



*Adhering to the spirit of entrepreneurship, Focus on power electronics,
Efficient use of energy, Serving global users.*



Always Available for Highest Fields

TonHe High-efficient and Reliable DC System Solutions

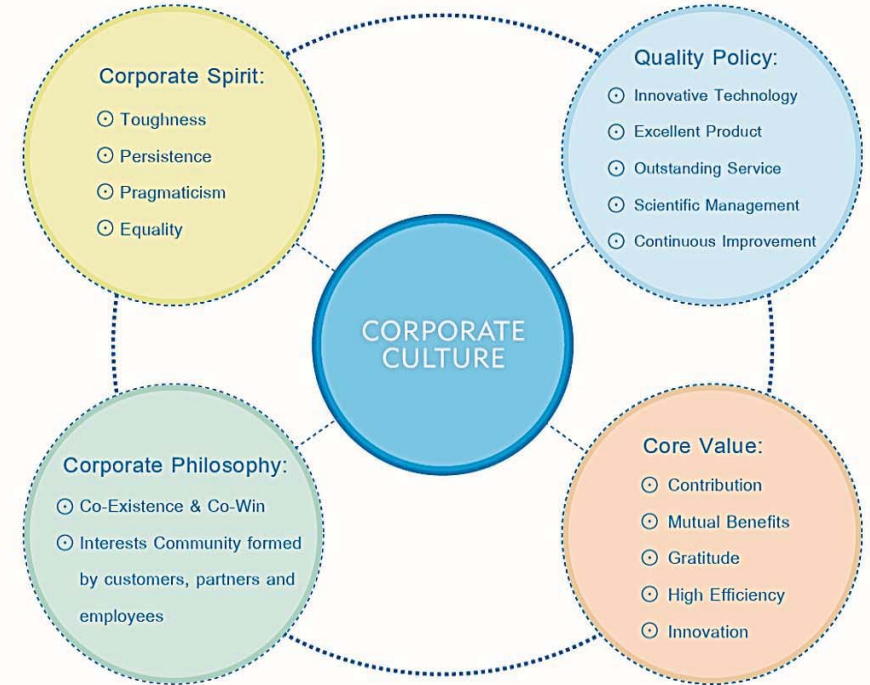


COMPANY PROFILE

Shijiazhuang Tonhe Electronics Technologies Co., Ltd (Hereafter referred to as TonHe) is a high technology enterprise specialized in innovation of technology, product and management in the power electronics industry, and R&D, manufacturing, sales, operation and service of high frequency switch mode power supply and related products, providing customers with system solution for the energy sector.

TonHe was established in 1998. In 2012 TonHe changed to a company limited by shares. On December 31st 2015, TonHe got listed at Shenzhen Stock Exchange (stock code 300491), marking a new milestone in the company's development. As a knowledge intensive high-tech enterprise after a sustained and steady development, TonHe now has total employees over 500, in which the R&D staff take more than 20%.

TonHe focus on cutting-edge technologies, and is the Chinese pioneer that realized soft switch during the whole process of power switching, obtaining 50 patents and 25 software copyrights.



Always Available for Highest Fields

220V High Frequency SMPS Module --- Natural Cooling



Parameter		Model Number	TH230D05ZZ-3	TH230D10ZZ-3G	TH230D20ZZ-3G	TH230D10ZZ-S
Input	Input voltage		323-456VAC	323-456VAC	323-456VAC	187-264VAC
	AC input frequency		45Hz~65Hz	45Hz~65Hz	45Hz~65Hz	45Hz~65Hz
	Efficiency		≥94%	≥94%	≥94%	≥93%
	Power factor		≥0.93	≥0.93	≥0.93	≥0.99
Output	Output voltage		190-300V	176-300V	176-300V	176-300V
	Output current		0-5A	0-10A	0-20A	0-10A
	Power (W)		1430	2860	5720	2860
	Soft start time		3~8s	3~8s	3~8s	3~8s
	Current stabilization accuracy		±1%	±1%	±1%	±1%
	Ripple		≤0.5%	≤0.5%	≤0.5%	≤0.5%
	Voltage stabilization accuracy		±0.5%	±0.5%	±0.5%	±0.5%
	Current sharing imbalance for modules in parallel		±3%	±3%	±3%	±3%
	Protocol & Interface		TH or Modbus / RS485			
Acoustic noise		<50dB				
Cooling method		Natura Cooling with Radiator				
Ambient Condition	Operation temperature	-10°C~40°C				
	Storage temperature	-40°C~ 60°C				
	Relative humidity	≤ 90% @ 25°C Ambient temperature				
	Altitude	≤ 2000m				
Protection	Multi-protection	Multi-protection and Warning including input over or under-voltage, output over or under-voltage, over-temperature, reverse connection, phase failure, and short circuit protection. The rectifier will shut down without output, and self recoverable.				
	Current limiting	The output current will keep fixed if it reached the setting value, and will not exceed the setting value. Setting value adjustable.				
Safety	Insulation resistance	I/O to chassis and Input to output >10MΩ (Test Voltage: 500V DC)				
	Dielectric strength	Impose 2000V AC between I/O and the chassis after shorting the input and output for one minute, no breakdown or flashover.				
Size	(H×W×D) mm	218×116×260	263×139×325	355×154×400	263×139×325	
Weight	Kg	4.5	8.0	15.5	9.0	

220V High Frequency Switch Mode Power Supply Module — Natural Cooling



Main Function and Features:

- * Modular design, N+1 redundancy
- * Natural cooling, more reliable and lower noise
- * Hot swapping, easy for maintenance
- * Efficiency up to 95%
- * Output voltage and current adjustable
- * Independent current sharing
- * Built-in isolation diode
- * Multi-protection



