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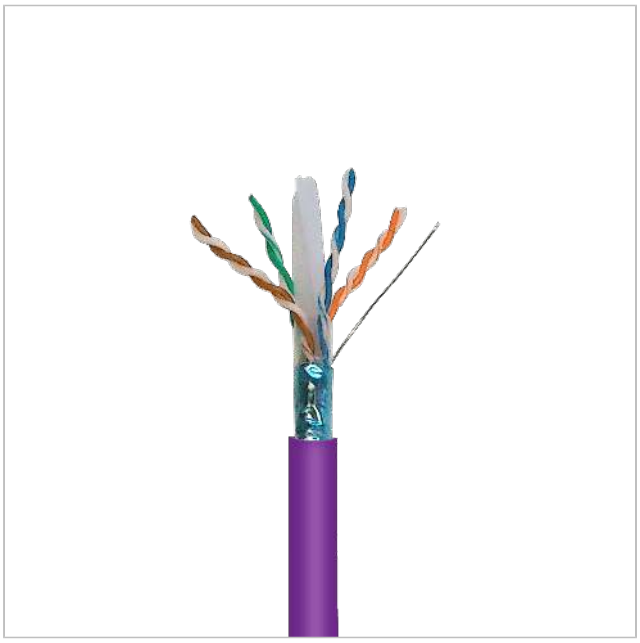

DK6000 data cable F/UTP Cat 6 Dca LSFH 23AWG

Category-6 and Dca Euroclass data cable, F/UTP type (Foiled cable, Unfoiled pairs), with copper conductor and LSFH sheath (Low Smoke Free of Halogen), purple colour (RAL 4008).

Recommended for PoE and PoE+.

Ref.	212101
Logical ref.	CAT6L500V
EAN13	8424450186510

Other features

Colour	Violet
Length	500.00 m

Packaging info

Reel	500 m
Pallet	13500 m

Physical data

Net weight	54.00 g
Gross volume	0.08 dm³
Gross weight	57.00 g
Width	7.00 mm
Height	1,000.00 mm
Depth	7.00 mm
Main product weight	54.00 g

Highlights

- F/UTP Cable
- Solid copper inner conductor (23AWG)

- Technically compatible with PoE/PoE+/PoE++ (Power over Ethernet) technology, allowing the cable to power network devices
- Aluminium foil + polyester between foil and outer cable sheath
- CuSn ground cable
- LSFH (Low Smoke Free of Halogen) outer sheath
- 72% nominal speed
- Certified according to the applicable standards as defined in the available declarations of conformity and performance

Discover

Category 6

Data cable category Cat 6 complies with the standard for Gigabit Ethernet and it is backwards compatible, with the standards of the inferior categories (Cat 5/5e and Cat 3). Category 6 evolves over category 5E, allowing to achieve transmission frequencies of up to 250 MHz (in each pair) and 1 Gbps of throughput. It includes characteristics and specifications to avoid crosstalk and noise. This type of data cable can be used in 10BASE-T, 100BASE-T and 1000BASE-T (Gigabit Ethernet) compliant systems.

Our category 6 cables are characterized:

- Comply with TIA/EIA-568B.2-1
- Crucifix type padding
- Transfer rate up to 1Gbps
- Frequency range of up to 250 MHz and up to 400MHz in some references
- Includes rip cord to make it easier to strip the cable
- Nominal impedance of 100 ohms
- Maximum resistance per conductor below 9.38 ohms/100m

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Compatibility of RJ45 connectors with Televes data cables:

Reference		CAT 6							CAT 6A				CAT 7	CAT 7A
		212201	212330	2123	212302	212305	212310	212101	219302	219312	219322	219332	219102	219202
Female connectors	209901/209907	OK	OK	OK	OK	OK	OK	X	X	X	X	X	X	X
	209905	OK	OK	OK	OK	OK	OK	X	X	X	X	X	X	X
	209921/209925	OK	OK	OK	OK	OK	OK	X	X	OK	X	OK	X	X
	209926	OK	OK	OK	OK	OK	OK	X	X	OK	X	OK	X	X
	209903	OK*	OK*	OK*	OK*	OK*	OK*	OK	X	X	X	X	X	X
	209923	OK*	OK*	OK*	OK*	OK*	OK*	OK	OK	OK*	OK	OK*	**	**
	209929/209501	OK*	OK*	OK*	OK*	OK*	OK*	OK	OK	OK*	OK	OK*	**	**
Male connectors	209902	OK	OK	OK	OK	OK	OK	X	X	X	X	X	X	X
	209961/209962	OK	OK	OK	OK	OK	OK	X	X	X	X	X	X	X
	209904	OK*	OK*	OK*	OK*	OK*	OK*	OK	X	X	X	X	X	X
	209906	OK	OK	OK	OK	OK	OK	X	X	X	X	X	X	X
	209965/209966	OK	OK	OK	OK	OK	OK	X	X	X	X	X	X	X
	209922	OK*	OK*	OK*	OK*	OK*	OK*	X	X	OK	X	OK	X	X
	209924	OK*	OK*	OK*	OK*	OK*	OK*	OK*	OK	OK*	OK	OK	**	**

OK Compatible
OK* Compatible, but there are better choices
X Incompatible
** Mechanical compatibility

What is the PoE technology?

