

## Earth leakage protection devices Break time - Non-actuating time

The next informations stem from standards to which all Merlin Gerin residual current devices complies with :

- IEC 61008, EN 61008, NF EN 61008 for RCCB
- IEC 61009, EN 61009, NF EN 61009 for RCBO and add-on vigi blocks

### Break time

Time which elapses between the instant when the residual operating current ( $I_{\Delta n}$ ) is suddenly attained and the instant of arc extinction in all poles.

### Non-actuating time

Maximum delay during a value of residual current higher than the residual non-operating current ( $I_{\Delta n0} = I_{\Delta n}/2$ ) can be applied to the residual current device without causing it to operate.

### Standard values of break time and non-actuating time

For operating voltage between 0,85 $U_n$  and 1,1 $U_n$  ( $U_n$  = rated operational voltage).

			Standard values of break time and non-actuating time for a residual current $I_{\Delta}$ egal to :					
Type	$I_n$	$I_{\Delta n}$	$I_{\Delta n}$	2 $I_{\Delta n}$	5 $I_{\Delta n}$ (1)	$I_{\Delta t}$ (2)	500 A ou 10 $I_{\Delta n}$ (3)	
general	any value	any value	300ms	150 ms	40 ms	40 ms	40 ms	maximum break times
S	$\geq 25$ A	$> 30$ mA	500 ms	200 ms	150 ms	150 ms	150 ms	maximum break times
			130 ms	60 ms	50 ms	40 ms	40 ms	minimum non-actuating times

- (1) For the residual current devices of general type with  $I_{\Delta n} \leq 30$  mA, 0,25 A may be used as an alternative to 5  $I_{\Delta n}$ .
- (2) Applicable to residual current circuit-breakers with overcurrent protection (RCBO). The test is made with a current  $I_{\Delta}$  which is the lower of the followings currents : 500A or the lower limit of the overcurrent instantaneous tripping range according to type B, C or D as applicable.
- (3) Additional values 5 A, 10 A, 20 A, 50 A, 100 A, 200 A, 500 A or 10  $I_{\Delta n}$  according to the greatest of these two values.

For the residual current devices of A type, the maximum break times shall also be valid, the current values  $I_{\Delta n}$ , 2  $I_{\Delta n}$ , 5  $I_{\Delta n}$ ,  $I_{\Delta t}$ , 0,25A, 500A ou 10  $I_{\Delta n}$ , however, being increased by the factor 1,4 for residual current devices with  $I_{\Delta n} > 10$ mA and by the factor 2 for residual current devices with  $I_{\Delta n} \leq 10$ mA.

## Multi9 RCD

