

How to select nVent Eriflex IBS & IBSB Advanced?

When sizing a conductor, the air temperature around the conductor is a very important parameter, mainly affected by factors such as convection type, protection level of enclosure or the temperature rise. Based on IEC 61439 standards, the ambient air temperature does not exceed +40°C and its average over a period of 24h does not exceed +35°C.

For IBS & IBSB Advanced, we provided an ampacity table under different temperature rise, a lower temperature rise maybe used when the ambient temperature is higher than usual.

For IBS & IBSB Advanced, we recommend the maximum temperature rise does not exceed 50°C for a normal application. Generally, 50°C is chosen as the default temperature rise considering the ambient temperature inside the panel is below 40°C. But when the connected section is an electrical component which may dissipate heat (for example circuit breaker) or the ventilation inside the enclosure is not efficient, it may be necessary to choose lower temperature rise.

TEMPERATURE RISE OF THE CONDUCTOR.

Temperature rise of the conductor (ΔT) = Temperature of the conductor – Internal temperature of the panel.

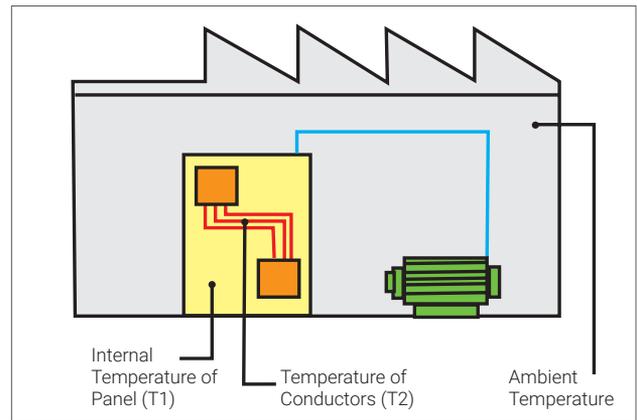
• Temperature rise of conductor = $T2 - T1 = \Delta T$ (C°)

Example:

For a requested current of 630A, with: $T1 = 40^\circ\text{C}$ and $T2 = 90^\circ\text{C}$

- $\Delta T = 90 - 40 = 50^\circ\text{C}$
- in the ΔT 50°C column, find the closest current value to 630A.

Result: IBSB Advanced 240 mm² – 718A (IEC & UL).



Insulated Braided conductor type	Cross Section mm ² (kcmil)	Maximum Ampacity Ratings							Current Coefficient	
		ΔT 30° C (A)	ΔT 40° C (A)	ΔT 45° C (A)	ΔT 50° C (A)	ΔT 55° C (A)	ΔT 60° C (A)	ΔT 70° C (A)		
IBSB ADV 25	25 (49.34)	116	134	142	150	157	164	177	1.6	2
IBS ADV 25	25 (49.34)	137	158	167	177	185	193	209	1.6	2
IBS ADV 50 IBSB ADV 50	50 (98.68)	213	246	260	274	288	301	325	1.6	2
IBSB ADV 70	70 (138.15)	226	261	277	291	306	319	345	1.6	2
IBSB ADV 100	100 (197.35)	298	344	365	385	404	422	456	1.6	2
IBSB ADV 120	120 (236.82)	363	419	444	468	491	513	554	1.6	2
IBSB ADV 185	185 (365.1)	416	480	509	537	563	588	635	1.6	2
IBSB ADV 240	240 (473.65)	556	642	681	718	753	786	849	1.6	2

Admissible currents: This table indicates the temperature rise produced by chosen current in the given section. This calculation does not take into account the heat dissipation from the switch gear.

IBS & IBSB ADVANCED IN PARALLEL

When using 2 or 3 IBS & IBSB Advanced in parallel for the same phase, use the current coefficient showed on the next IEC & UL ampacities table.

Example:

IBSB Advanced 240 mm² – $\Delta T = 50^\circ\text{C}$: 718 A (IEC & UL)

- 2 Braids in parallel: $718 \text{ A} \times 1,6 = 1149 \text{ A}$
- 3 Braids in parallel: $718 \text{ A} \times 2 = 1436 \text{ A}$

