

RailSol™-Saflex

LS Total Solution for Rolling Stock

Greater Value Together
LS Cable & System

About LS Cable & System

LS spun off from LG in 2003 as a group specializing in the Electrics, Electronics, Energy, and Material.
LS consists of about 40 affiliates including LS Cable & System, LSIS, LS-Nikko Copper, LS Mtron, E1 and Yesco.
A leading player in the global cable industry, with over half a century of experience as a manufacturer, providing consolidated expertise in the design and production of premium quality cabling technologies.



Total Solution Provider for Electric Power and Telecommunication Industries

LS Cable & System, the longtime de facto holding company of LS Group, officially transformed into a holding company in July of 2008. The company's operations now encompass a total solution for electric power and telecommunication industries.

The latest change in corporate structure comes as the company is accelerating efforts to improve management efficiency in rapidly expanding markets. The move also results from efforts to effect a more responsible and transparent management structure. Management is now prepared to take more aggressive action to enhance our businesses and to identify new growth engines. The holding company will take the lead in fostering new growth engines and in identifying lucrative investment opportunities, while the company's other business units will focus on improving management and on making operations more efficient. With the continued support of the holding company, LS Cable & System will spearhead efforts to strengthen our business expertise, corporate competitiveness and management.

Enable the Cabled World!!

LS Cable & System, established in 1962, has been contributing to building power grids and communication networks first in Korea and then in countries all over the world by developing, producing and providing cables and related solutions used in daily life and throughout many industries. Furthermore, the company set the stage for industrial and economic development by capitalizing on our innovative technology to supply various special industrial cables and industrial materials.

We at LS Cable & System are now supplying state-of-the-art products, such as submarine, extra-high voltage, high temperature superconducting and communications cables to power authorities, heavy electric equipment makers and common carriers around the world. Our products can be seen throughout the Americas, Europe, the Middle East and Asia, so we are now recognized as a leading manufacturer serving global industries both in name and reality.

Based on our corporate philosophy, "LS Cable & System Way," we will go beyond simply generating profits to develop forward thinking competencies by innovating our business models, developing environment-friendly high-quality products and reinforcing our partnerships with stakeholders as the best partner that will maximize customer values. We will open a brighter future by innovating and investing in technologies that push the envelope and developing the best total solutions.

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Convenience for High Speed Technology



LS Total Solutin for Rolling Stock

Application Business

The Leading Solution Provider, LS Cable & System introduced a new marketing concept, which is providing collected items applicable to an industry as a package instead of separately providing a single item. These LS Cable & System's business solutions are applicable to following industries : Wind Power Generation, Railway & Rolling stock, Airport, Power Transmission & distribution, Marine & Offshore, and Automotive. The Application Business manages various departments and their products to satisfy our customers' specific needs and convenience. The Leading Solution Provider, LS Cable & System introduced a new marketing concept, which is providing collected items applicable to an industry as a package instead of separately providing a single item. These LS Cable & System's business solutions are applicable to following industries : Wind Power Generation, Railway & Rolling stock, Airport, Power Transmission & distribution, Marine & Offshore, and Automotive. The Application Business manages various departments and their products to satisfy our customers' specific needs and convenience.

RailSol™ - Saflex

Rolling stock technology has been developed in the last few years and this development has been driven by high speed train network. Rolling stock for metro, commute and regional line are covered by this development. To reduce both size and weight has been always required to cable manufacturers. LS Cable & System has developed products to meet our customer and offers a wide range of products for rolling stock.

LS Cable & System supplies cables which pass the fire tests relevant to rolling stock standard, and these cables have low toxicity and excellent flame resistance. Moreover, thanks to compact construction and excellent material performance, LS Cable & System offers particularly space and weight saving. RailSol™-Saflex which is LS Cable & System's rolling stock solution covers wide range of rolling stock product such as single and multi-core power cables, signal and control cables, multimedia and telecommunication cables, MV roof cable, winding wires for transformer and traction motor, rubber flooring, RF antenna and connector, components for harness and jumper cable in various versions customized with combinations of cores and cables.

The Leading Solution Provider, LS Cable & System introduced a new marketing concept, which is providing collected items applicable to an industry as a package instead of separately providing a single item. These LS Cable & System's business solutions are applicable to following industries

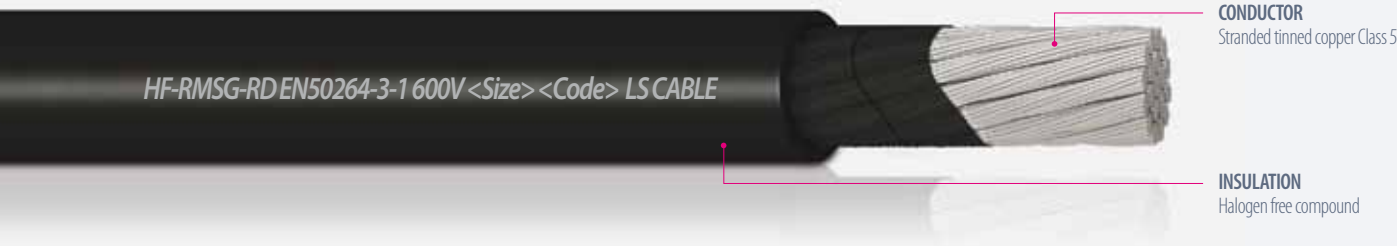


Innovation for High Speed Success



HF-RMSG-RD EN50264-3-1 0.6/1kV

Single Core Unsheathed Power Cables



Conductor

- Stranded tinned copper, Class 5 according to EN60228(IEC60228)

Design Standard

- EN50264-3-1

Insulation

- Low smoke, Halogen free compound according to EN50264-1
- Black (unless otherwise specified)

Technical Data

• Physical properties	Extra low temperature, extra oil and fuel resistance
• Normal operating conductor temperature	90°C
• Min. Ambient temperature for use	-40°C / -50°C

Installation (allowable bending radius)

For diameter (mm)	Fixed installation	Careful bending (once only at termination)
≤ 12	4D	3D
>12	5D	4D

* D : Cable OD

Application

- Lighting circuits powered by accumulators / Equipment control and monitoring circuits / Auxiliary and electric heating circuits

Properties

Halogen Free EN50267-2-1 EN50267-2-2 N50264-1 Annex B EN60684-2	Flame Retardant EN60332-1-2 EN60332-3-24 EN60332-3-25 UL1685	Low Smoke EN61034-2 BS6853 Annex D	Oil Resistant IRM 902 IRM 903	Ozone Resistant EN50305	Toxicity Index BS 6853 Annex B.1 BS S 7239	Cold Resistant @-40°C/-50°C EN 60811-1-4

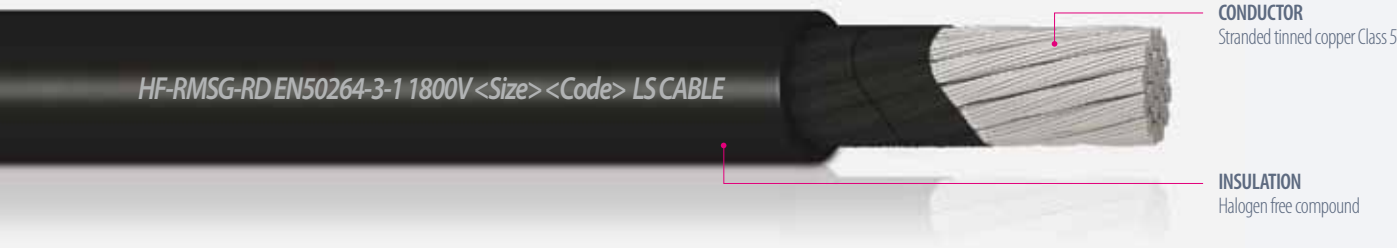
Product List

Conductor		Insulation Thickness	Cable O.D (mm)			Approx. Cable Weight
Cross Section (mm²)	Ø (mm)	Nom. (mm)	Min.	Nom.	Max.	kg / km
1.5	1.5	0.7	2.9	3.1	3.3	20
2.5	1.9	0.7	3.3	3.5	3.7	30
4	2.5	0.7	4.0	4.2	4.4	40
6	3.1	0.7	4.5	4.8	5.0	60
10	3.9	0.7	5.3	5.6	5.9	100
16	5.2	0.7	6.5	6.8	7.2	150
25	6.5	0.9	8.2	8.6	9.1	240
35	7.7	0.9	9.5	10.1	10.6	320
50	9.3	1.0	11.2	11.8	12.4	460
70	11.2	1.1	13.1	13.9	14.6	670
95	12.8	1.1	14.7	15.5	16.3	850
120	14.6	1.2	16.6	17.5	18.4	1100
150	16.2	1.4	18.5	19.6	20.6	1360
185	17.8	1.6	20.6	21.8	22.9	1830
240	20.6	1.7	23.4	24.7	26.0	2360
300	22.8	1.8	26.2	27.5	28.8	2770

* Other range on request.

HF-RMSG-RD EN50264-3-1 1.8/3kV

Single Core Unsheathed Power Cables



Conductor

- Stranded tinned copper, Class 5 according to EN60228(IEC60228)

Design Standard

- EN50264-3-1

Insulation

- Low smoke, Halogen free compound according to EN50264-1
- Black (unless otherwise specified)

Technical Data

• Physical properties	Extra low temperature, extra oil and fuel resistance
• Normal operating conductor temperature	90°C
• Min. Ambient temperature for use	-40°C / -50°C

Installation (allowable bending radius)

For diameter (mm)	Fixed installation	Careful bending (once only at termination)
≤ 12	4D	3D
>12	5D	4D

* D : Cable OD

Application

- Auxiliary circuits at line voltage / Traction circuits / Electric heating fed at line voltage in protected area

Properties

Halogen Free EN50267-2-1 EN50267-2-2 N50264-1 Annex B EN60684-2	Flame Retardant EN60332-1-2 EN60332-3-24 EN60332-3-25 UL1685	Low Smoke EN61034-2 BS6853 Annex D	Oil Resistant IRM 902 IRM 903	Ozone Resistant EN50305	Toxicity Index BS 6853 Annex B.1 BS S 7239	Cold Resistant @-40°C/-50°C EN 60811-1-4

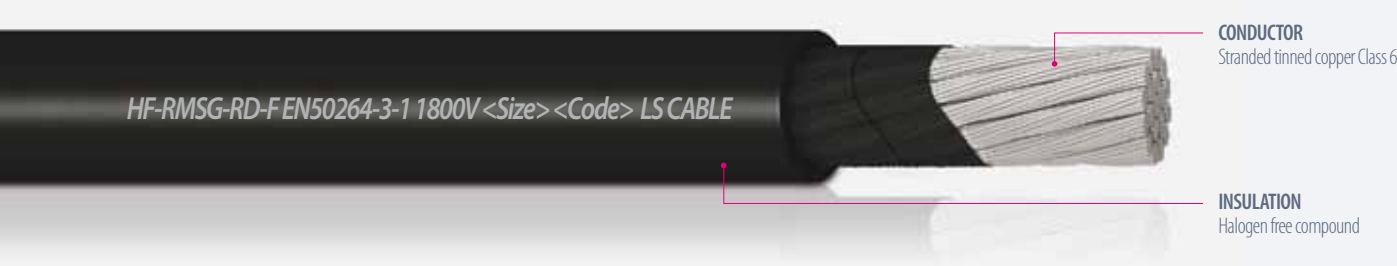
Product List

Conductor		Insulation Thickness	Cable O.D (mm)			Approx. Cable Weight
Cross Section (mm²)	Ø (mm)	Nom. (mm)	Min.	Nom.	Max.	kg / km
1.5	1.5	2.0	5.3	5.7	6.2	45
2.5	1.9	2.0	6.0	6.4	6.7	60
4	2.5	2.0	6.6	6.9	7.3	80
6	3.1	2.0	7.0	7.4	7.8	100
10	3.9	2.0	8.0	8.4	8.8	155
16	5.2	2.0	9.0	9.5	10.0	210
25	6.5	2.0	10.4	11.0	11.6	290
35	7.7	2.0	11.7	12.4	13.0	390
50	9.3	2.0	13.1	13.9	14.6	590
70	11.2	2.0	14.9	15.8	16.6	750
95	12.8	2.2	16.8	17.8	18.7	930
120	14.6	2.2	18.5	19.6	20.6	1180
150	16.2	2.2	20.1	21.2	22.3	1440
185	17.8	2.4	22.0	23.2	24.4	1740
240	20.6	2.4	24.8	26.1	27.5	2300
300	22.8	2.4	27.3	28.7	30.1	2900

* Other range on request.

