

Gerades Thermoelement mit Keramikschutzrohr TTAK

Anwendung

„Gerade Thermoelemente mit Keramikschutzrohr werden in Hochtemperaturbereichen eingesetzt, vor allem in Stahlwerken, Metallgießereien und Ofenbauern. Dank dem Einsatz von Keramik kann das Thermoelement Temperaturen bis +1850°C erfassen, was absolute Spitze in diesem Bereich ist.“

Technische Spezifikationen TTAK

Thermoelement	Typ K (NiCr-Ni)
Klasse	1
Temperaturbereich	von -200°C bis +1250°C
Schutzart	IP54
Messelement	auswechselbar
Anschlusskopf	BUZH
Werkstoff Keramik	C610
Werkstoff Schutzrohr	1.4841
Schutzrohrdurchmesser	15mm

Gerne fertigen wir nach Kundenwunsch!
benützen Sie unseren **Konfigurator**.

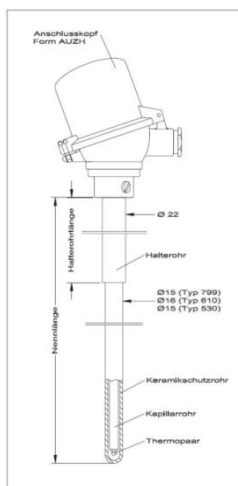
Artikelnummer

Ausführung ohne Ex: 500mm: **TTAK-500**
710mm: **TTAK-710**
1000mm: **TTAK-1000**
2000mm: **TTAK-2000**

Ausführung mit Ex: 500mm: **TTAK-500Ex**
710mm: **TTAK-710Ex**
1000mm: **TTAK-1000Ex**
2000mm: **TTAK-2000Ex**



Masszeichnung



Spannungstabelle Thermoelement Typ K (NiCr-Ni)

