

## RIM 绝缘监测系统 Rim insulation monitoring system

### 概述

#### Overview



RIM型绝缘监测系统用于交流IT系统的绝缘电阻监测，当发生绝缘低故障时，可自动判断故障所在支路，方便电力系统的维修。

RIM型绝缘监测系统由绝缘监测模块、绝缘故障定位模块、电流传感器三部分组成。

绝缘监测模块用于监测三相不接地系统的绝缘电阻，当绝缘电阻小于设定值时报警，发送探测信号。绝缘故障定位模块通过安装在支路中的互感器采集探测信号，并确定故障发生的支路。

电流互感器需要被ABC三相电线同时穿过，在没有绝缘故障时，三相电流的矢量和为零，互感器采集不到信号。当该支路绝缘低时，探测信号会从该支路流入大地，此时互感器就能采集到信号，并判断出该支路的故障。

最终的故障信息将汇总到绝缘监测模块上显示，同时上位机可通过RS485接口读取故障信息与系统参数。

RIM is used for monitoring the insulation resistors of the IT power grid. When the low insulation fault occurs, the system can find out the fault branch to help maintain the power system.

RIM is consist of Insulation monitor, Insulation fault location module, and Current sensor.

Insulation monitor is used for monitoring the insulation resistors of the IT power grid. When the value is lower than set, it starts sending the detective signal.

The Insulation fault location module collect the leak current of the current sensor installed in the branch of the power grid, to judge which branch has the fault.

The current sensor needs to be crossed by ABC three-phase wires at the same time. When there is no insulation fault, the vector sum of three-phase current is zero, and the CT can not collect any signal; When the fault occurs, the detective signal will flow from the branch to the earth, and the CT can sense the signal and judge the fault branch.

The Insulation monitor can show the fault branch on screen, and send the information to the host by Rs485.

### 产品特点

#### Product features

- 绝缘低故障监测功能;  
Low insulation fault monitoring function;
- 绝缘低故障支路定位功能;  
Fault branch location function;
- 人机界面交互功能;  
Interface interaction function;
- RS485通信功能;  
RS485 communication;

- 两个独立的报警输出触点;  
Two digital output;
- 配电系统电压、频率、绝缘电阻、漏电容等电参数的测量功能。  
Measuring function of voltage, frequency, insulation resistance and leakage capacitance of system.

### 产品组成

#### Product composition

RIM型绝缘监测系统由绝缘监测模块RIM-M1、绝缘故障定位模块RIM-S、电流互感器组成。

通常每个电力系统安装一个绝缘监测模块，每个绝缘监测模块最多可以和32个绝缘故障定位模块组网，通过CAN总线进行数据交互。而每个绝缘故障定位模块最多可以接收8个电流传感器的信号，也就相当于最多可测量8个配电支路。因此整个系统最多可定位256个配电支路。

RIM is consist of Insulation monitor, Insulation fault location module, and Current sensor.

Usually, each power system is equipped with an insulation monitor. Each insulation monitor can communication up to 32 insulation fault location modules using CAN bus. Each insulation fault location modules can receive signals up to 8 CTs, which means can monitoring 8 branches of power distributions. So the max branches the RIM system can monitoring is 256.

### 技术指标

#### Technical index

- 适用系统：220V/380V/440V单/三相交流不接地系统  
Applicable system: 220V/380V/440V single or three phase IT system
- 输入电压：DC24V +/-20%  
Working voltage: DC24V +/-20%
- 通信方式：RS485  
Communication: Rs485
- 辅助输出：二路无源触点输出  
Output: two passive contact output
- 辅助输入：二路有源触点输入  
Input: two active contact input

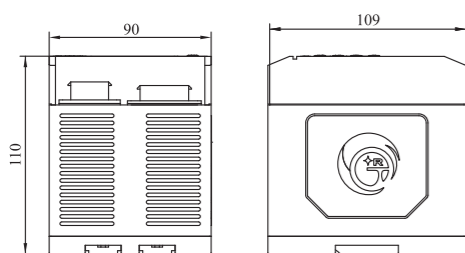
- 测量范围：0~10M欧姆  
Measuring range: 0~10M
- 报警设定范围：10k~1M欧姆  
Alarm setting range: 10k~1M
- 测量精度：0~100K欧姆误差不大于±5K欧姆。100K~1M误差不大于5%。（系统漏电容为1uF条件下）  
Measuring accuracy: 0~100K less than ±5K; 100K~1M less than 5%(under the condition of 1uF leakage capacitance)
- 工作温度：-10°C~55°C  
Ambient temperature: -10°C~55°C

## 外形尺寸

### Dimensions

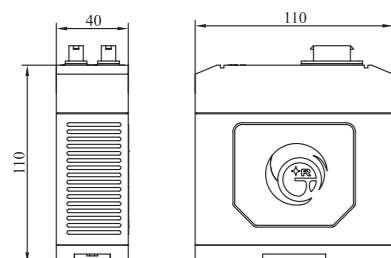
#### ■ 绝缘监测模块

Insulation monitor  
110mm x 110mm x 90



#### ■ 绝缘故障定位模块

Insulation fault location module  
110mm x 110mm x 40



#### ■ 电流互感器

Current sensor

型号 Model	尺寸 (mm) Dimensions (mm)
CT45	内径bore 45mm
CT100	内径bore 100mm
CT150	内径bore 150mm
CT200	内径bore 200mm
CT300X50	内径bore 300mm x 50mm
CT400X160	内径bore 400mm x 160mm

## 型号命名

### Model naming

#### ■ 绝缘监测模块

Insulation monitor

产品型号 绝缘监测系列 RIM -M1  
Model RIM series

设计代号  
Design code

#### ■ 绝缘故障定位模块

Insulation fault location module

产品型号 绝缘监测系列 RIM -S  
Model RIM series

设计代号  
Design code

#### ■ 电流传感器

Current sensor

产品型号 电流传感器系列 CT -□  
Model CT series

设计代号  
Design code

## 系统配置图

### System Configuration Diagram