HF-RMSG-RD-F EN50264-3-1 1.8/3kV

Single Core Extra Flexible Unsheathed Power Cables



Conductor

- Stranded tinned copper, Class 6 according to EN60228(IEC60228)

Design Standard

- EN50264-3-1

Insulation

- Low smoke, Halogen free compound according to EN50264-1
- Black (unless otherwise specified)

Technical Data

• Physical properties	Extra low temperature, extra oil and fuel resistance
• Normal operating conductor temperature	90°C
• Min. Ambient temperature for use	-40°C / -50°C

Installation (allowable bending radius)

For diameter (mm)	Fixed installation	Careful bending (once only at termination)
≤ 12	4D	3D
>12	5D	4D

* D : Cable OD

Application

- Auxiliary circuits at line voltage / Traction circuits / Electric heating fed at line voltage in protected area

Properties

						
Halogen Free EN50267-2-1 EN50267-2-2 N50264-1 Annex B EN60684-2	Flame Retardant EN60332-1-2 EN60332-3-24 EN60332-3-25 UL1685	Low Smoke EN61034-2 BS6853 Annex D	Oil Resistant IRM 902 IRM 903	Ozone Resistant EN50305	Toxicity Index BS 6853 Annex B.1 BS S 7239	Cold Resistant @-40°C / -50°C EN 60811-1-4

Product List

Conductor		Insulation Thickness	Nominal Cable O.D.	Approx. Cable Weight
Cross Section (mm²)	Ø (mm)	mm	Ø (mm)	kg / km
1.5	1.5	2.0	5.7	45
2.5	2.2	2.0	6.5	60
4	2.7	2.0	7.0	80
6	3.3	2.0	7.5	100
10	4.4	2.0	8.6	150
16	5.7	2.0	9.5	210
25	6.7	2.0	11.0	290
35	8.0	2.0	12.4	390
50	9.5	2.0	13.9	590
70	11.4	2.0	15.8	750
95	12.9	2.2	17.8	930
120	14.6	2.2	19.6	1180
150	16.2	2.2	21.2	1440
185	18.4	2.4	23.2	1740
240	20.9	2.4	26.1	2300
300	23.3	2.4	28.2	2900
400	26.1	2.6	33.0	4000

* Other range on request.

HF-RMSG-RD EN50264-3-1 1.8/3kV

Single Core Sheathed Power Cables



Conductor

- Stranded tinned copper, Class 5 according to EN60228(IEC60228)

Design Standard

- EN50264-3-1

Insulation

- Low smoke, Halogen free compound according to EN50264-1
- Black (unless otherwise specified)

Sheath

- Low smoke, Halogen free compound according to EN50264-1
- Black (unless otherwise specified)

Technical Data

• Physical properties	Extra low temperature, extra oil and fuel resistance
• Normal operating conductor temperature	90°C
• Min. Ambient temperature for use	-40°C / -50°C

Installation (allowable bending radius)

For diameter	Fixed installation	Careful bending
(mm)		(once only at termination)
≤ 12	4D	3D
>12	5D	4D

* D : Cable OD

Application

- Auxiliary circuits at line voltage / Traction circuits / Electric heating fed at line voltage run on trays, exposed

Properties

Halogen Free EN50267-2-1 EN50267-2-2 N50264-1 Annex B EN60684-2	Flame Retardant EN60332-1-2 EN60332-3-24 EN60332-3-25 UL1685	Low Smoke EN61034-2 BS6853 Annex D	Oil Resistant IRM 902 IRM 903	Ozone Resistant EN50305	Toxicity Index BS 6853 Annex B.1 BS S 7239	Cold Resistant @-40°C / -50°C EN 60811-1-4

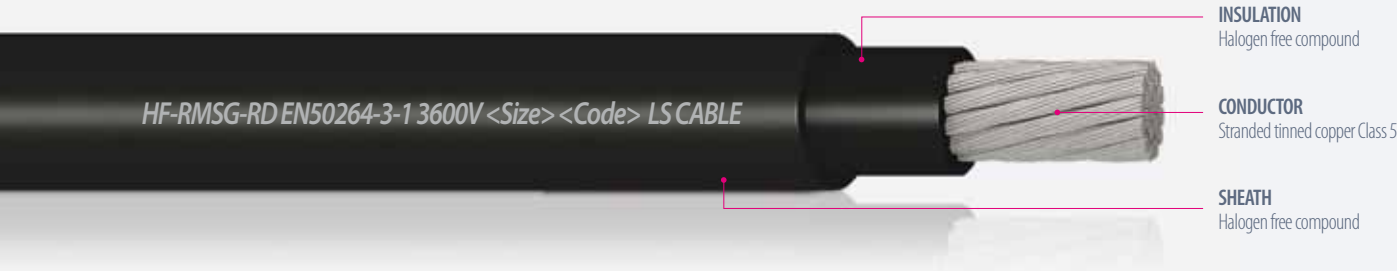
Product List

Conductor		Insulation Thickness	Sheath Thickness	Nominal Cable O.D.	Approx. Cable Weight
Cross Section (mm²)	Ø (mm)	mm	mm	Ø (mm)	kg / km
1.5	1.5	1.3	0.8	5.9	60
2.5	1.9	1.3	0.8	6.3	70
4	2.5	1.3	0.8	6.8	90
6	3.1	1.3	0.8	7.4	110
10	3.9	1.5	0.8	8.7	170
16	5.2	1.5	0.8	10.1	240
25	6.5	1.8	1.0	12.3	360
35	7.7	1.8	1.0	13.7	480
50	9.3	1.8	1.0	15.3	630
70	11.2	1.8	1.0	17.3	860
95	12.8	2.2	1.0	19.6	1100
120	14.6	2.2	1.0	21.4	1380
150	16.2	2.2	1.2	23.4	1680
185	17.8	2.4	1.2	25.5	2060
240	20.6	2.4	1.2	28.4	2620
300	22.8	2.4	1.2	30.6	3120
400	26.1	2.6	1.4	36.8	4250

* Other range on request.

HF-RMSG-RD EN50264-3-1 3.6/6kV

Single Core Sheathed Power Cables



Conductor

- Stranded tinned copper, Class 5 according to EN60228(IEC60228)

Design Standard

- EN50264-3-1

Insulation

- Low smoke, Halogen free compound according to EN50264-1
- Black (unless otherwise specified)

Sheath

- Low smoke, Halogen free compound according to EN50264-1
- Black (unless otherwise specified)

Technical Data

• Physical properties	Extra low temperature, extra oil and fuel resistance
• Normal operating conductor temperature	90°C
• Min. Ambient temperature for use	-40°C / -50°C

Installation (allowable bending radius)

For diameter (mm)	Fixed installation	Careful bending (once only at termination)
≤ 12		3D
>12	5D	4D

* D : Cable OD

Application

- Auxiliary circuits at line voltage / Traction circuits / Electric heating fed at line voltage run on trays, exposed

Properties

Halogen Free EN50267-2-1 EN50267-2-2 N50264-1 Annex B EN60684-2	Flame Retardant EN60332-1-2 EN60332-3-24 EN60332-3-25 UL1685	Low Smoke EN61034-2 BS6853 Annex D	Oil Resistant IRM 902 IRM 903	Ozone Resistant EN50305	Toxicity Index BS 6853 Annex B.1 BS S 7239	Cold Resistant @-40°C/-50°C EN 60811-1-4

Product List

Conductor		Insulation Thickness	Sheath Thickness	Nominal Cable O.D.	Approx. Cable Weight
Cross Section (mm²)	Ø (mm)	mm	mm	Ø (mm)	kg / km
2.5	1.9	2.6	0.8	9.6	110
4	2.5	2.6	0.8	10.2	130
6	3.1	2.6	0.8	10.7	150
10	3.9	2.6	0.8	11.7	200
16	5.2	2.6	0.8	12.9	280
25	6.5	2.9	1.0	15.6	410
35	7.7	2.9	1.0	17.0	510
50	9.3	2.9	1.0	18.6	670
70	11.2	2.9	1.0	20.6	910
95	12.8	2.9	1.0	22.2	1110
120	14.6	2.9	1.2	24.5	1400
150	16.2	2.9	1.2	26.1	1680
185	17.8	3.2	1.2	28.8	2010
240	20.6	3.4	1.4	32.4	2670
300	22.8	3.4	1.4	35.0	3190
400	26.1	3.4	1.4	38.7	4470

* Other range on request.

750V HF-RMSG

Single Core Sheathed Power Cables



Conductor

- Stranded tinned copper, Class 5 according to IEC60228

Design Standard

- NFF63-826

Insulation

- Low smoke, Halogen free compound
- White (unless otherwise specified)

Sheath

- Low smoke, Halogen free compound
- Black (unless otherwise specified)

Technical Data

• Voltage	DC 750V
• Min. Ambient temperature for use	-25°C
• Fire Performance	Tested in Accordance with - Flame-Retardant : IEC60332-3-24 Cat.C - Smoke Density : IEC61034-2 - Toxicity : BS6853 Annex B

Application

- Auxiliary circuits at line voltage / Traction circuits / Electric heating fed at line voltage run on trays, exposed

Properties



Halogen Free

IEC60754-2
IEC60684-2



Flame Retardant

NF C 32-070
IEC60332-1/2/3



Low Smoke

IEC61034-2



UV Resistant

UL 1581



Oil Resistant

IRM 902



Ozone Resistant

UIC 895 OR



Toxicity Index

BS 6853 Annex B.1
BS S 7239

Product List

Conductor	Insulation Thickness	Sheath Thickness	Nominal Cable O.D.	Approx. Cable Weight
Cross Section (mm²)	mm	mm	Ø (mm)	kg / km
1.0	0.46	0.8	3.77	8
1.5	0.46	0.69	3.79	36
2.5	0.46	0.69	4.27	45
4	0.46	0.58	4.64	60
6	0.55	0.58	5.31	85
10	0.60	0.6	6.53	135
16	0.60	0.7	8.03	195
25	0.70	0.65	9.53	300
35	0.75	0.53	11.30	443
50	0.80	0.55	13.50	623
70	0.80	0.55	15.60	847
95	0.95	0.65	18.10	1119
120	0.95	0.58	19.80	1445
150	1.00	0.63	22.00	1775
185	1.10	0.7	24.40	2115
240	1.20	0.8	27.80	2762
300	1.30	0.85	31.20	3452
400	1.30	0.8	35.20	4474

* Other range on request.

1500V HF-RMSG

Single Core Sheathed Power Cables



Conductor

- Stranded tinned copper, Class 5 according to IEC60228

Design Standard

- NFF63-826

Insulation

- Low smoke, Halogen free compound
- White (unless otherwise specified)

Sheath

- Low smoke, Halogen free compound
- Black (unless otherwise specified)

Technical Data

• Voltage	DC 1500V
• Min. Ambient temperature for use	-25°C
• Fire Performance	Tested in Accordance with - Flame-Retardant : IEC60332-3-24 Cat.C - Smoke Density : IEC61034-2 - Toxicity : BS6853 Annex B

Application

- Auxiliary circuits at line voltage / Traction circuits / Electric heating fed at line voltage in protected area / Jumper

Properties

Halogen Free	Flame Retardant	Low Smoke	UV Resistant	Oil Resistant	Ozone Resistant	Toxicity Index
IEC60754-2 IEC60684-2	NF C 32-070 IEC60332-1/2/3	IEC61034-2	UL 1581	IRM 902	UIC 895 OR	BS 6853 Annex B.1 BS S 7239

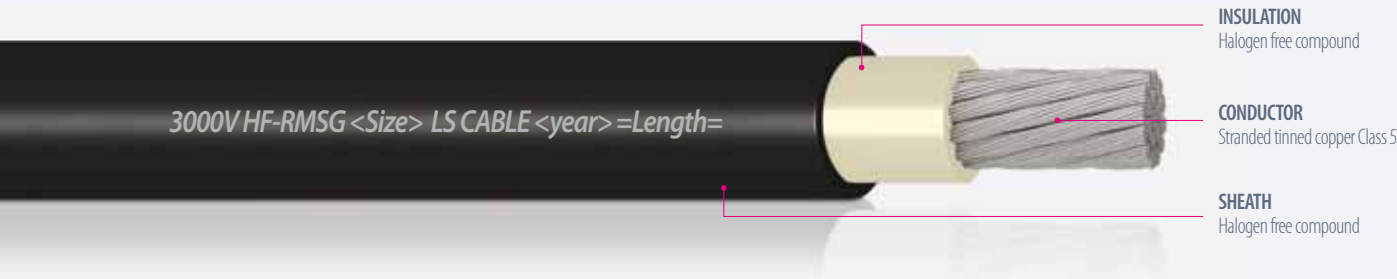
Product List

Conductor	Insulation Thickness	Sheath Thickness	Nominal Cable O.D.	Approx. Cable Weight
Cross Section (mm²)	mm	mm	Ø (mm)	kg / km
1.5	0.6	0.9	4.55	60
2.5	0.65	0.9	5.07	82
4	0.65	0.9	5.66	100
6	0.65	0.9	6.15	130
10	0.65	0.95	7.33	185
16	0.65	1.05	8.83	250
25	0.70	1.05	10.33	350
35	0.75	1.05	11.70	430
50	0.80	1.05	13.48	590
70	0.90	1.04	15.33	790
95	1.00	1.2	17.93	1020
120	1.00	1.2	19.8	1320
150	1.00	1.02	21.44	0550
185	1.12	0.88	23.28	1900
240	1.19	1.41	27.33	2500
300	1.19	1.61	32.5	3562

* Other range on request.

