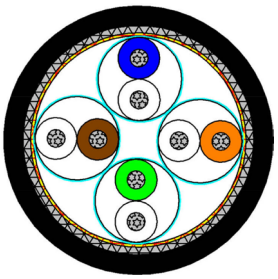
ProPlex®

CAT5e ULTRA S/FTP
**ETHERNET CABLE!**
PCCAT5EPU

# The World's Most Durable Ethernet Cables



Cross Section

Dependable, highest quality ProPlex Ethernet cables - From the Super Bowl Half-Time Show, to the Academy Awards, to a rock concert near you, the industry standard for entertainment and live event networks.

Originally developed for the demanding professional live event market, ProPlex Ethernet Cables have since been proven in indoor, outdoor, and temporary underwater applications of all kinds. In addition to entertainment use, they are now trusted for the connection of many different portable networks, including; industrial, scientific, military, marine, communications, and more. The original roadworthy, dependable, verified Ethernet cables, they combine unsurpassed critical data integrity with outstanding durability, long-term reliability and optimum handling characteristics – all proven over many years of professional portable use, over five million meters of cable sold, and over millions of touring miles traveled.

Premium ProPlex CAT5e Ultra S/FTP offers outstanding, fully verified Gigabit performance, extreme noise resistance and practically zero skew. Other superior performance benefits include:

- Full CAT5e performance and data integrity, verified up to 90m!
- Minimal transmission degradation, even after years of heavy use and abuse
- Kevlar reinforced, stranded conductors for long-term portable reliability
- Tear and cut-proof UV-resistant outer jacket
- Suitable for use in CAT6 applications
- Excellent DC resistance. Low attenuation. Low N.E.X.T. (Near-end crosstalk loss).
- High tensile strength. Extreme durability. Easy handling and coiling.

**RoHS**
Compliant

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# CAT5e ULTRA S/FTP **ETHERNET CABLE!** PCCAT5EPU

## General Specifications

| | |
|---|---|
| Part Number | PCCAT5EPU |
| Conductors | 24 AWG [0.25 mm²] tinned copper, 7x0.20 mm |
| Insulation | Cellular PO,<br>Nom. Dia. 0.055" [1.4 mm] |
| Colour Code | White X Blue; White X Orange; White X Green,<br>White X Brown |
| Assembly | Pairs individually shielded and cabled with strength yarns. |
| Shields | Inner: Individual aluminum foil for each pair, 100% coverage.<br>Outer: tinned copper braid, 80% coverage |
| Jacket | Black, UV resistant industrial grade PU compound. |
| Marking | ProPlex PCCAT5EPU Ultra S/FTP 24AWG shielded 100MHz Data Cable Cat5e verified [batch no.] |
| Weight | 47 lbs./mft [70 Kg/Km] |
| Outside Diameter | 0.32" [8.1 mm] +/-0.012" [0.3 mm] |
| Bend Radius | 75 mm min. |
| Max. tensile force during installation | 150 N |
| Drag Chain | May be used in drag chain (cable carrier) applications. Avoid surface contact between cables with different jacket materials, or abrasion may result. |
| Temperature Rating | Operational: -40 to +70 °C |
| Compliance | Flame test: IEC 60332.1<br>Environmental: per IEC 61156-6 and ISO/IEC 11801<br>RoHS compliance: RoHS-2 2015/863/EU |

## Transmission Performance

| | 10 MHz | 16 MHz | 62.5 MHz | 100 MHz |
|---|---|---|---|---|
| Attenuation db/10m nom. | 0.65 | 0.85 | 2.0 | 2.5 |
| N.E.X.T (Near-End Crosstalk Loss) db min. | 58 | 56 | 45 | 43 |
| ACR db min. | 57.2 | 54.9 | 42.6 | 40.1 |

**ProPlex CAT5e Ultra Ethernet cable meets attenuation specs up to 90 m (295 ft); meets all other CAT5e performance specs up to 100 m (328 ft)**

## General Information

A 4-pair, 24 AWG, 100 Ohm S/FTP round patch cable, designed to the ISO / IEC 11801 Category 5e requirements. The cable contains 4 twisted pairs, cabled, double shielded with Kevlar reinforcement strands, jacketed in black UV resistant polyurethane. Designed for fixed or portable applications in harsh environments.

