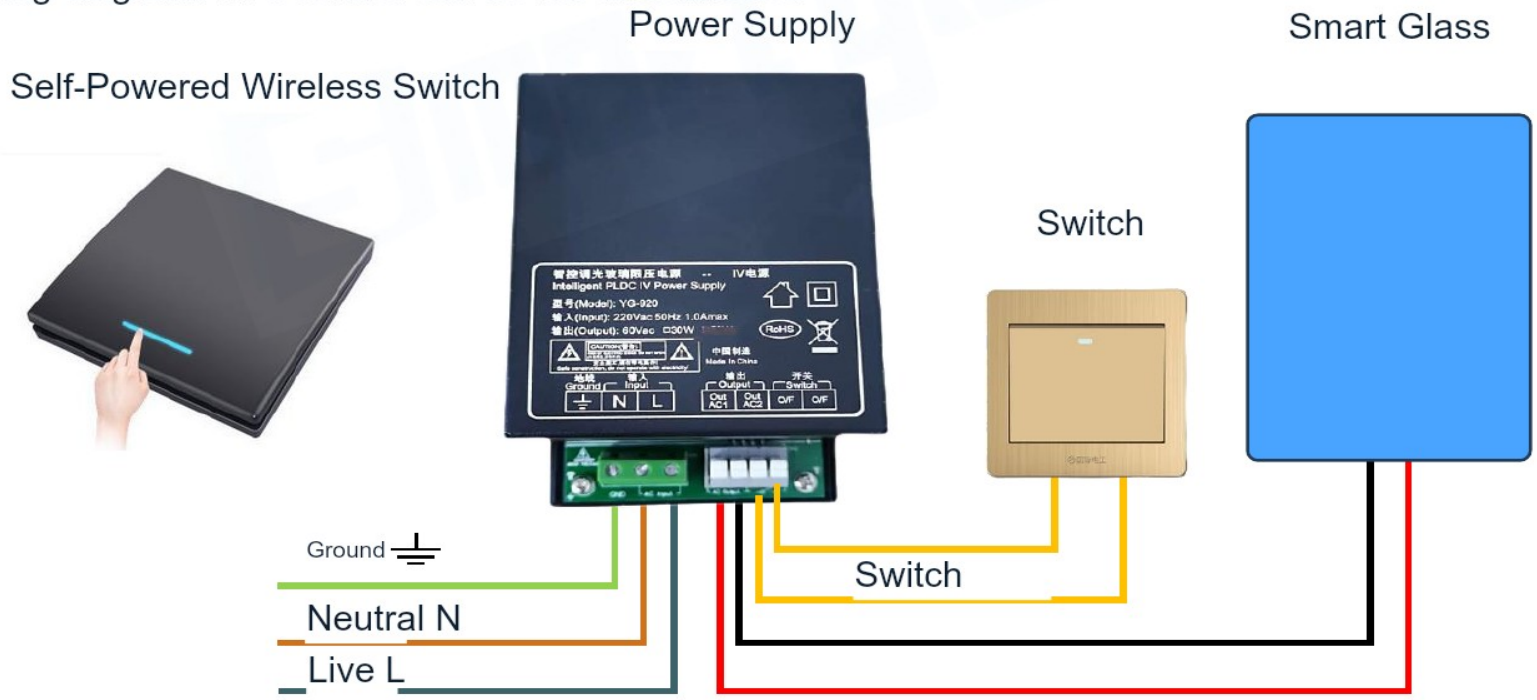
Extended Function 5 — Light-Beam Sensor

- Basic function: A laser beam interrupted by an object toggles a group of smart glass between clear and frosted.
- Control principle: The chip detects the receiver signal when the laser beam is blocked.
- Note 1: The supply provides a 5V red wire; consult technicians if the sensor needs an external supply.
- Note 2: Beam unbroken: frosted on power-on; interrupted beam: clear (custom logic can be reversed).
- Note 3: Route the black wire indicated by the arrow in a separate duct, away from interference cables.
- Accessories: Beam transmitter, beam receiver.
- Wiring diagram:



