



Instrumentation Cables

Product Catalogue



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(Updated as at January 2015)



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INTRODUCTION



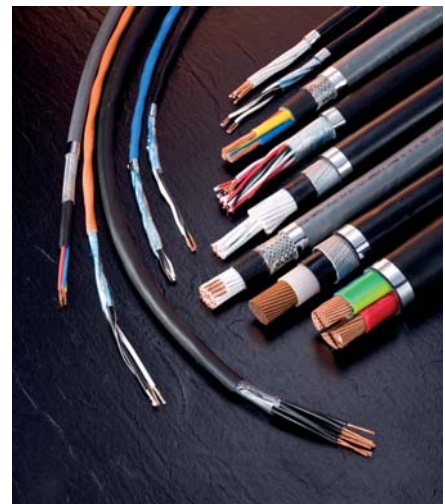
Since our incorporation in 1980 as Tai Sin Electric Cables Manufacturer Pte Ltd, we have expanded and diversified over the past three decades to establish ourselves as the present Tai Sin Electric Limited. To cater for the robust growth in the regional market, Tai Sin now operates three cable manufacturing plants located in Singapore, Malaysia and Vietnam, all of which are fully equipped with the latest manufacturing facilities and technologies to meet increasing demands.

Tai Sin stocks the widest range of the Power, Control, Instrumentation and Safety Cables for use in all areas of electrical and instrumentation installation for commercial, residential, industrial and infrastructure projects. Our cables and wires are manufactured under strict quality control and designed to perform within fixed parameters of electrical, mechanical and environmental tolerances and we assure you that our products will not present a safety hazard if used with care.

For 30 years, we have grown steadily based on a sound business philosophy of providing quality products using leading edge technology, backed by unfailing excellence in customer service and faster turnaround time to maintain customer loyalty. These are the beliefs and values that give us the strength and confidence to continue to grow, excel and succeed in the exciting years ahead.

This catalogue feature Single and Multi-pair cables utilized in communication services and the interconnection of electrical equipment and instruments especially in and around process plants. In addition, these cables are also suitable for process control, monitoring applications and telemetering applications which require the interconnection of electrical instruments and control equipment for indoor or underground burials. These cables are not applicable for direct connection low impedance e.g. public main supply.

We hope that this catalogue will be useful to engineers and end-users to serve as their full reference guidelines.



In this catalogue we have given each cable a name accompanied with the various short and long descriptions based on its material used.

For example:

FRT-XOL

CU / XLPE / OS / LSZH (PAIRS & TRIADS) ← *This is the short description*
XLPE Insulated, Overall Aluminum Foil Screened, LSZH Sheathed Cable ← *Full description on the third line*

To better understand the contents of the cable, we have included a 3-dimensional image plus a cross-sectional image of the cable for easy reference of its structure and components. The technical specifications and figures are provided by our quality team to ensure the accurate use of our products.

Electrical properties such as Insulation Resistance and Mutual Capacitance and other essential technical details are provided in the Appendices at the last section of this catalogue.

For all other enquiries, please feel free to contact our friendly customer service hotline for further assistance.

VARIOUS TYPES OF INSTRUMENTATION CABLES FOUND IN THIS CATALOGUE

Overall Screened Cores (Armoured & Non-Armoured)

Cables for this range are customarily used in the process industries (steel, pharmaceutical, petrochemical, paper, mining, etc.) providing control connections for DC or AC networks with an option of a fixed potential, with respect to earth. Applications are found in valve and motor control units, auxiliary station controls, circuit breaker indications and operations, etc. Cables in this category come in the armoured and non-armoured type for indoor applications.

Overall Screened Pairs / Traids (Armoured & Non-Armoured)

The cables mentioned here are overall screened to oppose static & crosstalk noises ensuring precise and flawless signals to be transmitted. These cables are recommended where signals transmitted are in excess of 100 millivolts in instrumentation and control applications. Cables of this classification are mainly used for interconnections between sensors, monitors and instruments where 100% shield effectiveness is ensured through our aluminum foil/PET shield with drain wires. Instrumentation cables that are used for indoor applications and unarmoured and cables for direct underground burials are those with steel wire armouring.

Individual & Overall Screened Pairs / Traids (Armoured & Non-Armoured)

Where noise rejection is essential, individually shielded pairs or triads with an overall shield are recommended. To provide optimal protection from crosstalk and common mode interference, individual pair & triad shields are separated from each other and each contains independent drain wires for grounding. These cables also come with an overall shield for additional electrostatic noise protection.

The various types of Instrumentation Cables manufactured may be insulated with our standard PVC, XLPE materials or with our Eco-friendly Non-Toxic Low Smoke Zero Halogen Flame Retardant materials with or without Fire Resistant characteristics.

Additionally, our instrumentation cables are available with standard or reduced flame propagation and low acid gas emission PVC sheaths as well as Low Smoke Zero Halogen Flame Retardant materials.

Our instrumentation cables are generally manufactured to BS EN50288-7. Should you need alternative constructions for different conductor sizes or pair combinations, we can also manufacture to your specific needs, installation and operating requirements. Our technical personnel will provide the necessary guidance and assistance in designing the cables that will meet your requirements.

APPLICABLE STANDARDS

Below are the applicable standards that are used as reference in the construction of our instrumentation cables.



ASTM D 2863

Measuring the minimum oxygen concentration to support candle-like combustion of plastic (oxygen index).

BS6387 / SS299

Performance requirements for cables required to maintain circuit integrity under fire conditions.

BS6724

600 / 1000V armoured electric cables having thermosetting insulation and low emission of smoke and corrosive gases when affect by fire.

BS7211

Thermosetting insulated cables (non-armoured) for electric power and lighting with low emission of smoke and corrosive gases when affected by fire.

BS7629-1

300 / 500V fire-resistant screened cables having low emission of smoke and corrosive gases when affect by fire.

Part 1: Multicore and multi-pair cables.

BS7846

600 / 1000V armoured fire-resistant electric cables having low emission of smoke and corrosive gases when affected by fire.

BS EN50288-7

Multi-element metallic cables use in analogue and digital communication and control.

Part 7: Sectional specification for instrumentation and control Cables.

BS EN60228

Conductors of insulated cables.

IEC60331

Fire-resistant characteristics of electric cables.

IEC60332-1 / BS4066-1 / BS EN50266-1

Tests in electric cables under fire conditions.

Part 1: Method of test on a single vertical insulated wire or cable.

IEC60332-3 / BS4066-3 / BS EN50266-2

Tests on electric cables under fire conditions.

Part 3: Methods of classification of flame propagation characteristics of bunched cables.

IEC60502-1

Power cables with extruded insulation and their accessories for rated voltages from 1kV up to 30kV.

Part 1: Cables for rated voltage of 1kV and 3kV.

IEC60754-1 / BS6425-1 / BS EN50267-2-1

Tests on gases evolved during the combustion of materials from cables.

Part 1: Methods of determination of amount of halogen acid gas evolved during combustion of polymeric materials taken from cables.

IEC60754-2 / BS6425-2 / BS EN50267-2-2

Tests on gases evolved during combustion of materials from cables.

Part 2: Determination of degree of acidity (corrosive) of gases by measuring pH and conductivity.

IEC61034-2 / BS7622-2 / BS EN61034-2

Measurement of smoke density of electric cables burning under defined conditions.

Part 2: Test procedure and requirements.

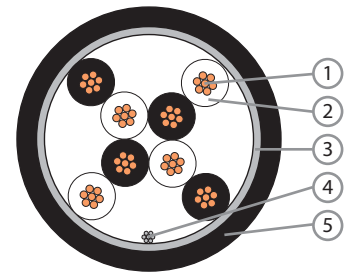
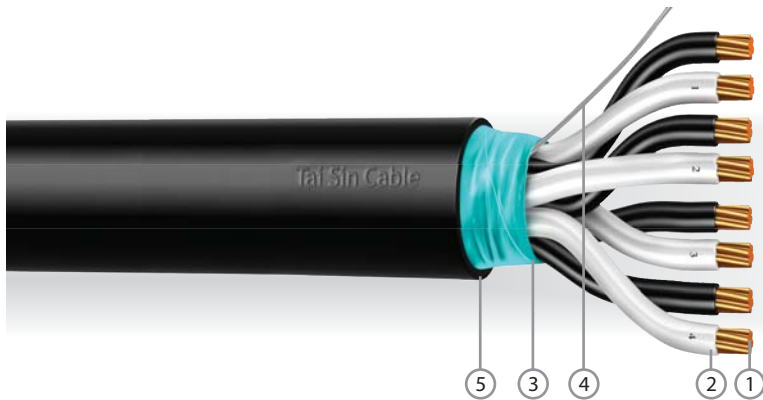
IN-POP CU / PVC / OS / PVC (PAIRS & TRIADS)

PVC Insulated, Overall Aluminium Foil Screened, PVC Sheathed Cable, 300 / 500V, BS EN50288-7



IN-XOP CU / XLPE / OS / PVC (PAIRS & TRIADS)

XLPE Insulated, Overall Aluminium Foil Screened, PVC Sheathed Cable, 300 / 500V, BS EN50288-7



- Component**
1. Plain Annealed Copper Wire
 2. PVC Compound or XLPE Compound
 3. Aluminium / Polyester Tape
 4. Tinned Copper Drain Wire
 5. PVC Compound

CONSTRUCTION

| | |
|----------------------|-----------------------------------------------------------------------------------------------------|
| Conductor: | Plain Annealed Copper, Class 2 Stranded Circular |
| Insulation: | (1) Polyvinyl Chloride (PVC) Compound Type T151 or (2) Cross-linked Polyethylene (XLPE) Compound |
| Insulation Colour: | Pair/s - Black/White with Black numberings Triad/s - Red/Black/White with Black numberings |
| Cores Twisted: | Cores twisted to form a pair, triad or quad |
| Lay Up: | Multi-pairs, triads or quads are assembled together in concentric layers to form the cable core |
| Wrap Film: | Polyester Binder Tape |
| Overall Screen: | Aluminium/Polyester Tape, with a Tinned Copper Drain Wire 0.5mm ² (7/0.3mm) (OS) |
| Outer Sheath: | Flame Retardancy Polyvinyl Chloride (PVC) Compound Type ST2 FR |
| Outer Sheath Colour: | Black or Blue |

ELECTRICAL CHARACTERISTICS

| | |
|---------------------------------------|-----------------------------------------------------------------|
| Operating Voltage, U ₀ /U: | 300/500V |
| Operating Temperature: | -15°C to 70°C (PVC Insulated) -15°C to 90°C (XLPE Insulated) |
| Final Short Circuit Temperature: | 160°C (PVC Insulated) 250°C (XLPE Insulated) |
| Test Voltage: | 2kV for 1 minute |

REFERENCE STANDARDS

| | |
|-----------------------|----------------------|
| Design Specification: | BS EN50288-7 |
| Conductor: | IEC60228, BS EN60228 |
| Flame Retardancy: | IEC60332-3 |

INSTALLATION REFERENCE

| | |
|--------------------------------------------|----------------------------|
| Min. Bending Radius (mm): | 8 x cable overall diameter |
| Max. Pulling Tension (N/mm ²): | 50 |

| | No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | IN-XOP | | IN-POP | |
|---------------------------------|--------------|-------------------------------------------|------------------------------------|-------------------------------------|-----------------------------|----------------------------|-----------------------------|----------------------------|
| | | | | | Cable Overall Diameter (mm) | Approximate Weight (kg/km) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) |
| SINGLE & MULTI-PAIRS | 1P | 0.5 | 7 / 0.3 | 0.6 | 7.1 | 58 | 7.1 | 63 |
| | 2P (Quad) | | 7 / 0.3 | 0.6 | 8.0 | 81 | 8.0 | 90 |
| | 2P | | 7 / 0.3 | 0.6 | 10.7 | 98 | 10.7 | 108 |
| | 3P | | 7 / 0.3 | 0.6 | 11.5 | 126 | 11.5 | 141 |
| | 4P | | 7 / 0.3 | 0.6 | 12.6 | 152 | 12.6 | 171 |
| | 5P | | 7 / 0.3 | 0.6 | 13.7 | 177 | 13.7 | 202 |
| | 6P | | 7 / 0.3 | 0.6 | 15.1 | 211 | 15.1 | 240 |
| | 8P | | 7 / 0.3 | 0.6 | 16.9 | 260 | 16.9 | 300 |
| | 10P | | 7 / 0.3 | 0.6 | 19.3 | 322 | 19.3 | 371 |
| | 12P | | 7 / 0.3 | 0.6 | 19.9 | 364 | 19.9 | 423 |
| | 16P | | 7 / 0.3 | 0.6 | 22.1 | 465 | 22.1 | 533 |
| | 20P | | 7 / 0.3 | 0.6 | 24.8 | 560 | 24.8 | 659 |
| | 24P | | 7 / 0.3 | 0.6 | 27.7 | 669 | 27.7 | 787 |
| 36P | 7 / 0.3 | 0.6 | 31.9 | 943 | 31.9 | 1121 | | |

* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

Table 1

IN-POP CU / PVC / OS / PVC (PAIRS & TRIADS)

PVC Insulated, Overall Aluminium Foil Screened, PVC Sheathed Cable, 300 / 500V, BS EN50288-7



IN-XOP CU / XLPE / OS / PVC (PAIRS & TRIADS)

XLPE Insulated, Overall Aluminium Foil Screened, PVC Sheathed Cable, 300 / 500V, BS EN50288-7

| No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | IN-XOP | | IN-POP | | |
|--------------|-------------------------------------------|------------------------------------|-------------------------------------|-----------------------------|----------------------------|-----------------------------|----------------------------|-----|
| | | | | Cable Overall Diameter (mm) | Approximate Weight (kg/km) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) | |
| 1P | 0.75 | 7 / 0.37 | 0.6 | 7.5 | 66 | 7.5 | 72 | |
| 2P (Quad) | | 7 / 0.37 | 0.6 | 8.5 | 95 | 8.5 | 105 | |
| 2P | | 7 / 0.37 | 0.6 | 11.6 | 119 | 11.6 | 130 | |
| 3P | | 7 / 0.37 | 0.6 | 12.3 | 148 | 12.3 | 165 | |
| 4P | | 7 / 0.37 | 0.6 | 13.5 | 180 | 13.5 | 202 | |
| 5P | | 7 / 0.37 | 0.6 | 14.9 | 220 | 14.9 | 247 | |
| 6P | | 7 / 0.37 | 0.6 | 16.2 | 253 | 16.2 | 285 | |
| 8P | | 7 / 0.37 | 0.6 | 18.2 | 315 | 18.2 | 358 | |
| 10P | | 7 / 0.37 | 0.6 | 20.8 | 390 | 20.8 | 444 | |
| 12P | | 7 / 0.37 | 0.6 | 21.5 | 444 | 21.5 | 509 | |
| 16P | | 7 / 0.37 | 0.6 | 24.0 | 571 | 24.0 | 658 | |
| 20P | | 7 / 0.37 | 0.6 | 27.0 | 704 | 27.0 | 812 | |
| 24P | | 7 / 0.37 | 0.6 | 30.1 | 840 | 30.1 | 970 | |
| 36P | | 7 / 0.37 | 0.6 | 34.7 | 1215 | 34.7 | 1384 | |
| 1P | | 1.0 | 7 / 0.43 | 0.6 | 7.9 | 74 | 7.9 | 80 |
| 2P (Quad) | | | 7 / 0.43 | 0.6 | 9.0 | 108 | 9.0 | 120 |
| 2P | 7 / 0.43 | | 0.6 | 12.3 | 135 | 12.3 | 147 | |
| 3P | 7 / 0.43 | | 0.6 | 13.0 | 170 | 13.0 | 187 | |
| 4P | 7 / 0.43 | | 0.6 | 14.2 | 207 | 14.2 | 231 | |
| 5P | 7 / 0.43 | | 0.6 | 15.8 | 254 | 15.8 | 283 | |
| 6P | 7 / 0.43 | | 0.6 | 17.2 | 293 | 17.2 | 328 | |
| 8P | 7 / 0.43 | | 0.6 | 19.5 | 378 | 19.5 | 424 | |
| 10P | 7 / 0.43 | | 0.6 | 22.1 | 456 | 22.1 | 514 | |
| 12P | 7 / 0.43 | | 0.6 | 23.0 | 534 | 23.0 | 604 | |
| 16P | 7 / 0.43 | | 0.6 | 25.5 | 674 | 25.5 | 767 | |
| 20P | 7 / 0.43 | | 0.6 | 28.7 | 832 | 28.7 | 948 | |
| 24P | 7 / 0.43 | | 0.6 | 32.0 | 994 | 32.0 | 1133 | |
| 36P | 7 / 0.43 | | 0.6 | 36.9 | 1416 | 36.9 | 1626 | |
| 1P | 1.5 | | 7 / 0.53 | 0.6 | 8.5 | 89 | 8.5 | 95 |
| 2P (Quad) | | | 7 / 0.53 | 0.6 | 9.7 | 134 | 9.7 | 147 |
| 2P | | 7 / 0.53 | 0.6 | 13.3 | 164 | 13.3 | 177 | |
| 3P | | 7 / 0.53 | 0.6 | 14.2 | 211 | 14.2 | 230 | |
| 4P | | 7 / 0.53 | 0.6 | 15.7 | 268 | 15.7 | 294 | |
| 5P | | 7 / 0.53 | 0.6 | 17.2 | 319 | 17.2 | 352 | |
| 6P | | 7 / 0.53 | 0.6 | 19.0 | 381 | 19.0 | 420 | |
| 8P | | 7 / 0.53 | 0.6 | 21.3 | 480 | 21.3 | 532 | |
| 10P | | 7 / 0.53 | 0.6 | 24.4 | 595 | 24.4 | 660 | |
| 12P | | 7 / 0.53 | 0.6 | 25.2 | 685 | 25.2 | 763 | |
| 16P | | 7 / 0.53 | 0.6 | 28.2 | 886 | 28.2 | 990 | |
| 20P | | 7 / 0.53 | 0.6 | 31.7 | 1094 | 31.7 | 1224 | |
| 24P | | 7 / 0.53 | 0.6 | 35.4 | 1308 | 35.4 | 1464 | |
| 36P | | 7 / 0.53 | 0.6 | 41.1 | 1895 | 41.1 | 2128 | |

* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

Table 2

IN-POP CU / PVC / OS / PVC (PAIRS & TRIADS)

PVC Insulated, Overall Aluminium Foil Screened, PVC Sheathed Cable, 300 / 500V, BS EN50288-7



IN-XOP CU / XLPE / OS / PVC (PAIRS & TRIADS)

XLPE Insulated, Overall Aluminium Foil Screened, PVC Sheathed Cable, 300 / 500V, BS EN50288-7

| | No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | IN-XOP | | IN-POP | |
|----------------------|--------------|-------------------------------------------|------------------------------------|-------------------------------------|-----------------------------|----------------------------|-----------------------------|----------------------------|
| | | | | | Cable Overall Diameter (mm) | Approximate Weight (kg/km) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) |
| SINGLE & MULTI-PAIRS | 1P | 2.5 | 7 / 0.67 | 0.7 | 9.7 | 117 | 9.7 | 126 |
| | 2P (Quad) | | 7 / 0.67 | 0.7 | 11.4 | 191 | 11.4 | 209 |
| | 2P | | 7 / 0.67 | 0.7 | 15.7 | 229 | 15.7 | 247 |
| | 3P | | 7 / 0.67 | 0.7 | 16.8 | 300 | 16.8 | 327 |
| | 4P | | 7 / 0.67 | 0.7 | 18.6 | 384 | 18.6 | 420 |
| | 5P | | 7 / 0.67 | 0.7 | 20.4 | 460 | 20.4 | 505 |
| | 6P | | 7 / 0.67 | 0.7 | 22.5 | 548 | 22.4 | 602 |
| | 8P | | 7 / 0.67 | 0.7 | 22.5 | 709 | 25.5 | 782 |
| | 10P | | 7 / 0.67 | 0.7 | 29.2 | 879 | 29.2 | 970 |
| | 12P | | 7 / 0.67 | 0.7 | 30.2 | 1015 | 30.2 | 1124 |
| | 16P | | 7 / 0.67 | 0.7 | 33.8 | 1315 | 33.8 | 1461 |
| | 20P | | 7 / 0.67 | 0.7 | 38.0 | 1625 | 38.0 | 1807 |
| | 24P | | 7 / 0.67 | 0.7 | 42.5 | 1941 | 42.5 | 2159 |
| | 36P | | 7 / 0.67 | 0.7 | 49.2 | 2817 | 49.2 | 3144 |

* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

Table 3

| | No. of Triads | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | IN-XOP | | IN-POP | |
|-----------------------|---------------|-------------------------------------------|------------------------------------|-------------------------------------|-----------------------------|----------------------------|-----------------------------|----------------------------|
| | | | | | Cable Overall Diameter (mm) | Approximate Weight (kg/km) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) |
| SINGLE & MULTI-TRIADS | 1T | 0.5 | 7 / 0.3 | 0.6 | 7.4 | 69 | 7.4 | 77 |
| | 6T | | 7 / 0.3 | 0.6 | 16.8 | 276 | 16.8 | 320 |
| | 16T | | 7 / 0.3 | 0.6 | 24.9 | 630 | 24.9 | 748 |
| | 24T | | 7 / 0.3 | 0.6 | 31.2 | 927 | 31.2 | 1105 |
| | 1T | 0.75 | 7 / 0.37 | 0.6 | 7.9 | 80 | 7.9 | 88 |
| | 6T | | 7 / 0.37 | 0.6 | 18.0 | 335 | 18.0 | 384 |
| | 16T | | 7 / 0.37 | 0.6 | 27.1 | 796 | 27.1 | 926 |
| | 24T | | 7 / 0.37 | 0.6 | 34.0 | 1172 | 34.0 | 1367 |
| | 1T | 1.0 | 7 / 0.43 | 0.6 | 8.3 | 91 | 8.3 | 100 |
| | 6T | | 7 / 0.43 | 0.6 | 19.3 | 404 | 19.3 | 456 |
| | 16T | | 7 / 0.43 | 0.6 | 28.8 | 946 | 28.8 | 1086 |
| | 24T | | 7 / 0.43 | 0.6 | 36.2 | 1398 | 36.2 | 1607 |
| | 1T | 1.5 | 7 / 0.53 | 0.6 | 8.9 | 111 | 8.9 | 121 |
| | 6T | | 7 / 0.53 | 0.6 | 21.2 | 518 | 21.2 | 576 |
| | 16T | | 7 / 0.53 | 0.6 | 31.9 | 1254 | 31.9 | 1410 |
| | 24T | | 7 / 0.53 | 0.6 | 40.0 | 1853 | 40.0 | 2087 |
| 1T | 2.5 | 7 / 0.67 | 0.7 | 10.5 | 157 | 10.5 | 171 | |
| 6T | | 7 / 0.67 | 0.7 | 25.3 | 768 | 25.3 | 850 | |
| 16T | | 7 / 0.67 | 0.7 | 38.2 | 1872 | 38.2 | 2090 | |
| 24T | | 7 / 0.67 | 0.7 | 48.2 | 2790 | 48.2 | 3117 | |

* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

Table 4

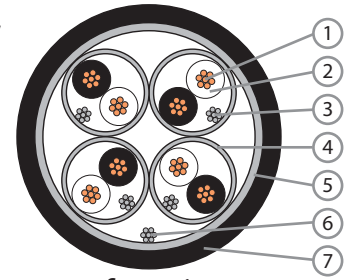
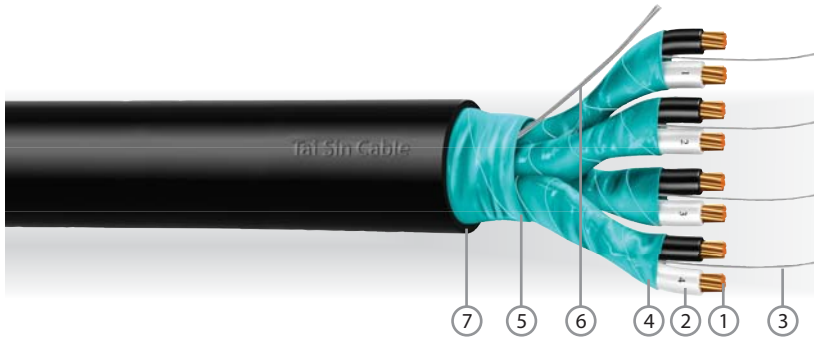
IN-PIOP CU / PVC / IS / OS / PVC (PAIRS & TRIADS)

