RAYFAST

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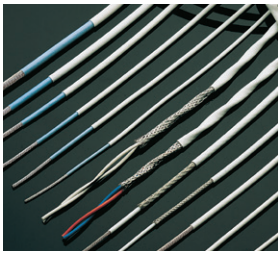
Technical question? ask our online chat

Solutions for Space

Wire and Cable



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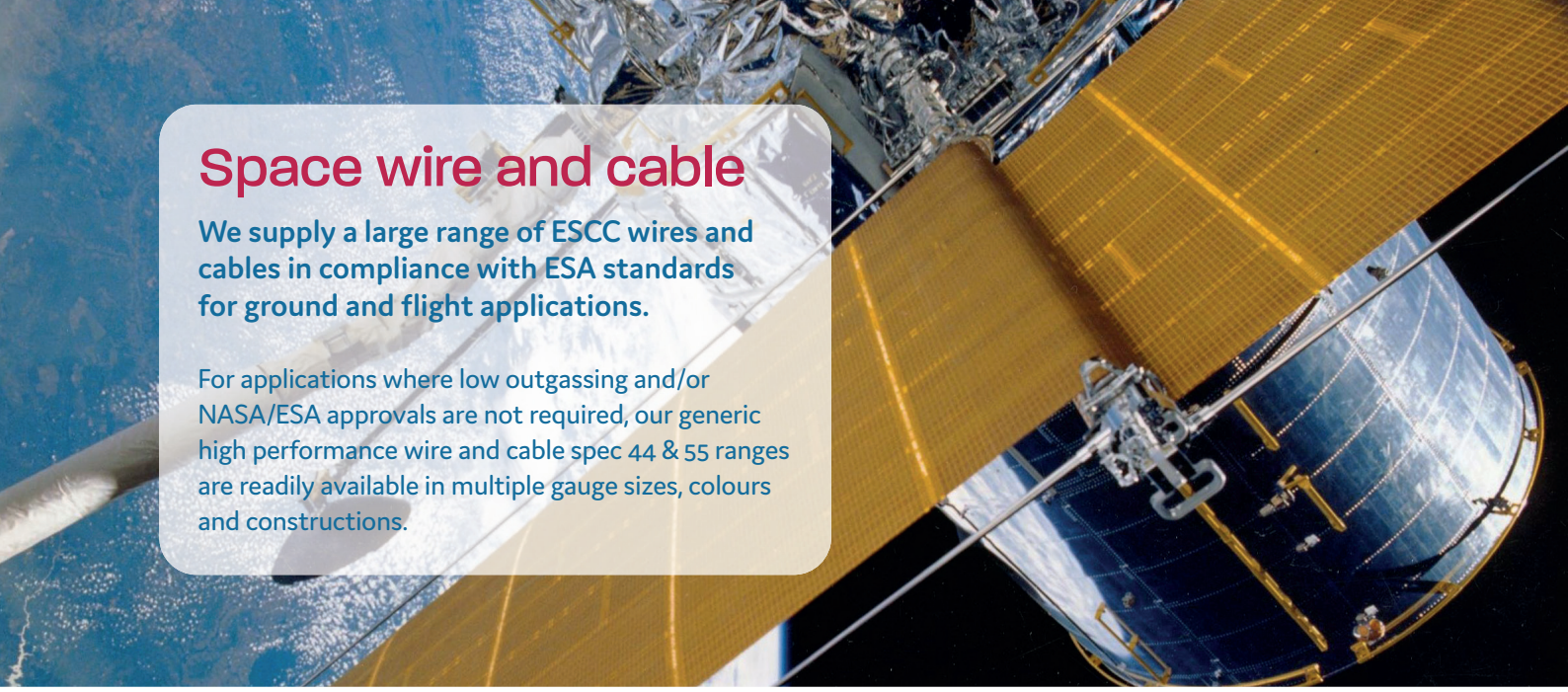


Space wire and cable

We supply a large range of ESCC wires and cables in compliance with ESA standards for ground and flight applications.

For applications where low outgassing and/or NASA/ESA approvals are not required, our generic high performance wire and cable spec 44 & 55 ranges are readily available in multiple gauge sizes, colours and constructions.

