

## The World's Most Durable Ethernet Cables



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	PCCAT6AP
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] Insulation heat shock: 80 °C/1hour
Pairs	Color Coded singles twisted into pairs Color Code: White X Blue; White X Orange; White X Green; White X Brown
Assembly	Structure: 4 pairs cabled together. Each pair wrapped with an aluminum foil providing 100% coverage. An overall braid with strength yarns
Shields	Aluminum foil over individual pairs 100% coverage plus Tinned copper braid, 80% nominal coverage
Jacket	Material: Industrial grade PU compound OD: 8.1 mm +/- 0.3 mm Color: Black UV Resistant Jacket material heat shock: 120 °C/1hour
Marking	ProPlex PCCAT6AP 24AWG S/FTP Data Cable Cat6a verified [lot no.]
Weight	47 lbs./mft (70 Kg/Km)
Temperature Range	Working: -40 °C to +70 °C
Bending Radius	75 mm min.
Typical Operational Installation Length	Up to 85 m (@ 20 °C)
Tensile Force	150 N max.
Compliance	Flame test: IEC 60332.1 Environmental: per IEC 61156-6 and ISO/IEC 11801 RoHS compliance: 2002/95/EC

**RoHS**  
Compliant

Electrical Specifications	
Dielectric Strength	700 Vrms/min.
Pair Mutual Capacitance	42 pF/m
Capacitance Unbalance	1.4 pF/m (800 Hz)
Pair characteristic impedance	100 +/- 5 Ohm
NVP (Nominal Velocity of Propagation)	78 %
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	2.4	72.3	75.3	20	67	65	68
4	4.2	63.3	66.3	23	67	53	56
10	6.4	57.3	60.3	25	67	45	48
20	9.1	52.8	55.8	25	67	39	42
30	11.5	50.1	53.1	23.8	67	35.4	38.4
100	21.4	42.3	45.3	21.1	62.5	25	28
150	26.6	39.7	42.7	18.8	59.8	21.5	24.5
200	50.5	37.8	40.8	18	58	19	22
250	34.3	36.3	39.3	17.3	56.5	17	20
300	37.7	35.1	38.1	17.3	55.3	15.5	18.5
400	44.5	33.3	36.3	17.3	53.4	13	16
500	50.5	31.8	34.8	17.3	52	11	14

ProPlex PCCAT6AP meets all CAT6a horizontal specs up to 85 m (and all CAT6a horizontal specs except attenuation 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
Glysantin / Water 1:1	Room Temp		slight	Potassium Nitrate, Aqu.	Room Temp		nil to slight
Glysantin / 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