LS Cable & System Vietnam – SAHAKO

Data Cabling System

Twenty-five Years System Warranty 25

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, Gaon Cable, 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.

Contents

THE WORLD BEST CABLE SOLUTION LEADER

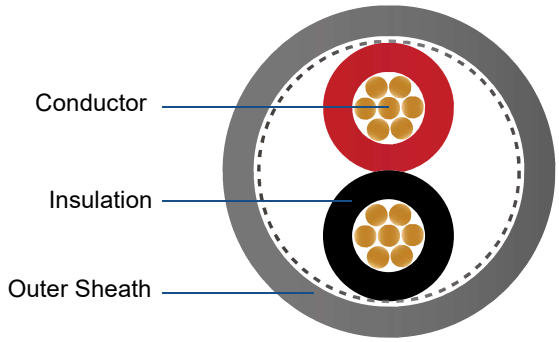
LS Cable & System supplies various cables and materials used for power grids and communication networks around the world across all industries providing its top class technology and excellent quality. The company has also developed state of the art products, such as superconductors, HVDC and submarine cables that will lead the future energy industry.

LS spun off from LG in 2003 as a group specializing in electronics, electrical systems, energy and materials.

LS

- **LS Cable & System**
  - Transmission Cable
  - Distribution Cable
  - Submarine Cable
  - Telecommunication Cable
  - Industrial Cable
  - Industrial Material
- **LS ELECTRIC**
  - Electric & Automatic Equipments
- **LS-Nikko Copper**
  - Copper Refinement
- **LS Mtron**
  - Mechanical & Electronic Parts
- **yesco**
  - LNG
- **E1**
  - LPG
- **GAON**
  - Power & Communication Cables

UNSHIELDED DATA CABLE



Description

- Multipair twisted cable
- Low level of line attenuations and low mutual capacitances enable long transmission distances
- Packaged on Wooden Reel
- ISO 9001 : 2015, ISO 14001 : 2015 and RoHS compliant

Application

- Internal wiring of electronic equipment, transmission measurement and control signals with minimum noise.
- Industrial, Data, Interconnect
- Public Address, BMS and Fire Alarm systems
- Optimized for Analogue Audio system
- *This product is not permitted for use in power applications.*

Technical Data

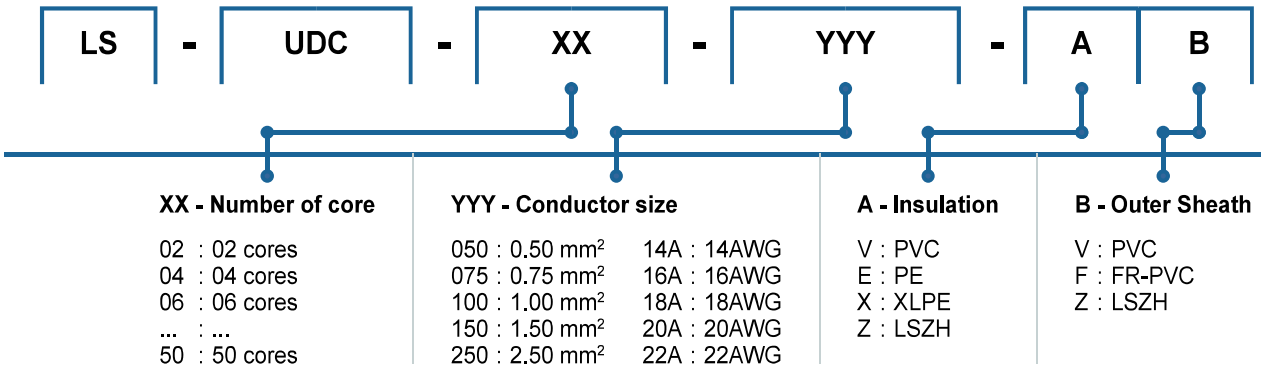
Application standard	BS EN 50288-7:2005
Temperature range	-20º C to +90º C
Operating peak Voltage *(not for power application)*	300/ 500 V 600/1000 V (option available on request)
Test voltage	2000 V
Minimum bending radius	Fixed 7.5 x cable Ø
Insulation resistance	> 5000 MΩxkm
Mutual capacitance	C/C: < 100 pF/m C/S: < 200 pF/m
Inductance	< 0.3 mH/km
Impedance	60 Ω

Cable Structure

- **Conductor**: Bare copper conductor, multiple wired according to IEC 60228 (Class 2/ Class 5) or ASTM (B 3/ B 33).
- **Core Insulation**: PVC (acc. to EN 50290-2-21) or PE (acc. to EN 50290-2-23) or XLPE (acc. to EN 50290-2-29) or LSZH (acc. to EN 50290-2-27). *Cores are twisted together in pairs.*
- **Outer sheath**: PVC or FR-PVC (acc. to EN 50290-2-22) or LSZH (acc. to EN 50290-2-27). Grey color.

UNSHIELDED DATA CABLE

Part Number



** Other conductor sizes are available upon request: 125 (1.25mm²), 200 (2.00mm²), 24A (24AWG) ... etc.*

Core Identification

02 cores: Black/ Red
04 cores: Black/ Red + Black/ White
06 up to 50(+) cores: Black + Numbered

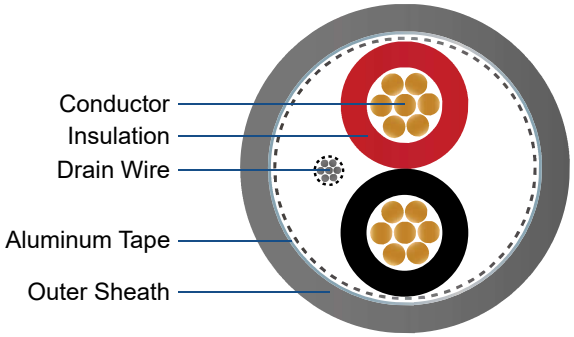
AWG to mm²

The conductor is metrically (mm²) or American Wire Gauge (AWG) constructed.
The AWG to mm² conversion is approximate and purely informative.

AWG	mm²
20	0.5
18	0.75
17	1.0
16	1.5

AWG	mm²
14	2.5
12	4
10	6
8	10

SHIELDED DATA CABLE



Description

- Multipair twisted cable with Aluminum Mylar Tape Shield and Drain wire
- Low level of line attenuations and low mutual capacitances enable long transmission distances
- Packaged on Wooden Reel
- ISO 9001 : 2015, ISO 14001 : 2015 and RoHS compliant

Application

- Internal wiring of electronic equipment, transmission measurement and control signals with minimum noise.
- Industrial, Data, Interconnect
- BMS, Fire Alarm systems
- Optimized for Public Address system
- *This product is not permitted for use in power applications.*

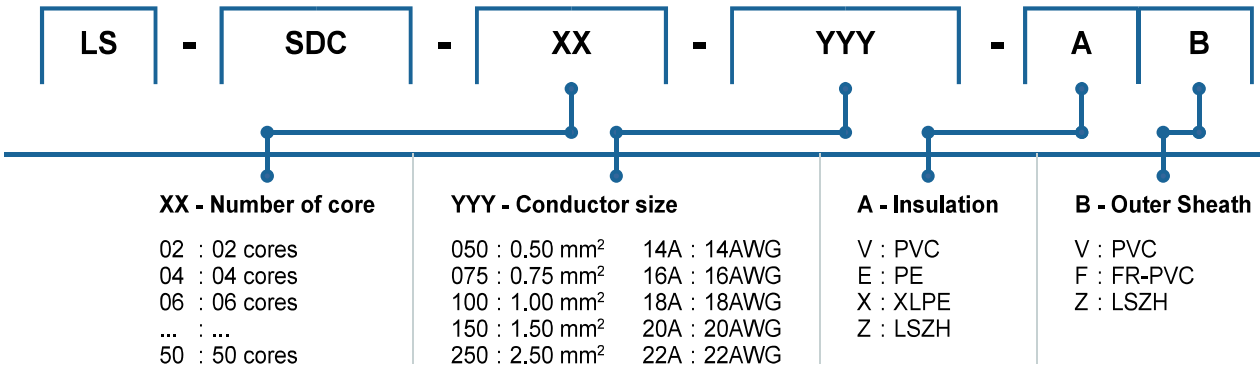
Technical Data

Application standard	BS EN 50288-7:2005
Temperature range	-20º C to +90º C
Operating peak Voltage *(not for power application)*	300/ 500 V 600/1000 V (option available on request)
Test voltage	2000 V
Minimum bending radius	Fixed 7.5 x cable Ø
Insulation resistance	> 5000 MΩxkm
Mutual capacitance	C/C: < 100 pF/m C/S: < 200 pF/m
Inductance	< 0.3 mH/km
Impedance	60 Ω

Cable Structure

- **Conductor**: Bare copper conductor, multiple wired according to IEC 60228 (Class 2/ Class 5) or ASTM (B 3/ B 33).
- **Core Insulation**: PVC (acc. to EN 50290-2-21) or PE (acc. to EN 50290-2-23) or XLPE (acc. to EN 50290-2-29) or LSZH (acc. to EN 50290-2-27). *Cores are twisted together in pairs.*
- **Overall Screen:** Aluminum Mylar tape over tinned copper stranded drain wire.
- **Outer sheath**: PVC or FR-PVC (acc. to EN 50290-2-22) or LSZH (acc. to EN 50290-2-27). Grey color.

