

Auto Reclose Relay – Multi Shot

Description

The relay is suitable up to four shots. It consists of four cards viz. front fascia, power supply status input & output card and Microcontroller card are housed in a compact 3N Non draw-out case.

Microcontroller does the sequence control and timing function. The DIP Switches on the relay front fascia select different operating functions and time setting.

There is a watchdog timer in the relay which continuously monitors the program, put off "POWER ON" LED indication if the watch dog timer elapses.

To start an auto reclose cycle, the initiating contact from the protective relay must be closed without chatter for atleast 12 milliseconds.

Inputs

Two optically isolated inputs are provided. One is used to take the three phase protection operated contact inputs to initiate the auto reclose relay.

The another input is used to block the reclose functions if the external blocking input is initiated.

Reclose Timer

The relay has four reclose timers. The relay selects the respective timer sequentially depending upon the number of reclose selection and the reclose initiation.

Reclaim Timer

There is the common reclaim timer. It operates in series with the reclose timers. The over all reclaim time delay from the relay initiation to relay reset is therefore reclaim timer setting plus reclose time. For every initiation the reclaim time counting are resets automatically.

Lockout Function

When the number of shots switch is in OFF mode the protection operated contact input initiation condition it will energise the lockout relay and lockout LED indication and it blocks the reclose function.

When the external blocking input is initiated, the reclose function is blocked and it energise external blocking LED, Lockout LED and Lockout relay.

As the relay allows the maximum of four reclose depending upon the number of shots selection, the number of shots is less than the number of initiation within the reclaim time it will energise the lockout relay and its LED indication.

Applications

- Distribution circuits
- Three phase breaker reclosing schemes



Auto Reclose Relay – Multi Shot - MART 403



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Features

Protection

- Automatic tripped breaker reclosure
- Suitable for three phase reclosing
- Micro-controller based relay
- Upto 4 reclosures available

Control

- The relay has 8 output contacts and 2 status inputs
- | | |
|----------------------------|------|
| Reclose pulse relay | 1N/O |
| First Reclose alarm relay | 1C/O |
| Second Reclose alarm relay | 1C/O |
| Third Reclose alarm relay | 1C/O |
| Fourth Reclose alarm relay | 1C/O |
| Lockout relay | 2N/O |
| Power on relay | 1N/C |

Monitoring

- Self-monitoring facility

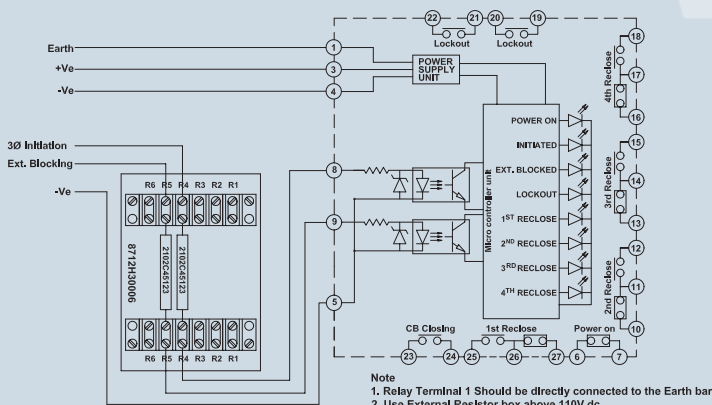
User Interface

- Dip switches for parameter setting
- LED indications
- Sealable front cover to prevent unauthorised access

Other Features

- Both AC and DC auxiliary supply available
- Compact design
- Non-drawout case

Wiring Diagram



Technical Information

Rating

Power Supply Input Rating in DC (AUX.)

18 to 135V DC or 43 to 280V DC

Optically Isolated Input Rating in DC (STATUS)

24V, 30V, 50V, 110V or 220V

Above 110V use external resistor

Number of Shots

Number of shot = 0 to 4

Number of shot $N = \sum s \times 1$

$\sum s$ = Sum of switch settings

Time Settings

Standard Setting

Reclose Pulse time 1 second fixed

Time setting (In seconds) = $\sum s \times \text{Multiples of setting}$

$\sum s$ = Sum of switch settings

Switch setting = 2^0 to 2^7

1st Reclose time – T1 secs.

Range: 0.25 to 63.75 secs in steps of 0.25 sec

2nd Reclose time – T2 secs.

