

Figure 1.1. The physical photo of ATSC10KF1-E4

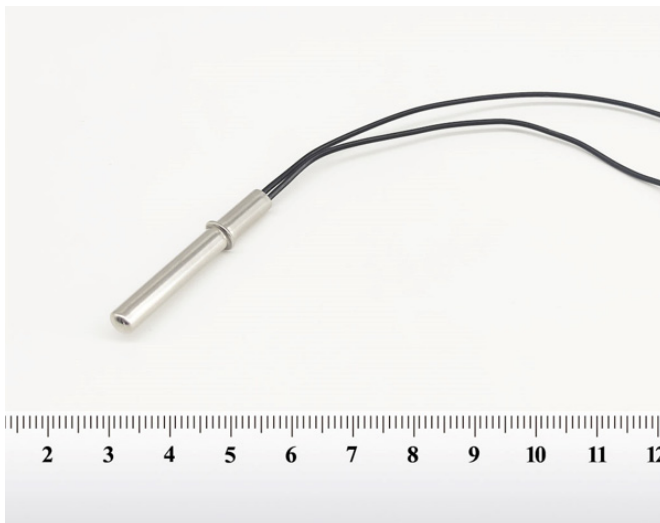


Figure 1.2. The physical photo of ATSC10KF1-E4

### MAIN FEATURES

- Glass Encapsulated for Long Term Stability & Reliability
- High Resistance Accuracy: 1%
- Maximum Temp. Range:  $-40^{\circ}\text{C}$  to  $200^{\circ}\text{C}$
- Packaged in Extra Small Metal Shell
- 100 % Lead (Pb)-free and RoHS Compliant

### APPLICATION AREAS

- Temperature Sensing
- Temperature Detection
- Transformers
- Electric Motors
- Air Sensors

### DESCRIPTIONS

The ATSC10KF1-E4 thermistor assembly is housed by a stainless cap. The thermistor inside has glass encapsulation to

ensure long time operation, wide temperature range, and no parameter drift of either short time or long term. Both the cap and the ring are made of metal, making them long time lasting even under harsh environment, such as acid, moisture, etc. The output terminals use a pair of heavy duty PVC insulated wires of 26 AWG. The ends are terminated by a standard 2 pin plug, which can be customized for other types of connectors according to customers need. The length of the wires can also be specified.

### SPECIFICATIONS

Parameters	Value
Nominal Resistance @ $25^{\circ}\text{C}$	$10\text{K} \pm 1\%$
B Value @ $25^{\circ}\text{C} / 50^{\circ}\text{C}$	$3950\text{K} \pm 1\%$
B Value @ $25^{\circ}\text{C} / 85^{\circ}\text{C}$	$3990\text{K} \pm 1\%$
$R@25^{\circ}\text{C} / R@50^{\circ}\text{C}$	2.771
$R@25^{\circ}\text{C} / R@85^{\circ}\text{C}$	9.271
Metal Head Length	$40 \pm 0.1\text{mm}$
Metal Head Width	$5 \pm 0.1\text{mm}$
Lead Diameter	1.5mm
Lead Length	150mm(can be customized)
Insulation Resistance	$50\text{M}\Omega$
Time Constant	37.8s (in still air) 1.13s (in water)

