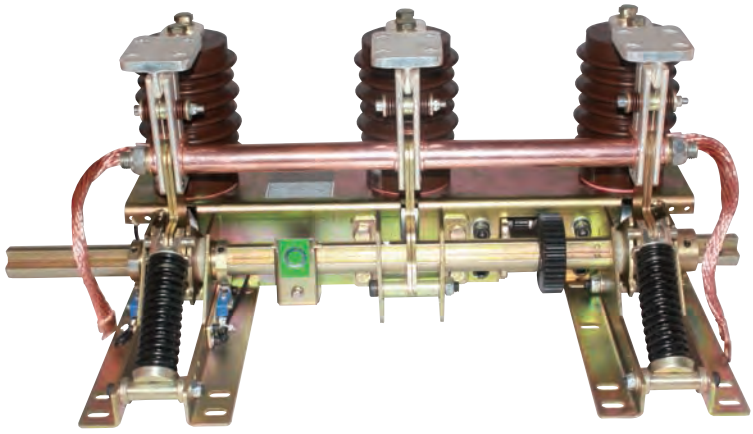
12/24KV EARTHING SWITCH (MOTORIZED TYPE)



Summary:

Our company developed the motor -operated mechanism is an advanced Intelligent operation mechanism . Connecting JN15 earth switch with short-circuit capacity and fast closing mechanism compatible, capable of photosynthesis test electrical earth switch under the operating conditions, with reliable "five anti) chain

It is Meet with demand for smart grid development,To use the earth switch ,It is of significance and value to apply the earth switch .

Main features:

1. Simple installation,with a combination of the main earthing switch,without changing the original install structure of earthing switch.
2. It can be achieved freely switch for manually operated and electrically operated.
3. It is safe and reliable, attempts to prevent the conversion function can be realized on control and protection for the motor.

Debug method:

After JN15-12/D31.5 electrical grounding switch is installed, according to the following steps for debugging:

1. Read the specification of REC-10-HB switchgear electric control device. According to the wiring terminal diagram of REC-10-HB switchgear electric control device sample, connect electric earthing switch wiring terminal in accordance with the electrical diagram terminal number.

2. Motor earthing switch terminal is pluggable terminal block. When complete connection,before testing power-on, user should pull out terminal, hang measured terminal 1,2 foot motor power, During press the switch knob of electric control device,need insure 1 foot is positive power(VDD), 2 foot is negative power(GND). If wiring is correct, then plug termina

3. By test, observing whether the indicator light function of ERC-10-HB switchgear electric control device is correct. If not correct, please check the correctness of terminal and in place of signal source of switch opening, closing is correct or not.

4. Manual operate earthing switch opening-closing, observing whether the display of electric control device is correct. If correct, can debug by motor operation.

5. Special note of motor operation test: switchgear electric control device send intruction of earthing switch opening or closing. If the operating conditions are met, then will perform earthing switch opening or closing operation, observing whether the mechanism rotation direction is correct. If mechanism rotation direction is opposite, user should immediately turn off the power or press the scram button on device to stop the current operation, try again after changing moter positive and negative terminals. If the operating conditions are not met,(such as the interlocking signal of control device 11 foot is not correct), control device will not work properly, the user should settle accordingly to meet the operating conditions and try again.

6. The switch off motion and the signal of the opening and closing reaching of the electric earthing switch are subject to the connect between operating shaft cam arrangement and microswitch. When electric earthing switch is connected with cabinet interlock, we should offer electric control device power supply, Combining with the control device opening and closing indicator light, manually adjust the opening and closing reaching of earthing switch(note:When the spring of earthing switch is just over dead point,the operating handle should seize up immediately.), observe whether the control device opening and closing indicator light can synchronously indicate or not. Otherwise, we should adjust the upper and lower position of twin thread screw in the interlock to make them synchronic. If interlock position error is too big to reach synchronic, we should make a fine adjustment in position between microswitch and cam, and then observe control device just to make the corresponding indicator light light.