Part Number



** Other conductor sizes are available upon request: 125 (1.25mm²), 200 (2.00mm²), 24A (24AWG) ... etc.*

Core Identification

02 cores: Black/ Red
04 cores: Black/ Red + Black/ White
06 up to 50(+) cores: Black + Numbered

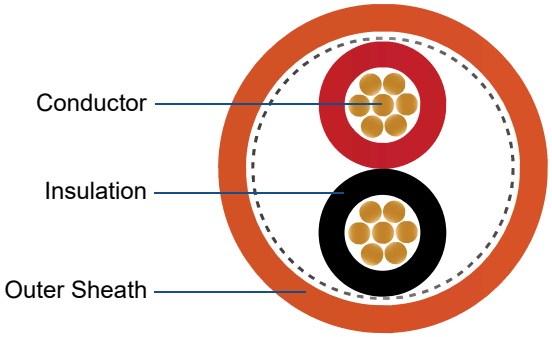
AWG to mm²

The conductor is metrically (mm²) or American Wire Gauge (AWG) constructed.
The AWG to mm² conversion is approximate and purely informative.

AWG	mm²
20	0.5
18	0.75
17	1.0
16	1.5

AWG	mm²
14	2.5
12	4
10	6
8	10

UNSHIELDED FLAME RETARDANT DATA CABLE



Description

- Multipair twisted cable
- Low level of line attenuations and low mutual capacitances enable long transmission distances
- Packaged on Wooden Reel
- ISO 9001 : 2015, ISO 14001 : 2015 and RoHS compliant

Application

- Internal wiring of electronic equipment, transmission measurement and control signals with minimum noise.
- Industrial, Data, Interconnect
- BMS, Public Address systems
- Optimized for Fire Alarm system
- *This product is not permitted for use in power applications.*

Technical Data

Application standard	BS EN 50288-7:2005
Temperature range	-20º C to +90º C
Operating peak Voltage *(not for power application)*	300/ 500 V 600/1000 V (option available on request)
Test voltage	2000 V
Minimum bending radius	Fixed 7.5 x cable Ø
Insulation resistance	> 5000 MΩxkm
Mutual capacitance	C/C: < 100 pF/m C/S: < 200 pF/m
Inductance	< 0.3 mH/km
Impedance	60 Ω

Cable Structure

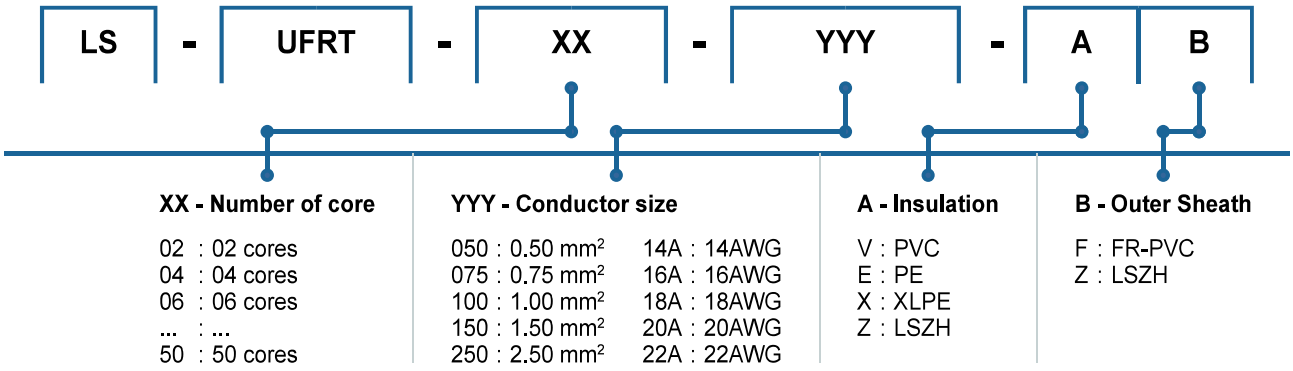
- **Conductor:** Bare copper conductor, multiple wired according to IEC 60228 (Class 2/ Class 5) or ASTM (B 3/ B 33).
- **Core Insulation:** PVC (acc. to EN 50290-2-21) or PE (acc. to EN 50290-2-23) or XLPE (acc. to EN 50290-2-29) or LSZH (acc. to EN 50290-2-27). *Cores are twisted together in pairs.*
- **Outer sheath:** FR-PVC (acc. to EN 50290-2-22) or LSZH (acc. to EN 50290-2-27). Orange color.

UNSHIELDED FLAME RETARDANT DATA CABLE

Tests

- Flame retardant according to IEC 60332-1-2
- Flame test on bunched wires according to IEC 60332-3-24 (Cat. C)
- Flame test on bunched wires according to IEC 60332-3-22 (Cat. A)
- Corrosiveness of combustion gases according to IEC 60754-2
- Smoke density according to IEC 61034-1
- Halogen-free according to IEC 60754-1
- Oil resistant according to IEC 60811-404
- Suitable for usage in explosive atmospheres acc. to IEC 60079-14 sec. 16.2.2

Part Number



** Other conductor sizes are available upon request: 125 (1.25mm²), 200 (2.00mm²), 24A (24AWG) ... etc.*

Core Identification

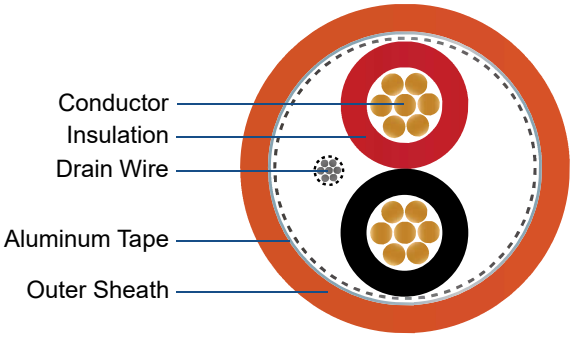
02 cores: Black/ Red
04 cores: Black/ Red + Black/ White
06 up to 50(+) cores: Black + Numbered

AWG to mm²

The conductor is metrically (mm²) or American Wire Gauge (AWG) constructed.
The AWG to mm² conversion is approximate and purely informative.

AWG	mm²	AWG	mm²
20	0.5	14	2.5
18	0.75	12	4
17	1.0	10	6
16	1.5	8	10

SHIELDED FLAME RETARDANT DATA CABLE



Description

- Multipair twisted cable with Aluminum Mylar Tape Shield and Drain wire
- Low level of line attenuations and low mutual capacitances enable long transmission distances
- Packaged on Wooden Reel
- ISO 9001 : 2015, ISO 14001 : 2015 and RoHS compliant

Application

- Internal wiring of electronic equipment, transmission measurement and control signals with minimum noise.
- Industrial, Data, Interconnect
- BMS, Public Address systems
- Optimized for Fire Alarm system
- *This product is not permitted for use in power applications.*

Technical Data

Application standard	BS EN 50288-7:2005
Temperature range	-20º C to +90º C
Operating peak Voltage *(not for power application)*	300/ 500 V 600/1000 V (option available on request)
Test voltage	2000 V
Minimum bending radius	Fixed 7.5 x cable Ø
Insulation resistance	> 5000 MΩxkm
Mutual capacitance	C/C: < 100 pF/m C/S: < 200 pF/m
Inductance	< 0.3 mH/km
Impedance	60 Ω

Cable Structure

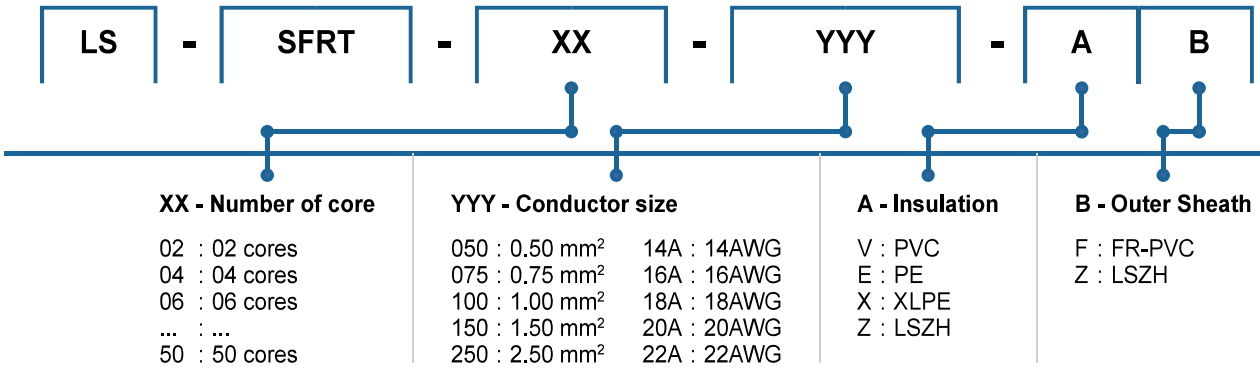
- **Conductor:** Bare copper conductor, multiple wired according to IEC 60228 (Class 2/ Class 5) or ASTM (B 3/ B 33).
- **Core Insulation:** PVC (acc. to EN 50290-2-21) or PE (acc. to EN 50290-2-23) or XLPE (acc. to EN 50290-2-29) or LSZH (acc. to EN 50290-2-27). *Cores are twisted together in pairs.*
- **Overall Screen:** Aluminum Mylar tape over tinned copper stranded drain wire.
- **Outer sheath:** FR-PVC (acc. to EN 50290-2-22) or LSZH (acc. to EN 50290-2-27). Orange color.

