Tolerance classes for thermocouples according to the IEC 60 584-2:1995

Thermocouple	Class 1 (°C)	Class 2 (°C)	Class 3 (°C)
Type T			
Temperature	- 40 ≤ t ≤ 125	-40 ≤ t ≤ 133	-67 ≤ t ≤ 40
Tolerance	±0,5	±1	±1
Temperature	125 ≤ t ≤ 350	133 ≤ t ≤ 350	-200 ≤ t ≤ -67
Tolerance	±0,004•ltl	±0,0075•ltl	±0,015•ltl
Type E			
Temperature	-40 < t ≤ 375	-40 ≤ t ≤ 333	-167 ≤ t ≤ 40
Tolerance	±1,5	±2,5	±2,5
Temperature	375 ≤ t ≤ 800	333 ≤ t ≤ 900	-200 ≤ t ≤ -167
Tolerance	±0,004•ltl	±0,0075•ltl	±0,015•ltl
Type J			
Temperature	-40 < t ≤ 375	-40 ≤ t ≤ 333	-
Tolerance	±1,5	±2,5	-
Temperature	375 ≤ t ≤ 750	333 ≤ t ≤ 750	-
Tolerance	±0,004•ltl	±0,0075•ltl	-
Type K and N	*Also see the diagramme below*		
Temperature	-40 < t ≤ 375	-40 ≤ t ≤ 333	-167 ≤ t ≤ 40
Tolerance	±1,5	±2,5	±2,5
Temperature	375 ≤ t ≤ 1000	333 ≤ t ≤ 1200	-200 ≤ t ≤ -167
Tolerance	±0,004•ltl	±0,0075•ltl	±0,015•ltl
Type S and R			
Temperature	0 < t ≤ 1100	0 ≤ t ≤ 600	-
Tolerance	±1	±1,5	-
Temperature	1100 ≤ t ≤ 1600	600 ≤ t ≤ 1600	-
Tolerance	±[1+0,003(t-1100)]	±0,0025•ltl	-
Type B			
Temperature	-	-	600 ≤ t ≤ 800
Tolerance	-	-	±4
Temperature	-	600 ≤ t ≤ 1700	800 ≤ t ≤ 1700
Tolerance	-	±0,0025•ltl	±0,005•ltl

Temperature referency
Reference point is 0 °C

Explanation
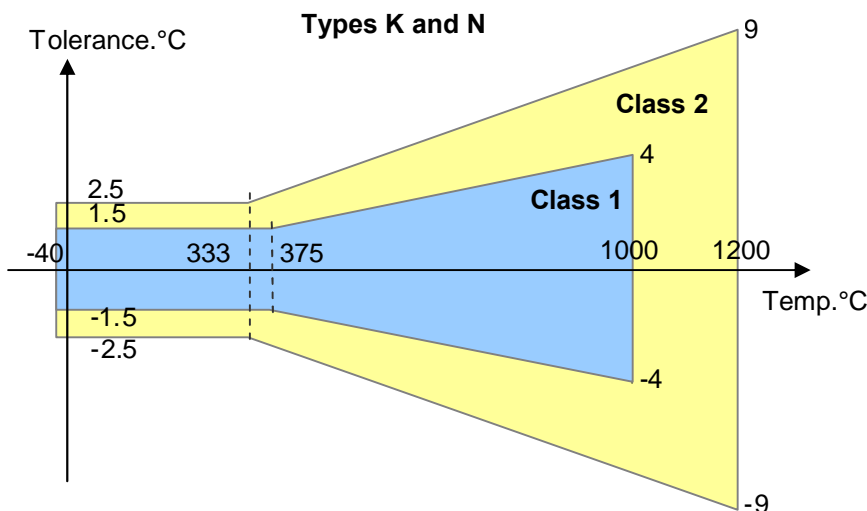|t| = is the positive value of the temperature t.

Tolerances
The tolerances of the table should be taken as guideline values. They are valid only for unused thermocouples.

Sources of error
Many factors such as high temperature combined with time of exposure, vacuum, or drawn wire can quickly lead to deviations that override the tolerances given in the table.

NB
The coloured markings used here have nothing to do with any colour coding of thermocouples.

Types K and N

2012-02-16