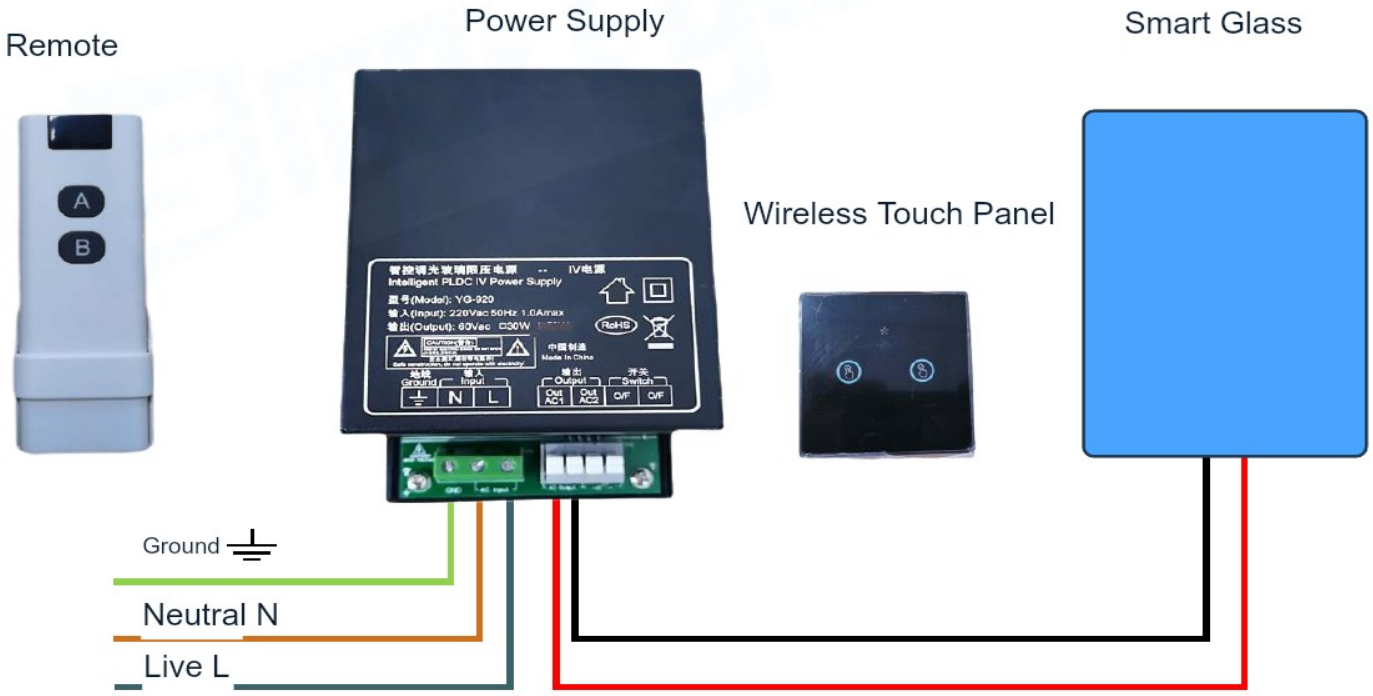
Extended Function 6 — Energy-Saving Wireless

- Basic function: A wireless switch and a wall switch both control a group of smart glass (dual control).
- Control principle: 433.92MHz self-powered RF remote.
- Note 1: Do not operate the self-powered panel within 3s of power-on.
- Note 2: A backup disconnect switch on the mains is recommended; do not use it for routine control.
- Note 3: Route the orange wire in a separate cable duct.
- Note 4: Never connect any live circuit to the O/F port — only dry contacts, otherwise the board will burn out.
- Accessories: Self-powered wireless switch.
- Wiring diagram: wire control can be left unconnected



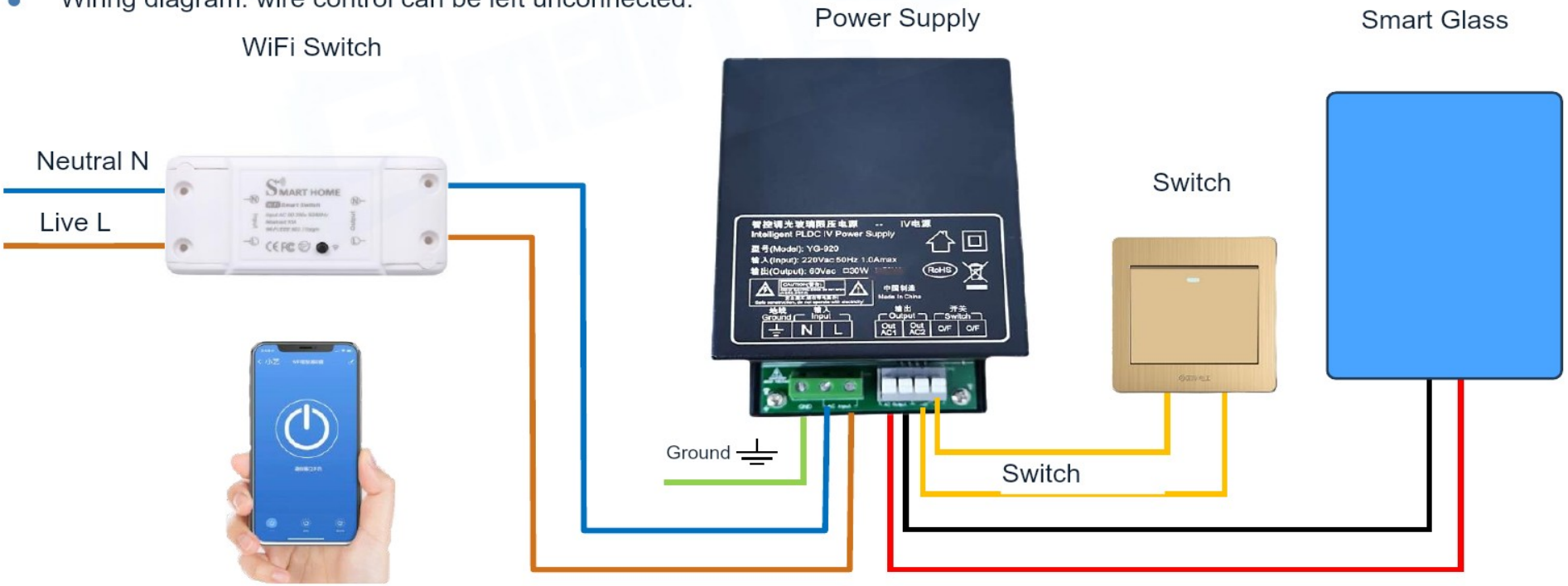
Extended Function 7 — Remote / Touch Control

