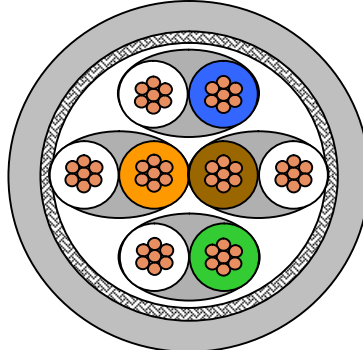


ICS IE ToughCat 5e LSHF-FR

S/FTP Installation Cable 4x2xAWG24/7 for tougher environments



Application

Generic Data transmission. This cable is a **Cat5e S/FTP** cable meant for use as installation/horizontal cable in tougher electrical and mechanical environment, including ships and offshore units.

Standards

EN 50288-2-1
Det Norske Veritas (DNV) specification No. 6-827.50-2 and Lloyd Register approval, system, 2002

Fire rating

LSHF-FR(SHF1) : IEC 60754-2; IEC 61034, IEC 60332-3-24

Chemical resistance

Mineral oils IRM 902 (IEC60811-2-1) : 7 days/23°C
4 hours/70°C
Diesel - IRM 903 (IEC60811-2-1) : 7 days/23°C
4 hours/70°C

Certification

This cable is certified by: Det Norske Veritas (DNV) and Lloyd Register

Construction

Conductor	Stranded copper wire, cross section 0.22 mm ² (AWG24/7)
Insulation	PE, Ø 1.4 mm
Twisting	2 cores to the pair
Cable lay up	4 pairs
Pair screen	Al-laminated plastic foil around each pair
Overall screen	Copper braid, tinned Ø 6.2 mm
Sheath	Oil resistant, Fire retardant and halogen free LSHF-FR (SHF1), diameter 7.7 mm
Colour	Grey RAL 7035
Marking	Draka ToughCat Part No. <MC7> CERTIFIED BY DET NORSKE VERITAS TYPE APPROVAL PROGRAMME NO. 6-827.50-2 CATEGORY 5e S/FTP 4x2/0,22mm ² IEC 61156-5 EN 50288-2-1 LSHF-FR Batch no. <factory> <prod.ordre.nr>

ICS IE ToughCat 5e LSHF-FR

Mechanical Properties

Bending radius	Without load	8 x D
	With load	4 x D
Temperature range	During operation	-40°C to + 85°C
	During installation	-15°C to + 50°C
Fire load	4 pair	670 MJ/km
Maximum tensile load	During operation	No load
	During installation	100 N

Electrical Properties

at 20°C

DC loop resistance		≤ 158 Ω/km
Resistance unbalance		≤ 2%
Insulation resistance	(500 V)	≥ 5000 MΩxkm
Capacitance	at 800 Hz	Nom. 43 nF/km
Capacitance unbalance	(pair to ground)	≤ 1500 pF/km
Mean Characteristic impedance	@ 100 MHz	100 ± 5 Ω
Nominal velocity of propagation		0.75c
Propagation delay		≤ 450 ns/100 m
Delay skew		≤ 15 ns/100 m
Transfer impedance	at 1 MHz	≤ 10 mΩ /m
	at 10 MHz	≤ 8 mΩ /m
	at 30 MHz	≤ 10 mΩ /m
Coupling attenuation		≥ 85 dB

Nominal Transmission characteristics

at 20°C

F (MHz)	Attenuation (dB/100m)	NEXT (dB)	ACR (dB/100m)	Return loss (dB)	PS-NEXT (dB)	PS-ACR (dB/100m)	ELFEXT (dB/100m)	PS-ELFEXT (dB/100m)
1	2.1	90	88		87	85	85	82
4	4.0	90	86	27	87	83	85	82
10	6.3	90	84	30	87	81	79	76
16	8.0	90	82	30	87	79	75	72
20	9.0	90	81	30	87	78	73	70
31.25	11.4	90	79	30	87	76	69	66
62.50	16.5	86	70	30	83	67	63	60
100	21.3	83	62	30	80	59	59	56
155.00	24.2	81	57	26	78	54	57	54
200.00	31.5	78	47	25	75	44	53	50
250.00	35.8	77	41	25	74	38	51	48
300.00	47.1	73	26	23	70	23	47	44
600.00	60.1	71	11	20	68	8	44	41



ICS IE ToughCat 5e LSHF-FR

Technical data

Part number	Cable type DIN/VDE	Product name	Outer diameter nominal mm	Weight kg/km	Delivery length m	Copper content	Tensile force N
1000745	Li-2YSCH 4x2AWG24/7 PiMF-100 Cat. 5e	ToughCat 5e LSHF-FR	7.7	68	1000	33	100