FOR ACCIDENT PREVENTION

Remote Insulation Resistance Measurement System

- Provides for work convenience & prevention of an accident by remote measurement(Telemetry)
- Guaranteed stability & reliability by triple protection system
- Effective in facility history management

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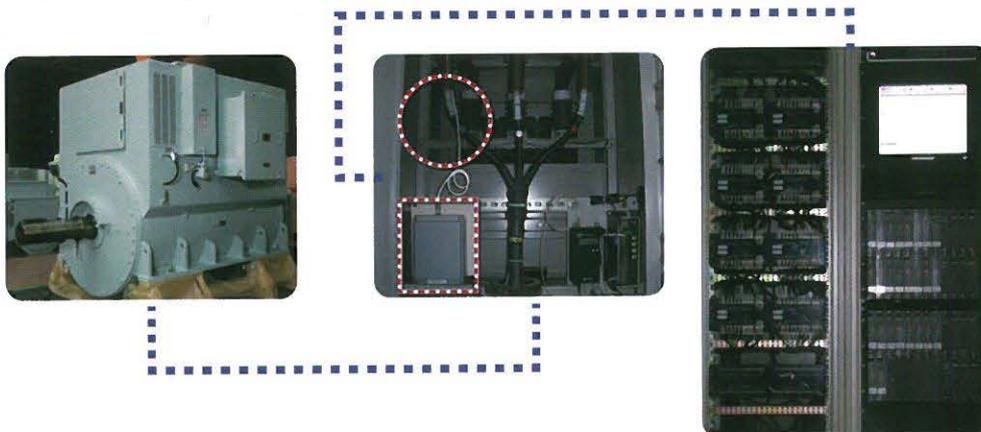
for accident prevention
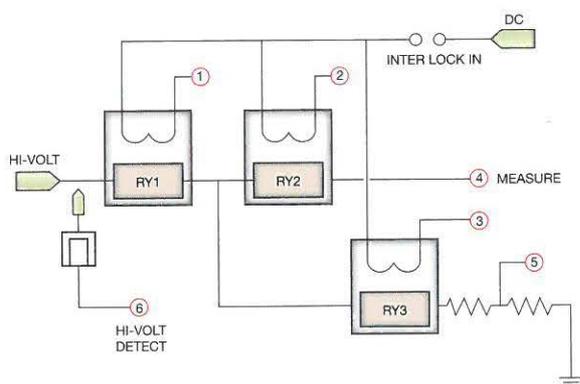
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Remote Insulation Resistance M

overview

Insulation resistance of a standby motor should be measured and managed periodically for the reliability. But repetitive working and maintenance brings a gap into the tulip contactor that makes increase of contact resistance which can cause human accident by manual measurement. RMRT provides failure prediction, reliability of facilities and accident prevention by remote measurement of insulation resistance.

◉ System configuration

Measurement sequence

◉ Triple protection system

Primary protection

Interlock control for dual relay operating power

Secondary protection(H/W)

Dual relay operates by condition of C/B(open/close), residual voltage by noncontact detection

Tertiary protection

Measurable signal transmit to S/W by condition of C/B(open/close)

◉ Measurement sequence

1. Confirmation of the residual voltage
2. Confirmation of Dual relay Soundness
3. Apply 2kV/ 5kV voltage and measure

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Composition

❯ **Signal Processing Module**

Measure the voltage of VCB by electroscope

Measured insulation resistance : 2kV/ 5kV

Measurement range : Less than 2GΩ

Display the C/B condition by point of contact

❯ **Relay Box**

Protection of C/B, Motor : Separate design of
Primary, secondary relay

Withstand Voltage of primary, secondary relay : MAX. 35kV

Withstand voltage of triple relay : MAX. 15kV

Measurement of conducting state : range 0.1kV~7kV
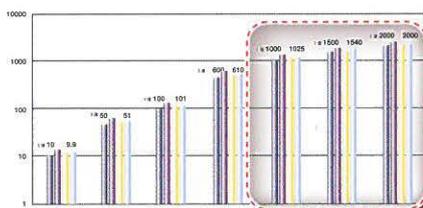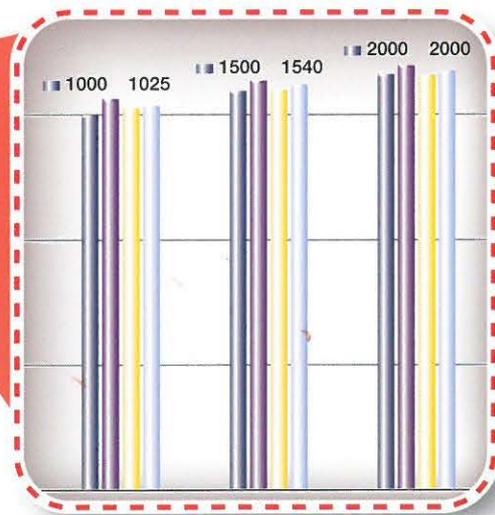
High voltage connector : 10kV(15kV test)

6.9kV   4.16kV

Reliability of measured value

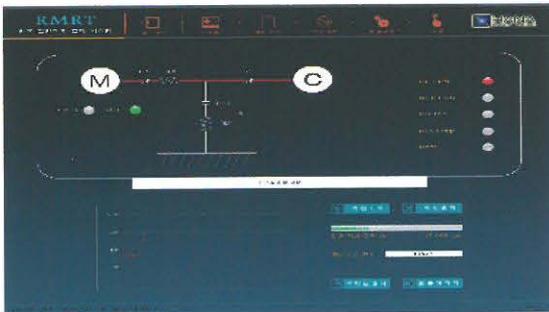- Reference value
- Analog(JW3600)
- Digital(MI3103)
- **RMRT**

❯ **Measurements Result**

1GΩ, 1.5GΩ, 2GΩ Measurement,

Reference value ≒ RMRT value

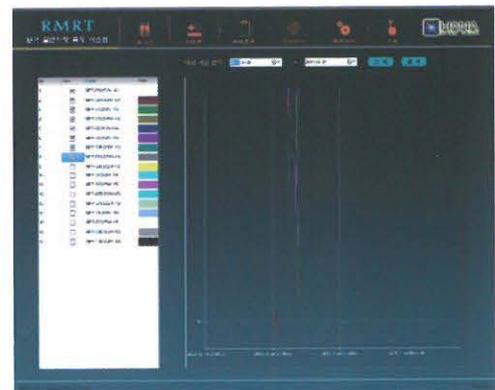# Remote Insulation Resistance Measurement System

Software

- Motor operating information display
- C/B operating information display
- Authorized user information management
- Output event or error MSG. during the operation program
- Strengthen security with password function
- Warning, alarm function for each C/B

- Interlock protection function depending on when C/B is open or closed

- Trend analysis & history management database

Case of safety accident

- Suffer serious burns by three phase fault during the field education (00 Power plant, #3 Unit, 5. 4. 2004)

- Human accidents by wrong handling of target C/B (00 Power plant #6 Unit, 19. 12. 2006)

- Human accidents by wrong handling of target Panel (00 Power palnt, #1 Unit, 10. 6. 2006)

Expected effects

- Accident Prevention

- Maintain reliability of the equipment