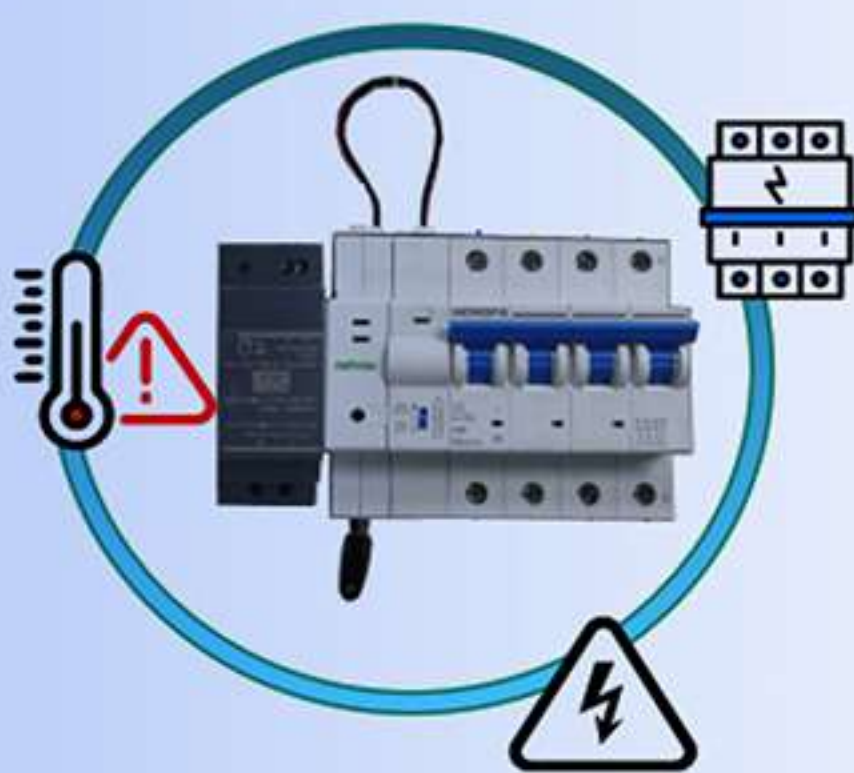




LoRaWAN™ Smart Circuit Breaker

Current situation of power consumption, Intelligent supervision

Features



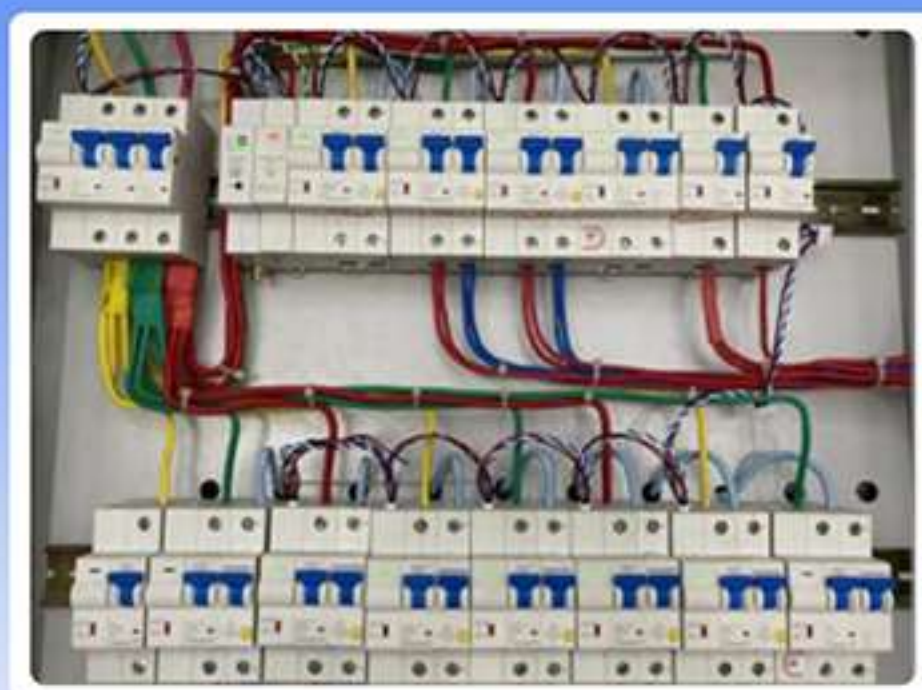
Smart Circuit Breaker monitors the real-time temperature, electric quantity, current, voltage, power, leakage current (only models with “L” have this function), circuit breaker status and other data information of all external circuit breakers and report to the gateway platform.

What Can Netvox's Smart Circuit Breaker Do?

