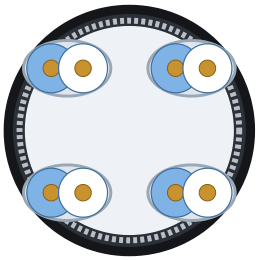
Cat6A / Cat8 S/FTP Data Cable

SORIVO Product Series: **screened data cable** | 4 pair · 23 AWG solid copper | 500 MHz (Cat6A) · 2000 MHz (Cat8) | LSZH · CPR



- LSZH sheath — halogen-free, low smoke
- Aluminium foil per pair (F) — 4 pairs
- 23 AWG solid bare copper, 0.57 mm nominal
- Overall tinned copper braid (S)
- Foamed PE insulation over 23 AWG solid copper

APPLICATION

Four-pair screened twisted-pair cable for horizontal runs, backbone links and patch leads in commercial and industrial networks. Cat6A carries 10GBASE-T to 100 m; Cat8 is a 30 m channel cable for 25GBASE-T and 40GBASE-T inside the rack row, not for building runs.

CONSTRUCTION

Conductor
23 AWG solid bare copper, 0.57 mm nominal

Insulation
Foamed PE

Pairing
Four twisted pairs, colour coded

Screen
Aluminium foil over each pair (F) plus an overall tinned copper braid (S) — two layers, not three

Sheath
LSZH compound

THREE CATEGORIES, TWO CONNECTOR SYSTEMS

Cat6A — 500 MHz, ISO Class EA, 8P8C (RJ45), 100 m channel
Cat8.1 — 2000 MHz, ISO Class I, 8P8C (RJ45), backward compatible to Class EA
Cat8.2 — 2000 MHz, ISO Class II, TERA / GG45 / ARJ45, compatible with Class FA

STANDARDS AND STATUS

- ISO/IEC 11801-1 — Classes EA / I / II
- EN 50288-10-1 (horizontal) and -10-2 (work area) — Cat6A screened
- IEC 61156-9 / -10 — Cat8 channel and work-area cable
- IEC 61156-5 / -6 — Cat6A horizontal and work-area cable
- EN 50575 — CPR, classified to EN 13501-6
- IEC 60754-1 / -2, IEC 61034-1 / -2, IEC 60332-1-2

TECHNICAL PARAMETERS

Characteristic Impedance
100 Ω nominal

Category Frequency
Cat6A 500 MHz
Cat8.1 / Cat8.2 2000 MHz

Channel Length
Cat6A 100 m
Cat8 30 m — 24 m permanent link + 3 m at each end

Conductor
23 AWG solid bare copper

DC Resistance
9.5 Ω/100 m max. at 20 °C (manufacturer value)

Screen
S/FTP — per-pair foil + overall braid

Sheath
LSZH

500 / 2000 MHz	4 pair 23 AWG	100 Ω impedance

CATEGORY SELECTION

Table 1 — the three categories differ by connector system, not by frequency alone

	CAT6A	CAT8.1	CAT8.2
Frequency	500 MHz	2000 MHz	2000 MHz
ISO/IEC class	Class EA	Class I	Class II
Connector system	8P8C (RJ45)	8P8C (RJ45)	TERA / GG45 / ARJ45
Backward compatible to	Class E (Cat6)	Class EA (Cat6A)	Class FA (Cat7A)
Channel length	100 m	30 m	30 m
Cable sectional spec.	EN 50288-10-1 / -10-2 IEC 61156-5 / -6	IEC 61156-9 / -10	IEC 61156-9 / -10
Typical application	10GBASE-T to 100 m	25GBASE-T, 40GBASE-T, short	25GBASE-T, 40GBASE-T, short

Cat8.1 and Cat8.2 run at the same 2000 MHz — what separates them is the connector, not the frequency. Both are 2000 MHz per IEC 61156-10. A Cat8 cable terminated on RJ45 is Class I; call it Class II and it is a false declaration, because Class II requires TERA, GG45 or ARJ45.

