JY1000-ST INSULATION MONITORING RELAY

DC INSULATION MONITORING

Introduction

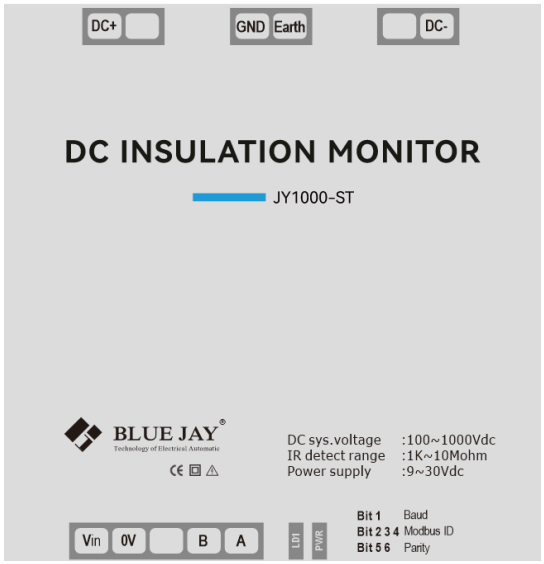
JY1000-ST is a DC insulation monitoring device based on MODBUS protocol, including DC to ground insulation impedance monitoring, DC voltage monitoring, DC voltage reverse connection alarm and other safety monitoring functions. It can be used for electric vehicle DC charging system, photovoltaic system, energy storage system, DC grid and other DC systems below 1000V.

JY1000-ST has the function of starting and stopping insulation monitoring. After insulation monitoring is started, the insulation resistance of positive and negative poles to ground can be monitored in real time. The monitoring result is not affected by DC voltage fluctuation, and is not affected by the symmetry of insulation resistance of positive and negative poles.

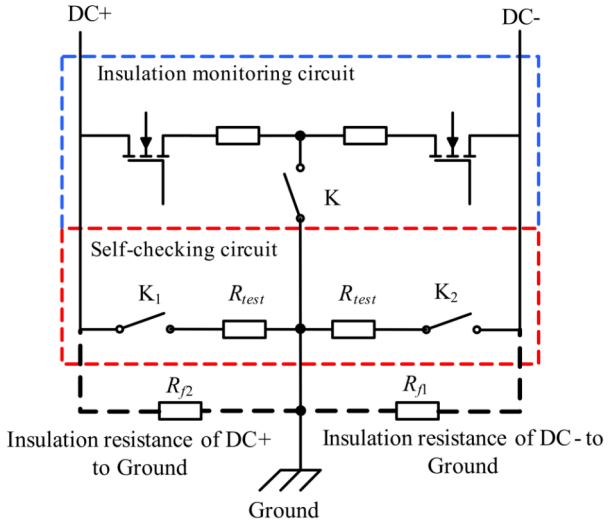
Main Features

- Rail mounting or screw fixing;
- Voltage reverse polarity alarm;
- High voltage grounding switch;
- Convenient parameter setting;
- Adaptive capacitance to ground;
- Monitor positive and negative poles;
- Insulation monitoring equipment self-test;
- RS485 remote monitoring and management;
- Widely insulation monitoring range (100V~1000VDC);

Terminal Definition



JY1000-ST Working Principle



Technical Characteristics

Basic parameters			
Power supply	9-30VDC, power 3W		
DC voltage range	100V~1000V		
DC voltage measurement accuracy	≤2V+0.3%		
Insulation resistance measurement range	1KΩ~10MΩ (DC System voltage:100V~1000V)		
Insulation monitoring accuracy (When :DC voltage:100V-1000V)	**CY range**	**Resistance range**	**Accuracy**
	0~0.8μF	≤60KΩ	≤3KΩ
		60kΩ<R≤1MΩ	≤5%
	0.8μF ~3μF	≤60KΩ	≤6KΩ
		60kΩ<R≤1MΩ	≤20%
Off-line pressure test	<2mA		
Maximum relay switching voltage	250VAC/30VDC		
Maximum relay switching current	3A		
Relay contact resistance	<100mΩ		
Relay insulation resistance	100MΩ		
Communication	RS485,modbus RTU		
Dimension	122.5*75*40mm,Din-rail:35mm		
Standard	IEC 61851-23 (2014-03):2014-11		
Humidity	85%		
Storage environment	- 40°C ~125°C		
Operating environment	- 40°C ~75°C		