ESCC Wire and cables

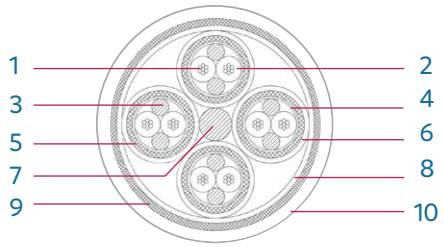
Product Family	Description	Operating Temperature	Application
3901 001	Polyimide insulated wires and cables	-100°C to +200°C	Large conductor guages: AWG 12 to 16
3901 002	Lightweight polyimide insulated wires and cables	-100°C to +200°C	Smaller conductor guages than the ESCC 3901 001 family: AWG 18 to 28
3901 012	Extruded cross-linked ETFE insulated wires and cables	-100°C to +200°C	Large range of conductor guages from AWG 12 to 30
3901 013	PTFE insulated wires and cables	-100°C to +200°C	Internal cabling of electronic boxes. PTFE allows for a thinner jacket and improves flexibility
3901 018	Polyimide/Fluorothermoplastic insulated wires and cables	-200°C to +200°C	Low Earth Orbit (LEO) applications. Jacket resistant to atomic oxygen (ATOX) environment
3901 019	CELLOFLON® /Polyimide insulated wires and cables	-200°C to +200°C	Cryogenic applications (optical instruments), and wherever mass is a critical issue. Celloflon® is a weight saving material with high stabililty across large temperature range
3901 020	Extruded cross-linked ETFE insulated wires and cables	-200°C to +200°C	Large range of conductor guages from AWG 12 to 30
3901 021	CELLOFLON® /Polyimide insulated wires and cables with drain wire	-200°C to +200°C	Same as 019 family. In addition, a drain wire is provided to ease shield construction
3901 024	Abrasion Resistance Tape (ART®) PTFE insulated wires and cables	-200°C to +200°C	Abrasion Resistance ART® PTFE tape with improved flexibility and bend radius

Coaxial and Triaxial cable

3902 002	Coaxial cable: CELLOFLON® PTFE dielectric	-200°C to +180°C	Coaxial line with 50 or 75 Ohms
3902 002	Triaxial cable: CELLOFLON® PTFE dielectric	-200°C to +180°C	Triaxial line with 50 or 75 Ohms
3902 002	Twisted pair bus cable	-200°C to +180°C	Balanced shielded line with 75, 100 or 120 Ohms
3902 003	SpaceWire quadribus cable	-200°C to +180°C	100 Ohm LVDS protocol

3902 003

Databus Cable



Construction

1. Stranded silver plated copper or copper alloy conductor
2. Dielectric: Expanded microporous PTFE
3. Filler: Expanded microporous PTFE
4. Binder (only var. 02): Wrapped microporous PTFE
5. Silver plated copper braided shield
6. Extruded PFA insulation
7. Filler: Expanded microporous PTFE
8. Binder: Wrapped microporous PTFE
9. Silver plated copper braided shield
10. Extruded PFA insulation.

Main Characteristics

Excellent physical, chemical and electrical properties:

- Designed to meet nominal transmission performances of Spacewire protocol
- Excellent penetration resistance under pressure
- Resist large overloads with no fire risk
- Non - flammable
- Good flexibility
- Resistant to most chemicals
- Suited for thermal, mechanical or laser stripping
- Controlled impedance for optimal data transmission.

Part Number	ZC Ω	Inner Conductor					Single Wire		Symmetric Cable Shield Strand ø mm
		AWG	Stranding Nb x ø mm	Max. ø mm	Nom. Cross Section mm²	Max. DC Resistance at 20°C Ω/km	Max. ø mm	Dielectric Colour	
ESCC 3902 003 01	100	28	7x0.127 SPCA	0.39	0.089	256	1.2	Blue / White	0.079
ESCC 3902 003 02	100	26	7x0.160 SPCA	0.49	0.141	159	1.4	Blue / White	0.079

Part Number	Symmetric Cable			ROUND CABLE					Min. Bend Radius
	Binder NOM. Thickness mm	Max. ø mm	Max. Weight g/m	Binder NOM. Thickness mm	Shield Strand ø mm	Max. ø mm	Jacket Colour	Max. Weight g/m	
ESCC 3902 003 01	-	2.7	12	0.102	0.102	7.5	White	85	90
ESCC 3902 003 02	0.076	3.1	15	0.102	0.102	9	Blue	100	120

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3902 002

Databus Cable

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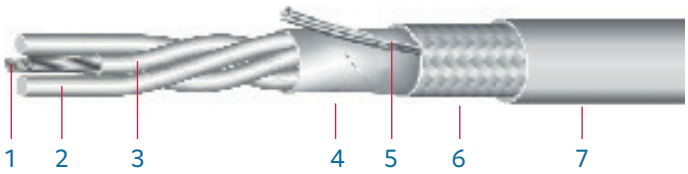
Construction

1. Stranded silver plated copper or copper alloy conductor
2. Filler (except var. 26): Expanded PTFE (CELLOFLON®)
3. Dielectric: Expanded PTFE (CELLOFLON®)
4. Binder (only var. 22 & 26 to 30): Wrapped expanded PTFE (CELLOFLON®),
5. Drain wire (except var. 26 to 30): Stranded silver plated copper or copper alloy
6. Silver plated copper shield
7. Extruded PFA insulation.