Netvox smart circuit breaker is a multifunctional device that can be controlled remotely, switched on/off regularly, and conduct monthly leakage self-inspection with low power consumption. The smart circuit breaker also reports detected electric information to the gateway platform, helping users discover hidden dangers beforehand. (For the leakage self-inspection part, it will not report data, only the circuit breaker trips to protect itself.)



It can monitor the status of up to 10 external circuit breakers in real time



Circuit-breaker Specification Cross Table

Model	RP02RH1PN063	RP02RH1PNLB063	RP02RH3PN063	RP02RH3PNLB063
Photo				
Rating Voltage	AC230V/50Hz	AC230V/50Hz	AC400V/50Hz	AC400V/50Hz
Rating Current	6A /10A /16A /20A /25A /32A /40A /50A /63A (The rated current can be configured according to the use environment.)	6A /10A /16A /20A /25A /32A /40A /50A /63A (The rated current can be configured according to the use environment.)	6A /10A /16A /20A /25A /32A /40A /50A /63A (The rated current can be configured according to the use environment.)	6A /10A /16A /20A /25A /32A /40A /50A /63A (The rated current can be configured according to the use environment.)
Leakage Protection	-	30mA	-	30mA
PN#	1PN	1PNL	3PN	3PNL
LoRa Module Power Supply	12VDC/2A	12VDC/2A	12VDC/2A	12VDC/2A
Motor operating mechanism Power Supply	-	-	-	-
Circuit-breaker Power Supply	-	-	-	-

Model	RP02RH2P100	RP02RH4P100	RP02RH3P250	RP02RH4P250
Photo				
Rating Voltage	AC230V/50Hz	AC400V/50Hz	AC400V/50Hz	AC400V/50Hz
Rating Current	100A	100A	250A	250A
Leakage Protection	-	-	-	-
PN#	2PN	4PN	3PN	4PN
LoRa Module Power Supply	12VDC/2A	12VDC/2A	12VDC/2A	12VDC/2A
Motor operating mechanism Power Supply	-	-	AC220V/50Hz	AC220V/50Hz
Circuit-breaker Power Supply	-	-	24VDC/2.5A	24VDC/2.5A

RP02 and LoRa Power Module Specification



➤ RP02

Power Supply	DC 12V
Operation Current	<100mA

➤ Power Module

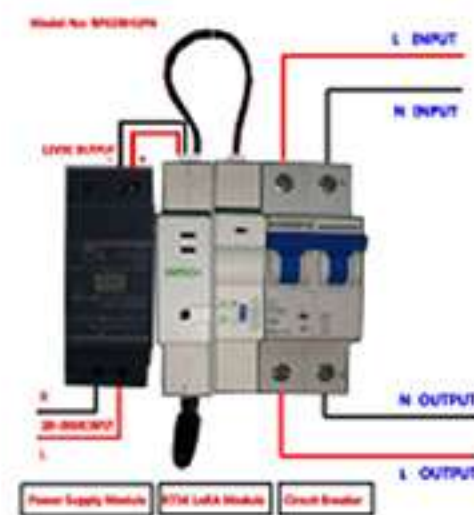
Power Supply	AC 100 to 240V
Frequency	50 to 60Hz
Power	30W

RP02RH1PN

(RP02 + Power Module + 1PN Circuit Breaker)

6A/10A/16A/20A/25A/32A/40A/50A/63A available

(The rated current can be configured according to the environment.)

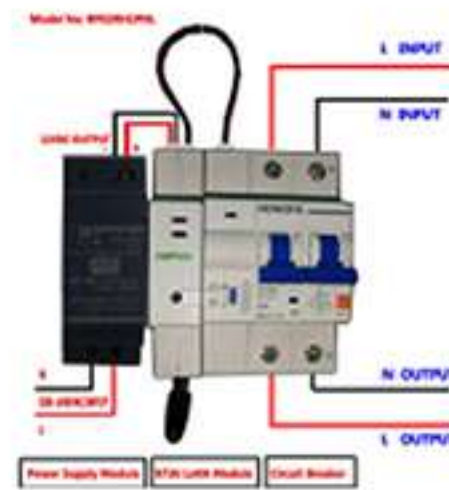


RP02RH1PNL

(RP02 + Power Module + 1PNL Circuit Breaker)

6A/10A/16A/20A/25A/32A/40A/50A/63A available

(The rated current can be configured according to the environment.)



RP02RH3PN

(RP02 + Power Module + 3PN Circuit Breaker)

6A /10A /16A /20A /25A /32A /40A /50A /63A available

(The rated current can be configured according to the environment.)

