



Marine & offshore cables

IEEE 1580 Type P

Marine & Offshore Drilling Cable

XLPO-insulated power, VFD and instrumentation cables, 600 V & 2 kV

IEEE 1580 / UL 1309

600 V & 2 kV

Type P Mud-Resistant

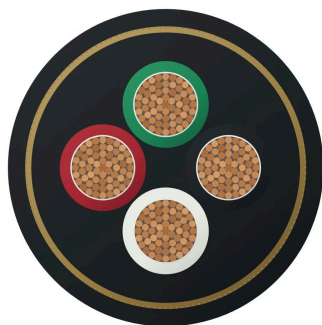


Application

High-temperature cross-linked polyolefin (Type P) marine and offshore cables with flexible tinned copper conductors, mud-resistant thermoset CPE jackets and optional braided bronze armour for offshore drilling rigs, FPSOs and shipboard systems.

Typical uses: Offshore oil & gas rigs, FPSO & production platforms, Shipboard power & propulsion, Top-drive & mud pump VFD, Drilling instrumentation, Class I Div 1 hazardous zones

Construction



Cross-section, not to scale

1	Flexible tinned copper conductor	ASTM B33 / IEEE 1580
2	Type P cross-linked polyolefin (XLPO) insulation	IEEE 1580 Table 25 / UL 1309
3	Foil/braid EMI screen (VFD & signal constructions)	IEEE 1580
4	Inner thermoset CPE bedding jacket	IEEE 1580
5	Braided bronze wire armour (armoured & sheathed types)	IEEE 1580 / IEEE 45
6	Mud-resistant thermoset CPE outer sheath	IEEE 1580 / UL 1309

Technical data

Typical values

Rated voltage	600 V (0.6/1 kV) & 2,000 V (2 kV/1000 V)
Pair mutual capacitance	82 pF/m (25 pF/ft) nominal at 1 kHz
Compound temperature rating	+125 °C continuous (Type P XLPO insulation)
Short-circuit temperature	+250 °C (5 s maximum)
Conductor construction	Soft annealed stranded tinned copper (ASTM B33)
Minimum bend radius	6 × D (unarmoured); 8 × D (armoured / VFD)
Drilling mud & oil resistance	Ester-based drilling mud (Type P-MR), oil & fuel
Standards	IEEE 1580; IEEE 45; UL 1309; CSA C22.2 No. 245

Pair characteristic impedance	68 Ω (16 & 14 AWG multipair); 60 Ω (1P 14 AWG)
Pair inductance	0.39 mH/km (0.12 mH/kft) nominal
Shipboard certification rating	+110 °C (UL 1309 / CSA X110); +100 °C (IEEE 45)
Cold bend & cold impact	−40 °C cold bend / −35 °C cold impact (CSA 0.3)
Armour coverage	Braided bronze wire ≥ 88 % optical coverage
Flame propagation	IEEE 1202 (70,000 BTU/hr) & IEC 60332-3-22 Cat. A
Hazardous location rating	Class I Div 1 / Zone 1 (armoured); Div 2 (unarmoured)
Standard packing	1,000 ft (305 m) or 2,000 ft (610 m) export seaworthy wooden drums

Sizes

79 standard constructions

Tick the sizes you need and send this page to info@tebaoflex.com or WhatsApp +86 185 9591 3361.

