

SPECIFICATION FOR APPROVAL

CUSTOMER

(客户名称)

:

PRODUCT NAME

(产品名称)

:

Fully Insulated Winding Wire

ITEM NO.

(物料型号)

:

KFIW(3~9)-B 线径 (all colors)

PART NO.

(客户料号)

:

客户确认签回欄(Confirmed and signed back by)client)			
检验 (Inspected by)	审核 (checked by)	核准 (Approved by)	盖章 (Stamped)

Approved Date: (Date / Month / Year)

益瑞電子股份有限公司 ALTRA ELECTRIC CORPORATION

Tel : +886-2-2995-9956 Fax : +886-2-2995-9967

E-Mail : altra@altra.com.tw <http://www.altra.com.tw>

益達貿易(深圳)有限公司

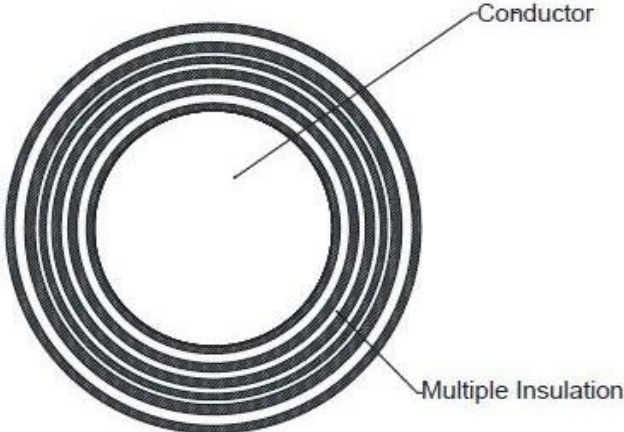
Tel : +86-755-27752585 Fax : +86-755-27751802

1: 适用范围 Scope:

此规格是依据 IEC 60317-56 相关安规要求而设计, 主要应用于电子设备及电器用绕线或配线.

This specification is designed basing on the safety requirements of IEC 60317-56 which is used for windings and wirings of electrical machines and apparatus.

2: 产品结构 Structure of the wire

项目 Item		摘要 Summary	
1	导体 Conductor	材质 Material	铜线 Bare Copper
2	绝缘 Insulation	材质 Material	Polyurethane
3	结构简图 Figure		

3: 特性 Characteristics

特性参见表1

The characteristics shall be as given in Table 1

4: 检查 Inspection

检查分为抽样检查和出货检查, 根据表1 规定的项目和测试方法进行.

The inspection is divided into the sampling inspection and OQC inspection, using the test methods referred to in clause 3 above, on the items specified in Table 1

5: 标记 Marking

线轴及包装上的适当地方,必须标记出以下事项.

The following items shall be marked on each bobbin at an appropriate position.

- (1) 品名规格 Product description
- (2) 颜色(除黄色外)Color (yellow is excluded)
- (3) 长度 Length
- (4) 轴号 Bobbin number
- (5) 生产日期 The date of manufacturer
- (6) 制造商名称 Manufacturer's name

6: 客户存放注意事项 Notes of storage for customer

建议客户在以下的条件下进行KFIW 线的存放. 打开包装后, 必须将KFIW 线尽快使用
存放包装好的 KFIW 产品时,应避开高温高湿,日光直射的场所,同时应防止灰尘.

When the wire is stored by the customer, the following conditions are recommended.

The unpacked wire should be used promptly.

The packed wire should be stored avoiding high humidity, high temperature, sunshine, and dust

温度 Temperature	湿度 Relative Humidity	保管期限 Storage Term	备注 Remark
-25~45℃	5~75%	1 年 One year	超过存放期限后,建议进行耐电压,绝缘击穿,可挠性的检查. Please check the Withstand voltage, Breakdown voltage, Flexibility when storage is out of the term time.

7: 包装及重量 Packaging and Weight

7.1 包装 Packaging

根据导体的直径,确定适当的线轴大小,选用适当的包装方法,以防止运输过程受伤,松散和打结.

