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alles außer gewöhnlich!**



**Wiking Kabel GmbH präsentiert  
neue innovative Hybrid- und Multidatakabel  
für den Schiffs- und Offshore- Einsatz**



**Die vom Lloyd's Register**

**uneingeschränkt zugelassene Spezialhybridkabel**

**welche als Netzwerk-, Kontroll- und Instrumenten-Kabel  
für die feste Installation auf Schiffen und auf Offshore-  
Plattformen eingesetzt werden,  
sind ab sofort bei uns erhältlich.**

**Haben wir Ihr Interesse geweckt –  
dann freuen wir uns über Ihre Anfragen.**



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# Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

Manufacturer	Wiking Kabel GmbH
Address	Dorothea-Bernstein-Weg 42, Hamburg, 22081, Germany
Place of Production	Kerpen Datacom GmbH Zweifaller Straße 275-287, Stolberg, 52224, Germany
Type	Cables Control, Telecommunication And Instrumentation
Description	Multi Data Shipboard Cable, halogen free, flame retardant. (LKD7KS704850000) (1) (LKD7KS704860000) (2) (LKD7KS704840000) (3)
Trade Name	KS-02YSCH/H 4x2xAWG 23/1 (1), KS-02YSCH/H 6x2xA WG 23/1 (2), KS-02YSCH/H 7x2xAWG 23/1 (3)
Application	Communication cable for fixed installation in ships and on offshore platforms.
Specified Standard	Manufacturer's specification: (LKD7KS704840000), (LKD7KS704850000), (LKD7KS704860000) DIN EN 50288-4-1: 2014-03, IEC 60092-360: 2021 DIN EN 60332-1-2: 2017-06, DIN EN IEC 60332-3-22: 2019-05 DIN EN 60754-1: 2015-08, DIN EN 60754-2: 2015-08



Jochen Koerner  
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# Type Approval Certificate

Ratings	Operating voltage:	125V
	Temperature range:	during operation -20°C up to +60°C during installation 0°C up to +50°C
	Minimal bending radius:	10 x cable diameter

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid Certificate.

Previous Version: This certificate supersedes certificate number LR2003133TA issued on 19.05.2020 which is hereby cancelled.

The Design Appraisal Document HTS/ETS 41459-21 HN/JK and its supplementary Type Approval Terms and Conditions form part of this Certificate.



# Multi Data Shipboard Cable

halogen-free, flame retardant



**KS-02YSCH/H**  
**4 x Cat. 7 (4 x 2 x AWG 23/1 PiMF)**

## Application

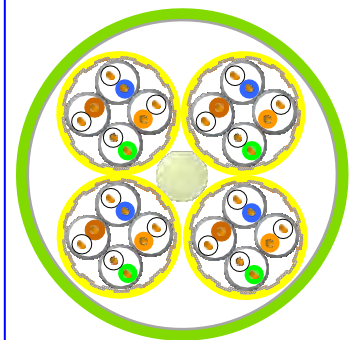
For data transmission and controlling on ships and other offshore application.  
 Recommended for fixed installation indoor and outdoor, in dry and wet locations.  
 Ideal for all applications of class D up to FA Multimedia (Video, Data, Voice) >10GbE acc. to IEEE 802.3 an,  
 Cable sharing, VoIP, PoE/PoE+.

## Construction

### Copper data pairs (4 x (4 x 2 x AWG 23/1) PiMF) 100 Ω (Cat. 7)

**Conductor**..... solid plain copper, size: AWG 23/1  
**Insulation**..... foamed polyethylene PE with skin layer of PE  
 (Ø 1.45 mm approx.)  
**Pair Colour Code** ..... white/blue, white/orange, white/green, white/brown  
**Pair Screen**..... plastic coated aluminium tape, metallic surface outside in  
 contact to tinned copper wire braid (to overall screen)  
**Overall Screen**..... tinned copper wire braid  
**Sheath**..... halogen-free flame retardant polymer (SHF1), yellow  
**Cable Marking** ..... continuously numbered (1-4) + WIKING KABEL HAMBURG  
 (inkjet)

### Example Sketch



### Cable core

**Laying up**..... 4 elements around central filling element twisted to cable core  
 (with additional filling elements if necessary)  
**Wrapping** ..... at least 1 layer of plastic tape, overlapped  
**Outer sheath**..... halogen-free, flame retardant polymer (SHF1), green  
**Cable Marking** ..... WIKING KABEL HAMBURG MULTI DATA CABLE MDS 4  
 (inkjet) Production Lot Code Length Marking