Other parameters		
Pressure point	**Maximum voltage rating**	**Time**
DC+/DC- to GND	4200VDC/3000VAC	≤1min
Power supply +/- to GND	3500VDC/2500VAC	≤1min
RS485 A/B to GND	3500VDC/2500VAC	≤1min
DC+/DC- to power supply +/-	3500VDC/2000VAC	≤1min
DC+/DC- to A/B	3500VDC/2000VAC	≤1min

JY1000 INSULATION MONITORING RELAY



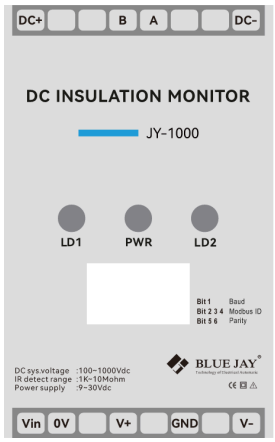
Introduction

JY1000 is an efficient insulation monitoring device specially designed for car charging piles. It can monitor the insulation status of the DC power supply system of charging piles in real time, detect potential insulation faults in time and alarm, effectively preventing fires and safety accidents. Users can realize start-stop and data collection of insulation monitoring through RS485 communication.

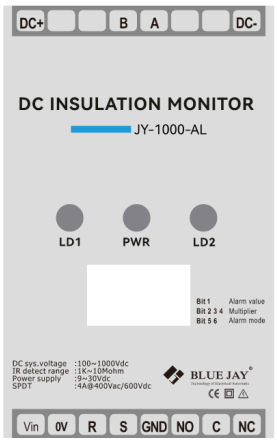
JY1000-AL is a DC to ground insulation monitoring module based on the unbalanced bridge principle, integrating monitoring and protection functions. It can monitor the insulation resistance value of the positive and negative poles of the DC floating system to the ground, ranging from 1KΩ to 10MΩ, and detect the DC voltage value, ranging from 100V to 1000V. In addition, JY1000-AL is equipped with a high-voltage grounding switch to realize online on-off function to ensure complete isolation from the ground when the module is powered off, reset or stops working.

JY1000	Standard model
JY1000-AL	With Fault alarm function

Terminal Definition



JY1000



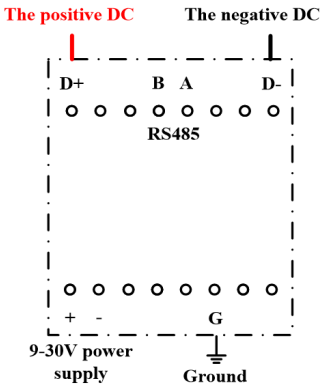
JY1000-AL

Main Features

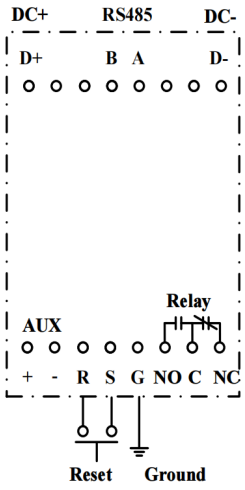
- Adaptive capacitance to ground;
- Simple device setting by DIP switch;
- Faster monitoring speed of turning on;
- Communicate with RS485 modbus;
- Equipped with high voltage grounding switch;
- Wider DC insulation monitoring range DC 100~1000V;
- Unbalanced bridge principle for resistance measurement;
- Monitoring the DC circuit bus bar insulation resistance RF to earth;

Wiring Method

JY1000



JY1000-AL



Technical Characteristics

Basic parameters			
Power supply	9-30VDC, power 3W		
DC voltage range	100V~1000V		
DC voltage measurement accuracy	≤2V+0.3%		
Insulation resistance measurement range	1KΩ~10MΩ (DC System voltage:100V~1000V)		
Insulation monitoring accuracy (When :DC voltage:100V-1000V)	**CY range**	**Resistance range**	**Accuracy**
	0~0.8μF	≤60KΩ	≤3KΩ
		60kΩ<R≤1MΩ	≤5%
	0.8μF ~3μF	≤60KΩ	≤6KΩ
		60kΩ<R≤1MΩ	≤20%
Off-line pressure test	<2mA		
Maximum relay switching voltage	250VAC/30VDC		
Maximum relay switching current	3A		
Relay contact resistance	<100mΩ		
Relay insulation resistance	100MΩ		
Communication	RS485,modbus RTU		
Dimension	98*49*62mm,Din-rail:35mm		
Standard	IEC 61851-23 (2014-03):2014-11		
Humidity	85%		
Storage environment	- 40°C ~125°C		
Operating environment	- 40°C ~75°C		