Thermoelemente vom Typ K (NiCr-Ni) in mV										
	0	1	2	3	4	5	6	7	8	9
-100°C	-3,554	-3,523	-3,492	-3,462	-3,431	-3,4	-3,368	-3,337	-3,306	-3,274
-90°C	-3,243	-3,211	-3,179	-3,147	-3,115	-3,083	-3,05	-3,018	-2,986	-2,953
-80°C	-2,92	-2,887	-2,854	-2,821	-2,788	-2,755	-2,721	-2,688	-2,654	-2,62
-70°C	-2,587	-2,553	-2,519	-2,485	-2,45	-2,416	-2,382	-2,347	-2,312	-2,278
-60°C	-2,243	-2,208	-2,173	-2,138	-2,103	-2,067	-2,032	-1,996	-1,961	-1,925
-50°C	-1,889	-1,854	-1,818	-1,782	-1,745	-1,709	-1,673	-1,637	-1,6	-1,564
-40°C	-1,527	-1,49	-1,453	-1,417	-1,38	-1,343	-1,305	-1,268	-1,231	-1,194
-30°C	-1,156	-1,119	-1,081	-1,043	-1,006	-0,968	-0,93	-0,892	-0,854	-0,816
-20°C	-0,778	-0,739	-0,701	-0,663	-0,624	-0,586	-0,547	-0,508	-0,47	-0,431
-10°C	-3,554	-3,523	-3,492	-3,462	-3,431	-3,4	-3,368	-3,337	-3,306	-3,274
0°C	0	0,075	0,114	0,154	0,193	0,233	0,273	0,313	0,352	0,392
+10°C	0,432	0,472	0,512	0,552	0,592	0,632	0,672	0,713	0,753	0,793
+20°C	0,833	0,874	0,914	0,954	0,995	1,035	1,076	1,117	1,157	1,198
+30°C	1,238	1,279	1,32	1,361	1,402	1,442	1,483	1,524	1,565	1,606
+40°C	1,647	1,688	1,729	1,77	1,811	1,852	1,893	1,935	1,976	2,017
+50°C	2,058	2,1	2,141	2,182	2,223	2,265	2,306	2,347	2,389	2,43
+60°C	2,472	2,513	2,555	2,596	2,637	2,679	2,72	2,762	2,803	2,845
+70°C	2,886	2,928	2,97	3,011	3,053	3,094	3,136	3,177	3,219	3,26
+80°C	3,302	3,343	3,385	3,426	3,468	3,51	3,551	3,593	3,634	3,676
+90°C	3,717	3,759	3,8	3,842	3,883	3,924	3,966	4,007	4,049	4,09
+100°C	4,131	4,173	4,214	4,255	4,297	4,338	4,379	4,421	4,462	4,503
	0	1	2	3	4	5	6	7	8	9
+110°C	4,544	4,585	4,627	4,668	4,709	4,75	4,791	4,832	4,873	4,914
+120°C	4,955	4,996	5,037	5,078	5,119	5,16	5,2	5,241	5,282	5,323
+130°C	5,364	5,404	5,445	5,486	5,526	5,567	5,608	5,648	5,689	5,729
+140°C	5,77	5,81	5,851	5,891	5,932	5,972	6,012	6,053	6,093	6,133
+150°C	6,174	6,214	6,254	6,294	6,335	6,375	6,415	6,455	6,495	6,535
+160°C	6,575	6,616	6,656	6,696	6,736	6,776	6,816	6,856	6,896	6,936
+170°C	6,976	7,016	7,056	7,096	7,136	7,176	7,216	7,255	7,295	7,335
+180°C	7,375	7,415	7,455	7,495	7,535	7,575	7,615	7,655	7,695	7,734
+190°C	7,774	7,814	7,854	7,894	7,934	7,974	8,014	8,054	8,094	8,134
+200°C	8,174	8,214	8,254	8,294	8,334	8,374	8,414	8,454	8,494	8,534
+210°C	8,574	8,614	8,654	8,694	8,734	8,774	8,814	8,855	8,895	8,935
+220°C	8,975	9,015	9,056	9,096	9,136	9,176	9,217	9,257	9,297	9,338
+230°C	9,378	9,418	9,459	9,499	9,539	9,58	9,62	9,661	9,701	9,742
+240°C	9,782	9,823	9,863	9,904	9,945	9,985	10,026	10,067	10,107	10,148
+250°C	10,189	10,229	10,27	10,311	10,352	10,392	10,433	10,474	10,515	10,556
+260°C	10,597	10,637	10,678	10,719	10,76	10,801	10,842	10,883	10,924	10,965
+270°C	11,006	11,047	11,088	11,129	11,17	11,212	11,253	11,294	11,335	11,376
+280°C	11,417	11,459	11,5	11,541	11,582	11,623	11,665	11,706	11,747	11,789
+290°C	11,83	11,871	11,913	11,954	11,995	12,037	12,078	12,119	12,161	12,202
+300°C	12,244	12,285	12,327	12,368	12,41	12,451	12,493	12,534	12,576	12,617
+310°C	12,659	12,7	12,742	12,783	12,825	12,867	12,908	12,95	12,992	13,033
+320°C	13,075	13,116	13,158	13,2	13,242	13,283	13,325	13,367	13,408	13,45
+330°C	13,492	13,534	13,575	13,617	13,659	13,701	13,742	13,784	13,826	13,868
+340°C	13,91	13,952	13,993	14,035	14,077	14,119	14,161	14,203	14,245	14,286