SHIELDED FLAME RETARDANT DATA CABLE

Tests

- Flame retardant according to IEC 60332-1-2
- Flame test on bunched wires according to IEC 60332-3-24 (Cat. C)
- Flame test on bunched wires according to IEC 60332-3-22 (Cat. A)
- Corrosiveness of combustion gases according to IEC 60754-2
- Smoke density according to IEC 61034-1
- Halogen-free according to IEC 60754-1
- Oil resistant according to IEC 60811-404
- Suitable for usage in explosive atmospheres acc. to IEC 60079-14 sec. 16.2.2

Part Number



** Other conductor sizes are available upon request: 125 (1.25mm²), 200 (2.00mm²), 24A (24AWG) ... etc.*

Core Identification

02 cores: Black/ Red
04 cores: Black/ Red + Black/ White
06 up to 50(+) cores: Black + Numbered

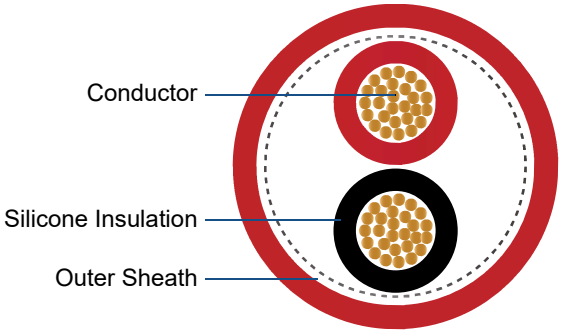
AWG to mm²

The conductor is metrically (mm²) or American Wire Gauge (AWG) constructed.
The AWG to mm² conversion is approximate and purely informative.

AWG	mm²	AWG	mm²
20	0.5	14	2.5
18	0.75	12	4
17	1.0	10	6
16	1.5	8	10

UNSHIELDED FIRE RESISTANT DATA CABLE

Silicone Fire Barrier



Description

- Multipair twisted cable with silicone fire barrier
- Low level of line attenuations and low mutual capacitances enable long transmission distances
- Packaged on Wooden Reel
- ISO 9001 : 2015, ISO 14001 : 2015 and RoHS compliant

Application

- Internal wiring of electronic equipment, transmission measurement and control signals with minimum noise.
- Industrial, Data, Interconnect
- Public Address, Fire Alarm systems
- Optimized for BMS system
- *This product is not permitted for use in power applications.*

Technical Data

Application standard	BS EN 50288-7:2005
Temperature range	-20º C to +90º C
Operating peak Voltage *(not for power application)*	300/ 500 V 600/1000 V (option available on request)
Test voltage	2000 V
Minimum bending radius	Fixed 7.5 x cable Ø
Insulation resistance	> 5000 MΩxkm
Mutual capacitance	C/C: < 100 pF/m C/S: < 200 pF/m
Inductance	< 0.3 mH/km
Impedance	60 Ω

Cable Structure

- **Conductor:** Bare copper conductor, multiple wired according to IEC 60228 (Class 2/ Class 5) or ASTM (B 3/ B 33).
- **Core Insulation (fire barrier):** Cross-linked ceramic forming polymer (Silicone) compound.
  Cores are twisted together in pairs.
- **Outer sheath:** LSZH (acc. to EN 50290-2-27). Red color.

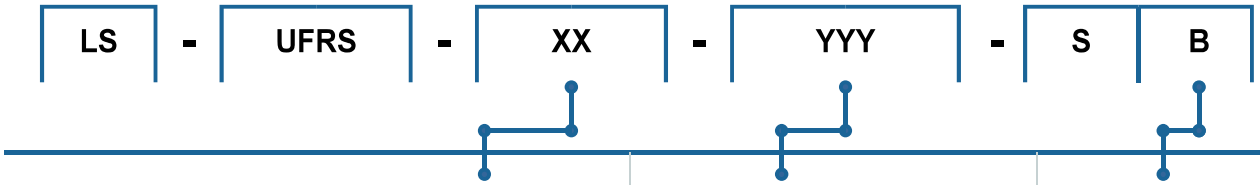
UNSHIELDED FIRE RESISTANT DATA CABLE

Silicone Fire Barrier

Tests

- Fire resistant according to IEC 60331-21
- Flame retardant according to IEC 60332-1-2
- Flame test on bunched wires according to IEC 60332-3-24 (Cat. C)
- Flame test on bunched wires according to IEC 60332-3-22 (Cat. A)
- Corrosiveness of combustion gases according to IEC 60754-2
- Smoke density according to IEC 61034-1
- Halogen-free according to IEC 60754-1
- Oil resistant according to IEC 60811-404
- Suitable for usage in explosive atmospheres acc. to IEC 60079-14 sec. 16.2.2

Part Number



XX - Number of core

02 : 02 cores
04 : 04 cores
06 : 06 cores
... : ...
50 : 50 cores

YYY - Conductor size

050 : 0.50 mm²
075 : 0.75 mm²
100 : 1.00 mm²
150 : 1.50 mm²
250 : 2.50 mm²
14A : 14AWG
16A : 16AWG
18A : 18AWG
20A : 20AWG
22A : 22AWG

B - Outer Sheath

V : PVC
F : FR-PVC
Z : LSZH

** Other conductor sizes are available upon request: 125 (1.25mm²), 200 (2.00mm²), 24A (24AWG) ... etc.*

Core Identification

02 cores: Black/ Red
04 cores: Black/ Red + Black/ White
06 up to 50(+) cores: Black + Numbered

AWG to mm²

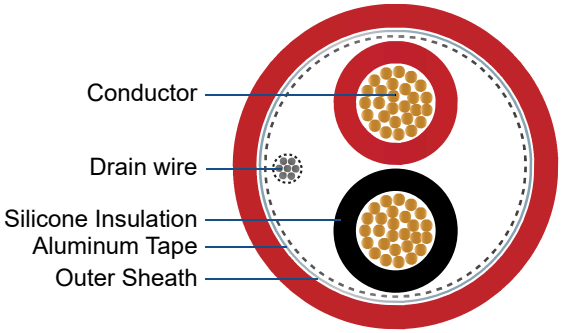
The conductor is metrically (mm²) or American Wire Gauge (AWG) constructed.
The AWG to mm² conversion is approximate and purely informative.

AWG	mm²
20	0.5
18	0.75
17	1.0
16	1.5

AWG	mm²
14	2.5
12	4
10	6
8	10

SHIELDED FIRE RESISTANT DATA CABLE

Silicone Fire Barrier



Description

- Multipair twisted cable with silicone fire barrier, Aluminum Mylar Tape Shield and Drain wire
- Low level of line attenuations and low mutual capacitances enable long transmission distances
- Packaged on Wooden Reel
- ISO 9001 : 2015, ISO 14001 : 2015 and RoHS compliant

Application

- Internal wiring of electronic equipment, transmission measurement and control signals with minimum noise.
- Industrial, Data, Interconnect
- Public Address, Fire Alarm systems
- Optimized for BMS system
- *This product is not permitted for use in power applications.*

Technical Data

Application standard	BS EN 50288-7:2005
Temperature range	-20º C to +90º C
Operating peak Voltage *(not for power application)*	300/ 500 V 600/1000 V (option available on request)
Test voltage	2000 V
Minimum bending radius	Fixed 7.5 x cable Ø
Insulation resistance	> 5000 MΩxkm
Mutual capacitance	C/C: < 100 pF/m C/S: < 200 pF/m
Inductance	< 0.3 mH/km
Impedance	60 Ω

Cable Structure

- **Conductor:** Bare copper conductor, multiple wired according to IEC 60228 (Class 2/ Class 5) or ASTM (B 3/ B 33).
- **Core Insulation (fire barrier):** Cross-linked ceramic forming polymer (Silicone) compound.
  Cores are twisted together in pairs.
- **Overall Screen:** Aluminum Mylar tape over tinned copper stranded drain wire.
- **Outer sheath:** LSZH (acc. to EN 50290-2-27). Red color.