3000V HF-RMSG

Single Core Sheathed Power Cables



Conductor

- Stranded tinned copper, Class 5 according to IEC60228

Design Standard

- NFF63-826

Insulation

- Low smoke, Halogen free compound
- White (unless otherwise specified)

Sheath

- Low smoke, Halogen free compound
- Black (unless otherwise specified)

Technical Data

• Voltage	DC 3000V
• Min. Ambient temperature for use	-25°C
• Fire Performance	Tested in Accordance with - Flame-Retardant : IEC60332-3-24 Cat.C - Smoke Density : IEC61034-2 - Toxicity : BS6853 Annex B

Application

- Auxiliary circuits at line voltage / Traction circuits / Electric heating fed at line voltage run on trays, exposed

Properties

Halogen Free	Flame Retardant	Low Smoke	UV Resistant	Oil Resistant	Ozone Resistant	Toxicity Index
IEC60754-2 IEC60684-2	NF C 32-070 IEC60332-1/2/3	IEC61034-2	UL 1581	IRM 902	UIC 895 OR	BS 6853 Annex B.1 BS S 7239

Product List

Conductor	Insulation Thickness	Sheath Thickness	Nominal Cable O.D.	Approx. Cable Weight
Cross Section (mm²)	mm	mm	Ø (mm)	kg / km
10	2.0	1.3	11.2	210
16	2.0	1.4	13.2	300
25	2.0	1.4	14.8	400
35	2.0	1.5	16.3	520
50	2.0	1.5	18.3	690
70	2.0	1.6	20.5	920
95	2.0	1.7	22.5	1160
120	2.0	1.7	24.6	1440
150	2.0	1.8	26.7	1740
185	2.0	1.9	29.2	2090
240	2.0	2.0	32.0	2680

* Other range on request.

HF-RMSG-HT EN50382-2 1.8/3kV

Single Core Unsheathed High Temperature Power Cables



Conductor

- Stranded tinned copper, Class 5 according to EN60228(IEC60228)
- Stranded annealed copper, Class 5 according to EN60228(IEC60228)

Design Standard

- EN50382-2

Insulation

- Low smoke, Halogen free silicone rubber according to EN50382-1
- Black (unless otherwise specified)

Technical Data

• Physical properties	Extra low temperature, oil resistance
• Normal operating conductor temperature	120°C / 150°C
• Min. Ambient temperature for use	-40°C

Installation (allowable bending radius)

For diameter (mm)	Fixed installation	Careful bending
		(once only at termination)
≤ 12	4D	3D
>12	5D	4D

* D : Cable OD

Application

- Auxiliary circuits at line voltage / Traction circuits / Electric heating fed at line voltage run in protected areas

Properties

Halogen Free EN50267-2-1 EN50267-2-2 N50264-1 Annex B EN60684-2	Flame Retardant EN60332-1-2 EN60332-3-24 EN60332-3-25	Low Smoke EN61034-2 BS6853 Annex D	Oil Resistant IRM 902	Ozone Resistant EN50305	Toxicity Index BS 6853 Annex B.1 BS S 7239	Cold Resistant @-40°C EN 60811-1-4

Product List

Conductor		Insulation Thickness	Nominal Cable O.D	Approx. Cable Weight
Cross Section (mm²)	Ø (mm)	mm	Ø (mm)	kg / km
1.5	1.5	2.5	6.7	55
2.5	1.9	2.5	7.1	66
4	2.5	2.5	7.6	85
6	3.1	2.5	8.2	105
10	3.9	2.5	9.1	150
16	5.2	2.5	10.2	215
25	6.5	2.5	11.7	310
35	7.7	2.5	13.0	390
50	9.3	2.5	14.5	540
70	11.2	2.5	16.3	740
95	12.8	2.7	18.3	950
120	14.6	2.7	20.0	1200
150	16.2	2.7	21.6	1460
185	17.8	2.7	23.3	1750
240	20.6	2.7	25.9	2300
300	22.8	2.7	28.3	2800
400	26.1	2.9	32.0	3900

* Other range on request.

HF-RMSG-HT EN50382-2 3.6/6kV

Single Core Unsheathed High Temperature Power Cables



Conductor

- Stranded tinned copper, Class 5 according to EN60228(IEC60228)
- Stranded annealed copper, Class 5 according to EN60228(IEC60228)

Design Standard

- EN50382-2

Insulation

- Low smoke, Halogen free silicone rubber according to EN50382-1
- Black (unless otherwise specified)

Technical Data

• Physical properties	Extra low temperature, oil resistance
• Normal operating conductor temperature	120°C / 150°C
• Min. Ambient temperature for use	-40°C

Installation (allowable bending radius)

For diameter (mm)	Fixed installation	Careful bending
		(once only at termination)
≤ 12	4D	3D
>12	6D	4D

* D : Cable OD

Application

- Auxiliary circuits at line voltage / Traction circuits / Electric heating fed at line voltage run in protected areas

Properties

Halogen Free EN50267-2-1 EN50267-2-2 N50264-1 Annex B EN60684-2	Flame Retardant EN60332-1-2 EN60332-3-24 EN60332-3-25	Low Smoke EN61034-2 BS6853 Annex D	Oil Resistant IRM 902	Ozone Resistant EN50305	Toxicity Index BS 6853 Annex B.1 BS S 7239	Cold Resistant @-40°C EN 60811-1-4

Product List

Conductor		Insulation Thickness	Nominal Cable O.D	Approx. Cable Weight
Cross Section (mm²)	Ø (mm)	mm	Ø (mm)	kg / km
2.5	1.9	3.0	8.1	82
4	2.5	3.0	8.7	100
6	3.1	3.0	9.2	120
10	3.9	3.0	10.1	170
16	5.2	3.0	11.3	240
25	6.5	3.0	12.7	330
35	7.7	3.0	14.0	420
50	9.3	3.0	15.5	570
70	11.2	3.0	17.3	780
95	12.8	3.0	18.9	970
120	14.6	3.0	20.5	1300
150	16.2	3.1	22.3	1500
185	17.8	3.2	24.4	1800
240	20.6	3.4	27.4	2400
300	22.8	3.4	29.8	2800
400	26.1	3.4	33.1	4100

* Other range on request.

HF-RMSG-HT EN50382-2 1.8/3kV

Single Core Sheathed High Temperature Power Cables



Conductor

- Stranded tinned copper, Class 5 according to EN60228(IEC60228)
- Stranded annealed copper, Class 5 according to EN60228(IEC60228)

Insulation

- Low smoke, Halogen free silicone rubber according to EN50382-1
- Black (unless otherwise specified)

Technical Data

• Physical properties	Extra low temperature, oil resistance
• Normal operating conductor temperature	120°C / 150°C
• Min. Ambient temperature for use	-40°C

Installation (allowable bending radius)

For diameter (mm)	Fixed installation	Careful bending (once only at termination)
≤ 12	4D	3D
>12	5D	4D

* D : Cable OD

Application

- Auxiliary circuits at line voltage / Traction circuits / Electric heating fed at line voltage run, exposed

Properties

Halogen Free EN50267-2-1 EN50267-2-2 N50264-1 Annex B EN60684-2	Flame Retardant EN60332-1-2 EN60332-3-24 EN60332-3-25	Low Smoke EN61034-2 BS6853 Annex D	Oil Resistant IRM 902	Ozone Resistant EN50305	Toxicity Index BS 6853 Annex B.1 BS S 7239	Cold Resistant @-40°C EN 60811-1-4

Product List

Conductor		Insulation Thickness	Sheath Thickness	Nominal Cable O.D.	Approx. Cable Weight
Cross Section (mm²)	Ø (mm)	mm	mm	Ø (mm)	kg / km
1.5	1.5	1.3	1.4	7.1	60
2.5	1.9	1.3	1.4	7.5	75
4	2.5	1.3	1.4	8.0	90
6	3.1	1.3	1.4	8.6	110
10	3.9	1.5	1.4	9.9	170
16	5.2	1.5	1.4	11.1	240
25	6.5	1.8	1.4	13.1	340
35	7.7	1.8	1.4	14.4	440
50	9.3	1.8	1.4	15.9	590
70	11.2	1.8	1.5	17.9	800
95	12.8	2.2	1.5	20.4	1100
120	14.6	2.2	1.6	22.3	1300
150	16.2	2.2	1.6	23.9	1600
185	17.8	2.4	1.7	26.2	1900
240	20.5	2.4	1.8	29.0	2400
300	22.8	2.4	1.9	31.6	3000
400	26.1	2.6	2.0	35.5	4300

* Other range on request.

HF-RMSG-HT EN50382-2 3.6/6kV

Single Core High Temperature Power Cables



Conductor

- Stranded tinned copper, Class 5 according to EN60228(IEC60228)
- Stranded annealed copper, Class 5 according to EN60228(IEC60228)

Insulation

- Low smoke, Halogen free silicone rubber according to EN50382-1
- Black (unless otherwise specified)

Technical Data

• Physical properties	Extra low temperature, oil resistance
• Normal operating conductor temperature	120°C / 150°C
• Min. Ambient temperature for use	-40°C

Installation (allowable bending radius)

For diameter (mm)	Fixed installation	Careful bending (once only at termination)
≤ 12	4D	3D
>12	6D	4D

* D : Cable OD

Design Standard

- EN50382-2

Sheath

- Low smoke, Halogen free compound according to EN50382-1
- Black (unless otherwise specified)

Application

- Auxiliary circuits at line voltage / Traction circuits / Electric heating fed at line voltage run, exposed

Properties

Halogen Free EN50267-2-1 EN50267-2-2 N50264-1 Annex B EN60684-2	Flame Retardant EN60332-1-2 EN60332-3-24 EN60332-3-25	Low Smoke EN61034-2 BS6853 Annex D	Oil Resistant IRM 902	Ozone Resistant EN50305	Toxicity Index BS 6853 Annex B.1 BS S 7239	Cold Resistant @-40°C EN 60811-1-4

Product List

Conductor		Insulation Thickness	Sheath Thickness	Nominal Cable O.D.	Approx. Cable Weight
Cross Section (mm²)	Ø (mm)	mm	mm	Ø (mm)	kg / km
2.5	1.9	2.6	1.4	10.2	120
4	2.5	2.6	1.4	10.7	140
6	3.1	2.6	1.4	11.2	160
10	3.9	2.6	1.4	12.2	210
16	5.2	2.6	1.4	13.4	290
25	6.5	2.9	1.4	15.4	400
35	7.7	2.9	1.4	16.7	510
50	9.3	2.9	1.5	18.4	650
70	11.2	2.9	1.5	20.2	880
95	12.8	2.9	1.6	22.0	1100
120	14.6	2.9	1.6	23.6	1400
150	16.2	2.9	1.7	25.4	1600
185	17.8	3.2	1.8	28.1	2000
240	20.6	3.4	1.9	31.3	2600
300	22.8	3.4	1.9	33.7	3200
400	26.1	3.4	2.0	37.2	4400

* Other range on request.

