DIGITAL CONDUCTIVITY C4E : METHODE OF T°C COMPENSATION

Method of temperature correction :

The method of temperature correction in the conductivity digital sensor C4E is a Non-linear temperature correction. The principal of this correction is that conductivity measured at the sample temperature is corrected to 25°C to give K_{25}.

$$K_{25} = \underbrace{[1 + \alpha \frac{1}{100}(t_{25}-t)]}_{f_{25}(t)} K_t$$

$f_{25}(T)$ is the temperature correction factor used for the conversion of conductivity values of natural water from T to 25°C.

With $\alpha = \alpha_{025} \times \alpha_{s25}$ (at 25 °C α_{025} = 1.9112 %/°C) for “normal” water surface.

Standard table at 25°C of coefficients αs25 (t) :

n	t_n °C	$\alpha_{s25}(t_n)$	n	t_n °C	$\alpha_{s25}(t_n)$
-5	-5	1,987	30	30	0,913
-4	-4	1,925	31	31	0,897
-3	-3	1,867	32	32	0,884
-2	-2	1,813	33	33	0,872
-1	-1	1,761	34	34	0,861
0	0	1,708	35	35	0,851
1	1	1,667	36	36	0,842
2	2	1,623	37	37	0,834
3	3	1,582	38	38	0,827
4	4	1,543	39	39	0,820
5	5	1,510	40	40	0,812
6	6	1,470	41	41	0,800
7	7	1,436	42	42	0,789
8	8	1,404	43	43	0,779
9	9	1,373	44	44	0,769
10	10	1,344	45	45	0,760
11	11	1,316	46	46	0,751
12	12	1,290	47	47	0,742
13	13	1,266	48	48	0,733
14	14	1,239	49	49	0,724
15	15	1,213	50	50	0,716
16	16	1,190	51	51	0,708
17	17	1,167	52	52	0,700
18	18	1,147	53	53	0,692
19	19	1,129	54	54	0,684
20	20	1,105	55	55	0,676
21	21	1,083	56	56	0,669
22	22	1,061	57	57	0,662
23	23	1,040	58	58	0,655
24	24	1,019	59	59	0,648
25	25	1,000	60	60	0,641
26	26	0,981	61	61	0,635
27	27	0,963	62	62	0,628
28	28	0,946	63	63	0,622
29	29	0,929	64	64	0,615

PONSEL MESURE- Groupe AQUALABO
35 Rue Michel MARION – 56850 CAUDAN
Tél.: +33 (0)2.97.89.25.30- Fax :+33 (0)2.97.76.55.72
www.ponsel.fr; email : ponsel@ponsel.fr