PVC Insulated, Individual Aluminium Foil Screened, Overall Aluminium Foil Screened, PVC Sheathed Cable, 300 / 500V, BS EN50288-7



IN-XIOP CU / XLPE / IS / OS / PVC (PAIRS & TRIADS)

XLPE Insulated, Individual Aluminium Foil Screened, Overall Aluminium Foil Screened, PVC Sheathed Cable, 300 / 500V, BS EN50288-7



- Component**
1. Plain Annealed Copper Wire
 2. PVC Compound or XLPE Compound
 3. Tinned Copper Drain Wire
 4. Aluminium / Polyester Tape (IS)
 5. Aluminium / Polyester Tape (OS)
 6. Tinned Copper Drain Wire
 7. PVC Compound

CONSTRUCTION

| | |
|--------------------|-----------------------------------------------------------------------------------------------------|
| Conductor: | Plain Annealed Copper, Class 2 Stranded Circular |
| Insulation: | (1) Polyvinyl Chloride (PVC) Compound Type TI51 or (2) Cross-linked Polyethylene (XLPE) Compound |
| Insulation Colour: | Pair/s - Black/White with Black numberings Triad/s - Red/Black/White with Black numberings |
| Cores Twisted: | Cores twisted to form a pair, triad or quad |
| Wrap Film: | Polyester Binder Tape |
| Individual Screen: | Aluminium/Polyester Tape, with a Tinned Copper Drain Wire 0.5mm ² (7/0.3mm) (IS) |
| Lay Up: | Multi-pairs, triads or quads are assembled together in concentric layers to form the cable core |
| Wrap Film: | Polyester Binder Tape |
| Overall Screen: | Aluminium/Polyester Tape, with a Tinned Copper Drain Wire 0.5mm ² (7/0.3mm) (OS) |

Outer Sheath: Flame Retardancy Polyvinyl Chloride (PVC) Compound Type ST2 FR

Outer Sheath Colour: Black or Blue

ELECTRICAL CHARACTERISTICS

| | |
|---------------------------------------|-----------------------------------------------------------------|
| Operating Voltage, U ₀ /U: | 300/500V |
| Operating Temperature: | -15°C to 70°C (PVC Insulated) -15°C to 90°C (XLPE Insulated) |
| Final Short Circuit Temperature: | 160°C (PVC Insulated) 250°C (XLPE Insulated) |
| Test Voltage: | 2kV for 1 minute |

REFERENCE STANDARDS

| | |
|-----------------------|----------------------|
| Design Specification: | BS EN50288-7 |
| Conductor: | IEC60228, BS EN60228 |
| Flame Retardancy: | IEC60332-3 |

INSTALLATION REFERENCE

| | |
|--------------------------------------------|----------------------------|
| Min. Bending Radius (mm): | 8 x cable overall diameter |
| Max. Pulling Tension (N/mm ²): | 50 |

| No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | IN-XIOP | | IN-PIOP | |
|--------------|-------------------------------------------|------------------------------------|-------------------------------------|-----------------------------|----------------------------|-----------------------------|----------------------------|
| | | | | Cable Overall Diameter (mm) | Approximate Weight (kg/km) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) |
| 1P | 0.5 | 7 / 0.3 | 0.6 | 7.1 | 58 | 7.1 | 62 |
| 2P | | 7 / 0.3 | 0.6 | 11.3 | 121 | 11.3 | 128 |
| 3P | | 7 / 0.3 | 0.6 | 11.9 | 151 | 11.9 | 161 |
| 4P | | 7 / 0.3 | 0.6 | 13.0 | 184 | 13.0 | 197 |
| 5P | | 7 / 0.3 | 0.6 | 14.4 | 225 | 14.4 | 241 |
| 6P | | 7 / 0.3 | 0.6 | 15.6 | 259 | 15.6 | 279 |
| 8P | | 7 / 0.3 | 0.6 | 17.7 | 333 | 17.7 | 360 |
| 10P | | 7 / 0.3 | 0.6 | 20.2 | 411 | 20.2 | 445 |
| 12P | | 7 / 0.3 | 0.6 | 20.9 | 469 | 20.9 | 509 |
| 16P | | 7 / 0.3 | 0.6 | 23.1 | 591 | 23.1 | 645 |
| 20P | | 7 / 0.3 | 0.6 | 26.0 | 729 | 26.0 | 795 |
| 24P | | 7 / 0.3 | 0.6 | 29.0 | 870 | 29.0 | 951 |
| 36P | | 7 / 0.3 | 0.6 | 33.5 | 1254 | 33.5 | 1375 |

* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

IN-PIOP CU / PVC / IS / OS / PVC (PAIRS & TRIADS)

PVC Insulated, Individual Aluminium Foil Screened, Overall Aluminium Foil Screened, PVC Sheathed Cable, 300 / 500V, BS EN50288-7



IN-XIOP CU / XLPE / IS / OS / PVC (PAIRS & TRIADS)

XLPE Insulated, Individual Aluminium Foil Screened, Overall Aluminium Foil Screened, PVC Sheathed Cable, 300 / 500V, BS EN50288-7

| No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | IN-XIOP | | IN-PIOP | |
|----------------------|-------------------------------------------|------------------------------------|-------------------------------------|-----------------------------|----------------------------|-----------------------------|----------------------------|
| | | | | Cable Overall Diameter (mm) | Approximate Weight (kg/km) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) |
| 1P | 0.75 | 7 / 0.37 | 0.6 | 7.5 | 66 | 7.5 | 70 |
| 2P | | 7 / 0.37 | 0.6 | 12.0 | 137 | 12.0 | 145 |
| 3P | | 7 / 0.37 | 0.6 | 12.7 | 174 | 12.7 | 185 |
| 4P | | 7 / 0.37 | 0.6 | 14.1 | 221 | 14.1 | 236 |
| 5P | | 7 / 0.37 | 0.6 | 15.4 | 261 | 15.4 | 280 |
| 6P | | 7 / 0.37 | 0.6 | 17.0 | 311 | 17.0 | 333 |
| 8P | | 7 / 0.37 | 0.6 | 19.0 | 390 | 19.0 | 420 |
| 10P | | 7 / 0.37 | 0.6 | 21.7 | 483 | 21.7 | 520 |
| 12P | | 7 / 0.37 | 0.6 | 22.4 | 553 | 22.4 | 598 |
| 16P | | 7 / 0.37 | 0.6 | 25.1 | 713 | 25.1 | 773 |
| 20P | | 7 / 0.37 | 0.6 | 28.2 | 879 | 28.2 | 953 |
| 24P | | 7 / 0.37 | 0.6 | 31.4 | 1049 | 31.4 | 1139 |
| 36P | | 7 / 0.37 | 0.6 | 36.4 | 1514 | 36.4 | 1648 |
| SINGLE & MULTI-PAIRS | | 1.0 | 7 / 0.43 | 0.6 | 7.9 | 74 | 7.9 |
| | 7 / 0.43 | | 0.6 | 12.6 | 153 | 12.6 | 161 |
| | 7 / 0.43 | | 0.6 | 13.6 | 203 | 13.6 | 215 |
| | 7 / 0.43 | | 0.6 | 14.9 | 250 | 14.9 | 266 |
| | 7 / 0.43 | | 0.6 | 16.2 | 296 | 16.3 | 317 |
| | 7 / 0.43 | | 0.6 | 17.9 | 353 | 17.9 | 378 |
| | 7 / 0.43 | | 0.6 | 20.3 | 456 | 20.3 | 488 |
| | 7 / 0.43 | | 0.6 | 23.0 | 552 | 23.0 | 592 |
| | 7 / 0.43 | | 0.6 | 24.0 | 647 | 24.0 | 695 |
| | 7 / 0.43 | | 0.6 | 26.6 | 820 | 26.6 | 885 |
| | 7 / 0.43 | | 0.6 | 29.9 | 1013 | 29.9 | 1093 |
| | 7 / 0.43 | | 0.6 | 33.5 | 1226 | 33.5 | 1324 |
| | 7 / 0.43 | | 0.6 | 38.6 | 1751 | 38.6 | 1896 |
| | SINGLE & MULTI-PAIRS | | 1.5 | 7 / 0.53 | 0.6 | 8.5 | 89 |
| 7 / 0.53 | | 0.6 | | 13.9 | 190 | 13.9 | 199 |
| 7 / 0.53 | | 0.6 | | 14.8 | 245 | 14.8 | 259 |
| 7 / 0.53 | | 0.6 | | 16.2 | 304 | 16.2 | 323 |
| 7 / 0.53 | | 0.6 | | 17.9 | 373 | 17.9 | 396 |
| 7 / 0.53 | | 0.6 | | 19.5 | 434 | 19.5 | 462 |
| 7 / 0.53 | | 0.6 | | 22.1 | 562 | 22.1 | 599 |
| 7 / 0.53 | | 0.6 | | 25.3 | 696 | 25.3 | 742 |
| 7 / 0.53 | | 0.6 | | 26.4 | 817 | 26.4 | 872 |
| 7 / 0.53 | | 0.6 | | 29.3 | 1041 | 29.3 | 1114 |
| 7 / 0.53 | | 0.6 | | 33.1 | 1302 | 33.1 | 1393 |
| 7 / 0.53 | | 0.6 | | 36.9 | 1553 | 36.9 | 1663 |
| 7 / 0.53 | | 0.6 | | 42.7 | 2248 | 42.7 | 2413 |

* Other pairs, triads and quads configurations are available upon request.
 * Class 5 conductors are available upon request.

IN-PIOP CU / PVC / IS / OS / PVC (PAIRS & TRIADS)

PVC Insulated, Individual Aluminium Foil Screened, Overall Aluminium Foil Screened, PVC Sheathed Cable, 300 / 500V, BS EN50288-7



IN-XIOP CU / XLPE / IS / OS / PVC (PAIRS & TRIADS)

XLPE Insulated, Individual Aluminium Foil Screened, Overall Aluminium Foil Screened, PVC Sheathed Cable, 300 / 500V, BS EN50288-7

| | No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | IN-XIOP | | IN-PIOP | |
|----------------------|--------------|-------------------------------------------|------------------------------------|-------------------------------------|-----------------------------|----------------------------|-----------------------------|----------------------------|
| | | | | | Cable Overall Diameter (mm) | Approximate Weight (kg/km) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) |
| SINGLE & MULTI-PAIRS | 1P | 2.5 | 7 / 0.67 | 0.7 | 9.7 | 117 | 9.7 | 124 |
| | 2P | | 7 / 0.67 | 0.7 | 16.3 | 258 | 16.3 | 272 |
| | 3P | | 7 / 0.67 | 0.7 | 17.4 | 339 | 17.4 | 359 |
| | 4P | | 7 / 0.67 | 0.7 | 19.0 | 423 | 19.0 | 450 |
| | 5P | | 7 / 0.67 | 0.7 | 21.1 | 519 | 21.1 | 553 |
| | 6P | | 7 / 0.67 | 0.7 | 23.2 | 618 | 23.2 | 659 |
| | 8P | | 7 / 0.67 | 0.7 | 26.3 | 800 | 26.4 | 855 |
| | 10P | | 7 / 0.67 | 0.7 | 30.1 | 990 | 30.1 | 1059 |
| | 12P | | 7 / 0.67 | 0.7 | 31.2 | 1146 | 31.2 | 1228 |
| | 16P | | 7 / 0.67 | 0.7 | 34.9 | 1486 | 34.9 | 1595 |
| | 20P | | 7 / 0.67 | 0.7 | 39.4 | 1855 | 39.4 | 1990 |
| | 24P | | 7 / 0.67 | 0.7 | 43.9 | 2212 | 43.9 | 2376 |
| | 36P | | 7 / 0.67 | 0.7 | 50.8 | 3207 | 50.8 | 3452 |

* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

Table 7

| | No. of Triads | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | IN-XIOP | | IN-PIOP | |
|-----------------------|---------------|-------------------------------------------|------------------------------------|-------------------------------------|-----------------------------|----------------------------|-----------------------------|----------------------------|
| | | | | | Cable Overall Diameter (mm) | Approximate Weight (kg/km) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) |
| SINGLE & MULTI-TRIADS | 1T | 0.5 | 7 / 0.3 | 0.6 | 7.5 | 68 | 7.5 | 74 |
| | 6T | | 7 / 0.3 | 0.6 | 16.5 | 317 | 16.5 | 356 |
| | 16T | | 7 / 0.3 | 0.6 | 24.4 | 730 | 24.4 | 835 |
| | 24T | | 7 / 0.3 | 0.6 | 30.6 | 1076 | 30.6 | 1233 |
| | 1T | 0.75 | 7 / 0.37 | 0.6 | 7.9 | 79 | 7.9 | 86 |
| | 6T | | 7 / 0.37 | 0.6 | 17.7 | 377 | 17.7 | 421 |
| | 16T | | 7 / 0.37 | 0.6 | 26.5 | 899 | 26.5 | 1014 |
| | 24T | | 7 / 0.37 | 0.6 | 33.1 | 1324 | 33.1 | 1497 |
| | 1T | 1.0 | 7 / 0.43 | 0.6 | 8.3 | 89 | 8.3 | 97 |
| | 6T | | 7 / 0.43 | 0.6 | 18.7 | 437 | 18.7 | 483 |
| | 16T | | 7 / 0.43 | 0.6 | 28.1 | 1052 | 28.1 | 1176 |
| | 24T | | 7 / 0.43 | 0.6 | 35.4 | 1673 | 35.4 | 1756 |
| | 1T | 1.5 | 7 / 0.53 | 0.6 | 8.9 | 109 | 8.9 | 118 |
| | 6T | | 7 / 0.53 | 0.6 | 20.6 | 561 | 20.6 | 614 |
| | 16T | | 7 / 0.53 | 0.6 | 31.1 | 1378 | 31.1 | 1517 |
| | 24T | | 7 / 0.53 | 0.6 | 39.0 | 2031 | 39.0 | 2240 |
| 1T | 2.5 | 7 / 0.67 | 0.7 | 10.5 | 155 | 10.5 | 167 | |
| 6T | | 7 / 0.67 | 0.7 | 24.5 | 813 | 24.5 | 888 | |
| 16T | | 7 / 0.67 | 0.7 | 37.0 | 2002 | 37.0 | 2201 | |
| 24T | | 7 / 0.67 | 0.7 | 46.5 | 2977 | 46.5 | 3275 | |

* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

Table 8

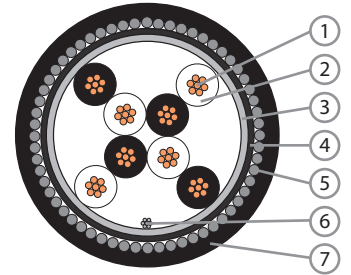
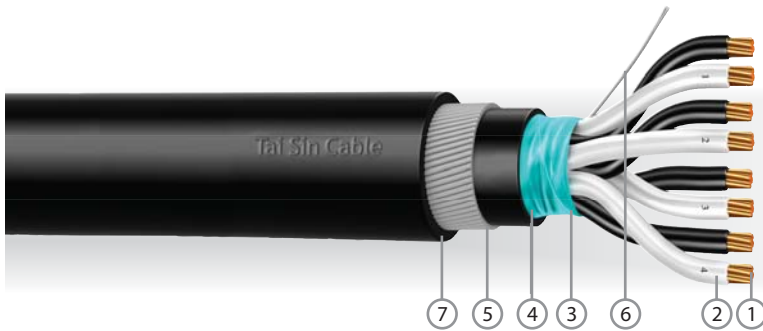
IN-POSP CU / PVC / OS / PVC / SWA / PVC (PAIRS & TRIADS)

PVC Insulated, Overall Aluminium Foil Screened, PVC Bedded, Galvanised Steel Wire Armoured, PVC Sheathed Cable, 300 / 500V, BS EN50288-7



IN-XOSP CU / XLPE / OS / PVC / SWA / PVC (PAIRS & TRIADS)

XLPE Insulated, Overall Aluminium Foil Screened, PVC Bedded, Galvanised Steel Wire Armoured, PVC Sheathed Cable, 300 / 500V, BS EN50288-7



- Component**
1. Plain Annealed Copper Wire
 2. PVC Compound or XLPE Compound
 3. Aluminium / Polyester Tape
 4. PVC Compound
 5. Galvanised Steel Wire Armoured
 6. Tinned Copper Drain Wire
 7. PVC Compound

CONSTRUCTION

| | |
|--------------------|-----------------------------------------------------------------------------------------------------|
| Conductor: | Plain Annealed Copper, Class 2 Stranded Circular |
| Insulation: | (1) Polyvinyl Chloride (PVC) Compound Type TI51 or (2) Cross-linked Polyethylene (XLPE) Compound |
| Insulation Colour: | Pair/s - Black/White with Black numberings Triad/s - Red/Black/White with Black numberings |
| Cores Twisted: | Cores twisted to form a pair, triad or quad |
| Lay Up: | Multi-pairs, triads or quads are assembled together in concentric layers to form the cable core |
| Wrap Film: | Polyester Binder Tape |
| Overall Screen: | Aluminium/Polyester Tape, with a Tinned Copper Drain Wire 0.5mm ² (7/0.3mm) (OS) |
| Bedding: | Polyvinyl Chloride (PVC) Compound Type ST2 |
| Bedding Colour: | Black |

| | |
|----------------------|----------------------------------------------------------------|
| Armour: | Galvanized Steel Wire Armoured (SWA) |
| Outer Sheath: | Flame Retardancy Polyvinyl Chloride (PVC) Compound Type ST2 FR |
| Outer Sheath Colour: | Black or Blue |

ELECTRICAL CHARACTERISTICS

| | |
|---------------------------------------|-----------------------------------------------------------------|
| Operating Voltage, U _o /U: | 300/500V |
| Operating Temperature: | -15°C to 70°C (PVC Insulated) -15°C to 90°C (XLPE Insulated) |
| Final Short Circuit Temperature: | 160°C (PVC Insulated) 250°C (XLPE Insulated) |
| Test Voltage: | 2kV for 1 minute |

REFERENCE STANDARDS

| | |
|-----------------------|----------------------|
| Design Specification: | BS EN50288-7 |
| Conductor: | IEC60228, BS EN60228 |
| Flame Retardancy: | IEC60332-3 |

INSTALLATION REFERENCE

| | |
|--------------------------------------------|-----------------------------|
| Min. Bending Radius (mm): | 10 x cable overall diameter |
| Max. Pulling Tension (N/mm ²): | 70 |

| No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Diameter Under Armour (mm) | Armour Wire Diameter (mm) | IN-XOSP | | IN-POSP | |
|--------------|-------------------------------------------|------------------------------------|-------------------------------------|----------------------------|---------------------------|-----------------------------|------------------------|-----------------------------|------------------------|
| | | | | | | Cable Overall Diameter (mm) | Approx. Weight (kg/km) | Cable Overall Diameter (mm) | Approx. Weight (kg/km) |
| 1P | 0.5 | 7 / 0.3 | 0.6 | 7.2 | 0.9 | 11.9 | 264 | 11.9 | 269 |
| 2P (Quad) | | 7 / 0.3 | 0.6 | 8.1 | 0.9 | 12.7 | 308 | 12.7 | 318 |
| 2P | | 7 / 0.3 | 0.6 | 10.8 | 0.9 | 15.7 | 398 | 15.7 | 408 |
| 3P | | 7 / 0.3 | 0.6 | 11.4 | 0.9 | 16.3 | 434 | 16.3 | 449 |
| 4P | | 7 / 0.3 | 0.6 | 12.5 | 0.9 | 17.4 | 487 | 17.4 | 507 |
| 5P | | 7 / 0.3 | 0.6 | 13.6 | 0.9 | 18.5 | 541 | 18.5 | 565 |
| 6P | | 7 / 0.3 | 0.6 | 14.8 | 1.25 | 20.6 | 714 | 20.6 | 743 |
| 8P | | 7 / 0.3 | 0.6 | 16.6 | 1.25 | 22.4 | 814 | 22.4 | 854 |
| 10P | | 7 / 0.3 | 0.6 | 18.8 | 1.25 | 24.6 | 940 | 24.6 | 989 |
| 12P | | 7 / 0.3 | 0.6 | 19.4 | 1.25 | 25.4 | 1008 | 25.4 | 1068 |
| 16P | | 7 / 0.3 | 0.6 | 21.6 | 1.25 | 27.6 | 1175 | 27.6 | 1252 |
| 20P | | 7 / 0.3 | 0.6 | 24.1 | 1.25 | 30.3 | 1357 | 30.3 | 1455 |
| 24P | | 7 / 0.3 | 0.6 | 26.8 | 1.25 | 33.0 | 1539 | 33.0 | 1657 |
| 36P | | 7 / 0.3 | 0.6 | 30.8 | 1.25 | 37.2 | 1939 | 37.2 | 2116 |

* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

IN-POSP CU / PVC / OS / PVC / SWA / PVC (PAIRS & TRIADS)

PVC Insulated, Overall Aluminium Foil Screened, PVC Bedded, Galvanised Steel Wire Armoured, PVC Sheathed Cable, 300 / 500V, BS EN50288-7



IN-XOSP CU / XLPE / OS / PVC / SWA / PVC (PAIRS & TRIADS)