- Basic function: A remote and a touch panel both control a group of smart glass (dual control).
- Control principle: 433.92MHz RF remote + 433.92MHz RF touch panel.
- Note 1: Do not operate the remote or panel within 3s of power-on.
- Note 2: A backup disconnect switch on the mains is recommended; do not use it for routine control.
- Note 3: Panel battery lasts about 1 year on standby; replace it when depleted.
- Note 4: Never connect any live circuit to the O/F port — only dry contacts, otherwise the board will burn out.
- Accessories: Remote, touch panel.
- Wiring diagram: wire control can be left unconnected



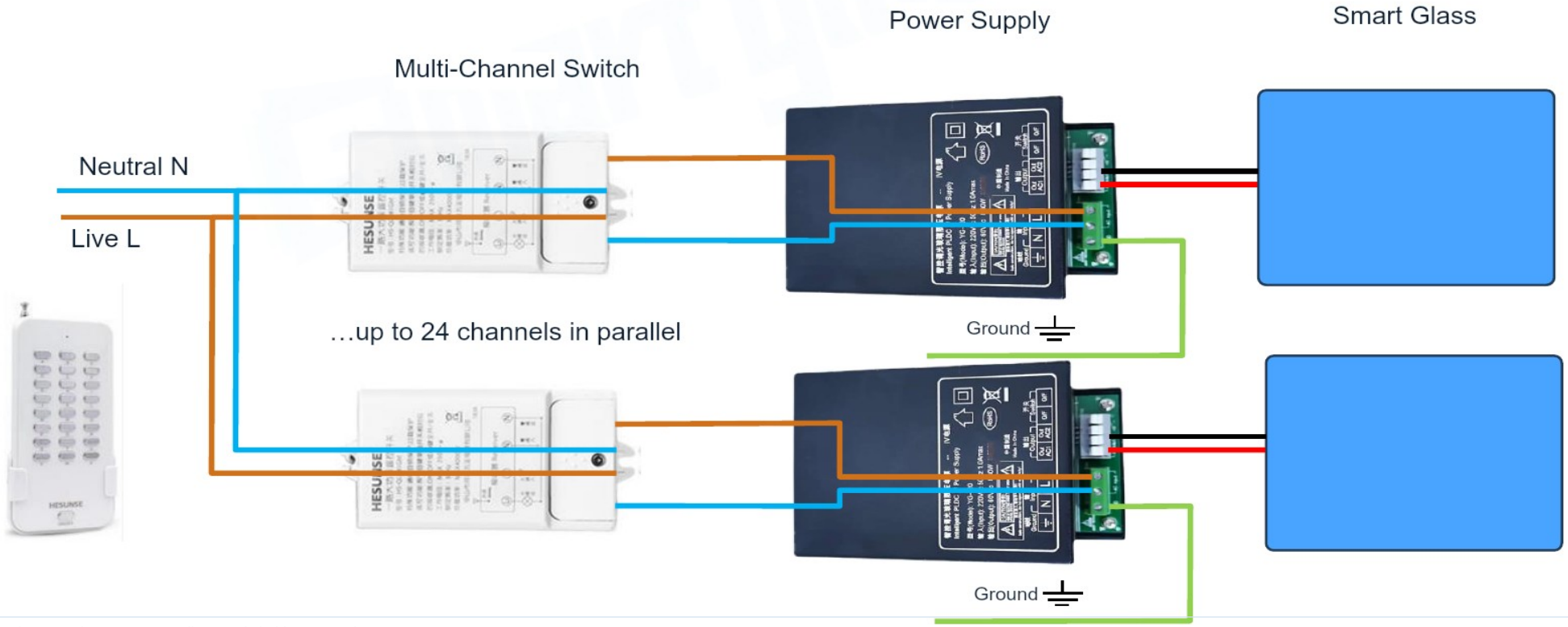
Extended Function 8 — WiFi / Wire Control

- Basic function: A mobile app toggles a group of smart glass between clear and frosted.
- Control principle: 2.4GHz WiFi; app, AP and LAN remote control.
- Note 1: Read the WiFi controller pairing/network setup instructions carefully.
- Note 2: Max WiFi switch load is 500W; do not reverse the switch box input/output.
- Note 3: This switch only pairs with 2.4GHz WiFi; 5GHz is not supported.
- Note 4: Route the orange wire in a separate cable duct.
- Note 5: Never connect any live circuit to the O/F port — only dry contacts, otherwise the board will burn out.
- Accessories: WiFi smart switch.
- Wiring diagram: wire control can be left unconnected.