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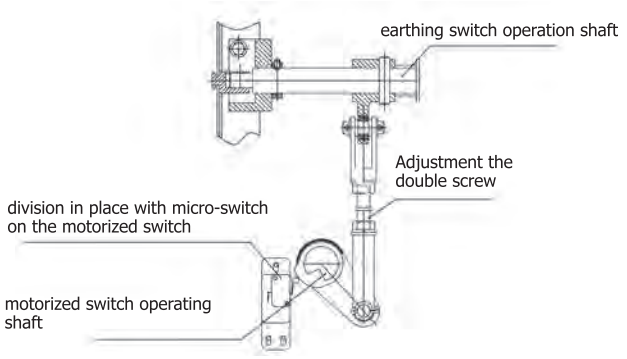
attached drawing:

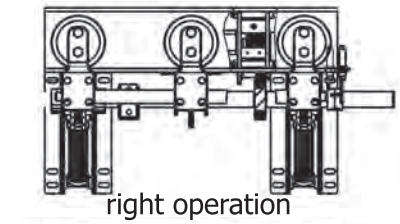


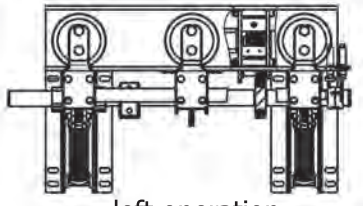
Applying Ambient condition :

1. The height above sea level is not exceed 1000m
2. Ambient temperature :+40%,-25%
3. Earthquake intensity :not exceed 8 degrees
4. Ambient humidity :the average humidity of a day should be no more than 95%, the average pressure of month should be not more than 90%.
5. Contamination level: II

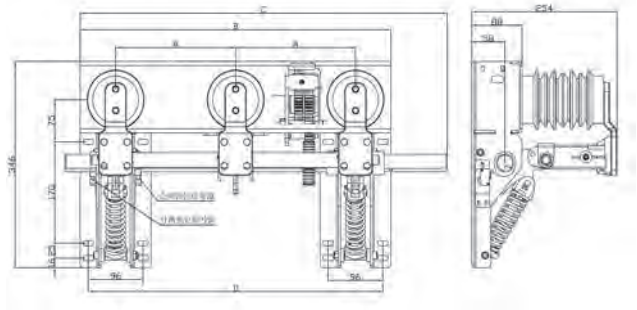
Order Information:

1. When order electrical earthing switch,shall specify whether need extended length flexible connection.
2. Whether need for auxiliary switches, auxiliary switch whether need to lead to terminals.
3. Please note that operation way of switch is arm drive or bevel gear drive.(match with chain parts)
4. Mark left or right operating direction of motor earth switch.Our company stipulate that left operating or right operation as follows.
5. The electrical devices have three options:
(1)ERC-10-HB-A1 is installed on the board of instrument room, is a conventional ancillary products.
(2)ERC-10-HB-A2 is installed in the door board of instrument room, with RS485 communication interface, is optional part.
(3)EPC-20-HB-A1 is installed on the guide rail in instrument room, is optional part.


right operation


left operation

JN15-12/D31.5 Motorized earthing switch Outline and installation size



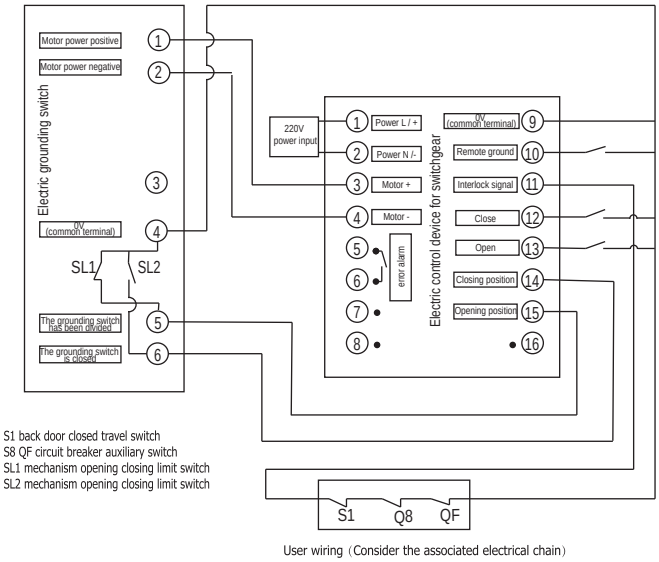
Terminal diagram

Terminal No	1	Motor power anode
	2	Motor power cathode
	3	Ov (common)
	4	Earthing switch opened
	5	Earthing switch closed