Other parameters		
Pressure point	**Maximum voltage rating**	**Time**
DC+/DC- to GND	4200VDC/3000VAC	≤1min
Power supply +/- to GND	3500VDC/2500VAC	≤1min
RS485 A/B to GND	3500VDC/2500VAC	≤1min
DC+/DC- to power supply +/-	3500VDC/2000VAC	≤1min
DC+/DC- to A/B	3500VDC/2000VAC	≤1min

JY1000-C2 INSULATION MONITORING RELAY

Introduction

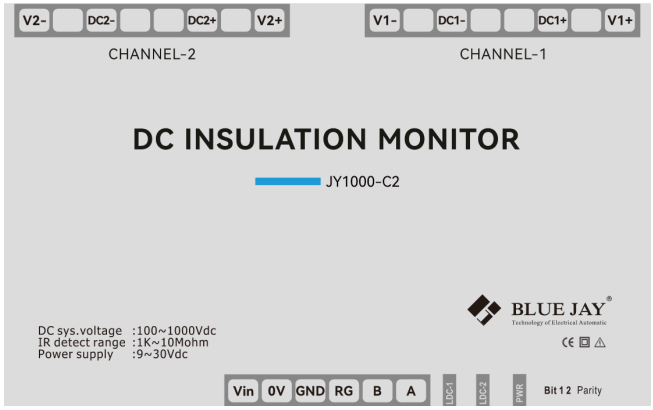
JY1000-C2 is used in on-line monitoring insulation resistance of the DC floating system (Dual DC system shared one ground). Dual DC channels are controlled independently, two DC insulation monitoring non-interference in each other. Users can enable or disable the insulation monitoring function of each DC channel and acquire insulation resistance values by RS485 communication.

JY1000-C2 adopts Dual-DC channels independent control scheme. Users can control dual-channel startup, close and data reading respectively according to the communication protocol.

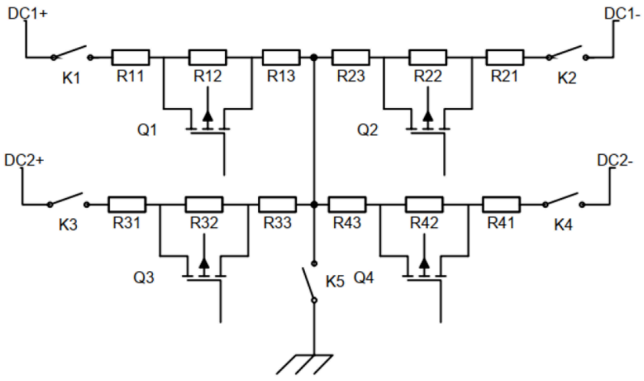
Main Features

- Dual-channels independent control;
- Remote monitoring and management;
- Monitor positive and negative poles;
- Ground insulation resistance;
- DC voltage monitoring;
- Vehicle side DC voltage monitoring;
- Voltage reverse polarity alarm;

Terminal Definition



Working Principle



Technical Characteristics

Basic parameters			
Power supply	9-30VDC, Power 6W		
DC voltage range	100V~1000V		
DC voltage measurement accuracy	≤2V+0.3%		
Insulation resistance measurement range	1KΩ~10MΩ (DC System voltage:100V~1000V)		
Insulation monitoring accuracy (When :DC voltage:100V-1000V)	**CY range**	**Resistance range**	**Accuracy**
	0~0.8μF	≤60KΩ	≤3KΩ
		60KΩ<R≤1MΩ	≤5%
	0.8μF ~3μF	≤60KΩ	≤6KΩ
		60KΩ<R≤1MΩ	≤20%
Off-line pressure test	<2mA		
Communication	RS485,Modbus RTU/ Private protocol		
Dimension	145*95*40mm,Din-rail:35mm		
Standard	IEC 61851-23 (2014-03):2014-11		
Humidity	85%		
Storage environment	- 40°C ~125°C		
Operating environment	- 40°C ~75°C		

Other parameters		
Pressure point	**Maximum voltage rating**	**Time**
DC+/DC- to GND	4200VDC/3000VAC	≤1min
Power supply +/- to GND	4200VDC/3000VAC	≤1min
RS485 A/B to GND	4200VDC/3000VAC	≤1min
DC+/DC- to power supply +/-	4200VDC/3000VAC	≤1min
DC+/DC- to A/B	4200VDC/3000VAC	≤1min

