

## ANEXA C

**Tabelul 1. Tensiunea termoelectrică (ttem) în milivolți (valori absolute) pentru termocuplul de tip J conform ITS-90**

<sup>0</sup> C	0	1	2	3	4	5	6	7	8	9	10
0	0,000	0,050	0,101	0,151	0,202	0,253	0,303	0,354	0,405	0,456	0,507
10	0,507	0,558	0,609	0,660	0,711	0,762	0,814	0,865	0,916	0,968	1,019
20	1,019	1,071	1,122	1,174	1,226	1,277	1,329	1,381	1,433	1,485	1,537
30	1,537	1,589	1,641	1,693	1,745	1,797	1,849	1,902	1,954	2,006	2,059
40	2,059	2,111	2,164	2,216	2,269	2,322	2,374	2,427	2,480	2,532	2,585
50	2,585	2,638	2,691	2,744	2,797	2,850	2,903	2,956	3,009	3,062	3,116
60	3,116	3,169	3,222	3,275	3,329	3,382	3,436	3,489	3,543	3,596	3,650
70	3,650	3,703	3,757	3,810	3,864	3,918	3,971	4,025	4,079	4,133	4,187
80	4,187	4,240	4,294	4,348	4,402	4,456	4,510	4,564	4,618	4,672	4,726
90	4,726	4,781	4,835	4,889	4,943	4,997	5,052	5,106	5,160	5,215	5,269
<sup>0</sup> C	0	1	2	3	4	5	6	7	8	9	10
100	5,269	5,323	5,378	5,432	5,487	5,541	5,595	5,650	5,705	5,759	5,814
110	5,814	5,868	5,923	5,977	6,032	6,087	6,141	6,196	6,251	6,306	6,360
120	6,360	6,415	6,470	6,525	6,579	6,634	6,689	6,744	6,799	6,854	6,909
130	6,909	6,964	7,019	7,074	7,129	7,184	7,239	7,294	7,349	7,404	7,459
140	7,459	7,514	7,569	7,624	7,679	7,734	7,789	7,844	7,900	7,955	8,010
150	8,010	8,065	8,120	8,175	8,231	8,286	8,341	8,396	8,452	8,507	8,562
160	8,562	8,618	8,673	8,728	8,783	8,839	8,894	8,949	9,005	9,060	9,115
170	9,115	9,171	9,226	9,282	9,337	9,392	9,448	9,503	9,559	9,614	9,669
180	9,669	9,725	9,780	9,836	9,891	9,947	10,002	10,057	10,113	10,168	10,224
190	10,224	10,279	10,335	10,390	10,446	10,501	10,557	10,612	10,668	10,723	10,779
<sup>0</sup> C	0	1	2	3	4	5	6	7	8	9	10
200	10,779	10,834	10,890	10,945	11,001	11,056	11,112	11,167	11,223	11,278	11,334
210	11,334	11,389	11,445	11,501	11,556	11,612	11,667	11,723	11,778	11,834	11,889
220	11,889	11,945	12,000	12,056	12,111	12,167	12,222	12,278	12,334	12,389	12,445
230	12,445	12,500	12,556	12,611	12,667	12,722	12,778	12,833	12,889	12,944	13,000
240	13,000	13,056	13,111	13,167	13,222	13,278	13,333	13,389	13,444	13,500	13,555
250	13,555	13,611	13,666	13,722	13,777	13,833	13,888	13,944	13,999	14,055	14,110
260	14,110	14,166	14,221	14,277	14,332	14,388	14,443	14,499	14,554	14,609	14,665
270	14,665	14,720	14,776	14,831	14,887	14,942	14,998	15,053	15,109	15,164	15,219
280	15,219	15,275	15,330	15,386	15,441	15,496	15,552	15,607	15,663	15,718	15,773
290	15,773	15,829	15,884	15,940	15,995	16,050	16,106	16,161	16,216	16,272	16,327
<sup>0</sup> C	0	1	2	3	4	5	6	7	8	9	10
300	16,327	16,383	16,438	16,493	16,549	16,604	16,659	16,715	16,770	16,825	16,881
310	16,881	16,936	16,991	17,046	17,102	17,157	17,212	17,268	17,323	17,378	17,434
320	17,434	17,489	17,544	17,599	17,655	17,710	17,765	17,820	17,876	17,931	17,986

