

### The World's Most Durable Ethernet Cables



PCCAT6APX with full verified CAT6a performance up to 100 metres!

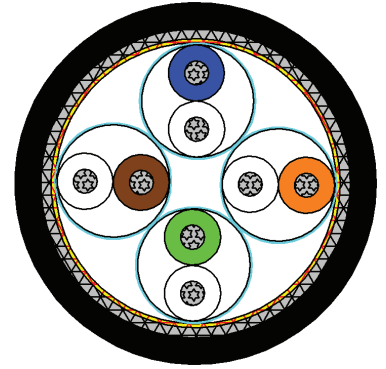
Road-worthy CAT6a cables for touring applications. 10-Gigabit networking for the road!

ProPlex CAT6a flexible yet rugged patch cables combine outstanding data transmission, noise rejection and very low skew with the ability to withstand the most extreme handling and conditions, indoors and outdoors. Available as fully assembled patch cables, in standard and custom lengths, with your choice of heavy-duty RJ-45 connector formats: ProShell Extra; EtherCon; EtherCon IP Rated; and RJ45. Panel mount connectors are also available for a complete OEM Ethernet wiring solution.

| General Specifications                  |  |
|---|--|
| Part Number                             | PCCAT6APX  |
| Conductors                              | 24 AWG (0.25 mm <sup>2</sup> ) 7x0.2 mm stranded tinned copper.  |
| Insulation                              | Cellular PO, Nom. Diameter 0.055" [1.4 mm]<br>Insulation heat shock: 80 °C/1hour   |
| Pairs                                   | Colour Coded singles twisted into pairs<br>Colour Code: White X Blue; White X Orange; White X Green; White X Brown                         |
| Assembly                                | Structure: 4 pairs cabled together. Each pair wrapped with an aluminium foil providing 100% coverage. An overall braid with strength yarns |
| Shields                                 | Aluminium foil over individual pairs 100% coverage plus tinned copper braid, 80% nominal coverage  |
| Jacket                                  | Material: Industrial grade PU compound<br>OD: 8.1 mm +/- 0.3 mm<br>Colour: Black UV Resistant<br>Jacket material heat shock: 120 °C/1hour  |
| Marking                                 | ProPlex PCCAT6APX 24AWG S/FTP Data Cable Cat6a Extended verified [lot no.]   |
| Weight                                  | 48.4 lbs./mft (72 Kg/Km)   |
| Temperature Range                       | Working: -40 °C to +70 °C  |
| Bending Radius                          | 75 mm min.   |
| Typical Operational Installation Length | Up to 100 m (@ 20 °C)  |
| Tensile Force                           | 150 N max.   |
| Compliance                              | Flame test: IEC 60332.1<br>Environmental: per IEC 61156-6 and ISO/IEC 11801<br>RoHS compliance: 2002/95/EC                                 |

**RoHS**  
Compliant

| Electrical Specifications             |                                  |
|---------------------------------------|----------------------------------|
| Dielectric Strength                   | 700 Vrms/min.                    |
| Pair Mutual Capacitance               | 40 pF/m                          |
| Capacitance Unbalance                 | 1.4 pF/m (800 Hz)                |
| Pair characteristic impedance         | 100 +/- 5 Ohm                    |
| NVP (Nominal Velocity of Propagation) | 80 %                             |
| Max skew delay                        | 25 nSec/100m                     |
| Conductor DC resistance (20° C)       | 93 Ohm                           |
| Resistance unbalance (within pairs)   | 2% max.                          |
| Insulation resistance                 | Not less than 5 GΩ-km            |
| 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 (TCL)      | Level A per IEC 61156-6          |



Cross Section

| Transmission Performance |                          |                 |               |               |               |               |               |
|--------------------------|--------------------------|-----------------|---------------|---------------|---------------|---------------|---------------|
| Freq. MHz                | Attenuation dB/100m 20°C | PS NEXT Loss dB | NEXT Loss dB  | RL dB         | PS ANEXT dB   | PS ELFEXT dB  | ELFEXT dB     |
|                          | Typical value            | Typical value   | Typical value | Typical value | Typical value | Typical value | Typical value |
| 1                        | 2.3                      | 72.3            | 94.1          | 25            | 67            | 67            | 70            |
| 4                        | 3.9                      | 92.8            | 90.7          | 28            | 67            | 66            | 70            |
| 10                       | 6.1                      | 91.1            | 90.1          | 31            | 67            | 64.5          | 68            |
| 20                       | 8.7                      | 93.4            | 89.5          | 25            | 67            | 62            | 65            |
| 30                       | 10.8                     | 91.1            | 89.1          | 23            | 67            | 58.5          | 62            |
| 100                      | 20.1                     | 90.6            | 89.1          | 28            | 62.5          | 54.3          | 58            |
| 150                      | 24.6                     | 87.3            | 88.6          | 25            | 59.8          | 47            | 50            |
| 200                      | 28.5                     | 86.1            | 85            | 25            | 58            | 44.2          | 47            |
| 250                      | 32.1                     | 84.5            | 84.8          | 25            | 56.5          | 42            | 45            |
| 300                      | 35.3                     | 81.9            | 81.8          | 25            | 55.3          | 36.9          | 40            |
| 400                      | 41.1                     | 78.5            | 78.5          | 25            | 53.4          | 32.3          | 35            |
| 500                      | 46.1                     | 76              | 77.3          | 25            | 52            | 27            | 30            |

ProPlex PCCAT6APX meets all CAT6a horizontal specs up to 100 m.

