

Product Specification

RJ45 Ethernet Patch Cables

Cat8 / Cat7 / Cat6A / Cat6 / Cat5e
S/FTP / U/UTP | PVC Jacket | CM-Rated

Features

- Cat5e, Cat6, Cat6A, Cat7, and Cat8 Ethernet patch cable options
- RJ45 male connectors with snagless molded strain relief
- Stranded bare copper conductors
- S/FTP shielding for Cat8, Cat7, and Cat6A
- U/UTP construction for Cat6 and Cat5e
- 50 µin gold-plated RJ45 contacts
- 4 twisted-pair construction for reliable signal transmission
- Bandwidth from 100 MHz to 2000 MHz
- Supports Gigabit, 10 Gigabit, 25 Gigabit, and 40 Gigabit Ethernet applications depending on cable category
- PVC CM-rated cable jacket
- Fluke channel tested
- Available in lengths from 1 ft to 50 ft

Compliance

- RoHS / REACH
- ANSI/TIA-568.2-E (Cat5e / Cat6 / Cat6A / Cat8)
- ISO/IEC 11801-1
- IEEE 802.3 BASE-T Ethernet Applications
- UL 444 / NEC CM

Applications

- Data Center and Enterprise Networks
- Switch, Server, Router, and Patch Panel Connections
- High-Speed BASE-T Ethernet Links
- General Indoor Network Cabling

Description

AICPLIGHT RJ45 Ethernet Patch Cables provide reliable copper connectivity for data centers, enterprise networks, server rooms, and general network infrastructure. The product family includes Cat5e, Cat6, Cat6A, Cat7, and Cat8 configurations to support different bandwidth, data-rate, and electromagnetic-interference requirements.

Cat5e and Cat6 cables use U/UTP construction for flexible and cost-effective network connections, while Cat6A, Cat7, and Cat8 cables use S/FTP shielding to improve immunity to crosstalk and external electromagnetic interference.

The series uses stranded bare copper conductors, snagless RJ45 connectors, and PVC CM-rated jackets. Cat5e supports Gigabit Ethernet, Cat6 supports Gigabit Ethernet and short-reach 10GBASE-T applications, Cat6A and Cat7 support 10GBASE-T, and Cat8 supports 25GBASE-T and 40GBASE-T high-speed Ethernet applications.

Available in lengths from 1 ft to 50 ft, these patch cables provide flexible connectivity for switches, servers, routers, patch panels, network adapters, and other RJ45-based network equipment.

Product Performance Specifications

1、Model Configuration

Parameter	EC-C8-SFTP-P-C28	EC-C7-SFTP-P-C26	EC-C6A-SFTP-P-C26	EC-C6-UTP-P-C24	EC-C5E-UTP-P-C24
Category	Cat8	Cat7	Cat6A	Cat6	Cat5e
Shielding Type	S/FTP	S/FTP	S/FTP	U/UTP	U/UTP
Connector A	RJ45 Male	RJ45 Male	RJ45 Male	RJ45 Male	RJ45 Male
Connector B	RJ45 Male	RJ45 Male	RJ45 Male	RJ45 Male	RJ45 Male
Conductor Type	Stranded	Stranded	Stranded	Stranded	Stranded
Conductor Material	Bare Copper	Bare Copper	Bare Copper	Bare Copper	Bare Copper
Wire Gauge	28 AWG	26 AWG	26 AWG	24 AWG	24 AWG
Number of Pairs	4 Pairs	4 Pairs	4 Pairs	4 Pairs	4 Pairs
Insulation Material	FM-PE	Foam PE	Foam PE	HDPE	HDPE
Cable O.D.	6.2 ± 0.3 mm	6.2 ± 0.3 mm	6.2 ± 0.3 mm	6.1 ± 0.4 mm	5.4 ± 0.3 mm
Jacket Material	PVC	PVC	PVC	PVC	PVC
Flame Rating	CM	CM	CM	CM	CM
Connector Boot	Snagless	Snagless	Snagless	Snagless	Snagless
Available Length	1–50 ft	1–50 ft	1–50 ft	1–50 ft	1–50 ft

