

RAYCHEM SINGLE PAIR ETHERNET (SPE) CABLES

ENABLING 100 MB/S OR 1 GB/S ETHERNET CONNECTIVITY USING
A SINGLE PAIR ETHERNET DESIGN



Enabling 100 Mb/s or 1 Gb/s ethernet connectivity using a Single Pair ethernet design



Description

TE Connectivity (TE) has released a Single Pair Ethernet (SPE) cable that enables the transmission of data by ethernet using one twisted pair. This product is currently capable of transmission rates ranging from 100 Mb/s to 1 Gb/s.

ELECTRICAL/ENVIRONMENTAL

- **Differential Impedance:** 100 +/- 10 Ω
- **Attenuation (Max.) at 600 MHz:**
24 AWG: 14.4dB/15m
26 AWG: 14.4dB/15m
- **Mutual Capacitance (Max.) at 1 kHz:** 13 pF/1ft
- **Temperature Rating:** -65°C to +150°C

MATERIALS

- **Conductors:** 24 and 26 AWG Silver-coated high strength copper alloy
- **Dielectric:** Foamed FEP
- **Inner Shield:** Al/PET
- **Shielding:** Silver-coated copper
- **Jacket:** FEP
- **Available Jacket Colors:** Laser markable white, black, white, brown, red, orange, yellow, green, blue, violet, gray and clear (translucent available)

APPLICATIONS

- Avionics
- Inflight Entertainment (IFE)
- Galley Systems
- Interior Cabin Lighting
- eVTOL (Electric Vertical Takeoff and Landing)

STANDARDS AND SPECIFICATIONS

- Meets requirements of ARINC 800
- Flammability: FAR Part 25, Appendix F, Part 1 & AS4373
- Smoke Density and Toxicity: BSS7238, BSS7239, AITM 2-0008 and AITM 3-0005

MARKETS SERVED

- Military Aerospace
- Commercial Aerospace
- Defense
- Low Earth Orbit Satellites
- eVTOL

RUGGED

- Meets many stringent aerospace industry flammability, smoke and toxicity requirements

REDUCED SIZE AND WEIGHT

- Compared to existing multi-pair ethernet systems
- Termination time: Octax/Quadax: 15-20 minutes vs. 369: 2-5 minutes

REDUCED INSTALLATION TIME

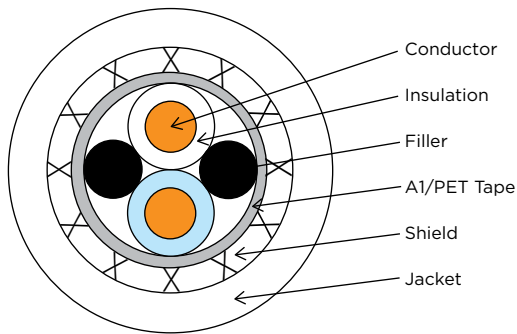
- Single pair cable vs. 2 or 4 pair Ethernet cables

VERSATILE

- End to end solution using TE ARINC 854 connectors



Raychem Single Pair Ethernet (SPE) Cables



TE Description	TE Part Number	Temperature Range (°C)	Jacket OD (in/mm), Nom.	ARINC 854 Connector Compatibility	Molded Boot Compatibility
0024B8424-9	EP3169-000	-65 to +150°C	0.161 (4.089)	YD369-MP99-NP10000	202D971-4/86-0
0026G8424-9	EP3166-000	-65 to +150°C	0.135 (3.429)	YD369-MP99-NP10000	202D971-4/86-0

Additional constructions and custom designs available upon request - please contact your local account representative for questions

Complete System Solutions



End-to-End Solutions

369 Series Shielded Connectors

- 100Base-T1 standard
- 15 m link with four connector breaks
- Reduces termination complexity
- (369) 2-5 minutes vs. (Quadrax) 6-10 minutes



Molded Parts

Molded Parts

- Molded part shape designed specifically for use with 369 connector and Single-Pair Ethernet cable
- Flexible polyolefin (-4) material provides strain relief, environmental sealing, and abrasion resistance
- High temperature adhesive (/86) for bonding with cable jacket or heat shrink tubing
- Low profile design and 2:1 heat shrink ratio for ease of installation

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