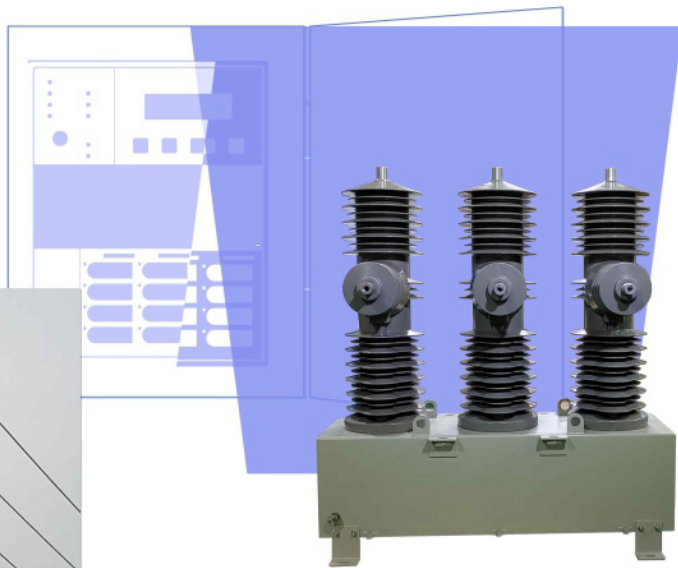
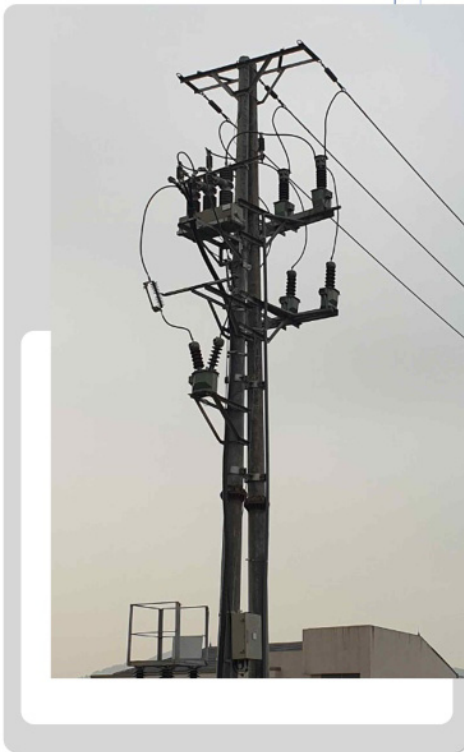




Korea Product

Solid Insulated Recloser by **JMTEC**

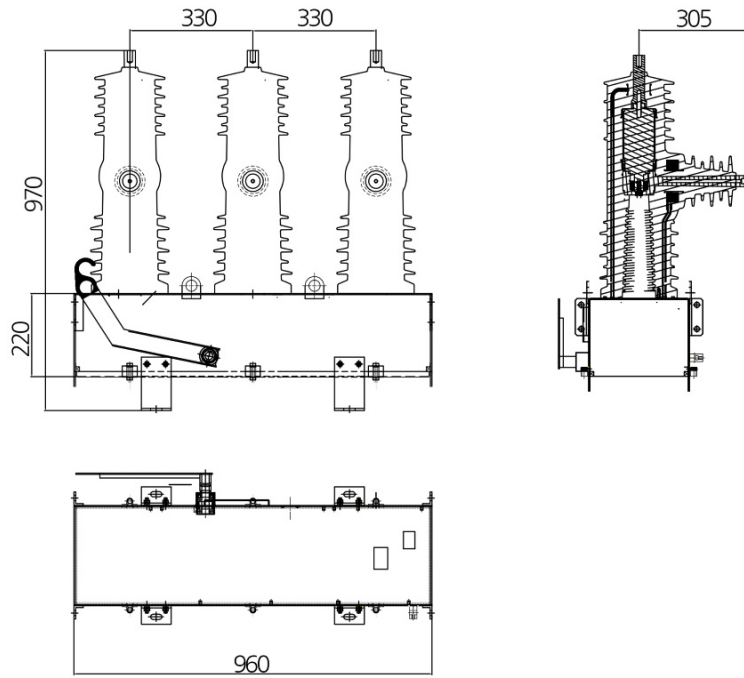
for power distribution system (Overhead line)