2、Transmission Performance

Parameter	EC-C8-SFTP-P-C28	EC-C7-SFTP-P-C26	EC-C6A-SFTP-P-C26	EC-C6-UTP-P-C24	EC-C5E-UTP-P-C24
Maximum Frequency	2000 MHz	600 MHz	500 MHz	250 MHz	100 MHz
Characteristic Impedance	100 Ω	100 Ω	100 Ω	100 Ω	100 Ω
Maximum Delay Skew	≤25 ns/100 m	≤45 ns/100 m	≤45 ns/100 m	≤45 ns/100 m	≤45 ns/100 m
Primary Ethernet Application	25GBASE-T / 40GBASE-T	10GBASE-T	10GBASE-T	1000BASE-T / Short-Reach 10GBASE-T	1000BASE-T
Backward Compatibility	10G / 5G / 2.5G / 1G / 100M / 10M	5G / 2.5G / 1G / 100M / 10M	5G / 2.5G / 1G / 100M / 10M	5G / 2.5G / 1G / 100M / 10M	100M / 10M

3、Connector and Electrical Characteristics

Parameter	Specification
Connector Type	RJ45 (8P8C) Male to Male
Wiring Scheme	T568B Straight-Through
Contact Material	Phosphor Bronze
Contact Plating	50 µin Gold over Nickel
Maximum Contact Resistance	≤20 mΩ
Minimum Insulation Resistance	≥500 MΩ
Dielectric Strength	≥1000 VAC
Connector Durability	≥750 Mating Cycles

4、Shielding Characteristics

Parameter	EC-C8-SFTP-P-C28	EC-C7-SFTP-P-C26	EC-C6A-SFTP-P-C26	EC-C6-UTP-P-C24	EC-C5E-UTP-P-C24
Cable Construction	S/FTP	S/FTP	S/FTP	U/UTP	U/UTP
Individual Pair Shield	Aluminum Foil	Aluminum Foil	Aluminum Foil	None	None
Overall Shield	Braid	Braid	Braid	None	None
Shielded RJ45 Plug	Yes	Yes	Yes	No	No
Drain Wire	Yes	Yes	No	No	No

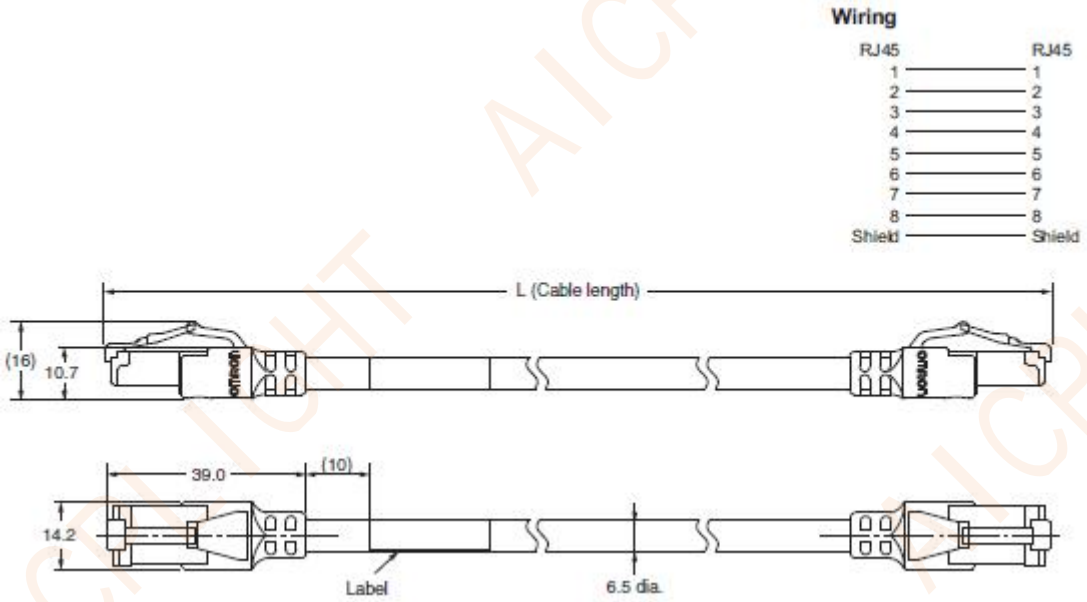
5、Physical and Mechanical Characteristic

