

Halogen free, Low Smoke Zero Halogen cables

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axon'
cable & interconnect 



Halogen free, Low Smoke Zero Halogen cables

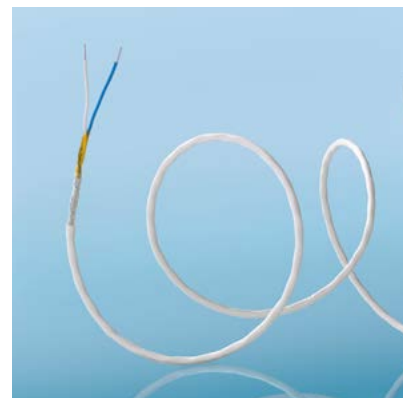
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└ SINGLE CORE HALOGEN FREE CABLE



└ TWISTED PAIR HALOGEN FREE CABLE

Halogen free, Low Smoke Zero Halogen products

wires and cables

POLIAX™ THERMOPLASTIC INSULATED WIRES

XT xxxx TPC	7
XT xxxx TSTX1 TPC	8
XT xxxx THSTX2 TPC	9
XT xxxx THSTX3 TPC	10
X xxxx TPC	11
X xxxx TSTX1 TPC	12
X xxxx TSTX2 TPC	13
X xxxx TSTX3 TPC	14

NEUTRAX™ THERMOPLASTIC INSULATED WIRES

QT xxxx SPC	15
Q xxxx SPC	16

POLYIMIDE INSULATED WIRES

FHT xxx SPC or SCA	17
FH xxx SPC or SCA	18
FHT xxx NPC or NCA	19
FH xxx NPC or NCA	20

ASC13-16X INSULATED WIRES

XZT 19x0.59 / AWG 20	21
XZT 19x2.94 / AWG 12	22
XZT 30 PBLG0.38 / AWG 22	23



INDUSTRIAL FACILITIES

THIS CATALOGUE IS INTENDED AS A GUIDE TO HELP SELECTION OF AXON' PRODUCTS.
THE INFORMATION IN THIS CATALOGUE IS ACCURATE TO THE BEST
OF OUR KNOWLEDGE AT TIME OF GOING TO PRINT,
HOWEVER, AXON' CANNOT BE HELD LIABLE FOR ANY ERRORS MADE
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CHANGES AND MODIFICATIONS CAN BE MADE TO THIS BROCHURE AT ANY TIME
WITHOUT PRIOR NOTICE.

General information

AXON' CABLE,
the manufacturer of
wires, cables, and cable
assemblies, offers a
range of halogen free,
Low Smoke
Zero Halogen cables
for public places and
industrial facilities.
This range of cables
has been designed
to avoid propagation
of fire and emission
of toxic fumes
in case of fire.

Non propagation of flame and fire

In public places, buildings, trains, subways, ships as well as industrial facilities, electrical cables have to work whilst maintaining a high level of security of people and material. In case of fire, the electrical cables shall not cause the fire or spread it. They shall not emit impenetrable, toxic or corrosive fumes that could damage equipment or harm people. AXON' low smoke and fire cables have been designed to meet the following requirements :

- > Non-propagation of flame and fire.
- > Low or no emission of fumes to allow the rescue team to work without visibility problems.
- > No emission of toxic fumes to assure the security of the people detained in the premises affected by the fire.
- > No emission of corrosive fumes to save equipment and buildings not affected by the fire.

The term «Zero Halogen»

During a fire, the most dangerous toxic gases emitted are acid gases such as hydrogen chloride (HCl), hydrogen fluoride (HF) and hydrogen bromide (HBr).

These gases are produced by the combustion of materials containing halogen materials such as Chlorine, Fluorine, Bromine, Iodine and Astatine.

As a consequence, insulation materials of cables should not contain halogen materials to meet the security requirements.

However, Zero Halogen materials including polyethylene or polypropylene have an adverse reaction to fire : they spread flame and fire. To solve this problem, it is possible to use halogen additives to increase the flame retardant effect of the insulation.

Other materials do not contain halogen but emit toxic substances during combustion.

AXON' has listed the insulating materials of primary wires and jacketing according to their reaction to fire. Standardized tests have enabled to define the behaviour of the materials with regard to flame and fire propagation, fume opacity, toxicity and corrosivity of the gas emissions.

Tests carried out on AXON' materials

FRENCH STANDARD	CORRESPONDANT INTERNATIONAL STANDARD	TESTS
NF C 32-70 TEST 1 CATEGORY C2	IEC 60 332-1	NON PROPAGATION OF FLAME
NF C 32-70 TEST 2 CATEGORY C1	IEC 60 332-3	NON PROPAGATION OF FIRE
NF X 10-702	IEC 61 034-1 IEC 61 034-2	OPACITY OF FUMES
NF X 70-100	IEC 60 754-1	TOXICITY OF GAS
NF C 20-453	IEC 60 754-2	CORROSIVITY OF FUMES

Quality assurance

ISO 9001
TS 16949
EN 9100
Business Excellence Models
(EFQM)
ISO 14001
OHSAS 18001
ISO 13485

Tests results

MATERIALS	PRIMARY INSULATION				JACKET			EVALUATION CRITERIA
	POLIAX™ SILTEM BASED	NEUTRAX™ PEEK BASED	POLYIMIDE	ASC3-10 BASE : EVA....	ASC3-16 BASE : EVA....	ASC3-16X BASE : CROSSLINKED EVA, ...	AXOTHERM® SILICONE BASED	
OPERATING TEMPERATURE	-40 TO +130°C	-50 TO +250°C	-50 TO +250°C	-40 TO +70°C	-40 TO +70°C	-40 TO +100°C	-60 TO +180°C	-
APPLICATION	THIN INSULATION	THIN INSULATION	THIN INSULATION	THICK INSULATION	JACKETING	JACKETING	JACKETING	-
FLAME RETARDANT	YES	YES	YES	YES	YES	YES	YES	-
SMOKE EMISSION	Dm = 283 VOF4 = 30	Dm = 20 VOF4 = 1	TBD	Dm = 200 VOF4 = 8	Dm = 248 VOF4 = 64	Dm = 248 VOF4 = 64	Dm = 74 VOF4 = 85	Dm <300 VOF < 100
TOXICITY OF GAS EMISSION	ITC = 10	-	TBD	ITC = 4	ITC = 3	ITC = 3	ITC = 1.6	ITC = 10
CORROSIVITY OF FUMES	pH = 7.1		TBD	pH = 7.85	pH = 5.2	pH = 5.2	pH = 4.7	pH = 4.5
TENSILE STRENGTH AT BREAK (MPa)	30	97	172	8	8	8	6.5	-
ELONGATION AT BREAK (%)	100	105	120	100	100	100	220	-
RESISTANCE TO OIL	VERY GOOD	EXCELLENT	VERY GOOD	VERY GOOD	VERY GOOD	VERY GOOD	AVERAGE	-
RADIATION RESISTANCE	EXCELLENT	EXCELLENT	EXCELLENT	VERY GOOD	VERY GOOD	VERY GOOD	GOOD	

ASC = AXON' SPECIAL COMPOUND

Dm = maximum optical density according to NF X 10-702 (corresponds to IEC 1034-1/2)