The wires shall be wound on suitable bobbin, and adequately packaged to avoid scratch, loosening or tangle during transportation

7.2 重量 Weight

重量换算请参考表5 Conversion of weight please refer to Table 5

Table 1

项目 Item		特性 Characteristics	参考标准 Reference Standard	检查Inspection	
				抽样检查 Sampling inspection	出货检查 OQC inspection
1	外观 Appearance	光滑、均匀、不易剥落 Smooth、uniformity and the film coating not removing easily	IEC 60317-0-7 part 3.3	○	○
2	尺寸 Dimensions	与表2 的数值一致 As specified in Table 2	IEC60317-0-7 part 4 IEC 60851-2.3	○	○
3	导体电阻 Conductor Resistance	与表 2 的数值一致 Shall meet the values specified in Table 2	IEC60317-0-7 part 5 IEC 60851-5.3	○	○
4	伸长率 Elongation	与表3 的数值一致 Shall meet the values specified in Table 3	IEC60317-0-7 part 5 IEC 60 851-3.1	○	—
5	绝缘击穿电压 Breakdown Voltage	与表3 的数值一致 As specified in Table 3	IEC60317-0-7 part 13 IEC 60851-5. 4	○	○
6	耐软化 Resistance to cut through	245℃ 以上 Not less than 245℃	IEC60317-0-7 part 10 IEC60851-6.4	○	—
7	可挠性 Flexibility	通过皮膜上的龟裂，看不到导体 Film shall show no crack through which conductor is visible	IEC60317-0-7 part 8 IEC60851-3.5	○	—
8	耐热冲击(200℃ /30Min) Resistance to heat shock	通过皮膜上的龟裂，看不到导体. 与表 4 的数值一致 Film shall show no crack through which conductor is visible. As specified in Table4	IEC60317-0-7 part 9 IEC 60 851-6.3.1	○	—
9	可焊性 Solderability	390±5℃可以焊锡 The temperature of solder shall be maintained at 390±5℃	IEC60317-0-7 part 17 IEC 60 851-4.5	○	—

Table 2

Nominal Diameter	Tolerance	Max. Resistance	Overall Diameter													
			KFIW3-B		KFIW4-B		KFIW5-B		KFIW6-B		KFIW7-B		KFIW8-B		KFIW9-B	
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
mm	±mm	Ω/m	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	
0.080	0.003	3.703	0.102	0.108	0.109	0.122	0.123	0.136	0.137	0.150	0.151	0.164	0.165	0.178	0.179	0.192
0.090	0.003	2.900	0.114	0.120	0.121	0.134	0.135	0.148	0.149	0.162	0.163	0.176	0.177	0.190	0.191	0.204
0.100	0.003	2.333	0.126	0.132	0.133	0.148	0.149	0.164	0.165	0.180	0.181	0.196	0.197	0.212	0.213	0.228
0.110	0.003	1.917	0.138	0.145	0.146	0.162	0.163	0.179	0.180	0.196	0.197	0.213	0.214	0.230	0.231	0.247
0.120	0.003	1.604	0.150	0.158	0.159	0.176	0.177	0.194	0.195	0.212	0.213	0.230	0.231	0.248	0.249	0.266
0.130	0.003	1.361	0.161	0.169	0.170	0.189	0.190	0.209	0.210	0.229	0.230	0.249	0.250	0.269	0.270	0.289
0.140	0.003	1.170	0.172	0.181	0.182	0.201	0.202	0.221	0.222	0.241	0.242	0.261	0.262	0.281	0.282	0.301
0.150	0.003	1.0159	0.183	0.193	0.194	0.215	0.216	0.237	0.238	0.259	0.260	0.281	0.282	0.303	0.304	0.325
0.160	0.003	0.8906	0.195	0.205	0.206	0.227	0.228	0.249	0.250	0.271	0.272	0.293	0.294	0.315	0.316	0.337
0.180	0.003	0.7007	0.218	0.229	0.230	0.253	0.254	0.277	0.278	0.301	0.302	0.325	0.326	0.349	0.350	0.373
0.200	0.003	0.5657	0.240	0.252	0.253	0.277	0.278	0.302	0.303	0.327	0.328	0.352	0.353	0.377	0.378	0.402
0.250	0.004	0.3628	0.298	0.312	0.313	0.342	0.343	0.372	0.373	0.402	0.403	0.432	0.433	0.462	0.463	0.492
0.300	0.004	0.2506	0.353	0.369	0.370	0.400	0.401	0.431	0.432	0.462	0.463	0.493	0.494	0.524	0.525	0.555
0.350	0.004	0.1834	0.407	0.423	0.424	0.454	0.465	0.485	0.486	0.516	0.517	0.547	0.548	0.578	0.579	0.609
0.400	0.005	0.1407	0.460	0.478	0.479	0.509	0.510	0.540	0.541	0.571	0.572	0.602	0.603	0.633		
0.450	0.005	0.1109	0.514	0.533	0.534	0.564	0.565	0.595	0.596	0.626	0.627	0.657	0.658	0.688		
0.500	0.005	0.08959	0.567	0.587	0.588	0.628	0.629	0.669	0.670	0.710	0.711	0.751				
0.550	0.006	0.07444	0.621	0.643	0.644	0.684	0.685	0.725	0.726	0.766	0.767	0.807				
0.600	0.006	0.06224	0.675	0.698	0.699	0.739	0.740	0.780	0.781	0.821	0.822	0.862				
0.630	0.006	0.05638	0.705	0.728	0.729	0.769	0.770	0.810	0.811	0.851	0.852	0.892				
0.650	0.007	0.05310	0.730	0.754	0.755	0.795	0.796	0.836	0.837	0.877	0.878	0.918				
0.700	0.007	0.04572	0.780	0.804	0.805	0.845	0.846	0.886	0.887	0.927	0.928	0.968				
0.750	0.008	0.03987	0.835	0.861	0.862	0.912	0.913	0.963	0.964	1.014						
0.800	0.008	0.03500	0.885	0.911	0.912	0.962	0.963	1.013	1.014	1.064						
0.850	0.009	0.03104	0.940	0.968	0.969	1.019	1.020	1.070	1.071	1.121						
0.900	0.009	0.02765	0.990	1.018	1.019	1.069	1.070	1.120	1.121	1.171						
0.950	0.010	0.02484	1.045	1.074	1.075	1.125	1.126	1.176	1.177	1.227						
1.000	0.010	0.02240	1.095	1.124	1.125	1.175	1.176	1.226	1.227	1.277						
1.200	0.012	0.01555	1.300	1.331	1.332	1.392	1.393	1.453								