PoE (Power over Ethernet) technology enables the simultaneous transmission of power and data over the same Ethernet network cable, eliminating the need for separate power supplies. Currently, there are three main standards: IEEE 802.3af (PoE), IEEE 802.3at (PoE+), and IEEE 802.3bt (PoE++/4PPoE). The latter defines two additional types (Type 3 and Type 4) with higher power levels, making four PoE levels in total.
The three aspects that differentiate the different types of PoE are:

- Maximum PSE (Power Sourcing Equipment) Power: Indicates the maximum amount of electrical power that can be supplied by an equipment over the Ethernet cable.
- Power for the PD (Powered Device): This is the electrical power that can be received by the device powered by the cable.
- Number of Twisted Pairs Used: Refers to how many twisted pairs in the Ethernet cable are used

to deliver electrical power.

Standard	Type of PoE		Maximum PSE Power	Power for the PD	No. of Pairs Used
IEEE 802.3af	Type 1	PoE	15.4W	12.95W	2
IEEE 802.3at	Type 2	PoE+	30W	25.5W	2
IEEE 802.3bt	Type 3	PoE++ 4PPoE	60W	51W	4
	Type 4		90-100W	71W	4

Recommended uses according to PoE type:

- Type 1: IP phones, basic IP cameras. low-demand Wi-Fi access points, sensors or simple IoT devices.
- Type 2: Dual band Wi-Fi access points, IP motion cameras (PTZ), IP video phones, alarm systems.
- Type 3: Wi-Fi 6 / Wi-Fi 6E access points, heated PTZ cameras, multimedia terminals, video conferencing equipment.
- Type 4: Monitors or touch screens, desktops, high-performance network equipment.

Devices compatible with a specific type of PoE can also be powered using a higher type, which provides greater versatility and scalability in installations.
The recommended data cables and connectors for Types 3 and 4 are CAT6A and above with shielding. This recommendation is based on their better ability to dissipate the heat generated during the transmission of electrical power.
CAT6A UTP cables and connectors are technically compatible with PoE++ technology, but they may present limitations over distances greater than 55 m. Since they lack shielding, thermal dissipation is less efficient, which can cause voltage drops along the run and affect the proper operation of the powered device. This also happens with CAT5e and CAT6; they are compatible with PoE++ but not recommended for distances over 55 m.
Main advantages of PoE technology in installations:

- Quick and cost-effective installation by using the same cable for power and data transmission.
- Greater installation flexibility as there is no need to rely on auxiliary power sockets.
- More efficient management and optimised maintenance thanks to the monitoring and administration of the power supply of all equipment from a single point.
- Cost reduction by avoiding electrical conduits and external power supplies.
- Increased safety by minimising electrical risks in the installation, thanks to the use of low voltage.