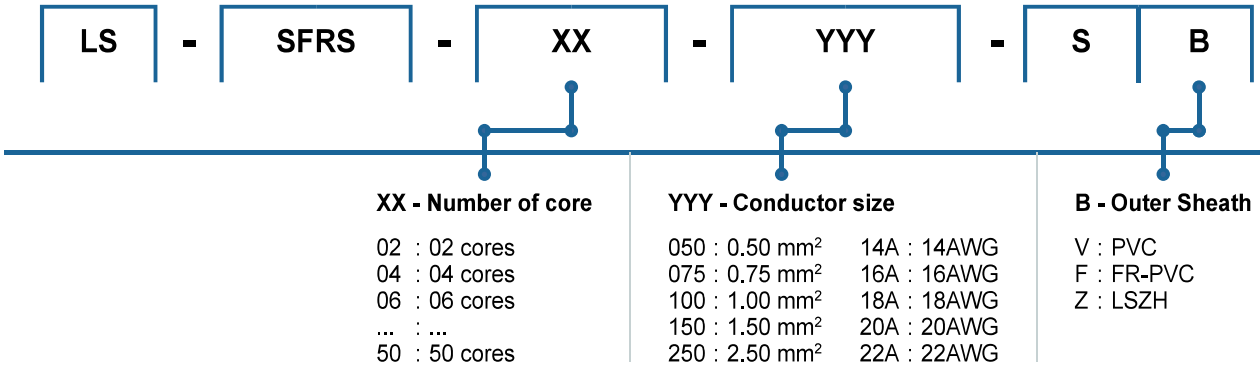
SHIELDED FIRE RESISTANT DATA CABLE

Silicone Fire Barrier

Tests

- Fire resistant according to IEC 60331-21
- Flame retardant according to IEC 60332-1-2
- Flame test on bunched wires according to IEC 60332-3-24 (Cat. C)
- Flame test on bunched wires according to IEC 60332-3-22 (Cat. A)
- Corrosiveness of combustion gases according to IEC 60754-2
- Smoke density according to IEC 61034-1
- Halogen-free according to IEC 60754-1
- Oil resistant according to IEC 60811-404
- Suitable for usage in explosive atmospheres acc. to IEC 60079-14 sec. 16.2.2

Part Number



** Other conductor sizes are available upon request: 125 (1.25mm²), 200 (2.00mm²), 24A (24AWG) ... etc.*

Core Identification

02 cores: Black/ Red
04 cores: Black/ Red + Black/ White
06 up to 50(+) cores: Black + Numbered

AWG to mm²

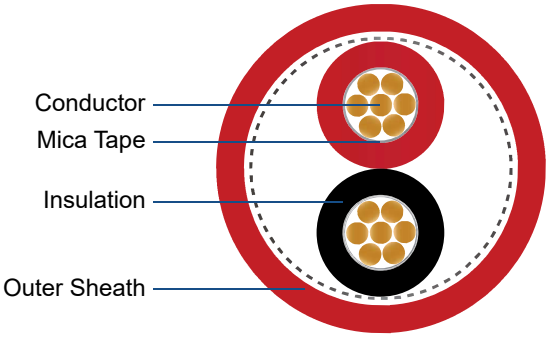
The conductor is metrically (mm²) or American Wire Gauge (AWG) constructed.
The AWG to mm² conversion is approximate and purely informative.

AWG	mm²
20	0.5
18	0.75
17	1.0
16	1.5

AWG	mm²
14	2.5
12	4
10	6
8	10

UNSHIELDED FIRE RESISTANT DATA CABLE

Mica Fire Barrier



Description

- Multipair twisted cable with Mica tape
- Low level of line attenuations and low mutual capacitances enable long transmission distances
- Packaged on Wooden Reel
- ISO 9001 : 2015, ISO 14001 : 2015 and RoHS compliant

Application

- Internal wiring of electronic equipment, transmission measurement and control signals with minimum noise.
- Industrial, Data, Interconnect
- BMS, Public Address systems
- Optimized for Fire Alarm system
- *This product is not permitted for use in power applications.*

Technical Data

Application standard	BS EN 50288-7:2005
Temperature range	-20º C to +90º C
Operating peak Voltage *(not for power application)*	300/ 500 V 600/1000 V (option available on request)
Test voltage	2000 V
Minimum bending radius	Fixed 7.5 x cable Ø
Insulation resistance	> 5000 MΩxkm
Mutual capacitance	C/C: < 100 pF/m C/S: < 200 pF/m
Inductance	< 0.3 mH/km
Impedance	60 Ω

Cable Structure

- **Conductor:** Bare copper conductor, multiple wired according to IEC 60228 (Class 2/ Class 5) or ASTM (B 3/ B 33).
- **Fire barrier:** MICA tape.
- **Core Insulation:** XLPE (acc. to EN 50290-2-29) or LSZH (acc. to EN 50290-2-27). *Cores are twisted together in pairs.*
- **Outer sheath:** FR-PVC (acc. to EN 50290-2-22) or LSZH (acc. to EN 50290-2-27). Red color.

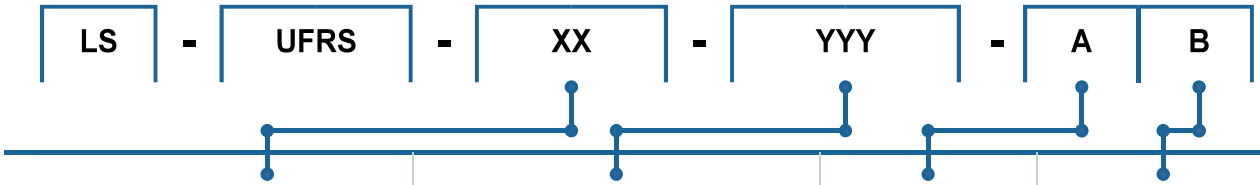
UNSHIELDED FIRE RESISTANT DATA CABLE

Mica Fire Barrier

Tests

- Fire resistant according to IEC 60331-21 / BS 6387 (Cat. CWZ)
- Flame retardant according to IEC 60332-1-2
- Flame test on bunched wires according to IEC 60332-3-24 (Cat. C)
- Flame test on bunched wires according to IEC 60332-3-22 (Cat. A)
- Corrosiveness of combustion gases according to IEC 60754-2
- Smoke density according to IEC 61034-1
- Halogen-free according to IEC 60754-1
- Oil resistant according to IEC 60811-404
- Suitable for usage in explosive atmospheres acc. to IEC 60079-14 sec. 16.2.2

Part Number



XX - Number of core

02 : 02 cores
04 : 04 cores
06 : 06 cores
... : ...
50 : 50 cores

YYY - Conductor size

050 : 0.50 mm²
075 : 0.75 mm²
100 : 1.00 mm²
150 : 1.50 mm²
250 : 2.50 mm²
14A : 14AWG
16A : 16AWG
18A : 18AWG
20A : 20AWG
22A : 22AWG

A - Insulation

X : XLPE
Z : LSZH

B - Outer Sheath

F : FR-PVC
Z : LSZH

** Other conductor sizes are available upon request: 125 (1.25mm²), 200 (2.00mm²), 24A (24AWG) ... etc.*

Core Identification

02 cores: Black/ Red
04 cores: Black/ Red + Black/ White
06 up to 50(+) cores: Black + Numbered

AWG to mm²

The conductor is metrically (mm²) or American Wire Gauge (AWG) constructed.
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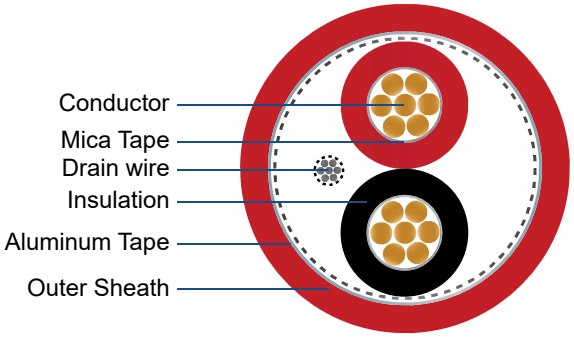
AWG	mm²
20	0.5
18	0.75
17	1.0
16	1.5

AWG	mm²
14	2.5
12	4
10	6
8	10

SHIELDED FIRE RESISTANT DATA CABLE

Mica Fire Barrier



Description

- Multipair twisted cable with Mica tape, Aluminum Mylar Tape Shield and Drain wire
- Low level of line attenuations and low mutual capacitances enable long transmission distances
- Packaged on Wooden Reel
- ISO 9001 : 2015, ISO 14001 : 2015 and RoHS compliant

Application

- Internal wiring of electronic equipment, transmission measurement and control signals with minimum noise.
- Industrial, Data, Interconnect
- BMS, Public Address systems
- Optimized for Fire Alarm system
- *This product is not permitted for use in power applications.*

Technical Data

Application standard	BS EN 50288-7:2005
Temperature range	-20º C to +90º C
Operating peak Voltage *(not for power application)*	300/ 500 V 600/1000 V (option available on request)
Test voltage	2000 V
Minimum bending radius	Fixed 7.5 x cable Ø
Insulation resistance	> 5000 MΩxkm
Mutual capacitance	C/C: < 100 pF/m C/S: < 200 pF/m
Inductance	< 0.3 mH/km
Impedance	60 Ω

Cable Structure

- **Conductor:** Bare copper conductor, multiple wired according to IEC 60228 (Class 2/ Class 5) or ASTM (B 3/ B 33).
- **Fire barrier:** MICA tape.
- **Core Insulation:** XLPE (acc. to EN 50290-2-29) or LSZH (acc. to EN 50290-2-27). *Cores are twisted together in pairs.*
- **Overall Screen:** Aluminum Mylar tape over tinned copper stranded drain wire.
- **Outer sheath:** FR-PVC (acc. to EN 50290-2-22) or LSZH (acc. to EN 50290-2-27). Red color.