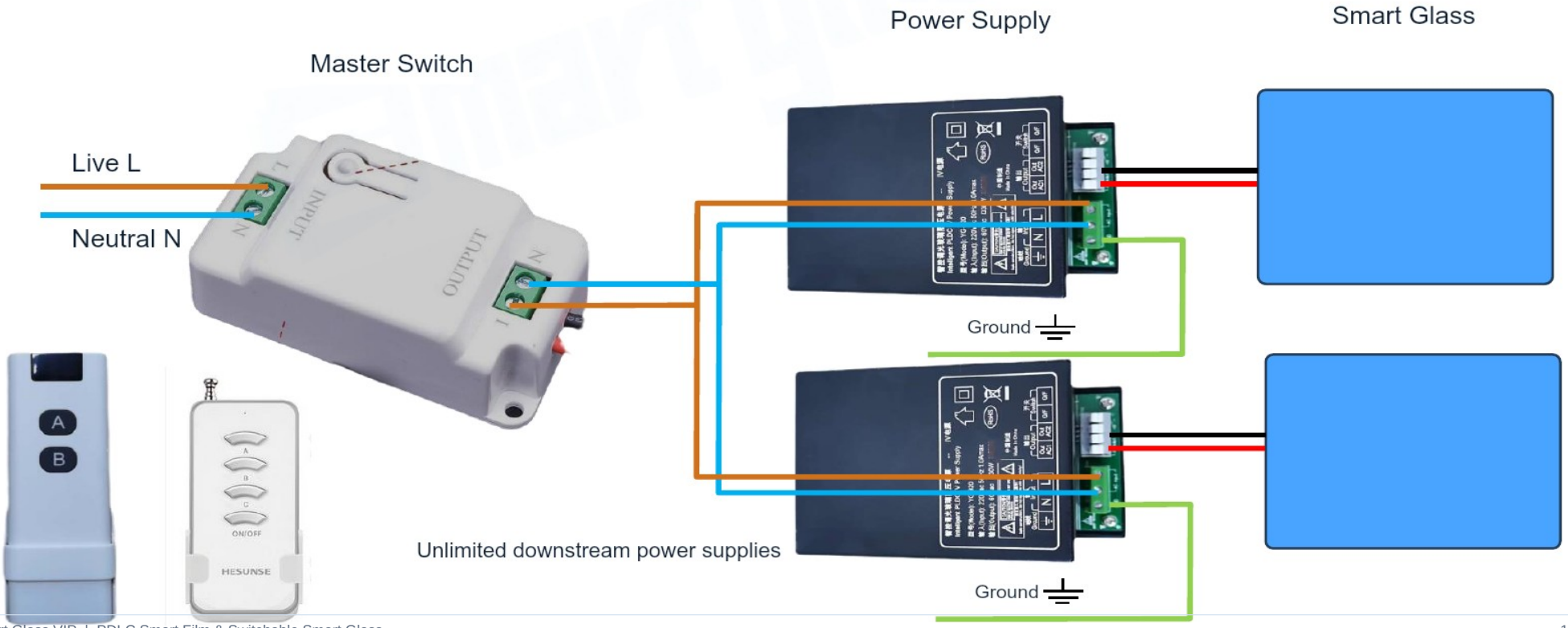
Extended Function 9 — Remote Multi-Zone Control

- Basic function: One remote controls multiple groups of smart glass (clear/frosted).
- Control principle: 433.92MHz RF remote; each button controls one group, plus a master switch.
- Note 1: The multi-channel switch box has input and output ends; wiring order must not be reversed.
- Note 2: Place the multi-channel box centrally in the remote coverage area for best sensitivity.
- Note 3: Never connect any live circuit to the O/F port — only dry contacts, otherwise the board will burn out.
- Accessories: Remote, multi-channel switch.
- Wiring diagram: wire control can be left unconnected.



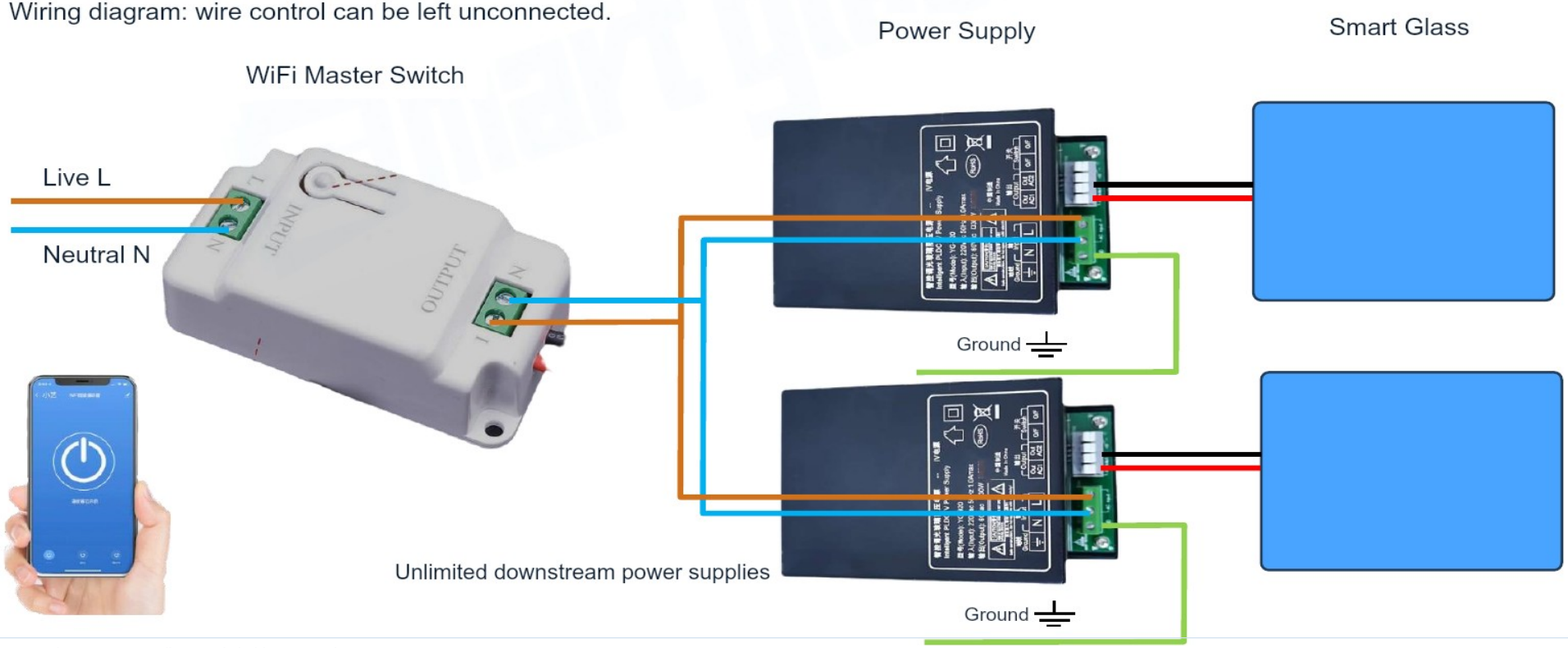
Extended Function 10 — Remote Master Control

