

Type P Instrument Pairs Signal Cable Overall Copper shield (0.6/1kV) Flame Retardant



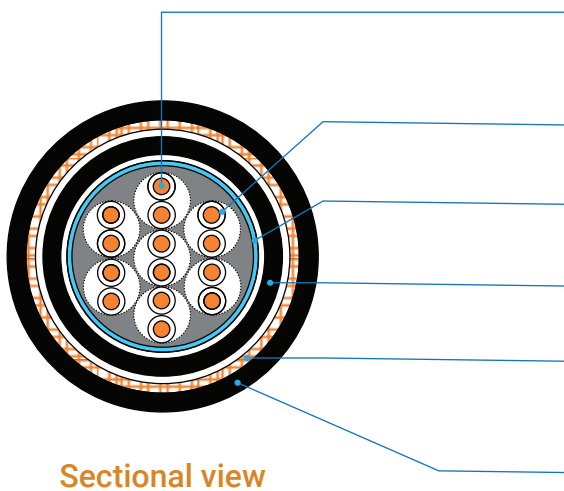
CABLE DESIGNATION

0.6/1kV TP(OBS)PN, TP(OBS)PNB, TP(OBS)PNBS

APPLICATION STANDARD

Design guide	IEEE 1580(2010) , UL 1309(2017)
Insulation material	IEEE 1580, Type P UL 1309, X110
Sheath material	IEEE 1580, Type N
Flame retardant	IEEE 1202 & IEC 60332-3 Category A
Fire resistance	IEC 60331-2I(90min), IEC 60331-1,-2(120min), FS-type only
Cold bend / impact	CSA C22.2 NO. 2556(-40°C/-40°C) (Formerly CSA C22.2 NO.0.3)

CONSTRUCTION



Conductor

- Flexible stranded tinned annealed copper wires as per IEEE 1580
- A suitable separator tape(s) may be applied over the conductor

Insulation

XLPO (Type P) as per IEEE 1580 & XLPO (X110) as per UL 1309

Overall shield

Polyester/aluminum tape (AL/PS tape) + Tinned copper drain wire

Jacket

Thermosetting Neoprene (Type N) as per IEEE 1580 & UL 1309

Armor

- Braid of commercial bronze wires
- A suitable separator tape(s) may be applied under / over the armor

Sheath

- Thermosetting Neoprene (Type N) as per IEEE 1580 & UL 1309
- Outer sheath color : Black

Core identification

Colored insulation plus

Arabic number printing on the insulation

Each core color : pair _ Black, White(or Red)

Fire resisting layer(optional)

Mica/glass tape (FS Type cable only)

Twisting

Two Insulated cores shall be twisted together to form a pair

Cabling

- Twisted pairs shall be cabled
- Flame retardant & non-hygroscopic fillers may be used
- Suitable tape(s) may be applied on the cabled core
- A Filler may be applied to obtain a circular Cable

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No. of Pairs	Conductor	Thickness of Insulation	Thickness of Jacket	Thickness of Sheath	Unarmor		Armor		Armor and Sheath	
	Nominal Area				Nom.Dia. Approx.	Weight Approx.	Nom.Dia. Approx.	Weight Approx.	Nom.Dia. Approx.	Weight Approx.
No.	AWG or kcmil	mm/inch	mm/inch	mm/inch	mm/inch	kg/km	mm/inch	kg/km	mm/inch	kg/km
1P	18	0.76/0.030	1.14 / 0.045	1.52 / 0.060	9.4 / 0.370	120	11.2 / 0.441	220	14.6 / 0.575	320
2P			1.52 / 0.060	1.52 / 0.060	14.3 / 0.563	230	16.1 / 0.634	380	19.5 / 0.768	520
4P			1.52 / 0.060	2.03 / 0.080	16.1 / 0.634	290	17.9 / 0.705	460	22.4 / 0.882	660
7P			1.52 / 0.060	2.03 / 0.080	19.1 / 0.752	390	20.9 / 0.823	590	25.4 / 1.000	830
9P			2.03 / 0.080	2.03 / 0.080	23.1 / 0.909	550	24.9 / 0.980	790	29.4 / 1.157	1,060
10P			2.03 / 0.080	2.03 / 0.080	23.7 / 0.933	580	25.5 / 1.004	820	30.0 / 1.181	1,100
14P			2.03 / 0.080	2.03 / 0.080	25.8 / 1.016	680	27.6 / 1.087	950	32.1 / 1.264	1,250
15P			2.03 / 0.080	2.03 / 0.080	26.4 / 1.039	710	28.2 / 1.110	980	32.7 / 1.287	1,290
1P	16	0.76/0.030	1.14 / 0.045	1.52 / 0.060	9.7 / 0.382	140	11.4 / 0.449	250	14.8 / 0.583	350
2P			1.52 / 0.060	1.52 / 0.060	14.9 / 0.587	290	16.6 / 0.654	440	20.0 / 0.787	590
4P			1.52 / 0.060	2.03 / 0.080	16.8 / 0.661	400	18.5 / 0.728	570	23.0 / 0.906	790
7P			1.52 / 0.060	2.03 / 0.080	20.0 / 0.787	580	21.7 / 0.854	780	26.2 / 1.031	1,040
8P			2.03 / 0.080	2.03 / 0.080	22.4 / 0.882	700	24.1 / 0.949	930	28.6 / 1.126	1,210
9P			2.03 / 0.080	2.03 / 0.080	24.3 / 0.957	800	26.0 / 1.024	1,040	30.5 / 1.201	1,340
10P			2.03 / 0.080	2.03 / 0.080	24.9 / 0.980	850	26.6 / 1.047	1,100	31.1 / 1.224	1,410
12P			2.03 / 0.080	2.03 / 0.080	26.2 / 1.031	950	27.9 / 1.098	1,220	32.4 / 1.276	1,540
14P			2.03 / 0.080	2.03 / 0.080	27.2 / 1.071	1,050	28.9 / 1.138	1,330	33.4 / 1.315	1,660
15P			2.03 / 0.080	2.03 / 0.080	27.8 / 1.094	1,100	29.5 / 1.161	1,390	34.0 / 1.339	1,720

Note. For outer diameter, it is applied to $\pm 5\%$ manufacturing tolerance.