DETAIL VIEW OF THE DATA CABLE SECTION

A. Inner conductor

B. Inner conductor isolation

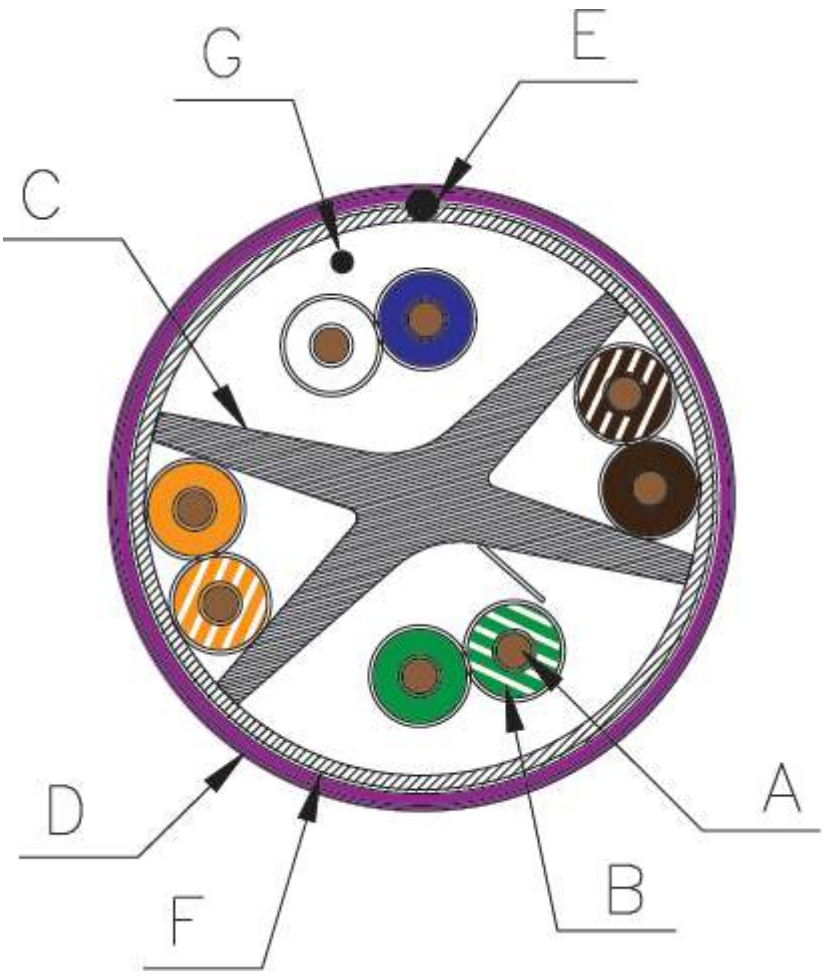
C. Crucifix Filler

D. Outer sheath

E. Rip cord

F. Shielding foil

G. Drain wire



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Technical specifications : Ref. 212101

Model		DK6000											
Type		F/UTP											
Euroclass		Dca											
Euroclass: Smoke Production		s2											
Euroclass: Flaming droplets		d2											
Euroclass: Acidity		a1											
Categorie		Cat 6											
Transmission bandwidth		250MHz											
Transfer rate		1Gbps											
Conductor Diameter	in	0.022											
Conductor Material		Solid copper											
Conductor type AWG		23											
Conductor isolation Diameter	in	0.045											
Conductor isolation Material		Polyethylene											
Crucifix filler		Yes											
Shielding foil of pairs		Aluminium + Polyester											
Outer sheath Diameter	in	0.283											
Outer sheath Material		LSFH											
Outer sheath Thickness	in	0.024											
Rip cord		Yes											
Spark Test	Vac	3000											
Nominal impedance	Ω	100											
Conductor resistance	Ohm/100m	< 9.38											
Nominal speed	%	72											
Working voltage	V	300											
Operating temperature	°F	-13 ... 158											
Frequencies		1 MHz	4 MHz	8 MHz	10 MHz	16 MHz	20 MHz	25 MHz	31,25 MHz	62,5 MHz	100 MHz	200 MHz	250 MHz
Attenuation (max.)	dB/100m	2	3.8	5.3	6	7.6	8.5	9.5	10.7	15.4	19.8	29	32.8
Attenuation (typ.)	dB/100m	2	3.7	5.2	5.8	7.3	8.2	9.2	10.3	14.6	18.6	26.5	29.8
NEXT (min.)	dB/100m	74.3	65.3	60.8	59.3	56.2	54.8	53.3	51.9	47.4	44.3	39.8	38.3
NEXT (typ.)	dB/100m	88.9	78.7	77.7	71.7	69.3	71.1	65.8	63.9	58.6	54	48.7	45.8
PS NEXT (min.)	dB/100m	72.3	63.3	58.8	57.3	54.2	52.8	51.3	49.9	45.4	42.3	37.8	36.3
PS NEXT (typ.)	dB/100m	86.7	76.3	75	69.8	67.2	69	63.7	61.4	56.5	52.8	46	42.6
ACR-N (min.)	dB/100m	72.3	61.5	55.5	53.3	48.6	46.3	43.8	41.2	32	24.5	10.8	5.5
ACR-N (typ.)	dB/100m	87	75.1	72.7	66.2	62	62.9	56.7	53.8	44.1	35.4	22.2	16
PS ACR-N (min.)	dB/100m	70.3	59.5	53.5	51.3	46.6	44.3	41.8	39.2	30	22.5	8.8	3.5
PS ACR-N (typ.)	dB/100m	84.7	72.7	70.1	64.2	60	60.9	54.6	51.2	42	34.3	19.6	13
ACR-F (min.)	dB/100m	67.8	55.8	49.7	47.8	43.7	41.8	39.8	37.9	31.9	27.8	21.8	19.8
ACR-F (typ.)	dB/100m	81	70.4	67.2	66.9	63.7	59	55.1	53.5	49.3	43.9	40.5	35.9
PS ACR-F (min.)	dB/100m	64.8	52.8	46.7	44.8	40.7	38.8	36.8	34.9	28.9	24.8	18.8	16.8
PS ACR-F (typ.)	dB/100m	79.2	67.8	63.8	63.2	61.6	57	52.9	50.5	46	43.5	37.5	34.8
Return losses (min.)	dB	20	23	24.5	25	25	25	24.3	23.6	21.5	20.1	18	17.3
Return losses	dB	26.8	28.5	35.1	36.2	41.8	39.9	40.3	39.4	35.2	32	32.2	30.1