Main Characteristics

Excellent physical, chemical and electrical properties:

- Excellent penetration resistance under pressure
- Resist large overloads with no fire risk,
- Non - flammable
- Good flexibility
- Resistant to most chemicals
- Suited for thermal, mechanical or laser stripping
- Controlled impedance for optimal data transmission.



Part Number	ZC Ω	Inner Conductor			o/Electric		Shield o mm	Jacket		Max.
		AWG	Max. o mm	MAX. OC Resistance AT 20°C Ω/km	Nom. o mm	Colour		Max . o mm	Colour	
ESCC 3902 002 20	75	24	0.65	95	1.2	● ○	2.4	3.9	●	24
ESCC 3902 002 21	100	22	0.82	54	2.1	● ●	4.2	5.2	●	36
ESCC 3902 002 22	120	30	0.32	401	0.8	○	1.6	2.8	●	14
ESCC 3902 002 23	120	28	0.39	256	1.3	○	2.6	3.3	●	18
ESCC 3902 002 24	120	26	0.49	159	1.6	● ●	3.2	3.8	●	21
ESCC 3902 002 25	120	24	0.65	89	2.1	● ●	4.2	5.3	●	32
ESCC 3902 002 26	100	30	0.32	401	0.85	○	1.7	2.2	●	11
ESCC 3902 002 27	100	28	0.39	256	0.89	○	1.78	2.9	●	14
ESCC 3902 002 28	100	26	0.49	159	1.1	○	2.2	3.1	●	18
ESCC 3902 002 29	100	24	0.65	89	1.5	○	3.0	3.9	●	22
ESCC 3902 002 30	100	22	0.82	54	1.8	○	3.6	4.8	●	28

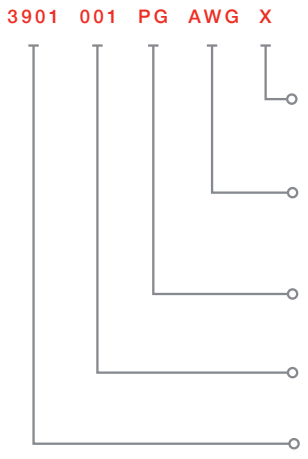
3901 001

Polyimide Insulated Wires and Cables

Construction

1. Stranded silver plated copper or copper alloy conductor
2. Polyimide tape
3. Polyimide tape
4. Polyimide coating.

PART NUMBERING EXAMPLE



Main Characteristics

Excellent physical, chemical and electrical properties:

- Excellent penetration resistance under pressure
- Excellent radiation resistance
- Resist large overloads with no fire risk
- Non - flammable
- Resistant to most chemicals
- Suited for thermal, mechanical or laser stripping.

Product group	AWG	Cores	Wire and Cable Type	Temp Range
24 to 31 & 47	28 to 12	1	Single Wire	-100°C to +200°C
32 to 34	16 to 12	2	Twisted Pairs	-100°C to +200°C
35 to 37	16 to 12	3	Twisted Triples	-100°C to +200°C
38 to 39	16 to 12	1	Shielded Jacketed Single Wires	-100°C to +200°C
41 to 43	16 to 12	2	Shielded Jacketed Twisted Pairs	-100°C to +200°C
44 to 46	16 to 12	3	Shielded Jacketed Twisted Triples	-100°C to +200°C

Primary Wire Colour Code Chart

3901 002

Lightweight Polyimide Insulated Wires and Cables

Construction

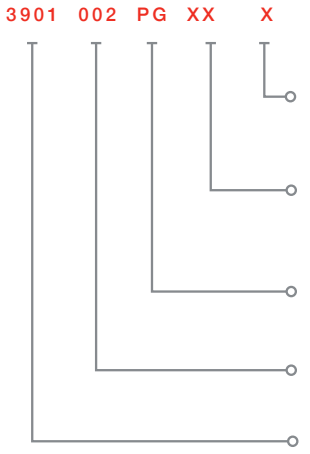
1. Stranded silver plated copper or copper alloy conductor
2. Polyimide tape
3. Polyimide coating.