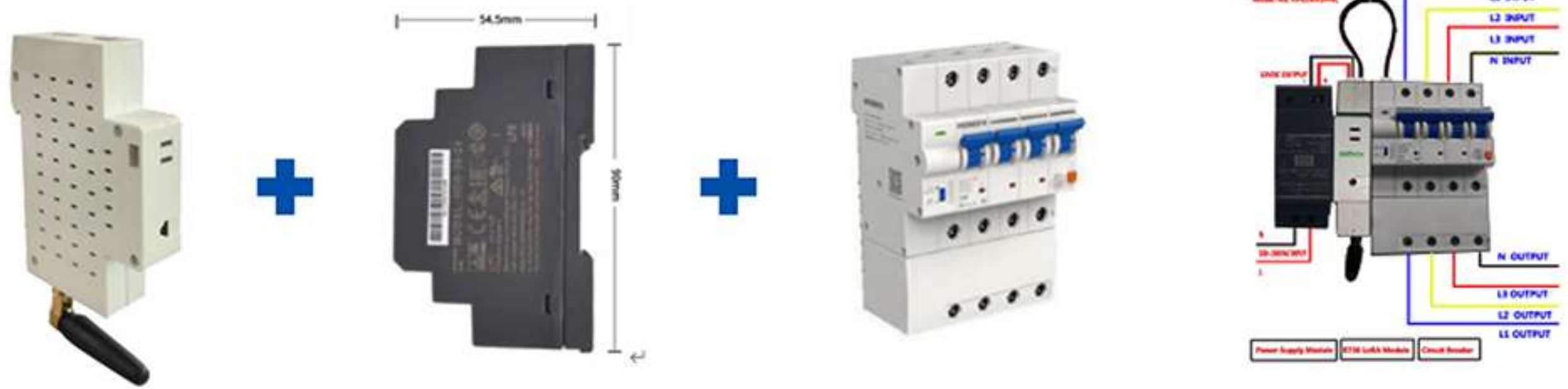


RP02RH3PNL

(RP02 + Power Module + 3PNL Circuit Breaker)

6A /10A /16A /20A /25A /32A /40A /50A /63A available

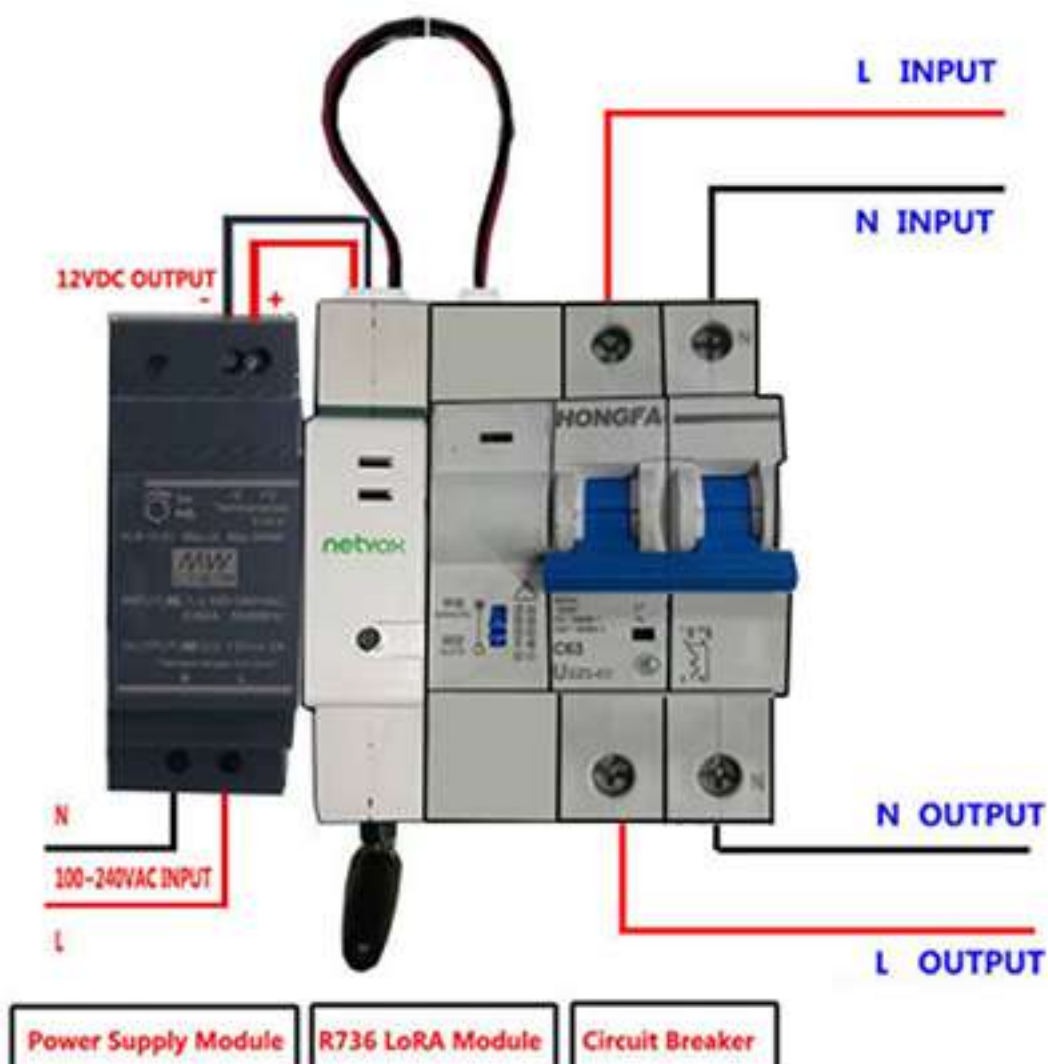
(The rated current can be configured according to the environment.)