- Basic function: One remote controls large-area smart glass (clear/frosted).
- Control principle: 433.92MHz RF remote switches the master supply on and off.
- Note 1: The master switch box has input and output ends; wiring order must not be reversed.
- Note 2: Place the master switch box within the remote coverage area for best sensitivity.
- Note 3: Never connect any live circuit to the O/F port — only dry contacts, otherwise the board will burn out.
- Accessories: Remote, master control switch.
- Wiring diagram: wire control can be left unconnected.



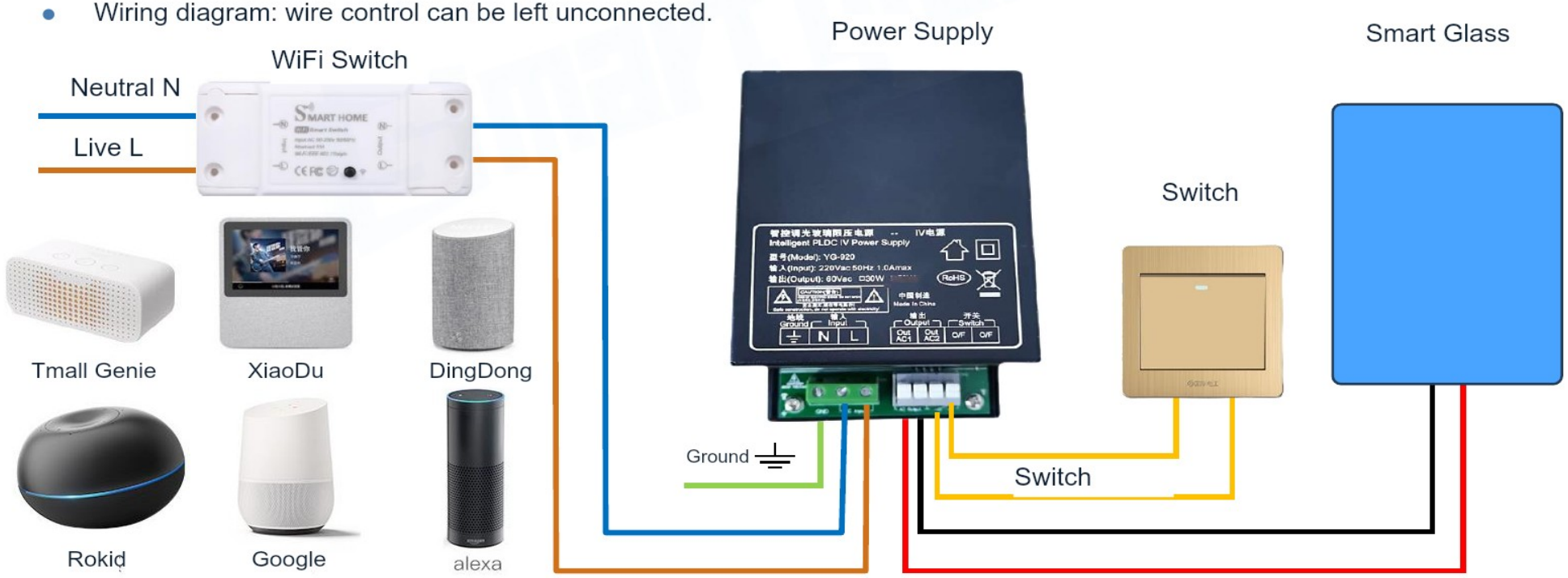
Extended Function 11 — WiFi Master Control

- Basic function: Mobile control of large-area smart glass (clear/frosted).
- Control principle: 2.4GHz WiFi; app, AP and LAN remote control.
- Note 1: Read the WiFi controller pairing/network setup instructions carefully.
- Note 2: Maximum WiFi switch load is 500W.
- Note 3: This switch only pairs with 2.4GHz WiFi; 5GHz is not supported.
- Note 4: The WiFi switch box has input and output ends; wiring order must not be reversed.
- Note 5: Never connect any live circuit to the O/F port — only dry contacts, otherwise the board will burn out.
- Accessories: WiFi master control switch.
- Wiring diagram: wire control can be left unconnected.