220V High Frequency SMPS Module --- Forced Fan Cooling



Model Number		TH230D05NZ-D	TH230D10NZ-D	TH230D20NZ-3	TH230D30NZ-3	TH230D40NZ-3
Parameter						
Input	Input voltage	323-456VAC	323-456VAC	323-456VAC	323-456VAC	323-456VAC
	AC input frequency	45Hz ~ 65Hz	45Hz ~ 65Hz	45Hz ~ 65Hz	45Hz ~ 65Hz	45Hz ~ 65Hz
	Efficiency	≥93%	≥94%	≥93%	≥93%	≥93%
	Power factor	≥0.93	≥0.93	≥0.93	≥0.93	≥0.93
Output	Output voltage	176-300V	176-300V	190-300V	190-300V	190-300V
	Output current	0-5A	0-10A	0-20A	0-30A	0-40A
	Power (W)	1430	2860	5720	8580	11440
	Soft start time	3~8s	3~8s	3~8s	3~8s	3~8s
	Current stabilization accuracy	≤±1%	≤±1%	≤±1%	≤±1%	≤±1%
	Ripple	≤0.5%	≤0.5%	≤0.5%	≤0.5%	≤0.5%
	Voltage stabilization accuracy	≤±0.5%	≤±0.5%	≤±0.5%	≤±0.5%	≤±0.5%
	Current sharing imbalance for modules in parallel	≤±3%	≤±3%	≤±3%	≤±3%	≤±3%
Protocol & Interface		Modbus / RS485		TH or Modbus / RS485		
Acoustic noise		<55dB				
Cooling method		Forced Fan Cooling				
Ambient Condition	Operation temperature	-10°C~40°C				
	Storage temperature	-40°C~ 60°C				
	Relative humidity	≤ 90% @ 25°C Ambient temperature				
	Altitude	≤ 2000m				
Protection	Multi-protection	Multi-protection and Warning including input over or under-voltage, output over or under-voltage, over-temperature, reverse connection, phase failure, and short circuit protection. The rectifier will shut down without output, and self recoverable.				
	Current limiting	The output current will keep fixed if it reached the setting value, and will not exceed the setting value. Setting value adjustable.				
Safety	Insulation resistance	I/O to chassis and input to output >10MΩ (Test Voltage: 500V DC)				
	Dielectric strength	Impose 2000V AC between I/O and the chassis after shorting the input and output for one minute, no breakdown or flashover.				
Size	(H×W×D) mm	160×67×299.5	160×67×299.5	218×118×357	303×136×410	303×136×410
Weight	Kg	4.0	4.0	10.5	18	18

220V High Frequency Switch Mode Power Supply Module — Forced Fan Cooling



Main Function and Features:

- * Modular design, N+1 redundancy
- * Fan cooling, small size
- * Hot swapping, easy for maintenance
- * Output voltage and current adjustable
- * Independent current sharing
- * Built-in isolation diode
- * Multi-protection



TH230D20NZ-3 / TH230D30NZ-3 /
TH230D40NZ-3



TH230D05NZ-D / TH230D10NZ-D

110V High Frequency SMPS Module --- Natural Cooling



Model Number		TH110D10ZZ-3	TH110D20ZZ-3G	TH110D40ZZ-3G	TH110D20ZZ-S
Input	Input voltage	323-456VAC	323-456VAC	323-456VAC	187-264VAC
	AC input frequency	45Hz~65Hz	45Hz~65Hz	45Hz~65Hz	45Hz~65Hz
	Efficiency	≥94%	≥94%	≥94%	≥93%
	Power factor	≥0.93	≥0.93	≥0.93	≥0.99
Output	Output voltage	95-150V	88-150V	88-150V	88-150V
	Output current	0-10A	0-20A	0-40A	0-20A
	Power (W)	1430	2860	5720	2860
	Soft start time	3~8s	3~8s	3~8s	3~8s
	Current stabilization accuracy	≤±1%	≤±1%	≤±1%	≤±1%
	Ripple	≤0.5%	≤0.5%	≤0.5%	≤0.5%
	Voltage stabilization accuracy	≤±0.5%	≤±0.5%	≤±0.5%	≤±0.5%
	Current sharing imbalance for modules in parallel	≤±3%	≤±3%	≤±3%	≤±3%
Protocol & Interface		TH or Modbus / RS485			
Acoustic noise		<50dB			
Cooling method		Natura Cooling with Radiator			
Ambient Condition	Operation temperature	-10 °C~40 °C			
	Storage temperature	-40 °C~60 °C			
	Relative humidity	≤90%@25 °C Ambient temperature			
	Altitude	≤2000m			
Protection	Multi-protection	Multi-protection and Warning including input over or under-voltage, output over or under-voltage, over-temperature, reverse connection, phase failure, and short circuit protection. The rectifier will shut down without output, and self recoverable.			
	Current limiting	The output current will keep fixed if it reached the setting value, and will not exceed the setting value. Setting value adjustable.			
Safety	Insulation resistance	I/O to chassis and input to output >10MΩ (Test Voltage: 500V DC)			
	Dielectric strength	Impose 2000V AC between I/O and the chassis after shorting the input and output for one minute, no breakdown or flashover.			
Size	(H×W×D) mm	218×116×260	263×139×325	255×154×400	263×139×325
Weight	Kg	5.5	8.0	16.0	9.0

110V High Frequency Switch Mode Power Supply Module — Natural Cooling



Main Function and Features:

- * Modular design, N+1 redundancy
- * Natural cooling, more reliable and lower noise
- * Hot swapping, easy for maintenance
- * Efficiency up to 95%
- * Output voltage and current adjustable
- * Independent current sharing
- * Built-in isolation diode
- * Multi-protection



110V High Frequency SMPS Module --- Forced Fan Cooling



Model Number		TH110D10NZ-D	TH110D20NZ-D	TH110D20NZ-5
Parameter				
Input	Input voltage	323-456VAC	323-456VAC	323-456VAC
	AC input frequency	45Hz~65Hz	45Hz~65Hz	45Hz~65Hz
	Efficiency	≥93%	≥93%	≥92%
	Power factor	≥0.93	≥0.93	≥0.93
Output	Output voltage	88-150V	88-150V	88-150V
	Output current	0-10A	0-20A	0-20A
	Power (W)	1430	2860	2860
	Soft start time	3~8s	3~8s	3~8s
	Current stabilization accuracy	≤±1%	≤±1%	≤±1%
	Ripple	≤0.5%	≤0.5%	≤0.5%
	Voltage stabilization accuracy	≤±0.5%	≤±0.5%	≤±0.5%
	Current sharing imbalance for modules in parallel	≤±3%	≤±3%	≤±3%
Protocol & Interface		Modbus / RS485		TH or Modbus / RS485
Acoustic noise		<55dB		
Cooling method		Forced FanCooling		
Ambient Condition	Operation temperature	-10°C~40°C		
	Storage temperature	-40°C~ 60°C		
	Relative humidity	≤ 90% @ 25°C Ambient temperature		
	Altitude	≤ 2000m		
Protection	Multi-protection	Multi-protection and Warning including input over or under-voltage, output over or under-voltage, over-temperature, reverse connection, phase failure, and short circuit protection. The rectifier will shut down without output, and self recoverable.		
	Current limiting	The output current will keep fixed if it reached the setting value, and will not exceed the setting value. Setting value adjustable.		
Safety	Insulation resistance	I/O to chassis and input to output >10MΩ (Test Voltage: 500V DC)		
	Dielectric strength	Impose 2000V AC between I/O and the chassis after shorting the input and output for one minute, no breakdown or flashover.		
Size	(H×W×D)mm	160×67×299.5	160×67×299.5	179×86×303
Weight	Kg	4.0	4.0	4.5

110V High Frequency Switch Mode Power Supply Module — Forced Fan Cooling



Main Function and Features:

- * Modular design, N+1 redundancy
- * Fan cooling, small size
- * Hot swapping, easy for maintenance
- * Output voltage and current adjustable
- * Independent current sharing
- * Built-in isolation diode
- * Multi-protection



TH110D20NZ-5



TH110D10NZ-D / TH110D20NZ-D

Substation Telecom 48V DC Power Supply Module

Substation Telecom 48V DC Power Supply Modules cover 10A, 20A, 25A, 30A, 50A and 100A models, applicable to power substation, military, railway, financial industry, etc.