Designation	Cores × AWG / kcmil	Voltage grade	Stranding No./AWG	XLPO wall mm	Outer sheath mm	Nominal OD in	Nominal OD mm	Total mass lb/kft	Total mass kg/km
Single-Core Power Unarmoured - 2 kV / 1 kV 23 sizes									
☐ Type P 1×18 AWG 2 kV	1 × 18 AWG (0.96 mm ²)	2 kV / 1 kV	19/30	1.02	–	0.14	3.7	15	22
☐ Type P 1×16 AWG 2 kV	1 × 16 AWG (1.23 mm ²)	2 kV / 1 kV	19/29	1.02	–	0.16	4.1	20	30
☐ Type P 1×14 AWG 2 kV	1 × 14 AWG (1.94 mm ²)	2 kV / 1 kV	19/27	1.14	–	0.16	4.2	23	34
☐ Type P 1×12 AWG 2 kV	1 × 12 AWG (3.08 mm ²)	2 kV / 1 kV	19/25	1.14	–	0.18	4.6	30	45
☐ Type P 1×10 AWG 2 kV	1 × 10 AWG (5.26 mm ²)	2 kV / 1 kV	37/90	1.14	–	0.20	5.2	44	65
☐ Type P 1×8 AWG 2 kV	1 × 8 AWG (8.37 mm ²)	2 kV / 1 kV	37/24	1.40	–	0.26	6.5	74	110
☐ Type P 1×6 AWG 2 kV	1 × 6 AWG (13.3 mm ²)	2 kV / 1 kV	61/24	1.52	–	0.31	7.9	115	171
☐ Type P 1×4 AWG 2 kV	1 × 4 AWG (21.2 mm ²)	2 kV / 1 kV	133/27	1.52	–	0.37	9.4	175	260
☐ Type P 1×2 AWG 2 kV	1 × 2 AWG (33.6 mm ²)	2 kV / 1 kV	259/26	1.52	–	0.44	11.2	262	390
☐ Type P 1×1 AWG 2 kV	1 × 1 AWG (42.4 mm ²)	2 kV / 1 kV	259/25	1.65	–	0.47	11.9	310	461
☐ Type P 1×1/0 AWG 2 kV HD	1 × 1/0 AWG (53.5 mm ²)	2 kV / 1 kV	266/24	2.03	1.14	0.65	16.5	450	670
☐ Type P 1×2/0 AWG 2 kV HD	1 × 2/0 AWG (67.4 mm ²)	2 kV / 1 kV	342/24	2.03	1.14	0.70	17.8	535	796
☐ Type P 1×3/0 AWG 2 kV HD	1 × 3/0 AWG (85.0 mm ²)	2 kV / 1 kV	418/24	2.03	1.14	0.75	19.1	660	982
☐ Type P 1×4/0 AWG 2 kV HD	1 × 4/0 AWG (107 mm ²)	2 kV / 1 kV	532/24	2.03	1.14	0.82	20.8	810	1,205
☐ Type P 1×262 kcmil 2 kV HD	1 × 262 kcmil (133 mm ²)	2 kV / 1 kV	646/24	2.29	1.65	0.92	23.4	985	1,466
☐ Type P 1×313 kcmil 2 kV HD	1 × 313 kcmil (159 mm ²)	2 kV / 1 kV	777/24	2.29	1.65	0.98	24.9	1,170	1,741
☐ Type P 1×373 kcmil 2 kV HD	1 × 373 kcmil (189 mm ²)	2 kV / 1 kV	925/24	2.29	1.65	1.05	26.7	1,345	2,001
☐ Type P 1×444 kcmil 2 kV HD	1 × 444 kcmil (225 mm ²)	2 kV / 1 kV	1110/24	2.29	1.65	1.12	28.4	1,595	2,373
☐ Type P 1×535 kcmil 2 kV HD	1 × 535 kcmil (271 mm ²)	2 kV / 1 kV	1332/24	2.54	1.65	1.24	31.5	1,955	2,909
☐ Type P 1×646 kcmil 2 kV HD	1 × 646 kcmil (327 mm ²)	2 kV / 1 kV	1591/24	2.54	1.65	1.33	33.8	2,345	3,490
☐ Type P 1×777 kcmil 2 kV HD	1 × 777 kcmil (394 mm ²)	2 kV / 1 kV	1924/24	2.54	1.65	1.44	36.6	2,755	4,100
☐ Type P 1×929 kcmil 2 kV HD	1 × 929 kcmil (471 mm ²)	2 kV / 1 kV	2300/24	2.54	1.65	1.54	39.1	3,320	4,940
☐ Type P 1×1111 kcmil 2 kV HD	1 × 1111 kcmil (563 mm ²)	2 kV / 1 kV	2745/24	2.92	2.03	1.70	43.2	3,925	5,841