<sup>0</sup> C	0	1	2	3	4	5	6	7	8	9	10
330	17,986	18,041	18,097	18,152	18,207	18,262	18,318	18,373	18,428	18,483	18,538
340	18,538	18,594	18,649	18,704	18,759	18,814	18,870	18,925	18,980	19,035	19,090
350	19,090	19,146	19,201	19,256	19,311	19,366	19,422	19,477	19,532	19,587	19,642
360	19,642	19,697	19,753	19,808	19,863	19,918	19,973	20,028	20,083	20,139	20,194
370	20,194	20,249	20,304	20,359	20,414	20,469	20,525	20,580	20,635	20,690	20,745
380	20,745	20,800	20,855	20,911	20,966	21,021	21,076	21,131	21,186	21,241	21,297
390	21,297	21,352	21,407	21,462	21,517	21,572	21,627	21,683	21,738	21,793	21,848
<sup>0</sup> C	0	1	2	3	4	5	6	7	8	9	10
400	21,848	21,903	21,958	22,014	22,069	22,124	22,179	22,234	22,289	22,345	22,400
410	22,400	22,455	22,510	22,565	22,620	22,676	22,731	22,786	22,841	22,896	22,952
420	22,952	23,007	23,062	23,117	23,172	23,228	23,283	23,338	23,393	23,449	23,504
430	23,504	23,559	23,614	23,670	23,725	23,780	23,835	23,891	23,946	24,001	24,057
440	24,057	24,112	24,167	24,223	24,278	24,333	24,389	24,444	24,499	24,555	24,610
450	24,610	24,665	24,721	24,776	24,832	24,887	24,943	24,998	25,053	25,109	25,164
460	25,164	25,220	25,275	25,331	25,386	25,442	25,497	25,553	25,608	25,664	25,720
470	25,720	25,775	25,831	25,886	25,942	25,998	26,053	26,109	26,165	26,220	26,276
480	26,276	26,332	26,387	26,443	26,499	26,555	26,610	26,666	26,722	26,778	26,834
490	26,834	26,889	26,945	27,001	27,057	27,113	27,169	27,225	27,281	27,337	27,393

**NOTĂ:** În standardizarea ITS-90 valorile tensiunii termoelectrice ale termocuplului de tip J sunt date – din <sup>0</sup>C în <sup>0</sup>C – pe intervalul -210<sup>0</sup>C ÷ +1200<sup>0</sup>C; în cadrul acestei anexe s-a considerat un interval mult restrâns (0<sup>0</sup>C ÷ +500<sup>0</sup>C) din considerente de utilizare în aplicațiile dezvoltate.