Model Number		48VDC Output Power Module						
		TH48T50ZZ	TH48T25ZZ	TH48T100NZ	TH48D20ZZ-220	TH48D30ZZ-220	TH48V30A-110	TH48T50ZZ-220
Input	Input voltage	380VAC±15%		380VAC±10%	220VDC(-10%~+30%) or 220VAC±15%		110VDC±15%	220VDC±10%
	AC input frequency	45Hz ~ 65Hz						
	Efficiency	≥92%	≥92%	≥94%	≥92%	≥90%	≥90%	≥92%
	Power factor	≥0.93	≥0.93	≥0.93	≥0.93	≥0.93	≥0.93	≥0.93
Output	Output voltage	40-58V	40-58V	40-58V	40-58V	40-58V	40-58V	43-53V
	Output current	0-50A	0-25A	0-100A	0-20A	0-30A	0-30A	0-50A
	Power (W)	2900	1450	5800	1160	1740	1740	2650
	Soft start time	3~8s	3~8s	3~8s	3~8s	3~8s	3~8s	3~8s
	Ripple	≤200mv	≤200mv	≤200mv	≤200mv	≤200mv	≤200mv	≤200mv
	Voltage stabilization accuracy	≤±0.6%	≤±0.6%	≤±0.6%	≤±0.6%	≤±0.6%	≤±0.6%	≤±0.5%
	Current sharing imbalance for modules in parallel	≤±3%	≤±3%	≤±3%	≤±3%	≤±3%	≤±3%	≤±3%
Protocol & Interface		TH or Modbus / RS485						
Acoustic noise		<50dB		<55dB	<50dB			
Cooling method		Natural cooling with radiator		Forced fan cooling	Natural cooling with radiator			
Ambient Condition	Operation temperature	-10°C ~ 40°C						
	Storage temperature	-40°C~ 60°C						
	Relative humidity	≤90% @ 25°C Ambient temperature						
	Altitude	≤2000m						
Protection	Multi-protection	Multi-protection and Warning, including input over or under-voltage, output over or under-voltage, over-temperature, reverse connection, phase failure, and short circuit protection. The rectifier will shut down without output, self-recoverable						
	Current limiting	The output current will keep fixed without increase after it exceed the set-point, set-point adjustable.						
Safety	Insulation resistance	I/O to chassis and input to output >10MΩ (Test voltage: 500V DC)						
	Dielectric strength	Impose 1500V AC between I/O VE and 500VAC between the O/E for one minute, no breakdown or flashover.						
Size	(H×W×D)mm	263×139×390	218×116×260	132×482×400	218×116×260	263×139×325	263×139×325	263×139×390
Weight	Kg	9.5	5.5	18.5	4.5	7.0	7.5	9.5



Substation Telecom 24V DC Power Supply Module

Substation Telecom 24V DC Power Supply Modules cover 20A, 30A and 50A models, applicable to power substation, military, railway, financial industry, etc.



Parameter		24VDC output power module		
		TH24T30ZZ	TH24T50ZZ	TH24V20A-220
Input	Input voltage	380VAC±20%	380VAC±15%	220VDC(-10%~+30%) or 220VAC±15%
	AC input frequency	45Hz ~ 65Hz	45Hz ~ 65Hz	45Hz ~ 65Hz
	Efficiency	≥90%	≥90%	≥90%
	Power factor	≥0.90	≥0.90	≥0.90
Output	Output voltage	21-29V	21-29V	21-29V
	Output current	0-30A	0-50A	0-20A
	Power (W)	870	1450	580
	Soft start time	3 ~ 8s	3 ~ 8s	3 ~ 8s
	Current stabilization accuracy	≤±1%	≤±1%	≤±1%
	Ripple	≤200mv	≤200mv	≤200mv
	Voltage stabilization accuracy	≤±0.5%	≤±0.5%	≤±0.5%
	Current sharing imbalance for modules parallel	≤±3%	≤±3%	≤±3%
Protocol & Interface		TH or Modbus / RS485	TH or Modbus / RS485	TH or Modbus / RS485
Acoustic noise		<50dB		
Cooling method		Natural cooling with radiator		
Ambient Condition	Operation temperature	-10°C ~ 40°C		
	Storage temperature	-40°C~ 60°C		
	Relative humidity	90% @ 25°C Ambient temperature		
	Altitude	≤2000m		
Protection	Multi-protection	Multi-protection and Warning, including input over or under-voltage, output over or under-voltage, over-temperature, reverse connection, phase failure, and short circuit protection. The rectifier will shut down without output, self-recoverable		
	Current limiting	The output current will keep fixed without increase after it exceed the set-point, set-point adjustable.		
Safety	Insulation resistance	I/O to chassis and input to output >10MΩ (Test voltage: 500V DC)		
	Dielectric strength	Impose 1500V AC between I/O I/E and 500VAC between the O/E for one minute, no breakdown or flashover.		
Size	(H×W×D) mm	218×116×260	263×139×391	218×116×260
Weight	Kg	5.5	9.5	5.0



EPS Power Supply Module

EPS Power Supply Modules cover 600V and 400V series for 380VAC input, applicable to railway, subway project, etc



Model Number		380VAC Input							
		TH600X03ZZ	TH600X05ZZ	TH600X10ZZ	TH400X03ZZ	TH400X05ZZ	TH400X07ZZ	TH400X10ZZ	TH400X15ZZ
Parameter	Input voltage	380 VAC±15%, 3 phase							
	AC input frequency	45Hz ~ 65Hz							
	Efficiency	≥95%							
	Power factor	≥0.93							
Output	Output voltage	450-600V	450-600V	450-600V	300-450V	300-450V	300-450V	350-400V	260-400V
	Output current	0-3 A	0-5 A	0-10 A	0-3 A	0-5 A	0-7 A	0-10 A	0-15 A
	Power (W)	1800	3000	6000	1300	2200	3100	4000	6000
	Soft start time	3~8s							
	Ripple	≤0.5%							
	Voltage stabilization accuracy	≤±0.5%							
	Current sharing imbalance for modules in parallel	≤±3%							
Protocol & Interface		TH or Modbus / RS485							
Accoustic noise		<50dB							
Cooling method		Natural cooling with radiator							
Ambient Condition	Operation temperature	-10°C ~ 40°C							
	Storage temperature	-40°C~ 60°C							
	Relative humidity	≤90% @ 25°C Ambient temperature							
	Altitude	≤2000m							
Protection	Multi-protection	Multi-protection and Warning, including input over or under-voltage, output over or under-voltage, over-temperature, reverse connection, phase failure, and short circuit protection. The rectifier will shut down without output, self-recoverable							
	Current limiting	The output current will keep fixed without increase after it exceed the set-point, set-point adjustable.							
Safety	Insulation resistance	I/O to chassis and input to output >10MΩ (Test voltage: 500V DC)							
	Dielectric strength	Impose 2000V AC between I/O and the chassis after shorting the input and output for one minutes. No breakdown or flashover							
Size	(H×W×D)mm	218×116×260	263×139×325	365×154×400	218×116×260	263×139×325	263×139×325	365×154×400	365×154×400
Weight	Kg	5.5	8.5	15.5	5.5	8.5	8.5	15.5	15.5