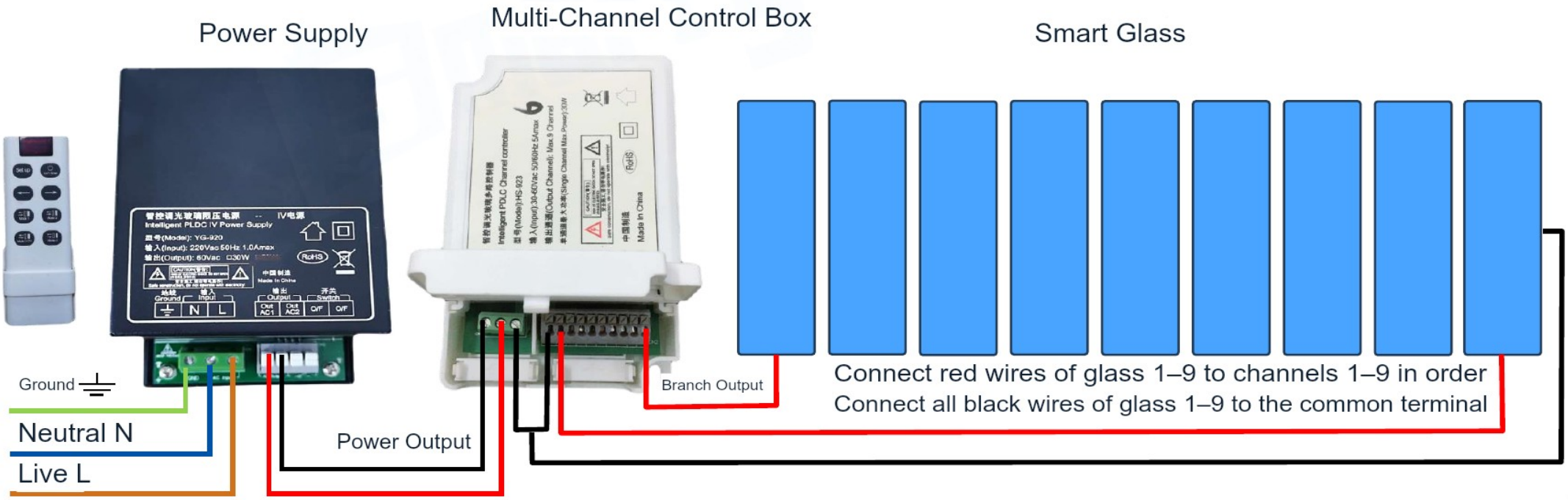
Extended Function 12 — Voice Control

- Basic function: An AI speaker controls a group of smart glass by voice (clear/frosted).
- Control principle: 2.4GHz WiFi, AI speaker control, LAN voice control.
- Note 1: Read the AI speaker connection manual carefully (use the Tuya Smart app).
- Note 2: Maximum WiFi switch load is 500W.
- Note 3: This switch only pairs with 2.4GHz WiFi; 5GHz is not supported.
- Note 4: Search for Tuya in the speaker app, bind your account and share it with the speaker.
- Note 5: Never connect any live circuit to the O/F port — only dry contacts, otherwise the board will burn out.
- Accessories: WiFi voice switch.
- Wiring diagram: wire control can be left unconnected.