### 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     |             |                |               | Inorganic Substances               |             |                |               |
|------------------------|-------------|----------------|---------------|------------------------------------|-------------|----------------|---------------|
| Medium                 | Temperature | Concentration  | Reaction      | Medium                             | Temperature | Concentration  | Reaction      |
| Acetic Acid            | Room Temp   | 20%            | slight        | Acetic Acid                        | Room Temp   | 20%            | nil to slight |
| Acetone                | Room Temp   | 40%            | poor          | Acetic Acid 3N                     | Room Temp   |                | poor          |
| Astm Fuel A            | Room Temp   | 4%             | nil           | Aluminium Chloride, Aqu.           | Room Temp   | 5%             | nil           |
| Astm Fuel B            | Room Temp   | 10%            | nil           | Ammonia, Aqu.                      | Room Temp   | 10%            | nil           |
| Astm Fuel C            | Room Temp   | 18%            | nil to slight | Aniline                            | Room Temp   |                | no resistance |
| Astm Oil 1             | 80°C        |                | nil           | Barium Salts                       | Room Temp   | cold saturated | nil to slight |
| Astm Oil 2             | 80°C        | 3%             | nil           | Boric Acid                         | Room Temp   | 100%           | nil to slight |
| Astm Oil 3             | 80°C        | 6%             | nil           | Calcium Chloride                   | Room Temp   | cold saturated | nil to slight |
| Benzene                | Room Temp   |                | poor          | Calcium Nitrate                    | Room Temp   | cold saturated | nil to slight |
| Butanol                | Room Temp   |                | poor          | Chromium Salts, Aqu.               | Room Temp   | cold saturated | nil to slight |
| Butyl Acetate          | Room Temp   | 40%            | poor          | Copper Salts, Aqu.                 | Room Temp   | cold saturated | nil to slight |
| Citric Acid            | Room Temp   |                | slight        | Fe Chloride, Aqu. 5%               | 40°C        |                | slight        |
| Cutting Oil            | Room Temp   |                | nil to slight | Hydrochloric Acid 20%              | Room Temp   | 20%            | nil to slight |
| Cyclohexanol           | Room Temp   | 5%             | slight        | Hydrogen Peroxide                  | Room Temp   | 3%             | nil to slight |
| Dibutylphthalate       | Room Temp   | 40%            | slight        | Hydrogen Sulphide                  | Room Temp   |                | nil to slight |
| Diesel Oil             | Room Temp   |                | nil to slight | Magnesium Salts, Aqu.              | Room Temp   | cold saturated | nil to slight |
| Diesel Oil             | Room Temp   | 5%             | nil           | Mercury                            | Room Temp   | 100%           | nil to slight |
| Diethylether           | Room Temp   |                | nil to slight | Mercury Salts, Aqu.                | Room Temp   | cold saturated | nil to slight |
| Diethylprestone        | Room Temp   |                | nil to slight | Nickel Salts, Aqu.                 | Room Temp   | cold saturated | nil to slight |
| Dimethylformamide      | Room Temp   |                | soluble       | Nitric Acid                        | Room Temp   | 20%            | no resistance |
| Ethyl Alcohol          | Room Temp   | 100%           | slight        | Phosphoric Acid                    | Room Temp   | 50%            | nil to slight |
| Ethylacetate           | Room Temp   | 40%            | poor          | Potassium Carbonate, Aqu. (Potash) | Room Temp   |                | nil to slight |
| Ethylether             | Room Temp   |                | slight        | Potassium Chloride                 | Room Temp   | cold saturated | nil to slight |
| Glycerin               | Room Temp   |                | nil           | Potassium Dichromate, Aqu.         | Room Temp   |                | slight        |
| Glycol                 | Room Temp   | 2%             | nil           | Potassium Iodide                   | Room Temp   |                | nil to slight |
| Glystantin / Water 1:1 | Room Temp   |                | slight        | Potassium Nitrate, Aqu.            | Room Temp   |                | nil to slight |
| Glystantin / Water 1:1 | 80°C        |                | slight        | Potassium Permanganate             | Room Temp   |                | nil to slight |
| Hydraulic Oil          | Room Temp   |                | slight        | Potassium Sulphate, Aqu.           | Room Temp   |                | nil to slight |
| Isopropanol            | Room Temp   | 12%            | slight        | Sea Water                          | Room Temp   | 100%           | nil           |
| Isopropyl Alcohol      | Room Temp   | 100%           | slight        | Silver Salts, Aqu.                 | Room Temp   |                | nil to slight |
| Kerosene               | Room Temp   | 3%             | nil           | Sodium Bicarbonate, Aqu. (Soda)    | Room Temp   |                | slight        |
| Machine Oil            | Room Temp   |                | nil to slight | Sodium Chloride, Aqu.              | Room Temp   |                | nil to slight |
| Methanol               | Room Temp   | 10%            | slight        | Sodium Chloride Solution, Conc.    | Room Temp   |                | nil           |
| Methyl Alcohol         | Room Temp   | 100%           | slight        | Sodium Hydroxide Solution 1N       | Room Temp   |                | slight        |
| Methylen Chloride      | Room Temp   |                | no resistance | Sodium Thiosulphate, Aqu.          | Room Temp   |                | nil to slight |
| Methylethylketone      | Room Temp   | 45%            | poor          | Sulphur                            | Room Temp   | 100%           | nil to slight |
| Mineral Oil            | 80°C        |                | nil           | Sulphur Dioxide                    | Room Temp   |                | slight        |
| Olive Oil              | Room Temp   |                | nil           | Sulphuric Acid 20%                 | Room Temp   |                | slight        |
| Paraffin Oil           | Room Temp   |                | nil to slight | Toluene                            | Room Temp   | 35%            | poor          |
| Siccinic Acid, Aqu.    | Room Temp   | cold saturated | nil to slight | Water                              | 100°C       |                | poor          |
| Vegetable Oil And Fats | Room Temp   |                | nil           | 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