## Electrical Specifications

| | |
|---|---|
| Velocity of Propagation | 78% nom. |
| Impedance | 100 +/- 5 Ohm (100 MHz) |
| Delay Skew | 25 ns/100 m max. |
| Dielectric Strength | VAC/1min - 700V/min |
| Capacitance | 42 pF/m nom. @1 KHz |
| Resistance Unbalance | 2% max @ 20 °C |
| Capacitance Unbalance | 1.4 pF/m max. @ 800 Hz |
| Insulation Resistance | 5000 M Ohm / Km Min. |
| DC Resistance | 93 Ohm/Km @ 20 °C |
| Typical channel length | Up to 90 m @ 20 °C |
| Alien cross talk | Proven by design per IEC 61156-6 |
| Coupling Attenuation | Type I per IEC 61156-6 |
| Transfer impedance | Grade 1 per IEC 61156-6 |
| Transverse conversion loss | Level A per IEC 61156-6 |
| PoE Compatibility | Yes |

## Reeling Capability

In the core level, under the shields, are 4 conductor pairs and 6 strength members, 3 white and 3 yellow. Two central strength members perform a "tension relief" function. The other 4 are twisted around the pairs, each pair is wrapped in a strength member to perform a "pair structure holding" function. The reason for two types of strength members is that each one has a different prolongation constant – one positive, the other negative – so on average the length of the strength members remains constant and equal to the wire length.

To install on a reel, please use the following guidelines:

- Minimum reel core diameter is 10 cm.
- Minimum tension to be used during reeling and unreeling process.
- Terminate the cable with plugs before reeling is initiated.
- Cable length per reel is 90 metres or less.



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## PUR Jacket Properties

### Jacket Compound Specification

Halogen Free Flame Retardant Polyether-based Polyurethane, Glossy finish. Excellent Hydrolysis resistance. High microbial resistance. UV resistant. High flexibility.

### Jacket Testing Results

| Test | Test Method | Result |
|---|---|---|
| Density | DIN 53479 | 1.15g/cubic cm |
| Tensile strength | DIN 53504 | 40 nom. N/sqmm |
| Tensile strength after 42 days, H2O 80°C | DIN 53504 | 30 N/sqmm |
| Ultimate elongation | DIN 53504 | 550 nom. % min. |
| 20% modulus | DIN 53504 | 3.2 N/sqmm |
| 100% modulus | DIN 53504 | 5.5 N/sqmm |
| 300% modulus | DIN 53504 | 12 N/sqmm |
| Tear strength | DIN 53515 | 60 N/mm |
| Hardness shore A | DIN 53505 | 87 |
| Hardness shore D | DIN 53505 | 36 |
| Melt index- MVR | ISO 1133 | 30-60 cubic cm/10 min |
| Brittle point | DIN 53513 | -45°C |
| Abrasion Loss | DIN 53516 | 40 cubic mm |
| Compression set (23°C) 70h | DIN 53517 | 30% |
| Compression set (70°C) 24h | DIN 53517 | 50% |

### PUR Jacket Chemical Resistance Chart

#### Organic Substances

| Medium | Temperature | Concentration | Reaction |
|---|---|---|---|
| Acetic Acid | Room Temp | 20% | slight |
| Acetone | Room Temp | 40% | poor |
| Astm Fuel A | Room Temp | 4% | nil |
| Astm Fuel B | Room Temp | 10% | nil |
| Astm Fuel C | Room Temp | 18% | nil to slight |
| Astm Oil 1 | 80°C | | nil |
| Astm Oil 2 | 80°C | 3% | nil |
| Astm Oil 3 | 80°C | 6% | nil |
| Benzene | Room Temp | | poor |
| Butanol | Room Temp | | poor |
| Butyl Acetate | Room Temp | 40% | poor |
| Citric Acid | Room Temp | | slight |
| Cutting Oil | Room Temp | | nil to slight |
| Cyclohexanol | Room Temp | 5% | slight |
| Dibutylphthalate | Room Temp | 40% | slight |
| Diesel Oil | Room Temp | | nil to slight |
| Diesel Oil | Room Temp | 5% | nil |
| Diethylether | Room Temp | | nil to slight |
| Diethylprestone | Room Temp | | nil to slight |
| Dimethylformamide | Room Temp | | soluble |
| Ethyl Alcohol | Room Temp | 100% | slight |
| Ethylacetate | Room Temp | 40% | poor |
| Ethylether | Room Temp | | slight |
| Glycerin | Room Temp | | nil |
| Glycol | Room Temp | 2% | nil |
| Glysantin / Water 1:1 | Room Temp | | slight |
| Glysantin / Water 1:1 | 80°C | | slight |
| Hydraulic Oil | Room Temp | | slight |
| Isopropanol | Room Temp | 12% | slight |
| Isopropyl Alcohol | Room Temp | 100% | slight |
| Kerosene | Room Temp | 3% | nil |
| Machine Oil | Room Temp | | nil to slight |
| Methanol | Room Temp | 10% | slight |
| Methyl Alcohol | Room Temp | 100% | slight |
| Methylen Chloride | Room Temp | | no resistance |
| Methylethylketone | Room Temp | 45% | poor |
| Mineral Oil | 80°C | | nil |
| Olive Oil | Room Temp | | nil |
| Paraffin Oil | Room Temp | | nil to slight |
| Siccinic Acid, Aqu. | Room Temp | cold saturated | nil to slight |
| Vegetable Oil And Fats | Room Temp | | nil |