VOF4 = obscuration value due to fume during the first 4 minutes of test according to NF X 10-702 (corresponds to IEC 1034-1/2)

ITC = toxicity index calculated according to NF F 16-101 after analysis and proportionning according to NF X 70-100

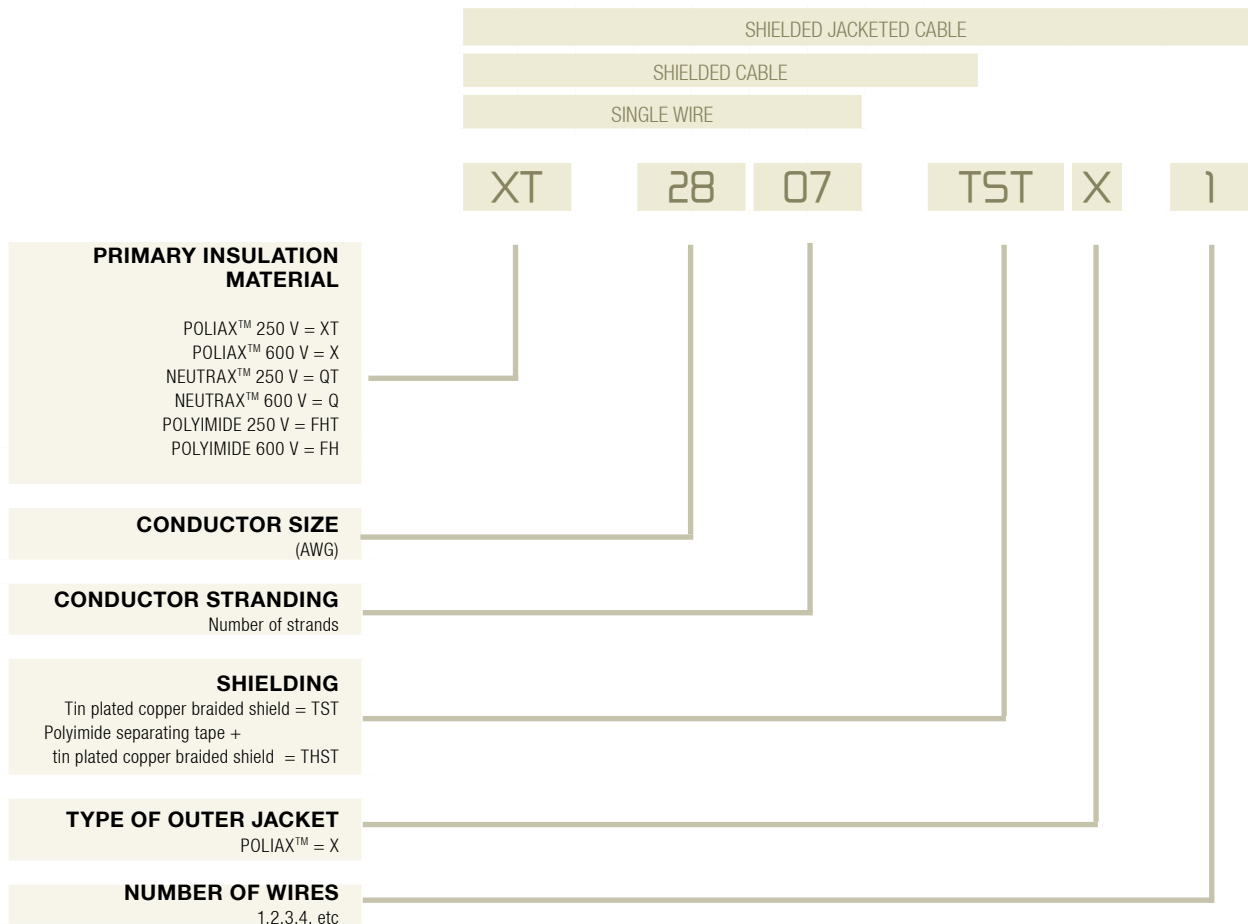
Most commonly required qualifications

- IEC 60331 : Tests for electrical cables under fire conditions.
- IEC 60332 : Tests on electrical cables under fire conditions.
- IEC 60754-1 : Tests on gases evolved during combustion of materials from cables.
- IEC 60754-2 : Test on gases evolved during combustion of electrical cables.
- IEC 60544 : Electrical insulating materials – determination of the effects of ionizing radiation.
- IEEE Std 383 : Standard for qualifying class 1E electrical cables and field splices for nuclear power generating stations.
- IEEE Std 383 simulated post-LOCA test (LOCA : Loss Of Coolant Accident)



HALOGEN FREE CABLES

AXON' reference identification code



FOR FURTHER INFORMATION,
our sales team is at your disposal for any advice you may require.

Single wires

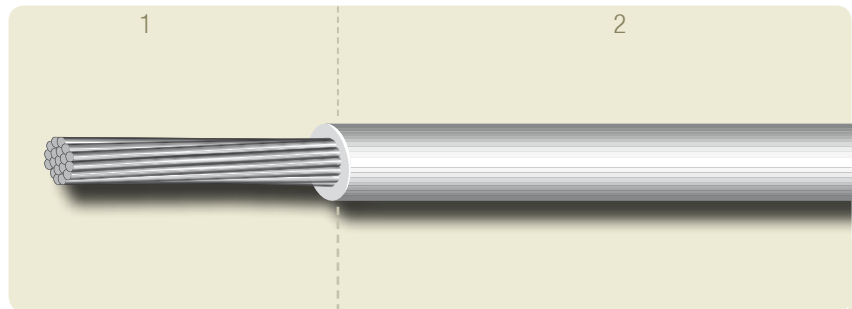
TYPE XT xxxx TPC

Insulation : POLIAX™ halogen free / LSZH

Operating temperature : -40°C up to +130°C

Voltage rating : 250 V AC / 350 V DC

Colours : according to the customers requirements



Construction

PRIMARY WIRE

1 - Conductor : tin plated annealed copper (TPC)

2 - Insulation : POLIAX™

Main characteristics

Pairs, triples and quads as well as shielded cables jacketed with ASC13, ASC16X or other insulation materials will be studied according to the customers requirements.

Other constructions on request.