ELECTRICAL AND MECHANICAL DATA

Table 2 — electrical and mechanical characteristics

PARAMETER	VALUE	BASIS
Characteristic impedance	100 Ω nominal	Tolerance per the class sectional specification
DC resistance, 23 AWG	9.5 Ω/100 m max. at 20 °C	Manufacturer value — no standard cited
Insulation resistance	—	Not stated — not tabulated
Operating temperature	-20 °C to +75 °C	Manufacturer value for the LSZH compound
Bend radius, installed	8 × OD	Manufacturer value; 4 × OD quoted for patch use
Data rate	10G / 25G / 40GBASE-T	IEEE 802.3 — subject to length and connector system
PoE	802.3af / at / bt capable	Ampacity and temperature rise depend on the bundle — calculated per project

S/FTP means two layers of screening, not three. S = overall braid, F = foil per pair, TP = twisted pair. Any datasheet describing S/FTP as triple-shielded is counting the pair twist as a layer; ours does not.

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FIRE PERFORMANCE AND CPR

Table 3 — the building regulation and the cable test are separate systems

REQUIREMENT	STANDARD	WHAT SORIVO SUPPLIES
Flame propagation, single cable	IEC 60332-1-2	Compound and construction tested to the single vertical flame test
Halogen content	IEC 60754-1	Halogen-free compound — acid gas measured to the standard
Acidity and conductivity	IEC 60754-2	Tested on the delivered construction
Smoke density	IEC 61034-1 / -2	LSZH compound; light transmittance reported on the test certificate
Reaction to fire, CPR	EN 50575 → EN 13501-6	Eca or Dca selected per construction; DoP raised for the delivered batch

Eca is the entry level of EN 13501-6, and it is not the same thing as IEC 60332-1-2. EN 13501-6 classifies a construction product for the CPR Declaration of Performance; IEC 60332-1-2 is a laboratory flame test on the cable itself. A cable can pass one and be declared the other — state both, and neither substitutes for the other.

> **There is no such thing as "CPR certified".** CPR is Regulation (EU) 305/2011; under it the cable is *classified* to EN 13501-6 and a DoP is issued. The same applies to "CE certified" — CE is a declaration, not a certificate.

INSTALLATION REQUIREMENTS

What has to be right for the category to survive commissioning

- **Screen bonding.** Terminate the braid 360° at both ends to the equipotential bonding system. A screen left floating is an antenna, not a shield.
- **Pair geometry.** Keep the twist to within 13 mm of the termination; untwisting further destroys near-end crosstalk margin before any test is run.
- **Bend radius.** 8 × OD installed, 4 × OD for a patch lead under no load. Below that the foil wrinkles and return loss fails at the top of the band.
- **Separation.** Keep 300 mm from power runs below 1 kV; screened cable reduces the coupling but does not license sharing a tray.
- **PoE.** Bundled cables carrying 802.3bt dissipate heat into the bundle. The temperature rise is a function of the bundle, the tray and the ambient — it is calculated for the project, not quoted as a fixed current.

> **On screened cable next to drives.** A braid bonded at both ends will carry a standing current wherever there is a potential difference between the two earth points. That is normal and is the price of the screen working; if the current is high enough to heat the braid, the fix is equipotential bonding of the two ends, not cutting one end loose.

WHICH CPR CLASS THE PROJECT NEEDS

The class is set by the building, not by the cable

- **Eca** — the entry level. Meets the minimum for most residential work and short escape routes.
- **Dca** — higher heat-release and flame-spread thresholds; the class commonly written into office and hotel specifications.
- **Above Dca** — hospitals, tunnels and high-occupancy public buildings often name a higher class or a national supplement. Quote the clause, not just the class.
- The class is declared per construction: a Dca compound on a 4-pair cable does not make a 25-pair cable Dca.

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