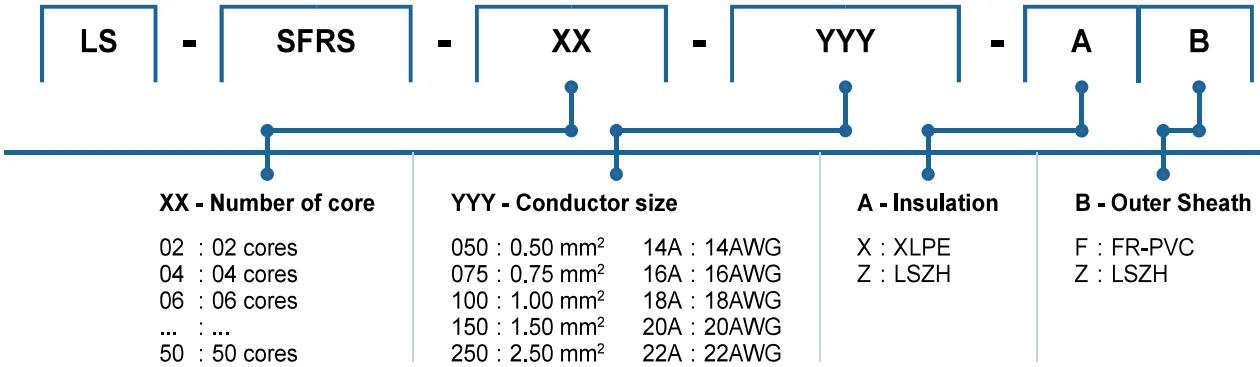
SHIELDED FIRE RESISTANT DATA CABLE

Mica Fire Barrier

Tests

- Fire resistant according to IEC 60331-21 / BS 6387 (Cat. CWZ)
- Flame retardant according to IEC 60332-1-2
- Flame test on bunched wires according to IEC 60332-3-24 (Cat. C)
- Flame test on bunched wires according to IEC 60332-3-22 (Cat. A)
- Corrosiveness of combustion gases according to IEC 60754-2
- Smoke density according to IEC 61034-1
- Halogen-free according to IEC 60754-1
- Oil resistant according to IEC 60811-404
- Suitable for usage in explosive atmospheres acc. to IEC 60079-14 sec. 16.2.2

Part Number



** Other conductor sizes are available upon request: 125 (1.25mm²), 200 (2.00mm²), 24A (24AWG) ... etc.*

Core Identification

02 cores: Black/ Red
04 cores: Black/ Red + Black/ White
06 up to 50(+) cores: Black + Numbered

AWG to mm²

The conductor is metrically (mm²) or American Wire Gauge (AWG) constructed.
The AWG to mm² conversion is approximate and purely informative.

AWG	mm²
20	0.5
18	0.75
17	1.0
16	1.5

AWG	mm²
14	2.5
12	4
10	6
8	10

CERTIFICATE

This is to certify that

LS CABLE & SYSTEM VIETNAM CO., LTD.

Nhon Trach 2 - Loc Khang Industrial Zone,
Hiep Phuoc Town, Nhon Trach District,
Dong Nai Province,
Vietnam

has implemented and maintains a **Quality Management System**.

Scope:
Manufacturing of Copper Telecommunication Cables, Power Cables, Control Cables, Optical Fiber Cables and Busduct to Specification Agreed Upon with LS Cables & System, Ltd.

Through an audit, documented in a report, it was verified that the management system fulfills the requirements of the following standard:

ISO 9001 : 2015

Certificate registration no.	50650011 QM15
Valid from	2021-10-05
Valid until	2024-10-04
Date of certification	2021-10-05

DQS GmbH

Markus Bleher
Managing Director

Accredited Body: DQS GmbH, August-Schanz-Straße 21, 60433 Frankfurt am Main, Germany
Administrative Office: DQS Cert. Co. Ltd., Helios Tower- Tower B,
No 75 Tam Trinh Street, Mai Dong Ward, Hoang Mai District, Hanoi, Vietnam

CERTIFICATE

This is to certify that

LS CABLE & SYSTEM VIETNAM CO., LTD.

Nhon Trach 2 - Loc Khang Industrial Zone,
Hiep Phuoc Town, Nhon Trach District,
Dong Nai Province,
Vietnam

has implemented and maintains an **Environmental Management System**.

Scope:
Manufacturing of Copper Telecommunication Cables, Power Cables, Control Cables, Optical Fiber Cables and Busduct to Specification Agreed Upon with LS Cables & System, Ltd.

Through an audit, documented in a report, it was verified that the management system fulfills the requirements of the following standard:

ISO 14001 : 2015

Certificate registration no.	50650011 UM15
Valid from	2021-10-05
Valid until	2024-10-04
Date of certification	2021-10-05

DQS GmbH

Markus Bleher
Managing Director

Accredited Body: DQS GmbH, August-Schanz-Straße 21, 60433 Frankfurt am Main, Germany
Administrative Office: DQS Cert. Co. Ltd., Helios Tower- Tower B,
No 75 Tam Trinh Street, Mai Dong Ward, Hoang Mai District, Hanoi, Vietnam

Quatest 1
TỔNG CỤC TIÊU CHUẨN ĐO LƯỜNG CHẤT LƯỢNG
Directorate for Standards Metrology and Quality
TRUNG TÂM KỸ THUẬT TIÊU CHUẨN ĐO LƯỜNG CHẤT LƯỢNG 1
Quality Assurance and Testing Center 1

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Tel: 024 32191002 * Fax: 024 32191001

Số/No: 23 / TN2 / 1709

KẾT QUẢ THỬ NGHIỆM
TEST RESULT

1. **Tên mẫu thử:** Cáp dữ liệu 2x1 mm^2 – 600/1000V
   Sample: *Data cable 2x1 sqmm – 600/100V*
2. **Khách hàng:** Công ty TNHH cáp điện và hệ thống LS Việt Nam
   Customer:
3. **Số lượng mẫu:** 01
   Quantity:
4. **Ghi nhãn:** LS Cable & Systems – Sahako Shielded Fire Resistant Data cable
   Marking: 600/1000V 2C x 1mm2
5. **Tình trạng mẫu:** Mới, chưa qua sử dụng
   Sample observation: *New, unused*
6. **Ngày nhận mẫu:** 22 / 05 / 2023
   Reception date:
7. **Ngày thử nghiệm:** 25 / 05 / 2023
   Test duration:
8. **Phương pháp thử:** IEC 60331-21:1999
   Test methods:

Hanoi, date of 25 / 05 / 2023

TRƯỞNG PHÒNG THỬ NGHIỆM
ĐIỆN, ĐIỆN TỬ VÀ HIỆU SUẤT NĂNG LƯỢNG
Chief of Electric, Electronic & Energy efficiency Testing Lab

Đặng Thanh Tùng

GIÁM ĐỐC
Director

TRUNG TÂM KỸ THUẬT TIÊU CHUẨN ĐO LƯỜNG CHẤT LƯỢNG 1

PHÓ GIÁM ĐỐC
Nguyễn Ngọc Châm

1. *Phiếu kết quả này chỉ có giá trị đối với mẫu thử do khách hàng đưa tới.*
   This test results is value only for samples taken by customer.
2. *Không được trích sao một phần kết quả này nếu không được sự đồng ý của trung tâm Kỹ thuật 1.*
   This test results shall not reproduced except in full, without the written approved of QUATEST 1.
3. *Tên mẫu và tên khách hàng được ghi theo yêu cầu của khách hàng.*
   Name of sample and customer are written as customer's request.

Quatest 1
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Directorate for Standards Metrology and Quality
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Tel: 024 32191002 * Fax: 024 32191001

KẾT QUẢ THỬ NGHIỆM
TEST RESULT

TT *No*	Tên chỉ tiêu *Specifications*	Đơn vị *Unit*	Phương pháp thử *Test methods*	Mức quy định *Standard level*	Kết quả *Results*
1	Thử nghiệm khả năng chống cháy cho cáp đơn theo phương nằm ngang *Fire resistance test for horizontal single cable* • Điện áp thử nghiệm/ *Test voltage:* 0,6/1kV • Nhiệt độ thử nghiệm/ *Temperature of test:* 750 $^{+50}_{0}$ °C • Thời gian đặt nguồn đốt/ *The flame application time:* 90 min		IEC 60331-21:1999	Điện áp được duy trì *The voltage is maintained* Ruột dẫn không bị đứt *The conductor does not rupture*	Đạt *Pass*

Hình ảnh/ *Picture:*

TỔNG CỤC TIÊU CHUẨN ĐO LƯỜNG CHẤT LƯỢNG
Directorate for Standards Metrology and Quality
TRUNG TÂM KỸ THUẬT TIÊU CHUẨN ĐO LƯỜNG CHẤT LƯỢNG 1
Quality Assurance and Testing Center 1
Trụ sở chính: Số 8 Hoàng Quốc Việt - Cầu Giấy - Hà Nội
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Tel: 024 32191002 * Fax: 024 32191001

Quatest 1

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Số/No: 22 / TN2 / 2332 Trang/Page: 1 / 2