Main Characteristics

Excellent physical, chemical and electrical properties:

- Excellent penetration resistance under pressure
- Excellent radiation resistance
- Resist large overloads with no fire risk
- Non - flammable
- Resistant to most chemicals
- Suited for thermal, mechanical or laser stripping.

PART NUMBERING EXAMPLE



Product group	AWG	Cores	Wire & Cable Type	Temp Range
56 to 61	28 to 18	1	Single Wire	-100°C to +200°C
31 to 35 & 62	28 to 18	2	Twisted Pairs	-100°C to +200°C
36 to 40 & 63	28 to 18	3	Twisted Triples	-100°C to +200°C
41 to 45 & 64	28 to 18	1	Shielded Jacketed Single Wires	-100°C to +200°C
46 to 50 & 65	28 to 18	2	Shielded Jacketed Twisted Pairs	-100°C to +200°C
51 to 55 & 66	28 to 18	3	Shielded Jacketed Twisted Triples	-100°C to +200°C
67 to 71	28 to 20	4	Shielded Jacketed Twisted Quad	-100°C to +200°C
72 & 73	28 to 26	5	Shielded Jacketed 5-Core Cable	-100°C to +200°C

Primary Wire Colour Code Chart

3902 002

Triaxial Cable

FOR FURTHER DETAILS CONTACT US TODAY

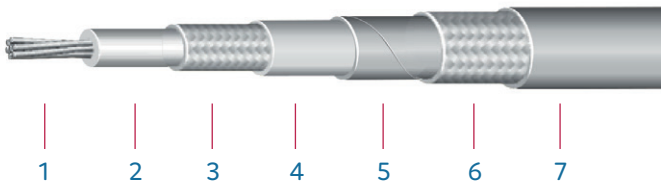
Construction

1. Stranded silver plated copper or copper alloy conductor
2. Expanded microporous PTFE (CELLOFLON®) - colour, natural)
3. Silver plated copper braided shield
4. Extruded PFA insulation (colour: natural)
5. Wrapped foil shield (only var. 13)
6. Silver plated copper braided shield
7. Extruded PFA insulation.

Main Characteristics

Excellent physical, chemical and electrical properties:

- Excellent penetration resistance under pressure
- Resist large overloads with no fire risk
- Non - flammable
- Good flexibility
- Resistant to most chemicals
- Suited for thermal, mechanical or laser stripping
- Controlled impedance for optimal data transmission.



Part Number	ZC Ω	Inner Conductor			o/Electric		MAX. omm	Coaxial Cable	
		AWG	MAX. o mm	MAX. OC Resistance AT 20°C Ω/km	NOM. o mm	Inner Jacket MAX. o mm		Jacket Colour	MAX. Weight g/m
ESCC 3902 002 10	50	26	0.49	150	1.25	1.9	2.9	Orange	16
ESCC 3902 002 11	50	20	1.03	30.8	3.0	3.8	5.2	Green	52
ESCC 3902 002 12	75	20	1.03	30.8	4.33	5.2	7.3	Natural	74
ESCC 3902 002 13	75	20	1.03	30.8	4.33	5.2	7.3	White	85

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3902 002

Coaxial Cable

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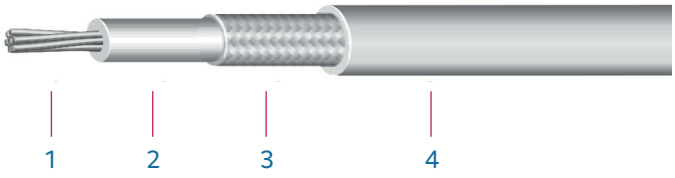
Construction

1. Stranded silver plated copper or copper alloy conductor
2. Expanded microporous PTFE (CELLOFLON®) - colour, natural)
3. Silver plated copper braided shield
4. Extruded PFA insulation.

Main Characteristics

Excellent physical, chemical and electrical properties:

- Excellent penetration resistance under pressure
- Resist large overloads with no fire risk
- Non - flammable
- Good flexibility
- Resistant to most chemicals
- Suited for thermal, mechanical or laser stripping
- Controlled impedance for optimal data transmission.