XLPE Insulated, Overall Aluminium Foil Screened, PVC Bedded, Galvanised Steel Wire Armoured, PVC Sheathed Cable, 300 / 500V, BS EN50288-7

| No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Diameter Under Armour (mm) | Armour Wire Diameter (mm) | IN-XOSP | | IN-POSP | | |
|--------------|-------------------------------------------|------------------------------------|-------------------------------------|----------------------------|---------------------------|-----------------------------|------------------------|-----------------------------|------------------------|-----|
| | | | | | | Cable Overall Diameter (mm) | Approx. Weight (kg/km) | Cable Overall Diameter (mm) | Approx. Weight (kg/km) | |
| 1P | 0.75 | 7 / 0.37 | 0.6 | 7.6 | 0.9 | 12.3 | 280 | 12.3 | 286 | |
| 2P (Quad) | | 7 / 0.37 | 0.6 | 8.6 | 0.9 | 13.2 | 336 | 13.2 | 346 | |
| 2P | | 7 / 0.37 | 0.6 | 11.5 | 0.9 | 16.4 | 433 | 16.4 | 444 | |
| 3P | | 7 / 0.37 | 0.6 | 12.2 | 0.9 | 17.1 | 477 | 17.1 | 493 | |
| 4P | | 7 / 0.37 | 0.6 | 13.4 | 0.9 | 18.3 | 537 | 18.3 | 559 | |
| 5P | | 7 / 0.37 | 0.6 | 14.6 | 1.25 | 20.4 | 711 | 20.4 | 738 | |
| 6P | | 7 / 0.37 | 0.6 | 15.9 | 1.25 | 21.7 | 782 | 21.7 | 815 | |
| 8P | | 7 / 0.37 | 0.6 | 17.9 | 1.25 | 23.7 | 907 | 23.7 | 950 | |
| 10P | | 7 / 0.37 | 0.6 | 20.3 | 1.25 | 26.3 | 1070 | 26.3 | 1124 | |
| 12P | | 7 / 0.37 | 0.6 | 21.0 | 1.25 | 27.0 | 1139 | 27.0 | 1204 | |
| 16P | | 7 / 0.37 | 0.6 | 23.3 | 1.25 | 21.3 | 1327 | 29.3 | 1414 | |
| 20P | | 7 / 0.37 | 0.6 | 26.1 | 1.25 | 32.3 | 1549 | 32.3 | 1657 | |
| 24P | | 7 / 0.37 | 0.6 | 29.0 | 1.25 | 35.4 | 1775 | 35.4 | 1905 | |
| 36P | | 7 / 0.37 | 0.6 | 33.4 | 1.6 | 40.7 | 2499 | 40.7 | 2694 | |
| 1P | | 1.0 | 7 / 0.43 | 0.6 | 8.0 | 0.9 | 12.7 | 296 | 12.7 | 302 |
| 2P (Quad) | | | 7 / 0.43 | 0.6 | 9.1 | 0.9 | 13.9 | 365 | 13.9 | 376 |
| 2P | 7 / 0.43 | | 0.6 | 12.2 | 0.9 | 17.1 | 464 | 17.1 | 475 | |
| 3P | 7 / 0.43 | | 0.6 | 12.9 | 0.9 | 17.8 | 518 | 17.8 | 536 | |
| 4P | 7 / 0.43 | | 0.6 | 14.1 | 1.25 | 19.9 | 693 | 19.9 | 717 | |
| 5P | 7 / 0.43 | | 0.6 | 15.5 | 1.25 | 21.3 | 771 | 21.3 | 801 | |
| 6P | 7 / 0.43 | | 0.6 | 16.9 | 1.25 | 22.7 | 859 | 22.7 | 894 | |
| 8P | 7 / 0.43 | | 0.6 | 19.0 | 1.25 | 25.0 | 1010 | 25.0 | 1056 | |
| 10P | 7 / 0.43 | | 0.6 | 21.6 | 1.25 | 27.6 | 1174 | 27.6 | 1233 | |
| 12P | 7 / 0.43 | | 0.6 | 22.3 | 1.25 | 28.3 | 1265 | 28.3 | 1334 | |
| 16P | 7 / 0.43 | | 0.6 | 24.8 | 1.25 | 31.0 | 1495 | 31.0 | 1588 | |
| 20P | 7 / 0.43 | | 0.6 | 27.8 | 1.25 | 34.0 | 1727 | 34.0 | 1844 | |
| 24P | 7 / 0.43 | | 0.6 | 30.9 | 1.25 | 37.3 | 1990 | 37.3 | 2129 | |
| 36P | 7 / 0.43 | | 0.6 | 35.6 | 1.6 | 42.9 | 2803 | 42.9 | 3013 | |
| 1P | 1.5 | | 7 / 0.53 | 0.6 | 8.6 | 0.9 | 13.3 | 329 | 13.3 | 336 |
| 2P (Quad) | | | 7 / 0.53 | 0.6 | 9.8 | 0.9 | 14.6 | 411 | 14.6 | 424 |
| 2P | | 7 / 0.53 | 0.6 | 13.2 | 0.9 | 18.1 | 519 | 18.1 | 532 | |
| 3P | | 7 / 0.53 | 0.6 | 14.1 | 1.25 | 19.9 | 696 | 19.9 | 716 | |
| 4P | | 7 / 0.53 | 0.6 | 15.4 | 1.25 | 21.2 | 785 | 21.2 | 811 | |
| 5P | | 7 / 0.53 | 0.6 | 16.9 | 1.25 | 22.7 | 885 | 22.7 | 918 | |
| 6P | | 7 / 0.53 | 0.6 | 18.5 | 1.25 | 24.5 | 1000 | 24.5 | 1039 | |
| 8P | | 7 / 0.53 | 0.6 | 20.8 | 1.25 | 26.8 | 1173 | 26.8 | 1225 | |
| 10P | | 7 / 0.53 | 0.6 | 23.7 | 1.25 | 29.9 | 1380 | 29.9 | 1445 | |
| 12P | | 7 / 0.53 | 0.6 | 24.5 | 1.25 | 30.7 | 1494 | 30.7 | 1572 | |
| 16P | | 7 / 0.53 | 0.6 | 27.3 | 1.25 | 33.5 | 1769 | 33.5 | 1873 | |
| 20P | | 7 / 0.53 | 0.6 | 30.6 | 1.25 | 37.0 | 2209 | 37.0 | 2079 | |
| 24P | | 7 / 0.53 | 0.6 | 34.1 | 1.6 | 41.4 | 2637 | 41.4 | 2793 | |
| 36P | | 7 / 0.53 | 0.6 | 39.8 | 1.6 | 47.3 | 3475 | 47.3 | 3709 | |

* Other pairs, triads and quads configurations are available upon request.
 * Class 5 conductors are available upon request.

IN-POSP CU / PVC / OS / PVC / SWA / PVC (PAIRS & TRIADS)

PVC Insulated, Overall Aluminium Foil Screened, PVC Bedded, Galvanised Steel Wire Armoured, PVC Sheathed Cable, 300 / 500V, BS EN50288-7



IN-XOSP CU / XLPE / OS / PVC / SWA / PVC (PAIRS & TRIADS)

XLPE Insulated, Overall Aluminium Foil Screened, PVC Bedded, Galvanised Steel Wire Armoured, PVC Sheathed Cable, 300 / 500V, BS EN50288-7

| | No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Diameter Under Armour (mm) | Armour Wire Diameter (mm) | IN-XOSP | | IN-POSP | |
|----------------------|--------------|-------------------------------------------|------------------------------------|-------------------------------------|----------------------------|---------------------------|-----------------------------|------------------------|-----------------------------|------------------------|
| | | | | | | | Cable Overall Diameter (mm) | Approx. Weight (kg/km) | Cable Overall Diameter (mm) | Approx. Weight (kg/km) |
| SINGLE & MULTI-PAIRS | 1P | 2.5 | 7 / 0.67 | 0.7 | 9.8 | 0.9 | 14.7 | 394 | 14.7 | 403 |
| | 2P (Quad) | | 7 / 0.67 | 0.7 | 11.3 | 0.9 | 16.1 | 499 | 16.1 | 516 |
| | 2P | | 7 / 0.67 | 0.7 | 15.4 | 1.25 | 21.2 | 746 | 21.2 | 764 |
| | 3P | | 7 / 0.67 | 0.7 | 16.5 | 1.25 | 22.3 | 853 | 22.3 | 881 |
| | 4P | | 7 / 0.67 | 0.7 | 18.1 | 1.25 | 24.1 | 990 | 24.1 | 1026 |
| | 5P | | 7 / 0.67 | 0.7 | 19.9 | 1.25 | 25.9 | 1127 | 25.9 | 1173 |
| | 6P | | 7 / 0.67 | 0.7 | 21.8 | 1.25 | 27.8 | 1256 | 27.8 | 1311 |
| | 8P | | 7 / 0.67 | 0.7 | 24.6 | 1.25 | 30.8 | 1506 | 30.8 | 1579 |
| | 10P | | 7 / 0.67 | 0.7 | 28.1 | 1.25 | 34.5 | 1789 | 34.5 | 1880 |
| | 12P | | 7 / 0.67 | 0.7 | 29.1 | 1.25 | 35.5 | 1960 | 35.5 | 2070 |
| | 16P | | 7 / 0.67 | 0.7 | 32.5 | 1.6 | 39.8 | 2587 | 39.8 | 2733 |
| | 20P | | 7 / 0.67 | 0.7 | 36.9 | 1.6 | 44.4 | 3108 | 44.4 | 3209 |
| | 24P | | 7 / 0.67 | 0.7 | 41.2 | 1.6 | 48.9 | 3586 | 48.9 | 3805 |
| | 36P | | 7 / 0.67 | 0.7 | 47.5 | 2.0 | 56.2 | 5066 | 56.2 | 5394 |

* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

Table 11

| | No. of Triads | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | IN-XOSP | | IN-POSP | |
|-----------------------|---------------|-------------------------------------------|------------------------------------|-------------------------------------|-----------------------------|----------------------------|-----------------------------|----------------------------|
| | | | | | Cable Overall Diameter (mm) | Approximate Weight (kg/km) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) |
| SINGLE & MULTI-TRIADS | 1T | 0.5 | 7 / 0.3 | 0.6 | 12.2 | 282 | 12.2 | 290 |
| | 6T | | 7 / 0.3 | 0.6 | 22.3 | 830 | 22.3 | 877 |
| | 16T | | 7 / 0.3 | 0.6 | 30.4 | 1427 | 30.4 | 1554 |
| | 24T | | 7 / 0.3 | 0.6 | 36.5 | 1899 | 36.5 | 2090 |
| | 1T | 0.75 | 7 / 0.37 | 0.6 | 12.7 | 302 | 12.7 | 310 |
| | 6T | | 7 / 0.37 | 0.6 | 23.5 | 926 | 23.5 | 979 |
| | 16T | | 7 / 0.37 | 0.6 | 32.4 | 1642 | 32.4 | 1781 |
| | 24T | | 7 / 0.37 | 0.6 | 39.8 | 2441 | 39.8 | 2650 |
| | 1T | 1.0 | 7 / 0.43 | 0.6 | 13.1 | 325 | 13.1 | 334 |
| | 6T | | 7 / 0.43 | 0.6 | 24.8 | 1035 | 24.8 | 1091 |
| | 16T | | 7 / 0.43 | 0.6 | 34.1 | 1853 | 34.1 | 2002 |
| | 24T | | 7 / 0.43 | 0.6 | 42.2 | 2765 | 42.2 | 2990 |
| | 1T | 1.5 | 7 / 0.53 | 0.6 | 13.9 | 367 | 13.9 | 377 |
| | 6T | | 7 / 0.53 | 0.6 | 26.7 | 1210 | 26.7 | 1273 |
| | 16T | | 7 / 0.53 | 0.6 | 37.2 | 2250 | 37.2 | 2417 |
| | 24T | | 7 / 0.53 | 0.6 | 46.4 | 3415 | 46.4 | 3666 |
| | 1T | 2.5 | 7 / 0.67 | 0.7 | 15.3 | 443 | 15.3 | 457 |
| | 6T | | 7 / 0.67 | 0.7 | 30.6 | 1563 | 30.6 | 1651 |
| | 16T | | 7 / 0.67 | 0.7 | 44.6 | 3357 | 44.6 | 3589 |
| | 24T | | 7 / 0.67 | 0.7 | 55.2 | 5007 | 55.2 | 5356 |

* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

Table 12

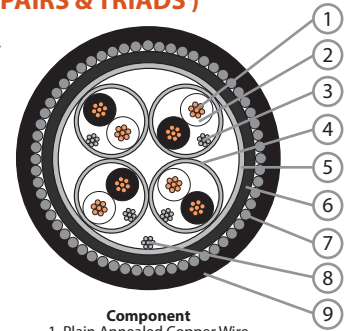
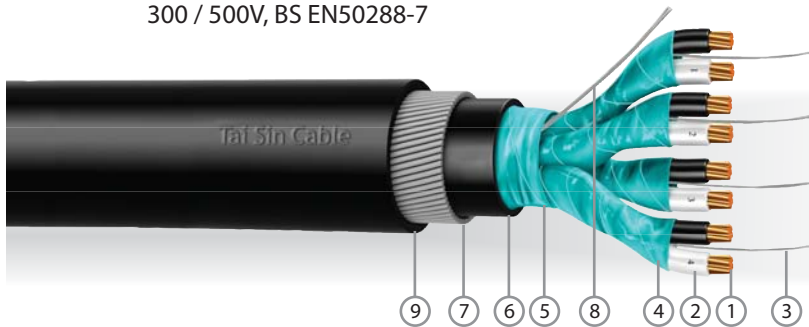
IN-PIOSP CU / PVC / IS / OS / PVC / SWA / PVC (PAIRS & TRIADS)

PVC Insulated, Individual Aluminium Foil Screened, Overall Aluminium Foil Screened, PVC Bedded, Galvanised Steel Wire Armoured, PVC Sheathed Cable, 300 / 500V, BS EN50288-7



IN-XIOSP CU / XLPE / IS / OS / PVC / SWA / PVC (PAIRS & TRIADS)

XLPE Insulated, Individual Aluminium Foil Screened, Overall Aluminium Foil Screened, PVC Bedded, Galvanised Steel Wire Armoured, PVC Sheathed Cable, 300 / 500V, BS EN50288-7



- Component**
1. Plain Annealed Copper Wire
 2. PVC Compound or XLPE Compound
 3. Tinned Copper Drain Wire
 4. Aluminium / Polyester Tape (IS)
 5. Aluminium / Polyester Tape (OS)
 6. PVC Compound
 7. Galvanised Steel Wire Armoured
 8. Tinned Copper Drain Wire
 9. PVC Compound

CONSTRUCTION

| | |
|--------------------|-----------------------------------------------------------------------------------------------------|
| Conductor: | Plain Annealed Copper, Class 2 Stranded Circular |
| Insulation: | (1) Polyvinyl Chloride (PVC) Compound Type TI51 or (2) Cross-linked Polyethylene (XLPE) Compound |
| Insulation Colour: | Pair/s - Black/White with Black numberings Triad/s - Red/Black/White with Black numberings |
| Cores Twisted: | Cores twisted to form a pair, triad or quad |
| Wrap Film: | Polyester Binder Tape |
| Individual Screen: | Aluminium/Polyester Tape, with a Tinned Copper Drain Wire 0.5mm ² (7/0.3mm) (IS) |
| Lay Up: | Multi-pairs, triads or quads are assembled together in concentric layers to form the cable core |
| Wrap Film: | Polyester Binder Tape |
| Overall Screen: | Aluminium/Polyester Tape, with a Tinned Copper Drain Wire 0.5mm ² (7/0.3mm) (OS) |
| Bedding: | Polyvinyl Chloride (PVC) Compound Type ST2 |

| | |
|----------------------|----------------------------------------------------------------|
| Bedding Colour: | Black |
| Armour: | Galvanized Steel Wire Armoured (SWA) |
| Outer Sheath: | Flame Retardancy Polyvinyl Chloride (PVC) Compound Type ST2 FR |
| Outer Sheath Colour: | Black or Blue |

ELECTRICAL CHARACTERISTICS

| | |
|---------------------------------------|-----------------------------------------------------------------|
| Operating Voltage, U _o /U: | 300/500V |
| Operating Temperature: | -15°C to 70°C (PVC Insulated) -15°C to 90°C (XLPE Insulated) |
| Final Short Circuit Temperature: | 160°C (PVC Insulated) 250°C (XLPE Insulated) |
| Test Voltage: | 2kV for 1 minute |

REFERENCE STANDARDS

| | |
|-----------------------|----------------------|
| Design Specification: | BS EN50288-7 |
| Conductor: | IEC60228, BS EN60228 |
| Flame Retardancy: | IEC60332-3 |

INSTALLATION REFERENCE

| | |
|--------------------------------------------|-----------------------------|
| Min. Bending Radius (mm): | 10 x cable overall diameter |
| Max. Pulling Tension (N/mm ²): | 70 |

| | No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Diameter Under Armour (mm) | Armour Wire Diameter (mm) | IN-XIOSP | | IN-PIOSP | |
|----------------------|--------------|-------------------------------------------|------------------------------------|-------------------------------------|----------------------------|---------------------------|-----------------------------|------------------------|-----------------------------|------------------------|
| | | | | | | | Cable Overall Diameter (mm) | Approx. Weight (kg/km) | Cable Overall Diameter (mm) | Approx. Weight (kg/km) |
| SINGLE & MULTI-PAIRS | 1P | | 7 / 0.3 | 0.6 | 7.2 | 0.9 | 11.9 | 264 | 11.9 | 269 |
| | 2P | | 7 / 0.3 | 0.6 | 11.2 | 0.9 | 16.1 | 428 | 16.1 | 438 |
| | 3P | | 7 / 0.3 | 0.6 | 11.8 | 0.9 | 16.7 | 472 | 16.7 | 487 |
| | 4P | | 7 / 0.3 | 0.6 | 12.9 | 0.9 | 17.8 | 533 | 17.8 | 553 |
| | 5P | | 7 / 0.3 | 0.6 | 14.1 | 1.25 | 19.9 | 703 | 19.9 | 728 |
| | 6P | | 7 / 0.3 | 0.6 | 15.3 | 1.25 | 21.1 | 775 | 21.1 | 805 |
| | 8P | 0.5 | 7 / 0.3 | 0.6 | 17.2 | 1.25 | 23.2 | 913 | 23.2 | 954 |
| | 10P | | 7 / 0.3 | 0.6 | 19.5 | 1.25 | 25.5 | 1056 | 25.5 | 1106 |
| | 12P | | 7 / 0.3 | 0.6 | 20.2 | 1.25 | 26.2 | 1128 | 26.2 | 1188 |
| | 16P | | 7 / 0.3 | 0.6 | 22.4 | 1.25 | 28.6 | 1337 | 28.6 | 1417 |
| | 20P | | 7 / 0.3 | 0.6 | 25.1 | 1.25 | 31.3 | 1549 | 31.3 | 1649 |
| | 24P | | 7 / 0.3 | 0.6 | 27.9 | 1.25 | 34.3 | 1779 | 34.3 | 1900 |
| 36P | | 7 / 0.3 | 0.6 | 32.0 | 1.6 | 39.3 | 2490 | 39.3 | 2670 | |

* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

IN-PIOSP CU / PVC / IS / OS / PVC / SWA / PVC (PAIRS & TRIADS)

PVC Insulated, Individual Aluminium Foil Screened, Overall Aluminium Foil Screened, PVC Bedded, Galvanised Steel Wire Armoured, PVC Sheathed Cable, 300 / 500V, BS EN50288-7



IN-XIOSP CU / XLPE / IS / OS / PVC / SWA / PVC (PAIRS & TRIADS)

XLPE Insulated, Individual Aluminium Foil Screened, Overall Aluminium Foil Screened, PVC Bedded, Galvanised Steel Wire Armoured, PVC Sheathed Cable, 300 / 500V, BS EN50288-7

| No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Diameter Under Armour (mm) | Armour Wire Diameter (mm) | IN-XIOSP | | IN-PIOSP | | |
|----------------------|-------------------------------------------|------------------------------------|-------------------------------------|----------------------------|---------------------------|-----------------------------|------------------------|-----------------------------|------------------------|------|
| | | | | | | Cable Overall Diameter (mm) | Approx. Weight (kg/km) | Cable Overall Diameter (mm) | Approx. Weight (kg/km) | |
| 1P | 0.75 | 7 / 0.37 | 0.6 | 7.6 | 0.9 | 12.3 | 280 | 12.3 | 286 | |
| 2P | | 7 / 0.37 | 0.6 | 11.9 | 0.9 | 16.8 | 459 | 16.8 | 470 | |
| 3P | | 7 / 0.37 | 0.6 | 12.6 | 0.9 | 17.5 | 510 | 17.5 | 527 | |
| 4P | | 7 / 0.37 | 0.6 | 13.8 | 0.9 | 18.9 | 593 | 18.9 | 615 | |
| 5P | | 7 / 0.37 | 0.6 | 15.1 | 1.25 | 20.9 | 766 | 20.9 | 794 | |
| 6P | | 7 / 0.37 | 0.6 | 16.5 | 1.25 | 22.5 | 868 | 22.5 | 901 | |
| 8P | | 7 / 0.37 | 0.6 | 18.5 | 1.25 | 24.5 | 1009 | 24.5 | 1053 | |
| 10P | | 7 / 0.37 | 0.6 | 21.0 | 1.25 | 27.2 | 1180 | 27.2 | 1235 | |
| 12P | | 7 / 0.37 | 0.6 | 21.7 | 1.25 | 27.9 | 1274 | 27.9 | 1340 | |
| 16P | | 7 / 0.37 | 0.6 | 24.2 | 1.25 | 30.4 | 1498 | 30.4 | 1586 | |
| 20P | | 7 / 0.37 | 0.6 | 27.1 | 1.25 | 33.5 | 1763 | 33.5 | 1873 | |
| 24P | | 7 / 0.37 | 0.6 | 30.1 | 1.25 | 36.7 | 2024 | 36.7 | 2155 | |
| 36P | | 7 / 0.37 | 0.6 | 35.1 | 1.6 | 42.6 | 2902 | 42.6 | 3100 | |
| <hr/> | | | | | | | | | | |
| SINGLE & MULTI-PAIRS | 1P | 1.0 | 7 / 0.43 | 0.6 | 8.0 | 0.9 | 12.7 | 296 | 12.7 | 302 |
| | 2P | | 7 / 0.43 | 0.6 | 12.5 | 0.9 | 17.4 | 489 | 17.4 | 500 |
| | 3P | | 7 / 0.43 | 0.6 | 13.3 | 0.9 | 18.4 | 562 | 18.4 | 580 |
| | 4P | | 7 / 0.43 | 0.6 | 14.6 | 1.25 | 20.4 | 741 | 20.4 | 765 |
| | 5P | | 7 / 0.43 | 0.6 | 15.9 | 1.25 | 21.7 | 826 | 21.7 | 856 |
| | 6P | | 7 / 0.43 | 0.6 | 17.4 | 1.25 | 23.4 | 936 | 23.4 | 971 |
| | 8P | | 7 / 0.43 | 0.6 | 19.6 | 1.25 | 25.6 | 1101 | 25.6 | 1148 |
| | 10P | | 7 / 0.43 | 0.6 | 22.3 | 1.25 | 28.5 | 1297 | 28.5 | 1356 |
| | 12P | | 7 / 0.43 | 0.6 | 23.1 | 1.25 | 29.3 | 1405 | 29.3 | 1476 |
| | 16P | | 7 / 0.43 | 0.6 | 25.7 | 1.25 | 32.1 | 1670 | 32.1 | 1765 |
| | 20P | | 7 / 0.43 | 0.6 | 28.8 | 1.25 | 35.2 | 1947 | 35.2 | 2065 |
| | 24P | | 7 / 0.43 | 0.6 | 32.0 | 1.6 | 39.3 | 2462 | 39.3 | 2603 |
| | 36P | | 7 / 0.43 | 0.6 | 37.3 | 1.6 | 44.8 | 3234 | 44.8 | 3447 |
| <hr/> | | | | | | | | | | |
| SINGLE & MULTI-PAIRS | 1P | 1.5 | 7 / 0.53 | 0.6 | 8.6 | 0.9 | 13.3 | 329 | 13.3 | 336 |
| | 2P | | 7 / 0.53 | 0.6 | 13.6 | 0.9 | 18.7 | 556 | 18.7 | 569 |
| | 3P | | 7 / 0.53 | 0.6 | 14.5 | 1.25 | 20.3 | 737 | 20.3 | 756 |
| | 4P | | 7 / 0.53 | 0.6 | 15.9 | 1.25 | 21.7 | 834 | 21.7 | 861 |
| | 5P | | 7 / 0.53 | 0.6 | 17.4 | 1.25 | 23.4 | 955 | 23.4 | 988 |
| | 6P | | 7 / 0.53 | 0.6 | 19.0 | 1.25 | 25.0 | 1066 | 25.0 | 1106 |
| | 8P | | 7 / 0.53 | 0.6 | 21.4 | 1.25 | 27.6 | 1272 | 27.6 | 1324 |
| | 10P | | 7 / 0.53 | 0.6 | 24.4 | 1.25 | 30.6 | 1492 | 30.6 | 1558 |
| | 12P | | 7 / 0.53 | 0.6 | 25.3 | 1.25 | 31.7 | 1641 | 31.7 | 1720 |
| | 16P | | 7 / 0.53 | 0.6 | 28.2 | 1.25 | 34.6 | 1951 | 34.6 | 2057 |
| | 20P | | 7 / 0.53 | 0.6 | 31.6 | 1.6 | 38.9 | 2535 | 38.9 | 2666 |
| | 24P | | 7 / 0.53 | 0.6 | 35.6 | 1.6 | 43.1 | 2961 | 43.1 | 3118 |
| | 36P | | 7 / 0.53 | 0.6 | 41.0 | 1.6 | 48.7 | 3850 | 48.7 | 4087 |

* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

IN-PIOSP CU / PVC / IS / OS / PVC / SWA / PVC (PAIRS & TRIADS)

PVC Insulated, Individual Aluminium Foil Screened, Overall Aluminium Foil Screened, PVC Bedded, Galvanised Steel Wire Armoured, PVC Sheathed Cable, 300 / 500V, BS EN50288-7