#### Inorganic Substances

| Medium | Temperature | Concentration | Reaction |
|---|---|---|---|
| Acetic Acid | Room Temp | 20% | nil to slight |
| Acetic Acid 3N | Room Temp | | poor |
| Aluminium Chloride, Aqu. | Room Temp | 5% | nil |
| Ammonia, Aqu. | Room Temp | 10% | nil |
| Aniline | Room Temp | | no resistance |
| Barium Salts | Room Temp | cold saturated | nil to slight |
| Boric Acid | Room Temp | 100% | nil to slight |
| Calcium Chloride | Room Temp | cold saturated | nil to slight |
| Calcium Nitrate | Room Temp | cold saturated | nil to slight |
| Chromium Salts, Aqu. | Room Temp | cold saturated | nil to slight |
| Copper Salts, Aqu. | Room Temp | cold saturated | nil to slight |
| Fe Chloride, Aqu. 5% | 40°C | | slight |
| Hydrochloric Acid 20% | Room Temp | 20% | nil to slight |
| Hydrogen Peroxide | Room Temp | 3% | nil to slight |
| Hydrogen Sulphide | Room Temp | | nil to slight |
| Magnesium Salts, Aqu. | Room Temp | cold saturated | nil to slight |
| Mercury | Room Temp | 100% | nil to slight |
| Mercury Salts, Aqu. | Room Temp | cold saturated | nil to slight |
| Nickel Salts, Aqu. | Room Temp | cold saturated | nil to slight |
| Nitric Acid | Room Temp | 20% | no resistance |
| Phosphoric Acid | Room Temp | 50% | nil to slight |
| Potassium Carbonate, Aqu. (Potash) | Room Temp | | nil to slight |
| Potassium Chloride | Room Temp | cold saturated | nil to slight |
| Potassium Dichromate, Aqu. | Room Temp | | slight |
| Potassium Iodide | Room Temp | | nil to slight |
| Potassium Nitrate,Aqu. | Room Temp | | nil to slight |
| Potassium Permanganate | Room Temp | | nil to slight |
| Potassium Sulphate, Aqu. | Room Temp | | nil to slight |
| Sea Water | Room Temp | 100% | nil |
| Silver Salts, Aqu. | Room Temp | | nil to slight |
| Sodium Bicarbonate, Aqu. (Soda) | Room Temp | | slight |
| Sodium Chloride, Aqu. | Room Temp | | nil to slight |
| Sodium Chloride Solution, Conc. | Room Temp | | nil |
| Sodium Hydroxide Solution 1N | Room Temp | | slight |
| Sodium Thiosulphate, Aqu. | Room Temp | | nil to slight |
| Sulphur | Room Temp | 100% | nil to slight |
| Sulphur Dioxide | Room Temp | | slight |
| Sulphuric Acid 20% | Room Temp | | slight |
| Toluene | Room Temp | 35% | poor |
| Water | 100°C | | poor |
| Water | Room Temp | | nil |
| Water | 80°C | | nil to slight |

**Key:**
Nil: Resistance over a prolonged period.
Nil to slight: After a certain time appreciable differences are noticeable.
Slight: Conditionally resistant.
Poor: Short term contact possible under certain conditions.
No resistance: Pronounced attack



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ProSeries®

# RJ45 CONNECTORS FOR PROPLEX ETHERNET CABLES

High quality shielded and unshielded RJ45 connectors paired for optimum performance and reliability with ProPlex ethernet cables.