HF-RMSG-RD EN50264-3-2 300/500V

Multi-Core Unscreened Power Cables



Conductor

- Stranded tinned copper, Class 5 according to EN60228(IEC60228)

Design Standard

- EN50264-3-2

Insulation

- Low smoke, Halogen free compound according to EN50264-1
- Black (unless otherwise specified)

Sheath

- Low smoke, Halogen free compound according to EN50264-1
- Black (unless otherwise specified)

Technical Data

• Physical properties	Extra low temperature, oil resistance
• Normal operating conductor temperature	90°C
• Min. Ambient temperature for use	-40°C

Installation (allowable bending radius)

For diameter (mm)	Fixed installation	Careful bending (once only at termination)
≤ 12	4D	3D
>12	6D	4D

* D : Cable OD

Application

- Internal safe circuits / Control and monitoring circuits

Properties

Halogen Free
EN50267-2-1
EN50267-2-2
N50264-1 Annex B
EN60684-2

Flame Retardant
EN60332-1-2
EN60332-3-24
EN60332-3-25

Low Smoke
EN61034-2

Oil Resistant
IRM 902
IRM 903

Ozone Resistant
EN50305

Toxicity Index
BS 6853 Annex B.1

Cold Resistant @-40°C
EN 60811-1-4

Product List

Number of Cores	Conductor		Insulation Thickness	Sheath Thickness	Nominal Cable O.D.	Approx. Cable Weight
	Cross Section (mm²)	Ø (mm)	mm	mm	Ø (mm)	kg / km
2	1.0	1.3	0.4	0.6	5.9	40
4	1.0	1.3	0.4	0.6	6.8	72
7	1.0	1.3	0.4	0.7	8.3	120
9	1.0	1.3	0.4	0.7	9.7	150
12	1.0	1.3	0.4	0.7	10.9	190
19	1.0	1.3	0.4	0.8	13.0	300
24	1.0	1.3	0.4	1.0	15.6	400
32	1.0	1.3	0.4	1.0	17.2	510
37	1.0	1.3	0.4	1.0	17.9	580
40	1.0	1.3	0.4	1.0	18.6	630
4	1.5	1.5	0.5	0.7	8.1	95
7	1.5	1.5	0.5	0.7	9.6	170
9	1.5	1.5	0.5	1.0	11.9	230
12	1.5	1.5	0.5	1.0	13.3	290
19	1.5	1.5	0.5	1.0	15.6	440
24	1.5	1.5	0.5	1.2	18.7	570
32	1.5	1.5	0.5	1.2	20.5	740
37	1.5	1.5	0.5	1.2	21.3	840
4	2.5	1.9	0.5	0.7	9.1	130
7	2.5	1.9	0.5	0.8	11.1	250
9	2.5	1.9	0.5	1.0	13.5	340
12	2.5	1.9	0.5	1.0	15.1	430
24	2.5	1.9	0.5	1.2	21.3	850

* Other range on request.

HF-RMSG-RD EN50264-3-2 300/500V

Multi-Core Screened Power Cables



Conductor

- Stranded tinned copper, Class 5 according to EN60228(IEC60228)

Design Standard

- EN50264-3-2

Insulation

- Low smoke, Halogen free compound according to EN50264-1
- Black (unless otherwise specified)

Sheath

- Low smoke, Halogen free compound according to EN50264-1
- Black (unless otherwise specified)

Screen

- Tinned copper braid

Technical Data

• Physical properties	Extra low temperature, oil resistance
• Normal operating conductor temperature	90°C
• Min. Ambient temperature for use	-40°C
• Allowable Min. bending radius	10D

* D : Cable OD

Application

- Internal safe circuits / Control and monitoring circuits

Properties

Halogen Free EN50267-2-1 EN50267-2-2 N50264-1 Annex B EN60684-2	Flame Retardant EN60332-1-2 EN60332-3-24 EN60332-3-25	Low Smoke EN61034-2	Oil Resistant IRM 902 IRM 903	Ozone Resistant EN50305	Toxicity Index BS 6853 Annex B.1	Cold Resistant @-40°C EN 60811-1-4

Product List

Number of Cores	Conductor		Insulation Thickness	Sheath Thickness	Nominal Cable O.D.	Approx. Cable Weight
	Cross Section (mm²)	Ø (mm)	mm	mm	Ø (mm)	kg / km
2	1.0	1.3	0.4	0.6	6.7	58
4	1.0	1.3	0.4	0.6	7.7	87
7	1.0	1.3	0.4	0.7	9.2	140
9	1.0	1.3	0.4	0.7	10.8	180
12	1.0	1.3	0.4	0.7	12.0	230
19	1.0	1.3	0.4	0.8	14.4	340
24	1.0	1.3	0.4	1.0	17.0	440
32	1.0	1.3	0.4	1.0	18.6	550
37	1.0	1.3	0.4	1.0	19.2	610
40	1.0	1.3	0.4	1.0	19.9	660
4	1.5	1.5	0.5	0.7	8.9	120
7	1.5	1.5	0.5	0.7	10.7	190
9	1.5	1.5	0.5	1.0	13.0	260
12	1.5	1.5	0.5	1.0	14.4	320
19	1.5	1.5	0.5	1.0	16.9	480
24	1.5	1.5	0.5	1.2	20.0	610
32	1.5	1.5	0.5	1.2	21.9	770
37	1.5	1.5	0.5	1.2	22.7	870
4	2.5	1.9	0.5	0.7	10.2	170
7	2.5	1.9	0.5	0.8	12.3	270
9	2.5	1.9	0.5	1.0	14.9	370
12	2.5	1.9	0.5	1.0	16.5	470
24	2.5	1.9	0.5	1.2	22.7	870

* Other range on request.

HF-RMSG-RD EN50264-3-2 0.6/1 kV

Multi-Core Unscreened Power Cables



Conductor

- Stranded tinned copper, Class 5 according to EN60228(IEC60228)

Design Standard

- EN50264-3-2

Insulation

- Low smoke, Halogen free compound according to EN50264-1
- Black (unless otherwise specified)

Sheath

- Low smoke, Halogen free compound according to EN50264-1
- Black (unless otherwise specified)

Technical Data

• Physical properties	Extra low temperature, oil resistance
• Normal operating conductor temperature	90°C
• Min. Ambient temperature for use	-40°C

Installation (allowable bending radius)

For diameter (mm)	Fixed installation	Careful bending (once only at termination)
≤ 12	4D	3D
>12	5D	4D

* D : Cable OD

Application

- Lighting circuits / Auxiliary and electric heating circuits / Control and monitoring circuits

Properties

Halogen Free EN50267-2-1 EN50267-2-2 N50264-1 Annex B EN60684-2	Flame Retardant EN60332-1-2 EN60332-3-24 EN60332-3-25	Low Smoke EN61034-2	Oil Resistant IRM 902 IRM 903	Ozone Resistant EN50305	Toxicity Index BS 6853 Annex B.1	Cold Resistant @-40°C EN 60811-1-4

Product List

Number of Cores	Conductor		Sheath Thickness mm	Nominal Cable O.D. Ø (mm)	Approx. Cable Weight kg / km
	Cross Section (mm²)	Ø (mm)			
2	1.5	1.5	0.7	7.8	63
2	2.5	1.9	0.7	8.7	85
2	4	2.5	0.7	9.7	117
2	6	3.1	0.8	10.9	160
2	10	3.9	1.0	13.2	260
2	16	5.2	1.0	15.4	380
2	25	6.5	1.2	19.4	580
2	35	7.7	1.2	22.1	770
2	50	9.3	1.4	25.9	1100
3	1.5	1.5	0.7	8.3	85
3	2.5	1.9	0.7	9.2	120
3	4	2.5	0.7	10.3	170
3	6	3.1	0.8	11.6	230
3	10	3.9	1.0	14.1	360
3	16	5.2	1.0	16.4	550
3	25	6.5	1.2	20.1	840
3	35	7.7	1.2	23.5	1100
3	50	9.3	1.4	27.6	1600
4	1.5	1.5	0.7	9.1	110
4	2.5	1.9	0.7	10.1	150
4	4	2.5	0.8	11.6	210
4	6	3.1	1.0	13.2	290
4	10	3.9	1.0	15.5	470
4	25	6.5	1.4	23.3	1100

* Other range on request.

HF-RMSG-RD EN50264-3-2 0.6/1 kV

Multi-Core Screened Power Cables



Conductor

- Stranded tinned copper, Class 5 according to EN60228(IEC60228)

Design Standard

- EN50264-3-2

Insulation

- Low smoke, Halogen free compound according to EN50264-1
- Black (unless otherwise specified)

Sheath

- Low smoke, Halogen free compound according to EN50264-1
- Black (unless otherwise specified)

Screen

- Tinned copper braid

Technical Data

• Physical properties	Extra low temperature, oil resistance
• Normal operating conductor temperature	90°C
• Min. Ambient temperature for use	-40°C
• Allowable Min. bending radius	10D

* D : Cable OD

Application

- Lighting circuits / Auxiliary and electric heating circuits / Control and monitoring circuits

Properties

Halogen Free EN50267-2-1 EN50267-2-2 N50264-1 Annex B EN60684-2	Flame Retardant EN60332-1-2 EN60332-3-24 EN60332-3-25	Low Smoke EN61034-2	Oil Resistant IRM 902 IRM 903	Ozone Resistant EN50305	Toxicity Index BS 6853 Annex B.1	Cold Resistant @-40°C EN 60811-1-4

Product List

Number of Cores	Conductor		Sheath Thickness	Nominal Cable O.D.	Approx. Cable Weight
	Cross Section (mm²)	Ø (mm)		Ø (mm)	kg / km
2	1.5	1.5	0.7	8.6	88
2	2.5	1.9	0.7	9.5	110
2	4	2.4	0.7	10.8	160
2	6	3.0	0.8	12.1	210
2	10	3.9	1.0	14.3	310
2	16	5.0	1.0	16.8	470
2	25	6.4	1.2	20.8	690
2	35	7.7	1.2	23.7	920
2	50	9.2	1.4	27.5	1300
3	1.5	1.5	0.7	9.1	110
3	2.5	1.9	0.7	10.0	150
3	4	2.4	0.7	11.4	210
3	6	3.0	0.8	12.7	280
3	10	3.9	1.0	15.4	440
3	16	5.0	1.0	17.8	640
3	25	6.4	1.2	22.1	950
3	35	7.7	1.2	25.1	1300
3	50	9.2	1.4	29.2	1800
4	1.5	1.9	0.7	9.9	136
4	2.5	2.4	0.7	11.2	193
4	4	3.0	0.8	12.6	260
4	6	3.9	1.0	14.3	360
4	10	5.0	1.0	16.9	550
4	25	6.4	1.4	24.9	1260

* Other range on request.

A high-speed train, specifically a Shinkansen, is shown at a station platform. The train is white with a blue and yellow stripe. It is moving along the tracks, and the platform is visible on the right. The background shows the station's infrastructure, including overhead power lines and signals.

Convenience for High Speed Technology

The Leading Solution Provider, LS Cable & System introduced a new marketing concept, which is providing collected items applicable to an industry as a package instead of separately providing a single item. These LS Cable & System's business solutions are applicable to following industries :
Wind Power Generation, Railway & Rolling stock, Airport, Power Transmission & distribution, Marine & Offshore, and Automotive.
The Application Business manages various departments and their products to satisfy our customers' specific needs and convenience.

LSRS EN50306-2 450/750V

Thin Wall Single Core Unsheathed Light Weight Control Cables



Conductor

- Tin coated annealed copper
- Class 5 according to IEC(EN)60228

Insulation

- Low smoke, halogen free cross-linked material
- Color : Black (unless otherwise specified)

Use Condition

• Voltage	• 300/500V (a.c.) • 450/750V (d.c.)
• Dielectric withstanding voltage (5min.)	2000V (a.c.)
• Permissidle conductor temperature	-40°C ~ 125°C
• Maximum continuous operating temperature (Based on EN50306-1:2002)	105°C

Cable Properties

• Vertical flame test (Single-wire)	-	EN60332-1-2 (EN50265-2-1)
• Vertical flame test (Multi-wires)	-	EN50305 9.1.2
• Toxicity test	ITC 6	EN50305 9.2
• Halogen gas volume	5mg/g	EN50267-2-1
• Corrosivity of combustion gases	pH 4.3 Conductivity 10µs/mm	EN50267-2-2
• Smoke density test	Transmissivity 70%	EN61034-2 (EN50268-2)

Installation (allowable bending radius)

For diameter	Fixed installation	Careful bending
(mm)		(once only at termination)
≤ 12	4D	3D
>12	5D	4D

* D : Cable O.D

Application

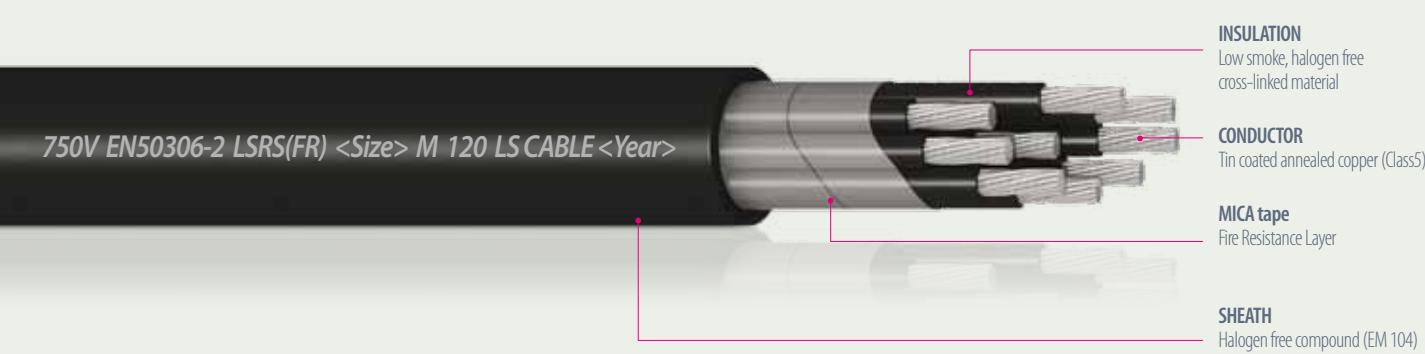
This wire is applied to fixed internal wining for a train, single-core cablefor vehicles, and rating voltage to ground is 300V or less. (Reference : EN50355:2003 EN50343:2003)