Part Number	ZC Ω	Inner Conductor Jacket			O/Electric	Jacket		
		AWG	MAX. o mm	Max. OC Resistance AT 20°C Ω/km	NOM. o mm	MAX. omm	Jacket Colour	MAX. Weight g/m
ESCC 3902 002 03	50	28	0.39	239	1.05	1.75	White	6.5
ESCC 3902 002 04	50	26	0.49	150	1.25	2.05	Orange	8.3
ESCC 3902 002 05	50	20	1.03	30.8	3.0	3.9	Green	28
ESCC 3902 002 06	75	26	0.49	150	2.07	2.9	Black	14

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3901 012

Extruded Cross Linked ETFE Insulated Wires and Cables

Construction

1. Stranded silver plated copper or copper alloy conductor
2. Extruded crosslinked ETFE insulation.

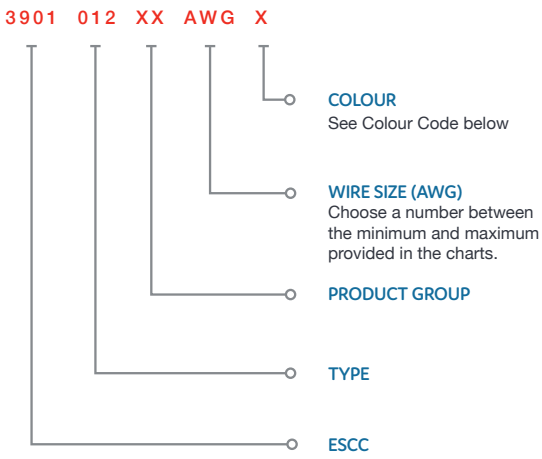
Colour to be specified when ordering: black, brown, red, orange, yellow, green, blue, violet, grey, white.
Note: the colours are light.

Main Characteristics

Excellent physical, chemical and electrical properties:

- Good penetration resistance under pressure
- Good radiation resistance
- Resist large overloads with no fire risk
- Suited for thermal, mechanical or laser stripping.

PART NUMBERING EXAMPLE



Product group	AWG	Cores	Wire & Cable Type	Temp Range
01 to 10	30 to 12	1	Single Wire	-100°C to +200°C
11 to 20	30 to 12	2	Twisted Pair	-100°C to +200°C
21 to 30	30 to 12	3	Twisted Triple	-100°C to +200°C
31 to 40	30 to 12	4	Twisted Quad	-100°C to +200°C
41 to 50	30 to 12	1	Shielded Jacket Single Wire	-100°C to +200°C
51 to 60	30 to 12	2	Shielded Jacket Twisted Pair	-100°C to +200°C
61 to 70	30 to 12	3	Shielded Jacket Twisted Triple	-100°C to +200°C
71 to 80	30 to 12	4	Shielded Jacket Twisted Quad	-100°C to +200°C

Primary Wire Colour Code Chart

3901 013

PTFE Insulated Wires and Cables

Construction

1. Stranded silver plated copper or copper alloy conductor
2. Extruded PTFE insulation
3. Polyimide protective coating.

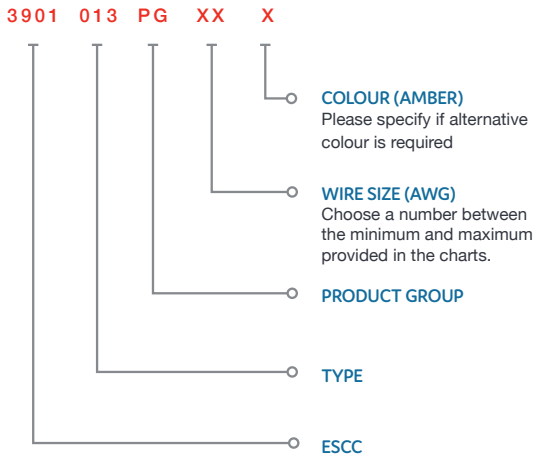
Colour: Amber (other colours on request)

Main Characteristics

Excellent physical, chemical and electrical properties:

- Excellent penetration resistance under pressure
- Resist large overloads with no fire risk
- Non - Flammable
- Good flexibility and low spring back effect
- Resistant to most chemicals
- Suited for thermal, mechanical or laser stripping.