Use this table to determine which ProSeries RJ45 connector to use with each ProPlex cable.
Also the part number for compatible ProShell Backshell, ethernet connector, or snagless rubber boot.

| Part Number | Ethernet Cable | Cable OD | ProSeries RJ45 Part Number | ProShell Part Number | Ethernet Connector Part Number | Rubber Boot Part Number |
|---|---|---|---|---|---|---|
| PCCAT5EUTPP | ProPlex | 6.2 mm +/- 0.3 mm | RJ45K | PRJ0V2-BK | Seetronic SE8MH02BLOD / Neutrik NE8MXB-1 | RJ45KBTBK |
| PCCAT5EP26AWG | ProPlex | 6.9 mm +/- 0.3 mm | RJ45SKV1 | PRJ0V2-BK | Seetronic SE8MH02BLOD / Neutrik NE8MXB-1 | RJ45KBTBK |
| PCCAT5EPWE | ProPlex | 7.1 mm +/- 0.3 mm | RJ45SKV1 | PRJ0V2-BK | Seetronic SE8MH02BLOD / Neutrik NE8MXB-1 | RJ45KBTBK |
| PCCAT5EPU | ProPlex | 8.1 mm +/- 0.3 mm | RJ45SKV4 | PRJ0EX-BK | Seetronic SE8MH02BLOD / Neutrik NE8MXB-1 | RJ45V2BTBK |
| PCCAT5EPU2X | ProPlex | 7.9 mm +/-0.3 mm | RJ45SKV4 | PRJ0EX-BK | Seetronic SE8MH02BLOD / Neutrik NE8MXB-1 | RJ45V2BTBK |
| PCCAT5ETU4X | ProPlex | 8.1 mm +/- 0.3 mm | RJ45SKV4 | PRJ0EX-BK | Seetronic SE8MH02BLOD / Neutrik NE8MXB-1 | RJ45V2BTBK |
| PCCAT6AP | ProPlex | 8.1 mm +/- 0.3 mm | RJ45SKV4 | PRJ0EX-BK | Seetronic SE8MH02BLOD / Neutrik NE8MXB-1 | RJ45V2BTBK |
| PCCAT6AP2X | ProPlex | 8.6 mm +/- 0.3 mm | RJ45SKV4 | PRJ0EX-BK | Seetronic SE8MH02BLOD / Neutrik NE8MXB-1 | RJ45V2BTBK |
| PCCAT6APX | ProPlex | 8.1 mm +/- 0.3 mm | RJ45SKV4 | PRJ0EX-BK | Seetronic SE8MH02BLOD / Neutrik NE8MXB-1 | RJ45V2BTBK |
| WDPCAT5ET | DataPlex | 7.4 mm +/- 0.254 mm | RJ45SKV4 | PRJ0EX-BK | Seetronic SE8MC130BLOD / Neutrik NE8MXB-1 | RJ45V2BTBK |
| WDPCAT6AT | DataPlex | 8.3 mm +/- 0.254 mm | RJ45SKV4 | PRJ0EX-BK | Seetronic SE8MC130BLOD / Neutrik NE8MXB-1 | RJ45V2BTBK |
| SCCAT6A | StarCable | 7.0 ± 0.2 mm | RJ45SKV1 | PRJ0V2-BK | Seetronic SE8MC130BLOD / Neutrik NE8MXB-1 | RJ45KBTBK |

| Specifications | | | |
|---|---|---|---|
| | RJ45K | RJ45SKV1 | RJ45SKV4 |
| Housing Material | Clear Polycarbonate, UL94V-2 | Clear Polycarbonate, UL94V-2 | Clear Polycarbonate, UL94V-2 |
| Contact Material | 6U below brass. 15U above phosphor bronze. | Phosphor bronze with 50U hard gold plating | Phosphor bronze with 50U hard gold plating |
| Shield Material | No Shield | Nickel plated brass | Nickel plated brass |
| Wire Diameter | 23-24 AWG | 22-24 AWG | 22-24 AWG |
| Cable Outside Diameter | 6-7.5 mm | 6-7.5 mm | 6-8.6 mm |
| Operating Temperature | -10 to 60 °C | -40 to 80 °C | -20 to 75 °C |
| Voltage Rating | 30 VAC, 1.5A | 125 VAC, 1.5 A | 250 VAC, 2.0 A |
| Dielectric Rating | 500 VAC | 500 VAC | 1000 VAC |
| Insulation Resistance | 500 megaohms | 500 megaohms | 500 megaohms |
| Termination Resistance | 20 milliohms max. | 35 milliohms max. | 20 milliohms max |
| Standards | REACH, FCC Part 68, IEC 60603-7, UL Certified and RoHS compliant. | REACH, FCC Part 68, IEC 60603-7, UL Certified and RoHS compliant. | REACH, FCC Part 68, IEC 60603-7, UL Certified and RoHS compliant. |