## Technical Data

<b>Flame retardant:</b>	IEC 60332-1	<b>Temperature range:</b>	-20°C up to +60°C (during operation)
<b>Flame propagation:</b>	IEC 60332-3-22 (cat. A)		0 °C up to +50°C (during installation)
<b>Amount of halogen acid gas:</b>	IEC 60754-1 (0%)	<b>Min. bending radius:</b>	10 x cable diameter
<b>Degree of acidity of gases:</b>	IEC 60754-2 (pH ≥ 4.3, C ≤ 10µS/mm)		
<b>Smoke density:</b>	IEC 61034-2 (L.T. > 60 %)		
<b>Fire Load :</b>	approx. 4.24 (MJ/m)		
<b>Tensile Load:</b>	440 N (max.)		
<b>Crush resistance:</b>	1000 N (100 mm)		
<b>Impact strength (quantity of impacts):</b>	10		
<b>Overall diameter:</b>	approx.: 19.4 mm		
<b>Weight:</b>	approx.: 340 kg/km		
<b>Part. No.:</b>	LKD7KS704850000		

## Abbreviations

KS-	Data cable
02YS	foam skin PE
C	screen
H	halogen-free compound
PiMF	pair in metal foil





# Multi Data Shipboard Cable

halogen-free, flame retardant



KS-02YSCH/H  
4 x Cat. 7 (4 x 2 x AWG 23/1 PiMF)

## Electrical data at 20°C

	Character	Unit	Values
Conductor resistance (loop)	max.	Ω/km	75
Impedance (f = 100 MHz)		Ω	100 Ω ± 5 Ω
Isolation resistance	min.	GΩ x km	5
Mutual capacitance	approx.	nF/km	43
Capacitance unbalance (e)	approx.	pF/km	1100
Signal velocity (c)	approx.		0.77
Phase delay	approx.	ns/100 m	430
Delay skew (f = 100 MHz)	approx.	ns/100 m	5
Test voltage Ueff		V	1000
Operating voltage	max.	V	125

## Electromagnetic behaviour

	Character	Unit	Values
Transfer impedance at 10 MHz	nom.	mΩ/m	5
Screen attenuation up to 1000 MHz	nom.	dB	70
Coupling attenuation up to 1000 MHz	nom.	dB	85
Segregation class	in acc. to EN 50174-2		d

## Electrical characteristics

Frequency MHz	Attenuation dB/100m		NEXT dB		PS-NEXT dB		ACR dB@100 m		PS-ACR dB@100 m		ACR-F dB@100 m		PSACR-F dB@100 m		RL dB	
	typ.	Cat.7 max.*	typ.	Cat.7 min.*	typ.	Cat.7 min.*	typ.	Cat.7 min.*	typ.	Cat.7 min.*	typ.	Cat.7 min.*	typ.	Cat.7 min.*	typ.	Cat.7 min.*
1	1.9	2	105	80	102	77	104	78	101	75	98	80	95	77	26.6	23
10	4.8	5.7	105	80	102	77	101	74	98	71	103	74	100	71	35.3	25
100	16.3	18.5	105	72	102	69	89	54	86	51	89	54	86	51	39.6	20.1
200	24.3	26.8	105	68	102	65	81	41	78	38	82	48	79	45	36	18
250	27.5	30.2	105	66	102	63	78	36	75	33	79	46	76	43	34	17.3
500	37.9	44.1	100	62	97	59	62	18	59	15	67	40	64	37	29	17.3
600	42.4	48.9	95	61	92	58	53	12	50	9	60	38	57	35	25.4	17.3

\*EN 50288-4-1 (2014) / IEC 61156-5 (2009)

As a result of stranding several individual elements, it can occur in multi-types up to 5 % higher attenuation and Frequency-selective reflection.

