What should be done when MCB ARC trips?

This diagnosis must be performed by a qualified person. All connections, disconnections and inspections must be performed with the entire circuit powered off.

Step 1: Analyze the context

- Tripping on short-circuit or overload: Apply the usual electrical fault detection procedure.
- Tripping on leakage current: Apply the usual leakage current detection procedure.

Step 2: Check that the arc detector is working correctly

- Only the arc detector trips (visible red square).
- List the circumstances under which tripping occurred:
  - What happened prior to tripping?
  - What loads were connected and operating?
  - When and how many times did the arc detector trip?
- Look for signs of deterioration, overheating or sparking (on power cords, sockets, cables, etc.).
- If no deterioration is evident, go to Step 2.

196 V AC < U < 275 V AC

Press for "T" for 1 s

MCB ARC is working: go to Step 3

MCB ARC does not trip

Test button (T)

Self protection part of MCB ARC trips

MCB ARC trips

MCB ARC does not trip

 disconnect the cables downstream of MCB ARC

Check the voltage (max. 275 V AC)

196 V AC < U < 275 V AC

U < 196 V AC

U > 275 V AC

Network problem: contact the electricity supplier

Press for "T" for 1 s

It is defective: replace it and repeat Step 1

CONDITION OF MCB ARC
Step 3
Check current leakage risk

Disconnect all loads that could be damaged during this test.

1. Phase / Neutral leakage
   Test the impedance

2. Leakage to ground
   Test the impedance

Leakage current detected:
- Risk of arc to ground or parallel arc, change the cable or repair it
- No leakage current detected: go to Step 4

Test parallel arc risk

Turn off MCB ARC. Reconnect the cables downstream of MCB ARC.
Disconnect all loads powered by this circuit.

Turn back ON MCB ARC

ON

MCB ARC

Risk of parallel arc, change the cable or repair it

Go to Step 4

Step 5
Check whether there is a crossed neutral with another feeder

Visual check

Check whether phase and neutral of each circuit are well connected

Change wiring in case of wrong wiring of neutral or phase

No cross neutral validated

Go to Step 3

Check with loads

Set MCB ARC to ON and all other feeders to OFF (disconnect all neutrals which power directly a load)

ON

MCB ARC

Connect and turn ON a load powered by MCB ARC

The load works

Change wiring if the load does not work
Step 6

Test serial arc risk in cable and connection

Disconnect all loads powered by this circuit.

Prepare a 1000 W resistive load (heater, kettle, etc.) in good working order

Connect this load to the different sockets on the circuit protected by MCB ARC

Check that the loads identified at Step 3 are in good condition.

Connect and activate these different loads one by one, then all together, repeating the tripping circumstances described at Step 1.

Check whether MCB ARC trips

- The device trips
  - Inspect the load(s) involved (connections, power cords, etc.) to locate any deterioration causing the device to trip.
  - If deterioration is detected: make good or change the damaged loads
  - If an overvoltage is discovered (> 275 V): contact your electricity supplier

- The device does not trip
  - MCB ARC initially tripped due to a transient cause as overvoltage: install a voltage level recorder
  - If no overvoltage or deterioration has been discovered:
    - Note the MCB ARC serial number (above the test button) or note the serial number that appears using the QR code product.
    - Contact Schneider Electric, giving all the information related to the previous steps and the serial number.
    - You will have to replace MCB ARC or allow specialists to carry out further tests on site.

Step 7

Examine the loads involved

CIRCUIT CONDITION

The device trips

- Inspect the cables, connections and sockets to locate any signs of deterioration causing the device to trip.
- Do not forget to check cables that supply several sockets, including cables connected upstream of the arc detector.

The device does not trip

- MCB ARC initially tripped due to a transient cause as overvoltage: install a voltage level recorder
- If no overvoltage or deterioration has been discovered:
  - Contact Schneider Electric, giving all the information related to the previous steps and the serial number
  - You will have to replace MCB ARC or allow specialists to carry out further tests on site.

LOAD CONDITION

- Disconnect all loads powered by this circuit.
- Prepare a 1000 W resistive load (heater, kettle, etc.) in good working order
- Connect this load to the different sockets on the circuit protected by MCB ARC
- Check that the loads identified at Step 3 are in good condition.
- Connect and activate these different loads one by one, then all together, repeating the tripping circumstances described at Step 1.
- Check whether MCB ARC trips

- The device trips
  - Inspect the load(s) involved (connections, power cords, etc.) to locate any deterioration causing the device to trip.
  - If deterioration is detected: make good or change the damaged loads
  - If an overvoltage is discovered (> 275 V): contact your electricity supplier

- The device does not trip
  - MCB ARC initially tripped due to a transient cause as overvoltage: install a voltage level recorder
  - If no overvoltage or deterioration has been discovered:
    - Note the MCB ARC serial number (above the test button) or note the serial number that appears using the QR code product.
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    - You will have to replace MCB ARC or allow specialists to carry out further tests on site.