EPS Power Supply Module

EPS Power Supply Modules cover 600V, 400V and 200V series for 220VAC input, applicable to railway, subway project, etc



Parameter		Model Number		
		220VAC Input		
		TH600X02N-220AC	TH400X02N-220AC	TH220X03N-220AC
Input	Input voltage	220VAC±15%, single phase		
	AC input frequency	45Hz ~ 65Hz		
	Efficiency	≥92%		
Output	Output voltage	450-600V	260-400V	198-260V
	Output current	0-1.5A	0-2A	0-3 A
	Power (W)	900	800	780
	Soft start time	3 ~ 8s		
	Ripple	≤0.5%		
	Voltage stabilization accuracy	±0.5%		
	Current sharing imbalance for modules parallel	±3%		
Acoustic noise		<55dB		
Cooling method		Forced fan cooling		
Ambient Condition	Operation temperature	-10°C ~ 40°C		
	Storage temperature	-40°C~ 60°C		
	Relative humidity	90% @ 25°C Ambient temperature		
	Altitude	≤2000m		
Protection	Multi-protection	Multi-protection and Warning, including input over or under-voltage, output over or under-voltage, over-temperature, reverse connection, phase failure, and short circuit protection. The rectifier will shut down without output, self-recoverable		
	Current limiting	The output current will keep fixed without increase after it exceed the set-point, set-point adjustable.		
Safety	Insulation resistance	I/O to chassis and input to output >10MΩ (Test voltage: 500Vdc)		
	Dielectric strength	Impose 1500VAC between I/O and the chassis after shorting the input and output for one minutes. No breakdown or flashover		
Size	(H×W×D) mm	58×118×187	58×118×187	58×118×187
Weight	Kg	1.0	1.0	1.0



Main Function and Features:

1. Human Machine Interface

- * 7"multicolor LCD touch screen monitor, full graphic display
- * Can save more than 10,000 alarm logs and work logs, records not lost when power off

2. System Function

- * Battery management function for 1 or 2 battery packs
- * Integrated with Complex Information Detector RTU (ZHCL-2 or ZHCL-3), can detect information of AC input and bus status
- * Integrated with Complex Information Detector RTU ZHCL-3, can provide ATS function for 2 route of AC input
- * Integrated with Insulation Status Detector RTU (JYJC-32G or JYJC-64G), can detect bus and branch insulation status

3. Protocol and Interface

- * MODBUS or IEC61850 (optional) protocol and RS485/RJ45 interface
- * Communication address range 0~255

4. Other Functions

- * Switch Input (DI) alarm, definition of Switch Input can be made by user



THJK070SW-ZL or THJK070LW-ZL Configuration Framework



Upper Monitor / PC

RS485/RS232/RJ45



THJK070SW-ZL / THJK070LW-ZL

RS485

RS485

RS485

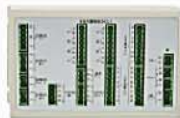
RS485

RS485

RS485



Rectifier
(Required)



ZHCL-2 / ZHCL-3
(Required)



JYJC-32G/JYJC-64G
(Optional)



DCXJ-55/DCXJ-19
(Optional)



KGL-64
(Optional)

THJK070SW-ZL or THJK070LW-ZL can integrate with TonHe 110V/220V rectifiers. Can manage 2 groups of rectifiers, max 16 rectifiers each group

Integrated with ZHCL-2, can manage 1 group of rectifiers, 1 battery pack, 1 section of bus, 1 AC input.

Integrated with ZHCL-3, can manage 2 groups of rectifiers, 2 battery pack, 2 section of bus, 2 AC input with ATS function.

THJK070SW-ZL or THJK070LW-ZL can integrate with Insulation Status Detector RTU JYJC-32G or JYJC-64G, max 2 JYJC-32G or 2 JYJC-64G, can detect max 2 section of bus insulation status and 128 branch insulation status

THJK070SW-ZL or THJK070LW-ZL can integrate with Battery Detector RTU DCXJ-19 or DCXJ-55, max 2 DCXJ-19 or 2 DCXJ-55. DCXJ-19 for 12V/cell battery, DCXJ-55 for 2V/cell battery.

THJK070SW-ZL or THJK070LW-ZL can integrate with Switch Status Detector RTU KGL-64, max 4 KGL-64

Main Function and Features:

1. Human Machine Interface

- * 4.3" TFT Screen
- * Max 100 current faults display
- * Max 4096 historical faults storage, not lost when power off

2. System Function

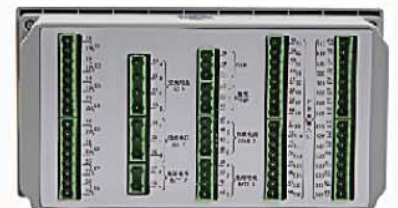
- * Battery management, monitoring 1 battery pack with 108 cells
- * Integrated with 2 of JYJC-64G RTU, can detect 1 section of bus insulation status, 128 route of branch insulation status, can detect AC intruding voltage
- * Providing 32 switch input (DI) and 8 Switch output (DO), definition can be chosen by user