Table 3

Nominal Diameter mm	Min. Elongation %	Dielectric Strengthk,Min. Breakdown						
		KFIW3-B Min.(v)	KFIW4-B Min.(v)	KFIW5-B Min.(v)	KFIW6-B Min.(v)	KFIW7-B Min.(v)	KFIW8-B Min.(v)	KFIW9-B Min.(v)
0.080	14	1782	2349	3483	4617	5751	6885	8019
0.090	15	1944	2511	3645	4779	5913	7047	8181
0.100	16	2106	2673	3969	5265	6561	7857	9153
0.110	17	2128	2736	4028	5320	6612	7904	9196
0.120	17	2280	2964	4332	5700	7068	8436	9804
0.130	18	2356	3040	4560	6080	7600	9120	10640
0.140	18	2432	3192	4712	6232	7752	9272	10792
0.150	19	2508	3344	5016	6688	8360	10032	11704
0.160	19	2660	3496	5168	6840	8512	10184	11856
0.180	20	2888	3800	5624	7448	9272	11096	12920
0.200	21	3040	4028	5928	7828	9728	11628	13528
0.250	22	3648	4788	7068	9348	11628	13908	16188
0.300	23	4028	5320	7676	10032	12388	14744	17100
0.350	23	4332	5624	7980	10336	12692	15048	16030
0.400	24	4200	5530	7700	9870	12040	14210	
0.450	25	4480	5880	8050	10220	12390	14560	
0.500	25	4690	6160	9030	11900	14770		
0.550	26	3763	4982	7155	9328	11501		
0.600	27	3975	5247	7420	9593	11766		
0.630	27	3975	5247	7420	9593	11766		
0.650	28	4240	5565	7738	9911	12084		
0.700	28	4240	5565	7738	9911	12084		
0.750	28	4505	5936	8109	10282			
0.800	28	4505	5936	8109	10282			
0.850	29	4770	6307	8480	10653			
0.900	29	4770	6307	8480	10653			
0.950	30	5035	6625	8798	10971			
1.000	30	5035	6625	8798	10971			
1.200	30	4406	6603	8930				