AXON' REFERENCE	AWG	CONDUCTOR				INSULATED WIRE	
		CONSTRUCTION (Nb x Ø mm)	NOMINAL Ø (mm)	NOMINAL AREA (mm ²)	NOMINAL RESISTANCE (Ω/ 100m)	NOMINAL Ø (mm)	APPROX WEIGHT (g/m)
XT 2807 TPC	28	7 x 0.127	0.38	0.0886	20.8	0.70	1.10
XT 2619 TPC	26	19 x 0.102	0.48	0.154	12.87	0.80	1.80
XT 2419 TPC	24	19 x 0.127	0.60	0.24	7.66	0.95	2.70
XT 2237 TPC	22	37 x 0.114	0.78	0.38	5.08	1.10	4.20
XT 2037 TPC	20	37 x 0.142	0.97	0.59	3.37	1.30	6.20

TPC : TIN PLATED ANNEALED COPPER - LSZH : LOW SMOKE ZERO HALOGEN

Shielded jacketed single core cables

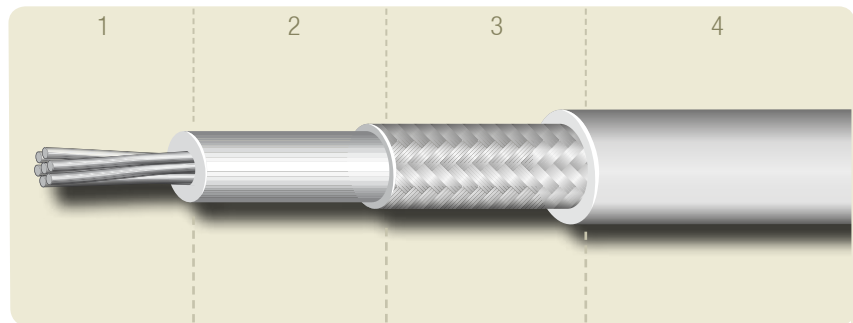
TYPE XT xxxx TSTX1 TPC

Insulation : POLIAX™ halogen free / LSZH

Operating temperature : -40°C up to +130°C

Voltage rating : 250 VAC / 350 V DC

Outer jacket colour : white. Other colours upon request.



Construction

PRIMARY WIRE

- 1 - Conductor : tin plated annealed copper (TPC)
- 2 - Insulation : POLIAX™

SHIELDING

- 3 - Braided shield : tin plated annealed copper (TPC)

OUTER JACKET

- 4 - POLIAX™

Main characteristics

Pairs, triples and quads as well as shielded cables jacketed with ASC13, ASC16X or other insulation materials will be studied according to the customers requirements.

Other constructions on request.

AXON' REFERENCE	PRIMARY WIRE		SHIELDING			CABLE	
	REFERENCE	NOMINAL Ø (mm)	SHIELDING WIRE Ø (mm)	COVERAGE (%)	SHIELDING Ø (mm)	NOMINAL Ø (mm)	APPROX WEIGHT (g/m)
XT 2807 TSTX 1	XT 2807 TPC	0.70	0.102	85	1.15	1.40	4.40
XT 2619 TSTX 1	XT 2619 TPC	0.80	0.102	96	1.25	1.50	6.50
XT 2419 TSTX 1	XT 2419 TPC	0.95	0.102	93	1.40	1.70	7.60
XT 2237 TSTX 1	XT 2237 TPC	1.10	0.102	88	1.55	1.90	9.50
XT 2037 TSTX 1	XT 2037 TPC	1.30	0.102	93	1.75	2.15	13.10

TPC : TIN PLATED ANNEALED COPPER - LSZH : LOW SMOKE ZERO HALOGEN

Shielded jacketed twisted pairs

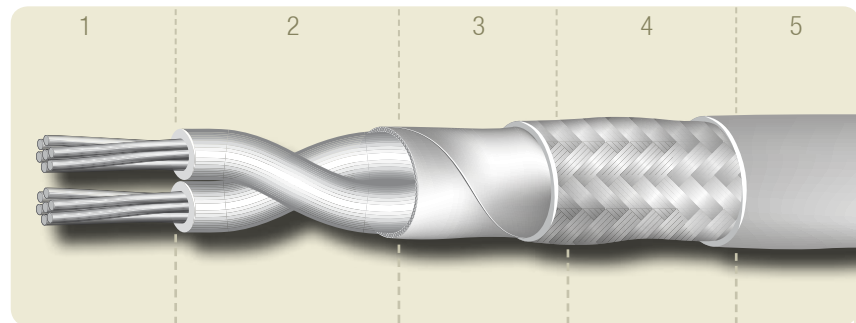
TYPE XT xxxx THSTX2 TPC

Insulation : POLIAX™ halogen free / LSZH

Operating temperature : -40°C up to +130°C

Voltage rating : 250 VAC / 350 VDC

Outer jacket colour : white. Other colours upon request.



Construction

PRIMARY WIRE

1 - Conductor : tin plated annealed copper (TPC)

2 - Insulation : POLIAX™

TAPE

3 - Polyimide separating tape

SHIELDING

4 - Braided shield : tin plated annealed copper (TPC)

OUTER JACKET

5 - POLIAX™

Main characteristics

Pairs, triples and quads as well as shielded cables jacketed with ASC13, ASC16X or other insulation materials will be studied according to the customers requirements.

Other constructions on request.

AXON' REFERENCE	PRIMARY WIRE		SHIELDING		CABLE		
	REFERENCE	NOMINAL Ø (mm)	SHIELDING WIRE Ø (mm)	COVERAGE (%)	SHIELDING Ø (mm)	NOMINAL Ø (mm)	APPROX WEIGHT (g/m)
XT 2807 THSTX 2	XT 2807 TPC	0.70	0.102	85	1.90	2.20	8.00
XT 2619 THSTX 2	XT 2619 TPC	0.80	0.127	96	2.20	2.50	11.60
XT 2419 THSTX 2	XT 2419 TPC	0.95	0.127	93	2.50	2.80	15.80
XT 2237 THSTX 2	XT 2237 TPC	1.10	0.127	88	2.80	3.10	19.30
XT 2037 THSTX 2	XT 2037 TPC	1.30	0.127	93	3.20	3.55	28.50

TPC : TIN PLATED ANNEALED COPPER - LSZH : LOW SMOKE ZERO HALOGEN

Shielded jacketed twisted triples

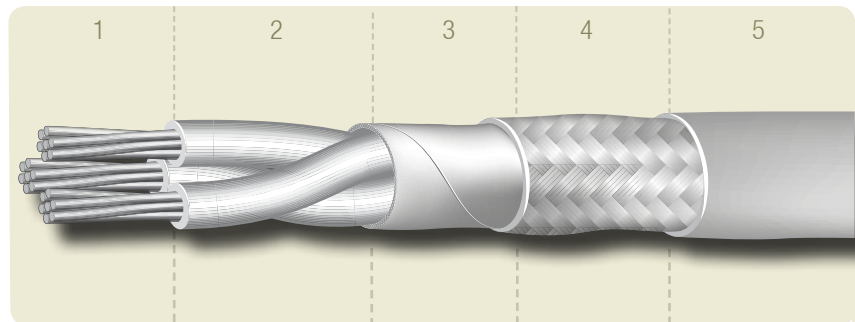
TYPE XT xxxx THSTX3 TPC

Insulation : POLIAX™ halogen free / LSZH

Operating temperature : -40°C up to +130°C

Voltage rating : 250 VAC / 350 V DC

Outer jacket colour : white. Other colours upon request.



Construction

PRIMARY WIRE

1 - Conductor : tin plated annealed copper (TPC)

2 - Insulation : POLIAX™

TAPE

3 - Polyimide separating tape

SHIELDING

4 - Braided shield : tin plated annealed copper (TPC)

OUTER JACKET

5 - POLIAX™

Main characteristics

Pairs, triples and quads as well as shielded cables jacketed with ASC13, ASC16X or other insulation materials will be studied according to the customers requirements.

Other constructions on request.