3. Protocol and Interface

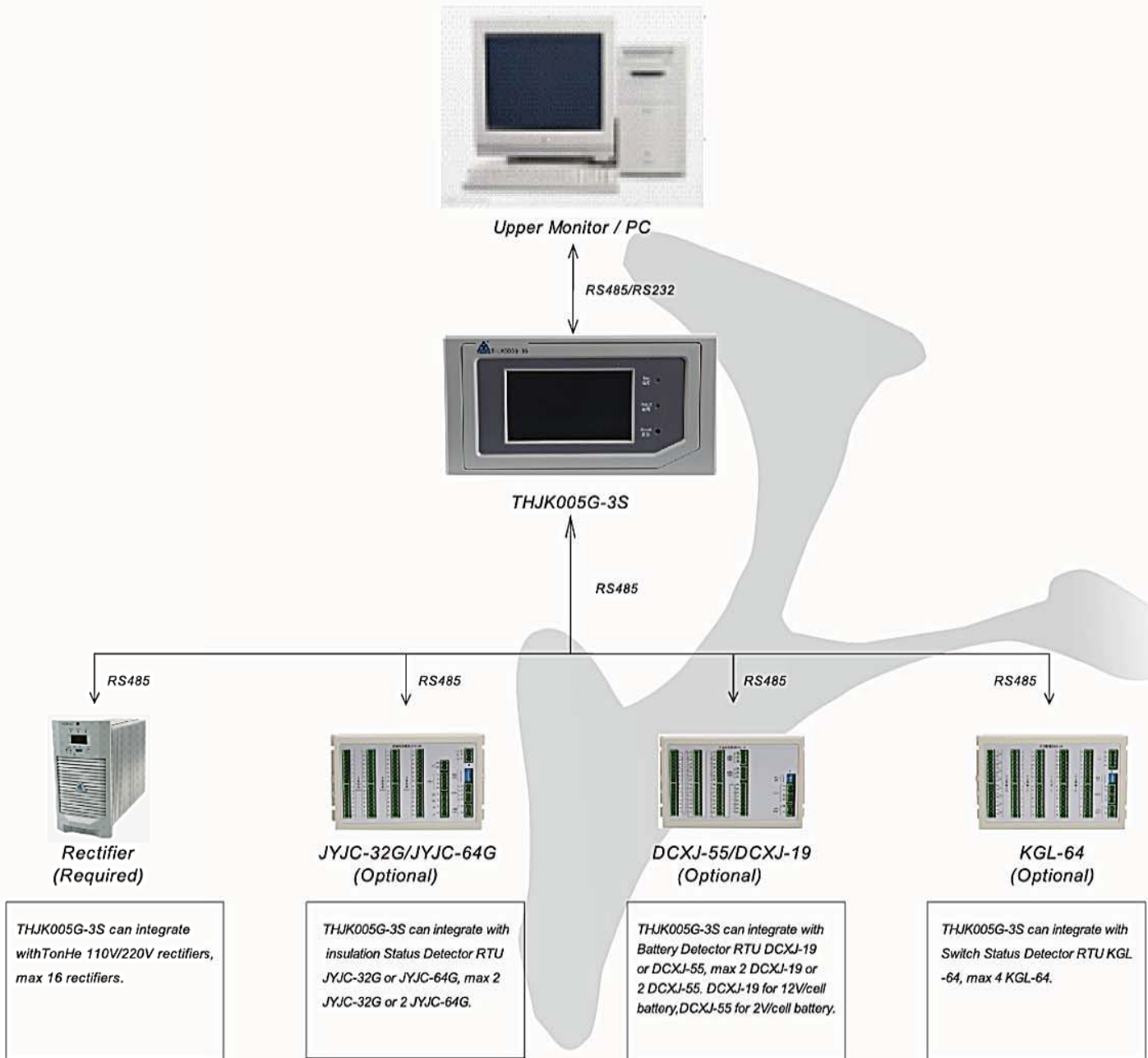
- * MODBUS protocol and RS485 interface
- * Communication address range 0~255

4. Other Functions

- * 2048 work logs, record every 10 minutes, not lost when power off
- * Time can be set to start screen saver automatically
- * Real-time clock, normal operation when power off



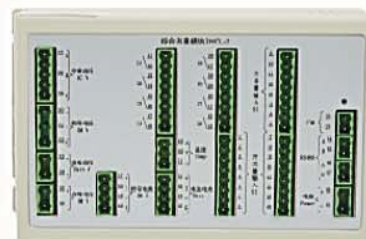
THJK005G-3S Configuration Framework



Complex Information Detector

ZHCL-2

- * Detect 1 route voltage of 3 phase AC input
- * Detect 3 route DC voltage, 2 route current, 1 battery pack ambient temperature
- * Detect 24 route switch input (DI), provide 8 route switch output (DO)
- * Control 5/7 level diode chain voltage dropper
- * Detect 1 section of bus insulation status
- * Applicable to system with 1 battery pack, 1 group of rectifiers



● ZHCL-2

ZHCL-3

- * Detect 2 route voltage of 3 phase AC input, automatically switch to backup AC input when main AC input failed
- * Detect 6 route DC voltage, 4 route current, 2 battery pack ambient temperature
- * Detect 32 route switch input (DI), provide 8 route switch output (DO)
- * Control 5/7 level diode chain voltage dropper
- * Detect 2 section of bus insulation status
- * Applicable to system with 2 battery pack, 2 group of rectifiers

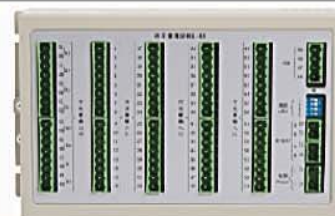


● ZHCL-3

Switch Status Detector

KGL-64

- * Detect 64 route switch input (DI)
- * Provide 8 route switch output (DO)
- * Applicable for system with more branches



● KGL-64

RTU for Monitoring System



Battery Detector

DCXJ-19

- * Detect cell voltage of 19 batteries (12V/cell)
- * Detect 1 battery pack ambient temperature
- * Applicable to battery pack with 9/18 cell battery (12V/cell)



●DCXJ-19

DCXJ-55

- * Detect cell voltage of 55 batteries (2V/cell)
- * Detect 2 battery pack ambient temperature
- * Applicable to battery pack with 54/108 cell battery (2V/cell)



●DCXJ-55

Insulation Status Detector

JYJC-32G

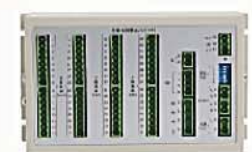
- * Detect 1 section of bus insulation status, can detect AC intruding voltage
- * Detect 32 route of branch insulation status
- * Unilateral detecting or bilateral detecting optional



●JYJC-32G

JYJC-64G

- * Detect 1 section of bus insulation status, can detect AC intruding voltage
- * Detect 64 route of branch insulation status
- * Unilateral detecting or bilateral detecting optional



●JYJC-64G

Insulation Status Monitor THJY001-3S

THJY001-3S can measure bus to ground voltage, +/- bus to ground resistance, branch to ground resistance, etc. The main functions are as following:

- * 240*64 pixel LCD screen, key-press operation*
- * Max 30 current faults display, max 200 historical alarm logs, not lost when power off*
- * Auto fault display with buzzer, the alarm threshold can be set*
- * MODBUS protocol with RS485 interface*
- * Screen protection if no key-press operation over 4 minutes*
- * Real-time clock display*

Insulation Status Monitor THJY005

THJY005 can measure resistance to ground, AC intruding voltage, single bus ring network fault, dual bus crosstalk fault, earth capacitance, battery insulation, etc.