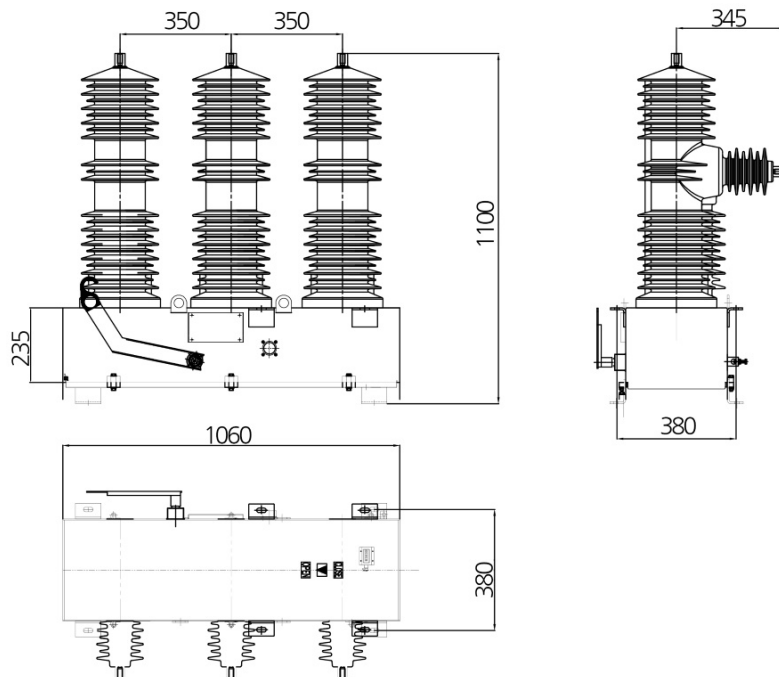
JMTEC

1. Recloser outline

1.1. 27kV



1.2. 38kV





2. General features

JMTEC Solid Insulated Recloser designed for using on overhead lines as 27kV and 38kV. Main mechanism of solid recloser is magnetic actuator One-Coil Type, and bushing material is made of Epoxy. Recloser is protected with Stainless-Steel Material Enclosure. Recloser control consists of RTU(Remote Terminal Unit)in one control with space for modem.

2.1. Recloser Housing

Advanced Outdoor solid dielectric Material(Epoxy)

2.2. Mechanism

One Coil PMA

2.3. Installation Environment

Pole Mounting/Substation Available

All accessories included such as Control

Power cable, Mounting bracket etc

Operating Temperature: -30°C to 70°C

Altitude : up to 1000M

Remarks: Altitude above 1000m should be corrected in accordance with ANSI C37.60 – 2012

2.4. Other Technical Features

Voltage measurement : CVD Type

Manual Trip Operation Available

In case of loss of control power, over

50 Times of open/close operations with fully charged battery(18AH/30HOURS)

Various CT Ratio available

2.5. OPTION (Diagnostic)

-Partial discharge Detection

-Alarm Indicating for remote

3. Microprocessor Based Recloser Control R300(NEOPIS)

3.1. Introduction (NEOPIS – Catalog)



Summary

Reclosers are used in distribution system. In case of line fault, due to temporarily overcurrent, Reclosers can break and make currents several times, thus avoiding longer network interruptions due to temporary faults. But, in case of permanent fault, because fault current is still detected after trip and reclosing actions of pre-set sequences, Recloser is locked out finally as opened.

The pre-set sequences are available to set five times, and for both phase and ground, the combined operations are possible within the range of 5 instantaneous or 5 times delayed operating. The first interruption of a fault regarding instantaneous operation, is done quickly and instantaneously, so that even the fuses in the system do not operate. After setting time, it recloses back on. And the next interruption has a definite or inverse time delay. Thus downstream fuses or other protection devices in the network have the chance to operate and isolate the affected network section, restoring normal operation in the remaining work. Therefore reclosers make the range of fault section to be limited.

Mainly Reclosers which are installed in overhead distribution line, provide the measurement of electric current flowing in the distribution line. In case of load current occurrence and fault detection, it opens and recloses repeatedly according to setting sequence, and at the sametime, it transmits the status/receives the command to/from HOST and remote controls of opening/reclosing to minimize the accident. Besides, it stores the whole events in distribution line, provides the fault causes, and it performs remote monitoring and controls by transmitting data through DNP3.0, IEC60870-5-101, IEC60870-5-104 protocols



3.2. Main features

3.2.1. Protection

- Fault Detection about phase and ground fault
- SEF(Sensitive Earth Fault) used on non-grounded network
- Inrush current control function during fault detection
- In case of Cold Load, Fault Pickup Level adjustment
- Phase Loss Detection
- Phase Sync Fail Detection about source and load voltage
- Automatic breaking and reclosing by detecting phase and ground fault
- Detecting fault and monitoring the status in distribution line
- Built-in 50 types of recloser curves including IEC, ANSI/IEEE, McGraw Edison Recloser curve
- Equipped with 4 types of curves(N1, N2, N3, N4) developed by Korea Electric Power Research Institute(KEPRI, under KEPCO)
- Additionally user defined 4 types of curves available
- 3 steps protection characteristics implementable, established with definite time elements and high-current elements