## Geometrical data Overall

RT of outer sheath	Outer diameter	Weight	Part No.:
nom. (mm)	approx. (mm)	approx. (kg/km)	
1.65	19.4	340	LKD7KS704850000

Construction is free of hazardous substances in acc. to RoHS 2011/65/EU



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# Multi Data Shipboard Cable

halogen-free, flame retardant



**KS-02YSCH/H**  
**6 x Cat. 7 (4 x 2 x AWG 23/1 PiMF)**

## Application

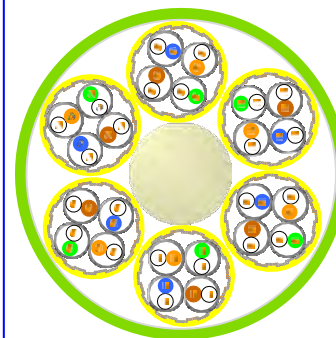
For data transmission and controlling on ships and other offshore application. Recommended for fixed installation indoor and outdoor, in dry and wet locations. Ideal for all applications of class D up to FA Multimedia (Video, Data, Voice) >10GbE acc. to IEEE 802.3 an, Cable sharing, VoIP, PoE/PoE+.

## Construction

### Copper data pairs (6 x (4 x 2 x AWG 23/1) PiMF) 100 Ω (Cat. 7)

- Conductor**..... solid plain copper, size: AWG 23/1
- Insulation**..... foamed polyethylene PE with skin layer of PE (Ø 1.45 mm approx.)
- Pair Colour Code** ..... white/blue, white/orange, white/green, white/brown
- Pair Screen**..... plastic coated aluminium tape, metallic surface outside in contact to tinned copper wire braid (to overall screen)
- Overall Screen**..... tinned copper wire braid
- Sheath**..... halogen-free flame retardant polymer (SHF1), yellow
- Cable Marking** ..... continuously numbered + WIKING KABEL HAMBURG (inkjet)

### Example Sketch



### Cable core

- Laying up**..... 6 elements, around central filling element, twisted to cable core (with additional filling elements if necessary)
- Wrapping**..... at least 1 layer of plastic tape, overlapped
- Outer sheath**..... halogen-free, flame retardant polymer (SHF1), green
- Cable Marking** ..... WIKING KABEL HAMBURG MULTI DATA CABLE MDS 6 (inkjet) Production Lot Code Length Marking

## Technical Data

- |   |                           |                             |                       |
|---|---------------------------|-----------------------------|-----------------------|
| <b>Flame retardant:</b>                       | IEC 60332-1               | <b>Temperature range:</b>   | -20°C up to +60°C     |
| <b>Flame propagation:</b>                     | IEC 60332-3-22 (cat. A)   |                             | (during operation)    |
| <b>Amount of halogen acid gas:</b>            | IEC 60754-1 (0%)          |                             | 0 °C up to +50°C      |
| <b>Degree of acidity of gases:</b>            | IEC 60754-2               |                             | (during installation) |
|   | (pH ≥ 4.3, C ≤ 10µS/mm)   | <b>Min. bending radius:</b> | 10 x cable diameter   |
| <b>Smoke density:</b>                         | IEC 61034-2 (L.T. > 60 %) |                             |                       |
| <b>Fire Load :</b>                            | approx. 6.29 (MJ/m)       |                             |                       |
| <b>Tensile Load:</b>                          | 650 N (max.)              |                             |                       |
| <b>Crush resistance:</b>                      | 1000 N (100 mm)           |                             |                       |
| <b>Impact strength (quantity of impacts):</b> | 10                        |                             |                       |
| <b>Overall diameter:</b>                      | approx.: 24.9 mm          |                             |                       |
| <b>Weight:</b>                                | approx.: 502 kg/km        |                             |                       |
| <b>Part. No.:</b>                             | LKD7KS704860000           |                             |                       |

## Abbreviations

- |      |                       |
|------|-----------------------|
| KS-  | Data cable            |
| 02YS | foam skin PE          |
| C    | screen                |
| H    | halogen-free compound |
| PiMF | pair in metal foil    |





## Wiking Multi Data Shipboard Cable MDS 6

# Multi Data Shipboard Cable

halogen-free, flame retardant



KS-02YSCH/H  
6 x Cat. 7 (4 x 2 x AWG 23/1 PiMF)

### Electrical data at 20°C

	Character	Unit	Values
Conductor resistance (loop)	max.	Ω/km	75
Impedance (f = 100 MHz)		Ω	100 Ω ± 5 Ω
Isolation resistance	min.	GΩ x km	5
Mutual capacitance	approx.	nF/km	44
Capacitance unbalance (e)	approx.	pF/km	1100
Signal velocity (c)	approx.		0.76
Phase delay	approx.	ns/100 m	440
Delay skew (f = 100 MHz)	approx.	ns/100 m	5
Test voltage U <sub>eff</sub>		V	1000
Operating voltage	max.	V	125

