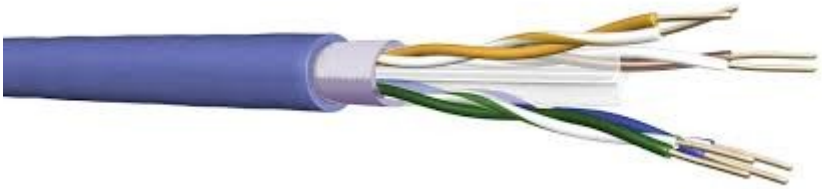
Cat.6 F/UTP AWG23/1

LAN cable with 4 pairs,
category 6 ,with cable core screen

Standards: ISO/IEC 11801, IEC 61156-5
EN 50173-1, EN 50288-6-1; EIA/TIA 568-B



Ambient installation T° C range
0 + 50 °C

Operating temp.
-20 + 60 °C

Storage temperature range
-20 + 70 °C

Flame retardant
IEC 60332-1

Smoke density

Application

A high-performance 4-pair cable consisting of twisted pairs of conductors, used primarily for data transmission. Category 6 F/UTP is recommended for all new installations, supports a frequency range of up to 250 MHz and is designed for transmission speeds of up to 1 gigabit per second (Gigabit Ethernet). It is also used in installations where fire, smoke emissions and toxic fumes pose a potential risk to life and equipment.

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Temperature limit conditions:
• Ambient installation temperature, range: from 0°C to +50°C
• Operating temperature, range: from -20 °C to +60°C

Mechanical properties:

Minimum internal bending radius:
(D = cable outer diameter)
• No load 4xD
• during installation (under load): 8xD
• packaging: 305m in box, 500m on wooden reel

Flame resistance:
• the cable is self-extinguishing according to IEC 60332-1 / EN 60332-1
• LSHF version additionally:
- halogen-free according to IEC 60754-1
- non-corrosive combustion gases according to IEC 60754-2
- minimal smoke emission according to IEC 61034-2

Cable construction

Conductor category class:	1 = solid conductor
Conductor material	Pure copper
AWG size	23/1
Insulation material	Polyethylene (HDPE)
Nominal diameter through insulation	1.03 mm
Twisting:	2 cores in a pair
Cable lay up:	4 pairs to the core
	PE cross separator (spline)
Screen	Aluminium Polyester Tape
Sheath:	PVC or LSHF (LSZH,FRNC)
Outer diameter:	6.9-7.1 mm
Sheath color:	blue (RAL 5012)

Conductor color marking:
• 1st suit: blue/white with blue line
• 2nd suit: orange/white with orange line
• 3rd suit: green/white with green line
• 4th suit: brown/white with brown line

Electrical characteristics at 20°C ± 5°C

Characteristic impedance at 100 MHz	(Ω) 100 ± 5
Resistance unbalance , max.	% 2
Loop resistance at 20°C , max.	(Ω/km) ≤ 178
Test voltage (DC,1min)	v 1000
Operating voltage, max.	v 125
Capacitance unbalance	(pF/km) ≤ 1500
Capacitance at 800 Hz	nF/km 48

Transmission characteristics

Propagation delay (max. 100MHz)	(ns/100m) 535
Delay skew	(ns/100m) 20
Nominal propagation speed	ca. 68 %

Technical data

Cable type	Number of pairs (23AWG)	insulation diameter mm	Outer diameter mm	weight kg/km	Tensile force N

Cat 6 F/UTP PVC	4	1.03	6.9-7.0	42-44	100
Cat 6 F/UTP LSHF	4	1.03	6.9-7.1	43-44	100

Electrical performance

f (MHz)	Attenuation (dB/100 m)	NEXT (dB)	PS-NEXT (dB)	ACR (dB/100m)	PS-ACR (dB/100m)	ELFEXT (dB/100m)	PS-ELFEXT (dB/100m)	Return loss (dB)
1	2	76	74	74	72	82	80	22
4	3.9	67	65	63.1	61.1	70	69	25
10	6.2	61	59	54.8	52.8	62	61	27
16	7.7	58	55	50.3	47.3	58	56	27
20	8,5	57	54	48.5	45.5	56	54	27
31.25	10.9	54	52	43.1	41.1	52	50	26
62.5	15.2	49	47	33.8	31.8	46	44	24
100	19.7	46	44	26.3	24.3	42	40	23
125	22.2	44	43	21.8	20.8	40	39	22
155.5	24.6	43	41	18.4	16.4	38	37	21
175	26,9	42	40	15.1	13.1	37	35	21
200	28.5	41	39	12.5	10.5	36	34	20
250	32.5	40	38	7.5	5.5	34	32	19
300	36.1	39	37	2.9	0.9	32	30	19

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