BIM SERIES DC INSULATION MONITORING

INSULATION MONITORING DEVICE



Introduction

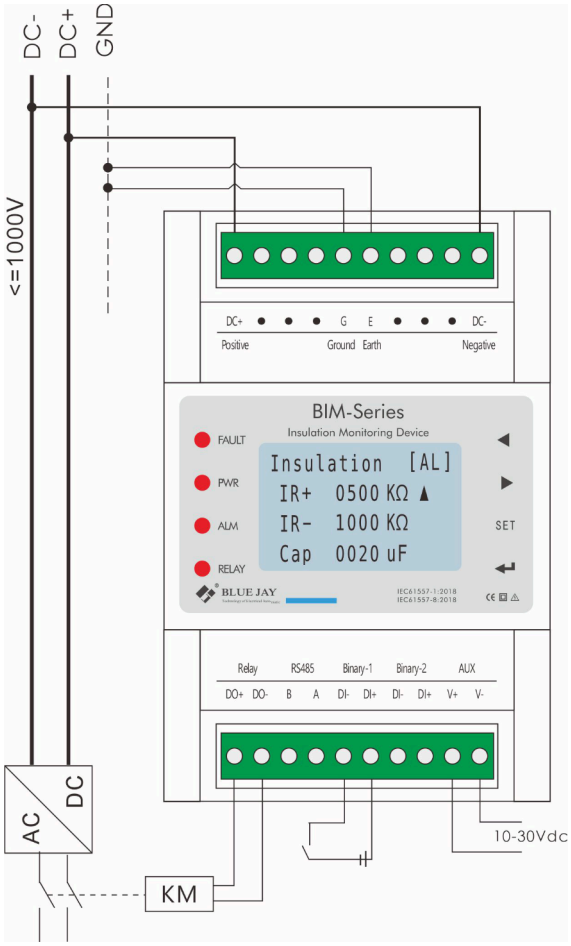
BIM-series insulation monitoring devices provide continuous insulation supervision for 100-1000 Vdc unearthed systems. Single-channel options include cost-optimised BIM-4MS (no screen) and feature-rich BIM-CH1 (LCD). BIM-CH2 dual-channel version monitors two independent DC circuits in one device, perfectly suited for dual-port DC charging piles.

All units support automatic adaptation to system stray capacitance up to 5 µF, configurable insulation alarm thresholds and selectable NO/NC relay outputs for reliable DC system earth fault protection.

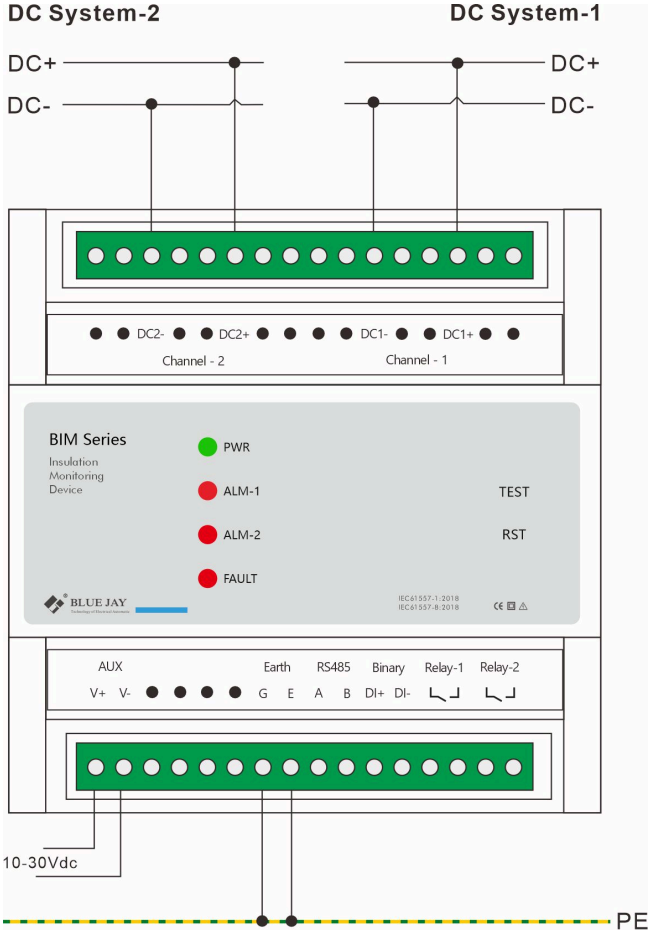
Main Features

- For unearthed (IT) 100-1000 VDC systems;
- Auto adaptation to system leakage Y-capacitance;
- Adjustable insulation alarm thresholds 10kΩ …10MΩ;
- Dual-channel monitoring for two independent DC circuits,
- Ideal for dual-gun DC charging stations;
- Built-in DI / DO terminals for control and alarm output;
- Local self-test & wiring connection fault supervision;
- RS485 communication with Modbus-RTU protocol;