### Electromagnetic behaviour

	Character	Unit	Values
Transfer impedance at 10 MHz	nom.	mΩ/m	5
Screen attenuation up to 1000 MHz	nom.	dB	70
Coupling attenuation up to 1000 MHz	nom.	dB	85
Segregation class	in acc. to EN 50174-2		d

### Electrical characteristics

Frequency MHz	Attenuation dB/100m		NEXT dB		PS-NEXT dB		ACR dB@100 m		PS-ACR dB@100 m		ACR-F dB@100 m		PSACR-F dB@100 m		RL dB	
	typ.	Cat.7 max.*	typ.	Cat.7 min.*	typ.	Cat.7 min.*	typ.	Cat.7 min.*	typ.	Cat.7 min.*	typ.	Cat.7 min.*	typ.	Cat.7 min.*	typ.	Cat.7 min.*
1	1.9	2	105	80	102	77	104	78	101	75	98	80	95	77	26.6	23
10	4.8	5.7	105	80	102	77	101	74	98	71	103	74	100	71	35.3	25
100	16.3	18.5	105	72	102	69	89	54	86	51	89	54	86	51	39.6	20.1
200	24.3	26.8	105	68	102	65	81	41	78	38	82	48	79	45	36	18
250	27.5	30.2	105	66	102	63	78	36	75	33	79	46	76	43	34	17.3
500	37.9	44.1	100	62	97	59	62	18	59	15	67	40	64	37	29	17.3
600	42.4	48.9	95	61	92	58	53	12	50	9	60	38	57	35	25.4	17.3

\*EN 50288-4-1 (2014) / IEC 61156-5 (2009)

As a result of stranding several individual elements, it can occur in multi-types up to 5 % higher attenuation and Frequency-selective reflection.

### Geometrical data Overall

RT of outer sheath nom. (mm)	Outer diameter approx./max. (mm)	Weight approx. (kg/km)	Part No.:
1.65	24.9/25.0	502	LKD7KS704860000

Construction is free of hazardous substances in acc. to RoHS 2011/65/EU



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# Multi Data Shipboard Cable

halogen-free, flame retardant



**KS-02YSCH/H**  
**7 x Cat. 7 (4 x 2 x AWG 23/1 PiMF)**

## Application

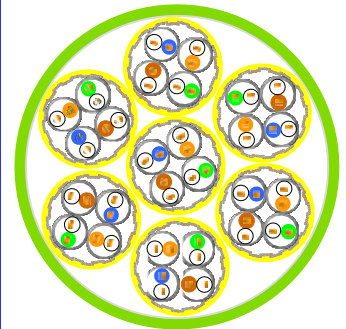
For data transmission and controlling on ships and other offshore application.  
 Recommended for fixed installation indoor and outdoor, in dry and wet locations.  
 Ideal for all applications of class D up to FA Multimedia (Video, Data, Voice) >10GbE acc. to IEEE 802.3 an,  
 Cable sharing, VoIP, PoE/PoE+.

## Construction

### Copper data pairs (7 x (4 x 2 x AWG 23/1) PiMF) 100Ω (Cat. 7)

**Conductor**..... solid plain copper, size: AWG 23/1  
**Insulation**..... foamed polyethylene PE with skin layer of PE  
 (Ø 1.45 mm approx.)  
**Pair Colour Code** ..... white/blue, white/orange, white/green, white/brown  
**Pair Screen**..... plastic coated aluminium tape, metallic surface outside in  
 contact to tinned copper wire braid (to overall screen)  
**Overall Screen**..... tinned copper wire braid  
**Sheath**..... halogen-free flame retardant polymer (SHF1), yellow  
**Cable Marking** ..... continuously numbered + WIKING KABEL HAMBURG  
 (inkjet)

### Example Sketch



### Cable core

**Laying up**..... 7 elements, twisted to cable core  
 (with additional filling elements if necessary)  
**Wrapping** ..... at least 1 layer of plastic tape, overlapped  
**Outer sheath**..... halogen-free, flame retardant polymer (SHF1), green  
**Cable Marking** ..... WIKING KABEL HAMBURG MULTI DATA CABLE MDS 7  
 (inkjet) Production Lot Code Length Marking