	0	1	2	3	4	5	6	7	8	9
+340°C	13,91	13,952	13,993	14,035	14,077	14,119	14,161	14,203	14,245	14,286
+350°C	14,328	14,37	14,412	14,454	14,496	14,538	14,58	14,622	14,664	14,706
+360°C	14,748	14,79	14,832	14,874	14,916	14,958	15	15,042	15,084	15,126
+370°C	15,168	15,21	15,252	15,294	15,336	15,378	15,42	15,462	15,505	15,547
+380°C	15,589	15,631	15,673	15,715	15,757	15,799	15,842	15,884	15,926	15,968
+390°C	16,01	16,052	16,095	16,137	16,179	16,221	16,263	16,306	16,348	16,39
+400°C	16,432	16,475	16,517	16,559	16,601	16,644	16,686	16,728	16,77	16,813
+410°C	16,855	16,897	16,94	16,982	17,024	17,067	17,109	17,151	17,194	17,236
+420°C	17,278	17,321	17,363	17,405	17,448	17,49	17,532	17,575	17,617	17,66
+430°C	17,702	17,744	17,787	17,829	17,872	17,914	17,957	17,999	18,041	18,084
+440°C	18,126	18,169	18,211	18,254	18,296	18,339	18,381	18,424	18,466	18,509
+450°C	18,551	18,594	18,636	18,678	18,721	18,764	18,806	18,849	18,891	18,934
+460°C	18,976	19,019	19,061	19,104	19,146	19,189	19,231	19,274	19,316	19,359
+470°C	19,402	19,444	19,487	19,529	19,572	19,614	19,657	19,7	19,742	19,785
+480°C	19,827	19,87	19,912	19,955	19,998	20,04	20,083	20,125	20,168	20,211
+490°C	20,253	20,296	20,339	20,381	20,424	20,466	20,509	20,552	20,594	20,637
+500°C	20,679	20,722	20,765	20,807	20,85	20,893	20,935	20,978	21,021	21,063
+510°C	21,106	21,148	21,191	21,234	21,276	21,319	21,362	21,404	21,447	21,49
+520°C	21,532	21,575	21,618	21,66	21,703	21,746	21,788	21,831	21,873	21,916
+530°C	21,959	22,001	22,044	22,087	22,129	22,172	22,215	22,257	22,3	22,343
+540°C	22,385	22,428	22,471	22,513	22,556	22,598	22,641	22,684	22,726	22,769
+550°C	22,812	22,854	22,897	22,94	22,982	23,025	23,067	23,11	23,153	23,195
+560°C	23,238	23,281	23,323	23,366	23,408	23,451	23,494	23,536	23,579	23,621
	0	1	2	3	4	5	6	7	8	9
+570°C	23,664	23,707	23,749	23,792	23,834	23,877	23,92	23,962	24,005	24,047
+580°C	24,09	24,132	24,175	24,218	24,26	24,303	24,345	24,388	24,43	24,473
+590°C	24,515	24,558	24,601	24,643	24,686	24,728	24,771	24,813	24,856	24,898
+600°C	24,941	24,983	25,026	25,068	25,111	25,153	25,196	25,238	25,281	25,323
+610°C	25,366	25,408	25,45	25,493	25,535	25,578	25,62	25,663	25,705	25,748
+620°C	25,79	25,832	25,875	25,917	25,96	26,002	26,044	26,087	26,129	26,171
+630°C	26,214	26,256	26,299	26,341	26,383	26,426	26,468	26,51	26,553	26,595
+640°C	26,637	26,68	26,722	26,764	26,806	26,849	26,891	26,933	26,976	27,018
+650°C	27,06	27,102	27,145	27,187	27,229	27,271	27,313	27,356	27,398	27,44
+660°C	27,482	27,524	27,567	27,609	27,651	27,693	27,735	27,777	27,82	27,862
+670°C	27,904	27,946	27,988	28,03	28,072	28,114	28,156	28,198	28,241	28,283
+680°C	28,325	28,367	28,409	28,451	28,493	28,535	28,577	28,619	28,661	28,703
+690°C	28,745	28,787	28,829	28,871	28,913	28,955	28,997	29,038	29,08	29,122
+700°C	29,164	29,206	29,248	29,29	29,332	29,374	29,415	29,457	29,499	29,541
+710°C	29,583	29,625	29,666	29,708	29,75	29,792	29,834	29,875	29,917	29,959
+720°C	30,001	30,042	30,084	30,126	30,167	30,209	30,251	30,292	30,334	30,376
+730°C	30,417	30,459	30,501	30,542	30,584	30,626	30,667	30,709	30,75	30,792
+740°C	30,833	30,875	30,917	30,958	31	31,041	31,083	31,124	31,166	31,207
+750°C	31,249	31,29	31,332	31,373	31,414	31,456	31,497	31,539	31,58	31,622
+760°C	31,663	31,704	31,746	31,787	31,828	31,87	31,911	31,952	31,994	32,035
+770°C	32,076	32,118	32,159	32,2	32,241	32,283	32,324	32,365	32,406	32,447
+780°C	32,489	32,53	32,571	32,612	32,653	32,694	32,736	32,777	32,818	32,859
+790°C	32,9	32,941	32,982	33,023	33,064	33,105	33,147	33,188	33,229	33,27