RP02RH2P100

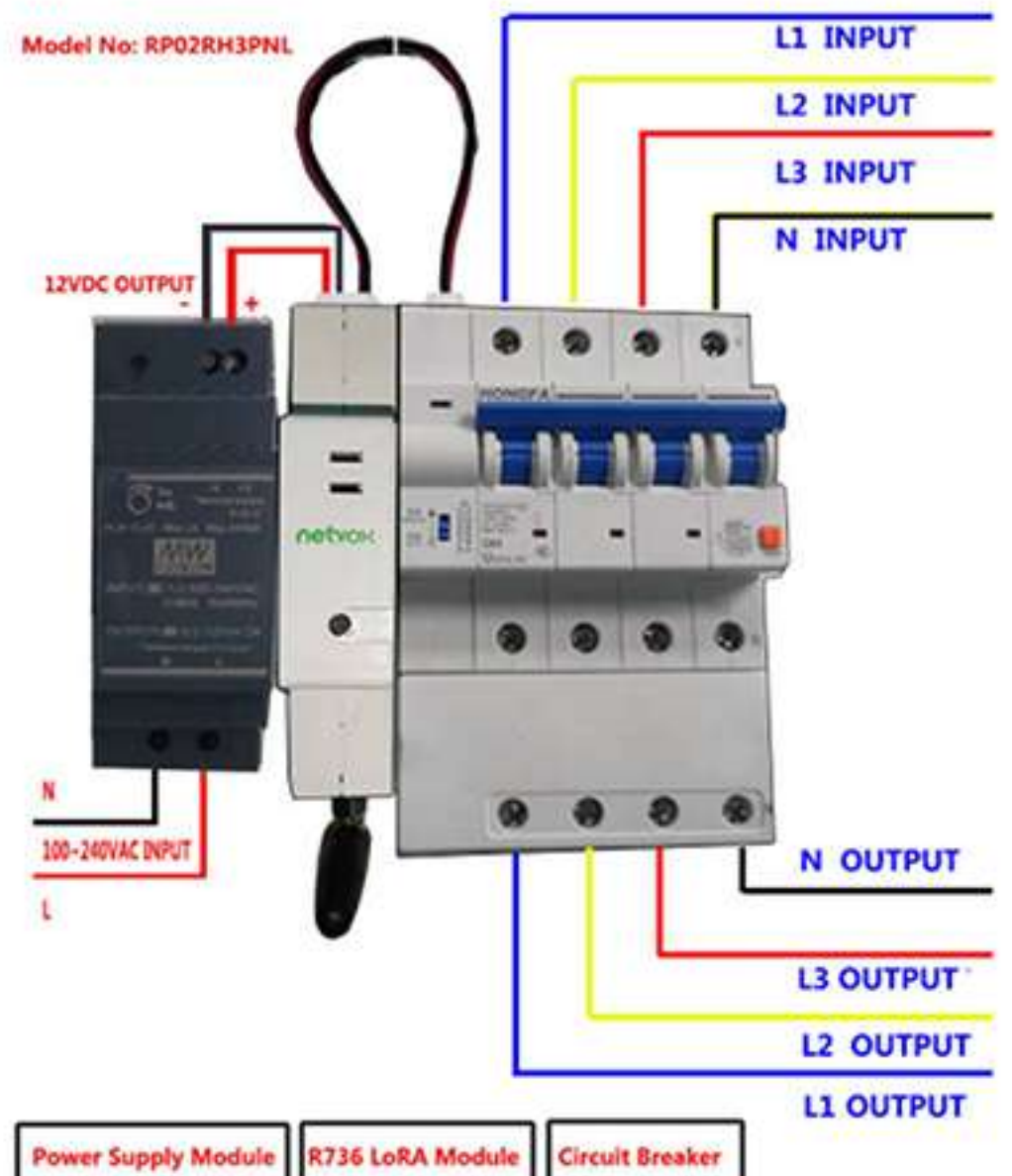
(RP02 + Power Module +
2P 100A Circuit Breaker)

Model No : RP02RH2P100 (100A 2P 不带漏电)