Product List (Thin Wall, Single Core Unsheathed - 450V/750V)

Part Number	Conductor				Insulation	Cable	
	Cross Section	Construction	Diameter(nom.)	Resistance(max.)	Thickness(nom.)	Diameter(nom.)	Weight (approx.)
	mm²	NQ./mm	mm	Ω/km at 20°C	mm	mm	kg/km
LSRS 1x0.50SQ	0.50	19/0.18	0.87	40.1	0.25	1.37	6.0
LSRS 1x0.75SQ	0.75	37/0.16	1.05	26.7	0.27	1.59	9.0
LSRS 1x1.00SQ	1.00	37/0.18	1.18	20.0	0.29	1.76	11
LSRS 1x1.50SQ	1.50	37/0.23	1.52	13.7	0.32	2.16	17
LSRS 1x2.50SQ	2.50	37/0.30	1.93	8.21	0.37	2.67	28

LSRS EN50306-2 450/750V

Thin Wall Single Core and Multi Core Fire Resistance Light Weight Control Cable



Conductor

- Tin coated annealed copper
- Class 5 according to IEC(EN)60228

Insulation

- Low smoke, halogen free cross-linked material
- Color : Black (unless otherwise specified)

Use Condition

• Voltage	• 300/500V (a.c.) • 450/750V (d.c.)
• Dielectric withstanding voltage (5min.)	2000V (a.c.)
• Permissible conductor temperature	-40°C ~ 125°C
• Maximum continuous operating temperature (Based on EN50306-1:2002)	105°C

Cable Properties

• Vertical flame test (Single-wire)	-	EN60332-1-2 (EN50265-2-1)
• Vertical flame test (Multi-wires)	-	EN50305 9.1.2
• Toxicity test	ITC 6	EN50305 9.2
• Halogen gas volume	5mg/g	EN50267-2-1
• Corrosivity of combustion gases	pH 4.3 Conductivity 10µs/mm	EN50267-2-2
• Smoke density test	Transmissivity 70%	EN61034-2 (EN50268-2)
• Fire Resistance	830 °C/120min.	EN50200

Installation (allowable bending radius) - Unscreened cable

For diameter	Fixed installation	Careful bending
(mm)		(once only at termination)
≤ 12	4D	3D
>12	5D	4D
Screened	10D	10D

* D : Cable O.D

Application

This wire is applied to fixed internal wiring for a train, single-core cable for vehicles, and rating voltage to ground is 300V or less. (Reference : EN50355:2003 EN50343:2003)

Product List (Thin Wall Single Core and Multi Core - 450/750V)

Part Number	Conductor				Insulation	Cable	
	Cross Section	Construction	Diameter(nom.)	Resistance(max.)	Thickness(nom.)	Diameter(nom.)	Weight (approx.)
	mm ²	NO./ mm	mm	Ω/km at 20°C	mm	mm	kg/km
LSRS(FR) 1x0.50SQ	0.50	19/0.18	0.87	40.1	0.25	2.17	10
LSRS(FR) 1x0.75SQ	0.75	37/0.16	1.05	26.7	0.27	2.41	13
LSRS(FR) 1x1.00SQ	1.00	37/0.18	1.18	20.0	0.29	2.60	16
LSRS(FR) 1x1.50SQ	1.50	37/0.23	1.52	13.7	0.32	3.00	22
LSRS(FR) 1x2.50SQ	2.50	37/0.30	1.93	8.21	0.37	3.39	35

Part Number	Core		Sheath	Cable	
	Cross Section	Diameter(nom.)	Thickness(nom.)	Diameter(nom.)	Weight (approx.)
	mm ²	mm	mm	mm	kg/km
LSRS(FR)-SB 2X0.75SQ	0.75	2.41	0.40	6.38	56
LSRS(FR)-SB 3X0.75SQ	0.75	2.41	0.40	6.74	70
LSRS(FR)-SB 4X0.75SQ	0.75	2.41	0.40	7.36	84
LSRS(FR)-SB 2X1.55SQ	1.50	3.00	0.40	7.55	85
LSRS(FR)-SB 3X1.55SQ	1.50	3.00	0.40	8.00	105
LSRS(FR)-SB 4X1.55SQ	1.50	3.00	0.40	8.80	130

* Other range on request.

LSRS-SB EN50306-4 450/750V

Thin Wall Single Core and Multi Core Screened and Sheathed Light Weight Control Cable



Conductor

- Tin coated annealed copper
- Class 5 according to IEC(EN)60228
- Low smoke, halogen free cross-linked material
- Color : White (unless otherwise specified)

Overall Screen

- Tin coated annealed copper

Sheath

- Low smoke, halogen free cross-linked material
- Color : Black (unless otherwise specified)

Use Condition

• Voltage (U/U)	• 300/500V (a.c.) • 450/750V (d.c.)
• Dielectric withstanding voltage (5min.)	2000V (a.c.)
• Permissible conductor temperature	-40°C ~ 125°C
• Maximum continuous operating temperature (Based on EN50306-1:2002)	105°C
• Allowable Min. bending radius	10D

Cable Properties

• Vertical flame test (Single-wire)	-	EN60332-1-2 (EN50265-2-1)
• Vertical flame test (Multi-wires)	-	EN50305 9.1.1 / 9.1.2
• Toxicity test	• Insulation : ITC 6 • Sheath : ITC 3	EN50305 9.2
• Halogen gas volume	5mg/g	EN50267-2-1
• Corrosivity of combustion gases	pH 4.3 Conductivity 10μs/mm	EN50267-2-2
• Smoke density test	Transmissivity 70%	EN61034-2 (EN50268-2)

Application

This cable is applied to fixed internal wiring for a train, multi-core cable for vehicles, and rating voltage to ground is 300V or less. (Reference : EN50355:2003 EN50343:2003)

Product List (Thin Wall, Single Core and Multi Core Screened and Sheathed - 450V/700V)

Part Number	Core		Sheath	Cable	
	Cross Section	Diameter(nom.)	Thickness(nom.)	Diameter(nom.)	Weight (approx.)
	mm ²	mm	mm	mm	kg/km
LSRS-SB 1X0.50SQ	0.50	1.37	0.40	2.75	17
LSRS-SB 2x0.50SQ	0.50	1.37	0.40	4.30	30
LSRS-SB 3x0.50SQ	0.50	1.37	0.40	4.42	36
LSRS-SB 4x0.50SQ	0.50	1.37	0.40	4.86	44
LSRS-SB 1x0.75SQ	0.75	1.59	0.40	2.97	20
LSRS-SB 2x0.75SQ	0.75	1.59	0.40	4.61	37
LSRS-SB 3x0.75SQ	0.75	1.59	0.40	4.85	46
LSRS-SB 4x0.75SQ	0.75	1.59	0.40	5.30	58
LSRS-SB 1x1.0SQ	1.00	1.76	0.40	3.14	24
LSRS-SB 2x1.0SQ	1.00	1.76	0.40	5.07	43
LSRS-SB 3x1.0SQ	1.00	1.76	0.40	5.34	58
LSRS-SB 4x1.0SQ	1.00	1.76	0.40	5.80	71
LSRS-SB 1x1.5SQ	1.50	2.16	0.40	3.54	33
LSRS-SB 2x1.5SQ	1.50	2.16	0.40	5.87	61
LSRS-SB 3x1.5SQ	1.50	2.16	0.40	6.19	82
LSRS-SB 4x1.5SQ	1.50	2.16	0.40	6.75	99
LSRS-SB 1x2.5SQ	2.50	2.67	0.40	3.95	44
LSRS-SB 2x2.5SQ	2.50	2.67	0.40	6.72	86
LSRS-SB 3x2.5SQ	2.50	2.67	0.40	7.12	115
LSRS-SB 4x2.5SQ	2.50	2.67	0.40	7.81	147

LSRS EN50306-4 300/500V

Standard Wall Multi Core Unscreened and Sheathed Light Weight Control Cable, Class E (Exposed) and Class P (Protected)



Conductor

- Tinned copper wires according to EN50306-2

Insulation

- 90°C/105°C Low-Smoke, Halogen-Free irradiated compound
- White - unless otherwise specified

Use Condition

• Voltage (U/U)	• 300/500V (a.c.) • 450/750V (d.c.)
• Dielectric withstanding voltage (5min.)	2000V (a.c.)
• Permissible conductor temperature	-40°C ~ 125°C
• Maximum continuous operating temperature (Based on EN50306-1:2002)	105°C

Cable Properties

• Vertical flame test (Single-wire)	-	EN60332-1-2 (EN50265-2-1)
• Vertical flame test (Multi-wires)	-	EN50305 9.1.1 / 9.1.2
• Toxicity test	• Insulation : ITC 6 • Sheath : ITC 3	EN50305 9.2
• Halogen gas volume	5mg/g	EN50267-2-1
• Corrosivity of combustion gases	pH 4.3 Conductivity 10µs/mm	EN50267-2-2
• Smoke density test	Transmissivity 70%	EN61034-2 (EN50268-2)

Installation (allowable bending radius)

For diameter	Fixed installation	Careful bending
(mm)		(once only at termination)
≤ 12	4D	3D
> 12	5D	4D

* D : Cable OD

Application

This cable is applied to fixed internal wiring for a train, multi-core cable for vehicles, and rating voltage to ground is 300V or less. (Reference : EN50355:2003 EN50343:2003)

Product List (Thin Wall, Multi Core Unscreened and Sheathed - 300V/500V)

Part Number	Cross Sectional Area	Cables Class E (Exposed)			
		Sheath Thickness	Overall Diameter		Weight
			Min.	Max.	Cable
	n x mm ²	mm	mm	mm	kg/km
LSRS EN50306-4 1E 4x0.50SQ	4*0.5	1.0	5.5	6.5	45
LSRS EN50306-4 1E 7x0.50SQ	7*0.5	1.0	6.3	7.3	69
LSRS EN50306-4 1E 13x0.50SQ	13*0.5	1.0	8.3	9.3	116
LSRS EN50306-4 1E 19x0.50SQ	19*0.5	1.0	9.0	10.2	151
LSRS EN50306-4 1E 37x0.50SQ	37*0.5	1.0	12.3	13.5	288
LSRS EN50306-4 1E 4x0.75SQ	4*0.75	1.0	6.0	7.0	58
LSRS EN50306-4 1E 7x0.75SQ	7*0.75	1.0	6.9	7.9	88
LSRS EN50306-4 1E 13x0.75SQ	13*0.75	1.0	9.1	10.3	148
LSRS EN50306-4 1E 19x0.75SQ	19*0.75	1.0	10.0	11.2	201
LSRS EN50306-4 1E 37x0.75SQ	37*0.75	1.0	13.2	14.4	364
LSRS EN50306-4 1E 48x0.75SQ	48*0.75	1.0	14.8	16.4	463
LSRS EN50306-4 1E 4x1.0SQ	4*1.0	1.0	6.3	7.3	68
LSRS EN50306-4 1E 7x1.0SQ	7*1.0	1.0	7.3	8.3	106
LSRS EN50306-4 1E 13x1.0SQ	13*1.0	1.0	9.7	10.9	182
LSRS EN50306-4 1E 19x1.0SQ	19*1.0	1.0	10.7	11.9	247
LSRS EN50306-4 1E 37x1.0SQ	37*1.0	1.0	14.0	15.6	451
LSRS EN50306-4 1E 4x1.5SQ	4*1.5	1.0	7.4	8.4	99
LSRS EN50306-4 1E 7x1.5SQ	7*1.5	1.0	8.6	9.8	153
LSRS EN50306-4 1E 13x1.5SQ	13*1.5	1.0	11.7	12.9	271
LSRS EN50306-4 1E 19x1.5SQ	19*1.5	1.0	13.0	14.2	373
LSRS EN50306-4 1E 37x1.5SQ	37*1.5	1.0	17.2	18.8	688
LSRS EN50306-4 1E 2x2.5SQ	2*2.5	1.0	7.7	8.7	87
LSRS EN50306-4 1E 3x2.5SQ	3*2.5	1.0	8.1	9.1	118
LSRS EN50306-4 1E 4x2.5SQ	4*2.5	1.0	8.8	10.0	147

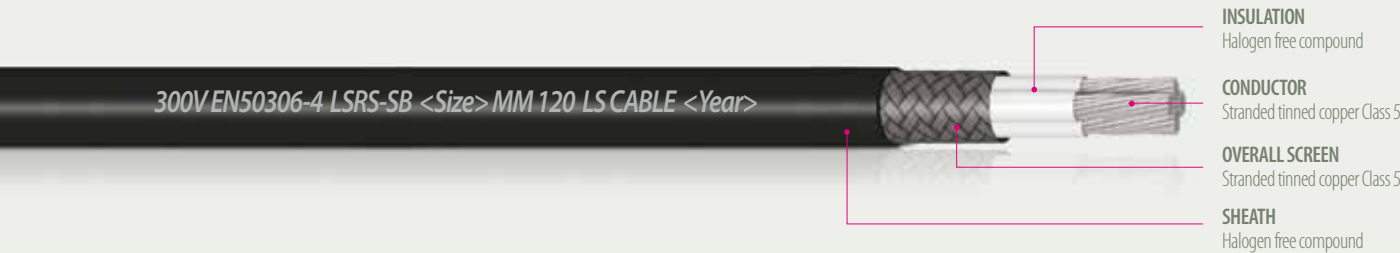
* Other range on request.