Assort table

A	B	C	D
210	544	655	516
275	674	785	646

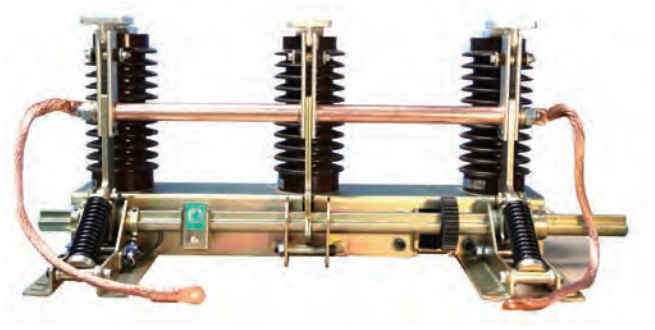
Control circuit and wiring of motorized earthing switch



Wiring instructions of motorized earthing switch

1. When switch equipment motorized control device terminal No. 3 and No. 4 corresponds to terminal No. 1 positive and No. 2 cathode, be careful not to reverse the polarity of the power supply to avoid damage to the motor. Through the debugging to observe whether the rotates direction of earthing switch operating shaft gear met the switch's opening, closing state, otherwise swap the positive and negative.
2. If operate motorized earthing switch separately(not loading), switch equipment motorized control device terminal No. 11 and No. 10(0V common terminal) short.

CONTROLLER: ERC-10-HB-A1 INSTRUCTIONS OF EARTHING SWITCH (MOTORIZED TYPE)



Summary:

ERC-10-HB-A1 switchgear pneumatic-electrical control device can realize control and protection of electric mechanism. The controller can brake motor, and reverse drive motor to remove the stuffy vehicle locked status when electric mechanism blocked in driving motor work, such as install is not in place or jam.

Model and meaning:

ERC - □- □- □- □

- Control code, which is represented by Arabic numerals
- Power voltage class,A represent AC/DC220V, B represent AC/DC 110V
- HB Customer code,HB
- Design serial number, 10 represent cabinet door installation
- Product code

Technical parameter6:

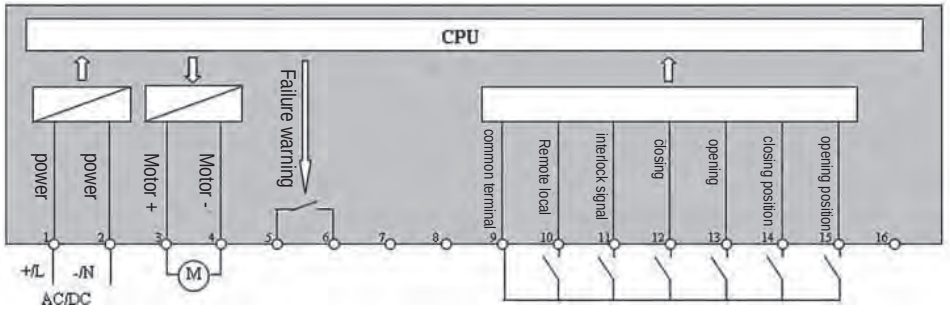
1. Supply voltage: AC/DC 220V, AC/DC 110V
2. Motor rated voltage: DC220V, DC110V
3. Max. motor rated power: Max. 300W
4. Power consumption: < 2W
5. Power frequency withstand voltage: AC2.5KV 1min
6. Output contact: 1NO, 5A, AC 250V
7. Protection level: IP20
8. Ambient temperature: -20 °C to +50°C
9. Dimension: Outline dimension Height* Width*Length=125*78*69
10. Installation method: Cabinet door installation

Instructions:

Button	Switch On	The controller allows operation, then push the button: 1. System is in standby mode, it will start the motor to the on–position. 2. System is in starting the motor to the on–position, it is not responding to the command.
	Switch Off	The controller allows operation, then push the button: 1. System is in standby mode, it will start the motor to the on–position. 2. System is in starting the motor to the on–position, it is not responding to the command
	Reset/E–stop	When controller is in protected and locked status, the red protected indicator light of the panel light up, push the button, system return to standby state. If push the button when system is in starting the motor to the on–position or off–position, it will brake motor and return to standby state immediately.
Indicator Light	Power	Power indicate function. power–on, light up, green; power–off ,blank out.
	Ready	Ready indicate function, green. Light up when ready, and blank out when unready.
	Remote	Remote operate indicate function, red. It's in remote operation mode when light up, and blank out when unready.
	On–position	Light up when electric mechanism is in on–position, red
	Off–position	Light up when electric mechanism is in off–position, red
	Accident	Light up when system is in protected and locked status, red; and blank out when reset.

1	Power+(L)	The controller power supply the positive or L
2	Power–(N)	The controller power supply the cathode or N
3	Motor+	The controller drive signal to output, connect drive motor "+"
4	Motor–	The controller drive signal to output, connect drive motor "–"
5、6	Failure warning	Normally open contacts. Open when no block and rotate.Close when block and rotate.
7、8	obligate	
9	Public terminal	Switch input signal common terminal
10	Remote / local	Short circuit when switch input to common terminal,it will be remote operation mode.Open when switch input to common terminal,it will be remote operation mode.
11	Interlock signal	Valid when switch input to public terminal is short circuit
12	Remote switch on	Valid when switch input to public terminal is short circuit
13	Remote switch off	Valid when switch input to public terminal is short circuit
14	Closing position	Valid when switch input to public terminal is short circuit
15	Opening position	Valid when switch input to public terminal is short circuit
16	obligate	

Terminal:

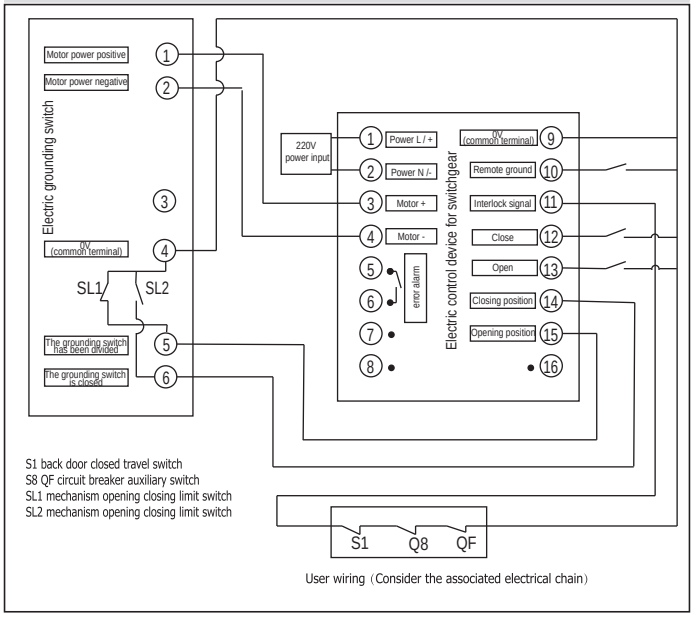


Connection diagram

Control logic:

1. The on- off switch operation can only be allowed when the interlocking signal is working.
2. In the process of on-off switch operation, the controller shall still execute the original operation when input the on-off order.
3. In the process of on-off switch operation, the controller shall stop working when press the Reset/sudden stop button, or the interlocking signal is inoperative.
4. The controller shall delay 0.3s, stop 1s, then reverse 0.3s when electric mechanism is up to on position. If the controller has not reversed 0.3s for power failure when the mechanism reaches on position, it should reverse 0.3s again when power is normal. (It can only be operated when the earth switch is in on position)
5. When it is locked-rotor protected, the controller shall revered 1.5s after stop operation. The setting value for locked-rotor current is tentatively 1.8A.
6. The operation is forbid within 4s upon the completion of on-off switch (including 1s reverse time).

Control circuit and wiring of motorized earthing switch



Internal wiring diagram of motorized earthing switch Motor