IN-XIOSP CU / XLPE / IS / OS / PVC / SWA / PVC (PAIRS & TRIADS)

XLPE Insulated, Individual Aluminium Foil Screened, Overall Aluminium Foil Screened, PVC Bedded, Galvanised Steel Wire Armoured, PVC Sheathed Cable, 300 / 500V, BS EN50288-7

| | No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Diameter Under Armour (mm) | Armour Wire Diameter (mm) | IN-XIOSP | | IN-PIOSP | |
|----------------------|--------------|-------------------------------------------|------------------------------------|-------------------------------------|----------------------------|---------------------------|-----------------------------|------------------------|-----------------------------|------------------------|
| | | | | | | | Cable Overall Diameter (mm) | Approx. Weight (kg/km) | Cable Overall Diameter (mm) | Approx. Weight (kg/km) |
| SINGLE & MULTI-PAIRS | 1P | 2.5 | 7 / 0.67 | 0.7 | 9.8 | 0.9 | 14.7 | 394 | 14.7 | 403 |
| | 2P | | 7 / 0.67 | 0.7 | 15.8 | 1.25 | 21.6 | 779 | 21.6 | 797 |
| | 3P | | 7 / 0.67 | 0.7 | 16.9 | 1.25 | 22.9 | 908 | 22.9 | 935 |
| | 4P | | 7 / 0.67 | 0.7 | 18.5 | 1.25 | 24.5 | 1042 | 24.5 | 1078 |
| | 5P | | 7 / 0.67 | 0.7 | 20.4 | 1.25 | 26.6 | 1203 | 26.6 | 1249 |
| | 6P | | 7 / 0.67 | 0.7 | 22.3 | 1.25 | 28.5 | 1352 | 28.5 | 1407 |
| | 8P | | 7 / 0.67 | 0.7 | 25.2 | 1.25 | 31.6 | 1623 | 31.6 | 1697 |
| | 10P | | 7 / 0.67 | 0.7 | 28.8 | 1.25 | 35.2 | 1909 | 35.2 | 2001 |
| | 12P | | 7 / 0.67 | 0.7 | 29.9 | 1.6 | 37.2 | 2321 | 37.2 | 2431 |
| | 16P | | 7 / 0.67 | 0.7 | 33.8 | 1.6 | 41.3 | 2851 | 41.3 | 2998 |
| | 20P | | 7 / 0.67 | 0.7 | 37.9 | 1.6 | 45.6 | 3545 | 45.6 | 3545 |
| | 24P | | 7 / 0.67 | 0.7 | 42.2 | 2.0 | 50.9 | 4225 | 50.9 | 4445 |
| | 36P | | 7 / 0.67 | 0.7 | 49.1 | 2.0 | 58.2 | 5598 | 58.2 | 5928 |

* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

Table 15

| | No. of Triads | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | IN-XIOSP | | IN-PIOSP | |
|-----------------------|---------------|-------------------------------------------|------------------------------------|-------------------------------------|-----------------------------|----------------------------|-----------------------------|----------------------------|
| | | | | | Cable Overall Diameter (mm) | Approximate Weight (kg/km) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) |
| SINGLE & MULTI-TRIADS | 1T | 0.5 | 7 / 0.3 | 0.6 | 12.2 | 282 | 12.2 | 290 |
| | 6T | | 7 / 0.3 | 0.6 | 23.0 | 904 | 23.0 | 949 |
| | 16T | | 7 / 0.3 | 0.6 | 31.3 | 1593 | 31.3 | 1711 |
| | 24T | | 7 / 0.3 | 0.6 | 38.6 | 2370 | 38.6 | 2549 |
| | 1T | 0.75 | 7 / 0.37 | 0.6 | 12.7 | 302 | 12.7 | 310 |
| | 6T | | 7 / 0.37 | 0.6 | 24.3 | 1005 | 24.3 | 1053 |
| | 16T | | 7 / 0.37 | 0.6 | 33.5 | 1829 | 33.5 | 1959 |
| | 24T | | 7 / 0.37 | 0.6 | 41.7 | 2776 | 41.7 | 2971 |
| | 1T | 1.0 | 7 / 0.43 | 0.6 | 13.1 | 325 | 13.1 | 334 |
| | 6T | | 7 / 0.43 | 0.6 | 25.4 | 1102 | 25.4 | 1155 |
| | 16T | | 7 / 0.43 | 0.6 | 35.2 | 2034 | 35.2 | 2174 |
| | 24T | | 7 / 0.43 | 0.6 | 43.9 | 3088 | 43.9 | 3298 |
| | 1T | 1.5 | 7 / 0.53 | 0.6 | 13.9 | 367 | 13.9 | 377 |
| | 6T | | 7 / 0.53 | 0.6 | 27.4 | 1293 | 27.4 | 1351 |
| | 16T | | 7 / 0.53 | 0.6 | 39.0 | 2667 | 39.0 | 2823 |
| | 24T | | 7 / 0.53 | 0.6 | 47.8 | 3698 | 47.8 | 3932 |
| 1T | 2.5 | 7 / 0.67 | 0.7 | 15.3 | 443 | 15.3 | 457 | |
| 6T | | 7 / 0.67 | 0.7 | 31.4 | 1655 | 31.4 | 1737 | |
| 16T | | 7 / 0.67 | 0.7 | 45.7 | 3578 | 45.7 | 3797 | |
| 24T | | 7 / 0.67 | 0.7 | 56.9 | 5383 | 56.9 | 5711 | |

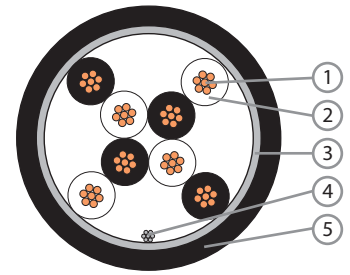
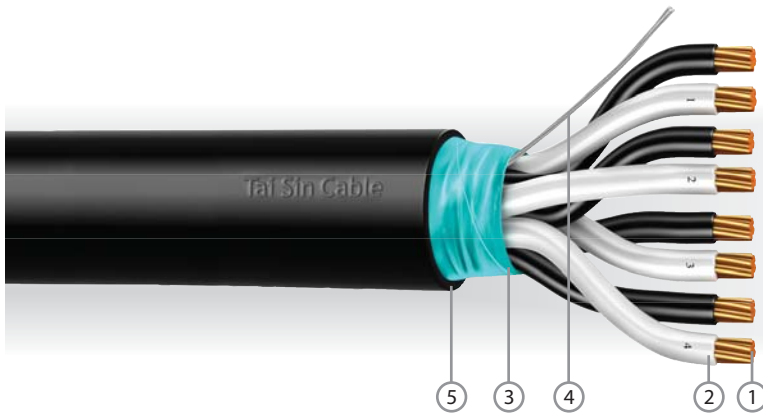
* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

Table 16

FRT-XOL

CU / XLPE / OS / LSZH (PAIRS & TRIADS)

XLPE Insulated, Overall Aluminium Foil Screened, LSZH Sheathed Cable, 300 / 500V, BS EN50288-7



- Component**
1. Plain Annealed Copper Wire
 2. Cross-linked Polyethylene Compound
 3. Aluminium / Polyester Tape
 4. Tinned Copper Drain Wire
 5. Low Smoke Zero Halogen (LSZH) Compound

CONSTRUCTION

| | |
|----------------------|-------------------------------------------------------------------------------------------------|
| Conductor: | Plain Annealed Copper, Class 2 Stranded Circular |
| Insulation: | Cross-linked Polyethylene (XLPE) Compound |
| Insulation Colour: | Pair/s - Black/White with Black numberings Triad/s - Red/Black/White with Black numberings |
| Cores Twisted: | Cores twisted to form a pair, triad or quad |
| Lay Up: | Multi-pairs, triads or quads are assembled together in concentric layers to form the cable core |
| Wrap Film: | Polyester Binder Tape |
| Overall Screen: | Aluminium/Polyester Tape, with a Tinned Copper Drain Wire 0.5mm ² (7/0.3mm) (OS) |
| Outer Sheath: | Low Smoke Zero Halogen (LSZH) Compound |
| Outer Sheath Colour: | Black |

ELECTRICAL CHARACTERISTICS

| | |
|---------------------------------------|------------------|
| Operating Voltage, U _o /U: | 300/500V |
| Operating Temperature: | -15°C to 90°C |
| Final Short Circuit Temperature: | 250°C |
| Test Voltage: | 2kV for 1 minute |

REFERENCE STANDARDS

| | |
|-------------------------|--------------------------------------------------------------------------------------|
| Design Specification: | BS EN50288-7 |
| Conductor: | IEC60228, BS EN60228 |
| Flame Retardancy: | IEC60332-3-22, BS EN60332-3-22 |
| Low Smoke Zero Halogen: | IEC61034-2, BS EN61034-2 IEC60754-1, IEC60754-2 BS EN50267-2-1, BS EN50267-2-2 |

INSTALLATION REFERENCE

| | |
|--------------------------------------------|----------------------------|
| Min. Bending Radius (mm): | 8 x cable overall diameter |
| Max. Pulling Tension (N/mm ²): | 50 |

| No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) |
|--------------|-------------------------------------------|------------------------------------|-------------------------------------|-----------------------------|----------------------------|
| 1P | 0.5 | 7 / 0.3 | 0.6 | 7.0 | 57 |
| 2P (Quad) | | 7 / 0.3 | 0.6 | 7.9 | 82 |
| 2P | | 7 / 0.3 | 0.6 | 10.4 | 94 |
| 3P | | 7 / 0.3 | 0.6 | 11.2 | 121 |
| 4P | | 7 / 0.3 | 0.6 | 12.3 | 145 |
| 5P | | 7 / 0.3 | 0.6 | 13.4 | 169 |
| 6P | | 7 / 0.3 | 0.6 | 14.7 | 202 |
| 8P | | 7 / 0.3 | 0.6 | 16.5 | 249 |
| 10P | | 7 / 0.3 | 0.6 | 18.8 | 308 |
| 12P | | 7 / 0.3 | 0.6 | 19.5 | 348 |
| 16P | | 7 / 0.3 | 0.6 | 21.6 | 434 |
| 20P | | 7 / 0.3 | 0.6 | 24.2 | 535 |
| 24P | | 7 / 0.3 | 0.6 | 27.1 | 640 |
| 36P | | 7 / 0.3 | 0.6 | 31.2 | 901 |

* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

Table 17

FRT-XOL

CU / XLPE / OS / LSZH (PAIRS & TRIADS)

XLPE Insulated, Overall Aluminium Foil Screened, LSZH Sheathed Cable, 300 / 500V, BS EN50288-7



| No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) | |
|--------------|-------------------------------------------|------------------------------------|-------------------------------------|-----------------------------|----------------------------|-----|
| 1P | 0.75 | 7 / 0.37 | 0.6 | 7.4 | 65 | |
| 2P (Quad) | | 7 / 0.37 | 0.6 | 8.4 | 96 | |
| 2P | | 7 / 0.37 | 0.6 | 11.4 | 115 | |
| 3P | | 7 / 0.37 | 0.6 | 12.1 | 143 | |
| 4P | | 7 / 0.37 | 0.6 | 13.2 | 173 | |
| 5P | | 7 / 0.37 | 0.6 | 14.6 | 211 | |
| 6P | | 7 / 0.37 | 0.6 | 15.9 | 243 | |
| 8P | | 7 / 0.37 | 0.6 | 17.8 | 302 | |
| 10P | | 7 / 0.37 | 0.6 | 20.3 | 375 | |
| 12P | | 7 / 0.37 | 0.6 | 21.0 | 427 | |
| 16P | | 7 / 0.37 | 0.6 | 23.5 | 549 | |
| 20P | | 7 / 0.37 | 0.6 | 26.4 | 677 | |
| 24P | | 7 / 0.37 | 0.6 | 29.5 | 809 | |
| 36P | | 7 / 0.37 | 0.6 | 34.0 | 1144 | |
| 1P | | 1.0 | 7 / 0.43 | 0.6 | 7.8 | 73 |
| 2P (Quad) | | | 7 / 0.43 | 0.6 | 8.9 | 110 |
| 2P | 7 / 0.43 | | 0.6 | 12.0 | 130 | |
| 3P | 7 / 0.43 | | 0.6 | 12.7 | 164 | |
| 4P | 7 / 0.43 | | 0.6 | 13.9 | 200 | |
| 5P | 7 / 0.43 | | 0.6 | 15.4 | 245 | |
| 6P | 7 / 0.43 | | 0.6 | 16.8 | 283 | |
| 8P | 7 / 0.43 | | 0.6 | 19.1 | 365 | |
| 10P | 7 / 0.43 | | 0.6 | 21.6 | 440 | |
| 12P | 7 / 0.43 | | 0.6 | 22.6 | 516 | |
| 16P | 7 / 0.43 | | 0.6 | 25.0 | 651 | |
| 20P | 7 / 0.43 | | 0.6 | 28.1 | 803 | |
| 24P | 7 / 0.43 | | 0.6 | 31.4 | 960 | |
| 36P | 7 / 0.43 | | 0.6 | 36.2 | 1368 | |
| 1P | 1.5 | | 7 / 0.53 | 0.6 | 8.4 | 87 |
| 2P (Quad) | | | 7 / 0.53 | 0.6 | 9.6 | 135 |
| 2P | | 7 / 0.53 | 0.6 | 13.1 | 159 | |
| 3P | | 7 / 0.53 | 0.6 | 13.9 | 204 | |
| 4P | | 7 / 0.53 | 0.6 | 15.4 | 260 | |
| 5P | | 7 / 0.53 | 0.6 | 16.9 | 310 | |
| 6P | | 7 / 0.53 | 0.6 | 18.6 | 370 | |
| 8P | | 7 / 0.53 | 0.6 | 20.9 | 466 | |
| 10P | | 7 / 0.53 | 0.6 | 23.9 | 578 | |
| 12P | | 7 / 0.53 | 0.6 | 24.8 | 666 | |
| 16P | | 7 / 0.53 | 0.6 | 27.7 | 861 | |
| 20P | | 7 / 0.53 | 0.6 | 31.2 | 1064 | |
| 24P | | 7 / 0.53 | 0.6 | 34.8 | 1271 | |
| 36P | | 7 / 0.53 | 0.6 | 40.4 | 1843 | |
| 1P | | 2.5 | 7 / 0.67 | 0.7 | 9.6 | 116 |
| 2P (Quad) | | | 7 / 0.67 | 0.7 | 11.3 | 193 |
| 2P | 7 / 0.67 | | 0.7 | 15.5 | 224 | |
| 3P | 7 / 0.67 | | 0.7 | 16.5 | 292 | |
| 4P | 7 / 0.67 | | 0.7 | 18.3 | 375 | |
| 5P | 7 / 0.67 | | 0.7 | 20.0 | 448 | |
| 6P | 7 / 0.67 | | 0.7 | 22.1 | 535 | |
| 8P | 7 / 0.67 | | 0.7 | 25.1 | 693 | |
| 10P | 7 / 0.67 | | 0.7 | 28.8 | 860 | |
| 12P | 7 / 0.67 | | 0.7 | 29.8 | 993 | |
| 16P | 7 / 0.67 | | 0.7 | 33.3 | 1286 | |
| 20P | 7 / 0.67 | | 0.7 | 37.5 | 1590 | |
| 24P | 7 / 0.67 | | 0.7 | 41.8 | 1898 | |
| 36P | 7 / 0.67 | | 0.7 | 48.5 | 2756 | |

SINGLE & MULTI-PAIRS

FRT-XOL

CU / XLPE / OS / LSZH (PAIRS & TRIADS)

XLPE Insulated, Overall Aluminium Foil Screened, LSZH Sheathed Cable, 300 / 500V, BS EN50288-7



| No. of Triads | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) |
|---------------|-------------------------------------------|------------------------------------|-------------------------------------|-----------------------------|----------------------------|
| 1T | 0.5 | 7 / 0.3 | 0.6 | 7.3 | 68 |
| 6T | | 7 / 0.3 | 0.6 | 16.7 | 275 |
| 16T | | 7 / 0.3 | 0.6 | 24.8 | 629 |
| 24T | | 7 / 0.3 | 0.6 | 31.1 | 927 |
| 1T | 0.75 | 7 / 0.37 | 0.6 | 7.8 | 79 |
| 6T | | 7 / 0.37 | 0.6 | 17.9 | 334 |
| 16T | | 7 / 0.37 | 0.6 | 27.0 | 795 |
| 24T | | 7 / 0.37 | 0.6 | 33.9 | 1173 |
| 1T | 1.0 | 7 / 0.43 | 0.6 | 8.2 | 90 |
| 6T | | 7 / 0.43 | 0.6 | 19.2 | 403 |
| 16T | | 7 / 0.43 | 0.6 | 28.7 | 946 |
| 24T | | 7 / 0.43 | 0.6 | 36.1 | 1398 |
| 1T | 1.5 | 7 / 0.53 | 0.6 | 8.8 | 110 |
| 6T | | 7 / 0.53 | 0.6 | 21.1 | 516 |
| 16T | | 7 / 0.53 | 0.6 | 31.8 | 1254 |
| 24T | | 7 / 0.53 | 0.6 | 39.9 | 1854 |
| 1T | 2.5 | 7 / 0.67 | 0.7 | 10.4 | 156 |
| 6T | | 7 / 0.67 | 0.7 | 25.2 | 767 |
| 16T | | 7 / 0.67 | 0.7 | 38.1 | 1873 |
| 24T | | 7 / 0.67 | 0.7 | 48.1 | 2794 |

* Other pairs, triads and quads configurations are available upon request.
 * Class 5 conductors are available upon request.

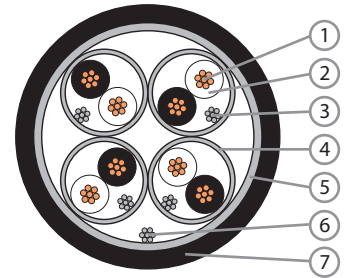
Table 19

SINGLE & MULTI-TRIADS

FRT-XIOL

CU / XLPE / IS / OS / LSZH (PAIRS & TRIADS)

XLPE Insulated, Individual Aluminium Foil Screened, Overall Aluminium Foil Screened, LSZH Sheathed Cable, 300 / 500V, BS EN50288-7



- Component**
1. Plain Annealed Copper Wire
 2. Cross-linked Polyethylene Compound
 3. Tinned Copper Drain Wire
 4. Aluminium / Polyester Tape (IS)
 5. Aluminium / Polyester Tape (OS)
 6. Tinned Copper Drain Wire
 7. Low Smoke Zero Halogen (LSZH) Compound

CONSTRUCTION

| | |
|----------------------|-------------------------------------------------------------------------------------------------|
| Conductor: | Plain Annealed Copper, Class 2 Stranded Circular |
| Insulation: | Cross-linked Polyethylene (XLPE) Compound |
| Insulation Colour: | Pair/s - Black/White with Black numberings Triad/s - Red/Black/White with Black numberings |
| Cores Twisted: | Cores twisted to form a pair, triad or quad |
| Wrap Film: | Polyester Binder Tape |
| Individual Screen: | Aluminium/Polyester Tape, with a Tinned Copper Drain Wire 0.5mm ² (7/0.3mm) (IS) |
| Lay Up: | Multi-pairs, triads or quads are assembled together in concentric layers to form the cable core |
| Wrap Film: | Polyester Binder Tape |
| Overall Screen: | Aluminium/Polyester Tape, with a Tinned Copper Drain Wire 0.5mm ² (7/0.3mm) (OS) |
| Outer Sheath: | Low Smoke Zero Halogen (LSZH) Compound |
| Outer Sheath Colour: | Black |

ELECTRICAL CHARACTERISTICS

| | |
|---------------------------------------|------------------|
| Operating Voltage, U ₀ /U: | 300/500V |
| Operating Temperature: | -15°C to 90°C |
| Final Short Circuit Temperature: | 250°C |
| Test Voltage: | 2kV for 1 minute |

REFERENCE STANDARDS

| | |
|-------------------------|--------------------------------------------------------------------------------------|
| Design Specification: | BS EN50288-7 |
| Conductor: | IEC60228, BS EN60228 |
| Flame Retardancy: | IEC60332-3-22, BS EN60332-3-22 |
| Low Smoke Zero Halogen: | IEC61034-2, BS EN61034-2 IEC60754-1, IEC60754-2 BS EN50267-2-1, BS EN50267-2-2 |

INSTALLATION REFERENCE

| | |
|--------------------------------------------|----------------------------|
| Min. Bending Radius (mm): | 8 x cable overall diameter |
| Max. Pulling Tension (N/mm ²): | 50 |

| No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) |
|--------------|-------------------------------------------|------------------------------------|-------------------------------------|-----------------------------|----------------------------|
| 1P | 0.5 | 7 / 0.3 | 0.6 | 7.1 | 60 |
| 2P | | 7 / 0.3 | 0.6 | 11.3 | 123 |
| 3P | | 7 / 0.3 | 0.6 | 11.9 | 153 |
| 4P | | 7 / 0.3 | 0.6 | 13.0 | 186 |
| 5P | | 7 / 0.3 | 0.6 | 14.4 | 227 |
| 6P | | 7 / 0.3 | 0.6 | 15.6 | 262 |
| 8P | | 7 / 0.3 | 0.6 | 17.7 | 336 |
| 10P | | 7 / 0.3 | 0.6 | 20.2 | 416 |
| 12P | | 7 / 0.3 | 0.6 | 20.9 | 474 |
| 16P | | 7 / 0.3 | 0.6 | 23.1 | 596 |
| 20P | | 7 / 0.3 | 0.6 | 26.0 | 735 |
| 24P | | 7 / 0.3 | 0.6 | 29.0 | 878 |
| 36P | | 7 / 0.3 | 0.6 | 33.5 | 1263 |

* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

FRT-XIOL

CU / XLPE / IS / OS / LSZH (PAIRS & TRIADS)