Table 4 -Heat shock

Nominal Diameter r mm	Mandrel diameter						
	Overall diameter range						
	KFIW3-B	KFIW4-B	KFIW5-B	KFIW6-B	KFIW7-B	KFIW8-B	KFIW9-B
0.08-0.112	0.150	0.200	0.200	0.200	0.200	0.200	0.200
0.112-0.140	0.150	0.300	0.300	0.300	0.300	0.300	0.300
0.160	0.250	0.450	0.450	0.450	0.560	0.560	0.560
0.180	0.280	0.450	0.450	0.450	0.560	0.560	0.560
0.200	0.315	0.450	0.450	0.450	0.560	0.560	0.560
0.224	0.355	0.630	0.630	0.800	0.800	1.000	1.000
0.250	0.400	0.630	0.630	0.800	0.800	1.000	1.000
0.280	0.630	0.630	0.630	0.800	0.800	1.000	1.000
0.315	0.710	1.000	1.000	1.250	1.250	1.600	1.600
0.355	0.800	1.000	1.000	1.250	1.250	1.600	1.600
0.400	0.900	1.000	1.000	1.250	1.250	1.600	
0.450	1.000	1.120	1.120	1.800	2.000	2.000	
0.500	1.120	1.120	1.120	1.800	2.000		
0.560	1.250	1.400	1.400	1.800	2.000		
0.630	1.400	2.000	2.000	2.800	2.800		
0.710	1.600	2.000	2.000	2.800	2.800		
0.800	1.800	2.240	3.550	4.000			
0.900	2.000	4.000	5.000	6.000			
1.000	2.240	4.000	5.000	6.000			
1.120	3.550	4.000	5.000	6.000			
1.250	4.000	4.000	5.000				

NOTE:For intermediate nominal conductor diameters, the mandrel diameter of the next largest nominal conductor diameter shall be taken.

Table 5 Weight in kg for 1 km of KFIW(3~9)-B wire

Nominal Diamete	KFIW3-B	KFIW4-B	KFIW5-B	KFIW6-B	KFIW7-B	KFIW8-B	KFIW9-B
	kg/km	kg/km	kg/km	kg/km	kg/km	kg/km	kg/km
0.080	0.049	0.052	0.056	0.060	0.064	0.068	0.073
0.090	0.062	0.065	0.069	0.074	0.078	0.083	0.088
0.100	0.077	0.080	0.085	0.091	0.096	0.102	0.108
0.110	0.092	0.097	0.102	0.108	0.115	0.122	0.129
0.120	0.111	0.115	0.122	0.129	0.136	0.144	0.152
0.130	0.130	0.134	0.141	0.150	0.158	0.168	0.178
0.140	0.149	0.155	0.164	0.173	0.180	0.191	0.201
0.150	0.170	0.178	0.188	0.199	0.207	0.219	0.232
0.160	0.194	0.202	0.212	0.224	0.232	0.245	0.258
0.180	0.244	0.254	0.267	0.281	0.291	0.306	0.323
0.200	0.300	0.312	0.327	0.342	0.354	0.371	0.389
0.250	0.468	0.479	0.507	0.522	0.545	0.571	0.597
0.300	0.670	0.688	0.713	0.740	0.763	0.797	0.825
0.350	0.906	0.928	0.957	0.980	1.012	1.050	1.080
0.400	1.179	1.205	1.243	1.266	1.298	1.340	
0.450	1.488	1.517	1.552	1.584	1.620	1.665	
0.500	1.831	1.869	1.922	1.962	2.020		
0.550	2.212	2.255	2.313	2.356	2.418		
0.600	2.629	2.676	2.738	2.811	2.851		
0.630	2.892	2.941	3.006	3.081	3.123		
0.650	3.082	3.134	3.201	3.268	3.322		
0.700	3.563	3.618	3.690	3.742	3.818		
0.750	4.089	4.150	4.226	4.282			
0.800	4.640	4.705	4.799	4.882			
0.850	5.238	5.308	5.394	5.456			
0.900	5.860	5.934	6.023	6.137			
0.950	6.530	6.607	6.711	6.771			
1.000	7.222	7.303	7.412	7.524			
1.200	10.356	10.455	10.629				