

Procedure of testing of ABB A/R REXA 103

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To test DC Supply Current:

1. For this test just connect a DC Ammeter in series with the relay positive/ negative. Measure the voltage at terminal nos. 408.B12 and 408.D12.

To change the Settings of Dead Time 1-4 and Reclaim Time:

2. To set the Dead Time t1, press “settings” one time and LED will appear in front of “t1 Shot1”. Now use “+” or “-” arrows to increase or decrease the value and press “Store” button to save the settings.
3. Similarly press “Setting” button until LED appears on “t2 Shot2”. Use “+” or “-” button to increase or decrease the value of timer. Finally press “Store” button to save the settings.
4. Similarly change the “tB Reclaim Time”.

To test Dead Time 1:

5. Now take +ve from terminal no. 1 of the test plug and connect it to one terminal of MCB and connect its other end to “A/R Start” i.e. “402.B01” and take –ve from terminal “18” of the test plug and connect it to “402.Z02”.
6. Connect one “NO” auxiliary contact of MCB to “START” contact of the “TM 200” timer and make its settings on “Dry” contact and from “Open to Close”.
7. Now connect the “STOP” contact of the “TM 200” timer to “Close” command of the relay i.e. “108.D12 and 108.B12” or “408.D01 and 408.B01”.
8. Now turn on the MCB and off it after some time such that a pulse is applied on the A/R Start and note the time.

To test Dead Time 2:

9. Now after the first shot is issued, means above step, reset the TM200 timer, again close and open the MCB i.e. give “close” pulse by MCB within reclaim time. Note the TM200 timer reading, it’s your Dead Time 2.

To test Dead Time 3:

10. Reset the timer and again give “Close” pulse using MCB and note the Dead Time 3.

To test Dead Time4:

11. Reset the timer and again give “Close” pulse using MCB and note the Dead Time 4.

To test Reclaim Time:

12. Now keep the MCB connections as such and remove the starting and stopping contacts of TM200.
13. Connect "Start" contact of the TM200 to "108.D12 and 108.B12" or "408.D01 and 408.B01".
14. Connect "Stop" contact of the TM200 to "A/R Ready" i.e. "108.D06 and 108.B06".
15. "Start" settings should be on "DRY" and "Open to Close" and "Stop" settings also should be on "DRY" and "Open to Close"
16. Now give the "A/R Start" pulse using MCB and note the timer.

To test Reclose Pulse Time:

17. Connect the "Start" contact of the TM200 to "Close" of the relay i.e. "108.D12 and 108.B12" or "408.D01 and 408.B01".
18. Short the "Start" and "Stop" contacts of the TM200.
19. Make "Start" from "Open to Close" and make "Stop" from "Close to Open".
20. Give "A/R Start" Pulse using MCB and note the time.

To test Inputs/ Selector Switch Function Check:

To test A/R ON and OFF I/P:

21. Connect +ve to "402.D08" and -ve to "402.Z08" for more than at least 200 m sec. and A/R will get "OFF" if it was "ON" or will get "ON" if previously "OFF".
22. When A/R is "ON" continuity will be observed on "408.D06 and 408.B06".
23. When A/R is "OFF" continuity will be observed on "408.Z08 and 408.B08".

To test Breaker Status I/P (CB CLOSED):

24. Give the relay "A/R Start" pulse via MCB and see that "Close" command (Contact Reference "108.D12 and 108.B12" or "408.D01 and 408.B01") will not be issued unless "CB Closed" Input (Contact Reference +ve at 402.B04 and -ve at 402.Z06) is not present for 5 seconds minimum.

To test Breaker Ready I/P (CB READY):

25. Give the relay "A/R Start" pulse via MCB and see that "Close" command (Contact Reference "108.D12 and 108.B12" or "408.D01 and 408.B01") will not be issued unless "CB Ready" Input (Contact Reference +ve at 402.D04 and -ve at 402.Z06) is not present just before issuing a "Close" command i.e. end of dead time.

To test Block A/R I/P (Block A/R):

26. As long as "Block A/R" I/P is high, giving "A/R Start" pulse via MCB will not make A/R issue "Close" command (Contact Reference "108.D12 and 108.B12" or "408.D01 and 408.B01").

To test Synch Check I/P (Synch Check):

27. Keep the front panel selector switch S1 i.e. Synch Check "ON".
28. Now Give the relay "A/R Start" pulse via MCB and see that "Close" command (Contact Reference "108.D12 and 108.B12" or "408.D01 and 408.B01") will not be issued unless "Synch Check" Input (Contact Reference +ve at 402.D06 and -ve at 402.Z06) is not present just before issuing a "Close" command i.e. end of dead time.

To test Synch Check Selector Switch S1 (Synch Check):

29. Make the Selector switch on front panel of the relay "OFF".
30. Now Relay will not wait for "Synch Check I/P" to be high before issuing "Close" command.
31. Now Give the relay "A/R Start" pulse via MCB and see that "Close" command (Contact Reference "108.D12 and 108.B12" or "408.D01 and 408.B01") will be issued even if "Synch Check" Input (Contact Reference +ve at 402.D06 and -ve at 402.Z06) is not present just before issuing a "Close" command i.e. end of dead time.

To test Low Priority I/P (Priority Release):

32. Keep S2 i.e. Low Priority Switch "ON".
33. Now relay will not issue "close" command unless "Priority Release" I/P is there.
34. Now Give the relay "A/R Start" pulse via MCB and see that "Close" command (Contact Reference "108.D12 and 108.B12" or "408.D01 and 408.B01") will be issued only when "Priority Release" Input (Contact Reference +ve at 402.B08 and -ve at 402.Z08) is high.

To test Low Priority Selector Switch (Low Priority):

35. Keep S2 "OFF".
36. Now relay will not care for "Priority Release" I/P is there or not.
37. Now Give the relay "A/R Start" pulse via MCB and see that "Close" command (Contact Reference "108.D12 and 108.B12" or "408.D01 and 408.B01") will be issued irrespective "Priority Release" Input (Contact Reference +ve at 402.B08 and -ve at 402.Z08) is high or low.

To test Communication Link Out of Service:

38. Apply +ve at 402.D02 and -ve at 402.Z02 i.e. communication link out input.
39. Now dead time will be increased by 0.4 sec.
40. Now Give the relay "A/R Start" pulse via MCB and see that "Close" command (Contact Reference "108.D12 and 108.B12" or "408.D01 and 408.B01") will be issued after 0.4 seconds than normal.

To test A/R's CB Close I/P:

41. Connect +ve to 402.B04 via MCB and –ve directly to 402.Z06.
42. Use NO auxiliary contact of MCB to initiate TM200 timer.
43. Connect "Stop" contact of TM200 to "A/R Ready" O/P of REXA i.e. 108.D06 and 108.B06".
44. Now turn on the MCB and measure the time for A/R getting ready. It should be 5 seconds.