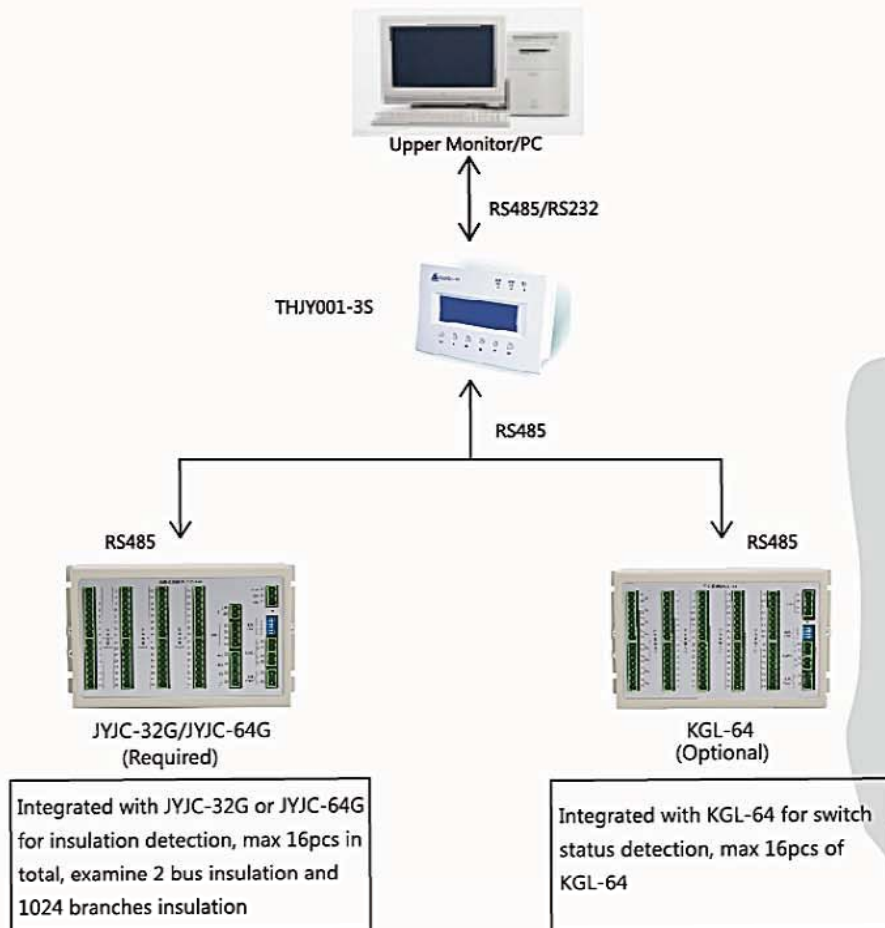
The main functions are as following:

- * 4.3" colorful TFT touch screen*
- * Max 100 current faults display, max 4096 historical faults storage, not lost when power off*
- * Auto fault display with buzzer, the alarm threshold can be set*
- * MODBUS protocol with RS485 interface*
- * Screen protection time can be set, real-time clock display*
- * Measure single bus ring network fault and dual bus crosstalk fault*
- * Measure the distributed capacitance of the system*
- * Real-time detection on present battery circuit insulation status*
- * Voltage balance function: When the ratio of positive bus and negative bus to ground voltage is over than protection maloperation risk factor, it will balance the voltage by voltage compensation bridge*

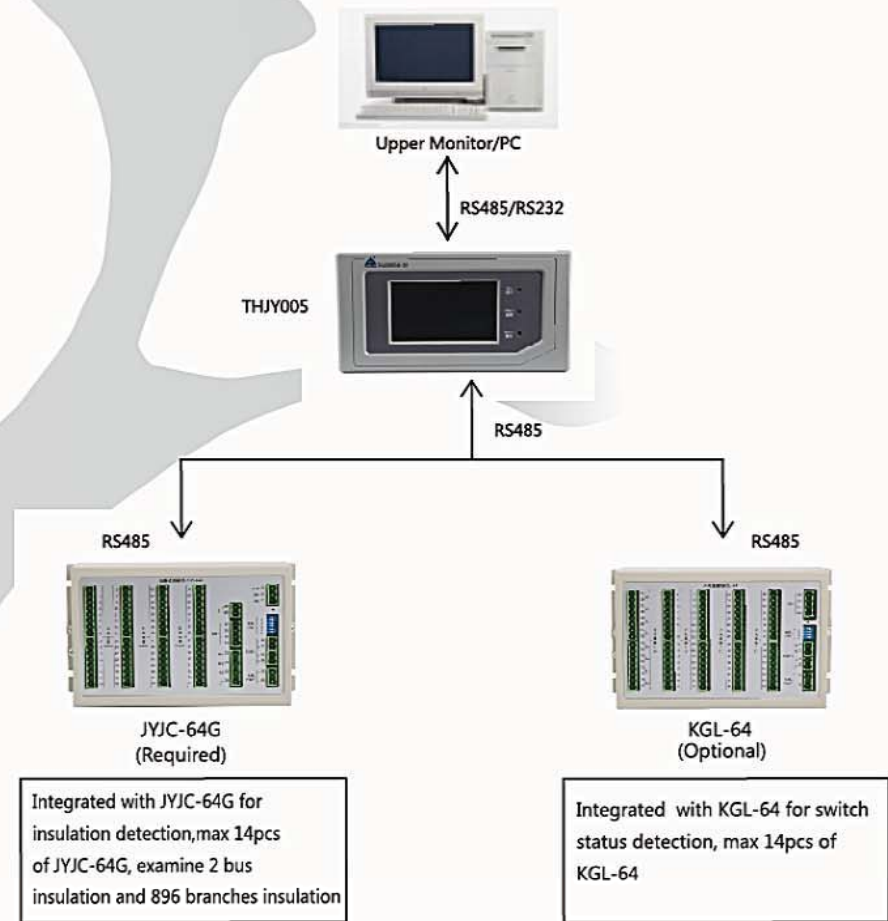
Insulation Status Monitor Configuration Framework