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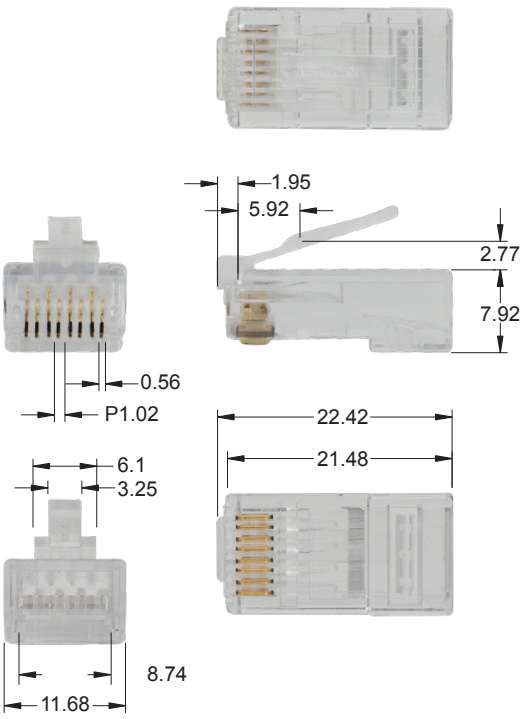
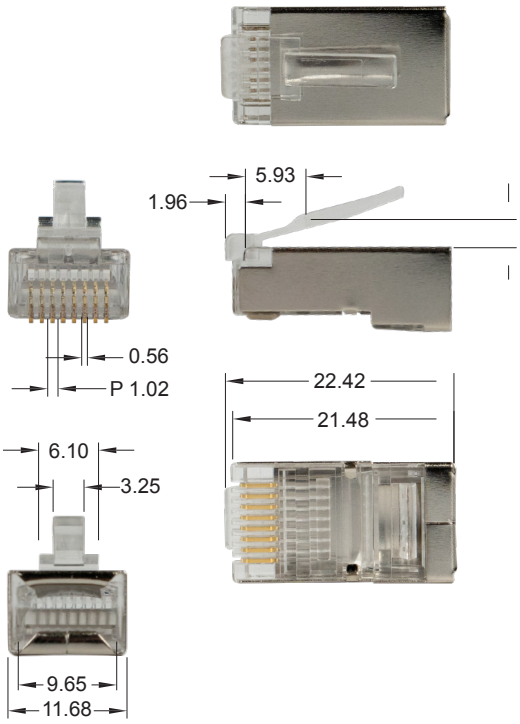
## RJ45K

Dimensions in millimeters



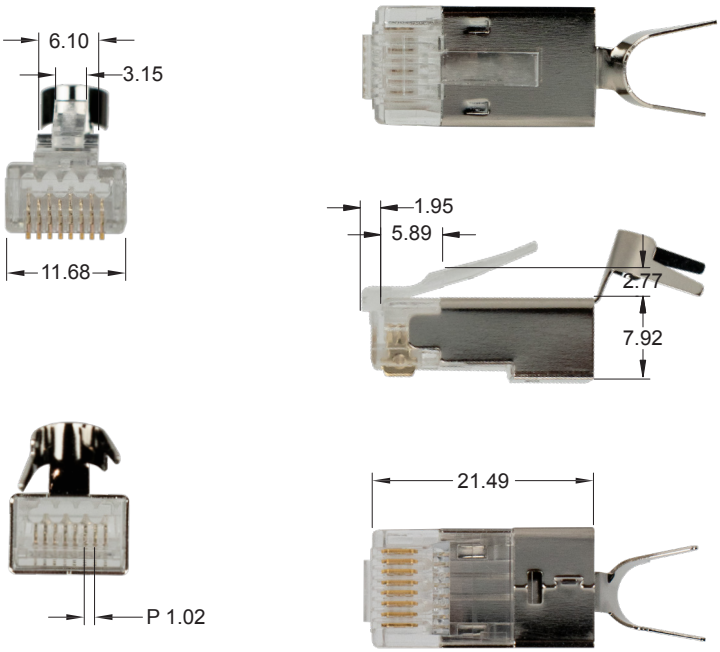

## RJ45SKV1

Dimensions in millimeters




## RJ45SKV4

Dimensions in millimeters



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