EnergoM-DU-1 SERIES INSULATION MONITORING RELAY

DC INSULATION MONITORING

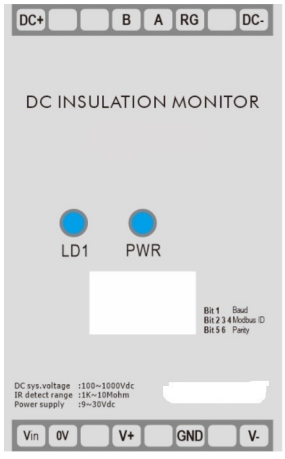
Introduction

EnergoM-DU-1 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.

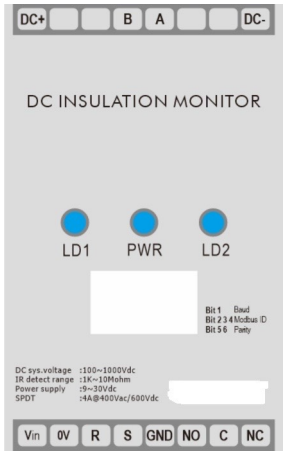
EnergoM-DU-1K is a DC-to-ground insulation monitoring module based on the unbalanced bridge principle, integrating monitoring and protection functions. It can monitor the insulation resistance value of the positive and negative poles of the DC floating system to the ground, ranging from 1KΩ to 10MΩ, and detect the DC voltage value, ranging from 100V to 1000V. In addition, EnergoM-DU-1K 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.

EnergoM-DU-1	Standard model
EnergoM-DU-1K	With Fault alarm function

Terminal Definition



EnergoM-DU-1

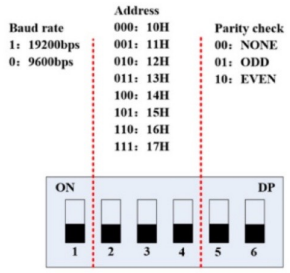


EnergoM-DU-1K

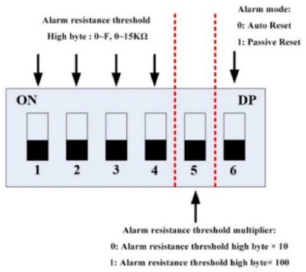
Main Features

- 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.

DIP Switch Settings



EnergoM-DU-1



EnergoM-DU-1K

Technical Characteristics

Basic parameters			
Power supply	10-30VDC, 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*52mm,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