Residual current devices

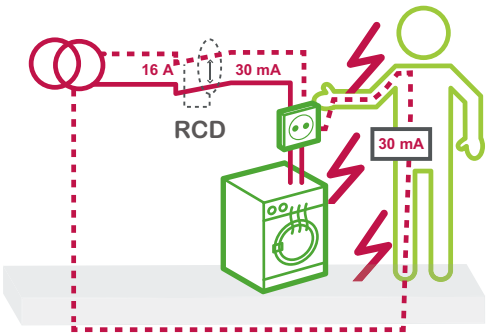
Function

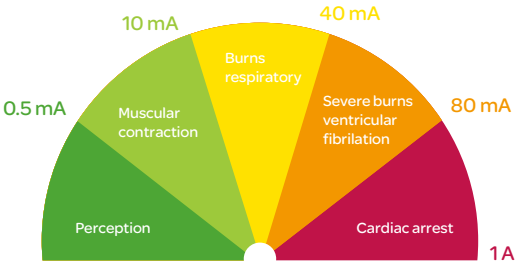
- Protection of persons against electric shock by direct contact (30 mA).
- Protection of installations against the risk of fire (300 mA).
- Protection of persons against electric shock by indirect contact (100 mA to 300 mA).

Operating principle

Protection from electric shocks by direct contact:

- Protection of persons against electric shock by direct contact (30 mA).
- Protection of installations against the risk of fire (300 mA).
- Protection of persons against electric shock by indirect contact (100 mA to 300 mA).





Research worldwide shows that the intensity of current flowing through the body determines the extent and severity of an electric shock.

By measuring the intensity difference between live and neutral conductors, RCDs actually detect the current flowing through the human body. If this current reaches the 30 mA limit, the RCD trips within a few milliseconds, so preventing injury or worse.

- Injuries become serious when currents exceed 40 to 50 mA during one second.
- Theoretically, a 150 mA current flows through the body when a person touches a 230 V energised conductor under dry conditions.

Check RCDs regularly

Test

Testing the RCD every 3 months enables detection of any event that may have impaired its operation

Residual current devices

Selection

Residual current sensitivity

Protection from	Residential	Non-residential	Sensitivity
Electric shocks by direct contact			
	Mandatory protection for all socket outlets Mandatory protection for all electrical equipment in bathroom Recommended for lighting circuits	Mandatory protection for all socket outlets Mandatory protection for all equipement located Close to water points	30 mA 10 mA for all applications where required by the standard (e.g.: jacuzzi, swimming pools, etc.)
Fire ignited by leakage current			
	Recommended in old buildings (presence of dust or moisture)	Mandatory in all locations under risk of fire or explosion Recommended in all premises under presence of dust, moisture, chemical agents.	300 mA
Electric shock by indirect contact			
	All circuits in case of "TT" earthing system	All circuits in case of "TT" earthing system	100 mA or 300 mA

Current rating: shall not be in excess of upstream MCB current rating

Requirements from wiring regulation (411.3.3)

Protection by means of a residual current protective device (RCD), shall be provided for:

- Socket outlets with a rated current not exceeding 20 A, mobile equipment with a current rating not exceeding 32 A for use outdoors.
- In rooms containing a bath or a shower.
- Cables in walls/ partitions
- EV charging circuits
- Swimming pools