Range: 0.5 to 127.5 secs in steps of 0.5 sec

3rd Reclose time – T3 secs.

Range: 1 to 255 secs in steps of 1 sec

4th Reclose time – T4 secs.

Range: 2 to 510 secs in steps of 2 sec

Reclaim time – T0 secs.

Range: 2 to 510 secs in steps of 2 sec

Optional Setting

Reclose and Reclaim Timer Setting Range in Seconds

- 0.25 to 63.75 in steps of 0.25
- 0.5 to 127.5 in steps of 0.5
- 1 to 255 in steps of 1
- 2 to 510 in steps of 2 and
- 4 to 1020 in steps of 4

Contact Rating

Reclose Pulse Contacts

Carry continuously 5A AC or DC

Make a Carry for 200ms

30A AC or DC with L/R >5ms



All Other Contacts

Make and carry – 3A continuous / 250V DC
Break
24V DC Resistive at 0.75Amps
48V DC Resistive at 0.5Amps
125V DC Resistive at 0.3Amps
250V DC Resistive at 0.2Amps

Burden

Power Supply Burden (AUX.)

Quotient Drain 2W
Maximum Energised Drain 8W

Optically Isolated Input Burden (STATUS)

Maximum Energised Drain 3W

Input, Outputs and Indications

Two Optically Isolated (STATUS) Inputs

- Initiating signal input (From single phase Protective Relay Contact)
- External Blocking signal input

Output Contacts

- The relay has 8 output contacts and 2 status inputs
- | | |
|----------------------------|------|
| Reclose pulse relay | 1N/O |
| First Reclose alarm relay | 1C/O |
| Second Reclose alarm relay | 1C/O |
| Third Reclose alarm relay | 1C/O |
| Fourth Reclose alarm relay | 1C/O |
| Lockout relay | 2N/O |
| Power on relay | 1N/C |

Eight LED on the Relay Front Fascia Indicate

- Green - Power supply is ON
- Yellow - Auto reclose is initiated
- Red - External Blocking signal is IN
- Red - Relay is in Lockout mode
- Green - First Reclose is completed
- Green - Second Reclose is completed
- Green - Third Reclose is completed
- Green - Fourth Reclose is completed

Environmental

Temperature	IEC 60068-2-1/2
Operating Range	-10°C to +55°C
Storage Range	-25°C to +55°C
Humidity	IEC 60068-2-3
Vibration (Sinusoidal)	IEC 60255-21-1 Class I
Shock and Bump	IEC 60255-21-2 Class I

Insulation

2.0 KV rms for 1 min between all terminals and earth
2.0 KV rms for 1 min between independent circuits
1.0 KV rms for 1 min across normally open contact

Transient Over Voltage IEC 60255-5

5 KV, 1.2/50 μ s, 0.5J between all terminals and earth or between any two terminals without damage or flashover.

High Frequency Disturbance IEC 60255-22-1 Class III

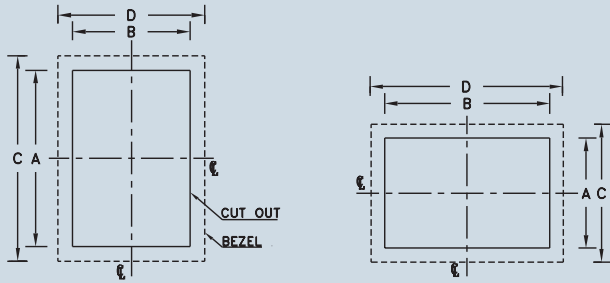
2.0 KV Common (Longitudinal) mode
1.0 KV Series (Transverse) mode

Fast Transient IEC 60255-22-4 Class IV

4 KV, 5/50 ns, 2.5 KHz repetitive



Cut-out Details



Case

3N-Non draw out with 27 terminals

PART	CASE SIZE	CUT OUT		BEZEL	
		A	B	C	D
01	3N	104	140	128	170

Note:

1. All dimensions are in mm
2. All dimensions are measured equidistant from centre line
3. Maximum depth of equipment inside panel : 200mm

The policy of Easun Reyrolle is one of continuous improvement and development. The company therefore reserves the right to supply equipment, which may differ slightly from that described and illustrated in this publication.

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Ordering Information

- Auxiliary supply rating in DC
- Optically isolated (status) inputs rating in DC
- Timer range - Standard or Optional
- Reclose outputs - Standard or Optional

Qualification

ISO 9001-2000



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