## Technical Data

<b>Flame retardant:</b>	IEC 60332-1	<b>Temperature range:</b>	-20°C up to +60°C (during operation)
<b>Flame propagation:</b>	IEC 60332-3-22 (cat. A)		0 °C up to +50°C (during installation)
<b>Amount of halogen acid gas:</b>	IEC 60754-1 (0%)	<b>Min. bending radius:</b>	10 x cable diameter
<b>Degree of acidity of gases:</b>	IEC 60754-2 (pH ≥ 4.3, C ≤ 10µS/mm)		
<b>Smoke density:</b>	IEC 61034-2 (L.T. > 60 %)		
<b>Fire Load :</b>	approx. 6.29 (MJ/m)		
<b>Tensile Load:</b>	650 N (max.)		
<b>Crush resistance:</b>	1000 N (100 mm)		
<b>Impact strength (quantity of impacts):</b>	10		
<b>Overall diameter:</b>	approx.: 24.9 mm max.: 25.0 mm		
<b>Weight:</b>	approx.: 538 kg/km		
<b>Part. No.:</b>	LKD7KS704840000		

## Abbreviations

KS-	Data cable
02YS	foam skin PE
C	screen
H	halogen-free compound
PiMF	pair in metal foil







## Wiking Multi Data Shipboard Cable MDS 7

# Multi Data Shipboard Cable

halogen-free, flame retardant



KS-02YSCH/H  
7 x Cat. 7 (4 x 2 x AWG 23/1 PiMF)

### Electrical data at 20°C

	Character	Unit	Values
Conductor resistance (loop)	max.	Ω/km	75
Impedance (f = 100 MHz)		Ω	100 Ω ± 5 Ω
Isolation resistance	min.	GΩ x km	5
Mutual capacitance	approx.	nF/km	44
Capacitance unbalance (e)	approx.	pF/km	1100
Signal velocity (c)	approx.		0.76
Phase delay	approx.	ns/100 m	440
Delay skew (f = 100 MHz)	approx.	ns/100 m	5
Test voltage U <sub>eff</sub>		V	1000
Operating voltage	max.	V	125

### Electromagnetic behaviour

	Character	Unit	Values
Transfer impedance at 10 MHz	nom.	mΩ/m	5
Screen attenuation up to 1000 MHz	nom.	dB	70
Coupling attenuation up to 1000 MHz	nom.	dB	85
Segregation class	in acc. to EN 50174-2		d

### Electrical characteristics

Frequency MHz	Attenuation dB/100m		NEXT dB		PS-NEXT dB		ACR dB@100 m		PS-ACR dB@100 m		ACR-F dB@100 m		PSACR-F dB@100 m		RL dB	
	typ.	Cat.7 max.*	typ.	Cat.7 min.*	typ.	Cat.7 min.*	typ.	Cat.7 min.*	typ.	Cat.7 min.*	typ.	Cat.7 min.*	typ.	Cat.7 min.*	typ.	Cat.7 min.*
1	1.9	2	105	80	102	77	104	78	101	75	98	80	95	77	26.6	23
10	4.8	5.7	105	80	102	77	101	74	98	71	103	74	100	71	35.3	25
100	16.3	18.5	105	72	102	69	89	54	86	51	89	54	86	51	39.6	20.1
200	24.3	26.8	105	68	102	65	81	41	78	38	82	48	79	45	36	18
250	27.5	30.2	105	66	102	63	78	36	75	33	79	46	76	43	34	17.3
500	37.9	44.1	100	62	97	59	62	18	59	15	67	40	64	37	29	17.3
600	42.4	48.9	95	61	92	58	53	12	50	9	60	38	57	35	25.4	17.3

\*EN 50288-4-1 (2014) / IEC 61156-5 (2009)

As a result of stranding several individual elements, it can occur in multi-types up to 5 % higher attenuation and Frequency-selective reflection.

### Geometrical data Overall

RT of outer sheath nom. (mm)	Outer diameter approx./max. (mm)	Weight approx. (kg/km)	Part No.:
1.65	24.9/25.0	538	LKD7KS704840000

Construction is free of hazardous substances in acc. to RoHS 2011/65/EU



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