THJY001-3S Configuration Framework



THJY005 Configuration Framework



DC Power Supply System



Overview

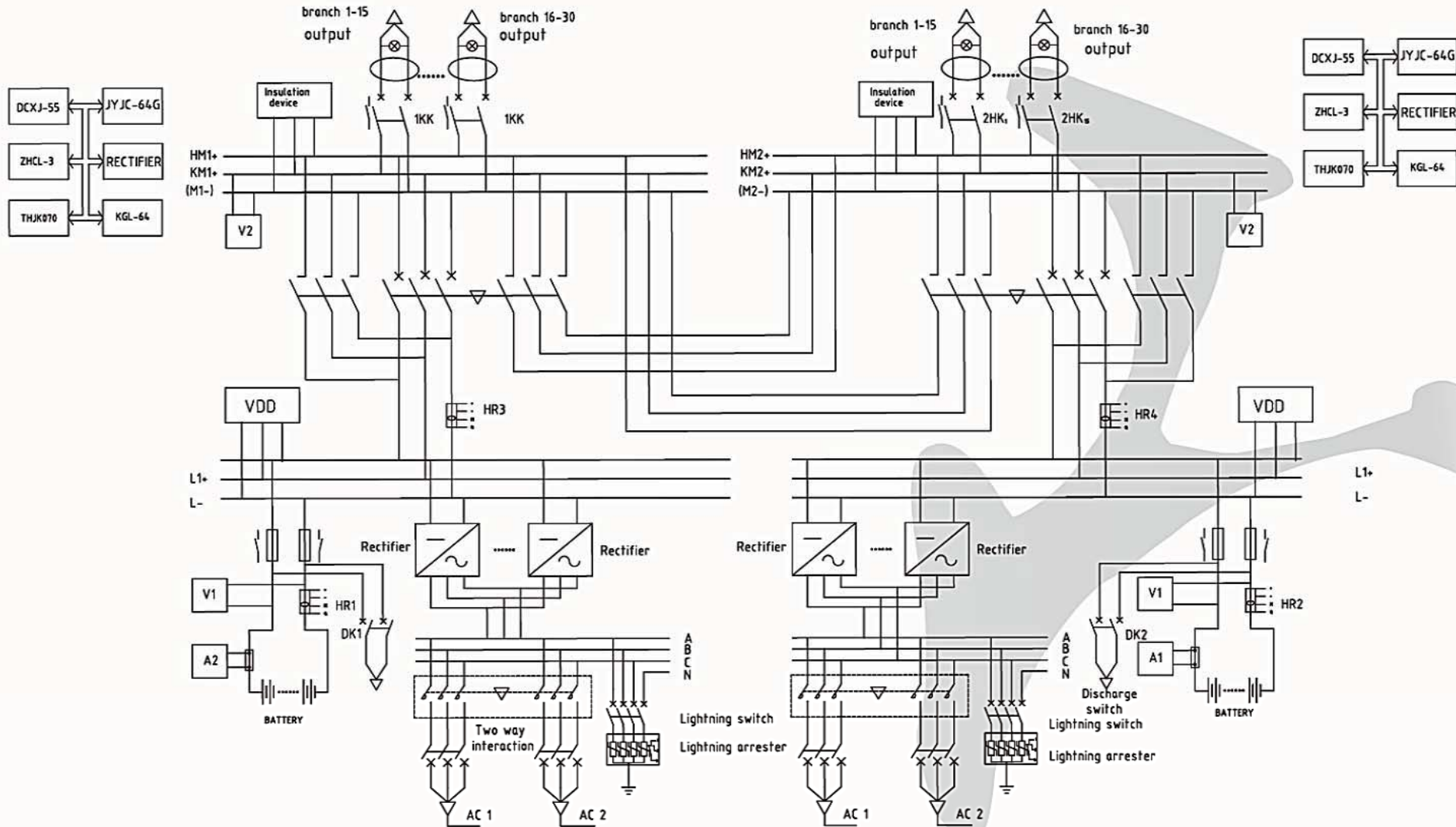
Our THGZDW series intelligent DC power supply system has advantages of high stabilization of voltage and current, low noise ,high efficiency and etc. It is designed with N+1 redundancy, and the function of remote monitoring and controlling makes the power system more safe and reliable. THGZDW series intelligent DC power supply system is applicable in thermal power plant, hydro power plant and substations etc, where the DC power supply is required as power supply for controlling, signal transmission, protection, telecommunications and lighting. It is widely applied in power generation, petroleum, chemical, metallurgy, papermaking, coal, building materials, textile industry and etc.



Main Function and Features:

- * Modular design, N+1 redundancy, easy expansion
- * Hot swapping, easy for maintenance
- * Soft switch technology with high efficiency
- * Output voltage and current adjustable
- * Independent current sharing
- * Double AC input with ATS function
- * Intelligent battery management, auto float/boost charge
- * Easy to operate by upper monitor/PC.
- * Modbus or IEC61850 protocol optional