Parameter	Specification
Cable Construction	4-Pair Stranded Twisted-Pair Patch Cable
Cable Jacket	PVC
Flame Rating	CM
Minimum Bend Radius During Installation	8 × Cable O.D.
Minimum Bend Radius After Installation	4 × Cable O.D.
Operating Temperature	-20°C to +75°C
Storage Temperature	-40°C to +85°C
Strain Relief	Molded
Connector Latch Protection	Snagless Boot

6、Category and Application Performance

Category	ISO/IEC Cabling Class	Bandwidth	Typical BASE-T Application	Maximum Standard Channel Reach
Cat8	Class I	2000 MHz	25GBASE-T / 40GBASE-T	30 m
Cat7	Class F Cable Performance	600 MHz	10GBASE-T	100 m
Cat6A	Class EA	500 MHz	10GBASE-T	100 m
Cat6	Class E	250 MHz	1000BASE-T / Short-Reach 10GBASE-T	100 m / Limited for 10GBASE-T
Cat5e	Class D	100 MHz	1000BASE-T	100 m

Mechanical Dimension



Note:

Length tolerance:L ≤ 1 m: ±0.05 m; 1 m < L < 20 m: ±0.10 m; L ≥ 20 m: ±1% of the nominal length. Overall length (L) is measured from the front mating face of Connector A to the front mating face of Connector B.

Handling and Safety Precautions:

- **Bend Radius:** Do not bend the cable below the specified minimum bend radius. Avoid sharp bends, kinks, or tight loops. Maintain at least 8 × cable O.D. during installation and 4 × cable O.D. after installation.
- **Cable Handling:** Avoid excessive pulling, twisting, crushing, pinching, or stretching. Do not place heavy objects on the cable or route it where it may be stepped on or mechanically damaged.
- **Installation and Removal:** Hold the RJ45 connector housing or snagless boot when plugging or unplugging the cable. Press the locking tab before removal and do not pull directly on the cable.
- **Connector Protection:** Keep RJ45 contacts clean and dry. Protect connectors from dust, moisture, oil, and other contaminants when not in use. Do not touch or damage the connector contacts.
- **Shielded Cable Installation:** For S/FTP cables, ensure that shielded RJ45 ports and properly grounded network equipment are used where shielding continuity is required.
- **PoE Applications:** When used with Power over Ethernet (PoE) equipment, avoid excessive cable bundling and ensure adequate ventilation to limit heat buildup. Use the cable only within the rated current, temperature, and application limits of the connected equipment.
- **Environmental Conditions:** These PVC CM-rated cables are intended for indoor general-purpose applications. Do not expose the cable to water, chemicals, excessive heat, direct sunlight, or environments beyond the specified operating temperature range.
- **Fire Rating:** CM-rated cables should only be installed in locations permitted by applicable building and electrical codes. Do not use CM-rated cables where CMR or CMP-rated cabling is required.

Ordering Information

PN	Description
EC-C8-SFTP-P-C28	Cat8 Snagless RJ45 Shielded (S/FTP) Ethernet Patch Cable, 28 AWG Pure Copper, PVC Jacket, CM-Rated
EC-C7-SFTP-P-C26	Cat7 Snagless RJ45 Shielded (S/FTP) Ethernet Patch Cable, 26 AWG Pure Copper, PVC Jacket, CM-Rated
EC-C6A-SFTP-P-C26	Cat6A Snagless RJ45 Shielded (S/FTP) Ethernet Patch Cable, 26 AWG Pure Copper, PVC Jacket, CM-Rated
EC-C6-UTP-P-C24	Cat6 Snagless RJ45 Unshielded (UTP) Ethernet Patch Cable, 23 AWG Pure Copper, PVC Jacket, CM-Rated
EC-C5E-UTP-P-C24	Cat5e Snagless RJ45 Unshielded (UTP) Ethernet Patch Cable, 23 AWG Pure Copper, PVC Jacket, CM-Rated