RRC-121 AUTOMATIC RE-CLOSING RELAY

RRC-121 Automatic re-closing relay is especially used to minimize the electricity interruption in distribution centers that are difficult to reach and are far away from downtowns.

THE STRUCTURE AND THE WORKING PRINCIPLE

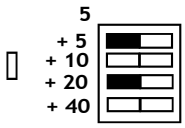
The relay is adjusted with 3 dip-switches on the front panel. All of these three dip-switches are variable within 5-80 sec. (with 5 sec. steps)

a) 1. Closing time

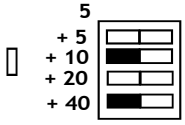
b) 2. Closing time

c) Lock time.

Now, Let's explain with an example how the relay's time setting is made by dip-switches:



t = 5+ (5+20)
t = 30 sn



t = 5+ (10+40)
t = 55 sn

Time setting dip-switches or 4-step dip-switches. Each step has a fixed value. When the movable bars on the dip-switches are pushed in the direction of the values, that value is added to the total. When pushed in the opposite direction it is subtracted from the total. Even if all of the bars are taken to the "0" position, time will not be zero. In this case, the relay's working time will have been selected, that is 5 sec.

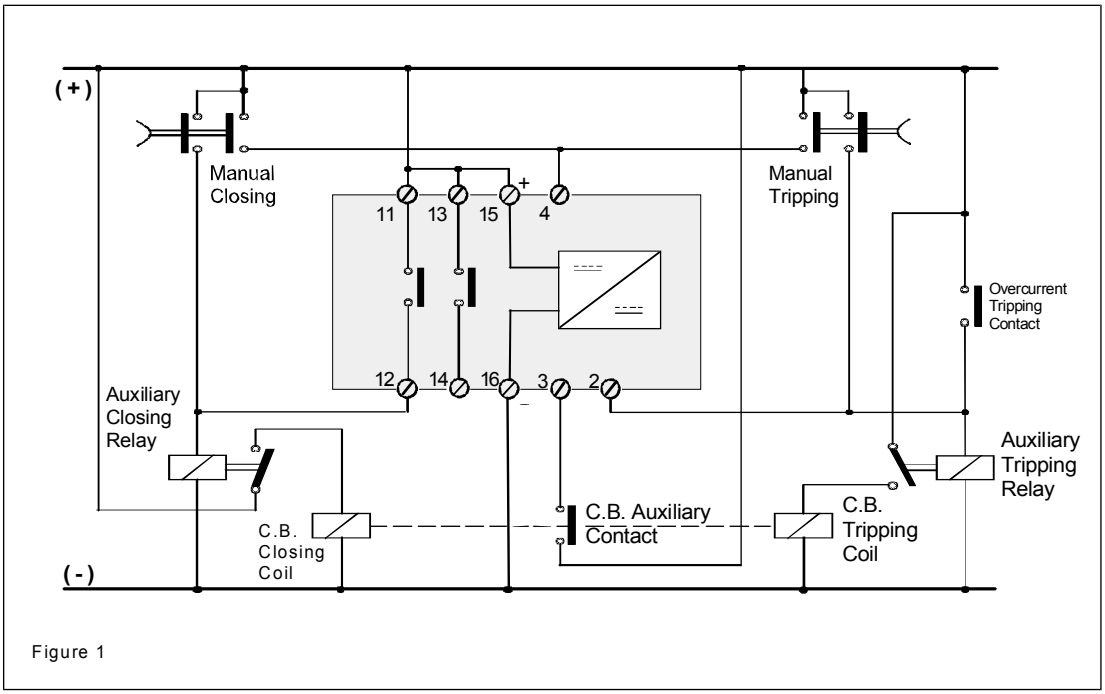


Figure 1

The relay should be connected according to the connection schematics in Figure 1. To take a relay connected in this way into service, the "service" switch is taken to the "1" position. After the relay is taken into the service, and after the time of lock period expires, the relay will be ready for service. "service" leds getting on and off we understand that the relay is ready to close.

One time re-closing

The closing number switch on the front panel is taken into the position "1". Than the "1.kap" led on the front panel will be on. Now while the circuit-breaker closed relay is in service, and ready to operate; at the moment an trip signal comes from over current relay, the process signal will be on, and the closing command will reach the circuit-breaker at the end of time delay 1. closing time set.

With the closing command, the relay will lock itself and the lock signal on the front panel will be on. If a new trip signal doesn't come from over current relay within the lock time. If a new trip signal comes from over current relay within the lock time, the relay will make the final trip, not making reclosing, and the final trip led will start to flash.

Two time re-closing

The closing number switch on the front panel is taken to the "2" position. Then the "2 kap" led on the front panel will be on. Suppose that a trip command comes from over current relay while the circuit breaker is closed and the relay is ready to operate. In this case, the process signal will be on, closing command will be transmitted to the circuit-breaker at the end of 1. closing. At the same moment, the succesfull reclosing time circuit without setting on the front panel will start to function. Succesfull re-closing time is fixed, 100 sec. If any trip signal doesn't come within the succesful closing time, the relay returns to the start position, and at the trips to come later the relay makes 1. Closing. If a trip comman Panel Window Width succesfull reclosing time, the relay transmits the closing command the second time at the end of the second closing time, with the second closing command the relay locks itself and the lock signal on the front panel gets on. If a trip signal new doesn't come from the over current relay within the locktime set, the lock signal gets off at the end of the lock time, the relay gets ready to make a new closing. If a new trip signal (3. trip) comes from the over current relay

within the lock time, the relay makes the final trip, the final signal on the front panel flashes, the relay doesn't make re-closing.