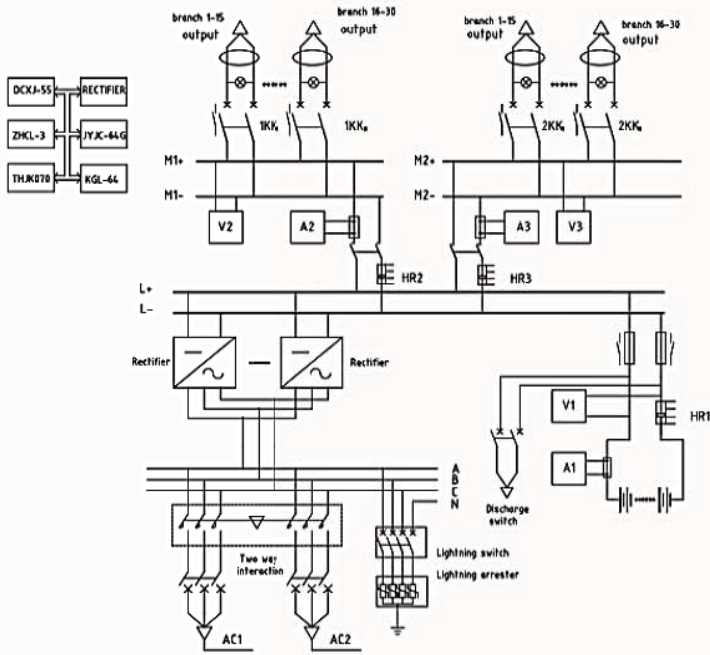
Schematic Diagram



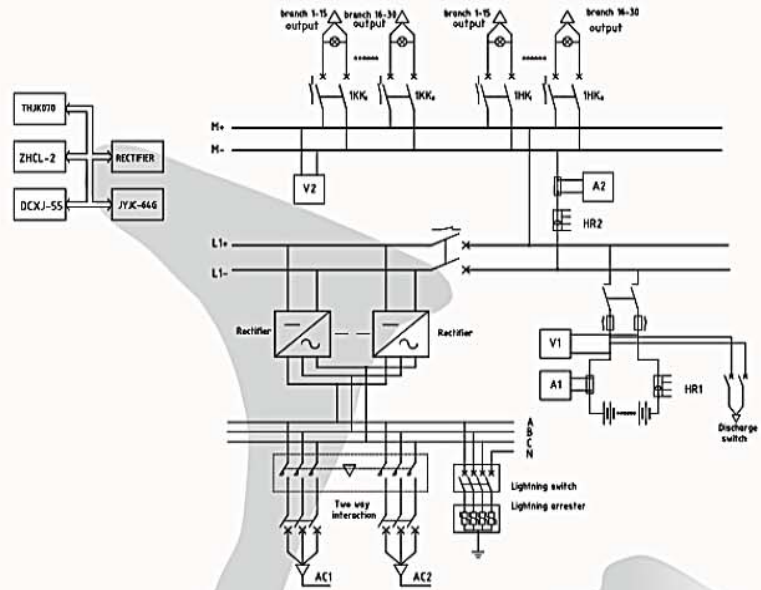
System Schematic Diagram



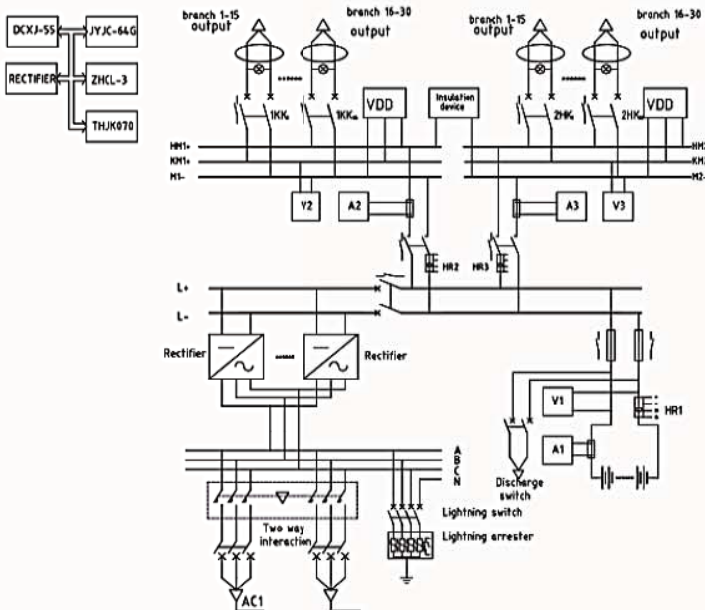
Schematic diagram 1



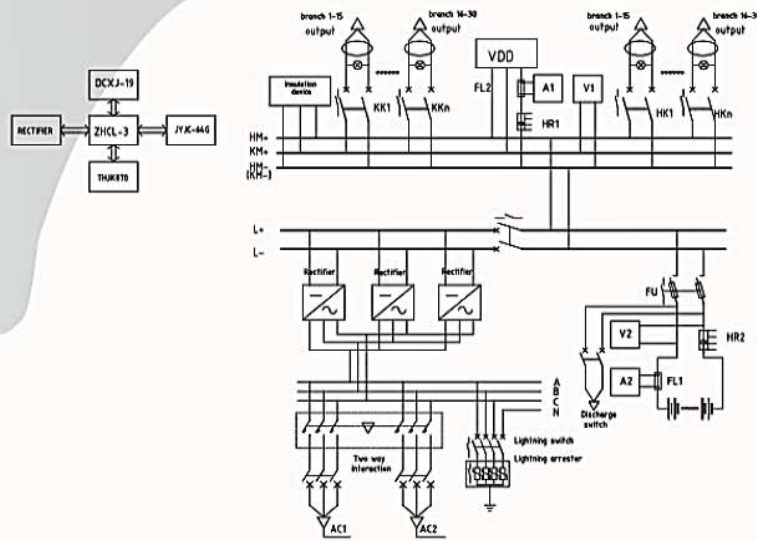
Schematic diagram 2



Schematic diagram 3



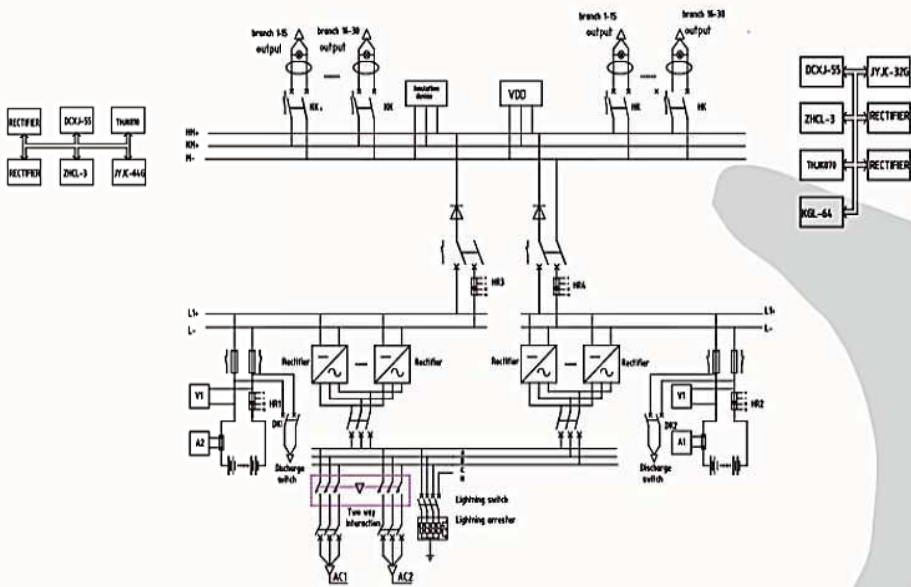
Schematic diagram 4



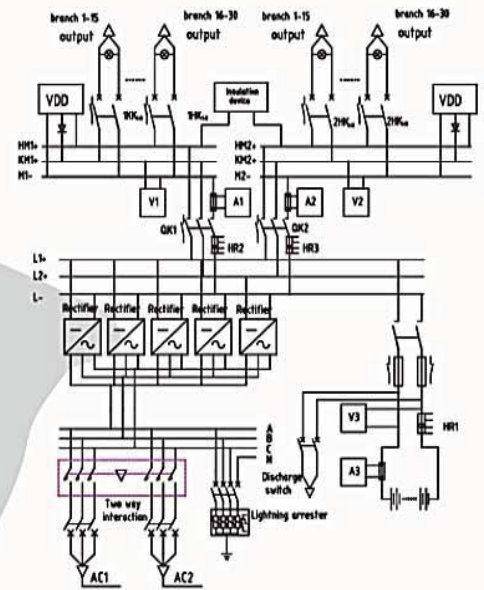
System Schematic Diagram



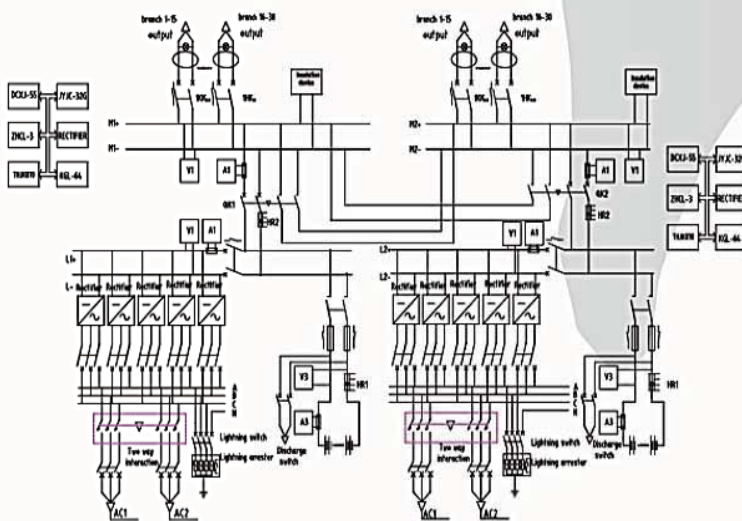
Schematic diagram 5



Schematic diagram 6



Schematic diagram 7



Schematic diagram 8