PART NUMBERING EXAMPLE



Product group	AWG	Cores	Wire & Cable Type	Temp Range
78, 01 to 05, 56 & 57	28 to 16	1	Single Wire	-100°C to +200°C
06 to 10, 58 & 59	28 to 16	2	Twisted Pair	-100°C to +200°C
11 to 15, 60 & 61	28 to 16	3	Twisted Triple	-100°C to +200°C
16 to 12, 62 & 63	28 to 16	4	Twisted Quad	-100°C to +200°C
21 to 25, 64 & 65	28 to 16	2	Shielded Jacket Single Wire	-100°C to +200°C
26 to 30, 66 & 67	28 to 16	3	Shielded Jacket Twisted pair	-100°C to +200°C
31 to 35, 68 & 69	28 to 16	4	Shielded Jacket Twisted Triple	-100°C to +200°C
36 to 40, 70 & 71	28 to 16	1	Shielded Jacket Twisted Quad	-100°C to +200°C
41 to 45, 72 & 73	28 to 16	2	Shielded Jacket Twisted Pair	-100°C to +200°C
46 to 50, 74 & 75	28 to 16	3	Shielded Jacket Twisted Triple	-100°C to +200°C
51 to 55, 76 & 77	28 to 16	4	Shielded Jacket Twisted Quad	-100°C to +200°C

3901 024 Abrasion Resistance Tape (ART®) PTFE insulated Wires and Cables

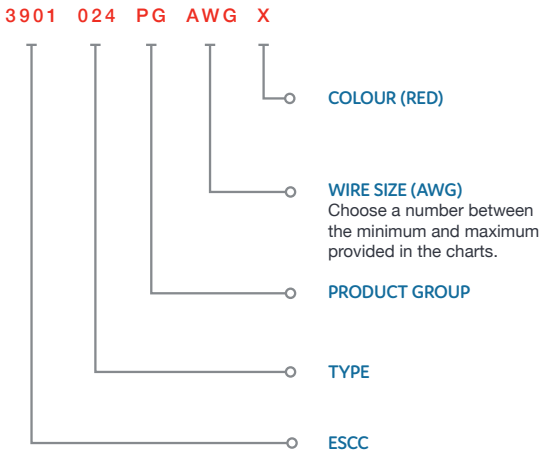
Construction

1. Stranded silver plated copper or copper alloy conductor
2. Abrasion resistant PTFE tape
3. Abrasion resistant PTFE tape

Single wire colour: Red

Except other specification: black, brown, orange, yellow, green, blue, violet, grey and white

PART NUMBERING EXAMPLE



Main Characteristics

Excellent physical, chemical and electrical properties:

- Excellent penetration resistance under pressure
- Excellent abrasion resistance
- Resist large overloads with no fire risk
- Non - flammable
- Good flexibility and very low spring back effect
- Resistant to most chemicals
- Suited for thermal, mechanical or laser stripping.

Product group	AWG	Cores	Wire & Cable Type	Temp Range
01 to 08	30 to 12	1	Single Wire	-200°C to +200°C
09 to 16	30 to 12	2	Twisted Pair	-200°C to +200°C
17 to 24	30 to 12	3	Twisted Triple	-200°C to +200°C
25 to 32	30 to 12	4	Twisted Quad	-200°C to +200°C
33 to 40	30 to 12	1	Shielded Jacket Single Wire	-200°C to +200°C
41 to 48	30 to 12	2	Shielded Jacket Twisted Pair	-200°C to +200°C
49 to 56	30 to 12	3	Shielded Jacket Twisted Triple	-200°C to +200°C
57 to 64	30 to 12	4	Shielded Jacket Twisted Quad	-200°C to +200°C

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3901 021

Celloflon / Polyimide insulated shielded cables with drain wire

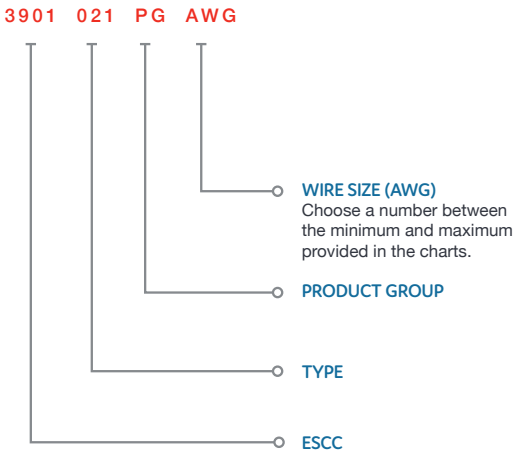
Construction

1. Stranded silver plated copper or copper alloy conductor
2. Expanded PTFE tape (CELLOFLON®)
3. Polyimide tape
4. Polyimide tape
5. Drain wire
6. Silver plated copper helicoidal shield
7. Polyimide tape
8. Polyimide tape.