**Tabelul 2. Tensiunea termoelectrică (ttem) în milivolți (valori absolute) pentru termocuplul de tip K conform ITS-90**

<sup>0</sup> C	0	1	2	3	4	5	6	7	8	9	10
0	0,000	0,039	0,079	0,119	0,158	0,198	0,238	0,277	0,317	0,357	0,397
10	0,397	0,437	0,477	0,517	0,557	0,597	0,637	0,677	0,718	0,758	0,798
20	0,798	0,838	0,879	0,919	0,960	1,000	1,041	1,081	1,122	1,162	1,203
30	1,203	1,244	1,285	1,325	1,366	1,407	1,448	1,489	1,529	1,570	1,611
40	1,611	1,652	1,693	1,734	1,776	1,817	1,858	1,899	1,940	1,981	2,022
50	2,022	2,064	2,105	2,146	2,188	2,229	2,270	2,312	2,353	2,394	2,436
60	2,436	2,477	2,519	2,560	2,601	2,643	2,684	2,726	2,767	2,809	2,850
70	2,850	2,892	2,933	2,975	3,016	3,058	3,100	3,141	3,183	3,224	3,266
80	3,266	3,307	3,349	3,390	3,432	3,473	3,515	3,556	3,598	3,639	3,681
90	3,681	3,722	3,764	3,805	3,847	3,888	3,930	3,971	4,012	4,054	4,095
<sup>0</sup> C	0	1	2	3	4	5	6	7	8	9	10
100	4,095	4,137	4,178	4,219	4,261	4,302	4,343	4,384	4,426	4,467	4,508
110	4,508	4,549	4,590	4,632	4,673	4,714	4,755	4,796	4,837	4,878	4,919
120	4,919	4,960	5,001	5,042	5,083	5,124	5,164	5,205	5,246	5,287	5,327
130	5,327	5,368	5,409	5,450	5,490	5,531	5,571	5,612	5,652	5,693	5,733
140	5,733	5,774	5,814	5,855	5,895	5,936	5,976	6,016	6,057	6,097	6,137
150	6,137	6,177	6,218	6,258	6,298	6,338	6,378	6,419	6,459	6,499	6,539
160	6,539	6,579	6,619	6,659	6,699	6,739	6,779	6,819	6,859	6,899	6,939
170	6,939	6,979	7,019	7,059	7,099	7,139	7,179	7,219	7,259	7,299	7,338
180	7,338	7,378	7,418	7,458	7,498	7,538	7,578	7,618	7,658	7,697	7,737
190	7,737	7,777	7,817	7,857	7,897	7,937	7,977	8,017	8,057	8,097	8,137
200	8,137	8,177	8,216	8,256	8,296	8,336	8,376	8,416	8,456	8,497	8,537
210	8,537	8,577	8,617	8,657	8,697	8,737	8,777	8,817	8,857	8,898	8,938
220	8,938	8,978	9,018	9,058	9,099	9,139	9,179	9,220	9,260	9,300	9,341
230	9,341	9,381	9,421	9,462	9,502	9,543	9,583	9,624	9,664	9,705	9,745
240	9,745	9,786	9,826	9,867	9,907	9,948	9,989	10,029	10,070	10,111	10,151
250	10,151	10,192	10,233	10,274	10,315	10,355	10,396	10,437	10,478	10,519	10,560
260	10,560	10,600	10,641	10,682	10,723	10,764	10,805	10,846	10,887	10,928	10,969
270	10,969	11,010	11,051	11,093	11,134	11,175	11,216	11,257	11,298	11,339	11,381
280	11,381	11,422	11,463	11,504	11,546	11,587	11,628	11,669	11,711	11,752	11,793
290	11,793	11,835	11,876	11,918	11,959	12,000	12,042	12,083	12,125	12,166	12,207
<sup>0</sup> C	0	1	2	3	4	5	6	7	8	9	10
300	12,207	12,249	12,290	12,332	12,373	12,415	12,456	12,498	12,539	12,581	12,623
310	12,623	12,664	12,706	12,747	12,789	12,831	12,872	12,914	12,955	12,997	13,039
320	13,039	13,080	13,122	13,164	13,205	13,247	13,289	13,331	13,372	13,414	13,456
330	13,456	13,497	13,539	13,581	13,623	13,665	13,706	13,748	13,790	13,832	13,874
340	13,874	13,915	13,957	13,999	14,041	14,083	14,125	14,167	14,208	14,250	14,292
350	14,292	14,334	14,376	14,418	14,460	14,502	14,544	14,586	14,628	14,670	14,712
360	14,712	14,754	14,796	14,838	14,880	14,922	14,964	15,006	15,048	15,090	15,132
370	15,132	15,174	15,216	15,258	15,300	15,342	15,384	15,426	15,468	15,510	15,552
380	15,552	15,594	15,636	15,679	15,721	15,763	15,805	15,847	15,889	15,931	15,974

<sup>0</sup> C	0	1	2	3	4	5	6	7	8	9	10
390	15,974	16,016	16,058	16,100	16,142	16,184	16,227	16,269	16,311	16,353	16,395
400	16,395	16,438	16,480	16,522	16,564	16,607	16,649	16,691	16,733	16,776	16,818
410	16,818	16,860	16,902	16,945	16,987	17,029	17,072	17,114	17,156	17,199	17,241
420	17,241	17,283	17,326	17,368	17,410	17,453	17,495	17,537	17,580	17,622	17,664
430	17,664	17,707	17,749	17,792	17,834	17,876	17,919	17,961	18,004	18,046	18,088
440	18,088	18,131	18,173	18,216	18,258	18,301	18,343	18,385	18,428	18,470	18,513
450	18,513	18,555	18,598	18,640	18,683	18,725	18,768	18,810	18,853	18,895	18,938
460	18,938	18,980	19,023	19,065	19,108	19,150	19,193	19,235	19,279	19,320	19,363
470	19,363	19,405	19,448	19,490	19,533	19,576	19,618	19,661	19,703	19,746	19,788
480	19,788	19,831	19,873	19,916	19,959	20,001	20,044	20,086	20,129	20,172	20,214
490	20,214	20,257	20,299	20,342	20,385	20,427	20,470	20,512	20,555	20,598	20,640

**NOTĂ:** În standardizarea ITS-90 valorile tensiunii termoelectrice ale termocuplului de tip **K** sunt date – din <sup>0</sup>C în <sup>0</sup>C – pe intervalul -270<sup>0</sup>C ÷ +1373<sup>0</sup>C; în cadrul acestei anexe s-a considerat un interval mult restrâns (0<sup>0</sup>C ÷ +500<sup>0</sup>C) din considerente de utilizare în aplicațiile dezvoltate.