AXON' REFERENCE	PRIMARY WIRE		SHIELDING			CABLE	
	REFERENCE	NOMINAL Ø (mm)	SHIELDING WIRE Ø (mm)	COVERAGE (%)	SHIELDING Ø (mm)	NOMINAL Ø (mm)	APPROX WEIGHT (g/m)
XT 2807 THSTX 3	XT 2807 TPC	0.70	0.102	90	2.00	2.30	10.40
XT 2619 THSTX 3	XT 2619 TPC	0.80	0.127	93	2.30	2.60	15.50
XT 2419 THSTX 3	XT 2419 TPC	0.95	0.127	87	2.65	3.00	19.10
XT 2237 THSTX 3	XT 2237 TPC	1.10	0.127	90	2.95	3.30	25.80
XT 2037 THSTX 3	XT 2037 TPC	1.30	0.127	92	3.40	3.80	35.30

TPC : TIN PLATED ANNEALED COPPER - LSZH : LOW SMOKE ZERO HALOGEN

Single wires

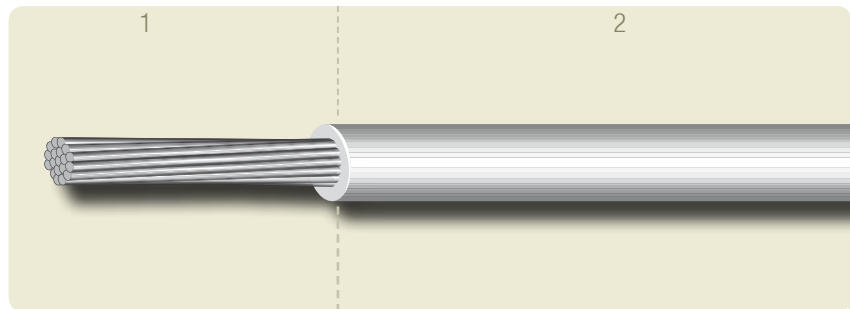
TYPE X xxxx TPC

Insulation : POLIAX™ halogen free / LSZH

Operating temperature : -40°C up to +130°C

Voltage rating : 600 V AC / 850 V DC

Colours : according to the customers requirements



Construction

PRIMARY WIRE

1 - Conductor : tin plated annealed copper (TPC)

2 - Insulation : POLIAX™

Main characteristics

Pairs, triples and quads as well as shielded cables jacketed with ASC13, ASC16X or other insulation materials will be studied according to the customers requirements.

Other constructions on request.

AXON' REFERENCE	AWG	CONDUCTOR				INSULATED WIRE	
		CONSTRUCTION (Nb x Ø mm)	NOMINAL Ø (mm)	NOMINAL AREA (mm ²)	NOMINAL RESISTANCE (Ω/ 100m)	NOMINAL Ø (mm)	APPROX WEIGHT (g/m)
X 2807 TPC	28	7 x 0.127	0.38	0.0886	20.8	0.85	1.40
X 2619 TPC	26	19 x 0.102	0.48	0.154	12.87	0.95	2.00
X 2419 TPC	24	19 x 0.127	0.60	0.24	7.66	1.05	2.80
X 2237 TPC	22	37 x 0.114	0.78	0.38	5.08	1.20	4.40
X 2037 TPC	20	37 x 0.142	0.97	0.59	3.37	1.50	6.70
X 1861 TPC	18	61 x 0.142	1.24	0.97	2.05	1.80	10.60
X 1661 TPC	16	61 x 0.160	1.45	1.23	1.56	2.00	13.10
X 1461 TPC	14	61 x 0.203	1.75	1.91	1.04	2.35	20.80
X 1291 TPC	12	91 x 0.203	2.15	2.94	0.68	2.90	31.20
X 1091 TPC	10	91 x 0.254	2.70	4.46	0.43	3.55	47.60
X 8133 TPC	8	133 x 0.287	4.20	8.60	0.23	5.10	86.90

TPC : TIN PLATED ANNEALED COPPER - LSZH : LOW SMOKE ZERO HALOGEN

Shielded jacketed single core cables

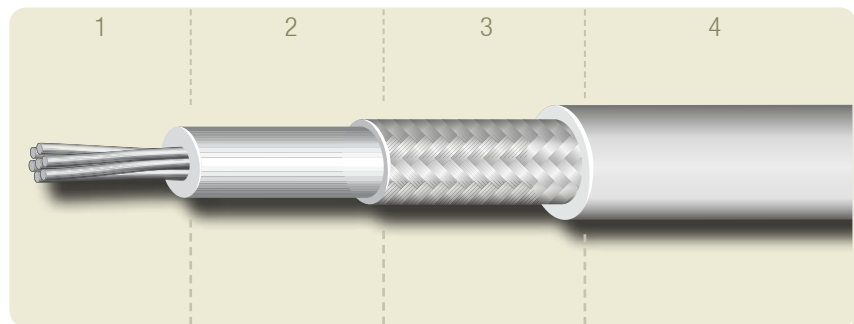
TYPE X xxxx TSTX1 TPC

Insulation : POLIAX™ halogen free / LSZH

Operating temperature : -40°C up to +130°C

Voltage rating : 600 VAC / 850 V DC

Outer jacket colour : white. Other colours upon request.



Construction

PRIMARY WIRE

- 1 - Conductor : tin plated annealed copper (TPC)
- 2 - Insulation : POLIAX™

SHIELDING

- 3 - Braided shield : tin plated annealed copper (TPC)

OUTER JACKET

- 4 - POLIAX™

Main characteristics

Pairs, triples and quads as well as shielded cables jacketed with ASC13, ASC16X or other insulation materials will be studied according to the customers requirements.

Other constructions on request.

AXON' REFERENCE	PRIMARY WIRE		SHIELDING			CABLE	
	REFERENCE	NOMINAL Ø (mm)	SHIELDING WIRE Ø (mm)	COVERAGE (%)	SHIELDING Ø (mm)	NOMINAL Ø (mm)	APPROX WEIGHT (g/m)
X 2807 TSTX 1	X 2807 TPC	0.85	0.102	98	1.40	1.60	6.30
X 2619 TSTX 1	X 2619 TPC	0.95	0.102	95	1.50	1.75	7.10
X 2419 TSTX 1	X 2419 TPC	1.05	0.102	92	1.60	1.85	8.00
X 2237 TSTX 1	X 2237 TPC	1.20	0.127	96	1.75	2.15	12.40
X 2037 TSTX 1	X 2037 TPC	1.50	0.127	97	2.05	2.40	16.60
X 1861 TSTX 1	X 1861 TPC	1.80	0.127	92	2.35	2.75	21.00
X 1661 TSTX 1	X 1661 TPC	2.00	0.127	96	2.55	2.95	26.80
X 1461 TSTX 1	X 1461 TPC	2.35	0.127	91	2.90	3.50	35.10
X 1291 TSTX 1	X 1291 TPC	2.90	0.127	90	3.45	3.90	47.10
X 1091 TSTX 1	X 1091 TPC	3.55	0.127	89	4.10	4.90	63.30
X 8133 TSTX 1	X 8133 TPC	5.10	0.127	91	5.65	6.55	119.40