XLPE Insulated, Individual Aluminium Foil Screened, Overall Aluminium Foil Screened, LSZH Sheathed Cable, 300 / 5 00V, BS EN50288-7



| No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) |
|--------------|-------------------------------------------|------------------------------------|-------------------------------------|-----------------------------|----------------------------|
| 1P | 0.75 | 7 / 0.37 | 0.6 | 7.5 | 67 |
| 2P | | 7 / 0.37 | 0.6 | 12.0 | 139 |
| 3P | | 7 / 0.37 | 0.6 | 12.7 | 176 |
| 4P | | 7 / 0.37 | 0.6 | 14.1 | 223 |
| 5P | | 7 / 0.37 | 0.6 | 15.4 | 264 |
| 6P | | 7 / 0.37 | 0.6 | 17.0 | 315 |
| 8P | | 7 / 0.37 | 0.6 | 19.0 | 394 |
| 10P | | 7 / 0.37 | 0.6 | 21.7 | 487 |
| 12P | | 7 / 0.37 | 0.6 | 22.4 | 558 |
| 16P | | 7 / 0.37 | 0.6 | 25.1 | 719 |
| 20P | | 7 / 0.37 | 0.6 | 28.2 | 886 |
| 24P | | 7 / 0.37 | 0.6 | 31.4 | 1058 |
| 36P | | 7 / 0.37 | 0.6 | 36.4 | 1525 |
| 1P | | 1.0 | 7 / 0.43 | 0.6 | 7.9 |
| 2P | 7 / 0.43 | | 0.6 | 12.6 | 155 |
| 3P | 7 / 0.43 | | 0.6 | 13.6 | 206 |
| 4P | 7 / 0.43 | | 0.6 | 14.9 | 252 |
| 5P | 7 / 0.43 | | 0.6 | 16.2 | 299 |
| 6P | 7 / 0.43 | | 0.6 | 17.9 | 357 |
| 8P | 7 / 0.43 | | 0.6 | 20.3 | 460 |
| 10P | 7 / 0.43 | | 0.6 | 23.0 | 557 |
| 12P | 7 / 0.43 | | 0.6 | 24.0 | 652 |
| 16P | 7 / 0.43 | | 0.6 | 26.6 | 827 |
| 20P | 7 / 0.43 | | 0.6 | 29.9 | 1020 |
| 24P | 7 / 0.43 | | 0.6 | 33.5 | 1236 |
| 36P | 7 / 0.43 | | 0.6 | 38.6 | 1762 |
| 1P | 1.5 | | 7 / 0.53 | 0.6 | 8.5 |
| 2P | | 7 / 0.53 | 0.6 | 13.9 | 192 |
| 3P | | 7 / 0.53 | 0.6 | 14.8 | 248 |
| 4P | | 7 / 0.53 | 0.6 | 16.2 | 307 |
| 5P | | 7 / 0.53 | 0.6 | 17.9 | 377 |
| 6P | | 7 / 0.53 | 0.6 | 19.5 | 438 |
| 8P | | 7 / 0.53 | 0.6 | 22.1 | 567 |
| 10P | | 7 / 0.53 | 0.6 | 25.3 | 702 |
| 12P | | 7 / 0.53 | 0.6 | 26.4 | 723 |
| 16P | | 7 / 0.53 | 0.6 | 29.3 | 1048 |
| 20P | | 7 / 0.53 | 0.6 | 33.1 | 1311 |
| 24P | | 7 / 0.53 | 0.6 | 36.9 | 1564 |
| 36P | | 7 / 0.53 | 0.6 | 42.7 | 2262 |
| 1P | | 2.5 | 7 / 0.67 | 0.7 | 9.7 |
| 2P | 7 / 0.67 | | 0.7 | 16.3 | 261 |
| 3P | 7 / 0.67 | | 0.7 | 17.4 | 342 |
| 4P | 7 / 0.67 | | 0.7 | 19.0 | 427 |
| 5P | 7 / 0.67 | | 0.7 | 21.1 | 524 |
| 6P | 7 / 0.67 | | 0.7 | 23.2 | 623 |
| 8P | 7 / 0.67 | | 0.7 | 26.3 | 806 |
| 10P | 7 / 0.67 | | 0.7 | 30.1 | 999 |
| 12P | 7 / 0.67 | | 0.7 | 31.2 | 1154 |
| 16P | 7 / 0.67 | | 0.7 | 34.9 | 1496 |
| 20P | 7 / 0.67 | | 0.7 | 39.4 | 1867 |
| 24P | 7 / 0.67 | | 0.7 | 43.9 | 2226 |
| 36P | 7 / 0.67 | | 0.7 | 50.8 | 3225 |

SINGLE & MULTI-PAIRS

* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

FRT-XIOL

CU / XLPE / IS / OS / LSZH (PAIRS & TRIADS)

XLPE Insulated, Individual Aluminium Foil Screened, Overall Aluminium Foil Screened, LSZH Sheathed Cable, 300 / 500V, BS EN50288-7



| No. of Triads | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) |
|---------------|-------------------------------------------|------------------------------------|-------------------------------------|-----------------------------|----------------------------|
| 1T | 0.5 | 7 / 0.3 | 0.6 | 7.4 | 70 |
| 6T | | 7 / 0.3 | 0.6 | 17.5 | 338 |
| 16T | | 7 / 0.3 | 0.6 | 26.0 | 778 |
| 24T | | 7 / 0.3 | 0.6 | 32.6 | 1146 |
| 1T | 0.75 | 7 / 0.37 | 0.6 | 7.9 | 82 |
| 6T | | 7 / 0.37 | 0.6 | 18.8 | 400 |
| 16T | | 7 / 0.37 | 0.6 | 28.2 | 951 |
| 24T | | 7 / 0.37 | 0.6 | 35.3 | 1400 |
| 1T | 1.0 | 7 / 0.43 | 0.6 | 8.3 | 92 |
| 6T | | 7 / 0.43 | 0.6 | 19.9 | 461 |
| 16T | | 7 / 0.43 | 0.6 | 29.9 | 1107 |
| 24T | | 7 / 0.43 | 0.6 | 37.7 | 1652 |
| 1T | 1.5 | 7 / 0.53 | 0.6 | 8.9 | 112 |
| 6T | | 7 / 0.53 | 0.6 | 21.9 | 589 |
| 16T | | 7 / 0.53 | 0.6 | 33.2 | 1441 |
| 24T | | 7 / 0.53 | 0.6 | 41.6 | 2124 |
| 1T | 2.5 | 7 / 0.67 | 0.7 | 10.5 | 159 |
| 6T | | 7 / 0.67 | 0.7 | 26.1 | 849 |
| 16T | | 7 / 0.67 | 0.7 | 39.5 | 2082 |
| 24T | | 7 / 0.67 | 0.7 | 49.7 | 3095 |

* Other pairs, triads and quads configurations are available upon request.
 * Class 5 conductors are available upon request.

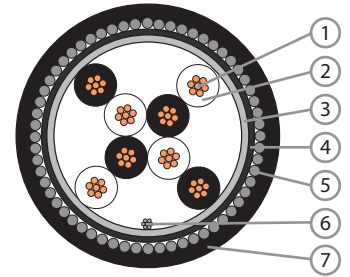
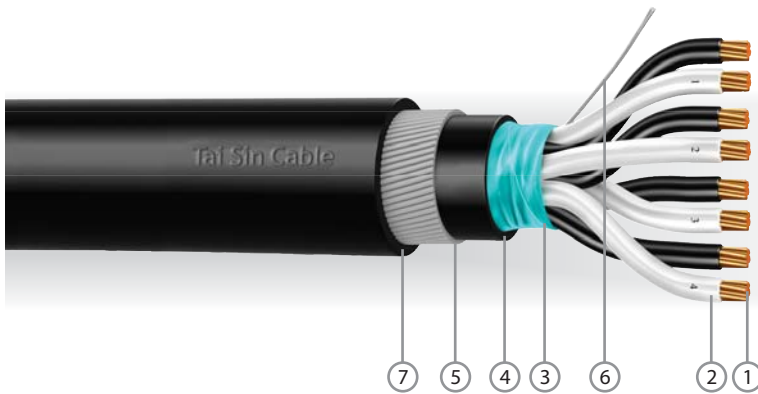
Table 22

SINGLE & MULTI-TRIADS

FRT-XOSL

CU / XLPE / OS / LSZH / SWA / LSZH (PAIRS & TRIADS)

XLPE Insulated, Overall Aluminium Foil Screened, LSZH Bedded, Galvanised Steel Wire Armoured, LSZH Sheathed Cable, 300 / 500V, BS EN50288-7



- Component**
1. Plain Annealed Copper Wire
 2. Cross-linked Polyethylene Compound
 3. Aluminium / Polyester Tape
 4. Low Smoke Zero Halogen (LSZH) Compound
 5. Galvanised Steel Wire Armoured
 6. Tinned Copper Drain Wire
 7. Low Smoke Zero Halogen (LSZH) Compound

CONSTRUCTION

| | |
|--------------------|-------------------------------------------------------------------------------------------------|
| Conductor: | Plain Annealed Copper, Class 2 Stranded Circular |
| Insulation: | Cross-linked Polyethylene (XLPE) Compound |
| Insulation Colour: | Pair/s - Black/White with Black numberings Triad/s - Red/Black/White with Black numberings |
| Cores Twisted: | Cores twisted to form a pair, triad or quad |
| Lay Up: | Multi-pairs, triads or quads are assembled together in concentric layers to form the cable core |
| Wrap Film: | Polyester Binder Tape |
| Overall Screen: | Aluminium/Polyester Tape, with a Tinned Copper Drain Wire 0.5mm ² (7/0.3mm) (OS) |
| Bedding: | Low Smoke Zero Halogen (LSZH) Compound |
| Bedding Colour: | Black |
| Armour: | Galvanized Steel Wire Armoured (SWA) |

Outer Sheath: Low Smoke Zero Halogen (LSZH) Compound

Outer Sheath Colour: Black

ELECTRICAL CHARACTERISTICS

| | |
|---------------------------------------|------------------|
| Operating Voltage, U ₀ /U: | 300/500V |
| Operating Temperature: | -15°C to 90°C |
| Final Short Circuit Temperature: | 250°C |
| Test Voltage: | 2kV for 1 minute |

REFERENCE STANDARDS

| | |
|-------------------------|--------------------------------------------------------------------------------------|
| Design Specification: | BS EN50288-7 |
| Conductor: | IEC60228, BS EN60228 |
| Flame Retardancy: | IEC60332-3-22, BS EN60332-3-22 |
| Low Smoke Zero Halogen: | IEC61034-2, BS EN61034-2 IEC60754-1, IEC60754-2 BS EN50267-2-1, BS EN50267-2-2 |

INSTALLATION REFERENCE

| | |
|--------------------------------------------|-----------------------------|
| Min. Bending Radius (mm): | 10 x cable overall diameter |
| Max. Pulling Tension (N/mm ²): | 70 |

| No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Diameter Under Armour (mm) | Armour Wire Diameter (mm) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) |
|--------------|-------------------------------------------|------------------------------------|-------------------------------------|----------------------------|---------------------------|-----------------------------|----------------------------|
| 1P | 0.5 | 7 / 0.3 | 0.6 | 7.2 | 0.9 | 11.9 | 268 |
| 2P (Quad) | | 7 / 0.3 | 0.6 | 8.1 | 0.9 | 12.7 | 312 |
| 2P | | 7 / 0.3 | 0.6 | 10.8 | 0.9 | 15.7 | 403 |
| 3P | | 7 / 0.3 | 0.6 | 11.4 | 0.9 | 16.3 | 440 |
| 4P | | 7 / 0.3 | 0.6 | 12.5 | 0.9 | 17.4 | 494 |
| 5P | | 7 / 0.3 | 0.6 | 13.6 | 0.9 | 18.5 | 547 |
| 6P | | 7 / 0.3 | 0.6 | 14.8 | 1.25 | 20.6 | 721 |
| 8P | | 7 / 0.3 | 0.6 | 16.6 | 1.25 | 22.4 | 823 |
| 10P | | 7 / 0.3 | 0.6 | 18.8 | 1.25 | 24.6 | 949 |
| 12P | | 7 / 0.3 | 0.6 | 19.4 | 1.25 | 25.4 | 1018 |
| 16P | | 7 / 0.3 | 0.6 | 21.6 | 1.25 | 27.6 | 1184 |
| 20P | | 7 / 0.3 | 0.6 | 24.1 | 1.25 | 30.3 | 1369 |
| 24P | | 7 / 0.3 | 0.6 | 26.8 | 1.25 | 33.0 | 1552 |
| 36P | | 7 / 0.3 | 0.6 | 30.8 | 1.25 | 37.2 | 1955 |

* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

FRT-XOSL

CU / XLPE / OS / LSZH / SWA / LSZH (PAIRS & TRIADS)

XLPE Insulated, Overall Aluminium Foil Screened, LSZH Bedded, Galvanised Steel Wire Armoured, LSZH Sheathed Cable, 300 / 500V, BS EN50288-7



| No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Diameter Under Armour (mm) | Armour Wire Diameter (mm) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) | |
|--------------|-------------------------------------------|------------------------------------|-------------------------------------|----------------------------|---------------------------|-----------------------------|----------------------------|-----|
| 1P | 0.75 | 7 / 0.37 | 0.6 | 7.6 | 0.9 | 12.3 | 284 | |
| 2P (Quad) | | 7 / 0.37 | 0.6 | 8.6 | 0.9 | 13.2 | 340 | |
| 2P | | 7 / 0.37 | 0.6 | 11.5 | 0.9 | 16.4 | 439 | |
| 3P | | 7 / 0.37 | 0.6 | 12.2 | 0.9 | 17.1 | 483 | |
| 4P | | 7 / 0.37 | 0.6 | 13.4 | 0.9 | 18.3 | 544 | |
| 5P | | 7 / 0.37 | 0.6 | 14.6 | 1.25 | 20.4 | 719 | |
| 6P | | 7 / 0.37 | 0.6 | 15.9 | 1.25 | 21.7 | 791 | |
| 8P | | 7 / 0.37 | 0.6 | 17.9 | 1.25 | 23.7 | 916 | |
| 10P | | 7 / 0.37 | 0.6 | 20.3 | 1.25 | 26.3 | 1080 | |
| 12P | | 7 / 0.37 | 0.6 | 21.0 | 1.25 | 27.0 | 1149 | |
| 16P | | 7 / 0.37 | 0.6 | 23.3 | 1.25 | 29.3 | 1339 | |
| 20P | | 7 / 0.37 | 0.6 | 26.1 | 1.25 | 32.3 | 1562 | |
| 24P | | 7 / 0.37 | 0.6 | 29.0 | 1.25 | 35.4 | 1790 | |
| 36P | | 7 / 0.37 | 0.6 | 33.4 | 1.6 | 40.7 | 2517 | |
| 1P | | 1.0 | 7 / 0.43 | 0.6 | 8.0 | 0.9 | 12.7 | 300 |
| 2P (Quad) | | | 7 / 0.43 | 0.6 | 9.1 | 0.9 | 13.9 | 370 |
| 2P | 7 / 0.43 | | 0.6 | 12.2 | 0.9 | 17.1 | 470 | |
| 3P | 7 / 0.43 | | 0.6 | 12.9 | 0.9 | 17.8 | 525 | |
| 4P | 7 / 0.43 | | 0.6 | 14.1 | 1.25 | 19.9 | 701 | |
| 5P | 7 / 0.43 | | 0.6 | 15.5 | 1.25 | 21.3 | 779 | |
| 6P | 7 / 0.43 | | 0.6 | 16.9 | 1.25 | 22.7 | 868 | |
| 8P | 7 / 0.43 | | 0.6 | 19.0 | 1.25 | 25.0 | 1020 | |
| 10P | 7 / 0.43 | | 0.6 | 21.6 | 1.25 | 27.6 | 1185 | |
| 12P | 7 / 0.43 | | 0.6 | 22.3 | 1.25 | 28.3 | 1276 | |
| 16P | 7 / 0.43 | | 0.6 | 24.8 | 1.25 | 31.0 | 1508 | |
| 20P | 7 / 0.43 | | 0.6 | 27.8 | 1.25 | 34.0 | 1741 | |
| 24P | 7 / 0.43 | | 0.6 | 30.9 | 1.25 | 37.3 | 2006 | |
| 36P | 7 / 0.43 | | 0.6 | 35.6 | 1.6 | 42.9 | 2822 | |
| 1P | 1.5 | | 7 / 0.53 | 0.6 | 8.6 | 0.9 | 13.3 | 334 |
| 2P (Quad) | | | 7 / 0.53 | 0.6 | 9.8 | 0.9 | 14.6 | 416 |
| 2P | | 7 / 0.53 | 0.6 | 13.2 | 0.9 | 18.1 | 526 | |
| 3P | | 7 / 0.53 | 0.6 | 14.1 | 1.25 | 19.9 | 704 | |
| 4P | | 7 / 0.53 | 0.6 | 15.4 | 1.25 | 21.2 | 793 | |
| 5P | | 7 / 0.53 | 0.6 | 16.9 | 1.25 | 22.7 | 894 | |
| 6P | | 7 / 0.53 | 0.6 | 18.5 | 1.25 | 24.5 | 1009 | |
| 8P | | 7 / 0.53 | 0.6 | 20.8 | 1.25 | 26.8 | 1184 | |
| 10P | | 7 / 0.53 | 0.6 | 23.7 | 1.25 | 29.9 | 1392 | |
| 12P | | 7 / 0.53 | 0.6 | 24.5 | 1.25 | 30.7 | 1507 | |
| 16P | | 7 / 0.53 | 0.6 | 27.3 | 1.25 | 33.5 | 1783 | |
| 20P | | 7 / 0.53 | 0.6 | 30.6 | 1.25 | 37.0 | 2095 | |
| 24P | | 7 / 0.53 | 0.6 | 34.1 | 1.6 | 41.4 | 2656 | |
| 36P | | 7 / 0.53 | 0.6 | 39.8 | 1.6 | 47.3 | 3498 | |
| 1P | | 2.5 | 7 / 0.67 | 0.7 | 9.8 | 0.9 | 14.7 | 399 |
| 2P (Quad) | | | 7 / 0.67 | 0.7 | 11.3 | 0.9 | 16.1 | 504 |
| 2P | 7 / 0.67 | | 0.7 | 15.4 | 1.25 | 21.2 | 754 | |
| 3P | 7 / 0.67 | | 0.7 | 16.5 | 1.25 | 22.3 | 862 | |
| 4P | 7 / 0.67 | | 0.7 | 18.1 | 1.25 | 24.1 | 999 | |
| 5P | 7 / 0.67 | | 0.7 | 19.9 | 1.25 | 25.9 | 1138 | |
| 6P | 7 / 0.67 | | 0.7 | 21.8 | 1.25 | 27.8 | 1267 | |
| 8P | 7 / 0.67 | | 0.7 | 24.6 | 1.25 | 30.8 | 1519 | |
| 10P | 7 / 0.67 | | 0.7 | 28.1 | 1.25 | 34.5 | 1804 | |
| 12P | 7 / 0.67 | | 0.7 | 29.1 | 1.25 | 35.5 | 1976 | |
| 16P | 7 / 0.67 | | 0.7 | 32.5 | 1.6 | 39.8 | 2605 | |
| 20P | 7 / 0.67 | | 0.7 | 36.9 | 1.6 | 44.4 | 3130 | |
| 24P | 7 / 0.67 | | 0.7 | 41.2 | 1.6 | 48.9 | 3611 | |
| 36P | 7 / 0.67 | | 0.7 | 47.5 | 2.0 | 56.2 | 5095 | |

SINGLE & MULTI-PAIRS

FRT-XOSL

CU / XLPE / OS / LSZH / SWA / LSZH (PAIRS & TRIADS)

XLPE Insulated, Overall Aluminium Foil Screened, LSZH Bedded, Galvanised Steel Wire Armoured, LSZH Sheathed Cable, 300 / 500V, BS EN50288-7



| No. of Triads | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Diameter Under Armour (mm) | Armour Wire Diameter (mm) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) |
|---------------|-------------------------------------------|------------------------------------|-------------------------------------|----------------------------|---------------------------|-----------------------------|----------------------------|
| 1T | 0.5 | 7 / 0.3 | 0.6 | 7.5 | 0.9 | 12.2 | 284 |
| 6T | | 7 / 0.3 | 0.6 | 16.5 | 1.25 | 22.3 | 840 |
| 16T | | 7 / 0.3 | 0.6 | 24.2 | 1.25 | 30.4 | 1446 |
| 24T | | 7 / 0.3 | 0.6 | 30.1 | 1.25 | 36.5 | 1924 |
| 1T | 0.75 | 7 / 0.37 | 0.6 | 8.0 | 0.9 | 12.7 | 304 |
| 6T | | 7 / 0.37 | 0.6 | 17.7 | 1.25 | 23.5 | 938 |
| 16T | | 7 / 0.37 | 0.6 | 26.2 | 1.25 | 32.4 | 1663 |
| 24T | | 7 / 0.37 | 0.6 | 32.7 | 1.6 | 39.8 | 2469 |
| 1T | 1.0 | 7 / 0.43 | 0.6 | 8.4 | 0.9 | 13.1 | 328 |
| 6T | | 7 / 0.43 | 0.6 | 18.8 | 1.25 | 24.8 | 1048 |
| 16T | | 7 / 0.43 | 0.6 | 27.9 | 1.25 | 34.1 | 1875 |
| 24T | | 7 / 0.43 | 0.6 | 34.9 | 1.6 | 42.2 | 2795 |
| 1T | 1.5 | 7 / 0.53 | 0.6 | 9.0 | 0.9 | 13.9 | 370 |
| 6T | | 7 / 0.53 | 0.6 | 20.7 | 1.25 | 26.7 | 1225 |
| 16T | | 7 / 0.53 | 0.6 | 30.8 | 1.25 | 37.2 | 2275 |
| 24T | | 7 / 0.53 | 0.6 | 38.9 | 1.6 | 46.4 | 3453 |
| 1T | 2.5 | 7 / 0.67 | 0.7 | 10.4 | 0.9 | 15.3 | 448 |
| 6T | | 7 / 0.67 | 0.7 | 24.4 | 1.25 | 30.6 | 1583 |
| 16T | | 7 / 0.67 | 0.7 | 37.1 | 1.6 | 44.6 | 3392 |
| 24T | | 7 / 0.67 | 0.7 | 46.5 | 2.0 | 55.2 | 5056 |

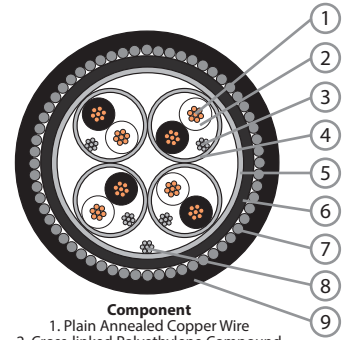
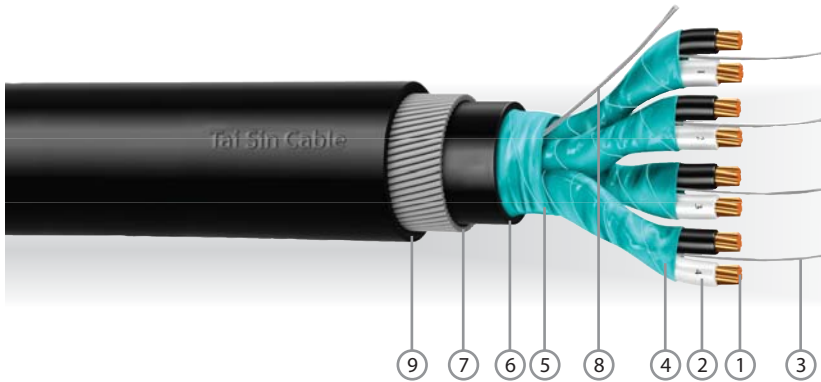
* Other pairs, triads and quads configurations are available upon request.
 * Class 5 conductors are available upon request.