Designation	Cores × AWG / kcmil	Voltage grade	Stranding No./AWG	XLPO wall mm	Outer sheath mm	Nominal OD in	Nominal OD mm	Total mass lb/ft	Total mass kg/km
3-Core Power Unarmoured · 600 V / 2 kV 13 sizes									
☐ Type P 3C 14 AWG Unarmoured	3 × 14 AWG (2.08 mm ²)	600 V / 2 kV	19/27	1.14	1.52	0.45	11.4	118	176
☐ Type P 3C 12 AWG Unarmoured	3 × 12 AWG (3.31 mm ²)	600 V / 2 kV	19/25	1.14	1.52	0.49	12.4	148	220
☐ Type P 3C 10 AWG Unarmoured	3 × 10 AWG (5.26 mm ²)	600 V / 2 kV	37/24	1.14	1.52	0.56	14.2	205	305
☐ Type P 3C 8 AWG Unarmoured	3 × 8 AWG (8.37 mm ²)	600 V / 2 kV	37/24	1.52	1.65	0.72	18.3	320	476
☐ Type P 3C 6 AWG Unarmoured	3 × 6 AWG (13.3 mm ²)	600 V / 2 kV	61/24	1.52	2.03	0.84	21.3	450	670
☐ Type P 3C 4 AWG Unarmoured	3 × 4 AWG (21.2 mm ²)	600 V / 2 kV	133/27	1.52	2.03	0.98	24.9	650	967
☐ Type P 3C 2 AWG Unarmoured	3 × 2 AWG (33.6 mm ²)	600 V / 2 kV	259/26	1.52	2.03	1.14	29.0	940	1,399
☐ Type P 3C 1/0 AWG Unarmoured	3 × 1/0 AWG (53.5 mm ²)	600 V / 2 kV	266/24	2.03	2.16	1.42	36.1	1,460	2,173
☐ Type P 3C 2/0 AWG Unarmoured	3 × 2/0 AWG (67.4 mm ²)	600 V / 2 kV	342/24	2.03	2.16	1.54	39.1	1,780	2,649
☐ Type P 3C 4/0 AWG Unarmoured	3 × 4/0 AWG (107 mm ²)	600 V / 2 kV	532/24	2.03	2.79	1.86	47.2	2,680	3,988
☐ Type P 3C 250 kcmil Unarmoured	3 × 250 kcmil (127 mm ²)	600 V / 2 kV	646/24	2.41	2.79	2.04	51.8	3,190	4,747
☐ Type P 3C 350 kcmil Unarmoured	3 × 350 kcmil (177 mm ²)	600 V / 2 kV	888/24	2.41	2.79	2.28	57.9	4,250	6,325
☐ Type P 3C 500 kcmil Unarmoured	3 × 500 kcmil (253 mm ²)	600 V / 2 kV	1221/24	2.41	3.18	2.62	66.5	5,860	8,721
3-Core Power Bronze-Braid Armoured · 600 V / 2 kV 13 sizes									
☐ Type P 3C 14 AWG Armoured	3 × 14 AWG (2.08 mm ²)	600 V / 2 kV	19/27	1.14	1.52	0.57	14.5	210	313
☐ Type P 3C 12 AWG Armoured	3 × 12 AWG (3.31 mm ²)	600 V / 2 kV	19/25	1.14	1.52	0.61	15.5	250	372
☐ Type P 3C 10 AWG Armoured	3 × 10 AWG (5.26 mm ²)	600 V / 2 kV	37/24	1.14	1.52	0.68	17.3	325	484
☐ Type P 3C 8 AWG Armoured	3 × 8 AWG (8.37 mm ²)	600 V / 2 kV	37/24	1.52	2.03	0.86	21.8	480	714
☐ Type P 3C 6 AWG Armoured	3 × 6 AWG (13.3 mm ²)	600 V / 2 kV	61/24	1.52	2.03	0.98	24.9	640	952
☐ Type P 3C 4 AWG Armoured	3 × 4 AWG (21.2 mm ²)	600 V / 2 kV	133/27	1.52	2.03	1.14	29.0	890	1,324
☐ Type P 3C 2 AWG Armoured	3 × 2 AWG (33.6 mm ²)	600 V / 2 kV	259/26	1.52	2.16	1.30	33.0	1,240	1,845
☐ Type P 3C 1/0 AWG Armoured	3 × 1/0 AWG (53.5 mm ²)	600 V / 2 kV	266/24	2.03	2.79	1.60	40.6	1,850	2,753