TPC : TIN PLATED ANNEALED COPPER - LSZH : LOW SMOKE ZERO HALOGEN

Shielded jacketed twisted pairs

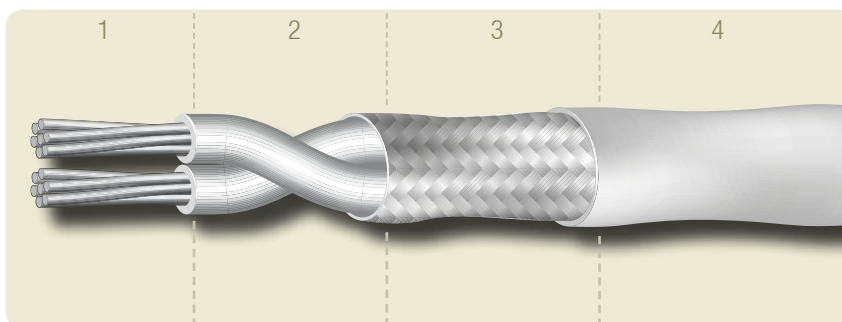
TYPE X xxxx TSTX2 TPC

Insulation : POLIAX™ halogen free / LSZH

Operating temperature : -40°C up to +130°C

Voltage rating : 600 V AC / 850 V DC

Outer jacket colour : white. Other colours upon request.



Construction

PRIMARY WIRE

1 - Conductor : tin plated annealed copper (TPC)

2 - Insulation : POLIAX™

SHIELDING

3 - Braided shield : tin plated annealed copper (TPC)

OUTER JACKET

4 - POLIAX™

Main characteristics

Pairs, triples and quads as well as shielded cables jacketed with ASC13, ASC16X or other insulation materials will be studied according to the customers requirements.

Other constructions on request.

AXON' REFERENCE	PRIMARY WIRE		SHIELDING			CABLE	
	REFERENCE	NOMINAL Ø (mm)	SHIELDING WIRE Ø (mm)	COVERAGE (%)	SHIELDING Ø (mm)	NOMINAL Ø (mm)	APPROX WEIGHT (g/m)
X 2807 TSTX 2	X 2807 TPC	0.85	0.127	95	2.25	2.60	13.20
X 2619 TSTX 2	X 2619 TPC	0.95	0.127	90	2.45	2.80	14.50
X 2419 TSTX 2	X 2419 TPC	1.05	0.127	86	2.65	3.00	18.50
X 2237 TSTX 2	X 2237 TPC	1.20	0.127	91	2.95	3.35	22.40
X 2037 TSTX 2	X 2037 TPC	1.50	0.127	90	3.55	4.00	29.60
X 1861 TSTX 2	X 1861 TPC	1.80	0.127	91	4.15	4.60	41.70
X 1661 TSTX 2	X 1661 TPC	2.00	0.127	86	4.55	5.00	49.10
X 1461 TSTX 2	X 1461 TPC	2.35	0.127	89	5.25	5.90	69.60
X 1291 TSTX 2	X 1291 TPC	2.90	0.127	89	6.35	7.00	96.80
X 1091 TSTX 2	X 1091 TPC	3.55	0.160	87	7.80	8.90	146.30
X 8133 TSTX 2	X 8133 TPC	5.10	0.160	93	10.90	12.30	261.20

TPC : TIN PLATED ANNEALED COPPER - LSZH : LOW SMOKE ZERO HALOGEN

Shielded jacketed twisted triples

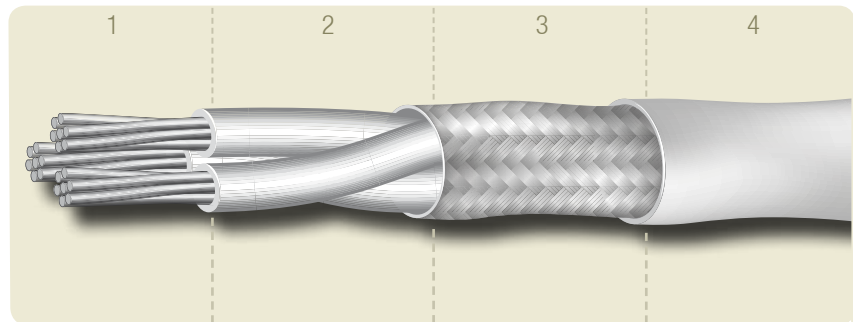
TYPE X xxxx TSTX3 TPC

Insulation : POLIAX™ halogen free / LSZH

Operating temperature : -40°C up to +130°C

Voltage rating : 600 VAC / 850 V DC

Outer jacket colour : white. Other colours upon request.



Construction

PRIMARY WIRE

1 - Conductor : tin plated annealed copper (TPC)

2 - Insulation : POLIAX™

SHIELDING

3 - Braided shield : tin plated annealed copper (TPC)

OUTER JACKET

4 - POLIAX™

Main characteristics

Pairs, triples and quads as well as shielded cables jacketed with ASC13, ASC16X or other insulation materials will be studied according to the customers requirements.

Other constructions on request.

AXON' REFERENCE	PRIMARY WIRE		SHIELDING			CABLE	
	REFERENCE	NOMINAL Ø (mm)	SHIELDING WIRE Ø (mm)	COVERAGE (%)	SHIELDING Ø (mm)	NOMINAL Ø (mm)	APPROX WEIGHT (g/m)
X 2807 TSTX 3	X 2807 TPC	0.85	0.127	95	2.30	2.75	14.70
X 2619 TSTX 3	X 2619 TPC	0.95	0.127	90	2.50	3.00	19.00
X 2419 TSTX 3	X 2419 TPC	1.05	0.127	86	2.70	3.20	21.40
X 2237 TSTX 3	X 2237 TPC	1.20	0.127	91	3.15	3.60	29.40
X 2037 TSTX 3	X 2037 TPC	1.50	0.127	90	3.80	4.25	38.70
X 1861 TSTX 3	X 1861 TPC	1.80	0.127	91	4.40	4.95	54.90
X 1661 TSTX 3	X 1661 TPC	2.00	0.127	86	4.85	5.35	68.40
X 1461 TSTX 3	X 1461 TPC	2.35	0.127	89	5.60	6.25	93.60
X 1291 TSTX 3	X 1291 TPC	2.90	0.127	89	6.80	7.55	132.20
X 1091 TSTX 3	X 1091 TPC	3.55	0.160	87	8.35	9.55	208.00
X 8133 TSTX 3	X 8133 TPC	5.10	0.160	93	11.65	13.15	262.00

TPC : TIN PLATED ANNEALED COPPER - LSZH : LOW SMOKE ZERO HALOGEN

Single wires

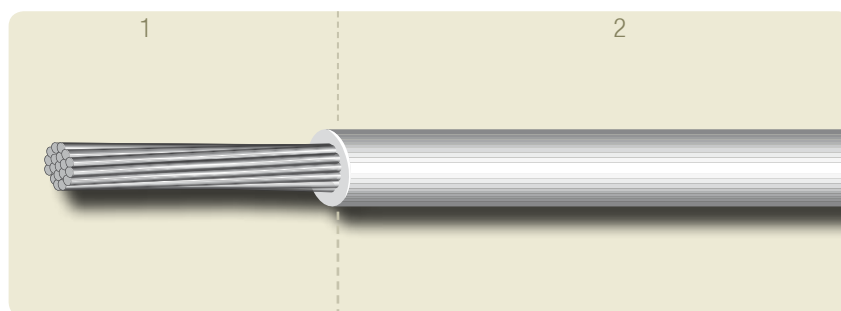
TYPE QT xxxx SPC

Insulation : NEUTRAX™ halogen free / LSZH

Operating temperature : -50°C up to +200°C

Voltage rating : 250 V AC / 350 V DC

Standard colour : natural. Other colours upon request.