KẾT QUẢ THỬ NGHIỆM
TEST RESULT

1. **Tên mẫu thử:** Cáp dữ liệu 2x1,5 mm^2 – 450/750V
   Sample: *Data cable 2x1.5 sqmm – 450/750V*
2. **Khách hàng:** Công ty TNHH hệ thống điện SAHAKO
   Customer:
3. **Số lượng mẫu:** 01
   Quantity:
4. **Ghi nhãn:** LS Cable & Systems – Sahako Shielded Fire Resistant Data cable
   Marking: 450/750V 2C x 1.5mm2
5. **Tình trạng mẫu:** Mới, chưa qua sử dụng
   Sample observation: *New, unused*
6. **Ngày nhận mẫu:** 09 / 06 / 2022
   Reception date:
7. **Ngày thử nghiệm:** 17 / 06 / 2022
   Test duration:
8. **Phương pháp thử:** IEC 60331-21:1999; BS 6387:2013 cat. C
   Test methods:

Hanoi, date of 20 / 06 / 2022

P. TRƯỞNG PHÒNG THỬ NGHIỆM
ĐIỆN, ĐIỆN TỬ VÀ HIỆU SUẤT NĂNG LƯỢNG
Deputy Chief of Electric, Electronic & Energy efficiency Testing Lab

Nguyễn Anh Tùng

KT. GIÁM ĐỐC
Director

TRUNG TÂM KỸ THUẬT TIÊU CHUẨN ĐO LƯỜNG CHẤT LƯỢNG 1

PHÓ GIÁM ĐỐC
Nguyễn Ngọc Châm

1. *Phiếu kết quả này chỉ có giá trị đối với mẫu thử do khách hàng đưa tới.*
   This test results is value only for samples taken by customer.
2. *Không được trích sao một phần kết quả này nếu không được sự đồng ý của trung tâm Kỹ thuật 1.*
   This test results shall not reproduced except in full, without the written approved of QUATEST 1.
3. *Tên mẫu và tên khách hàng được ghi theo yêu cầu của khách hàng.*
   Name of sample and customer are written as customer's request.

Quatest 1
TỔNG CỤC TIÊU CHUẨN ĐO LƯỜNG CHẤT LƯỢNG
Directorate for Standards Metrology and Quality
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Web: www.quatest1.com.vn
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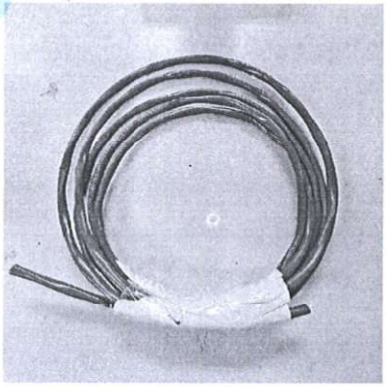
Tel: 024 32191002 * Fax: 024 32191001

KẾT QUẢ THỬ NGHIỆM
TEST RESULT

TT *No*	**Tên chỉ tiêu** *Specifications*	**Đơn vị** *Unit*	**Phương pháp thử** *Test methods*	**Mức qui định** *Standard level*	**Kết quả** *Results*
1	Thử nghiệm khả năng chống cháy cho cáp đơn theo phương nằm ngang *Fire resistance test for horizontal single cable* • Điện áp thử nghiệm/ *Test voltage:* 450/750V • Nhiệt độ thử nghiệm/ *Temperature of test:* 750 $^{+50}_{0}$ °C • Thời gian đặt nguồn đốt/ *The flame application time:* 90 min		IEC 60331-21:1999	Điện áp được duy trì *The voltage is maintained* Ruột dẫn không bị đứt *The conductor does not rupture*	Đạt *Pass*
2	Thử nghiệm khả năng chống cháy cho cáp đơn *Resistance to fire alone* • Điện áp thử nghiệm/ *Test voltage:* 0,6/1kV • Nhiệt độ thử nghiệm/ *Temperature of test:* 950 ± 40°C • Thời gian đặt nguồn đốt/ *The flame application time:* 180 min		BS 6387:2013 cat. C	Cầu chì không bị đứt và đèn không bị tắt trong quá trình thử *None of the fuses and none of the lambs is extinguished during the period of the test*	Đạt *Pass*

Hình ảnh/ *Picture:*



Quatest 1
TỔNG CỤC TIÊU CHUẨN ĐO LƯỜNG CHẤT LƯỢNG
Directorate for Standards Metrology and Quality
TRUNG TÂM KỸ THUẬT TIÊU CHUẨN ĐO LƯỜNG CHẤT LƯỢNG 1
Quality Assurance and Testing Center 1

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Web: www.quatest1.com.vn
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Tel: 024 32191002 * Fax: 024 32191001

Số/No: 23 / TN2 / 1656 - 01

KẾT QUẢ THỬ NGHIỆM

TEST RESULT

1. **Tên mẫu thử:** Cáp dữ liệu 2x1,5 mm^2 – 600/1000V
   Sample: *Data cable 2x1.5 sqmm – 600/100V*
   (LS – SFRS – 02 – 150 – XZ)
2. **Khách hàng:** Công ty TNHH thương mại thiết bị điện Thái Sơn Bắc
   Customer:
3. **Số lượng mẫu:** 01
   Quantity:
4. **Ghi nhãn:** LS Cable & Systems – Sahako Shielded Fire Resistant Data cable
   Marking: 600/1000V 2C x 1.5mm2
5. **Tình trạng mẫu:** Mới, chưa qua sử dụng
   Sample observation: *New, unused*
6. **Ngày nhận mẫu:** 18 / 05 / 2023
   Reception date:
7. **Ngày thử nghiệm:** 25 / 05 / 2023
   Test duration:
8. **Phương pháp thử:** IEC 60331-21:1999
   Test methods:

Hanoi, date of 25 / 05 / 2023

TRƯỞNG PHÒNG THỬ NGHIỆM
ĐIỆN, ĐIỆN TỬ VÀ HIỆU SUẤT NĂNG LƯỢNG
Chief of Electric, Electronic & Energy efficiency Testing Lab

Đặng Thanh Tùng

GIÁM ĐỐC
Director

PHÓ GIÁM ĐỐC
Nguyễn Ngọc Châm

1. *Phiếu kết quả này chỉ có giá trị đối với mẫu thử do khách hàng đưa tới.*
   This test results is value only for samples taken by customer.
2. *Không được trích sao một phần kết quả này nếu không được sự đồng ý của trung tâm Kỹ thuật 1.*
   This test results shall not reproduced except in full, without the written approved of QUATEST 1.
3. *Tên mẫu và tên khách hàng được ghi theo yêu cầu của khách hàng.*
   Name of sample and customer are written as customer's request.

Quatest 1
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Directorate for Standards Metrology and Quality
TRUNG TÂM KỸ THUẬT TIÊU CHUẨN ĐO LƯỜNG CHẤT LƯỢNG 1
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KẾT QUẢ THỬ NGHIỆM

TEST RESULT

TT *No*	Tên chỉ tiêu *Specifications*	Đơn vị *Unit*	Phương pháp thử *Test methods*	Mức quy định *Standard level*	Kết quả *Results*
1	Thử nghiệm khả năng chống cháy cho cáp đơn theo phương nằm ngang *Fire resistance test for horizontal single cable* • Điện áp thử nghiệm/ *Test voltage:* 0,6/1kV • Nhiệt độ thử nghiệm/ *Temperature of test:* 750 $^{+50}_{0}$ °C • Thời gian đặt nguồn đốt/ *The flame application time:* 90 min **Hình ảnh/** *Picture:*		IEC 60331-21:1999	Điện áp được duy trì *The voltage is maintained* Ruột dẫn không bị đứt *The conductor does not rupture*	Đạt *Pass*

Quatest 1
TỔNG CỤC TIÊU CHUẨN ĐO LƯỜNG CHẤT LƯỢNG
Directorate for Standards Metrology and Quality
TRUNG TÂM KỸ THUẬT TIÊU CHUẨN ĐO LƯỜNG CHẤT LƯỢNG 1
Quality Assurance and Testing Center 1

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Cơ sở 2: Khu CN Nam Thăng Long, Bắc Từ Liêm - Hà Nội
Tel: 024 32191002 * Fax: 024 32191001

Số/No: 23 / TN2 / 1656 - 02

KẾT QUẢ THỬ NGHIỆM
TEST RESULT

1. **Tên mẫu thử:** Cáp dữ liệu 2x1,5 mm^2 – 600/1000V
   Sample: *Data cable 2x1.5 sqmm – 600/100V*
   (LS – SFRS – 02 – 150 – XF)
2. **Khách hàng:** Công ty TNHH thương mại thiết bị điện Thái Sơn Bắc
   Customer:
3. **Số lượng mẫu:** 01
   Quantity:
4. **Ghi nhãn:** LS Cable & Systems – Sahako Shielded Fire Resistant Data cable
   Marking: 600/1000V 2C x 1.5mm2
5. **Tình trạng mẫu:** Mới, chưa qua sử dụng
   Sample observation: *New, unused*
6. **Ngày nhận mẫu:** 18 / 05 / 2023
   Reception date:
7. **Ngày thử nghiệm:** 25 / 05 / 2023
   Test duration:
8. **Phương pháp thử:** IEC 60331-21:1999
   Test methods:

Hanoi, date of 25 / 05 / 2023

TRƯỞNG PHÒNG THỬ NGHIỆM
ĐIỆN, ĐIỆN TỬ VÀ HIỆU SUẤT NĂNG LƯỢNG
Chief of Electric, Electronic & Energy efficiency Testing Lab

Đặng Thanh Tùng

GIÁM ĐỐC
Director

TRUNG TÂM KỸ THUẬT TIÊU CHUẨN ĐO LƯỜNG CHẤT LƯỢNG 1

PHÓ GIÁM ĐỐC
Nguyễn Ngọc Châm

1. *Phiếu kết quả này chỉ có giá trị đối với mẫu thử do khách hàng đưa tới.*
   This test results is value only for samples taken by customer.
2. *Không được trích sao một phần kết quả này nếu không được sự đồng ý của trung tâm Kỹ thuật 1.*
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3. *Tên mẫu và tên khách hàng được ghi theo yêu cầu của khách hàng.*
   Name of sample and customer are written as customer's request.