☐ Type P 3C 2/0 AWG Armoured	3 × 2/0 AWG (67.4 mm ²)	600 V / 2 kV	342/24	2.03	2.79	1.72	43.7	2,210	3,289
☐ Type P 3C 4/0 AWG Armoured	3 × 4/0 AWG (107 mm ²)	600 V / 2 kV	532/24	2.03	2.79	2.06	52.3	3,240	4,822
☐ Type P 3C 250 kcmil Armoured	3 × 250 kcmil (127 mm ²)	600 V / 2 kV	646/24	2.41	2.79	2.24	56.9	3,820	5,685
☐ Type P 3C 350 kcmil Armoured	3 × 350 kcmil (177 mm ²)	600 V / 2 kV	888/24	2.41	3.18	2.50	63.5	4,980	7,411
☐ Type P 3C 500 kcmil Armoured	3 × 500 kcmil (253 mm ²)	600 V / 2 kV	1221/24	2.41	3.56	2.86	72.6	6,720	10,000
3-Core VFD Power Armoured & Sheathed · 2 kV / 1 kV 16 sizes									
☐ Type P VFD 3C 8 AWG Armoured	3 × 8 AWG + 3 × 14 AWG Gnd	2 kV / 1 kV	37/24	1.40	2.03	0.85	21.6	529	787
☐ Type P VFD 3C 6 AWG Armoured	3 × 6 AWG + 3 × 12 AWG Gnd	2 kV / 1 kV	61/24	1.52	2.03	0.99	25.1	764	1,137
☐ Type P VFD 3C 4 AWG Armoured	3 × 4 AWG + 3 × 12 AWG Gnd	2 kV / 1 kV	133/27	1.52	2.03	1.12	28.4	1,020	1,518
☐ Type P VFD 3C 2 AWG Armoured	3 × 2 AWG + 3 × 10 AWG Gnd	2 kV / 1 kV	259/26	1.52	2.03	1.27	32.3	1,419	2,112
☐ Type P VFD 3C 1 AWG Armoured	3 × 1 AWG + 3 × 10 AWG Gnd	2 kV / 1 kV	259/25	1.65	2.16	1.39	35.2	1,692	2,518
☐ Type P VFD 3C 1/0 AWG Armoured	3 × 1/0 AWG + 3 × 10 AWG Gnd	2 kV / 1 kV	266/24	2.03	2.16	1.49	37.9	1,998	2,973
☐ Type P VFD 3C 2/0 AWG Armoured	3 × 2/0 AWG + 3 × 10 AWG Gnd	2 kV / 1 kV	342/24	2.03	2.16	1.60	40.6	2,407	3,582
☐ Type P VFD 3C 3/0 AWG Armoured	3 × 3/0 AWG + 3 × 8 AWG Gnd	2 kV / 1 kV	418/24	2.03	2.79	1.80	45.6	2,999	4,463
☐ Type P VFD 3C 4/0 AWG Armoured	3 × 4/0 AWG + 3 × 8 AWG Gnd	2 kV / 1 kV	532/24	2.03	2.79	1.95	49.4	3,622	5,390
☐ Type P VFD 3C 262 kcmil Armoured	3 × 262 kcmil + 3 × 6 AWG Gnd	2 kV / 1 kV	646/24	2.29	2.79	2.18	55.3	4,501	6,698
☐ Type P VFD 3C 313 kcmil Armoured	3 × 313 kcmil + 3 × 6 AWG Gnd	2 kV / 1 kV	777/24	2.29	2.79	2.30	58.4	5,152	7,666
☐ Type P VFD 3C 373 kcmil Armoured	3 × 373 kcmil + 3 × 6 AWG Gnd	2 kV / 1 kV	925/24	2.29	2.79	2.45	62.2	5,897	8,775
☐ Type P VFD 3C 444 kcmil Armoured	3 × 444 kcmil + 3 × 6 AWG Gnd	2 kV / 1 kV	1110/24	2.29	2.79	2.60	66.0	6,814	10,140
☐ Type P VFD 3C 535 kcmil Armoured	3 × 535 kcmil + 3 × 4 AWG Gnd	2 kV / 1 kV	1332/24	2.54	3.56	2.86	72.7	8,291	12,337
☐ Type P VFD 3C 646 kcmil Armoured	3 × 646 kcmil + 3 × 4 AWG Gnd	2 kV / 1 kV	1591/24	2.54	3.56	3.06	77.8	9,657	14,370
☐ Type P VFD 3C 777 kcmil Armoured	3 × 777 kcmil + 3 × 4 AWG Gnd	2 kV / 1 kV	1924/24	2.54	3.56	3.25	82.5	10,767	16,022