Construction

PRIMARY WIRE

1 - Conductor : electrolytic silver plated annealed copper (SPC)

2 - Insulation : NEUTRAX™

Other constructions on request.

AXON' REFERENCE	AWG	CONDUCTOR				INSULATED WIRE	
		CONSTRUCTION (Nb x Ø mm)	NOMINAL Ø (mm)	NOMINAL AREA (mm ²)	NOMINAL RESISTANCE (Ω/ 100m)	NOMINAL Ø (mm)	APPROX WEIGHT (g/m)
QT 3007	30	7 x 0.102	0.304	0.057	31.1	0.62	1.1
QT 2819	28	19 x 0.079	0.395	0.093	19.3	0.7	1.75
QT 2807	28	7 x 0.127	0.381	0.088	20.1	0.7	1.5
QT 2619	26	19 x 0.102	0.504	0.154	11.6	0.82	2.2
QT 2607	26	7 x 0.160	0.48	0.141	12.6	0.8	2.0
QT 2419	24	19 x 0.127	0.634	0.239	7.5	0.95	3.15
QT 2407	24	7 x 0.203	0.609	0.228	7.9	0.93	3.0
QT 2219	22	19 x 0.160	0.80	0.382	4.7	1.13	4.6
QT 2207	22	7 x 0.254	0.762	0.354	5.0	1.1	4.4
QT 2019	20	19 x 0.203	1.009	0.616	2.9	1.33	7.0
QT 2007	20	7 x 0.320	0.96	0.565	3.2	1.25	6.3

SPC : SILVER PLATED ANNEALED COPPER - LSZH : LOW SMOKE ZERO HALOGEN

Single wires

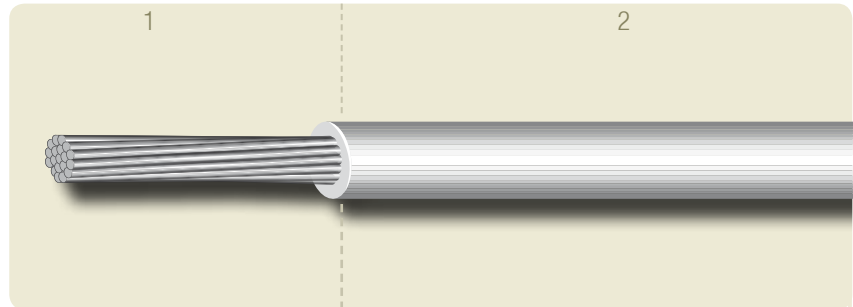
TYPE Q xxxx SPC

Insulation : NEUTRAX™ halogen free / LSZH

Operating temperature : -50°C up to +200°C

Voltage rating : 600 VAC / 850 V DC

Standard colour : natural. Other colours upon request.



Construction

PRIMARY WIRE

1 - Conductor : electrolytic silver plated annealed copper (SPC)

2 - Insulation : NEUTRAX™

Other constructions on request.

AXON' REFERENCE	AWG	CONDUCTOR				INSULATED WIRE	
		CONSTRUCTION (Nb x Ø mm)	NOMINAL Ø (mm)	NOMINAL AREA (mm ²)	NOMINAL RESISTANCE (Ω/ 100m)	NOMINAL Ø (mm)	WEIGHT (g/m)
Q 3007	30	7 x 0.102	0.303	0.057	36.5	0.8	2.1
Q 2819	28	19 x 0.079	0.395	0.093	19.3	0.9	2.5
Q 2807	28	7 x 0.127	0.381	0.088	20.1	0.9	2.0
Q 2619	26	19 x 0.102	0.504	0.154	11.6	1.0	3.0
Q 2607	26	7 x 0.160	0.48	0.141	12.6	1.0	2.7
Q 2419	24	19 x 0.127	0.634	0.239	7.5	1.15	4.1
Q 2407	24	7 x 0.203	0.609	0.228	7.9	1.1	3.6
Q 2219	22	19 x 0.160	0.80	0.382	4.7	1.3	5.7
Q 2207	22	7 x 0.254	0.762	0.354	5.0	1.25	5.0
Q 2019	20	19 x 0.203	1.009	0.616	2.9	1.5	7.9
Q 2007	20	7 x 0.320	0.96	0.565	3.2	1.45	7.7
Q 1819	18	19 X 0.254	1.269	0.962	1.9	1.75	11.5
Q 1619	16	19 X 0.300	1.5	1.343	1.35	2.1	16.3
Q 1427	14	27 X 0.300	1.8	1.91	0.95	2.45	21.8
Q 1419	14	19 X 0.360	1.803	1.938	0.92	2.35	21.8
Q 1245	12	45 X 0.300	2.45	3.18	0.58	3.05	34.0
Q 1237	12	37 X 0.320	2.22	2.97	0.6	2.85	33.4
Q 1219	12	19 X 0.455	2.273	3.097	0.58	2.85	33.0
Q 1037	10	37 X 0.405	2.8	4.74	0.39	3.35	51.0

SPC : SILVER PLATED ANNEALED COPPER - LSZH : LOW SMOKE ZERO HALOGEN

Single wires

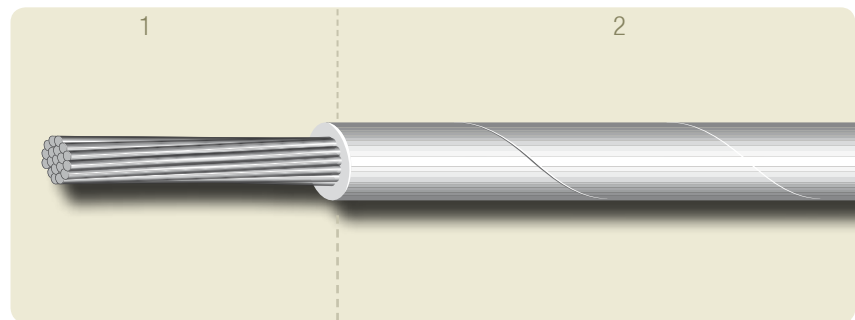
TYPE FHT xxxx SPC or SCA

Insulation : POLYIMIDE tape halogen free / LSZH

Operating temperature : -50°C up to +200°C

Voltage rating : 250 V AC / 350 V DC

Standard colour : natural. Other colours upon request.



Construction

PRIMARY WIRE

- 1 - Conductor : electrolytic silver plated annealed copper (SPC) or silver copper alloy (SCA)
 2 - Insulation : wrapped and sealed Polyimide tape

Other constructions on request.