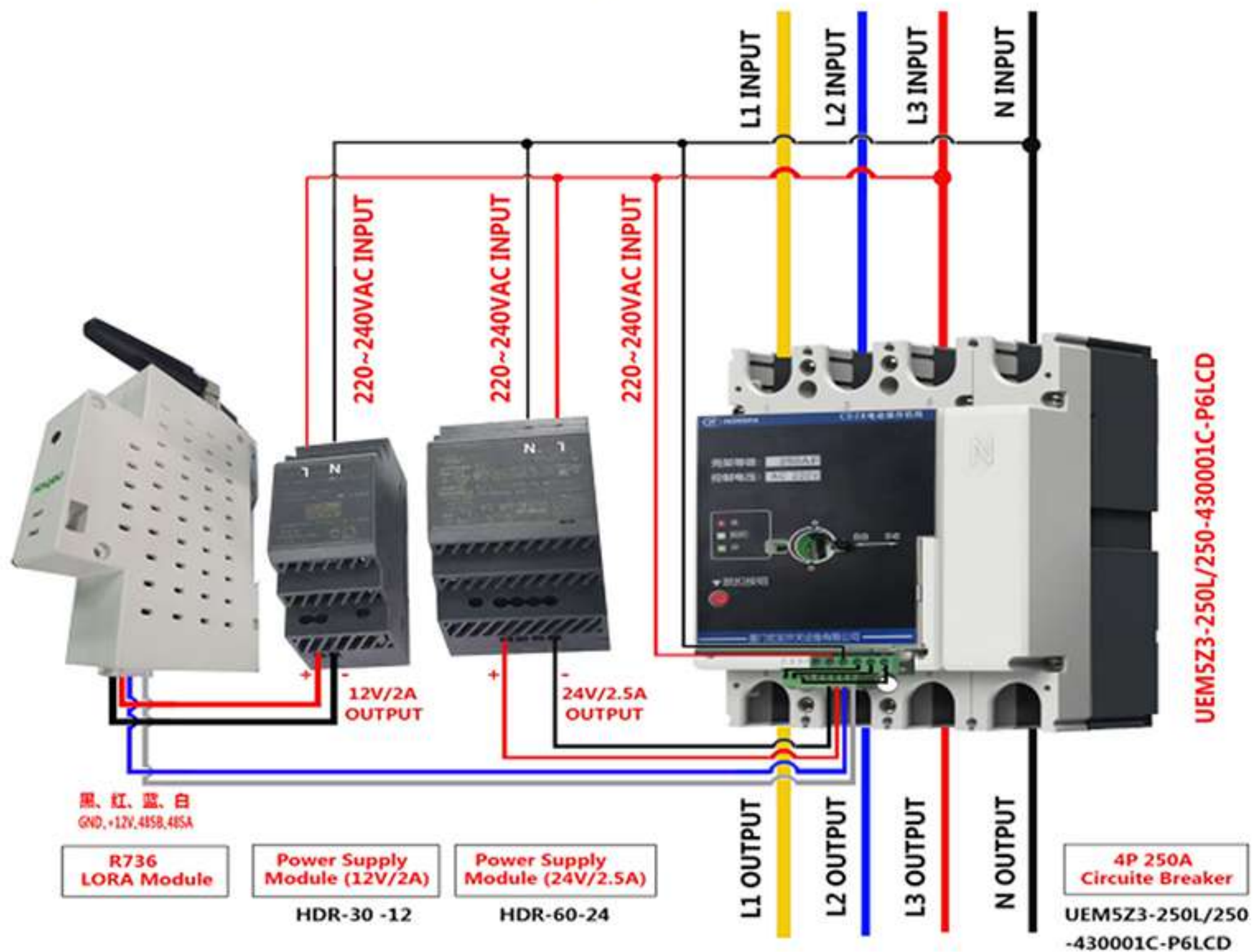
RP02RH4P100

(RP02 + Power Module +
4P 100A Circuit Breaker)



RP02RH3P250 & RP02RH4P250

RP02 + LoRa Power Module+ Breaker Power Module +
3P/4P 250A Circuit Breaker* 1)



