Influence of ambient temperature

Influence of temperature on the operation of Acti9 devices

Devices		Characteristics influenced by temperature	Temperature	
			Min.	Max.
iK60 circuit breakers		Tripping on overload	-25°C	+60°C
iID K residual current circuit breakers			-5°C	+40°C
iC60a/N/H/L circuit breakers	Without Vigi	Tripping on overload	-35°C	+70°C
	With Vigi (AC)		-5°C	+60°C
	With Vigi (A, Asi)		-25°C	+60°C
iID residual current circuit breakers	AC	Maximum operating current	-5°C	+60°C
	A, Asi		-25°C	+60°C
Protection auxiliaries		None	-35°C	+70°C
iCT contactors		Installation conditions	-5°C	+60°C
iTL impulse relays		None	-20°C	+50°C
iCT, iTL auxiliaries		None	- 20°C	+50°C
Distribloc		Maximum operating current	-25°C	+60°C
Multiclip		Maximum operating current	-25°C	+60°C

Note: the temperature considered is the temperature viewed through the device.
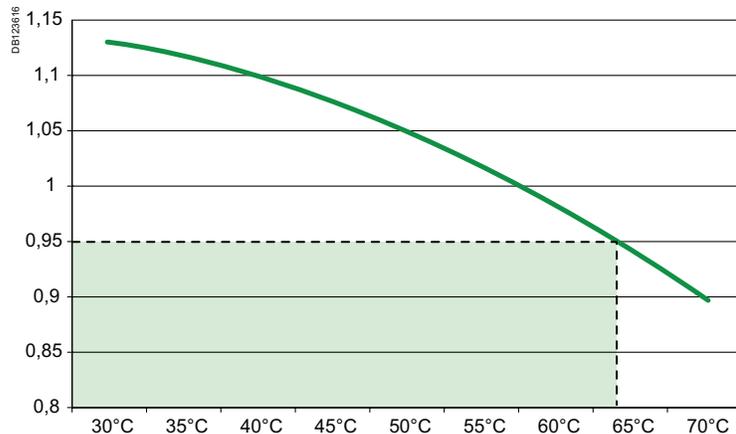
iK60, iC60 circuit breakers

Températures élevées

■ A rise in temperature causes lowering of the thermal threshold (tripping on overload).
■ Protection is still ensured: the tripping threshold remains lower than the current acceptable by the cable (I_z)
■ To prevent nuisance tripping, it should be checked that this threshold remains higher than the maximum operating current (I_B) of the circuit, defined by:
□ the rated load currents,
□ the coefficients of expansion and simultaneity of use.
■ The curve below indicates the minimum value of the threshold, relative to the rated current In, as a function of the temperature in the vicinity of the circuit breaker.

Example for a three-phase circuit having the following characteristics:
■ Cable (acceptable current I_z 68 A), protected by an iC60 circuit breaker of rating 63 A
■ Maximum current that can be demanded by the loads (I_B): 60 A.
This current represents 0.95 times the rating of the circuit breaker: based on the curve opposite, there is no risk of nuisance tripping so long as the temperature does not exceed +65°C.

If the temperature is sufficiently high for the tripping threshold to become lower than the operating current I_B, switchboard ventilation should be provided for.

Schneider Electric

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