AXON' REFERENCE	AWG	CONDUCTOR				INSULATED WIRE	
		CONSTRUCTION (Nb x Ø mm)	NOMINAL Ø (mm)	NOMINAL AREA (mm ²)	NOMINAL RESISTANCE (Ω/100m)	NOMINAL Ø (mm)	APPROX WEIGHT (g/m)
FHT 3007 SCA	30	7 x 0.102	0.304	0.057	37	0.53	0.76
FHT 3001 SCA	30	1 x 0.254	0.254	0.051	39	0.48	0.69
FHT 2807 SCA	28	7 x 0.127	0.381	0.089	23	0.61	1.11
FHT 2801 SCA	28	1 x 0.320	0.320	0.080	26	0.55	1.00
FHT 2619	26	19 x 0.102	0.504	0.16	12	0.74	1.79
FHT 2601	26	1 x 0.404	0.404	0.13	13	0.63	1.49
FHT 2419	24	19 x 0.127	0.634	0.24	7.6	0.86	2.65
FHT 2401	24	1 x 0.511	0.511	0.20	8.4	0.74	2.26
FHT 2219	22	19 x 0.160	0.800	0.38	4.7	1.03	4.73
FHT 2201	22	1 x 0.643	0.643	0.32	5.3	0.87	3.41
FHT 2019	20	19 x 0.203	1.009	0.616	3.2	1.24	6.26
FHT 2001	20	1 x 0.812	0.812	0.52	3.3	1.04	5.30
FHT 1819	18	19 x 0.254	1.269	0.96	2.1	1.50	9.63
FHT 1619	16	19 X 0.300	1.500	1.34	1.4	1.73	12.30

SPC : SILVER PLATED ANNEALED COPPER - SCA : SILVER COPPER ALLOY - LSZH : LOW SMOKE ZERO HALOGEN

Single wires

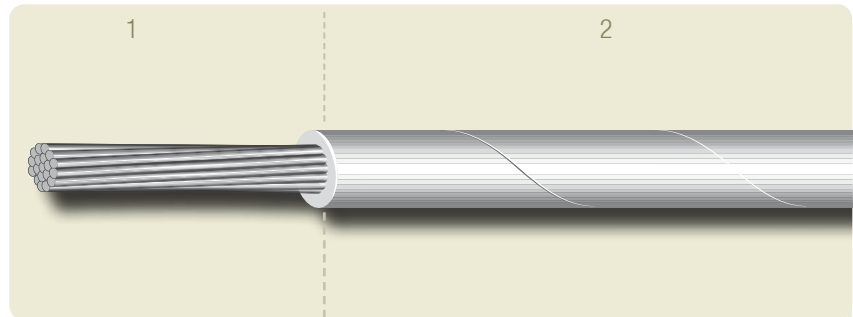
TYPE FH xxxx SPC or SCA

Insulation : POLYIMIDE tape halogen free / LSZH

Operating temperature : -50°C up to +200°C

Voltage rating : 600 V AC / 850 V DC

Standard colour : natural. Other colours upon request.



Construction

PRIMARY WIRE

1 - Conductor : electrolytic silver plated annealed copper (SPC) or silver copper alloy (SCA)

2 - Insulation : wrapped and sealed Polyimide tape

Other constructions on request.

AXON' REFERENCE	AWG	CONDUCTOR				INSULATED WIRE	
		CONSTRUCTION (Nb x Ø mm)	NOMINAL Ø (mm)	NOMINAL AREA (mm ²)	NOMINAL RESISTANCE (Ω / 100m)	NOMINAL Ø (mm)	APPROX WEIGHT (g/m)
FH 3007 SCA	30	7 x 0.102	0.303	0.057	37	0.60	0.88
FH 3001 SCA	30	1 x 0.254	0.254	0.051	39	0.55	0.78
FH 2807 SCA	28	7 x 0.127	0.381	0.089	23	0.68	1.24
FH 2801 SCA	28	1 x 0.320	0.320	0.080	26	0.62	1.11
FH 2619	26	19 x 0.102	0.504	0.16	12	0.81	1.94
FH 2601	26	1 x 0.404	0.404	0.13	13	0.70	1.62
FH 2419	24	19 x 0.127	0.634	0.24	7.6	0.93	2.82
FH 2401	24	1 x 0.511	0.511	0.20	8.4	0.81	2.42
FH 2219	22	19 x 0.160	0.800	0.38	4.7	1.10	4.14
FH 2201	22	1 x 0.643	0.643	0.32	5.3	0.94	3.58
FH 2019	20	19 x 0.203	1.009	0.61	3.2	1.31	6.51
FH 2001	20	1 x 0.812	0.812	0.52	3.3	1.11	5.50
FH 1819	18	19 x 0.254	1.269	0.96	2.1	1.57	9.92
FH 1619	16	19 x 0.300	1.500	1.34	1.4	1.80	12.60
FH 1419	14	19 x 0.361	1.805	1.94	0.95	2.15	19.80
FH 1237	12	37 x 0.320	2.22	2.98	0.60	2.59	29.80
FH 1037	10	37 x 0.404	2.80	4.77	0.40	3.19	46.70
FH 8133	8	133 x 0.287	4.09	8.60	0.25	4.85	88.60
FH 6133	6	133 x 0.361	5.14	13.61	0.14	6.07	136.70
FH 4133	4	133 x 0.455	6.48	21.63	0.09	7.42	213.30
FH 2665	2	665 x 0.254	8.30	33.70	0.06	9.01	323.70

SPC : SILVER PLATED ANNEALED COPPER - SCA : SILVER COPPER ALLOY - LSZH : LOW SMOKE ZERO HALOGEN

Single wires

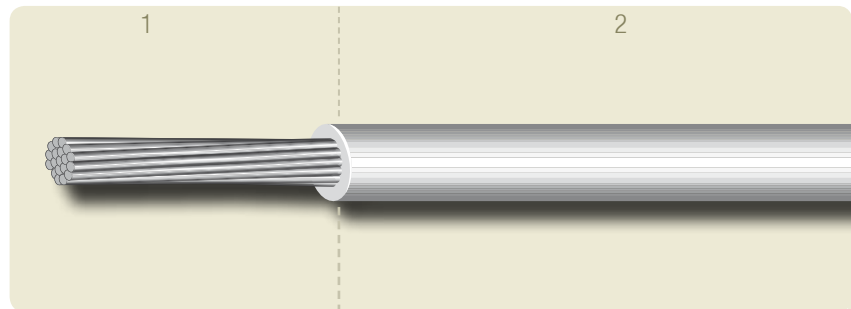
TYPE FHT xxxx NPC or NCA

Insulation : POLYIMIDE tape halogen free / LSZH

Operating temperature : -50°C up to +250°C

Voltage rating : 250 V AC / 350 V DC

Standard colour : natural. Other colours upon request.



Construction

PRIMARY WIRE

- 1 - Conductor : nickel plated annealed copper (NPC) or nickel copper alloy (NCA)
- 2 - Insulation : wrapped and sealed Polyimide tape

Other constructions on request.

