10,000 PSI Subsea Camera, Cat6 & Optical DO Salinity Sensor Cable



TEBAOFLEX® engineers 10,000 PSI (6,000–7,000 m) deepwater subsea Ethernet, HD camera, and digital optical dissolved-oxygen (DO) / salinity instrumentation cables (8.0–16.3 mm OD). Featuring 85 Shore A polyether-PUR jackets compatible with 120 °C overmolded wet-mate bulkhead connectors (zero halogen, PFAS-free), TIA/EIA-568B Cat5e/Cat6 gigabit pairs (<2% impedance/attenuation shift at 6,000 PSI), multi-STP power/RS-485 hybrids (75–108 Ω, 500–600 V), and double-armored 39-Ohm acoustic sonar coax (1,200 VDC).

1. Key Electrical, Thermal & Mechanical Ratings

Depth & Hydrostatic P	Up to 10,000 PSI (6,000–7,000 m) deep-ocean pressure	**Data / Telemetry Specs**	100 Mbps Cat5e, 1 Gbps Cat6, RS-485, & 39/75Ω Coax
Power Hybrid Options	2×1.0–2.0 mm², 4–10×20–18 AWG (600 V–1 kVDC)	**Wet-Mate Mold Compat.**	85A high-temp polyether-PUR (120 °C / 90 min chloroprene mold)
Outer Diameters (Nom.)	8.0 mm, 8.8–16.3 mm (0.364"–0.640"), 8.20 mm armored	**EMI Shielding Package**	Helical 12/23 µm Al/PET foils + 85% tinned copper braid
Pressure Drift Limits	<2% TIA-568B electrical deviation under 6,000 PSI soak	**MOQ & Lead Time**	50 m minimum | 7–45 working days custom wet-mate stock

2. Layer-by-Layer Cable Construction

Zero-void polyolefin/XLPE instrumentation cores screened in helical aluminum/PET foil and 85% tinned copper braid under vulcanization-ready 85A PUR.

Tinned-Cu Power & Precision Signal Pairs	Class 5 / 7-strand tinned copper (0.22–2.0 mm² / 24–14 AWG) resisting solder corrosion inside wet-mate tails
Incompressible Polyolefin / XLPE Cores	Solid/high-modulus XLPE & HDPE dielectrics maintaining exact pair spacing up to 10,000 PSI collapse pressure
Helical Individual & Overall Screens	12/23 µm Al/PET foil (50% min overlap + tinned drain) plus optional 85% tinned copper braided EMI shield
Water-Swellable Non-Woven Wrap	Hydrophilic water-blocking binder preventing hydrostatic travel down cable cores during outer nick events
Overmold-Ready 85A Polyether-PUR / Armor	PFAS-free black/blue/yellow PUR (120 °C hot rubber molding grade) or double-served 8.2 mm galvanized steel armor

3. Applicable Engineering & Testing Standards

• TIA/EIA-568B Under Hydrostatic Load: 100 Mbps / 1 Gbps differential attenuation (<2% deviation verified to 6,000 PSI)

• PFAS-Free, RoHS & LVD Compliant PUR: Halogen-free, non-toxic polyether polyurethane outer wall rated -40 °C to +90 °C static

• ISO 6722 / MIL-STD-202 Moisture Screening: Insulation resistance >500 MΩ·km @ 250 V (>5,000 MΩ·km coax) before and after immersion

4.1 10,000 PSI Deepwater Fast Ethernet / Gigabit Cat6 + Power Hybrid Schedule

Part Code	Data Rate / Std	Conductor & Power Description	Shield Tier	OD (mm / in)	Optional Tensile Tier
TBX-SUB-E01	100 Mb Cat5e	2 Pr 24 AWG Data + 2C 14 AWG Pwr	Alum / Braid	10.7 mm (0.422")	Opt. 1,200 lb Aramid
TBX-SUB-E03	100 Mb Cat5e	2 Pr 24 AWG Data + 2C 18 AWG Pwr	Alum / Braid	9.4 mm (0.371")	Opt. 1,200 lb Aramid
TBX-SUB-E04	100 Mb Cat5e	2 Pr 24 AWG Data + 2C 18 AWG Pwr	Unshielded PUR	8.8 mm (0.364")	Opt. 1,200 lb Aramid
TBX-SUB-E05	1 Gig Cat5e/6	4 Pr 24 AWG High-Speed Data	Unshielded PUR	11.2 mm (0.440")	Up to 50K lb Aramid
TBX-SUB-E07	1 Gig Cat6	4 Pr 23 AWG High-Speed Data	Unshielded PUR	12.0 mm (0.472")	Up to 50K lb Aramid
TBX-SUB-E08	1 Gig Cat6	4 Pr 23 AWG Data + 4C 22 AWG Ctrl	Alum / Braid	12.6 mm (0.495")	Opt. SS/Steel Armor
TBX-SUB-E10	1 Gig Cat6	4 Pr 23 AWG Data + 4C 20 AWG Ctrl	Unshielded PUR	12.0 mm (0.472")	Opt. 1,200 lb Aramid
TBX-SUB-E12	1 Gig Cat6	4 Pr 23 AWG Data + 10C 20 AWG Ctrl	Alum / Braid	16.3 mm (0.640")	Opt. SS/Steel Armor
TBX-SUB-E14	1 Gig Cat6	4 Pr 23 AWG Data + 4C 18 AWG Ctrl	Alum / Braid	12.7 mm (0.500")	Up to 50K lb Aramid

4.2 6,000 m Wet-Mate Multi-STP DO / CTD Hybrids (CC-Class) & 39-Ohm Acoustic Coax

Part Code	Series Class	Power & Signal Conductors	Approx. OD	Air / Seawater Weight	Voltage / Impedance
TBX-SS-4021	Data Telemetry	2 × 1.00 mm² XLPE + Foil	8.00 mm	76 / 26 kg/km	1,000 VDC | 75 ± 5 Ω
TBX-SS-2009	DO / CTD Power+Data	2 × 2.00 mm² + 2 × 0.22 mm² STP	9.00 mm	101 / 36 kg/km	600 V (16 A) | 88 Ω
TBX-SS-4622	Multi-Sensor Array	2 × 1.00 mm² + 6 × 0.22 mm² STP	12.00 mm	204 / 88 kg/km	85% Braid | Dual STP
TBX-SS-6013	Coax + Camera Hybrid	Coax + 2×2.0 + 2×TP + STP + Quad	15.10 mm	258 / 75 kg/km	6,000 m | Dual Foil
TBX-SS-1SSA32	Armored Tow Coax	1 × Coax (7×0.40 mm) + Dual Galv Steel	8.20 mm	Double Armor Tow	1,200 VDC | 39 Ω (131 pF/m)

Selection Note: Select TBX-SUB-E08/E12/E14 when driving 1 Gbps HD IP dome cameras under up to 10,000 PSI (70–90 m reach); choose TBX-SS-2009/4622 for compact 8–12 mm wet-mate DO/salinity probe whips.

5. Quotation & Custom Manufacturing Checklist

Specify Ethernet/data type (Cat5e / Cat6 / Multi-STP / 39Ω Coax), power conductors, depth (6,000–7,000 m), mold compatibility, and spool length (MOQ 50 m).