Quatest 1
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Tel: 024 32191002 * Fax: 024 32191001

KẾT QUẢ THỬ NGHIỆM

TEST RESULT

TT *No*	Tên chỉ tiêu *Specifications*	Đơn vị *Unit*	Phương pháp thử *Test methods*	Mức quy định *Standard level*	Kết quả *Results*
1	Thử nghiệm khả năng chống cháy cho cáp đơn theo phương nằm ngang *Fire resistance test for horizontal single cable* • Điện áp thử nghiệm/ *Test voltage:* 0,6/1kV • Nhiệt độ thử nghiệm/ *Temperature of test:* 750 $^{+50}_{0}$ °C • Thời gian đặt nguồn đốt/ *The flame application time:* 90 min **Hình ảnh/** *Picture:*		IEC 60331-21:1999	Điện áp được duy trì *The voltage is maintained* Ruột dẫn không bị đứt *The conductor does not rupture*	Đạt *Pass*

TỔNG CỤC TIÊU CHUẨN ĐO LƯỜNG CHẤT LƯỢNG
TRUNG TÂM KỸ THUẬT TIÊU CHUẨN ĐO LƯỜNG CHẤT LƯỢNG 3
QUALITY ASSURANCE & TESTING CENTER 3
QUATEST 3®
Head Office: 49 Pasteur, Dist. 1, HCMC, Vietnam Tel: (84-28) 3829 4274 Fax: (84-28) 3829 3012 E-mail: info@quatest3.com.vn Website: www.quatest3.com.vn
Testing Complex: No.7, road No.1, Bien Hoa 1 IZ, Dong Nai, Vietnam C5 lot, K1 road, Cat Lai IZ, Dist.2, HCMC, Vietnam 64 Le Hong Phong, Dist.5, HCMC, Vietnam

KT3-01196ADI3

PHIẾU KẾT QUẢ THỬ NGHIỆM
TEST REPORT

05/07/2023

1. Tên mẫu / *Name of sample*: **CÁP DỮ LIỆU 2 x 1,5 mm² - 600/1000V**
LS CABLE & SYSTEMS SAHAKO SHIELDED FIRE RESISTANT DATA CABLE 600/1000V 2Cx1,5 mm²
2. Số lượng mẫu / *Quantity*: 01
3. Mô tả mẫu / *Description*: Đoạn cáp dài 9 m có vỏ bọc màu đỏ; Nhãn trên mẫu: LS Cable & System - Sahako Unshielded Fire resistant data cable 600/1000V 2C x 1.5MM² / BS 6387 CWZ / IEC 60331
4. Ngày nhận mẫu / *Date of receiving*: 22/06/2023
5. Thời gian thử nghiệm / *Testing duration*: 23/06/2023 - 04/07/2023
6. Nơi gửi mẫu / *Customer*: **CÔNG TY TNHH THƯƠNG MẠI THÁI SƠN NAM**
116 đường D1, thuộc Khu đô thị mới Him Lam, Phường Tân Hưng, Quận 7, TP. Hồ Chí Minh
7. Phương pháp thử / *Test method*: IEC 60331-21 : 1999
Tests for electric cables under fire conditions - Circuit integrity
Part 21: Procedures and requirements - Cables of rated voltage up to and including 0,6/1,0 kV
8. Điều kiện thử nghiệm / *Testing condition*:
+ Điện áp thử / *Test voltage* : 1000 V
+ Nhiệt độ ngọn lửa thử / *Flame temperature of test* : $(750\ {}_{0}^{+50})$ °C
+ Thời gian cung cấp ngọn lửa / *The flame application time* : 90 min
+ Lưu lượng / *The flow rates* : • Không khí / *Air* : (80 ± 5) l/min
• Gas : (5 ± 0,5) l/min
9. Kết quả thử nghiệm / *Test result*: Xem trang sau / *See page*

TL. TRƯỞNG PTN ĐIỆN
PP. HEAD OF ELECTRICAL TESTING LAB.

Nguyễn Ngọc Tuấn

TL. GIÁM ĐỐC/ *PP. DIRECTOR*
TRƯỞNG PHÒNG THỬ NGHIỆM
HEAD OF TESTING LAB.

TRUNG TÂM KỸ THUẬT TIÊU CHUẨN ĐO LƯỜNG CHẤT LƯỢNG 3

Nguyễn Tấn Tùng

1. Các kết quả thử nghiệm ghi trong phiếu này chỉ có giá trị đối với mẫu do khách hàng gửi đến và không phải là giấy chứng nhận sản phẩm.
Test results are valid for the namely submitted sample(s) only, and this is not a certificate of product.
2. Tên mẫu, tên khách hàng được ghi theo yêu cầu của nơi gửi mẫu. / *Name of sample(s) and customer are written as customer's request.*
3. Độ không đảm bảo đo mở rộng được tính từ độ không đảm bảo đo chuẩn nhân với hệ số phủ k = 2, phân bố chuẩn tương ứng với 95 % độ tin cậy.
The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k = 2, at 95 % confidence level.
4. Không được trích sao một phần phiếu kết quả thử nghiệm này nếu không có sự đồng ý bằng văn bản của Trung tâm Kỹ thuật 3.
This Test Report shall not be reproduced, except in full, without the written permission by Quatest 3.
5. Mọi thắc mắc về kết quả khách hàng liên hệ theo địa chỉ dh.cs@quatest3.com.vn và rq.tn@quatest3.com.vn để biết thêm thông tin.
Please contact Quatest 3 at the email addresses dh.cs@quatest3.com.vn and rq.tn@quatest3.com.vn for further information about test report .

KT3-01196ADI3

PHIẾU KẾT QUẢ THỬ NGHIỆM
TEST REPORT

9. Kết quả thử nghiệm : *Test result*

Tên chỉ tiêu *Specification*		Kết quả thử nghiệm *Test result*	Nhận xét *Remark*
9.1. Thử cáp dưới điều kiện cháy *Test for electric cable under fire condition*			Đạt *Pass*
• Điều kiện thử / *Test condition*			-
+ Nhiệt độ ngọn lửa / *Flame temperature*,	°C	750	
+ Thời gian cháy / *Flame application time*,	min	90	
+ Điện áp thử / *Test voltage*,	V	1000	
• Yêu cầu / *Requirements*			
+ Điện áp phải được duy trì (cầu chì không bị đứt hoặc CB không tác động) *The voltage shall be maintaind (no fuse fails or circuit-breaker is interupted)*		Điện áp được duy trì (CB không tác động) *The voltage is maintained (Circuit-breaker is not interrupted)*	Đạt *Pass*
+ Ruột dẫn không bị đứt (đèn không bị tắt) *A conductor does not rupture (the lamp is not extinguished)*		Ruột dẫn không bị đứt *A conductor does not rupture*	Đạt *Pass*

SAHAKO ELECTRICAL SYSTEMS COMPANY LIMITED

116 D.1 STREET, HIM LAM NEW URBAN, TAN HUNG WARD, DISTRICT 7, HO CHI MINH CITY, VIETNAM

Product Description: SHIELDED FIRE RESISTANT DATA CABLE 2x1,5mm2 – 600V/1000V

SGS Ref No.: GZES2208015104CO

Model Name: LS-SFRS-02-150-VF

The above sample(s) was / were submitted and identified on behalf of the client. SGS is not responsible for the authenticity, integrity and results of the data and information and / or the validity of the conclusion arising therefrom. Results apply to the sample as received.

****

Test Requested:

BS 6387:2013, Test method for resistance to fire of cables required to maintain circuit integrity under fire conditions, Protocol C for resistance to fire alone.

Test Results: --- See attached sheet ---

Test Period:

Sample Receiving Date	:	AUG.05, 2022
Test Performing Date	:	AUG.05, 2022 TO AUG.11, 2022

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Anji Branch

Allen Zou
Approved Signatory

scan to see the report
AJFS2208006326FF

No. 301, Sunlight Road, 2 Block, Sunlight Industry Zone, Anji County, Zhejiang Province, China 313300 t (86-572) 5018825 f (86-572) 5018829 www.sgsgroup.com.cn
中国·浙江·安吉县阳光工业园二区阳光大道301号 邮编:313300 t (86-572) 5018825 f (86-572) 5018829 e sgs.china@sgs.com

I. Test conducted

Test was conducted in accordance with BS 6387:2013 Test method for resistance to fire of cables required to maintain circuit integrity under fire conditions, Protocol C for resistance to fire alone.