Extended Function 13 — 2–9 Channel Control

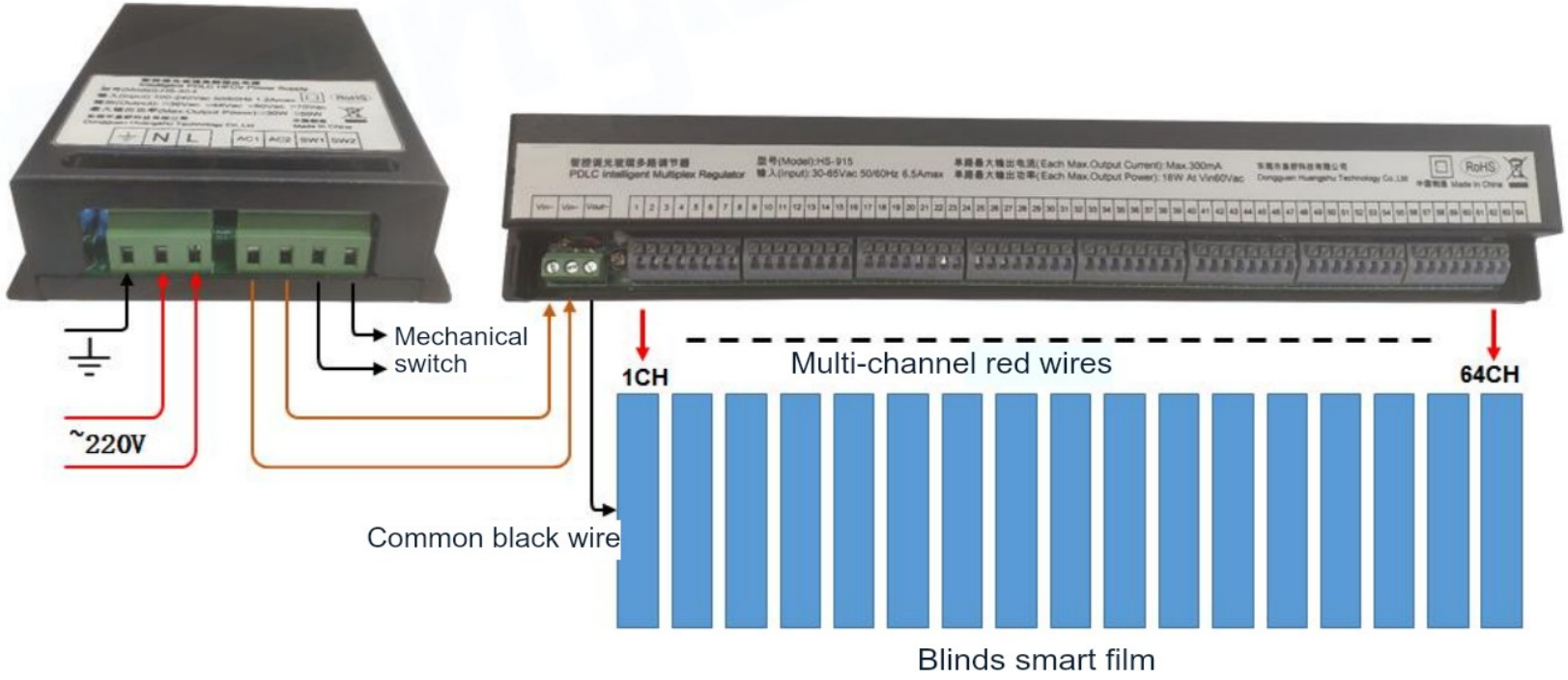
- Basic function: A 9-channel box controls multiple glass panels for dynamic or static effects.
- Control principle: The chip switches each channel to set each glass clear or frosted.
- Note 1: Check the nameplate terminal definitions carefully; wrong wiring is prohibited.
- Note 2: Glass area per channel must be less than 8 m².
- Note 3: A backup disconnect switch on the mains is recommended; do not use it for routine control.
- Note 4: Never connect any circuit to the O/F port, otherwise the board will burn out.
- Accessories: Multi-channel box, 8-key remote.
- Wiring diagram:



Extended Function 14 — 8–30 / 16–64 Channel Control

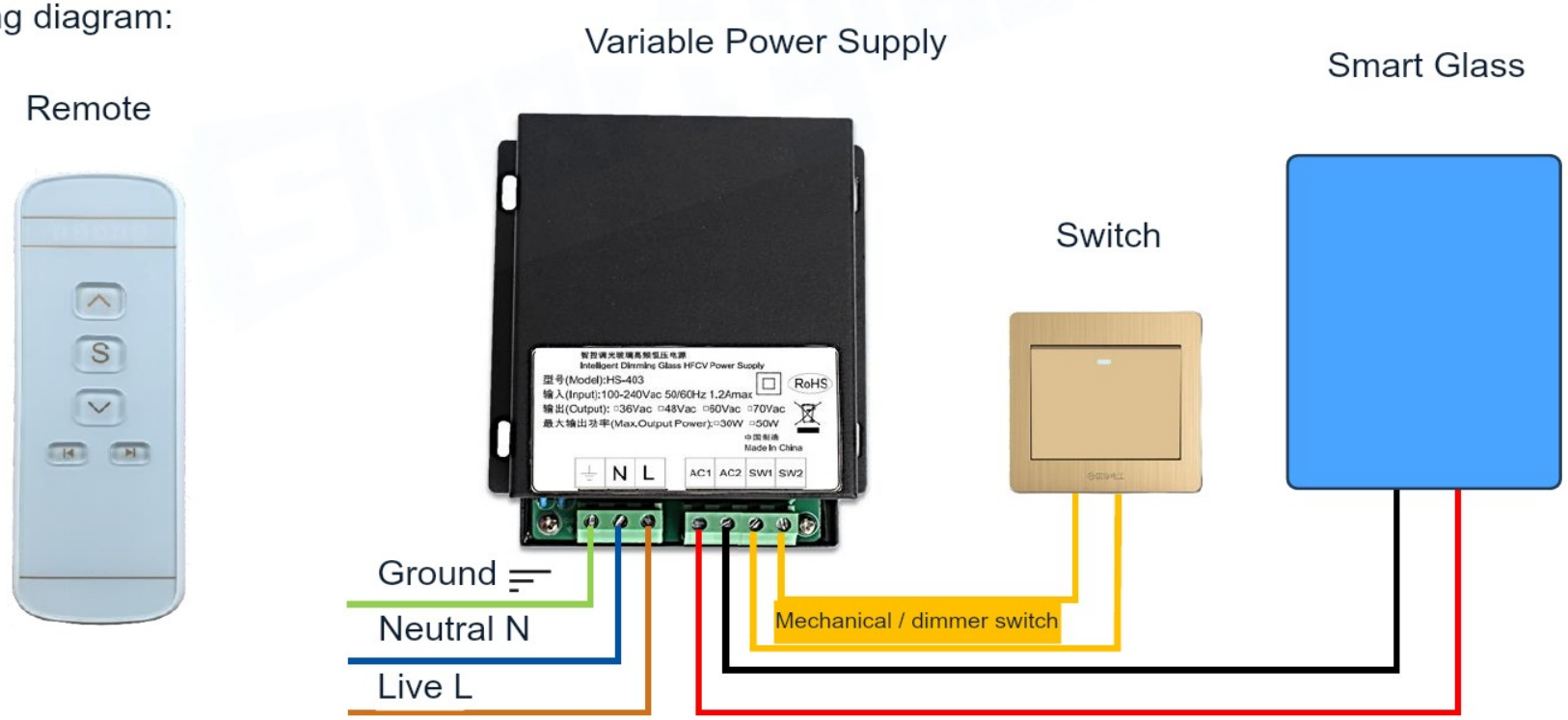
- Basic function: A 30- or 64-channel box controls multiple glass panels for dynamic or static effects.
- Control principle: The chip switches each channel to set each glass clear or frosted.
- Note 1: Check the nameplate terminal definitions carefully; wrong wiring is prohibited.
- Note 2: 30-channel: under 8 m² per channel; 64-channel: under 1 m² per channel.
- Note 3: A backup disconnect switch on the mains is recommended; do not use it for routine control.
- Note 4: Never connect any live circuit to the mechanical O/F port, otherwise the board will burn out.
- Accessories: Multi-channel box, 8-key remote.
- Wiring diagram:





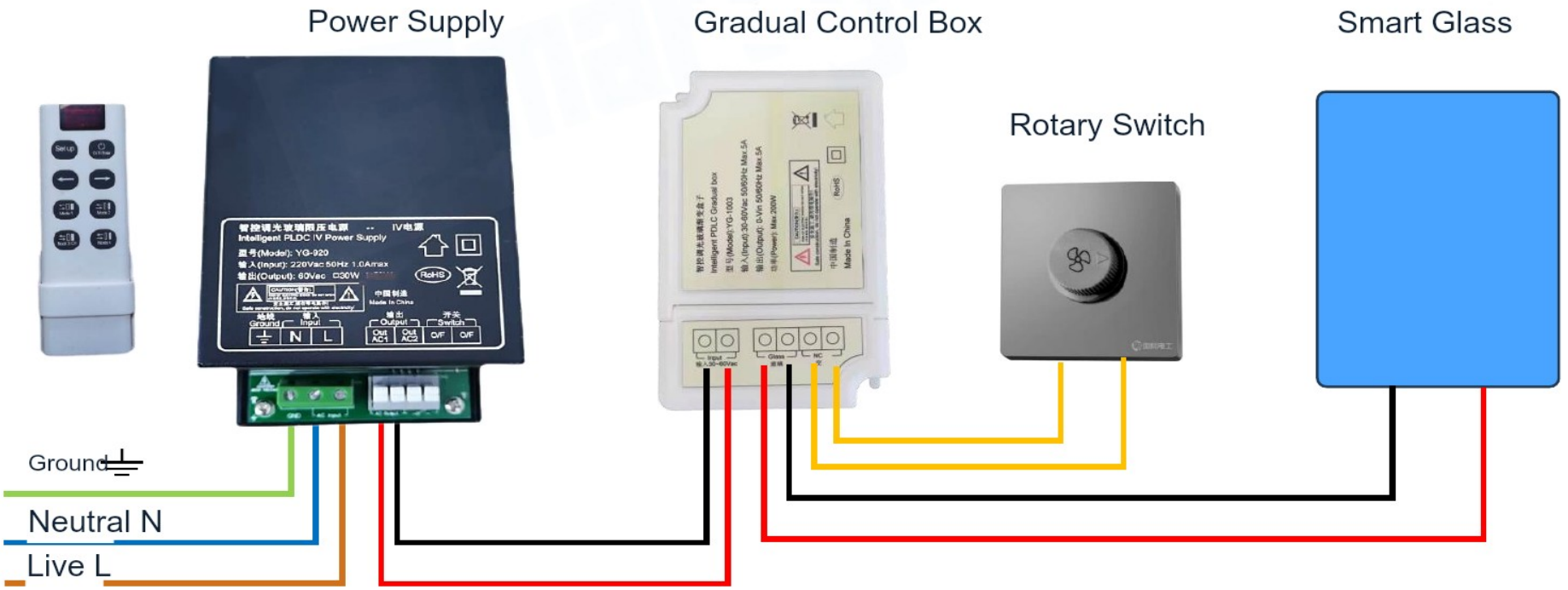
Extended Function 15 — HFCV Gradual Control Solution

- Basic function: Adjust glass transparency with a variable power supply.
- Control principle: SPWM and sinusoidal amplitude modulation set the voltage applied to the glass.
- Note 1: Wire this power supply separately from communication products.
- Note 2: HFCV is high-frequency constant-voltage output; works worldwide at 110V and 220V.
- Note 3: Never connect any live circuit to the mechanical O/F port, otherwise the board will burn out.
- Accessories: HFCV variable power supply, 5-key crystal remote.
- Wiring diagram:



Extended Function 16 — Separate Gradual Control Solution

- Basic function: Add a gradual-control box to a standard supply to adjust glass transparency.
- Control principle: Voltage-chopping technology adjusts the voltage applied to the glass.
- Note 1: Wire this power supply separately from communication products.
- Note 2: The cable between the gradual-control box and the glass must not be too long.
- Note 3: Never connect any live circuit to the rotary switch port, otherwise the board will burn out.
- Accessories: HFCV variable power supply, 5-key crystal remote.
- Wiring diagram:



Thank You!







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