Part Number	Cables Class P (Protected)			
	Sheath Thickness	Overall Diameter		Weight
		Min. mm	Max. mm	Cable kg/km
LSRS EN50306-4 1P 4X0.50SQ	0.42	4.1	5.1	32
LSRS EN50306-4 1P 7X0.50SQ	0.42	4.9	5.9	51
LSRS EN50306-4 1P 13X0.50SQ	0.56	7.3	8.3	98
LSRS EN50306-4 1P 19X0.50SQ	0.56	8.1	9.1	135
LSRS EN50306-4 1P 37X0.50SQ	0.56	10.8	12.0	246
LSRS EN50306-4 1P 4X0.75SQ	0.42	4.6	5.6	42
LSRS EN50306-4 1P 7X0.75SQ	0.42	5.5	6.5	68
LSRS EN50306-4 1P 13X0.75SQ	0.56	8.2	9.2	130
LSRS EN50306-4 1P 19X0.75SQ	0.56	9.0	10.2	184
LSRS EN50306-4 1P 37X0.75SQ	0.56	12.2	13.4	338
LSRS EN50306-4 1P 48X0.75SQ	0.56	13.9	15.5	440
LSRS EN50306-4 1P 4X1.0SQ	0.42	4.9	5.9	53
LSRS EN50306-4 1P 7X1.0SQ	0.42	6.0	7.0	88
LSRS EN50306-4 1P 13X1.0SQ	0.56	8.7	9.9	163
LSRS EN50306-4 1P 19X1.0SQ	0.56	9.8	11.0	229
LSRS EN50306-4 1P 37X1.0SQ	0.56	13.3	14.5	430
LSRS EN50306-4 1P 4X1.5SQ	0.42	6.0	7.0	79
LSRS EN50306-4 1P 7X1.5SQ	0.56	7.7	8.7	136
LSRS EN50306-4 1P 13X1.5SQ	0.56	10.7	11.9	248
LSRS EN50306-4 1P 19X1.5SQ	0.56	12.0	13.2	347
LSRS EN50306-4 1P 37X1.5SQ	0.56	16.2	17.8	651
LSRS EN50306-4 1P 2X2.5SQ	0.56	6.7	7.7	74
LSRS EN50306-4 1P 3X2.5SQ	0.56	7.7	8.1	111
LSRS EN50306-4 1P 4X2.5SQ	0.56	7.9	8.9	139

* Other range on request.

LSRS-SB EN50306-4 300/500V

Standard Wall Multi Core Screened and Sheathed Light Weight Control Cable, Class E (Exposed) and Class P (Protected)



Conductor

- Tinned copper wires according to EN50306-2

Insulation

- 90°C/105°C Low-Smoke, Halogen-Free irradiated compound
- White - unless otherwise specified

Overall Screen

- Tinned copper wires

Sheath

- Low-Smoke, Halogen-Free Irradlated compound (S2,EM 101 to EM 104)
- Black - unless otherwise specified

Use Condition

• Voltage (U/U)	• 300/500V (a.c.) • 450/750V (d.c.)
• Dielectric withstanding voltage (5min.)	2000V (a.c.)
• Permissible conductor temperature	-40°C ~ 125°C
• Maximum continuous operating temperature (Based on EN50306-1:2002)	105°C
• Allowable Min. bending radius	10D

Cable Properties

• Vertical flame test (Single-wire)	-	EN60332-1-2 (EN50265-2-1)
• Vertical flame test (Multi-wires)	-	EN50305 9.1.1 / 9.1.2
• Toxicity test	• Insulation : ITC 6 • Sheath : ITC 3	EN50305 9.2
• Halogen gas volume	5mg/g	EN50267-2-1
• Corrosivity of combustion gases	pH 4.3 Conductivity 10µs/mm	EN50267-2-2
• Smoke density test	Transmissivity 70%	EN61034-2 (EN50268-2)

Application

This cable is applied to fixed internal wiring for a train, multi-core cable for vehicles, and rating voltage to ground is 300V or less. (Reference : EN50355:2003 EN50343:2003)

Product List (Thin Wall, Multi Core Screened and Sheathed - 300V/500V)

Part Number	Cross Sectional Area	Cables Class E (Exposed)			
		Sheath Thickness	Overall Diameter		Weight
			Min. mm	Max. mm	Cable kg/km
LSRS-SB EN50306-4 3E 2X0.50SQ	2*0.5	1.0	5.5	6.5	46
LSRS-SB EN50306-4 3E 3X0.50SQ	3*0.5	1.0	5.7	6.7	54
LSRS-SB EN50306-4 3E 4X0.50SQ	4*0.5	1.0	6.1	7.1	64
LSRS-SB EN50306-4 3E 6X0.50SQ	6*0.5	1.0	6.9	7.9	87
LSRS-SB EN50306-4 3E 8X0.50SQ	8*0.5	1.0	7.5	8.5	107
LSRS-SB EN50306-4 3E 2X0.75SQ	2*0.75	1.0	5.9	6.9	56
LSRS-SB EN50306-4 3E 3X0.75SQ	3*0.75	1.0	6.2	7.2	65
LSRS-SB EN50306-4 3E 4X0.75SQ	4*0.75	1.0	6.5	7.5	79
LSRS-SB EN50306-4 3E 6X0.75SQ	6*0.75	1.0	7.5	8.5	106
LSRS-SB EN50306-4 3E 8X0.75SQ	8*0.75	1.0	8.2	9.2	133
LSRS-SB EN50306-4 3E 2X1.0SQ	2*1.0	1.0	6.2	7.2	62
LSRS-SB EN50306-4 3E 3X1.0SQ	3*1.0	1.0	6.5	7.5	79
LSRS-SB EN50306-4 3E 4X1.0SQ	4*1.0	1.0	6.9	7.9	93
LSRS-SB EN50306-4 3E 6X1.0SQ	6*1.0	1.0	8.0	9.0	128
LSRS-SB EN50306-4 3E 8X1.0SQ	8*1.0	1.0	8.6	9.8	157
LSRS-SB EN50306-4 3E 2X1.5SQ	2*1.5	1.0	7.1	8.1	85
LSRS-SB EN50306-4 3E 3X1.5SQ	3*1.5	1.0	7.4	8.4	103
LSRS-SB EN50306-4 3E 4X1.5SQ	4*1.5	1.0	8.0	9.0	127
LSRS-SB EN50306-4 3E 6X1.5SQ	6*1.5	1.0	9.2	10.4	174
LSRS-SB EN50306-4 3E 8X1.5SQ	8*1.5	1.0	10.2	11.4	218
LSRS-SB EN50306-4 3E 2X2.5SQ	2*2.5	1.0	8.3	9.3	117
LSRS-SB EN50306-4 3E 3X2.5SQ	3*2.5	1.0	8.6	9.8	145
LSRS-SB EN50306-4 3E 4X2.5SQ	4*2.5	1.0	9.4	10.6	180

* Other range on request.

Part Number	Cables Class P (Protected)			
	Sheath Thickness	Overall Diameter		Weight
		Min. mm	Max. mm	Cable kg/km
LSRS-SB EN50306-4 3P 2X0.50SQ	0.42	4.1	5.1	33
LSRS-SB EN50306-4 3P 3X0.50SQ	0.42	4.3	5.3	39
LSRS-SB EN50306-4 3P 4X0.50SQ	0.56	4.7	5.7	48
LSRS-SB EN50306-4 3P 6X0.50SQ	0.56	5.5	6.5	70
LSRS-SB EN50306-4 3P 8X0.50SQ	0.56	6.0	7.0	88
LSRS-SB EN50306-4 3P 2X0.75SQ	0.42	4.5	5.5	39
LSRS-SB EN50306-4 3P 3X0.75SQ	0.42	4.7	5.7	49
LSRS-SB EN50306-4 3P 4X0.75SQ	0.56	5.2	6.2	63
LSRS-SB EN50306-4 3P 6X0.75SQ	0.56	6.1	7.1	87
LSRS-SB EN50306-4 3P 8X0.75SQ	0.56	6.6	7.6	113
LSRS-SB EN50306-4 3P 2X1.0SQ	0.42	4.7	5.7	47
LSRS-SB EN50306-4 3P 3X1.0SQ	0.42	5.1	6.0	62
LSRS-SB EN50306-4 3P 4X1.0SQ	0.56	5.5	6.5	76
LSRS-SB EN50306-4 3P 6X1.0SQ	0.56	6.6	7.6	105
LSRS-SB EN50306-4 3P 8X1.0SQ	0.56	7.7	8.7	140
LSRS-SB EN50306-4 3P 2X1.5SQ	0.42	5.7	6.7	67
LSRS-SB EN50306-4 3P 3X1.5SQ	0.56	6.0	7.0	85
LSRS-SB EN50306-4 3P 4X1.5SQ	0.56	6.6	7.6	104
LSRS-SB EN50306-4 3P 6X1.5SQ	0.56	8.3	9.3	155
LSRS-SB EN50306-4 3P 8X1.5SQ	0.56	8.9	10.1	198
LSRS-SB EN50306-4 3P 2X2.5SQ	0.56	7.3	8.3	100
LSRS-SB EN50306-4 3P 3X2.5SQ	0.56	7.7	8.7	127
LSRS-SB EN50306-4 3P 4X2.5SQ	0.56	8.4	9.6	158

* Other range on request.

