



Aerospace & Avionics Data Bus & RF Cables

ARINC 429

Avionics Shielded Twisted-Pair Data Bus Cable

AEEC ARINC 429 / MIL-DTL-27500 · $78 \Omega \pm 5 \Omega$ · 20–26 AWG · SPC/SCCS · Fluoropolymer ·

AEEC ARINC 429 (DITS)

 $78 \Omega \pm 5 \Omega$ Twinax

-55 to +200 °C FAR 25.853

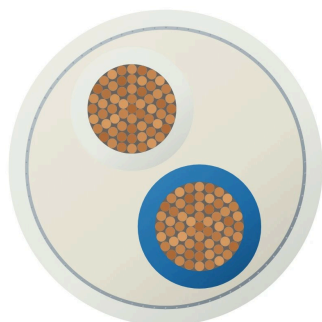


Application

ARINC 429 Avionics Shielded Twisted-Pair Data Bus Cable is a $78 \Omega \pm 5 \Omega$ aerospace twinax interconnect engineered to AEEC ARINC Specification 429 (Mark 33 Digital Information Transfer System / DITS) and MIL-DTL-27500. Operating from -55 °C to +200 °C, it

Typical uses: Commercial Airliner Avionics (FMS / EFIS), Air Data & Inertial Reference (ADIRU), Military Transport & Rotorcraft Buses, Business Jet & eVTOL Flight Controls, Avionics SIL Integration Test Benches

Construction



Cross-section, not to scale

1	19-strand SPC or Ag-Cu alloy twinax pair	AS22759 / ARINC 429
2	Low-loss fluoropolymer pair insulation	ARINC 429 Pt 1
3	100 % foil screen + high-temp binder	MIL-DTL-27500
4	Silver-plated copper wire braid shield	MIL-DTL-27500
5	UV-laser-markable ETFE / FEP / PTFE	FAR 25.853 / ABD0031

Technical data

Typical values

Characteristic impedance Z_0	78 $\Omega \pm 5 \Omega$ (at 1 MHz)	Mutual pair capacitance	59.0 pF/m (Foam FEP) to 85.0 pF/m (Solid)
Velocity of propagation (VoP)	69 % (Solid PTFE/FEP) to 78 % (Foam FEP)	Conductor DC resistance (22 / 24)	$\leq 49.5 \Omega/\text{km}$ / $\leq 84.0 \Omega/\text{km}$ at 20 °C
Max. operating voltage	600 V rms	Dielectric withstand test	1,500 V rms at 60 Hz
Operating temperature range	-55 °C to +200 °C (+150 °C on XL-ETFE)	PTFE variant temperature	-65 °C to +260 °C
Flammability & smoke rating	FAA FAR 25.853 & Airbus ABD0031 / Boeing	Thermal shock endurance	-55 °C to +200 °C per MIL-DTL-27500
Cold-bend temperature	-55 °C without cracking	UV laser markability	High-contrast Nd:YAG / UV laser printable
Conductor gauges available	20, 22, 24, and 26 AWG (19-strand)	Outer jacket diameter (24 / 22 AWG)	2.85 mm (0.112 in) / 3.25 mm (0.128 in)
Min. bend radius (fixed / harness)	15 mm (5×D) / 30 mm (10×D)	Nominal weight (24 / 22 AWG)	16.5 kg/km / 23.8 kg/km
Contact compatibility	MIL-DTL-38999 Size 8 & ARINC 600 twinax	Pair twist lay length	25 to 38 mm balanced tight twist
Aviation fluids & Skydrol	100 % resistant to Skydrol LD-4, Jet-A &	HIRF & lightning indirect effects	Foil + ≥ 90 % SPC braid (or dual braid)
Wet arc-tracking resistance	Passes SAE AS4373 arc-track test	Fungus & altitude humidity	Non-nutrient fluoropolymer per MIL-STD-810
Abrasion & scrape resistance	Tough crosslinked ETFE or PTFE jacket	RoHS / REACH status	Aerospace RoHS compliant
Standards	AEEC ARINC Specification 429 Part 1		

Sizes

4 standard constructions

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

Order designation	Construction / Variant	Conductor	Outer $\varnothing \approx$ mm	Metal kg/km	Weight $\approx$ kg/km	Min. bend R fixed mm
Standard ARINC 429 variants 4 sizes						
☐ ARINC 429 1×2×24 AWG Low-Cap Foam FEP	78 Ω Pair + Foil + 90% SPC Braid	24 AWG (19×36 Alloy)	2.85	9.8	16.5	14
☐ ARINC 429 1×2×22 AWG Standard FEP/ETFE	78 Ω Pair + Foil + 90% SPC Braid	22 AWG (19×34 SPC)	3.25	14.5	23.8	16
☐ ARINC 429 1×2×20 AWG Long-Run Twinax	78 Ω Pair + Foil + 90% SPC Braid	20 AWG (19×32 SPC)	3.85	21.0	33.5	19
☐ M17/176-00002 (1553B / ARINC 429 +200 °C)	78 Ω Pair + SPC Braid (PFA)	24 AWG (19×36 Alloy)	3.28	11.2	22.3	16

– Dimensions and weights are nominal production values subject to manufacturing tolerances per AEEC ARINC 429 / MIL-DTL-27500 / M17/176.

Impedance, capacitance & electrical data

4 sizes

Configuration	Max. conductor DC R Ω / km @ 20 °C	Characteristic Z_0 Ω	Capacitance pF / m	Velocity VoP %	Test voltage V rms
78 Ω Pair + Foil + 90% SPC Braid	1.5	78	48.0	72	1,500
78 Ω Pair + Foil + 90% SPC Braid	1.6	78	48.0	72	1,500
78 Ω Pair + Foil + 90% SPC Braid	1.7	78	48.0	72	1,500
78 Ω Pair + SPC Braid (PFA)	1.5	78	48.0	72	1,500

– Transmission parameters measured at 1–100 MHz (+20 °C) in accordance with AEEC ARINC 429 / MIL-DTL-27500 / M17/176.

Standards and approvals

- ✓ AEEC ARINC 429 Part 1
- ✓ MIL-DTL-27500 / M17/176
- ✓ FAA FAR 25.853 / ABD0031

Certifications



Management systems: ISO 9001, ISO 14001, ISO 45001

Request a quotation

Send the size, length and destination. An application engineer replies within 2 business hours.

WhatsApp / phone

+86 185 9591 3361

Email

info@tebaoflex.com

Web

tebaoflex.com/cables/arinc-429-avionics-shielded-twisted-pair-data-bus-cable



Typical values for this cable type, based on AEEC ARINC 429 / MIL-DTL-27500 / M17/176. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.