Single wire colour: Natural (or other specification)

Jacket colour: Amber (natural colour of polyimide tape)

PART NUMBERING EXAMPLE



Main Characteristics

Excellent physical, chemical and electrical properties:

- Excellent penetration resistance under pressure
- Excellent radiation resistance
- Resist large overloads with no fire risk
- Non - flammable
- Good flexibility
- Resistant to most chemicals
- Suited for thermal, mechanical or laser stripping.

Product group	AWG	Cores	Wire & Cable Type	Temp Range
01 to 09	30 to 12	1	Shielded Jacketed Single Wires	-200°C to +200°C
10 to 17	30 to 12	2	Shielded Jacketed Twisted Pairs	-200°C to +200°C
18 to 23	30 to 20	3	Shielded Jacketed Twisted Triples	-200°C to +200°C
24 to 29	30 to 20	4	Shielded Jacketed Twisted Quads	-200°C to +200°C
30 to 33	26 to 20	5	Shielded Jacketed Twisted 5-Core Cables	-200°C to +200°C
34 to 37	26 to 20	6	Shielded Jacketed Twisted 6-Core Cables	-200°C to +200°C
38 to 41	26 to 20	7	Shielded Jacketed Twisted 7-Core Cables	-200°C to +200°C

3901 018

Polyimide / Fluorothermoplastic insulated wires and cables

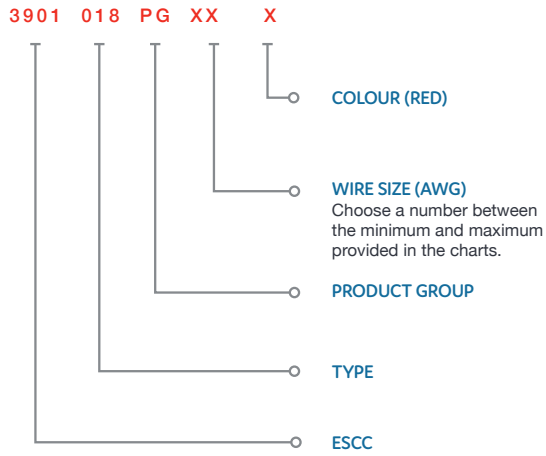
Construction

1. Stranded silver plated copper or copper alloy conductor
2. Extended PTFE tape (CELLOFLON®)
3. Polyimide tape
4. PTFE tape.

Single wire colour: Red

Except other specification: black, brown, orange, yellow, green, blue, violet, grey and white.

PART NUMBERING EXAMPLE



Main Characteristics

Excellent physical, chemical and electrical properties:

- Excellent penetration resistance under pressure
- Resist large overloads with no fire risk
- Non - flammable
- Good flexibility
- Resistant to most chemicals
- Suited for thermal, mechanical or laser stripping
- Withstand atomic oxygen environment (ATOX).

Product group	AWG	Cores	Wire & Cable Type	Temp Range
01 to 09	32 to 12	1	Single Wire	-200°C to +200°C
10 to 18	32 to 12	2	Twisted Pair	-200°C to +200°C
19 to 24	26 to 12	3	Twisted Triple	-200°C to +200°C
25 to 30	26 to 12	4	Twisted Quad	-200°C to +200°C
31 to 34	26 to 20	5	Twisted 5-Core	-200°C to +200°C
35 to 38	26 to 20	7	Twisted 7-Core	-200°C to +200°C
39 to 47	32 to 12	1	Shielded Jacket Single Wire	-200°C to +200°C
48 to 56	32 to 12	2	Shielded Jacket Twisted Pair	-200°C to +200°C
57 to 65	32 to 12	3	Shielded Jacket Twisted Triple	-200°C to +200°C
66 to 74	32 to 12	4	Shielded Jacket Twisted Quad	-200°C to +200°C
75 to 81	32 to 20	5	Shielded Jacket Twisted 5-Core	-200°C to +200°C

3901 019

Celloflon / Polyimide Insulated Wires and Cables

Construction

1. Stranded silver plated copper or copper alloy conductor
2. Expanded PTFE tape (CELLOFLON®)
3. Polyimide tape
4. Polyimide tape.