LSRS EN50306-4 300/500V

Standard Wall Multi Pair, Individually Screened and Sheathed Light Weight Control Cable, Class E (Exposed) and Class P (Protected)



Conductor

- Tinned copper wires according to EN50306-2

Insulation

- 90°C/105°C Low-Smoke, Halogen-Free irradiated compound
- White - unless otherwise specified

Overall Screen

- Tinned copper wires

Sheath

- Low-Smoke, Halogen-Free Irradlated compound (S2,EM 101 to EM 104)
- Black - unless otherwise specified

Use Condition

• Voltage (U/U)	• 300/500V (a.c.) • 450/750V (d.c.)
• Dielectric withstanding voltage (5min.)	2000V (a.c.)
• Permissible conductor temperature	-40°C ~ 125°C
• Maximum continuous operating temperature (Based on EN50306-1:2002)	105°C

Cable Properties

• Vertical flame test (Single-wire)	-	EN60332-1-2 (EN50265-2-1)
• Vertical flame test (Multi-wires)	-	EN50305 9.1.1 / 9.1.2
• Toxicity test	• Insulation : ITC 6 • Sheath : ITC 3	EN50305 9.2
• Halogen gas volume	5mg/g	EN50267-2-1
• Corrosivity of combustion gases	pH 4.3 Conductivity 10µs/mm	EN50267-2-2
• Smoke density test	Transmissivity 70%	EN61034-2 (EN50268-2)

Installation (allowable bending radius)

For diameter	Fixed installation	Careful bending
(mm)		(once only at termination)
≤ 12	4D	3D
>12	5D	4D

* D : Cable OD

Application

This cable is applied to fixed internal wiring for a train, multi-core cable for vehicles, and rating voltage to ground is 300V or less. (Reference : EN50355:2003 EN50343:2003)

Product List (Thin Wall, Multi Pair Individually Screened and Sheathed - 300V/500V)

Part Number	Cross Sectional Area	Cables Class E (Exposed)			
		Sheath Thickness	Overall Diameter		Weight
			Min. mm	Max. mm	Cable kg/km
LSRS EN50306-4 5E 2x2x0.50SQ	2*2*0.5	1.0	10.1	11.3	100
LSRS EN50306-4 5E 3x2x0.50SQ	3*2*0.5	1.0	10.8	12.0	148
LSRS EN50306-4 5E 4x2x0.50SQ	4*2*0.5	1.0	11.8	13.0	180
LSRS EN50306-4 5E 7x2x0.50SQ	7*2*0.5	1.0	13.9	15.5	270
LSRS EN50306-4 5E 2x2x0.750SQ	2*2*0.75	1.0	10.9	12.1	119
LSRS EN50306-4 5E 3x2x0.75SQ	3*2*0.75	1.0	11.6	12.8	174
LSRS EN50306-4 5E 4x2x0.75SQ	4*2*0.75	1.0	12.8	14.0	218
LSRS EN50306-4 5E 7x2x0.75SQ	7*2*0.75	1.0	15.1	16.7	328
LSRS EN50306-4 5E 2x2x1.0SQ	2*2*1.0	1.0	11.3	12.5	129
LSRS EN50306-4 5E 3x2x1.0SQ	3*2*1.0	1.0	12.0	13.2	191
LSRS EN50306-4 5E 4x2x1.0SQ	4*2*1.0	1.0	13.2	14.4	235
LSRS EN50306-4 5E 7x2x1.0SQ	7*2*1.0	1.0	15.7	17.3	369
LSRS EN50306-4 5E 2x2x1.5SQ	2*2*1.5	1.0	13.3	14.5	191
LSRS EN50306-4 5E 3x2x1.5SQ	3*2*1.5	1.0	14.0	15.6	257
LSRS EN50306-4 5E 4x2x1.5SQ	4*2*1.5	1.0	15.5	17.1	337
LSRS EN50306-4 5E 7x2x1.5SQ	7*2*1.5	1.0	18.7	20.3	542

* Other range on request.

Part Number	Cables Class P (Protected)			
	Sheath Thickness	Overall Diameter		Weight
		Min. mm	Max. mm	Cable kg/km
LSRS EN50306-4 5P 2x2x0.50SQ	0.56	9.0	10.2	85
LSRS EN50306-4 5P 3x2x0.50SQ	0.56	9.6	10.8	118
LSRS EN50306-4 5P 4x2x0.50SQ	0.56	10.7	11.9	158
LSRS EN50306-4 5P 7x2x0.50SQ	0.56	13.0	14.2	244
LSRS EN50306-4 5P 2x2x0.750SQ	0.56	9.8	11.0	93
LSRS EN50306-4 5P 3x2x0.75SQ	0.56	10.5	11.7	147
LSRS EN50306-4 5P 4x2x0.75SQ	0.56	11.6	12.8	183
LSRS EN50306-4 5P 7x2x0.75SQ	0.56	14.0	15.6	293
LSRS EN50306-4 5P 2x2x1.05SQ	0.56	10.2	11.6	107
LSRS EN50306-4 5P 3x2x1.05SQ	0.56	10.9	12.1	163
LSRS EN50306-4 5P 4x2x1.05SQ	0.56	12.1	13.3	204
LSRS EN50306-4 5P 7x2x1.05SQ	0.56	14.6	16.2	332
LSRS EN50306-4 5P 2x2x1.55SQ	0.56	12.2	13.4	153
LSRS EN50306-4 5P 3x2x1.55SQ	0.56	13.1	14.3	232
LSRS EN50306-4 5P 4x2x1.55SQ	0.56	14.3	15.9	293
LSRS EN50306-4 5P 7x2x1.55SQ	0.56	17.6	19.2	493

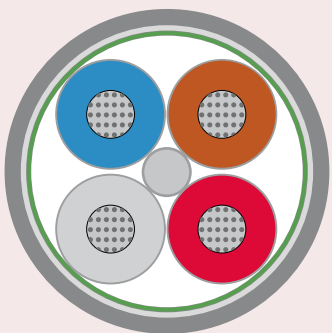
* Other range on request.



Convenience for High Speed Technology

The Leading Solution Provider, LS Cable & System introduced a new marketing concept, which is providing collected items applicable to an industry as a package instead of separately providing a single item. These LS Cable & System's business solutions are applicable to following industries : Wind Power Generation, Railway & Rolling stock, Airport, Power Transmission & distribution, Marine & Offshore, and Automotive. The Application Business manages various departments and their products to satisfy our customers' specific needs and convenience.

LS-MVB 4x0.5SQ, 120Ω
Databus Cable



Technical Data

• Voltage	300V
• Impedance	120Ω ± 12Ω @ 0.75~3MHz
• Temp. Range	-40°C ~ +90°C
• Attenuation	• ≤17dB/km (@ 1.5MHz) • ≤25dB/km (@ 3.0MHz)
• Allowable Min. bending radius	10D

Product List

Conductor	Cross-Section	Overall Dia.	Screen	Approx. Weight
-	mm ²	mm	-	kg/km
Tinned copper	4 x 0.5	7.90	Al/Mylar tape + Tinned copper braid	88

Properties



Halogen Free
EN50267-2-1
EN50267-2-2
EN60684-2



Flame Retardant
IEC60332-1
IEC 60332-3-24



Low Smoke
IEC61034



Ozone Resistant
EN50382



Oil Resistant
IRM 902

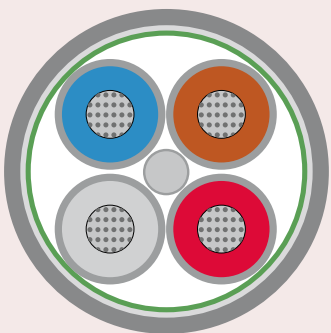


Cold Resistant
@-40 °C
EN 60811-1-4

Application

Standard communication interface for all kind of on-board equipment

LS-MVB(FR) 4x0.5SQ, 120Ω
Databus Cable



Technical Data

• Voltage	300V
• Impedance	120Ω ± 12Ω @ 0.75~3MHz
• Temp. Range	-40°C ~ +90°C
• Attenuation	• ≤17dB/km @ 1.5MHz • ≤25dB/km @ 3MHz
• Fire resistance	EN50200 830°C for 15 min.
• Allowable Min. bending radius	10D

Product List

Conductor	Cross-Section	Overall Dia.	Screen	Approx. Weight
-	mm ²	mm	-	kg/km
Tinned copper	4 x 0.5	9.5	Al/Mylar tape + Tinned copper braid	115

Properties



Halogen Free
EN50267-2-1
EN50267-2-2
EN60684-2



Flame Retardant
IEC60332-1
IEC 60332-3-24



Low Smoke
IEC61034



Ozone Resistant
EN50382



Oil Resistant
IRM 902

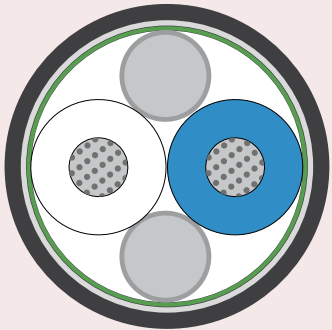


Cold Resistant
@-40 °C
EN 60811-1-4

Application

Standard communication interface for all kind of on-board equipment

LS-WTB 2x0.75SQ, 120Ω
Databus Cable



Technical Data

• Voltage	300V
• Impedance	120Ω ± 12Ω @ 0.5~2MHz
• Temp. Range	-40°C ~ +90°C
• Attenuation	• ≤10dB/km (@ 1.0MHz) • ≤14dB/km (@ 2.0MHz)
• Allowable Min. bending radius	10D

Product List

Conductor	Cross-Section	Overall Dia.	Screen	Approx. Weight
-	mm ²	mm	-	kg/km
Tinned copper	2 x 0.75	8.50	Al/Mylar tape + Tinned copper braid	93

Properties



Halogen Free
EN50267-2-1
EN50267-2-2
EN60684-2



Flame Retardant
IEC60332-1
IEC 60332-3-24



Low Smoke
IEC61034



Ozone Resistant
EN50382



Oil Resistant
IRM 902

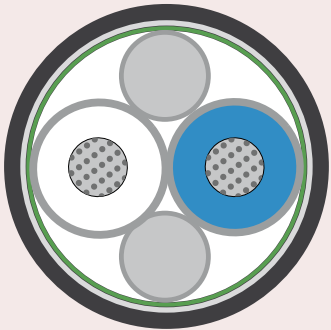


Cold Resistant
@-40°C
EN 60811-1-4

Application

Standard communication interface between vehicles

LS-WTB(FR) 2x0.75SQ, 120Ω
Databus Cable



Technical Data

• Voltage	300V
• Impedance	120Ω ± 12Ω @ 0.5~2MHz
• Temp. Range	-40°C ~ +90°C
• Attenuation	• ≤11dB/km @ 1MHz • ≤15dB/km @ 2MHz
• Fire resistance	EN50200 830°C for 15 min.
• Allowable Min. bending radius	10D

Product List

Conductor	Cross-Section	Overall Dia.	Screen	Approx. Weight
-	mm ²	mm	-	kg/km
Tinned copper	2 x 0.75	10.0	Al/Mylar tape + Tinned copper braid	120

Properties



Halogen Free
EN50267-2-1
EN50267-2-2
EN60684-2



Flame Retardant
IEC60332-1
IEC 60332-3-24



Low Smoke
IEC61034



Ozone Resistant
EN50382



Oil Resistant
IRM 902



Cold Resistant
@-40°C
EN 60811-1-4

Application

Standard communication interface between vehicles

Recomended Current Ratings Data

HS-RMSG-RD

1. Current Ratings

Conductor Cross-sectional Area sqmm	Current rating Single Cable A
1.5	30
2.5	40
4	56
6	74
10	104
16	135
25	184
35	233
50	295
70	369
95	442
120	522
150	602
185	688
240	830
300	953
400	1168

* Based upon a 20°C ambient air temperature
* Maximum conductor operating temperature : 90°C

2. Derating Factors

Temperature (°C)	Factor k ₁ *
10	1.06
15	1.03
20	1.00
25	0.97
30	0.93
35	0.89
40	0.85
45	0.81
50	0.76
55	0.72
60	0.66
65	0.60
70	0.54
75	0.46
80	0.38
85	0.27

*These factors are applicable to the ratings given in Table1

EN50355 : 2003 • Annex A. Recommended current ratings for railway rolling stock cables

3. Current Ratings

Conductor Cross-sectional Area sqmm	Current rating Single Cable A
1.5	25
2.5	33
4	46
6	60
10	85
16	110
25	150
35	190
50	240
70	300
95	360
120	425
150	490
185	560
240	675
300	775
400	950

* Based upon a 20°C ambient air temperature
* Maximum conductor operating temperature : 90°C

4. Derating Factors

Temperature (°C)	Factor k ₁ *
30	1.15
35	1.10
40	1.05
45	1.00
50	0.94
55	0.88
60	0.81
65	0.74
70	0.66
75	0.57
80	0.47
85	0.33

*These factors are applicable to the ratings given in Table3

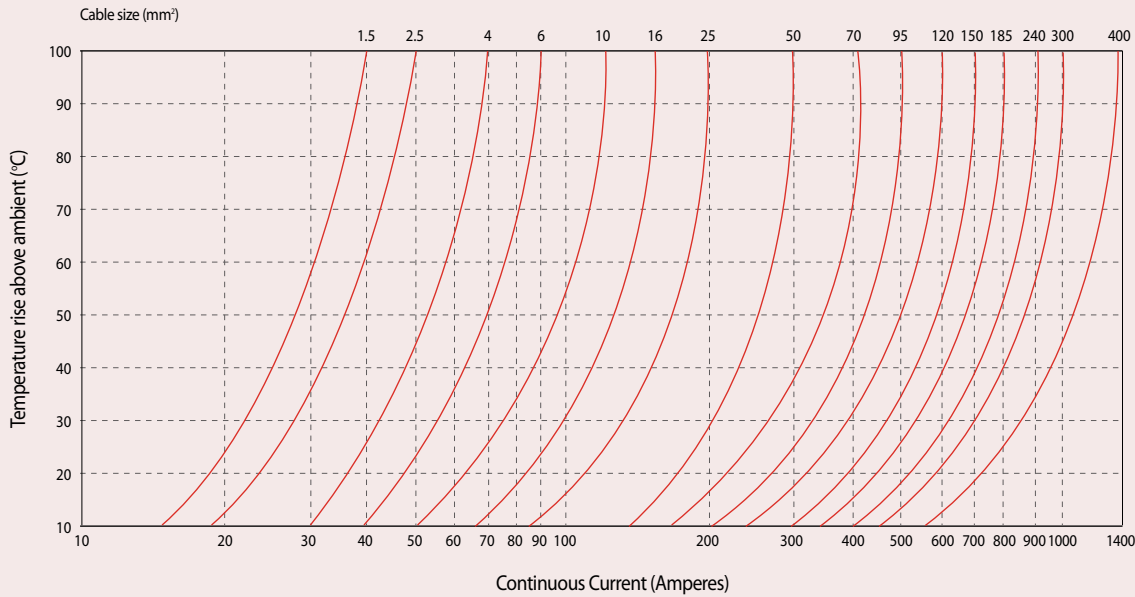
5. Correction factors for other ambient temperature