Designation	Cores × AWG / kcmil	Voltage grade	Stranding No./AWG	XLPO wall mm	Outer sheath mm	Nominal OD in	Nominal OD mm	Total mass lb/kft	Total mass kg/km
Shielded Multipair Signal Armoured & Sheathed · 600 V 14 sizes									
☐ Type P 1P 16 AWG OS Armoured	1 Pair × 16 AWG (1.23 mm ²)	600 V (0.6/1 kV)	19/29	0.76	1.50	0.54	13.7	200	300
☐ Type P 2P 16 AWG IS/OS Armoured	2 Pairs × 16 AWG (1.23 mm ²)	600 V (0.6/1 kV)	19/29	0.76	1.50	0.77	19.6	360	535
☐ Type P 4P 16 AWG IS/OS Armoured	4 Pairs × 16 AWG (1.23 mm ²)	600 V (0.6/1 kV)	19/29	0.76	2.00	0.90	22.9	520	775
☐ Type P 8P 16 AWG IS/OS Armoured	8 Pairs × 16 AWG (1.23 mm ²)	600 V (0.6/1 kV)	19/29	0.76	2.00	1.14	29.0	855	1,270
☐ Type P 12P 16 AWG IS/OS Armoured	12 Pairs × 16 AWG (1.23 mm ²)	600 V (0.6/1 kV)	19/29	0.76	2.00	1.25	31.8	1,030	1,535
☐ Type P 16P 16 AWG IS/OS Armoured	16 Pairs × 16 AWG (1.23 mm ²)	600 V (0.6/1 kV)	19/29	0.76	2.00	1.40	35.6	1,275	1,895
☐ Type P 24P 16 AWG IS/OS Armoured	24 Pairs × 16 AWG (1.23 mm ²)	600 V (0.6/1 kV)	19/29	0.76	2.80	1.81	46.0	1,730	2,575
☐ Type P 1P 14 AWG OS Armoured	1 Pair × 14 AWG (1.94 mm ²)	600 V (0.6/1 kV)	19/27	0.76	1.50	0.58	14.7	235	350
☐ Type P 2P 14 AWG IS/OS Armoured	2 Pairs × 14 AWG (1.94 mm ²)	600 V (0.6/1 kV)	19/27	0.76	1.50	0.82	20.8	410	610
☐ Type P 4P 14 AWG IS/OS Armoured	4 Pairs × 14 AWG (1.94 mm ²)	600 V (0.6/1 kV)	19/27	0.76	2.00	0.96	24.4	605	900
☐ Type P 8P 14 AWG IS/OS Armoured	8 Pairs × 14 AWG (1.94 mm ²)	600 V (0.6/1 kV)	19/27	0.76	2.00	1.19	30.2	995	1,480
☐ Type P 12P 14 AWG IS/OS Armoured	12 Pairs × 14 AWG (1.94 mm ²)	600 V (0.6/1 kV)	19/27	0.76	2.00	1.38	35.1	1,260	1,875
☐ Type P 16P 14 AWG IS/OS Armoured	16 Pairs × 14 AWG (1.94 mm ²)	600 V (0.6/1 kV)	19/27	0.76	2.00	1.52	38.6	1,525	2,270
☐ Type P 24P 14 AWG IS/OS Armoured	24 Pairs × 14 AWG (1.94 mm ²)	600 V (0.6/1 kV)	19/27	0.76	2.80	1.95	49.5	2,440	3,630

- Single-conductor sizes 18 AWG through 1 AWG are single-extrusion XLPO (sheath thickness 0.00 mm); heavy-duty sizes 1/0 AWG through 1111 kcmil include a separate thermoset CPE outer jacket.
- Armoured & sheathed constructions (PNBS) include an inner CPE bedding jacket, ≥ 88 % coverage braided bronze wire armour and an outer mud-resistant thermoset CPE sheath suitable for Class I Division 1 / Zone 1 hazardous locations.

Standards and approvals

- ✓ IEEE Std 1580 & IEEE Std 45 Marine Shipboard Cable
- ✓ UL 1309 & CSA C22.2 No. 245 Listed Type X110 (110 °C)
- ✓ USCG 46 CFR, ABS, DNV & Lloyd's Register Type Approval

Certifications



Management systems: ISO 9001, ISO 14001, ISO 45001

Request a quotation

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