



HES Cabling Systems

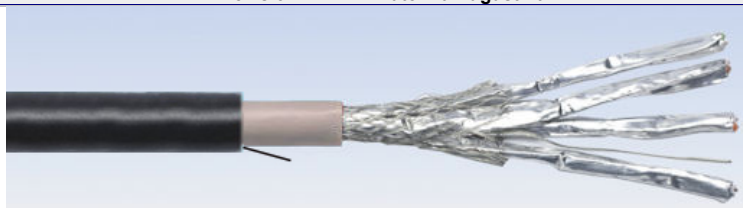
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Technical Specification

Cable Type: 4x2x23AWG S/FTP Category 7A 100 Ohm DJ Outdoor Horizontal Cable

HCS P/N: H7A-0047K-xx7-FA55W0

Revision: 11/24 Date: 20 August 2024



Category 7A S/FTP outdoor cable, conforming to IEC 61156-5, tested up to 1000MHz. The cable contains 4 individually foil-shielded twisted pairs cabled together, overall shielded with a tinned-copper braid and inner jacketed with LS0H (HFFR) compound for indoor use. An additional black PVC jacket provides protection for outdoor use. The cable fully supports all IEEE 802.3 PoE applications including Type 1, 2, 3 & 4, CISCO UPoE & UPoE+ and HDBase-T PoH. The cable fully supports all ISO/IEC 11801 and TIA-568.2-D applications up to IEEE 10GBASE-T.

Physical Description

Basic Conductor	Solid bare annealed copper, 23AWG (UL 444).
Insulation	SFS-PO.
Total number of insulated conductors	8, twisted in 4 pairs.
Color code	Blue x White, Orange x White, Green x White, Brown x White.
Individual pair shield	Aluminum foil, providing 100% coverage, foil face out.
Overall shield	Tin-coated copper wire braid, providing 55% coverage.
Drain wire	Tin-coated copper wire, 0.40±0.01 mm, laid in contact with the foils and the braid shields.
Inner jacket	LS0H (HFFR) compound for indoor use.
Inner jacket color	Grey RAL 9002.
Inner jacket thickness	0.6 mm nom.
Inner diameter	7.3 mm nom.
Surface Marking on inner jacket	HCS H7A-0040K 4x2x23# S/FTP CATEGORY 7A DataLink 1000 SHIELDED LS0H CABLE VERIFIED to CAT 7A ISO/IEC-11801 & IEC 61156-5 FR IEC 60332-1 CE 2011/65/EU (RoHS-2) [Meter Mark] METER wwSnnxxx
Note	Batch number wwSnnxxx ww=week number Snn=cabling machine number xxx=master reel number.
Rip cord	Rip-cord laid in parallel for easy outer-jacket removal.
Outer jacket	Heavy-duty, UV-resistant PVC compound for outdoor use.
Note	The outer jacket must be easily removed and the rip-cord must not tear during jacket removal.
Outer jacket thickness	1.4 mm nom.
Color	Black RAL 9005.
Overall Diameter	10.0 mm nom.
Surface Marking on outer jacket	HCS H7A-0047K (55%) 4x2x23# S/FTP CATEGORY 7A DataLink 1000 OUTDOOR DJ CABLE VERIFIED to CAT 7A ISO/IEC-11801 & IEC 61156-5 FR IEC 60332-1 CE 2011/65/EU (RoHS-2) [Meter Mark] METER wwSnnxxx
Note	Batch number wwSnnxxx ww=week number Snn=cabling machine number xxx=master reel number.

Mechanical Properties

Bend Radius	Dynamic: 10xD min. Static: 6xD min.
Storage Temperature	-20 to +75C
Temperature installation range	0 to +50C
Temperature operating range	-20 to +60C
Flame Tests (inner and outer cables)	IEC 60332-1.
Pulling force	150 N max.
Total Weight	110 kg/km nom.

Electrical Properties @ 20C

Characteristic Impedance	100±5 Ohm @ 1-1000 MHz
Vp	74% nom.
Capacitance	40 pF/m nom @ 1 kHz
Capacitance unbalance to ground	1.6 pF/m max. @ 1 kHz
Insulation Resistance	0.5 GOhm•km min.
Conductors DC Resistance	77 Ohm/km max. (2% max. resistance unbalance).
Conductors DC Loop Resistance	154 Ohm/km max. (2% max. resistance unbalance).
Voltage rating	72Vdc max.
Coupling attenuation	IEC 61156-5 Type I.
Transfer Impedance	IEC 61156-5 Grade 1.
Phase delay	534+36/f ^{1/2} nS/100m max. @ f=1-1000 MHz.
Delay Skew	25 nS/100m max. @ 4-1000MHz

Transmission Properties @ 20C CAT 7A IEC 61156-5

Freq. MHz	IL dB/100m	NEXT dB	PS-NEXT dB	ACR-F dB/100m	PS ACR-F dB/100m	RL dB	TCL dB	EL-TCTL dB	PS-ANEXT dB	PS-AACR-F dB
	Max	Min.	Min.	Min.	Min.	Min.	Min.	Min.	Min.	Min.
1	2.1	78.0	75.0	78.0	75.0	20.0	40.0	35.0	67.0	67.0
10	5.8	78.0	75.0	75.3	72.3	25.0	40.0	15.0	67.0	67.0
20	8.2	78.0	75.0	69.3	66.3	25.0	37.0	9.0	67.0	67.0
25	9.2	78.0	75.0	67.3	64.3	24.3	36.0	7.0	67.0	65.2
30	10.1	78.0	75.0	65.8	62.8	23.8	35.2	5.5	67.0	63.7
62.5	14.6	78.0	75.0	59.4	56.4	21.5	32.0	NS	67.0	57.3
100	18.5	75.4	72.4	55.3	52.3	20.1	30.0	NS	67.0	53.2
200	26.5	70.9	67.9	49.3	46.3	18.0	27.0	NS	67.0	47.2
250	29.7	69.4	66.4	47.3	44.3	17.3	26.0	NS	67.0	45.2
300	32.7	68.2	65.2	45.8	42.8	17.3	NS	NS	67.0	43.7
400	38.0	66.4	63.4	43.3	40.3	17.3	NS	NS	67.0	41.2
500	42.8	64.9	61.9	41.3	38.3	17.3	NS	NS	67.0	39.2
600	47.1	63.7	60.7	39.7	36.7	17.3	NS	NS	65.8	37.6
800	54.9	61.9	58.9	37.2	34.2	16.1	NS	NS	64.0	35.1
1000	61.9	60.4	57.4	35.3	32.3	15.1	NS	NS	62.5	33.2

This cable fully conforms to EU Directive 2011/65/EU (RoHS-2)