Temperature (°C)	Factor k ₁ *
105	1.15
120	1.29
140	1.45
150	1.52

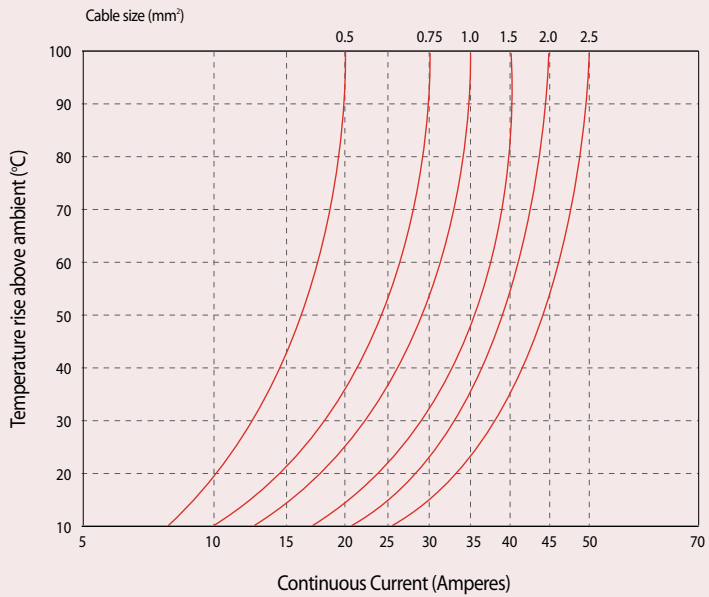
*These factors are applicable to the ratings given in Table3

Temperature Rise vs Current Guide

HF-RMSG-RD (EN50264-3-1) Cables in Free Air



LSRS Cables in Free Air (Single core)



Conductor Size (mm)	No. of Cores	Derating Factor
0.5	2	0.77
	3	0.62
	4	0.54
0.75	2	0.72
	3	0.61
	4	0.56
1	2	0.76
	3	0.67
	4	0.57
1.5	2	0.73
	3	0.63
	4	0.57
2	2	0.74
	3	0.65
	4	0.56
2.5	2	0.75
	3	0.64
	4	0.57

Table 1. Derating factors for multicore cables (LSRS-SB)

Products & Systems of LS Cable & System

Enable the Cabled World through the Use of Cable

Energy Cable

- Extra-high Voltage Cables

Extra-high voltage cables require the power network to go underground due to continuous increase of energy demand, larger transmission capacity, reliability of energy supply, safety and aesthetic issues. Among these cables, XLPE insulation cables are used widely due to their ease of handling, simple connectivity and maintenance, outstanding electrical features and other benefits.

- Submarine Cables

With the global renewable energy expansion, the demand for submarine power cables is steadily increasing. Embedded into the seabed, these cables interconnect the power grids of countries, as well as offshore wind farms and oil & gas platforms with the mainland. Our submarine turnkey solutions encompass the whole cable system: Design engineering, manufacturing, supply, installation, and testing.

- Overhead Line

LS Cable & System overhead wire is composed of ACSR and overhead ground wire. They are normally installed on steel towers, and recently the usage of high-capacity conductors for high-capacity transmission among power cables is increasing. Among overhead earth wires, the usage of OPGW, which has included communication functions to optical wires, has been increasing.

- Distribution Cables

Distribution cables can be divided into mid-to-low voltage cables that provide power to large-scale industrial sites and commercial buildings, control and instrumentation cables for signal transmission among industrial facilities, and insulation cables for distribution to electrical equipment and power supply to buildings.

- Bus Duct

Bus ducts are a fairly new-concept electricity distribution system first commercialized in the 20th century. As they are suitable for large-scale electrical systems, the demand for bus ducts is increasing rapidly. Following the trend of large-scale, wide-range energy supply/usage, bus ducts have proven to provide convenience of installation and maintenance as well as safety while minimizing energy loss.



Industrial Cables

- Industrial Specialty Cables

Industrial special cables are important heavy-duty cables that carry power and signals to facilities and equipment in various fields, such as shipbuilding, marine structures, wind power, nuclear power, mining and railways. Non-toxic high-molecular materials are used, and we are continuously developing products customized to the special usage environment of each industry.

- Industrial Devices Cables

LS Cable & System provides various cables for a wide range of industrial equipment including general industrial cables for home appliances, factory automation, equipment interfaces, automobile components, and also specialized industrial cables for military equipment, medical devices, broadcasting/sound facilities, railways and undersea applications.

- Automobiles Cables

Automobile cables have the central function of transmitting electricity to power various devices equipped on a vehicle such as lighting, air-conditioning units, steering servos, sensors, etc. LS Cable & System automobile cables consist of irradiation cables, general cables, battery cables, sensor cables, and others. We aim at providing total services through partnership with global automobile makers.

- Harness & Module

Demand for eco-friendly cars is increasing especially in Europe and China to solve environmental issues, and improve car fuel efficiency. Therefore, modularized parts, safe and lightweight products are necessary for high voltage harnesses, battery packs and energy storage devices. LS Cable & System aims to provide optimized, comprehensive solutions suitable to each customer's product usage environment.

- Tubes

Heat shrinkable tubes are high polymer synthetic resin products that can remember their original shape when heated. According to product, they shrink up to 33% or 75% in the radial direction, and adhere precisely to the object for insulation protection, core identification and anti-corrosion purposes.



Telecommunication

- Optical Cables

LS Cable & System opens a happier, richer future through providing total solutions for optical communication, which is required to create an ultra-high-speed, multimedia world. We produce optical fiber, optical cables, and optical connection materials.

- Structured Cabling System

LS Cable & System Structured Cabling System provides high performance & high density in its communication infrastructure. LS Simple™ offers End to End Solution for IT infrastructure with superior technical support & best quality control under 25 years warranty.

- RF Feeder System

Generally, coaxial cables are used for communication equipment in specific locations, and signal transmission between remote locations. For underground applications or tunnels, leak coaxial cables are used in which the external conductor is processed to create a signal leakage slot so the cable functions as the antenna. LS Cable & System provides solution packages for various transmission line applications.



Materials

- Copper Rod

LS Cable & System launched its copper rod business in 1980 with the purchase of facilities from Southwire (USA). We are producing SCR, OFC and copper alloys. We have the largest facilities in Korea and produce globally renowned product quality and technology. Copper rods are used as conductors to produce various cables and also for special purposes (electric vehicles, flat wire, plating).

- Magnet Wires

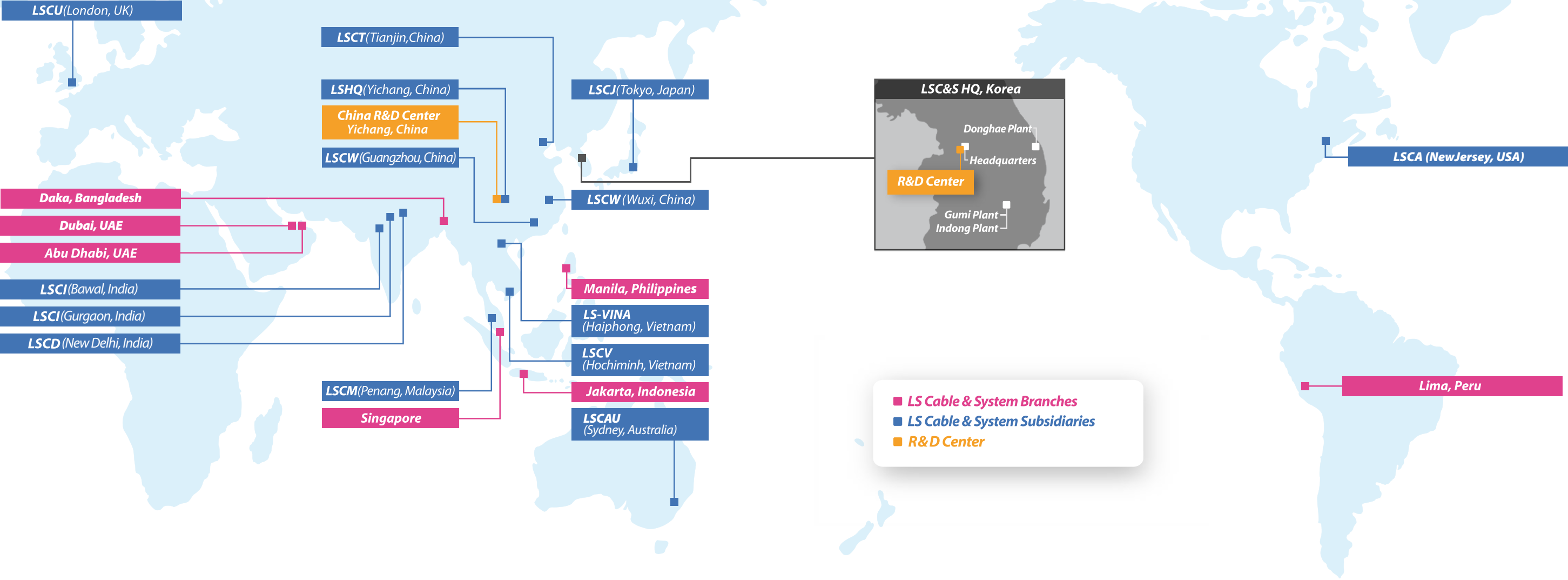
The magnet wire is a material essential for energy conversion. It is used mostly for converting electric energy into kinetic energy or vice versa and widely used in various electronic parts. LS Cable & System's magnet wire business are divided into round wire, flat and rectangular wire, high-function magnet wire.

- Aluminum

As light aluminum products save energy, they replaced existing copper (Cu) products in automobiles/home appliances/architecture/electric wires, and they are very popular. LS Cable & System is capitalizing its own facilities to introduce various products made of aluminum alloy to meet customer needs.



Global Network



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Jakarta Office(Indonesia)

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Manila Office(Philippines)

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Daka Office(Bangladesh)

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LSCAU(Australia) : Marketing and Sales

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LSCU(U.K.) : Marketing and Sales

Tel. +44-20-8545-2640 Fax. +44-20-8545-2643

LSCJ(Japan) : Marketing and Sales

Tel. +81-3-6205-7188 Fax. +81-3-6205-7187

LSCD(India) : Marketing and Sales

Tel. +91-11-4106-4242

LSHQ(China)

Tel. +86-717-667-7777

Production : EHV, LV/MV, Overhead Transmission Line, Industrial Specialty Cable & System

LSCT(China)

Tel. +86-22-2699-7618 Fax. +86-22-2695-7617

Production : Magnet Wire

LSCW(China)

Tel. +86-510-8811-9000 Fax. +86-510-8534-5341

Production : Automotive Wire & Cable, Bus Duct, Electronic Wire & Cable, Tube, ACF, Accessories for EHV Cable System

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Guangzhou Office(Guangzhou)

Tel. +86-20-8326-6321 Fax. +86-20-8326-6270

LS-VINA(Vietnam)

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Production : EHV, LV/MV, ACSR, OPGW, SCR

LSCV(Vietnam)

Tel. +84-61-356-9140 Fax. +84-61-356-9148

Production : Low Voltage Cable, UTP

LSCM(Malaysia)

Tel. +60-4-588-9609 Fax. +60-4-588-9607

Production : Magnet Wire

LSCI(India)

Gurgaon: Marketing & Sales

Tel. +91-124-428-5800-4 Fax. +91-124-428-5805

Bawal

Tel. +91-128-426-4267 Fax. +91-128-426-4364

Production : RF Feeder Cable, Network Solution, EHV, LV/MV, OPGW

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Korea Operations

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Gumi Plant

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Production : Power Cable up to 500kV, OHTL, OPGW, Data Cable, RF Feeder System, Copper Rod, Magnet Wire

Indong Plant

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Production : Industrial Cable & Module, Optical Cable, Aluminum Materials

Donghae Plant

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Production : Submarine Cable, Industrial Specialty Cable

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