Wiring of BIM-CH1/ BIM-4MS



Wiring of BIM-CH2



Technical Characteristics

	BIM-4MS	BIM-CH1	BIM-CH2
Parameter			
Channel	Single channel		Dual channel
Working principle	Bridge circuit		
Application system	DC system		
Power supply	10-30Vdc, power 3W		10-30Vdc, Power 5W
Voltage range	100V~1000Vdc		
Insulation resistance measurement range	10KΩ~10MΩ		
Insulation resistance measurement accuracy	**CY= 0~0.8μF:** ≤60kΩ, accuracy ≤3kΩ ; 60kΩ<R<1MΩ, accuracy≤5% **CY= 0.8μF ~3μF:** ≤60kΩ, accuracy ≤6kΩ; 60kΩ<R<1MΩ,, accuracy ≤20%		
Max system leakage capacitance	≤5μF		
Digital output (DO)	1*DO, passive dry contact, SPST, 4A@250Vac/ 30Vdc		2*DO, passive dry contact, SPDT, 5A@250Vac
Digital input (DI)	1*DI, 0.25mA@short circuit	2*DI, 0.25mA@short circuit	1*DI, NO, active dry contact, with internal 15Vdc pull-up voltage Load capacity: Ri<500Ω turn on, Ri> 100KΩ turn off
Virtual alarm	2* virtual alarms	8* virtual alarms	10* virtual alarms
Screen	/	LCD display	/
Dimension (W*H*D)	72*110*66 mm		108*110*66mm
Installation	Standard 35mm Din-rail mounting		
Communication	RS485/ Modbus RTU		
Standards	IEC 61557-1: 2018; IEC 61557-8: 2018		

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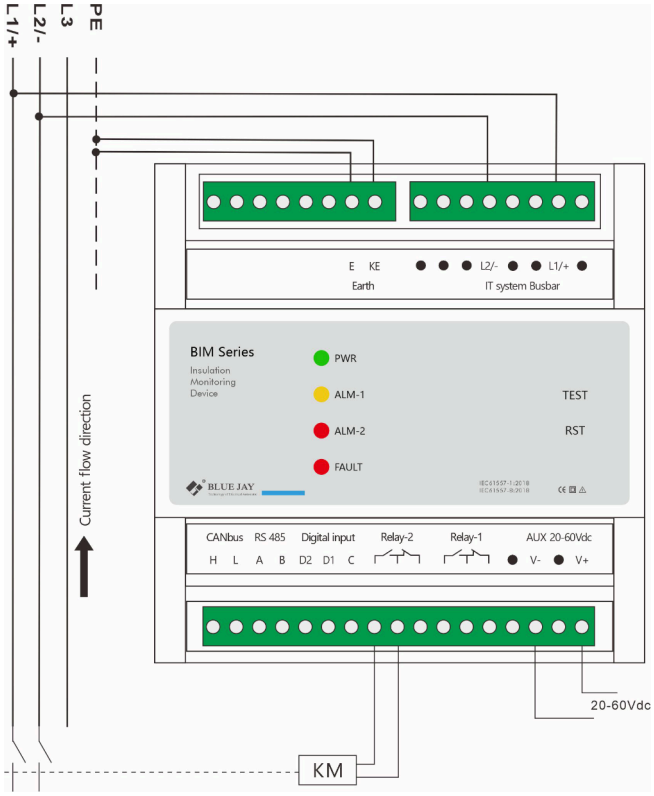
The BIM-M1000 insulation monitoring device provides continuous insulation resistance monitoring for unearthed AC/DC IT systems up to 1000 V. Using active signal injection technology, it detects insulation degradation and ground faults, with two independently adjustable alarm thresholds for early warning and fault indication.

Designed for industrial power distribution, battery energy storage systems, and EV charging facilities, the BIM-M1000 supports RS485 Modbus RTU communication and optional CAN bus integration. With automatic adaptation to system leakage capacitance up to 20 μF, it enables reliable insulation monitoring and system integration.

Main Features

- Active signal injection technology;
- Insulation resistance: 0–30MΩ;
- Nominal system voltages: AC, DC,or AC/DC up to 1000V;
- Monitoring for single-phase AC,three-phase AC, and DC systems;
- System leakage capaditances:up to 20uF;
- Adjustable alarm thresholds and response delays;
- Communication:RS485 Modbus RTU/ optional canbus;
- Compliant with IEC 61557-1/ 61557-8 standard;

Wiring of BIM-M1000



Application

- AC and DC IT power distribution systems;
- Industrial power and automation;
- Battery packs and energy storage systems;
- Electric vehicles and transportation;
- Renewable energy generation systems;
- DC charging stations for electric vehicles;

Technical Characteristics

Supply voltage	
Power supply	20-60Vdc, power consumption ≤ 5W
Frequency range	40~65Hz
Monitored IT system	
Nominal system voltage	0…1000 Vac/dc
Insulation resistance measurement range	0~30MΩ
Insulation resistance measurement accuracy	0~100 KΩ, CY≤ 2μF, Bus voltage stability: ±12 KΩ 100 kΩ~1 MΩ, CY≤ 2μF, Bus voltage stability: ±10 % 1 MΩ~30 MΩ, CY =0μF, Bus voltage stability: ±10 %
Measuring circuit	
Measuring principle	Active signal injection
Injection measuring voltage	±15V
Injection measuring current	<100μA
Permissible system leakage capacitance	≤20μF
Alarm relay output	
Quantity	2* SPDT relay
Max. switching current	>100mA
Max. withstand voltage	12Vdc
Load capacity	5A@250VAC
Alarm-1 (IR pre-alarm)	Default 500KΩ
Alarm-2 (IR alarm)	Default 250KΩ
Relay input	
Quantity	2*DI for reset/ test, NO, active dry contact, with internal 15Vdc pull-up voltage
Load capacity	Ri<500Ω turn on, Ri> 100KΩ turn off
Communication	
RS485 interface	Modbus RTU protocol
Canbus interface (optional)	Custom protocol
Others	
Standards	IEC 61557-1:2018 and IEC 61557-8:2018
Installation and dimension	Standard 35mm Din-rail mounting, W*H*D: 108*110*66mm