Final Tripping :

As is told in one and two time reclosing, if there is a trip signal coming from over current relay while the relay is counting the lock time, the relay switches to the final trip and doesn't make a new closing. Except for this, when the circuit-breaker is closed manually, the relay will lock itself because of the (+) voltage given to the terminal 5 of the relay, and if a trip signal comes from the over current relay at that moment the relay will make final the trip and will not make re-closing. Final trip signal is cleared providing that the circuit-breaker is closed manually and a trip command doesn't come (when switched to normal operation).

When the circuit-breaker is closed, the (+) voltage given to the terminal 5 the lock time active and prevents the relay from making re-closing And even if a wrong trip command comes when the circuit-breaker is open the relay doesn't make re-closing. The risk of the closing process being considered, many cautions against wrong closing are taken.

Closing Number

It can be seen from the illuminated counter how many re-closings the relay has made. "Closing counter" is off when in the position of quiescent. When the reading button is pushed, it gets on for 50 sec. and then it gets off. The number on the counter isn't cleared even if the energy of the relay is cut. The number on the counter is cleared only when the clearing button is pushed. Whenever the relay is taken into service and the process led gets on, the counter displays the closing number for 50 sec.

TECHNICAL CHARACTERISTICS

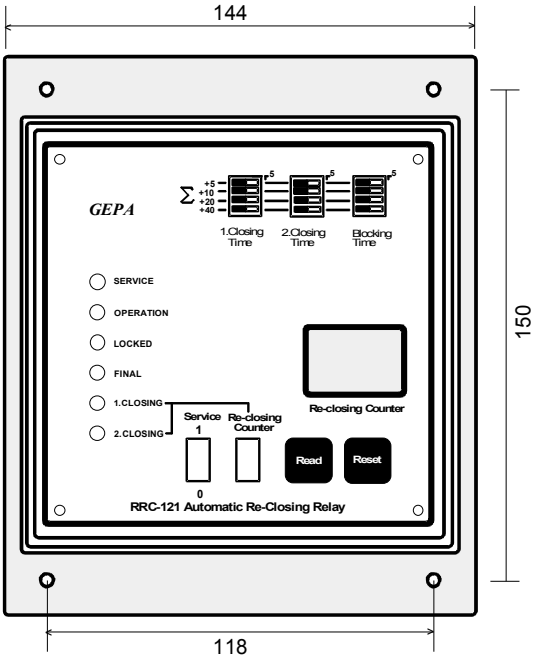
Re-closing number	: 1 or 2 times
1. closing time	: 5-80 sec. (With 5 sec. steps)
2. closing time	: 5-80 sec. (With 5 sec. steps)
Lock time	: 5-80 sec. (With 5 sec. steps)
Successfully closing time	: 80-100 sec.
Tıme element setting accuracy	: %1
Variation with temperature	: %1 (-5'C, +40'C)
Variation with feeding voltage	: %1 (between %80 - %120)
Closing command times	: 300ms

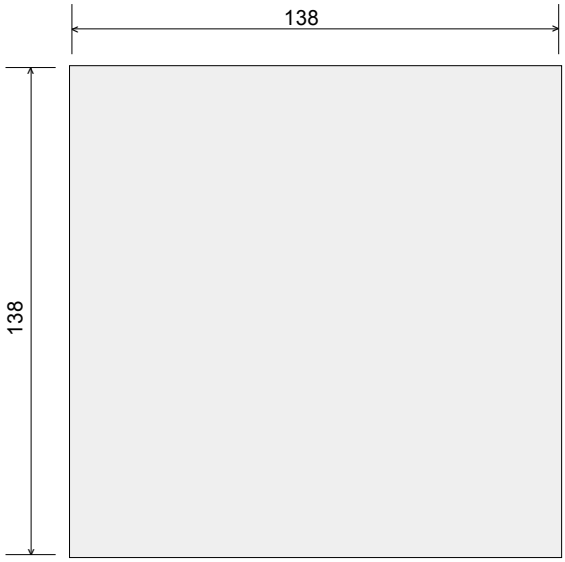
Contacts:

Number of contacts	: normally open 2 contacts
Contact capacity	: 10A closing
Breaking capacity	: L/R = 40 ms inductive load
	at 24 VDC 100W
	at 110 VDC 35 W
Auxiliary Feeding Supply	: 24, 48, 110 VDC
Signals	: Ready, process, lock, final trip
	: 1 kap. 2 kap.

Test voltages:

a) Dielectric strenght	: 2 kV AC 50 Hz 1 min.
b) Impulse strenght	: 5 kV AC ± 1,2/50 microsec. 0,5 joule
c) H.F.D.	
Transversal mode	: 1 kV 1 MHz and 400 Hz.
Longitudinal mode	: 2,5 kV 1 MHz and 400 Hz.
Dimensions:	: 144x170x110
Weight	: 2 Kg.





PANEL WINDOW WIDTH