

New RC223 residual current release (B type)

Only the most advanced technology can achieve such high performances.

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*Tmax.
T Generation.*



The RC223 residual current release, which can be combined with the Tmax T4 four-pole circuit-breaker in the fixed or plug-in version, is the most advanced solution in the whole residual current release family for the Tmax range. It can boast conformity with type B operation, which guarantees sensitivity to residual fault currents with alternating, alternating pulsating and direct current components. The reference Standards are: IEC 60947-1, IEC 60947-2 Appendix B and IEC 60755. Apart from the signals and settings typical of the "basic" residual current release, the RC223 also allows selection of the maximum threshold of sensitivity to the residual fault frequency (3 steps: 400 – 700 – 1000 Hz). It is therefore possible to adapt the residual current device to the different requirements of the industrial plant according to the prospective fault frequencies generated on the load side of the release. Typical installations which may require frequency thresholds different from the standard ones (50 – 60 Hz) are the welding plants for the automobile industry (1000 Hz), the textile industry (700 Hz), airports and three-phase drives (400 Hz). All the functions of the apparatus – even the most advanced ones – can be checked by the user by means of a careful watchdog test which is carried out by a series of simple successive steps.

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Detailed technical characteristics

RC223

Circuit breakers size	T4 4p	
Type	placed below	
Technology	microprocessor-based	
Action	with solenoid	
Primary service voltage ⁽¹⁾	[V]	110...500
Rated ultimate residual short-circuit breaking capacity, I _{Δm}	[A]	100% I _{cu}
Operating frequency	[Hz]	0 - 1000
Operating frequency thresholds	[Hz]	400 - 700 - 1000
Self-supply	•	
Test operation range ⁽¹⁾	[V]	110...500
Rated service current	[A]	up to 250
Rated residual current trip	[A]	0,03 - 0,05 - 0,1 - 0,3 - 0,5 - 1
Time limit for non-trip	[s]	0 - 0,1 - 0,2 - 0,3 - 0,5 - 1 - 2 - 3; instantaneous at 30mA
Tolerance over time trip	±20%	
Local trip signalling	•	
Trip coil with changeover contact for trip signalling	•	
Input for remote operating	•	
NO contact for pre-alarm signalling	•	
NO contact for alarm signalling	•	
Indication of pre-alarm from 25% I _{Δn} (tolerance ±3%)	•	
Indication of alarm timing	•	
Automatic residual current reset	•	
"A" type for pulsating alternating current, "AC" for alternating current	•	
"AE" type for remote operating	•	
"B" type for pulsating current and direct current	•	
"S" type for selectivity	•	
Button for insulation test	•	
Power exclusion during insulation test	•	
Power supply from above and below	•	
Terminals matched to the CB	•	
Kit for conversion of circuit-breaker with residual current release from fixed to plug-in	•	

(1) Operation up to 50V Phase-Neutral



"B" type residual protection

With the RC223 ABB SACE offers the first integrated residual current release for an MCCB capable of detecting also direct residual current components (RCD type B according to the IEC/TR 60755). It is thus suited for RC protection of AC/DC converters, electronic devices, battery charging stations, photovoltaic systems and all those applications that require power electronics (EN 50178).



Operating frequency thresholds

The RC223 optimizes the residual current protection in function of the characteristic residual fault frequency of the industrial facility, with particular attention to the welding plants for the automotive industry (1000Hz), the textile industry (700Hz), airports and three-phase drives (400Hz), and to all those application that require frequency thresholds different from the standard ones. Moreover, thanks to its advanced low pass filter, the new RC release for T4 can also operate under heavy harmonic components and electromagnetic disturbances.

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Due to possible developments of standards as well as of materials, the characteristics and dimensions specified in the present catalogue may only be considered binding after confirmation by ABB SACE.

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