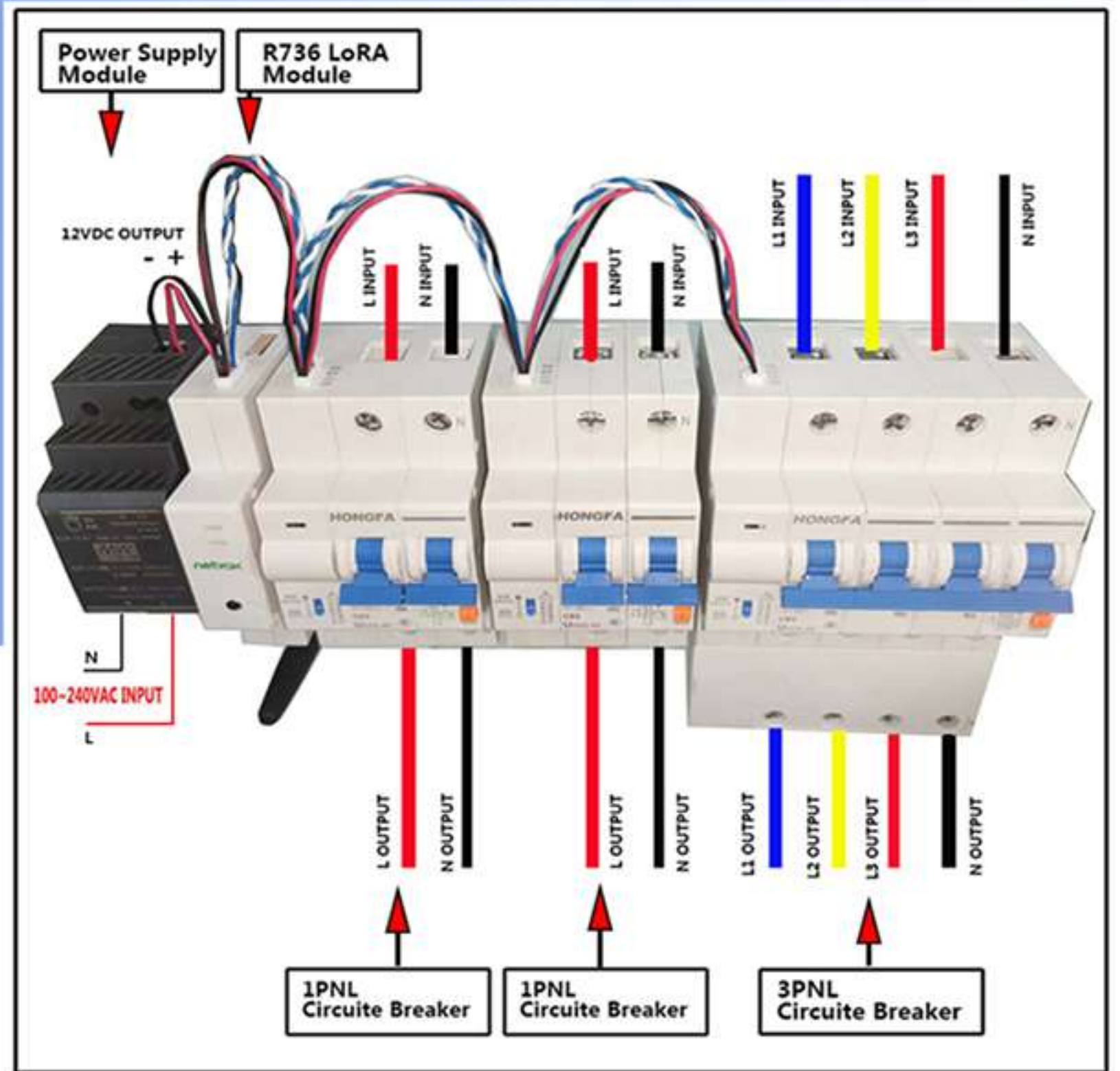
MODEL : RP02RH4P250

RP02 Default Value of Protection Parameters

Protection (Command)	Hardware Protection	Software Protection	Alarm	Parameter			Default	Note
				Alarm Value	Action Value	Time Coefficient		
Overload Protection (0x00)		0	0	113% I _r	125% I _r (1PN、1PNL) 120% I _r (3PN、3PNL)	15 s	2 - Trip	Configured through LoRaWan commands
Low-voltage Protection (0x01)		0	0	180 V	160 V	3 s	2 - Trip	Configured through LoRaWan commands
Overvoltage Protection (0x02)		0	0	260 V	270 V	6 s	2 - Trip	Configured through LoRaWan commands
Leakage Protection (0x03)	0			-	30 mA	-	Trip (cannot be configured)	Hardware Protection cannot be configured through LoRaWan commands
Temperature Protection (0x04)		0	0	75 °C	80 °C	30 s	0 - None	Configured through LoRaWan commands
Short Circuit Protection (0x05)	0			-	-	-	Trip (cannot be configured)	Hardware Protection cannot be configured through LoRaWan commands
Phase Failure Protection (0x06) (3PN, 3PNL support)		0	0	70%	80%	10 s	0 - None	Configured through LoRaWan commands
Overpower Protection (0x07) (1PN, 1PNL support)		0	0	110% P	150% P P = rated voltage* setting current	30 s	0 - None	Configured through LoRaWan commands

