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spec P7266-SP

**SUBMERSIBLE PUMP CONTROL AND INSTRUMENTATION CABLE
600 VOLT MULTI-CONDUCTOR
THHN/PVC TYPE TC-ER
INSULATION: HIGH DIELECTRIC PVC
JACKET: POLYVINYL CHLORIDE
SIZES: 18 AWG – 10 AWG
90°C DRY / 75°C WET**



1.0 Applications:

1.1 Three or more conductors having TFFN or VW-1 THHN/THWN (PVC/Nylon) conductors with PVC jacket conforming to Article 318 "Cable Trays" and Article 340 "Power and Control Cable Type TC". Direct Burial, Passes 210,000 BTU flame test and suitable for use as submersible cable.

2.0 Construction:

2.1 Conductors:

Bare, soft annealed copper per ASTM B3.
Sizes 18 & 16 AWG (TFFN): Bunch Stranded. Size 18 (16/.010") and Size 16 (26/.0210") per UL-62 Table 11.1.

Sizes 14, 12 & 10 AWG (THHN/THWN): Concentric stranded Class B (7 strands) per ASTM B-8 and UL-83 Table 13.1.

2.2 Insulation:

High dielectric strength polyvinyl chloride, UL-1581 Table 50.145 (THWN 75°C), UL-1581 Table 50.155 (THHN 90°C), UL-1581 Table 50.155 Class 12B (TFFN 90°C). Thickness: UL-83 Table 15.8 for THHN/THWN, UL-66 Table 4.7 for TFFN.

2.3 Conductor Jacket:

Nylon (UL-83 par. 14.1 for THHN/THWN, UL-62 par. 22.1 for TFFN)
Thickness: UL-83 table 15.8 for THHN/THWN, UL-66 par. 9.1 for TFFN.

2.4 Cable Assembly:

Three or more conductors are assembled with fillers in the core as needed. N nylon rip cord is inserted under the jacket for ease of stripping. Two conductors are assembled flat parallel (round, with fillers as needed, is available upon request).

2.5 Color Code:

Colored insulation and stripes plus print on one side with a contrasting ink per Table.

2.7 Overall Jacket:

A black, gas/vapor tight, flame resistant, VW-1 rated Polyvinyl Chloride (PVC) jacket is applied over the assembly. The surface profile of the jacket shall approximate that of the underlying assembly. A high strength nylon rip cord shall be placed under the jacket to facilitate stripping of the jacket.

2.8 Identification:

Sizes 18 & 16 AWG: "Size AWG/No. of CDRS, Type TC –ER TFFN CDRs. 90°C DRY/ 75°C WET, SUNLIGHT RESISTANT, 600V, (UL) DIRECT BURIAL.FT4/IEEE 1202 (SEQUENTIAL FOOTAGE)".

2.9 Identification:

Sizes 14, 12 & 10 AWG: "Size AWG/No. of CDRS, Type TC -ER THHN OR THWN CDRs. 90°C DRY/ 75°C WET, SUNLIGHT RESISTANT, 600V, (UL) DIRECT BURIAL.FT4/IEEE 1202 (SEQUENTIAL FOOTAGE)"

3.0 Color Codes:

Number of conductors	Base Color	Spiral Stripe
1	black	-
2	red	-
3	blue	-
4	orange	-
5	yellow	-
6	brown	-
7	red	black
8	blue	black
9	orange	black
10	yellow	black
11	brown	black
12	black	red

Number of conductors	Base Color	Spiral Stripe
13	blue	red
14	orange	red
15	yellow	red
16	brown	red
17	black	blue
18	red	blue
19	orange	blue
20	yellow	blue
21	brown	blue
22	black	orange
23	red	orange
24	blue	orange

Number of conductors	Base Color	Spiral Stripe
25	yellow	orange
26	brown	orange
27	black	yellow
28	red	yellow
29	blue	yellow
30	orange	yellow
31	brown	yellow
32	black	brown
33	red	brown
34	blue	brown
35	orange	brown
36	yellow	brown

4.0 Conductor Data:

SIZE (AWG)	NUMBER OF STRANDS	STRANDS O.D.	PVC INSULATION	NYLON ARMOR	APPROX O.D.
		(INCHES)	(INCHES)	(INCHES)	(INCHES)
18	16	0.0100	0.015	0.004	0.088
16	26	0.0100	0.015	0.004	0.091
14	7	0.0242	0.015	0.004	0.112
12	7	0.0305	0.015	0.004	0.13
10	7	0.0385	0.200	0.004	0.164

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5.0 Dimensions:

NO. OF CONDS	18 AWG			16 AWG			14 AWG			12 AWG			10 AWG		
	OA JACKET THICKNESS	APPROX. O.D.	APPROX. WEIGHT	OA JACKET THICKNESS	APPROX. O.D.	APPROX. WEIGHT	OA JACKET THICKNESS	APPROX. O.D.	APPROX. WEIGHT	OA JACKET THICKNESS	APPROX. O.D.	APPROX. WEIGHT	OA JACKET THICKNESS	APPROX. O.D.	APPROX. WEIGHT
	(MILS)	(INCHES)	(LBS/M FT)	(MILS)	(INCHES)	(LBS/M FT)	(MILS)	(INCHES)	(LBS/M FT)	(MILS)	(INCHES)	(LBS/M FT)	(MILS)	(INCHES)	(LBS/M FT)
2 Fl	45	.180x.268	41	45	.195x.295	49	45	.204x.316	64	45	.222x.353	83	45	.256x.421	115
2 Rd	45	0.268	46	45	0.295	54	45	0.316	71	45	0.353	92	45	0.421	127
3	45	0.281	50	45	0.310	66	45	0.334	87	45	0.393	113	45	0.446	167
4	45	0.304	60	45	0.335	79	45	0.363	107	45	0.406	145	45	0.490	212
5	45	0.330	71	45	0.365	94	45	0.395	129	45	0.444	175	60	0.566	269
6	45	0.357	85	45	0.395	109	45	0.429	147	45	0.458	199	60	0.616	317
7	45	0.357	89	45	0.395	118	45	0.429	162	45	0.485	223	60	0.616	352
8	45	0.384	99	45	0.430	133	45	0.463	184	60	0.553	268	60	0.666	399
9	45	0.411	112	45	0.460	147	45	0.503	221	60	0.593	304	60	0.716	445
10	45	0.432	121	45	0.480	162	60	0.577	237	60	0.645	327	60	0.781	490
11	45	0.443	130	45	0.490	176	60	0.577	257	60	0.645	357	60	0.781	527
12	45	0.454	156	45	0.505	202	60	0.594	281	60	0.670	388	60	0.812	579
13	45	0.470	158	60	0.550	217	60	0.603	293	60	0.680	413	80	0.825	657
14	45	0.486	160	60	0.570	230	60	0.622	316	60	0.704	442	80	0.893	706
15	45	0.498	169	60	0.585	243	60	0.639	340	60	0.740	466	80	0.935	750
16	45	0.513	192	60	0.600	258	60	0.655	356	60	0.740	500	80	0.935	795
17	60	0.557	203	60	0.620	274	60	0.690	375	60	0.780	530	80	0.990	844
18	60	0.570	214	60	0.635	284	60	0.690	393	60	0.780	558	80	0.990	893
19	60	0.570	220	60	0.635	296	60	0.690	408	60	0.780	581	80	0.990	918
20	60	0.585	228	60	0.655	310	60	0.709	424	60	0.804	647	80	1.020	975
21	60	0.596	239	60	0.670	327	60	0.723	450	80	0.820	680	80	1.040	1011
22	60	0.612	251	60	0.685	340	60	0.758	469	80	0.820	711	80	1.040	1058
23	60	0.623	259	60	0.700	353	60	0.758	488	80	0.900	738	80	1.090	1104
24	60	0.632	268	60	0.710	367	60	0.797	508	80	0.950	768	80	1.155	1151
25	60	0.640	279	60	0.720	379	60	0.802	526	80	0.950	796	80	1.155	1204
26	60	0.650	287	60	0.730	391	60	0.802	582	80	0.950	822	80	1.155	1238
27	60	0.657	298	60	0.740	405	60	0.820	601	80	0.970	850	80	1.180	1273
28	60	0.668	306	60	0.750	418	80	0.868	621	80	0.975	880	80	1.180	1317
29	60	0.677	314	60	0.760	431	80	0.868	640	80	0.980	907	80	1.194	1360
30	60	0.692	325	60	0.780	456	80	0.888	666	80	1.003	938	80	1.223	1404
31	60	0.696	333	60	0.785	458	80	0.904	679	80	1.023	964	80	1.223	1450
32	60	0.705	343	60	0.795	507	80	0.904	698	80	1.023	992	80	1.246	1495
33	60	0.720	353	60	0.810	522	80	0.920	718	80	1.041	1022	80	1.270	1540
34	60	0.725	361	60	0.815	536	80	0.938	737	80	1.062	1050	80	1.270	1585
35	60	0.733	371	80	0.865	549	80	0.938	756	80	1.062	1077	80	1.296	1625
36	60	0.745	381	80	0.880	564	80	0.955	780	80	1.080	1106	80	1.320	1675
37	60	0.745	390	80	0.880	580	80	0.955	794	80	1.080	1134	80	1.320	1700

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