JY2000-AL INSULATION MONITORING RELAY



Introduction

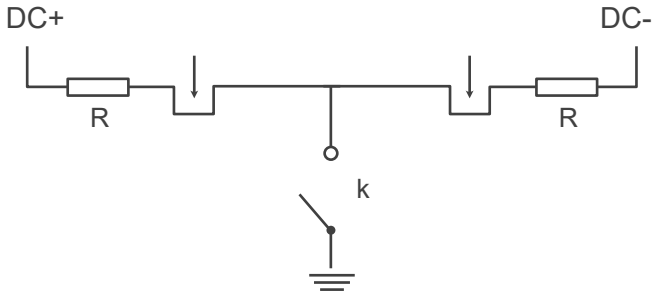
JY2000-AL is a DC to ground insulation monitoring module based on the principle of unbalanced bridge, which has monitoring and protection functions in one. It can monitor the insulation resistance value of the positive and negative poles of the DC floating system to the ground, ranging from 1KΩ to 10MΩ; at the same time, it can also detect the DC voltage value, ranging from 100V to 2000V.

After the insulation monitoring function is turned on, the product can continue to monitor the insulation resistance in real time, and user can read the insulation resistance value as soon as 1 second after the insulation monitoring function is turned on. For the DC to ground capacitance, module can realize self-adaptive monitoring the ground capacitance below 3μF (the positive and negative poles to the ground capacitance are respectively below 3μF, and the total capacitance is below 6μF).

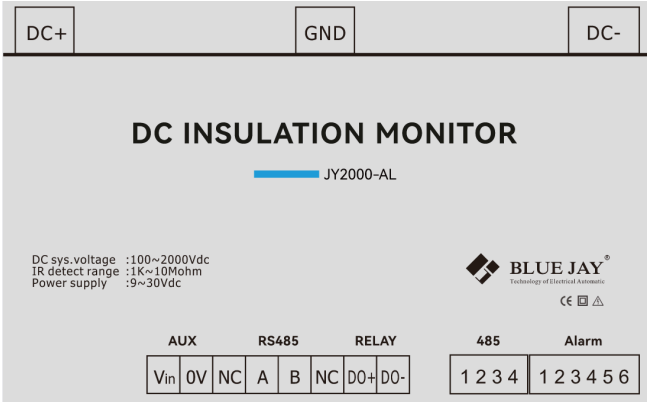
Main Features

- High voltage grounding switch;
- Widely power supply range;
- Widely insulation monitoring range (100V~2000VDC);
- Insulation monitoring equipment self-test;
- Adaptive capacitance to ground;
- Convenient parameter setting;
- Remote monitoring and management;
- Monitor positive and negative poles;
- Ground insulation resistance;
- Voltage reverse polarity alarm;

Working Principle



Terminal Definition



Technical Characteristics

Basic parameters		
Power supply	9-30VDC, Power 3W	
DC voltage range	100V~2000V	
DC voltage measurement accuracy	≤2V+0.3%	
Insulation resistance measurement range	1KΩ~10MΩ (DC System voltage:100V~1000V)	
Insulation monitoring accuracy	DC voltage:100V-300V	≤3KΩ+10%
	DC voltage:300V-2000V	≤3KΩ+5%
	CY>0.3μF, insulation resistance>1MΩ or CY>1μF	>10%
Off-line pressure test	<2mA	
Maximum relay switching voltage	250VAC/30VDC	
Maximum relay switching current	3A	
Relay contact resistance	<100mΩ	
Relay insulation resistance	100MΩ	
Communication	RS485,Modbus RTU	
Standard	IEC 61851-23 (2014-03):2014-11	
Dimension	145*115*40,Din-rail:35mm	
Humidity	85%	
Storage environment	- 40°C ~125°C	
Operating environment	- 40°C ~75°C	

Other parameters		
Pressure point	**Maximum voltage rating**	**Time**
DC+/DC- to GND	4200VDC/3000VAC	≤1min
Power supply +/- to GND	3500VDC/2500VAC	≤1min
RS485 A/B to GND	3500VDC/2500VAC	≤1min
DC+/DC- to power supply +/-	3500VDC/2500VAC	≤1min
DC+/DC- to A/B	3500VDC/2500VAC	≤1min