Table 25

FRT-XIOSL

CU / XLPE / IS / OS / LSZH / SWA / LSZH (PAIRS & TRIADS)

XLPE Insulated, Individual Aluminium Foil Screened, Overall Aluminium Foil Screened, LSZH Bedded, Galvanised Steel Wire Armoured, LSZH Sheathed Cable, 300 / 500V, BS EN50288-7



- Component**
1. Plain Annealed Copper Wire
 2. Cross-linked Polyethylene Compound
 3. Tinned Copper Drain Wire
 4. Aluminium / Polyester Tape (IS)
 5. Aluminium / Polyester (OS)
 6. Low Smoke Zero Halogen (LSZH) Compound
 7. Galvanised Steel Wire Armoured
 8. Tinned Copper Drain Wire
 9. Low Smoke Zero Halogen (LSZH) Compound

CONSTRUCTION

| | |
|--------------------|-------------------------------------------------------------------------------------------------|
| Conductor: | Plain Annealed Copper, Class 2 Stranded Circular |
| Insulation: | Cross-linked Polyethylene (XLPE) Compound |
| Insulation Colour: | Pair/s - Black/White with Black numberings Triad/s - Red/Black/White with Black numberings |
| Cores Twisted: | Cores twisted to form a pair, triad or quad |
| Wrap Film: | Polyester Binder Tape |
| Individual Screen: | Aluminium/Polyester Tape, with a Tinned Copper Drain Wire 0.5mm ² (7/0.3mm) (IS) |
| Lay Up: | Multi-pairs, triads or quads are assembled together in concentric layers to form the cable core |
| Wrap Film: | Polyester Binder Tape |
| Overall Screen: | Aluminium/Polyester Tape, with a Tinned Copper Drain Wire 0.5mm ² (7/0.3mm) (OS) |
| Bedding: | Low Smoke Zero Halogen (LSZH) Compound |
| Bedding Colour: | Black |

| | |
|----------------------|----------------------------------------|
| Armour: | Galvanized Steel Wire Armoured (SWA) |
| Outer Sheath: | Low Smoke Zero Halogen (LSZH) Compound |
| Outer Sheath Colour: | Black |

ELECTRICAL CHARACTERISTICS

| | |
|---------------------------------------|------------------|
| Operating Voltage, U ₀ /U: | 300/500V |
| Operating Temperature: | -15°C to 90°C |
| Final Short Circuit Temperature: | 250°C |
| Test Voltage: | 2kV for 1 minute |

REFERENCE STANDARDS

| | |
|-------------------------|--------------------------------------------------------------------------------------|
| Design Specification: | BS EN50288-7 |
| Conductor: | IEC60228, BS EN60228 |
| Flame Retardancy: | IEC60332-3-22, BS EN60332-3-22 |
| Low Smoke Zero Halogen: | IEC61034-2, BS EN61034-2 IEC60754-1, IEC60754-2 BS EN50267-2-1, BS EN50267-2-2 |

INSTALLATION REFERENCE

| | |
|--------------------------------------------|-----------------------------|
| Min. Bending Radius (mm): | 10 x cable overall diameter |
| Max. Pulling Tension (N/mm ²): | 70 |

| No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Diameter Under Armour (mm) | Armour Wire Diameter (mm) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) |
|--------------|-------------------------------------------|------------------------------------|-------------------------------------|----------------------------|---------------------------|-----------------------------|----------------------------|
| 1P | 0.5 | 7 / 0.3 | 0.6 | 7.2 | 0.9 | 11.9 | 268 |
| 2P | | 7 / 0.3 | 0.6 | 11.2 | 0.9 | 16.1 | 433 |
| 3P | | 7 / 0.3 | 0.6 | 11.8 | 0.9 | 16.7 | 478 |
| 4P | | 7 / 0.3 | 0.6 | 12.9 | 0.9 | 17.8 | 539 |
| 5P | | 7 / 0.3 | 0.6 | 14.1 | 1.25 | 19.9 | 711 |
| 6P | | 7 / 0.3 | 0.6 | 15.3 | 1.25 | 21.1 | 783 |
| 8P | | 7 / 0.3 | 0.6 | 17.2 | 1.25 | 23.2 | 923 |
| 10P | | 7 / 0.3 | 0.6 | 19.5 | 1.25 | 25.5 | 1066 |
| 12P | | 7 / 0.3 | 0.6 | 20.2 | 1.25 | 26.2 | 1139 |
| 16P | | 7 / 0.3 | 0.6 | 22.4 | 1.25 | 28.6 | 1349 |
| 20P | | 7 / 0.3 | 0.6 | 25.1 | 1.25 | 31.3 | 1562 |
| 24P | | 7 / 0.3 | 0.6 | 27.9 | 1.25 | 34.3 | 1794 |
| 36P | | 7 / 0.3 | 0.6 | 32.0 | 1.6 | 39.3 | 2507 |

* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

FRT-XIOSL

CU / XLPE / IS / OS / LSZH / SWA / LSZH (PAIRS & TRIADS)

XLPE Insulated, Individual Aluminium Foil Screened, Overall Aluminium Foil Screened, LSZH Bedded, Galvanised Steel Wire Armoured, LSZH Sheathed Cable, 300 / 500V, BS EN50288-7



| No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Diameter Under Armour (mm) | Armour Wire Diameter (mm) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) | |
|--------------|-------------------------------------------|------------------------------------|-------------------------------------|----------------------------|---------------------------|-----------------------------|----------------------------|-----|
| 1P | 0.75 | 7 / 0.37 | 0.6 | 7.6 | 0.9 | 12.3 | 284 | |
| 2P | | 7 / 0.37 | 0.6 | 11.9 | 0.9 | 16.8 | 465 | |
| 3P | | 7 / 0.37 | 0.6 | 12.6 | 0.9 | 17.5 | 517 | |
| 4P | | 7 / 0.37 | 0.6 | 13.8 | 0.9 | 18.9 | 600 | |
| 5P | | 7 / 0.37 | 0.6 | 15.1 | 1.25 | 20.9 | 774 | |
| 6P | | 7 / 0.37 | 0.6 | 16.5 | 1.25 | 22.3 | 865 | |
| 8P | | 7 / 0.37 | 0.6 | 18.5 | 1.25 | 24.5 | 1018 | |
| 10P | | 7 / 0.37 | 0.6 | 21.0 | 1.25 | 27.0 | 1177 | |
| 12P | | 7 / 0.37 | 0.6 | 21.7 | 1.25 | 27.9 | 1286 | |
| 16P | | 7 / 0.37 | 0.6 | 24.2 | 1.25 | 30.4 | 1511 | |
| 20P | | 7 / 0.37 | 0.6 | 27.1 | 1.25 | 33.5 | 1778 | |
| 24P | | 7 / 0.37 | 0.6 | 30.1 | 1.25 | 36.5 | 2021 | |
| 36P | | 7 / 0.37 | 0.6 | 35.1 | 1.6 | 42.6 | 2924 | |
| 1P | | 1.0 | 7 / 0.43 | 0.6 | 8.0 | 0.9 | 12.7 | 300 |
| 2P | | | 7 / 0.43 | 0.6 | 12.5 | 0.9 | 17.4 | 495 |
| 3P | 7 / 0.43 | | 0.6 | 13.3 | 0.9 | 18.2 | 559 | |
| 4P | 7 / 0.43 | | 0.6 | 14.6 | 1.25 | 20.4 | 749 | |
| 5P | 7 / 0.43 | | 0.6 | 15.9 | 1.25 | 21.7 | 834 | |
| 6P | 7 / 0.43 | | 0.6 | 17.4 | 1.25 | 23.4 | 945 | |
| 8P | 7 / 0.43 | | 0.6 | 19.6 | 1.25 | 25.6 | 1111 | |
| 10P | 7 / 0.43 | | 0.6 | 22.3 | 1.25 | 28.5 | 1309 | |
| 12P | 7 / 0.43 | | 0.6 | 23.1 | 1.25 | 29.3 | 1417 | |
| 16P | 7 / 0.43 | | 0.6 | 25.7 | 1.25 | 31.9 | 1667 | |
| 20P | 7 / 0.43 | | 0.6 | 28.8 | 1.25 | 35.2 | 1962 | |
| 24P | 7 / 0.43 | | 0.6 | 32.0 | 1.6 | 39.3 | 2480 | |
| 36P | 7 / 0.43 | | 0.6 | 37.3 | 1.6 | 44.8 | 3256 | |
| 1P | 1.5 | | 7 / 0.53 | 0.6 | 8.6 | 0.9 | 13.3 | 334 |
| 2P | | | 7 / 0.53 | 0.6 | 13.6 | 0.9 | 18.7 | 563 |
| 3P | | 7 / 0.53 | 0.6 | 14.5 | 1.25 | 20.3 | 744 | |
| 4P | | 7 / 0.53 | 0.6 | 15.9 | 1.25 | 21.7 | 843 | |
| 5P | | 7 / 0.53 | 0.6 | 17.4 | 1.25 | 23.4 | 965 | |
| 6P | | 7 / 0.53 | 0.6 | 19.0 | 1.25 | 25.0 | 1076 | |
| 8P | | 7 / 0.53 | 0.6 | 21.4 | 1.25 | 27.6 | 1283 | |
| 10P | | 7 / 0.53 | 0.6 | 24.4 | 1.25 | 30.6 | 1505 | |
| 12P | | 7 / 0.53 | 0.6 | 25.3 | 1.25 | 31.5 | 1638 | |
| 16P | | 7 / 0.53 | 0.6 | 28.2 | 1.25 | 34.6 | 1976 | |
| 20P | | 7 / 0.53 | 0.6 | 31.6 | 1.6 | 38.9 | 2553 | |
| 24P | | 7 / 0.53 | 0.6 | 35.6 | 1.6 | 43.1 | 2982 | |
| 36P | | 7 / 0.53 | 0.6 | 41.0 | 1.6 | 48.7 | 3875 | |
| 1P | | 2.5 | 7 / 0.67 | 0.7 | 9.8 | 0.9 | 14.7 | 399 |
| 2P | | | 7 / 0.67 | 0.7 | 15.8 | 1.25 | 21.6 | 787 |
| 3P | 7 / 0.67 | | 0.7 | 16.9 | 1.25 | 22.9 | 917 | |
| 4P | 7 / 0.67 | | 0.7 | 18.5 | 1.25 | 24.5 | 1051 | |
| 5P | 7 / 0.67 | | 0.7 | 20.4 | 1.25 | 26.4 | 1200 | |
| 6P | 7 / 0.67 | | 0.7 | 22.3 | 1.25 | 28.5 | 1364 | |
| 8P | 7 / 0.67 | | 0.7 | 25.2 | 1.25 | 31.6 | 1637 | |
| 10P | 7 / 0.67 | | 0.7 | 28.8 | 1.25 | 35.2 | 1925 | |
| 12P | 7 / 0.67 | | 0.7 | 29.9 | 1.25 | 36.5 | 2136 | |
| 16P | 7 / 0.67 | | 0.7 | 33.8 | 1.6 | 41.3 | 2871 | |
| 20P | 7 / 0.67 | | 0.7 | 37.9 | 1.6 | 45.6 | 3384 | |
| 24P | 7 / 0.67 | | 0.7 | 42.2 | 2.0 | 50.9 | 4252 | |
| 36P | 7 / 0.67 | | 0.7 | 49.1 | 2.0 | 58.2 | 5632 | |

SINGLE & MULTI-PAIRS

* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

FRT-XIOSL

CU / XLPE / IS / OS / LSZH / SWA / LSZH (PAIRS & TRIADS)

XLPE Insulated, Individual Aluminium Foil Screened, Overall Aluminium Foil Screened, LSZH Bedded, Galvanised Steel Wire Armoured, LSZH Sheathed Cable, 300 / 500V, BS EN50288-7



| No. of Triads | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Diameter Under Armour (mm) | Armour Wire Diameter (mm) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) |
|---------------|-------------------------------------------|------------------------------------|-------------------------------------|----------------------------|---------------------------|-----------------------------|----------------------------|
| 1T | 0.5 | 7 / 0.3 | 0.6 | 7.5 | 0.9 | 12.2 | 286 |
| 6T | | 7 / 0.3 | 0.6 | 17.0 | 1.25 | 22.8 | 900 |
| 16T | | 7 / 0.3 | 0.6 | 25.1 | 1.25 | 31.3 | 1605 |
| 24T | | 7 / 0.3 | 0.6 | 31.8 | 1.25 | 37.9 | 2165 |
| 1T | 0.75 | 7 / 0.37 | 0.6 | 8.0 | 0.9 | 12.7 | 306 |
| 6T | | 7 / 0.37 | 0.6 | 18.3 | 1.25 | 24.3 | 1014 |
| 16T | | 7 / 0.37 | 0.6 | 27.1 | 1.25 | 33.5 | 1843 |
| 24T | | 7 / 0.37 | 0.6 | 34.2 | 1.6 | 41.7 | 2795 |
| 1T | 1.0 | 7 / 0.43 | 0.6 | 8.4 | 0.9 | 13.1 | 330 |
| 6T | | 7 / 0.43 | 0.6 | 19.4 | 1.25 | 25.4 | 1112 |
| 16T | | 7 / 0.43 | 0.6 | 22.8 | 1.25 | 35.2 | 2094 |
| 24T | | 7 / 0.43 | 0.6 | 36.4 | 1.6 | 43.9 | 3108 |
| 1T | 1.5 | 7 / 0.53 | 0.6 | 9.0 | 0.9 | 13.9 | 372 |
| 6T | | 7 / 0.53 | 0.6 | 21.2 | 1.25 | 27.4 | 1304 |
| 16T | | 7 / 0.53 | 0.6 | 31.7 | 1.6 | 39.0 | 2684 |
| 24T | | 7 / 0.53 | 0.6 | 40.1 | 1.6 | 47.8 | 3721 |
| 1T | 2.5 | 7 / 0.67 | 0.7 | 10.4 | 0.9 | 15.3 | 449 |
| 6T | | 7 / 0.67 | 0.7 | 25.0 | 1.25 | 31.4 | 1668 |
| 16T | | 7 / 0.67 | 0.7 | 38.0 | 1.6 | 45.7 | 3601 |
| 24T | | 7 / 0.67 | 0.7 | 48.0 | 2.0 | 56.9 | 5414 |

* Other pairs, triads and quads configurations are available upon request.
 * Class 5 conductors are available upon request.

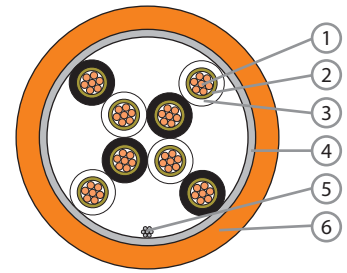
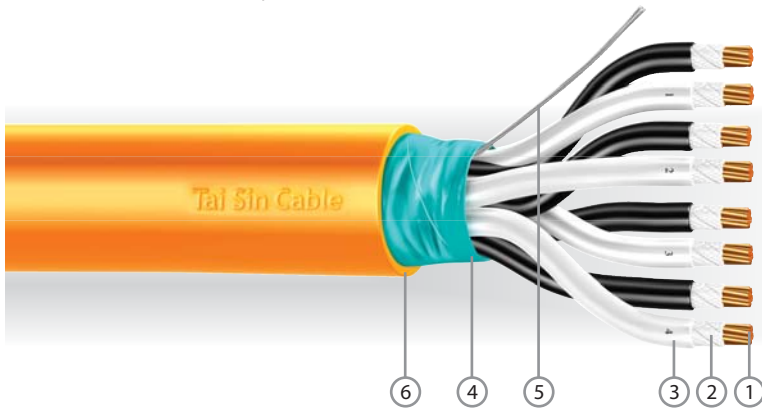
Table 28

SINGLE & MULTI-TRIADS

FR-XOL

CU / MGT / XLPE / OS / LSZH (PAIRS & TRIADS)

Mica Taped, XLPE Insulated, Overall Aluminium Foil Screened, LSZH Sheathed Cable, 300 / 500V, BS EN50288-7



- Component**
1. Plain Annealed Copper Wire
 2. Mica Tape
 3. Cross-linked Polyethylene Compound
 4. Aluminium / Polyester Tape
 5. Tinned Copper Drain Wire
 6. Low Smoke Zero Halogen (LSZH) Compound

CONSTRUCTION

| | |
|----------------------|-------------------------------------------------------------------------------------------------|
| Conductor: | Plain Annealed Copper, Class 2 Stranded Circular |
| Fire Barrier: | Mica Tape (MGT) |
| Insulation: | Cross-linked Polyethylene (XLPE) Compound |
| Insulation Colour: | Pair/s - Black/White with Black numberings Triad/s - Red/Black/White with Black numberings |
| Cores Twisted: | Cores twisted to form a pair, triad or quad |
| Lay Up: | Multi-pairs, triads or quads are assembled together in concentric layers to form the cable core |
| Wrap Film: | Polyester Binder Tape |
| Overall Screen: | Aluminium/Polyester Tape, with a Tinned Copper Drain Wire 0.5mm ² (7/0.3mm) (OS) |
| Outer Sheath: | Low Smoke Zero Halogen (LSZH) Compound |
| Outer Sheath Colour: | Orange or Blue |

ELECTRICAL CHARACTERISTICS

| | |
|---------------------------------------|------------------|
| Operating Voltage, U ₀ /U: | 300/500V |
| Operating Temperature: | -15°C to 90°C |
| Final Short Circuit Temperature: | 250°C |
| Test Voltage: | 2kV for 1 minute |

REFERENCE STANDARDS

| | |
|-------------------------|--------------------------------------------------------------------------------------|
| Design Specification: | BS EN50288-7 |
| Conductor: | IEC60228, BS EN60228 |
| Fire Resistance: | BS6387 (C, W, Z), SS299 (C, W, Z), IEC60331 |
| Flame Retardancy: | IEC60332-3-22, BS EN60332-3-22 |
| Low Smoke Zero Halogen: | IEC61034-2, BS EN61034-2 IEC60754-1, IEC60754-2 BS EN50267-2-1, BS EN50267-2-2 |

INSTALLATION REFERENCE

| | |
|--------------------------------------------|----------------------------|
| Min. Bending Radius (mm): | 8 x cable overall diameter |
| Max. Pulling Tension (N/mm ²): | 50 |

| No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) |
|--------------|-------------------------------------------|------------------------------------|-------------------------------------|-----------------------------|----------------------------|
| 1P | 0.75 | 7 / 0.37 | 0.6 | 9.6 | 89 |
| 2P (Quad) | | 7 / 0.37 | 0.6 | 11.0 | 142 |
| 2P | | 7 / 0.37 | 0.6 | 15.3 | 165 |
| 3P | | 7 / 0.37 | 0.6 | 16.3 | 206 |
| 4P | | 7 / 0.37 | 0.6 | 18.1 | 261 |
| 5P | | 7 / 0.37 | 0.6 | 19.9 | 308 |
| 6P | | 7 / 0.37 | 0.6 | 21.8 | 356 |
| 8P | | 7 / 0.37 | 0.6 | 24.8 | 458 |
| 10P | | 7 / 0.37 | 0.6 | 28.4 | 567 |
| 12P | | 7 / 0.37 | 0.6 | 29.4 | 645 |
| 16P | | 7 / 0.37 | 0.6 | 32.9 | 828 |
| 20P | | 7 / 0.37 | 0.6 | 36.8 | 1000 |
| 24P | | 7 / 0.37 | 0.6 | 41.2 | 1196 |
| 36P | | 7 / 0.37 | 0.6 | 47.8 | 1720 |

* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

FR-XOL

CU / MGT / XLPE / OS / LSZH (PAIRS & TRIADS)

Mica Taped, XLPE Insulated, Overall Aluminium Foil Screened, LSZH Sheathed Cable,
300 / 500V, BS EN50288-7



| No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) | | |
|----------------------|-------------------------------------------|------------------------------------|-------------------------------------|-----------------------------|----------------------------|------|------|
| 1P | 1.0 | 7 / 0.43 | 0.6 | 10.0 | 98 | | |
| 2P (Quad) | | 7 / 0.43 | 0.6 | 11.5 | 158 | | |
| 2P | | 7 / 0.43 | 0.6 | 16.0 | 182 | | |
| 3P | | 7 / 0.43 | 0.6 | 17.0 | 230 | | |
| 4P | | 7 / 0.43 | 0.6 | 18.9 | 292 | | |
| 5P | | 7 / 0.43 | 0.6 | 20.8 | 346 | | |
| 6P | | 7 / 0.43 | 0.6 | 22.7 | 400 | | |
| 8P | | 7 / 0.43 | 0.6 | 25.9 | 516 | | |
| 10P | | 7 / 0.43 | 0.6 | 29.7 | 640 | | |
| 12P | | 7 / 0.43 | 0.6 | 20.7 | 731 | | |
| 16P | | 7 / 0.43 | 0.6 | 34.4 | 941 | | |
| 20P | | 7 / 0.43 | 0.6 | 38.8 | 1161 | | |
| 24P | | 7 / 0.43 | 0.6 | 43.3 | 1386 | | |
| 36P | | 7 / 0.43 | 0.6 | 50.1 | 1970 | | |
| <hr/> | | | | | | | |
| SINGLE & MULTI-PAIRS | | 1P | 1.5 | 7 / 0.53 | 0.6 | 10.6 | 113 |
| | 2P (Quad) | 7 / 0.53 | | 0.6 | 12.4 | 195 | |
| | 2P | 7 / 0.53 | | 0.6 | 17.0 | 213 | |
| | 3P | 7 / 0.53 | | 0.6 | 18.4 | 283 | |
| | 4P | 7 / 0.53 | | 0.6 | 20.2 | 349 | |
| | 5P | 7 / 0.53 | | 0.6 | 22.4 | 428 | |
| | 6P | 7 / 0.53 | | 0.6 | 24.5 | 496 | |
| | 8P | 7 / 0.53 | | 0.6 | 27.9 | 641 | |
| | 10P | 7 / 0.53 | | 0.6 | 32.0 | 794 | |
| | 12P | 7 / 0.53 | | 0.6 | 33.1 | 911 | |
| | 16P | 7 / 0.53 | | 0.6 | 37.1 | 1176 | |
| | 20P | 7 / 0.53 | | 0.6 | 41.8 | 1450 | |
| | 24P | 7 / 0.53 | | 0.6 | 46.7 | 1731 | |
| | 36P | 7 / 0.53 | | 0.6 | 54.2 | 2500 | |
| | <hr/> | | | | | | |
| | SINGLE & MULTI-PAIRS | 1P | | 2.5 | 7 / 0.67 | 0.7 | 12.0 |
| 2P (Quad) | | 7 / 0.67 | 0.7 | | 13.9 | 253 | |
| 2P | | 7 / 0.67 | 0.7 | | 19.4 | 284 | |
| 3P | | 7 / 0.67 | 0.7 | | 21.0 | 383 | |
| 4P | | 7 / 0.67 | 0.7 | | 23.1 | 475 | |
| 5P | | 7 / 0.67 | 0.7 | | 25.6 | 583 | |
| 6P | | 7 / 0.67 | 0.7 | | 28.0 | 679 | |
| 8P | | 7 / 0.67 | 0.7 | | 31.9 | 873 | |
| 10P | | 7 / 0.67 | 0.7 | | 36.6 | 1090 | |
| 12P | | 7 / 0.67 | 0.7 | | 38.1 | 1277 | |
| 16P | | 7 / 0.67 | 0.7 | | 42.7 | 1650 | |
| 20P | | 7 / 0.67 | 0.7 | | 48.1 | 2036 | |
| 24P | | 7 / 0.67 | 0.7 | | 53.7 | 2428 | |
| 36P | | 7 / 0.67 | 0.7 | | 62.3 | 3513 | |

* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

FR-XOL

CU / MGT / XLPE / OS / LSZH (PAIRS & TRIADS)

Mica Taped, XLPE Insulated, Overall Aluminium Foil Screened, LSZH Sheathed Cable,
300 / 500V, BS EN50288-7



| No. of Triads | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) |
|---------------|-------------------------------------------|------------------------------------|-------------------------------------|-----------------------------|----------------------------|
| 1T | 0.75 | 7 / 0.37 | 0.6 | 10.1 | 109 |
| 6T | | 7 / 0.37 | 0.6 | 24.6 | 488 |
| 16T | | 7 / 0.37 | 0.6 | 37.2 | 1152 |
| 24T | | 7 / 0.37 | 0.6 | 46.8 | 1695 |
| 1T | 1.0 | 7 / 0.43 | 0.6 | 10.5 | 121 |
| 6T | | 7 / 0.43 | 0.6 | 25.7 | 552 |
| 16T | | 7 / 0.43 | 0.6 | 38.9 | 1318 |
| 24T | | 7 / 0.43 | 0.6 | 49.0 | 1943 |
| 1T | 1.5 | 7 / 0.53 | 0.6 | 11.2 | 143 |
| 6T | | 7 / 0.53 | 0.6 | 27.7 | 689 |
| 16T | | 7 / 0.53 | 0.6 | 42.0 | 1656 |
| 24T | | 7 / 0.53 | 0.6 | 52.9 | 2443 |
| 1T | 2.5 | 7 / 0.67 | 0.7 | 12.7 | 193 |
| 6T | | 7 / 0.67 | 0.7 | 31.7 | 951 |
| 16T | | 7 / 0.67 | 0.7 | 48.3 | 2336 |
| 24T | | 7 / 0.67 | 0.7 | 61.0 | 3478 |