3.2.2. Measuring

- Current, voltage magnitude and phase angle
- Symmetrical component about 3-phase voltage and current
- Active, reactive, apparent power, and power factor
- Active and reactive energy
- Frequency
- Power quality information : THD, sag/swell, harmonic 2~32th

3.2.3. Control

- Recloser switch Open / Close control
- Battery Test control
- Preparatory control

3.2.4. State Monitoring

- Recloser Open / Close status
- Handle locked status
- Gas pressure low status(option)
- External AC low status
- Battery overcharge status
- Door Open
- Spare status 1,2
- Over discharger
- Charger fail



3.2.5. Various Communication Interface

System Interface Port : RS232C
DNP3.0
IEC60870-5-101

System Interface Port(option) : Ethernet
DNP3.0 over TCP/IP
IEC60870-5-104

Maintenance Port : USB-A, Wi-Fi(option)
MODBUS RTU

3.2.6. Various Event Information



Operation Event

It stores and manages events occurred during operation such as control(On, Off, Trip)event and diagnosis event up to 30,000 cases in time sequence.

Fault Event

It stores and manages various fault information(occurred time, type of fault, operation relaying element) during distribution line accidents up to 1024 cases in time sequence.

Fault Wave Storage Function

It saves and manages the latest fault 160Cycle(16Sample standard) sample data up to 6 cases. The user can use save fault wave to analyze the cause of faults.

Convenient interface for users

through RS232 communication port, it is convenient to manage various set values and stored measuring information search on PC.(using company supplied S/W)

Self-diagnosis and Backup functions during power-off

EPIC-R300 operates self-diagnosis such as CPU check, memory error diagnosis, I/O diagnosis, and control power diagnosis. It saves warning output and diagnosis event on occasion of failure. Therefore the user can have a speedy response.

3.3. Control Technical Specifications

**RATINGS**

Rated frequency	50/60 Hz
Control voltage	110-240VAC/24V(DC)

ENVIRONMENTAL

Operating temperature	-40°C to +80°C
Humidity	99%
Degree of protection	Box (IP55), Electronic elements (IP65)
Insulation test voltage	2kV 50/60Hz, One minute
Impulse voltage withstand	6kV Peak, 1.2/50 μ s ANSI C62.45, IEC 61000-4-5
Interference test withstand	SWC ANSI C37.90.1, IEC 61000-4-4
Radio frequency interference	IEC 255-22-3 Class III, ANSI C37.90.2

GENERAL PROTECTION (CT ratio 1000:1A)

Phase time overcurrent	10 to 1,600 Amps in steps of 1A
Phase instantaneous overcurrent	10 to 20,000 Amps in steps of 1A
Ground time overcurrent	10 to 1,600 Amps in steps of 1A
Ground instantaneous overcurrent	10 to 20,000 Amps in steps of 1A
Sensitive earth fault(SEF)	1 to 160 Amps in steps of 1A

RECLOSE

	Programmable from 1 to 3
Reclose times	1st reclose : 0.5-600 sec in 0.01sec steps
Reclosing(Dead) times	2nd reclose: 1.0-600 sec in 0.01sec steps
	3rd reclose : 1.0-600 sec in 0.01sec steps
Control voltage	1 to 600 sec in 0.01 sec steps

METERING (At rated voltage and current)

	CVD
Current	+ -1%
Voltage	+ -1%
Watt hours	+ -2%
Vars hours	+ -2%
Demands	+ -2.5%
Power factor	+ -0.02
Frequency	+ -0.02Hz

RECORDING

Waveform capture	R300(Neopis) Last 32 events with
System event	Last 2048 events
Diagnostic event	Last 512 events
Fault event	Last 256 events
Load profile	Last 6144 events, 256 days / 60Min. (5, 10, 15, 20, 30, 60min interval)
PQM	Last 512 events
Fault events	Last 256 events
Operation events	Last 256 events
Set Change events	Last 100 events
Alarm Current event	Last 512 events



Counter	Trip, fault, system restart, PQM
Recloser wear	Phase A,B,C

4. Electrical ratings

Description	Unit	JMR24	JMR38
		Three Phase	
Rated maximum voltage	kV rms	27	38
Continuous current	A rms	630/800	800
Frequency	Hz	50/60	50/60
Short circuit interrupting current	kA rms	16	16
Short time withstand current. 1sec	kA rms	16	16
Making current	kA peak	41.6	41.6
Cable charging interrupting current	A rms	25	40
Line charging interrupting current	A rms	5	5
Basic impulse withstand voltage	kV crest	150	170
Power frequency withstand voltage, dry	kV	60	70
Power frequency withstand voltage, wet	kV	50	60
-Operating control voltage		110-240VAC/125VDC(Option)	
-Operating temperature	°C	-40 to + 80	
-Degree of protection		IP65	
-Maximum mechanical and electrical operations (c-o)	Number	10000	