	0	1	2	3	4	5	6	7	8	9
+800°C	33,311	33,352	33,393	33,434	33,475	33,515	33,556	33,597	33,638	33,679
+810°C	33,72	33,761	33,802	33,843	33,884	33,924	33,965	34,006	34,047	34,088
+820°C	34,129	34,169	34,21	34,251	34,292	34,333	34,373	34,414	34,455	34,495
+830°C	34,536	34,577	34,618	34,658	34,699	34,74	34,78	34,821	34,862	34,902
+840°C	34,943	34,983	35,024	35,065	35,105	35,146	35,186	35,227	35,267	35,308
+850°C	35,348	35,389	35,429	35,47	35,51	35,551	35,591	35,632	35,672	35,712
+860°C	35,753	35,793	35,834	35,874	35,914	35,955	35,995	36,035	36,076	36,116
+870°C	36,156	36,197	36,237	36,277	36,318	36,358	36,398	36,438	36,479	36,519
+880°C	36,559	36,599	36,639	36,68	36,72	36,76	36,8	36,84	36,88	36,92
+890°C	36,961	37,001	37,041	37,081	37,121	37,161	37,201	37,241	37,281	37,321
+900°C	37,361	37,401	37,441	37,481	37,521	37,561	37,601	37,641	37,681	37,721
+910°C	37,761	37,801	37,84	37,88	37,92	37,96	38	38,04	38,08	38,119
+920°C	38,159	38,199	38,239	38,279	38,318	38,358	38,398	38,438	38,477	38,517
+930°C	38,557	38,596	38,636	38,676	38,715	38,755	38,795	38,834	38,874	38,914
+940°C	38,953	38,993	39,032	39,072	39,112	39,151	39,191	39,23	39,27	39,309
+950°C	39,349	39,388	39,428	39,467	39,507	39,546	39,586	39,625	39,664	39,704
+960°C	39,743	39,783	39,822	39,861	39,901	39,94	39,979	40,019	40,058	40,097
+970°C	40,137	40,176	40,215	40,254	40,294	40,333	40,372	40,411	40,451	40,49
+980°C	40,529	40,568	40,607	40,647	40,686	40,725	40,764	40,803	40,842	40,881
+990°C	40,92	40,96	40,999	41,038	41,077	41,116	41,155	41,194	41,233	41,272
+1000°C	41,311	41,35	41,389	41,428	41,467	41,506	41,545	41,583	41,622	41,661
+1010°C	41,7	41,739	41,778	41,817	41,856	41,894	41,933	41,972	42,011	42,05
+1020°C	42,088	42,127	42,166	42,205	42,243	42,282	42,321	42,359	42,398	42,437
	0	1	2	3	4	5	6	7	8	9
+1030°C	42,475	42,514	42,553	42,591	42,63	42,669	42,707	42,746	42,784	42,823
+1040°C	42,862	42,9	42,939	42,977	43,016	43,054	43,093	43,131	43,17	43,208
+1050°C	43,246	43,285	43,323	43,362	43,4	43,439	43,477	43,515	43,554	43,592
+1060°C	43,63	43,669	43,707	43,745	43,783	43,822	43,86	43,898	43,937	43,975
+1070°C	44,013	44,051	44,089	44,128	44,166	44,204	44,242	44,28	44,318	44,356
+1080°C	44,394	44,433	44,471	44,509	44,547	44,585	44,623	44,661	44,699	44,737
+1090°C	44,775	44,813	44,851	44,889	44,927	44,965	45,002	45,04	45,078	45,116
+1100°C	45,154	45,192	45,23	45,267	45,305	45,343	45,381	45,419	45,456	45,494
+1110°C	45,532	45,57	45,607	45,645	45,683	45,72	45,758	45,796	45,833	45,871
+1120°C	45,908	45,946	45,984	46,021	46,059	46,096	46,134	46,171	46,209	46,246
+1130°C	46,284	46,321	46,359	46,396	46,434	46,471	46,508	46,546	46,583	46,621
+1140°C	46,658	46,695	46,733	46,77	46,807	46,844	46,882	46,919	46,956	46,993
+1150°C	47,031	47,068	47,105	47,142	47,179	47,217	47,254	47,291	47,328	47,365
+1160°C	47,402	47,439	47,476	47,513	47,55	47,587	47,624	47,661	47,698	47,735
+1170°C	47,772	47,809	47,846	47,883	47,92	47,957	47,993	48,03	48,067	48,104
+1180°C	48,141	48,177	48,214	48,251	48,288	48,324	48,361	48,398	48,434	48,471
+1190°C	48,508	48,544	48,581	48,618	48,654	48,691	48,727	48,764	48,8	48,837
+1200°C	48,873	48,91	48,946	48,983	49,019	49,056	49,092	49,129	49,165	49,201
+1210°C	49,238	49,274	49,31	49,347	49,383	49,419	49,455	49,492	49,528	49,564
+1220°C	49,6	49,636	49,673	49,709	49,745	49,781	49,817	49,853	49,889	49,925
+1230°C	49,961	49,997	50,033	50,069	50,105	50,141	50,177	50,213	50,249	50,285
+1240°C	50,321	50,357	50,393	50,429	50,464	50,5	50,536	50,572	50,608	50,643
+1250°C	50,679	50,715	50,75	50,786	50,822	50,858	50,893	50,929	50,964	51