SINGLE & MULTI-TRIADS

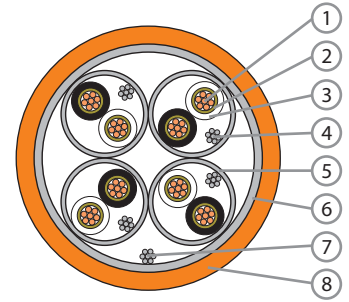
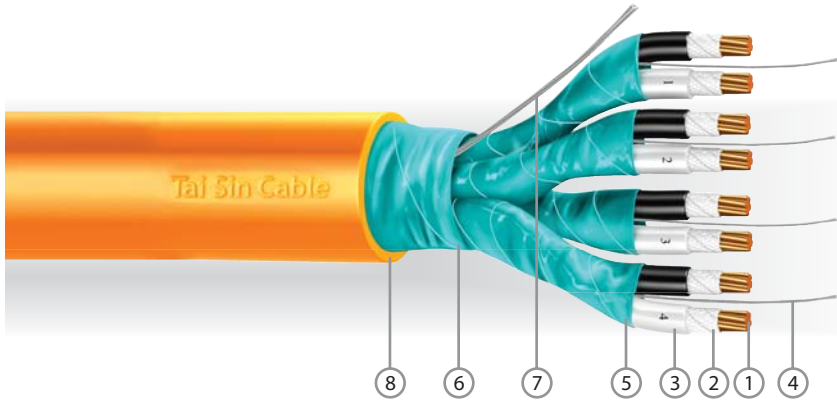
* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

Table 31

FR-XIOL

CU / MGT / XLPE / IS / OS / LSZH (PAIRS & TRIADS)

Mica Taped, XLPE Insulated, Individual Aluminium Foil Screened, Overall Aluminium Foil Screened, LSZH Sheathed Cable, 300 / 500V, BS EN50288-7



- Component**
1. Plain Annealed Copper Wire
 2. Mica Tape
 3. Cross-linked Polyethylene Compound
 4. Tinned Copper Drain Wire
 5. Aluminium / Polyester Tape (IS)
 6. Aluminium / Polyester Tape (OS)
 7. Tinned Copper Drain Wire
 8. Low Smoke Zero Halogen (LSZH) Compound

CONSTRUCTION

| | |
|----------------------|-------------------------------------------------------------------------------------------------|
| Conductor: | Plain Annealed Copper, Class 2 Stranded Circular |
| Fire Barrier: | Mica Tape (MGT) |
| Insulation: | Cross-linked Polyethylene (XLPE) Compound |
| Insulation Colour: | Pair/s - Black/White with Black numberings Triad/s - Red/Black/White with Black numberings |
| Cores Twisted: | Cores twisted to form a pair, triad or quad |
| Wrap Film: | Polyester Binder Tape |
| Individual Screen: | Aluminium/Polyester Tape, with a Tinned Copper Drain Wire 0.5mm ² (7/0.3mm) (IS) |
| Lay Up: | Multi-pairs, triads or quads are assembled together in concentric layers to form the cable core |
| Wrap Film: | Polyester Binder Tape |
| Overall Screen: | Aluminium/Polyester Tape, with a Tinned Copper Drain Wire 0.5mm ² (7/0.3mm) (OS) |
| Outer Sheath: | Low Smoke Zero Halogen (LSZH) Compound |
| Outer Sheath Colour: | Orange or Blue |

ELECTRICAL CHARACTERISTICS

| | |
|---------------------------------------|------------------|
| Operating Voltage, U ₀ /U: | 300/500V |
| Operating Temperature: | -15°C to 90°C |
| Final Short Circuit Temperature: | 250°C |
| Test Voltage: | 2kV for 1 minute |

REFERENCE STANDARDS

| | |
|-------------------------|--------------------------------------------------------------------------------------|
| Design Specification: | BS EN50288-7 |
| Conductor: | IEC60228, BS EN60228 |
| Fire Resistance: | BS6387 (C, W, Z), SS299 (C, W, Z), IEC60331 |
| Flame Retardancy: | IEC60332-3-22, BS EN60332-3-22 |
| Low Smoke Zero Halogen: | IEC61034-2, BS EN61034-2 IEC60754-1, IEC60754-2 BS EN50267-2-1, BS EN50267-2-2 |

INSTALLATION REFERENCE

| | |
|--------------------------------------------|----------------------------|
| Min. Bending Radius (mm): | 8 x cable overall diameter |
| Max. Pulling Tension (N/mm ²): | 50 |

| No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) |
|--------------|-------------------------------------------|------------------------------------|-------------------------------------|-----------------------------|----------------------------|
| 1P | 0.75 | 7 / 0.37 | 0.6 | 9.6 | 88 |
| 2P | | 7 / 0.37 | 0.6 | 15.7 | 183 |
| 3P | | 7 / 0.37 | 0.6 | 16.9 | 241 |
| 4P | | 7 / 0.37 | 0.6 | 18.6 | 295 |
| 5P | | 7 / 0.37 | 0.6 | 20.4 | 350 |
| 6P | | 7 / 0.37 | 0.6 | 22.5 | 417 |
| 8P | | 7 / 0.37 | 0.6 | 25.6 | 536 |
| 10P | | 7 / 0.37 | 0.6 | 29.3 | 663 |
| 12P | | 7 / 0.37 | 0.6 | 30.3 | 757 |
| 16P | | 7 / 0.37 | 0.6 | 34.0 | 974 |
| 20P | | 7 / 0.37 | 0.6 | 38.2 | 1200 |
| 24P | | 7 / 0.37 | 0.6 | 42.7 | 1431 |
| 36P | | 7 / 0.37 | 0.6 | 49.3 | 2032 |

* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

FR-XIOL

CU / MGT / XLPE / IS / OS / LSZH (PAIRS & TRIADS)

Mica Taped, XLPE Insulated, Individual Aluminium Foil Screened, Overall Aluminium Foil Screened, LSZH Sheathed Cable, 300 / 500V, BS EN50288-7



| No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) |
|----------------------|-------------------------------------------|------------------------------------|-------------------------------------|-----------------------------|----------------------------|
| 1P | 1.0 | 7 / 0.43 | 0.6 | 10.0 | 96 |
| 2P | | 7 / 0.43 | 0.6 | 16.5 | 208 |
| 3P | | 7 / 0.43 | 0.6 | 17.6 | 265 |
| 4P | | 7 / 0.43 | 0.6 | 19.4 | 326 |
| 5P | | 7 / 0.43 | 0.6 | 21.4 | 399 |
| 6P | | 7 / 0.43 | 0.6 | 23.5 | 463 |
| 8P | | 7 / 0.43 | 0.6 | 26.7 | 597 |
| 10P | | 7 / 0.43 | 0.6 | 30.6 | 739 |
| 12P | | 7 / 0.43 | 0.6 | 31.7 | 847 |
| 16P | | 7 / 0.43 | 0.6 | 35.5 | 1091 |
| 20P | | 7 / 0.43 | 0.6 | 39.9 | 1345 |
| 24P | | 7 / 0.43 | 0.6 | 44.6 | 1606 |
| 36P | | 7 / 0.43 | 0.6 | 51.7 | 2315 |
| <hr/> | | | | | |
| SINGLE & MULTI-PAIRS | 1.5 | 7 / 0.53 | 0.6 | 10.6 | 112 |
| | | 7 / 0.53 | 0.6 | 17.6 | 240 |
| | | 7 / 0.53 | 0.6 | 18.8 | 310 |
| | | 7 / 0.53 | 0.6 | 20.9 | 396 |
| | | 7 / 0.53 | 0.6 | 22.9 | 472 |
| | | 7 / 0.53 | 0.6 | 25.3 | 562 |
| | | 7 / 0.53 | 0.6 | 28.7 | 725 |
| | | 7 / 0.53 | 0.6 | 32.9 | 898 |
| | | 7 / 0.53 | 0.6 | 34.1 | 1032 |
| | | 7 / 0.53 | 0.6 | 38.2 | 1332 |
| | | 7 / 0.53 | 0.6 | 43.0 | 1643 |
| | | 7 / 0.53 | 0.6 | 48.0 | 1960 |
| | | 7 / 0.53 | 0.6 | 55.7 | 2833 |
| | | <hr/> | | | |
| SINGLE & MULTI-PAIRS | 2.5 | 7 / 0.67 | 0.7 | 12.0 | 149 |
| | | 7 / 0.67 | 0.7 | 20.0 | 315 |
| | | 7 / 0.67 | 0.7 | 21.3 | 411 |
| | | 7 / 0.67 | 0.7 | 23.7 | 525 |
| | | 7 / 0.67 | 0.7 | 26.1 | 630 |
| | | 7 / 0.67 | 0.7 | 28.8 | 750 |
| | | 7 / 0.67 | 0.7 | 32.7 | 970 |
| | | 7 / 0.67 | 0.7 | 37.5 | 1201 |
| | | 7 / 0.67 | 0.7 | 39.1 | 1407 |
| | | 7 / 0.67 | 0.7 | 43.8 | 1819 |
| | | 7 / 0.67 | 0.7 | 49.2 | 2242 |
| | | 7 / 0.67 | 0.7 | 55.2 | 2703 |
| | | 7 / 0.67 | 0.7 | 64.0 | 3903 |

* Other pairs, triads and quads configurations are available upon request.
 * Class 5 conductors are available upon request.

FR-XIOL

CU / MGT / XLPE / IS / OS / LSZH (PAIRS & TRIADS)

Mica Taped, XLPE Insulated, Individual Aluminium Foil Screened, Overall Aluminium Foil Screened, LSZH Sheathed Cable, 300 / 500V, BS EN50288-7



| | No. of Triads | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) |
|-----------------------|---------------|-------------------------------------------|------------------------------------|-------------------------------------|-----------------------------|----------------------------|
| SINGLE & MULTI-TRIADS | 1T | 0.75 | 7 / 0.37 | 0.6 | 10.1 | 109 |
| | 6T | | 7 / 0.37 | 0.6 | 25.3 | 561 |
| | 16T | | 7 / 0.37 | 0.6 | 38.3 | 1329 |
| | 24T | | 7 / 0.37 | 0.6 | 48.2 | 1956 |
| | 1T | 1.0 | 7 / 0.43 | 0.6 | 10.5 | 121 |
| | 6T | | 7 / 0.43 | 0.6 | 26.4 | 627 |
| | 16T | | 7 / 0.43 | 0.6 | 40.0 | 1500 |
| | 24T | | 7 / 0.43 | 0.6 | 50.4 | 2211 |
| | 1T | 1.5 | 7 / 0.53 | 0.6 | 11.2 | 143 |
| | 6T | | 7 / 0.53 | 0.6 | 28.5 | 768 |
| | 16T | | 7 / 0.53 | 0.6 | 43.1 | 1846 |
| | 24T | | 7 / 0.53 | 0.6 | 54.4 | 2750 |
| | 1T | 2.5 | 7 / 0.67 | 0.7 | 12.7 | 193 |
| | 6T | | 7 / 0.67 | 0.7 | 32.4 | 1037 |
| | 16T | | 7 / 0.67 | 0.7 | 49.4 | 2544 |
| | 24T | | 7 / 0.67 | 0.7 | 62.6 | 3815 |

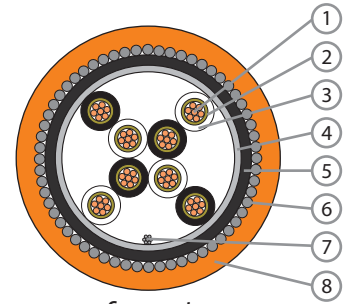
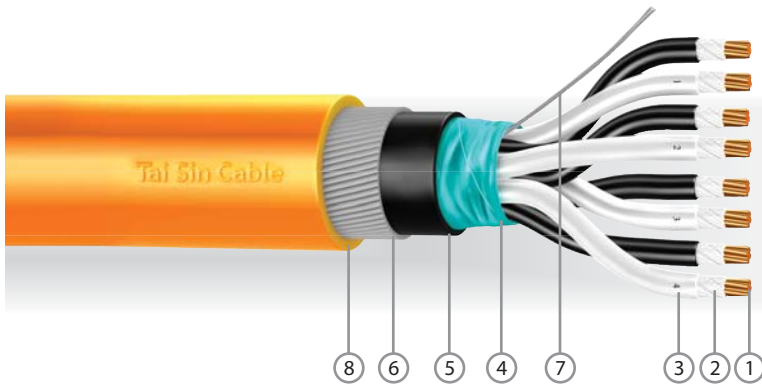
* Other pairs, triads and quads configurations are available upon request.
 * Class 5 conductors are available upon request.

Table 34

FR-XOSL

CU / MGT / XLPE / OS / LSZH / SWA / LSZH (PAIRS & TRIADS)

Mica Taped, XLPE Insulated, Overall Aluminium Foil Screened, LSZH Bedded, Galvanised Steel Wire Armoured, LSZH Sheathed Cable, 300 / 500V, BS EN50288-7



- Component**
1. Plain Annealed Copper Wire
 2. Mica Tape
 3. Cross-linked Polyethylene Compound
 4. Aluminium / Polyester Tape
 5. Low Smoke Zero Halogen (LSZH) Compound
 6. Galvanised Steel Wire Armoured
 7. Tinned Copper Drain Wire
 8. Low Smoke Zero Halogen (LSZH) Compound

CONSTRUCTION

| | |
|--------------------|-------------------------------------------------------------------------------------------------|
| Conductor: | Plain Annealed Copper, Class 2 Stranded Circular |
| Fire Barrier: | Mica Tape (MGT) |
| Insulation: | Cross-linked Polyethylene (XLPE) Compound |
| Insulation Colour: | Pair/s - Black/White with Black numberings Triad/s - Red/Black/White with Black numberings |
| Cores Twisted: | Cores twisted to form a pair, triad or quad |
| Lay Up: | Multi-pairs, triads or quads are assembled together in concentric layers to form the cable core |
| Wrap Film: | Polyester Binder Tape |
| Overall Screen: | Aluminium/Polyester Tape, with a Tinned Copper Drain Wire 0.5mm ² (7/0.3mm) (OS) |
| Bedding: | Low Smoke Zero Halogen (LSZH) Compound |
| Bedding Colour: | Black |
| Armour: | Galvanized Steel Wire Armoured (SWA) |

Outer Sheath: Low Smoke Zero Halogen (LSZH) Compound

Outer Sheath Colour: Orange or Blue

ELECTRICAL CHARACTERISTICS

| | |
|---------------------------------------|------------------|
| Operating Voltage, U _o /U: | 300/500V |
| Operating Temperature: | -15°C to 90°C |
| Final Short Circuit Temperature: | 250°C |
| Test Voltage: | 2kV for 1 minute |

REFERENCE STANDARDS

| | |
|-------------------------|--------------------------------------------------------------------------------------|
| Design Specification: | BS EN50288-7 |
| Conductor: | IEC60228, BS EN60228 |
| Fire Resistance: | BS6387 (C, W, Z), SS299 (C, W, Z), IEC60331 |
| Flame Retardancy: | IEC60332-3-22, BS EN60332-3-22 |
| Low Smoke Zero Halogen: | IEC61034-2, BS EN61034-2 IEC60754-1, IEC60754-2 BS EN50267-2-1, BS EN50267-2-2 |

INSTALLATION REFERENCE

| | |
|--------------------------------------------|-----------------------------|
| Min. Bending Radius (mm): | 10 x cable overall diameter |
| Max. Pulling Tension (N/mm ²): | 70 |

| No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Diameter Under Armour (mm) | Armour Wire Diameter (mm) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) |
|--------------|-------------------------------------------|------------------------------------|-------------------------------------|----------------------------|---------------------------|-----------------------------|----------------------------|
| 1P | 0.75 | 7 / 0.37 | 0.6 | 9.7 | 0.9 | 14.4 | 356 |
| 2P (Quad) | | 7 / 0.37 | 0.6 | 11.1 | 0.9 | 15.8 | 442 |
| 2P | | 7 / 0.37 | 0.6 | 15.2 | 1.25 | 20.8 | 682 |
| 3P | | 7 / 0.37 | 0.6 | 16.2 | 1.25 | 22.0 | 762 |
| 4P | | 7 / 0.37 | 0.6 | 17.8 | 1.25 | 23.6 | 858 |
| 5P | | 7 / 0.37 | 0.6 | 19.6 | 1.25 | 25.4 | 967 |
| 6P | | 7 / 0.37 | 0.6 | 21.5 | 1.25 | 27.5 | 1091 |
| 8P | | 7 / 0.37 | 0.6 | 24.3 | 1.25 | 30.3 | 1270 |
| 10P | | 7 / 0.37 | 0.6 | 27.7 | 1.25 | 33.9 | 1484 |
| 12P | | 7 / 0.37 | 0.6 | 28.7 | 1.25 | 34.9 | 1499 |
| 16P | | 7 / 0.37 | 0.6 | 32.0 | 1.25 | 38.2 | 1866 |
| 20P | | 7 / 0.37 | 0.6 | 35.9 | 1.6 | 43.0 | 2431 |
| 24P | | 7 / 0.37 | 0.6 | 40.1 | 1.6 | 47.4 | 2787 |
| 36P | 7 / 0.37 | 0.6 | 46.7 | 2.0 | 55.0 | 3970 | |

* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

FR-XOSL

CU / MGT / XLPE / OS / LSZH / SWA / LSZH (PAIRS & TRIADS)

Mica Taped, XLPE Insulated, Overall Aluminium Foil Screened, LSZH Bedded,
Galvanised Steel Wire Armoured, LSZH Sheathed Cable, 300 / 500V, BS EN50288-7



| No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Diameter Under Armour (mm) | Armour Wire Diameter (mm) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) | |
|----------------------|-------------------------------------------|------------------------------------|-------------------------------------|----------------------------|---------------------------|-----------------------------|----------------------------|------|
| SINGLE & MULTI-PAIRS | 1.0 | 1P | 7 / 0.43 | 0.6 | 10.1 | 0.9 | 14.8 | 378 |
| | | 2P (Quad) | 7 / 0.43 | 0.6 | 11.6 | 0.9 | 16.3 | 472 |
| | | 2P | 7 / 0.43 | 0.6 | 15.9 | 1.25 | 21.7 | 726 |
| | | 3P | 7 / 0.43 | 0.6 | 16.9 | 1.25 | 22.7 | 810 |
| | | 4P | 7 / 0.43 | 0.6 | 18.6 | 1.25 | 24.4 | 914 |
| | | 5P | 7 / 0.43 | 0.6 | 20.5 | 1.25 | 26.3 | 1031 |
| | | 6P | 7 / 0.43 | 0.6 | 22.4 | 1.25 | 28.4 | 1162 |
| | | 8P | 7 / 0.43 | 0.6 | 25.4 | 1.25 | 31.4 | 1356 |
| | | 10P | 7 / 0.43 | 0.6 | 29.0 | 1.25 | 35.2 | 1596 |
| | | 12P | 7 / 0.43 | 0.6 | 30.0 | 1.25 | 36.2 | 1723 |
| | | 16P | 7 / 0.43 | 0.6 | 33.5 | 1.6 | 40.6 | 2275 |
| | | 20P | 7 / 0.43 | 0.6 | 37.7 | 1.6 | 44.8 | 2649 |
| | | 24P | 7 / 0.43 | 0.6 | 42.0 | 2.0 | 50.1 | 3354 |
| | | 36P | 7 / 0.43 | 0.6 | 49.0 | 2.0 | 57.5 | 4341 |
| | | SINGLE & MULTI-PAIRS | 1.5 | 1P | 7 / 0.53 | 0.6 | 10.7 | 0.9 |
| 2P (Quad) | 7 / 0.53 | | | 0.6 | 12.3 | 0.9 | 17.0 | 516 |
| 2P | 7 / 0.53 | | | 0.6 | 16.9 | 1.25 | 22.7 | 793 |
| 3P | 7 / 0.53 | | | 0.6 | 18.1 | 1.25 | 23.9 | 893 |
| 4P | 7 / 0.53 | | | 0.6 | 19.9 | 1.25 | 25.7 | 1020 |
| 5P | 7 / 0.53 | | | 0.6 | 21.9 | 1.25 | 27.9 | 1164 |
| 6P | 7 / 0.53 | | | 0.6 | 24.0 | 1.25 | 30.0 | 1297 |
| 8P | 7 / 0.53 | | | 0.6 | 27.2 | 1.25 | 33.4 | 1545 |
| 10P | 7 / 0.53 | | | 0.6 | 31.1 | 1.25 | 37.3 | 1807 |
| 12P | 7 / 0.53 | | | 0.6 | 32.2 | 1.25 | 38.6 | 1970 |
| 16P | 7 / 0.53 | | | 0.6 | 36.0 | 1.6 | 43.1 | 2588 |
| 20P | 7 / 0.53 | | | 0.6 | 40.5 | 1.6 | 47.8 | 3040 |
| 24P | 7 / 0.53 | | | 0.6 | 45.6 | 2.0 | 53.9 | 3923 |
| 36P | 7 / 0.53 | | | 0.6 | 52.7 | 2.5 | 62.4 | 5566 |
| SINGLE & MULTI-PAIRS | 2.5 | | | 1P | 7 / 0.67 | 0.7 | 11.9 | 0.9 |
| | | 2P (Quad) | 7 / 0.67 | 0.7 | 13.8 | 0.9 | 18.5 | 615 |
| | | 2P | 7 / 0.67 | 0.7 | 19.1 | 1.25 | 24.9 | 930 |
| | | 3P | 7 / 0.67 | 0.7 | 20.5 | 1.25 | 26.5 | 1070 |
| | | 4P | 7 / 0.67 | 0.7 | 22.6 | 1.25 | 28.6 | 1227 |
| | | 5P | 7 / 0.67 | 0.7 | 24.9 | 1.25 | 31.1 | 1412 |
| | | 6P | 7 / 0.67 | 0.7 | 27.3 | 1.25 | 33.5 | 1584 |
| | | 8P | 7 / 0.67 | 0.7 | 31.0 | 1.25 | 37.4 | 1901 |
| | | 10P | 7 / 0.67 | 0.7 | 35.5 | 1.6 | 42.8 | 2505 |
| | | 12P | 7 / 0.67 | 0.7 | 36.8 | 1.6 | 44.1 | 2730 |
| | | 16P | 7 / 0.67 | 0.7 | 41.6 | 1.6 | 49.1 | 3324 |
| | | 20P | 7 / 0.67 | 0.7 | 46.8 | 2.0 | 55.3 | 4290 |
| | | 24P | 7 / 0.67 | 0.7 | 52.2 | 2.5 | 61.9 | 5452 |
| | | 36P | 7 / 0.67 | 0.7 | 60.8 | 2.5 | 70.9 | 7101 |

* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

FR-XOSL

CU / MGT / XLPE / OS / LSZH / SWA / LSZH (PAIRS & TRIADS)

Mica Taped, XLPE Insulated, Overall Aluminium Foil Screened, LSZH Bedded,
Galvanised Steel Wire Armoured, LSZH Sheathed Cable, 300 / 500V, BS EN50288-7



| No. of Triads | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Diameter Under Armour (mm) | Armour Wire Diameter (mm) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) |
|---------------|-------------------------------------------|------------------------------------|-------------------------------------|----------------------------|---------------------------|-----------------------------|----------------------------|
| 1T | 0.75 | 7 / 0.37 | 0.6 | 10.2 | 0.9 | 14.9 | 390 |
| 6T | | 7 / 0.37 | 0.6 | 24.1 | 1.25 | 30.1 | 1289 |
| 16T | | 7 / 0.37 | 0.6 | 36.1 | 1.6 | 43.2 | 2565 |
| 24T | | 7 / 0.37 | 0.6 | 45.3 | 2.0 | 53.4 | 3811 |
| 1T | 1.0 | 7 / 0.43 | 0.6 | 10.6 | 0.9 | 15.5 | 423 |
| 6T | | 7 / 0.43 | 0.6 | 25.2 | 1.25 | 31.2 | 1390 |
| 16T | | 7 / 0.43 | 0.6 | 37.8 | 1.6 | 44.9 | 2806 |
| 24T | | 7 / 0.43 | 0.6 | 47.5 | 2.0 | 55.8 | 4176 |
| 1T | 1.5 | 7 / 0.53 | 0.6 | 11.3 | 0.9 | 16.2 | 460 |
| 6T | | 7 / 0.53 | 0.6 | 27.0 | 1.25 | 33.0 | 1565 |
| 16T | | 7 / 0.53 | 0.6 | 40.7 | 1.6 | 48.0 | 3247 |
| 24T | | 7 / 0.53 | 0.6 | 51.6 | 2.0 | 60.1 | 4934 |
| 1T | 2.5 | 7 / 0.67 | 0.7 | 12.6 | 0.9 | 17.5 | 533 |
| 6T | | 7 / 0.67 | 0.7 | 30.8 | 1.25 | 37.0 | 1952 |
| 16T | | 7 / 0.67 | 0.7 | 47.0 | 1.6 | 55.3 | 4564 |
| 24T | | 7 / 0.67 | 0.7 | 59.1 | 2.0 | 69.0 | 6878 |