II. Test specimen

Description	Cable
Color	Red
Overall diameter	6.8mm~9.0mm
Specimen length	1200 mm
Marking	LS Cable & System – Sahako Shielded Fire Resistant Data Cable 600/1000V 2CX1.5mm2 / BS 6387 CWZ / IEC 60331 =0513M

Settings:

——Test voltage: [1000] V

——Test current: [0.25] A

——Flame temperature: 950°C

III. Test results

Items	Results
The survival time achieved	180 min
If the voltage is not maintained during the test duration, as indicated by fuse failure.	Pass
If a conductor ruptures during the test duration, as indicated by the lamp extinguishing.	Pass

Statements:

This declaration of conformity is only based on the result of this laboratory activity, the impact of the uncertainty of the results was not included.

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Photo Appendix:

Product

Cross-section

Marking (1)

Marking (2)

Marking (3)

SGS authenticate the photo on original report only

End of Report

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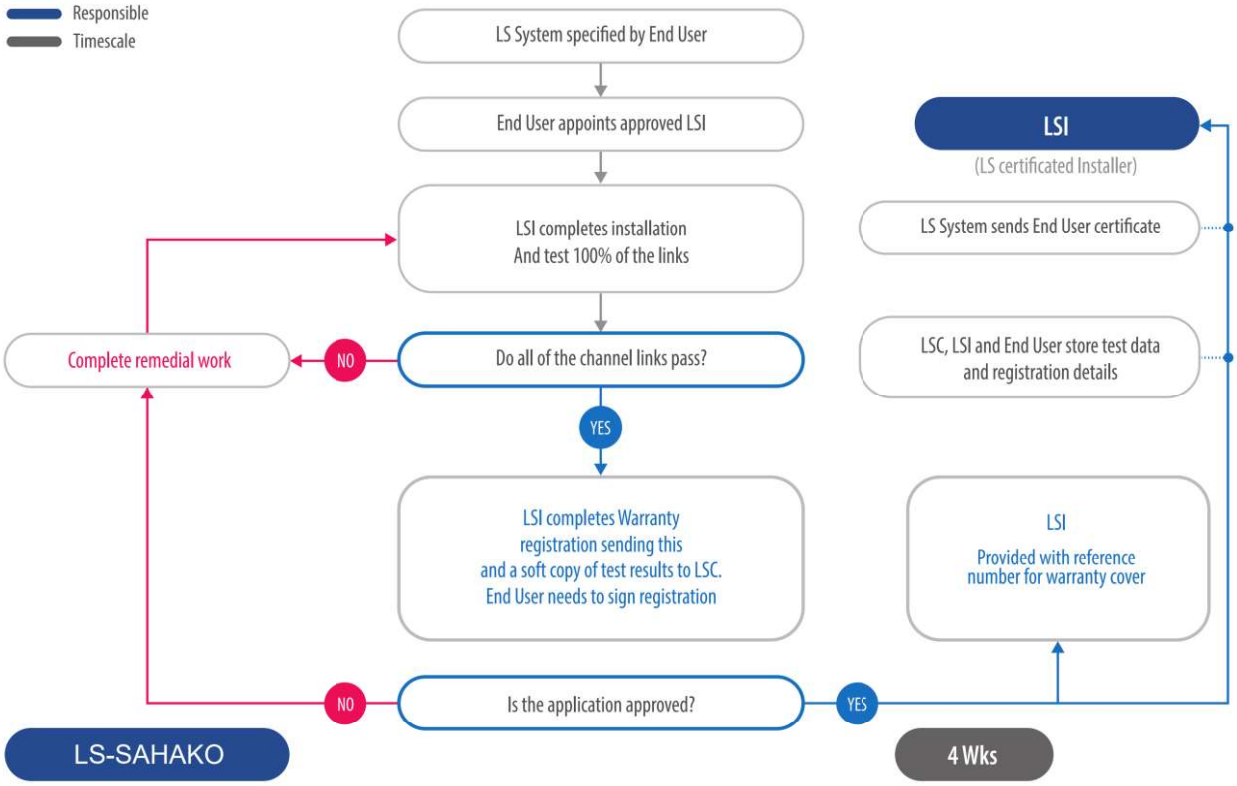
LS-SAHAKO Warranty

- Unique 25 year application and product warranty.
- The warranty applied to the network and can ɔe sold as an asset.
- The warranty is only offered by fully trained LS Integrators.
- The system is independently inspected by a third party.

Warranty Process



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UTP, Coaxial cable
SCR, Magnet wire
Overhead cable, Bus duct

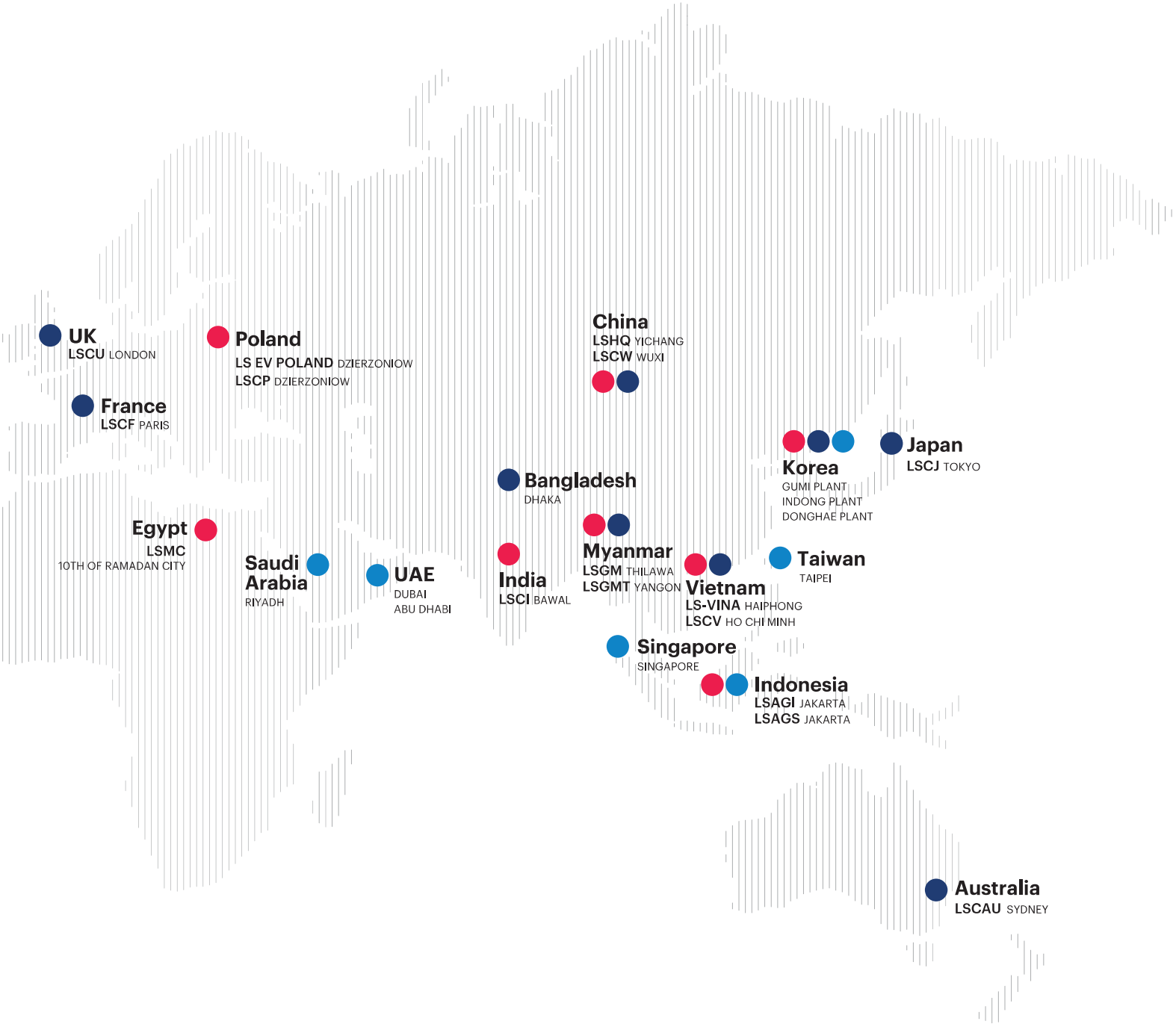
Indong Plant
Optical fiber
Optical cable

Donghae Plant
Submarine cable
Industrial specialty cable

CHINA

LSHQ(Yichang)
EHV / MV / LV cable
Industrial specialty cable

LSCW(Wuxi)
Industrial devices cable
Automotive cable
Harness & module
Aluminum, Bus duct



VIETNAM

LS-VINA(Haiphong)
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SCR, ACSR
Overhead cable

LSCV(HO Chi Minh)
MV / LV cable
UTP, Optical cable
Overhead cable

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LSCI(Bawal)
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Coaxial cable
Overhead cable

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LSCUS(Tarboro)
MV / LV cable
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