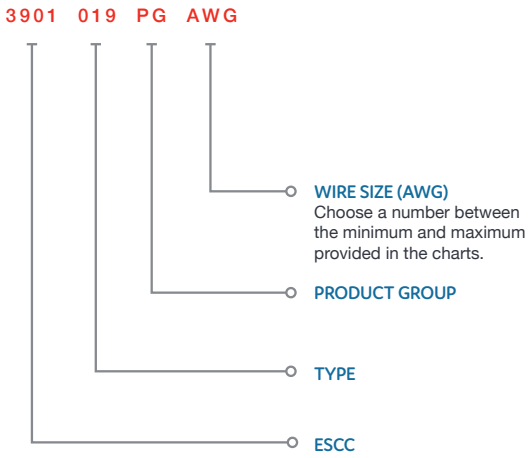
Colour: Amber (except other specification)

Main Characteristics

Excellent physical, chemical and electrical properties:

- Excellent penetration resistance under pressure
- Excellent radiation resistance
- Resist large overloads with no fire risk
- Non - flammable
- Good flexibility
- Resistant to most chemicals
- Suited for thermal, mechanical or laser stripping.

PART NUMBERING EXAMPLE



Product group	AWG	Cores	Wire & Cable Type	Temp Range
01 to 08	32 to 12	1	Single Wire	-200°C to +200°C
09 to 16	32 to 12	2	Twisted Pair	-200°C to +200°C
17 to 24	30 to 12	3	Twisted Triple	-200°C to +200°C
25 to 32	30 to 12	4	Twisted Quad	-200°C to +200°C
33 to 37	28 to 20	5	Twisted 5-Core	-200°C to +200°C
38 to 42	28 to 20	6	Twisted 6-Core	-200°C to +200°C
43 to 47	28 to 20	7	Twisted 7-Core	-200°C to +200°C
48 to 55	30 to 12	1	Shielded Jacketed Single Cable	-200°C to +200°C
56 to 63	30 to 12	2	Shielded Jacketed Twisted Pair Cables	-200°C to +200°C
64 to 71	30 to 12	3	Shielded Jacketed Twisted Triple Cables	-200°C to +200°C
72 to 79	30 to 12	4	Shielded Jacketed Twisted Quad Cables	-200°C to +200°C
80 to 84	28 to 20	5	Shielded Jacketed Twisted 5-Core Cables	-200°C to +200°C
85 to 89	28 to 20	6	Shielded Jacketed Twisted 6-Core Cables	-200°C to +200°C
90 to 94	28 to 20	7	Shielded Jacketed Twisted 7-Core Cables	-200°C to +200°C

3901 020 Extruded Cross linked Fluoropolymer insulated Wire and Cables

Construction

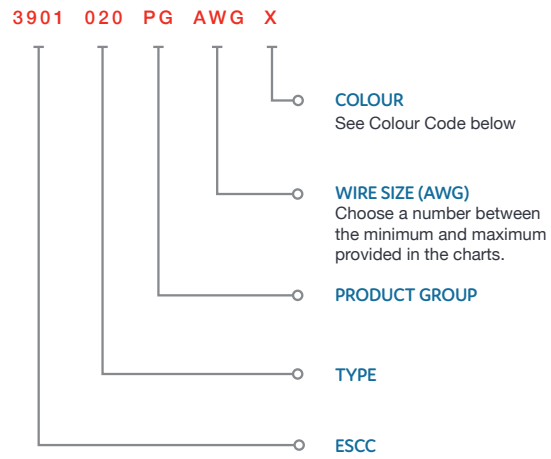
1. Silver Plated High Strength Copper Alloy Size 30 to 24
   Silver Plated Copper Size 22 to 12
2. Shield 2 Microns (Min.) Silver Coated Copper
   - 85% Minimum Coverage.

Main Characteristics

Excellent physical, chemical and electrical properties:

- Reduced wall thickness radiation cross-linked ETFE
- Primary wires an standard round braided cables.

PART NUMBERING EXAMPLE



Product group	AWG	Cores	Wire & Cable Type	Temp Range
01 to 10	30 to 12	1	Single Wire	-200°C to +200°C
11 to 20	30 to 12	2	Twisted Pair	-200°C to +200°C
21 to 30	30 to 12	3	Twisted Triple	-200°C to +200°C
31 to 40	30 to 12	4	Twisted Quad	-200°C to +200°C
41 to 50	30 to 12	5	Shielded Jacketed Single Wire	-200°C to +200°C
51 to 60	30 to 12	6	Shielded Jacketed Twisted Pair	-200°C to +200°C
61 to 70	30 to 12	7	Shielded Jacketed Twisted Triple	-200°C to +200°C
71 to 80	30 to 12	4	Shielded Jacketed Twisted Quads	-200°C to +200°C

Primary Wire Colour Code Chart

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