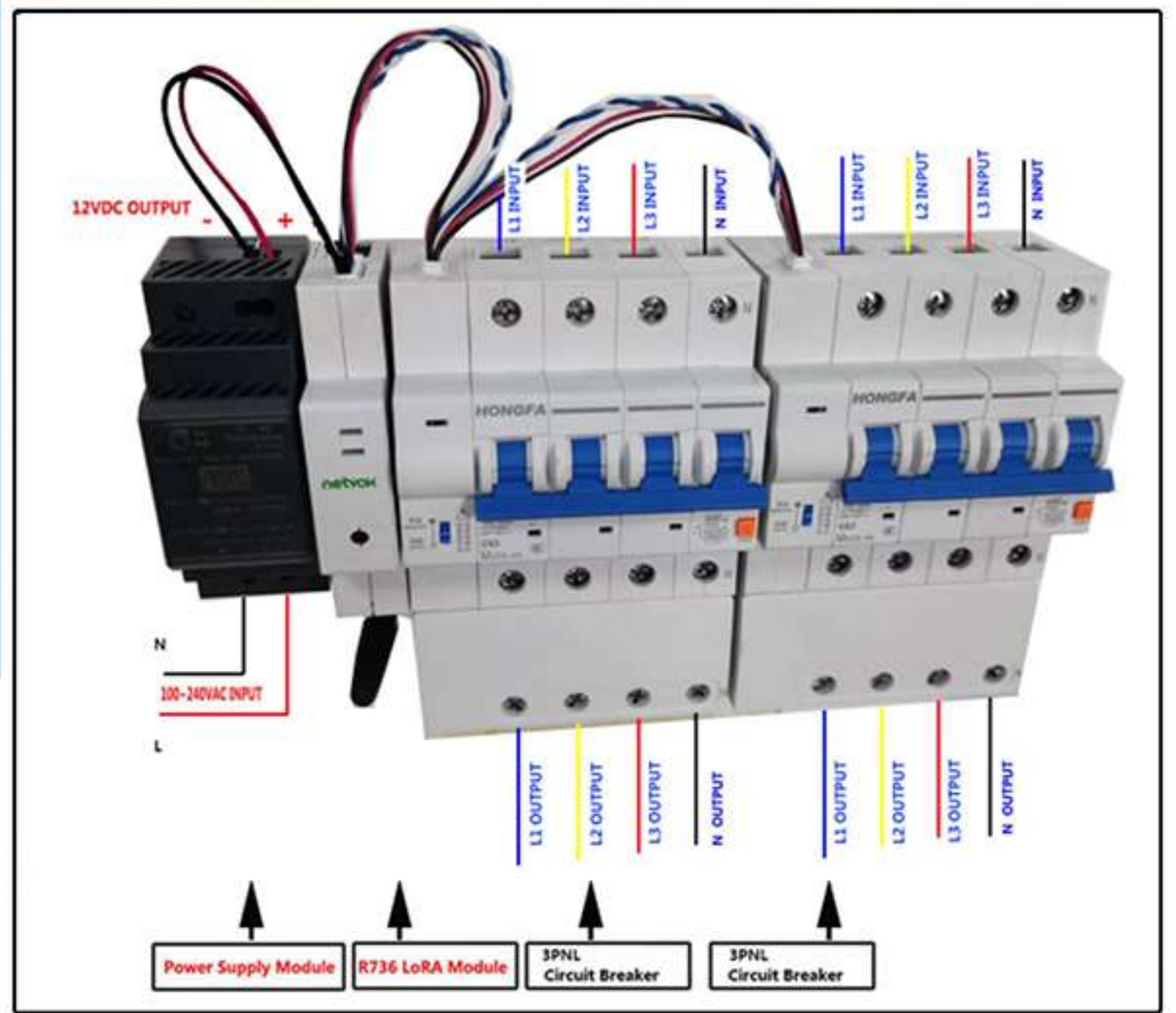
Example 1

24W Power Supply +
1PNL*2 + 3PNL*1



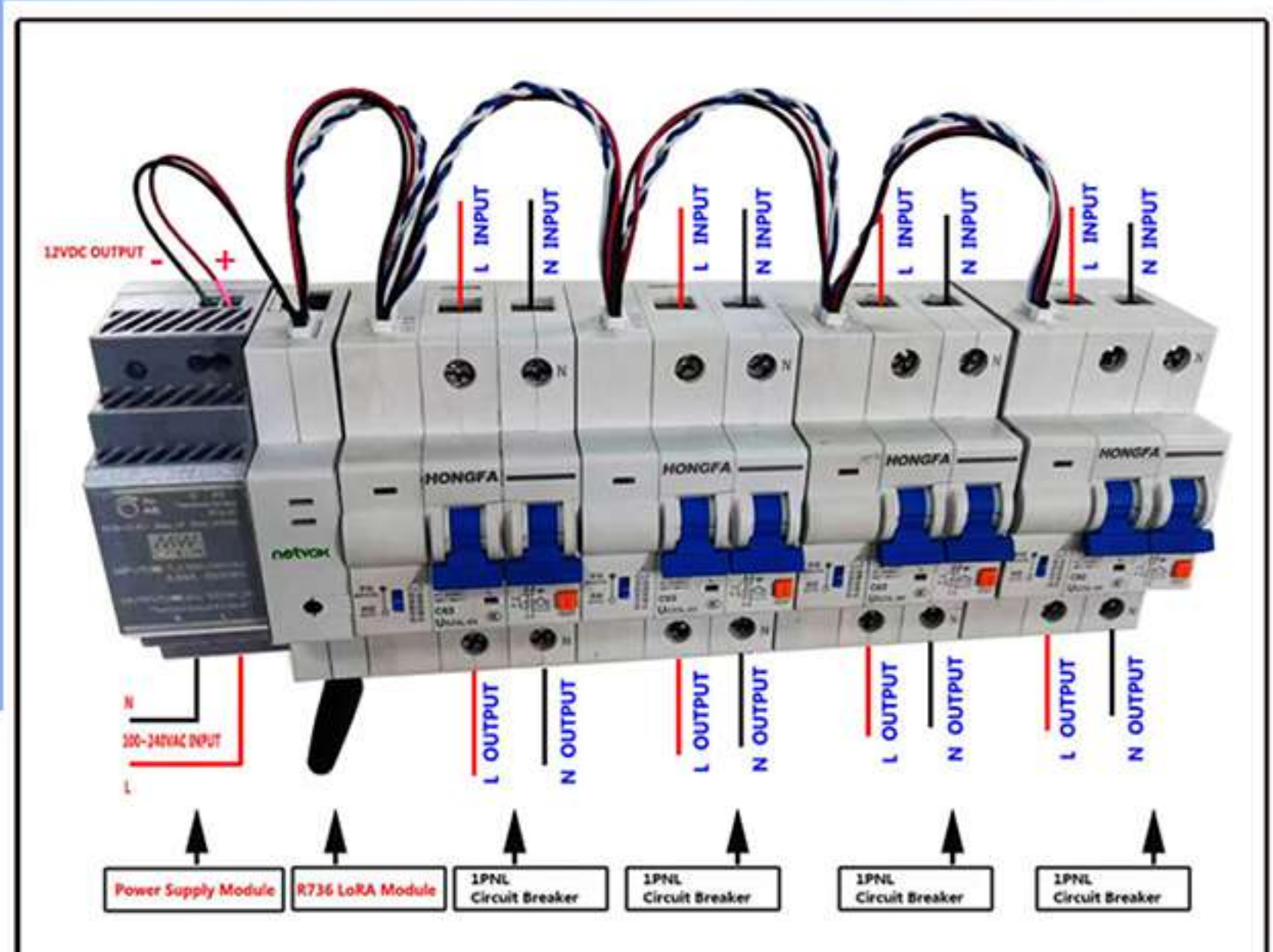
Example 2

24W Power Supply +
3PNL * 2



Example 3

24W Power Supply +
1PNL * 4



Applications

Charging Pile 充电桩

Current situation of power consumption

- The traditional leakage circuit breaker + guide rail meter + contactor scheme has large volume and high space occupancy.
- High frequency of electric shock and fire accidents.
- Low safety, frequent failures and low durability Coping strategies.

Coping strategies

- Small volume and low cost: Intelligent miniature circuit breaker= traditional leakage circuit breaker + guide rail meter + contractor.
- Intelligent control: Restore power supply in time in case of accidental power failure.
- Fault alarm: Electrical fault alarm and leakage self-inspection to ensure the safe use of the device.
- Fault analysis: Statistics and analysis of fault categories, and targeted maintenance and repair.

Smart Building 智能建筑

Current situation of power consumption

- Complex power environment, high personnel density and poor strain capacity.
- Serious waste of electric energy.
- Personnel use high-power electrical appliances in violation of regulations, which has great hidden dangers to cause fire.
- Accidental electric shock and electric leakage accident cause fire.

Coping strategies

- Safety protection: Set rated power, over limit alarm, limit malignant load and ensure power safety.
- Remote control: Timing control, energy saving and consumption reduction, realizing people walking lights off and device power off.
- Fault early warning: Power off and maintain the lines with electrical hazards in advance to prevent accidents.
- Cost reduction: The meter can realize remote meter reading and charging, and reduce the management cost.

Public Places 公共场所

Current situation of power consumption

- Lack of effective power safety solutions.
- Few professional managers and difficult management of many electric devices .
- Poor safety awareness and failure to trouble shooting.
- Electrical fire occurs frequently.

Coping strategies

- Fault analysis: Accurately analyze fault types and give solutions in time.
- Intelligent supervision: Real-time online monitoring of fire hazards, like a 24-hour close doctor using electricity.
- Remote control: Timely power-off protection shall be provided for the fault line to master the power safely.
- Fire prevention: Comply with the national fire safety management for dense places.