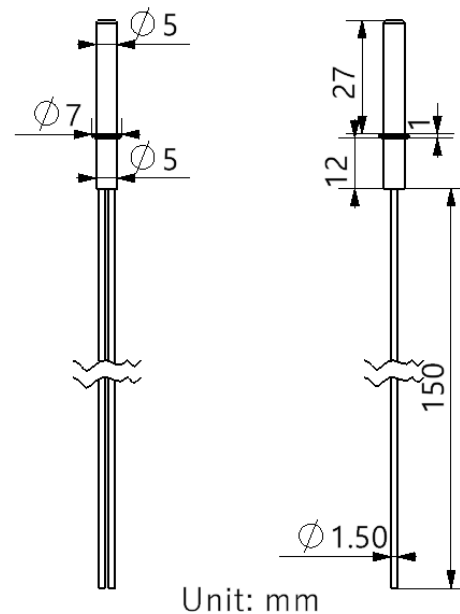


Figure 2. The Front and Side Views of ATSC10KF1-E4

**Resistance Temperature Characteristics**

Temp	Resistance	Temp	Resistance	Temp	Resistance	Temp	Resistance	Temp	Resistance
°C	KΩ	°C	KΩ	°C	KΩ	°C	KΩ	°C	KΩ
-40	342.55	7	23.041	54	3.1061	101	0.6639	148	0.1957
-39	320.26	8	21.935	55	2.9940	102	0.6463	149	0.1912
-38	299.57	9	20.908	56	2.8858	103	0.6280	150	0.1869
-37	280.36	10	19.921	57	2.7816	104	0.6102	151	0.1786
-36	262.51	11	18.984	58	2.6834	105	0.5932	152	0.1745
-35	245.92	12	18.100	59	2.5871	106	0.5766	153	0.1706
-34	230.49	13	17.264	60	2.4969	107	0.5605	154	0.1667
-33	216.13	14	16.471	61	2.4086	108	0.5449	155	0.1629
-32	202.77	15	15.717	62	2.3244	109	0.5229	156	0.1593
-31	190.31	16	15.004	63	2.2441	110	0.5153	157	0.1557
-30	178.71	17	14.327	64	2.1658	111	0.5013	158	0.1523
-29	167.89	18	13.683	65	2.0915	112	0.4877	159	0.1489
-28	157.80	19	13.073	66	2.0202	113	0.4745	160	0.1456
-27	148.37	20	12.494	67	1.9515	114	0.4617	161	0.1424
-26	139.58	21	11.943	68	1.8854	115	0.4493	162	0.1393
-25	131.36	22	11.419	69	1.8219	116	0.4371	163	0.1363
-24	123.68	23	10.923	70	1.7610	117	0.4256	164	0.1333
-23	116.49	24	10.449	71	1.7022	118	0.4141	165	0.1304
-22	109.78	25	10.000	72	1.6457	119	0.4032	166	0.1276
-21	103.49	26	9.5730	73	1.5916	120	0.3927	167	0.1249
-20	97.597	27	9.1658	74	1.5393	121	0.3823	168	0.1222
-19	92.091	28	8.7783	75	1.4891	122	0.3724	169	0.1196
-18	86.912	29	8.4085	76	1.4406	123	0.3628	170	0.1171
-17	82.063	30	8.0586	77	1.3941	124	0.3535	171	0.1146
-16	77.525	31	7.7224	78	1.3494	125	0.3445	172	0.1122
-15	73.259	32	7.4041	79	1.3063	126	0.3356	173	0.1099
-14	69.245	33	7.0995	80	1.2648	127	0.3271	174	0.1076
-13	65.485	34	6.8109	81	1.2246	128	0.3189	175	0.1054
-12	61.958	35	6.5341	82	1.1861	129	0.3109	176	0.1032
-11	58.626	36	6.2711	83	1.1488	130	0.3031	177	0.1011
-10	55.508	37	6.0180	84	1.1131	131	0.2955	178	0.0990
-9	530.5	38	5.7788	85	1.0786	132	0.2882	179	0.0970
-8	502.4	39	5.5496	86	1.0453	133	0.2811	180	0.0950
-7	476.2	40	5.3302	87	1.0132	134	0.2742	181	0.0931
-6	451.3	41	5.1207	88	0.9823	135	0.2675	182	0.0912
-5	428.0	42	4.9211	89	0.9524	136	0.2609	183	0.0894
-4	405.8	43	4.7315	90	0.9236	137	0.2546	184	0.0876
-3	385.1	44	4.5478	91	0.8957	138	0.2484	185	0.0859
-2	36.281	45	4.3740	92	0.8690	139	0.2425	186	0.0842
-1	34.407	46	4.2082	93	0.8431	140	0.2367	187	0.0825
0	32.738	47	4.0484	94	0.8181	141	0.2311	188	0.0809
1	31.104	48	3.8944	95	0.7938	142	0.2256	189	0.0793
2	29.568	49	3.7485	96	0.7705	143	0.2203	190	0.0778
3	28.109	50	3.6085	97	0.7481	144	0.2151	191	0.0763
4	26.729	51	3.4764	98	0.7262	145	0.2100	192	0.0748
5	25.428	52	3.3464	99	0.7051	146	0.2052	193	0.0733
6	24.205	53	3.2243	100	0.6825	147	0.2004	194	0.0719

Temp	Resistance	Temp	Resistance	Temp	Resistance	Temp	Resistance	Temp	Resistance
°C	KΩ	°C	KΩ	°C	KΩ	°C	KΩ	°C	KΩ
195	0.0706	211	0.0524	226	0.0402	241	0.0314	256	0.0248
196	0.0692	212	0.0514	227	0.0396	242	0.0309	257	0.0244
197	0.0679	213	0.0505	228	0.0389	243	0.0304	258	0.0241
198	0.0666	214	0.0496	229	0.0382	244	0.0299	259	0.0237
199	0.0654	215	0.0487	230	0.0376	245	0.0294	260	0.0234
200	0.0641	216	0.0479	231	0.0370	246	0.0290	261	0.0230
201	0.0630	217	0.0470	232	0.0364	247	0.0285	262	0.0227
202	0.0618	218	0.0462	233	0.0358	248	0.0280	263	0.0223
203	0.0606	219	0.0454	234	0.0352	249	0.0276	264	0.0220
204	0.0595	220	0.0446	235	0.0346	250	0.0272	265	0.0217
205	0.0584	221	0.0439	236	0.0340	251	0.0268	266	0.0214
206	0.0574	222	0.0431	237	0.0335	252	0.0264	267	0.0210
207	0.0563	223	0.0424	238	0.0329	253	0.0260	268	0.0207
208	0.0553	224	0.0416	239	0.0324	254	0.0256	269	0.0204
209	0.0543	225	0.0409	240	0.0319	255	0.0252	270	0.0201
210	0.0533								

**NOTICE**

- ATI reserves the right to make changes to its products or to discontinue any product or service without notice, and advise customers to obtain the latest version of relevant information to verify, before placing orders, that information being relied on is current and complete.
- All products are sold subject to the terms and conditions of sale supplied at the time of order acknowledgment, including those pertaining to warranty, patent infringement, and limitation of liability. Testing and other quality control techniques are utilized to the extent ATI deems necessary to support this warranty. Specific testing of all parameters of each device is not necessarily performed, except those mandated by government requirements.
- Customers are responsible for their applications using ATI components. In order to minimize risks associated with the customers' applications, adequate design and operating safeguards must be provided by the customers to minimize inherent or procedural hazards. ATI assumes no liability for applications assistance or customer product design.
- ATI does not warrant or represent that any license, either express or implied, is granted under any patent right, copyright, mask work right, or other intellectual property right of ATI covering or relating to any combination, machine, or process in which such products or services might be or are used. ATI's publication of information regarding any third party's products or services does not constitute ATI's approval, warranty or endorsement thereof.
- IP (Intellectual Property) Ownership: ATI retains the ownership of full rights for special technologies and/or techniques embedded in its products, the designs for mechanics, optics, plus all modifications, improvements, and inventions made by ATI for its products and/or projects.