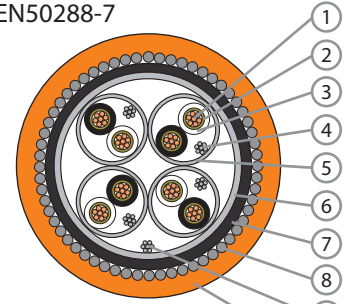
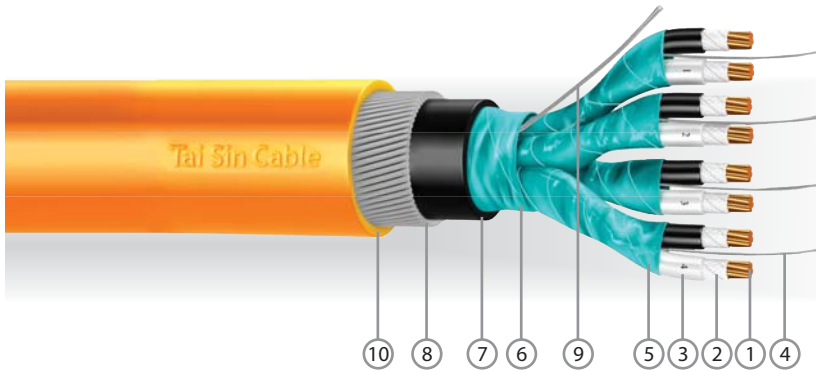
* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

SINGLE & MULTI-TRIADS

FR-XIOSL

CU / MGT / XLPE / IS / OS / LSZH / SWA / LSZH (PAIRS & TRIADS)

Mica Taped, XLPE Insulated, Individual Aluminium Foil Screened, Overall Aluminium Foil Screened, LSZH Bedded, Galvanised Steel Wire Armoured, LSZH Sheathed Cable, 300 / 500V, BS EN50288-7



- Component**
1. Plain Annealed Copper Wire
 2. Mica Tape
 3. Cross-linked Polyethylene Compound
 4. Tinned Copper Drain Wire
 5. Aluminium / Polyester Tape (IS)
 6. Aluminium / Polyester Tape (OS)
 7. Low Smoke Zero Halogen (LSZH) Compound
 8. Galvanised Steel Wire Armoured
 9. Tinned Copper Drain Wire
 10. Low Smoke Zero Halogen (LSZH) Compound

CONSTRUCTION

| | |
|--------------------|-------------------------------------------------------------------------------------------------|
| Conductor: | Plain Annealed Copper, Class 2 Stranded Circular |
| Fire Barrier: | Mica Tape (MGT) |
| Insulation: | Cross-linked Polyethylene (XLPE) Compound |
| Insulation Colour: | Pair/s - Black/White with Black numberings Triad/s - Red/Black/White with Black numberings |
| Cores Twisted: | Cores twisted to form a pair, triad or quad |
| Wrap Film: | Polyester Binder Tape |
| Individual Screen: | Aluminium/Polyester Tape, with a Tinned Copper Drain Wire 0.5mm ² (7/0.3mm) (IS) |
| Lay Up: | Multi-pairs, triads or quads are assembled together in concentric layers to form the cable core |
| Wrap Film: | Polyester Binder Tape |
| Overall Screen: | Aluminium/Polyester Tape, with a Tinned Copper Drain Wire 0.5mm ² (7/0.3mm) (OS) |
| Bedding: | Low Smoke Zero Halogen (LSZH) Compound |
| Bedding Colour: | Black |

| | |
|----------------------|----------------------------------------|
| Armour: | Galvanized Steel Wire Armoured (SWA) |
| Outer Sheath: | Low Smoke Zero Halogen (LSZH) Compound |
| Outer Sheath Colour: | Orange or Blue |

ELECTRICAL CHARACTERISTICS

| | |
|----------------------------------|------------------|
| Operating Voltage, Uo/U: | 300/500V |
| Operating Temperature: | -15°C to 90°C |
| Final Short Circuit Temperature: | 250°C |
| Test Voltage: | 2kV for 1 minute |

REFERENCE STANDARDS

| | |
|-------------------------|--------------------------------------------------------------------------------------|
| Design Specification: | BS EN50288-7 |
| Conductor: | IEC60228, BS EN60228 |
| Fire Resistance: | BS6387 (C, W, Z), SS299 (C, W, Z), IEC60331 |
| Flame Retardancy: | IEC60332-3-22, BS EN60332-3-22 |
| Low Smoke Zero Halogen: | IEC61034-2, BS EN61034-2 IEC60754-1, IEC60754-2 BS EN50267-2-1, BS EN50267-2-2 |

INSTALLATION REFERENCE

| | |
|--------------------------------------------|-----------------------------|
| Min. Bending Radius (mm): | 10 x cable overall diameter |
| Max. Pulling Tension (N/mm ²): | 70 |

| No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Diameter Under Armour (mm) | Armour Wire Diameter (mm) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) |
|--------------|-------------------------------------------|------------------------------------|-------------------------------------|----------------------------|---------------------------|-----------------------------|----------------------------|
| 1P | 0.75 | 7 / 0.37 | 0.6 | 9.7 | 0.9 | 14.4 | 356 |
| 2P | | 7 / 0.37 | 0.6 | 15.6 | 1.25 | 21.4 | 727 |
| 3P | | 7 / 0.37 | 0.6 | 16.6 | 1.25 | 22.4 | 805 |
| 4P | | 7 / 0.37 | 0.6 | 18.3 | 1.25 | 24.1 | 911 |
| 5P | | 7 / 0.37 | 0.6 | 20.1 | 1.25 | 25.9 | 1029 |
| 6P | | 7 / 0.37 | 0.6 | 22.0 | 1.25 | 28.0 | 1162 |
| 8P | | 7 / 0.37 | 0.6 | 24.9 | 1.25 | 30.9 | 1360 |
| 10P | | 7 / 0.37 | 0.6 | 28.4 | 1.25 | 34.6 | 1604 |
| 12P | | 7 / 0.37 | 0.6 | 29.4 | 1.25 | 35.6 | 1727 |
| 16P | | 7 / 0.37 | 0.6 | 32.9 | 1.6 | 40.0 | 2293 |
| 20P | | 7 / 0.37 | 0.6 | 36.9 | 1.6 | 44.2 | 2681 |
| 24P | | 7 / 0.37 | 0.6 | 41.2 | 1.6 | 48.5 | 3053 |
| 36P | | 7 / 0.37 | 0.6 | 48.0 | 2.0 | 56.5 | 4396 |

* Other pairs, triads and quads configurations are available upon request.
* Class 5 conductors are available upon request.

FR-XIOSL

CU / MGT / XLPE / IS / OS / LSZH / SWA / LSZH (PAIRS & TRIADS)

Mica Taped, XLPE Insulated, Individual Aluminium Foil Screened, Overall Aluminium Foil Screened, LSZH Bedded, Galvanised Steel Wire Armoured, LSZH Sheathed Cable, 300 / 500V, BS EN50288-7



| No. of Pairs | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Diameter Under Armour (mm) | Armour Wire Diameter (mm) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) | |
|--------------|-------------------------------------------|------------------------------------|-------------------------------------|----------------------------|---------------------------|-----------------------------|----------------------------|-----|
| 1P | 1.0 | 7 / 0.43 | 0.6 | 10.1 | 0.9 | 14.8 | 378 | |
| 2P | | 7 / 0.43 | 0.6 | 16.2 | 1.25 | 22.0 | 758 | |
| 3P | | 7 / 0.43 | 0.6 | 17.3 | 1.25 | 23.1 | 853 | |
| 4P | | 7 / 0.43 | 0.6 | 19.1 | 1.25 | 24.9 | 978 | |
| 5P | | 7 / 0.43 | 0.6 | 20.9 | 1.25 | 26.9 | 1106 | |
| 6P | | 7 / 0.43 | 0.6 | 23.0 | 1.25 | 29.0 | 1235 | |
| 8P | | 7 / 0.43 | 0.6 | 26.0 | 1.25 | 32.0 | 1458 | |
| 10P | | 7 / 0.43 | 0.6 | 29.7 | 1.25 | 35.9 | 1718 | |
| 12P | | 7 / 0.43 | 0.6 | 30.8 | 1.25 | 37.0 | 1865 | |
| 16P | | 7 / 0.43 | 0.6 | 34.4 | 1.6 | 41.5 | 2469 | |
| 20P | | 7 / 0.43 | 0.6 | 38.6 | 1.6 | 45.9 | 2887 | |
| 24P | | 7 / 0.43 | 0.6 | 43.5 | 2.0 | 51.8 | 3741 | |
| 36P | | 7 / 0.43 | 0.6 | 50.2 | 2.0 | 58.7 | 4746 | |
| <hr/> | | | | | | | | |
| 1P | | 1.5 | 7 / 0.53 | 0.6 | 10.7 | 0.9 | 15.6 | 416 |
| 2P | 7 / 0.53 | | 0.6 | 17.3 | 1.25 | 23.1 | 828 | |
| 3P | 7 / 0.53 | | 0.6 | 18.5 | 1.25 | 24.3 | 937 | |
| 4P | 7 / 0.53 | | 0.6 | 20.4 | 1.25 | 26.4 | 1089 | |
| 5P | 7 / 0.53 | | 0.6 | 22.4 | 1.25 | 28.4 | 1229 | |
| 6P | 7 / 0.53 | | 0.6 | 24.6 | 1.25 | 30.6 | 1373 | |
| 8P | 7 / 0.53 | | 0.6 | 27.8 | 1.25 | 34.0 | 1641 | |
| 10P | 7 / 0.53 | | 0.6 | 31.8 | 1.25 | 38.2 | 1943 | |
| 12P | 7 / 0.53 | | 0.6 | 33.0 | 1.6 | 40.1 | 2347 | |
| 16P | 7 / 0.53 | | 0.6 | 36.9 | 1.6 | 44.2 | 2811 | |
| 20P | 7 / 0.53 | | 0.6 | 41.9 | 2.0 | 50.2 | 3688 | |
| 24P | 7 / 0.53 | | 0.6 | 46.7 | 2.0 | 55.2 | 4251 | |
| 36P | 7 / 0.53 | | 0.6 | 54.0 | 2.5 | 63.7 | 5975 | |
| <hr/> | | | | | | | | |
| 1P | 2.5 | | 7 / 0.67 | 0.7 | 11.9 | 0.9 | 16.8 | 476 |
| 2P | | 7 / 0.67 | 0.7 | 19.5 | 1.25 | 25.5 | 980 | |
| 3P | | 7 / 0.67 | 0.7 | 20.8 | 1.25 | 26.8 | 1116 | |
| 4P | | 7 / 0.67 | 0.7 | 23.0 | 1.25 | 29.0 | 1284 | |
| 5P | | 7 / 0.67 | 0.7 | 25.4 | 1.25 | 31.6 | 1481 | |
| 6P | | 7 / 0.67 | 0.7 | 27.9 | 1.25 | 34.1 | 1675 | |
| 8P | | 7 / 0.67 | 0.7 | 31.6 | 1.25 | 38.0 | 2013 | |
| 10P | | 7 / 0.67 | 0.7 | 36.2 | 1.6 | 43.5 | 2652 | |
| 12P | | 7 / 0.67 | 0.7 | 37.6 | 1.6 | 44.9 | 2883 | |
| 16P | | 7 / 0.67 | 0.7 | 42.5 | 2.0 | 50.8 | 3868 | |
| 20P | | 7 / 0.67 | 0.7 | 47.7 | 2.0 | 56.2 | 4539 | |
| 24P | | 7 / 0.67 | 0.7 | 53.3 | 2.5 | 63.2 | 5793 | |
| 36P | | 7 / 0.67 | 0.7 | 62.1 | 2.5 | 72.4 | 7616 | |

* Other pairs, triads and quads configurations are available upon request.
 * Class 5 conductors are available upon request.

FR-XIOSL

CU / MGT / XLPE / IS / OS / LSZH / SWA / LSZH (PAIRS & TRIADS)

Mica Taped, XLPE Insulated, Individual Aluminium Foil Screened, Overall Aluminium Foil Screened, LSZH Bedded, Galvanised Steel Wire Armoured, LSZH Sheathed Cable, 300 / 500V, BS EN50288-7



| No. of Triads | Nominal Conductor Area (mm ²) | No. and Diameter of Wires (no./mm) | Radial Thickness of Insulation (mm) | Diameter Under Armour (mm) | Armour Wire Diameter (mm) | Cable Overall Diameter (mm) | Approximate Weight (kg/km) |
|---------------|-------------------------------------------|------------------------------------|-------------------------------------|----------------------------|---------------------------|-----------------------------|----------------------------|
| 1T | 0.75 | 7 / 0.37 | 0.6 | 10.2 | 0.9 | 14.9 | 390 |
| 6T | | 7 / 0.37 | 0.6 | 24.6 | 1.25 | 30.6 | 1362 |
| 16T | | 7 / 0.37 | 0.6 | 37.0 | 1.6 | 44.3 | 2783 |
| 24T | | 7 / 0.37 | 0.6 | 46.9 | 2.0 | 55.2 | 4183 |
| 1T | 1.0 | 7 / 0.43 | 0.6 | 10.6 | 0.9 | 15.5 | 423 |
| 6T | | 7 / 0.43 | 0.6 | 25.7 | 1.25 | 31.7 | 1465 |
| 16T | | 7 / 0.43 | 0.6 | 38.7 | 1.6 | 46.0 | 3013 |
| 24T | | 7 / 0.43 | 0.6 | 49.1 | 2.0 | 57.6 | 4582 |
| 1T | 1.5 | 7 / 0.53 | 0.6 | 11.3 | 0.9 | 16.2 | 460 |
| 6T | | 7 / 0.53 | 0.6 | 27.6 | 1.25 | 33.8 | 1670 |
| 16T | | 7 / 0.53 | 0.6 | 42.0 | 1.6 | 50.3 | 3861 |
| 24T | | 7 / 0.53 | 0.6 | 52.7 | 2.0 | 62.4 | 5789 |
| 1T | 2.5 | 7 / 0.67 | 0.7 | 12.6 | 0.9 | 17.5 | 533 |
| 6T | | 7 / 0.67 | 0.7 | 31.3 | 1.25 | 37.7 | 2054 |
| 16T | | 7 / 0.67 | 0.7 | 47.9 | 1.6 | 56.4 | 4832 |
| 24T | | 7 / 0.67 | 0.7 | 60.7 | 2.0 | 70.8 | 7339 |

* Other pairs, triads and quads configurations are available upon request.
 * Class 5 conductors are available upon request.

APPENDIX A

Table A1.1

Electrical Properties of Tai Sin Instrumentation Cables



Electrical Properties at 20°C

| | Unit of Measure | Conductor Size (Pair Cables) | | | | |
|-------------------------------------------------------------------------------------------------------------------------------|-----------------|------------------------------|---------------------|--------------------|--------------------|--------------------|
| | | 0.5mm ² | 0.75mm ² | 1.0mm ² | 1.5mm ² | 2.5mm ² |
| Operating Temperature (Max): | | | | | | |
| PVC Insulation | °C | | | 70 | | |
| XLPE & LSZH Insulation | °C | | | 90 | | |
| Rated Voltage U ₀ /U _M | | | | | | |
| | V | | | 300/500 | | |
| Test Voltage: | | | | | | |
| Core To Core for 1 Minute | V | | | 2000 | | |
| Core To Screen for 1 Minute | V | | | 1000 | | |
| Conductor Resistance (Max): | | | | | | |
| | Ω/km | 36.7 | 25.0 | 18.5 | 12.3 | 7.6 |
| Insulation Resistance (Min): | | | | | | |
| Individual Conductor (between each conductor and remaining bunched conductors/screened and/or armour) (PVC Insulated) | | | | | | |
| | MΩ · km | | | 10 | | |
| Individual Screens (between screens) (PVC Insulated) | | | | | | |
| | MΩ · km | | | 1 | | |
| Individual Conductor (between each conductor and remaining bunched conductors/screened and/or armour) (XLPE & LSZH Insulated) | | | | | | |
| | MΩ · km | | | 1000 | | |
| Individual Screens (between screens) (XLPE & LSZH Insulated) | | | | | | |
| | MΩ · km | | | 1 | | |
| Mutual Capacitance at 1KHz (Max): | | | | | | |
| PVC Insulation | nf/km | | | 250 | | |
| XLPE & LSZH Insulation | nf/km | | | 150 | | |
| Capacitance Unbalanced at 1KHz (Max) | | | | | | |
| | pf/500m | | | 500 | | |
| Maximum Inductance/Resistance Ratio (L/R) | | | | | | |
| | μH/Ω | 25 | 25 | 25 | 40 | 60 |

Note 1: Cables with Maximum Operating Temperature of 105°C are available upon request.
 Note 2: For 600/1000V cables, the Test Voltage will be 3.5kV/5min.

1. APPLICATION OF TERMS & CONDITIONS

These conditions govern the sales and purchase of goods ordered by Buyer from Seller ("the goods") and shall override any terms and conditions whether previously or hereafter stipulated incorporated or referred to by Buyer whether orally in its purchase order or other documents.

2. DELIVERY

- a. Any time for delivery named by Seller is an estimate only and Seller is not liable to make good any damage or loss arising out of any such delay.
- b. Delivery shall be deemed to have been made if seller delivers the goods to the location specified by the Buyer and Delivery Order is endorsed by any person present thereat. Seller not responsible to ensure the goods have been delivered to or is collected by Buyer or its authorized personnel and shall not be liable for any loss or damage to Buyer by reason of unauthorized collection of the goods.
- c. Should Buyer fail to take delivery of goods, Seller shall be entitled (without derogation of its rights under Law) to charge Buyer for storage and insurance for the goods calculated from the date fixed for delivery.
- d. The Seller reserves the right to deliver goods by installments and each installment shall be deemed to have been sold under a separate contract. Failure to deliver any installment shall not entitle the buyer to repudiate the contract.
- e. Off loading and/or handling will in all events be the responsibility of the Buyer.
- f. If the goods to be delivered are, at the Buyer's discretion, delivered to the destination other than the Buyer's premises, the Seller will arrange such delivery for the Buyer and all costs for carriage and insurance will be to the Buyer's account.
- g. Availability of the goods when offered ex-stock is subject to such goods being sold in another transaction between the date when the Seller advises the goods are available, and the date when it receives the Buyer's order. Any delivery time offered for products made to special customer order is indicative only, and the Seller shall not be liable for any loss or damage whatsoever arising as a consequence or result of any such failure to deliver.

3. PRICE

The quoted price for the goods are subject to change in the event of any imposition or increase in taxes, levies or duties whatsoever on the goods, its components or raw materials.

4. PAYMENT

Payments for the goods shall be made within the time stipulated in the invoice. Interest at 1.5% per month will be charged on late payment.

5. TIME OF THE ESSENCE

Time within which the Buyer is to pay for the goods shall be of the essence of this Contract.

6. ACCEPTANCE

Buyer shall inspect the goods immediately upon delivery. Unless Seller receives notice that the goods are not in accordance with the Buyer's order and the goods returned to Seller within 24 hours from the date of delivery, the goods shall be deemed to have been accepted by the Buyer PROVIDED ALWAYS Seller will not accept return of used goods and Buyer shall not reject any goods which are in accordance with the Buyer's order.

7. DESCRIPTION

Notwithstanding any description of the goods given by the Seller or Buyer, no sale of goods shall constitute or be construed as a sale by description.

8. WARRANTIES

Save and except for written warranties (if any) given by Seller, the Seller does not give any warranties as to the quality, state, condition or fitness of the goods or their suitability for any purpose or for use under any specific conditions, notwithstanding that such purpose or condition may be known or made known to Seller.

9. DEFECTS

Save and except as notified pursuant to Clause 6) above, Seller shall be under no liability to Buyer either in contract or tort for loss, injury or damage sustained by Buyer or any third party by reason of defects in the goods whether latent or otherwise but Buyer will keep Seller indemnified against any such claim.

10. TITLE

Title to the goods remains vested in Seller receives the full purchase price. If such payment is overdue, the Seller may without prejudice to any other rights sue for the purchase price, recover or re-sell the goods and the Buyer grants the Seller, its servants/agents the right and/or license to enter the Buyer's premise and/or any other premise where the goods are stored. If any of the goods are sold by Buyer before title has passed to Buyer, Buyer shall hold the proceeds of sale and all rights against purchaser in trust for Seller.

11. RISK

Risk passes to Buyer upon delivery of goods to Buyer.

12. DEFAULT

If Buyer fail to pay Seller on due date, commits a breach of any of its obligation herein, becomes insolvent or commits an act of bankruptcy, Seller may without prejudice to its other rights and without giving any notice, suspend/cancel further deliveries, stop any delivery in transit under this Contract or any other contracts and/or limit/cancel the Buyer's credit as to time and/or amount for executed, executory or future orders, and/or request for securities or guarantees. Seller shall not be liable to Buyer for any damages which Buyer may suffer or incur by reason thereof.

13. CANCELLATION OF CREDIT

Notwithstanding anything herein contained, Seller reserves the right to limit/cancel the credit of the Buyer as to time and/or amount without giving any reasons thereof and to demand full settlement immediately of all sums that may be owing by Buyer notwithstanding that the credit period has not expired.

14. FORCE MAJEURE

Seller shall not be liable to Buyer for failure to deliver the goods by reason of any breakdown of plant, fire, explosion, Act of God, or outbreak of hostilities, national emergency, industrial disputes, shortage of labour, raw materials, energy or any causes beyond Seller's control and which seller is unable to prevent by the exercise of reasonable diligence, whether of the class of causes enumerated herein or not.

15. APPROPRIATION OF PAYMENTS

All payments received from the Buyer will be applied towards settlement of the Buyer's oldest debts comprising the earliest invoices, debit notes (including debit notes for overdue interest) and other charges howsoever arising PROVIDED ALWAYS Seller may appropriate any payments towards account of interest before principal in respect of any debt as the Seller shall in its absolute discretion deem fit.

16. STATEMENT OF ACCOUNT

All amounts stated in the invoices and statement of accounts of Seller shall be conclusive of the amounts due and owing by Buyer to Seller and shall be binding against Buyer in any legal proceedings.

17. RIGHTS OF SET-OFF

Seller entitled to set-off against Buyer's debts all monies now or hereafter standing to the credit of Buyer's account with Seller and for this purpose Buyer shall give irrevocable authority to Seller to collect on behalf of Buyer and give valid receipt and discharge in respect of all such monies owing to the Buyer.

18. WAIVER

No failure or delay by the Seller in exercising any rights hereunder shall operate as a waiver hereof nor shall any single or partial exercise of right preclude any further exercise thereof or the exercises of any other right.

19. SALE OF GOODS ACT ("the Act")

The terms and conditions in favour of the Seller hereunder shall be in addition to and not in substitution for any term condition warranty expressed or implied in favour of the Seller under the Act or any statutory and re-enactment thereto for the time being enforced.

20. INFRINGEMENT OF PATENTS DESIGNS

Buyer shall indemnify Seller against all damages, claims, costs and expenses which Seller may become liable as a result or work done or goods sold in accordance with Buyer's specifications which involve infringement of any patents, registered designs or trademarks.

21. NOTICES

Any notices, communications or demands shall be deemed to have been sufficiently given if sent by prepaid post to the address of the addressee stated herein or to the addressee's last known place of business and shall be presumed to have reached the address in ordinary course of post.