AXON' REFERENCE	AWG	CONDUCTOR				INSULATED WIRE	
		CONSTRUCTION (Nb x Ø mm)	NOMINAL Ø (mm)	NOMINAL AREA (mm ²)	NOMINAL RESISTANCE (Ω/ 100m)	NOMINAL Ø (mm)	APPROX WEIGHT (g/m)
FHT 3007 NCA	30	7 x 0.102	0.304	0.057	37	0.53	0.76
FHT 3001 NCA	30	1 x 0.254	0.254	0.051	39	0.48	0.69
FHT 2807 NCA	28	7 x 0.127	0.381	0.089	23	0.61	1.11
FHT 2801 NCA	28	1 x 0.320	0.320	0.080	26	0.55	1.00
FHT 2619	26	19 x 0.102	0.504	0.16	12	0.74	1.79
FHT 2601	26	1 x 0.404	0.404	0.13	13	0.63	1.49
FHT 2419	24	19 x 0.127	0.634	0.24	7.6	0.86	2.65
FHT 2401	24	1 x 0.511	0.511	0.20	8.4	0.74	2.26
FHT 2219	22	19 x 0.160	0.800	0.38	4.7	1.03	4.73
FHT 2201	22	1 x 0.643	0.643	0.32	5.3	0.87	3.41
FHT 2019	20	19 x 0.203	1.009	0.616	3.2	1.24	6.26
FHT 2001	20	1 x 0.812	0.812	0.52	3.3	1.04	5.30
FHT 1819	18	19 x 0.254	1.269	0.96	2.1	1.50	9.63
FHT 1619	16	19 X 0.300	1.500	1.34	1.4	1.73	12.30

NPC : NICKEL PLATED ANNEALED COPPER - NCA : NICKEL COPPER ALLOY - LSZH : LOW SMOKE ZERO HALOGEN

Single wires

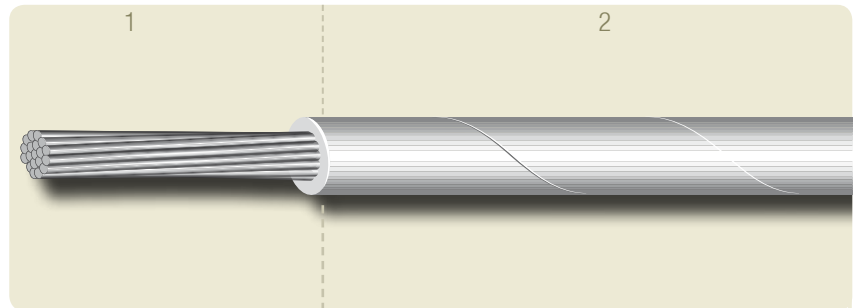
TYPE FH xxxx NPC or NCA

Insulation : POLYIMIDE tape halogen free / LSZH

Operating temperature : -50°C up to +250°C

Voltage rating : 600 V AC / 850 V DC

Standard colour : natural. Other colours upon request.



Construction

PRIMARY WIRE

1 - Conductor : nickel plated annealed copper (NPC) or nickel copper alloy (NCA)

2 - Insulation : wrapped and sealed Polyimide tape

Other constructions on request.

AXON' REFERENCE	AWG	CONDUCTOR				INSULATED WIRE	
		CONSTRUCTION (Nb x Ø mm)	NOMINAL Ø (mm)	NOMINAL AREA (mm ²)	NOMINAL RESISTANCE (Ω/100m)	NOMINAL Ø (mm)	APPROX WEIGHT (g/m)
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FH 3001 NCA	30	1 x 0.254	0.254	0.051	39	0.55	0.78
FH 2807 NCA	28	7 x 0.127	0.381	0.089	23	0.68	1.24
FH 2801 NCA	28	1 x 0.320	0.320	0.080	26	0.62	1.11
FH 2619	26	19 x 0.102	0.504	0.16	12	0.81	1.94
FH 2601	26	1 x 0.404	0.404	0.13	13	0.70	1.62
FH 2419	24	19 x 0.127	0.634	0.24	7.6	0.93	2.82
FH 2401	24	1 x 0.511	0.511	0.20	8.4	0.81	2.42
FH 2219	22	19 x 0.160	0.800	0.38	4.7	1.10	4.14
FH 2201	22	1 x 0.643	0.643	0.32	5.3	0.94	3.58
FH 2019	20	19 x 0.203	1.009	0.61	3.2	1.31	6.51
FH 2001	20	1 x 0.812	0.812	0.52	3.3	1.11	5.50
FH 1819	18	19 x 0.254	1.269	0.96	2.1	1.57	9.92
FH 1619	16	19 x 0.300	1.500	1.34	1.4	1.80	12.60
FH 1419	14	19 x 0.361	1.805	1.94	0.95	2.15	19.80
FH 1237	12	37 x 0.320	2.22	2.98	0.60	2.59	29.80
FH 1037	10	37 x 0.404	2.80	4.77	0.40	3.19	46.70
FH 8133	8	133 x 0.287	4.09	8.60	0.25	4.85	88.60
FH 6133	6	133 x 0.361	5.14	13.61	0.14	6.07	136.70
FH 4133	4	133 x 0.455	6.48	21.63	0.09	7.42	213.30
FH 2665	2	665 x 0.254	8.30	33.70	0.06	9.01	323.70

NPC : NICKEL PLATED ANNEALED COPPER - LSZH : LOW SMOKE ZERO HALOGEN

Composite cable

EXAMPLE OF A Z_T OPTIMIZED COMPOSITE CABLE

As a specialist in composite cables, AXON' offer custom designed constructions. Please contact us

TYPE XZT 19x0.59 / AWG 20 LSZH

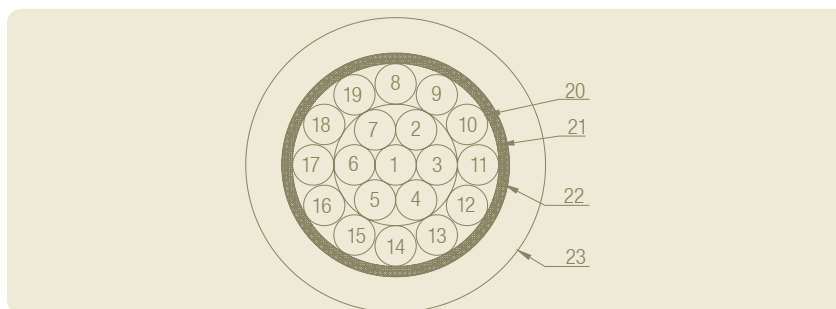
Z_T OPTIMIZED

Insulation : ASC3 - 16X

Operating temperature : -40°C up to +95°C

Voltage rating : 600 V AC / 850 V DC

Standard colour : black.



Example of construction

1 TO 19 - SINGLE WIRES

AWG 20 / X 2037 TPC.
 Conductor : tin plated copper.
 Construction : 37 x 0.142 mm.
 Diameter : 0.97 mm.
 Area : 0.59 mm².
 Resistance : 3.5 Ω / 100 m.
 Insulation : POLIAX™.
 Diameter : 1.50 mm.

20 - POLYESTER

SEPARATING TAPE

21 & 22 - SHIELDING

tin plated copper double braid,
 Z_T optimized. (see table below).

23 - BLACK ASC3-16X JACKET

LSZH thermoplastic elastomer.

Main characteristics

DIMENSIONS AND WEIGHT

- Diameter on assembled wires : 7.50 mm.
- Diameter on shielding : 9.00 mm.
- Diameter on outer jacket : 10.70 ± 0.50 mm.
- Nominal cable weight : 275 g/m.

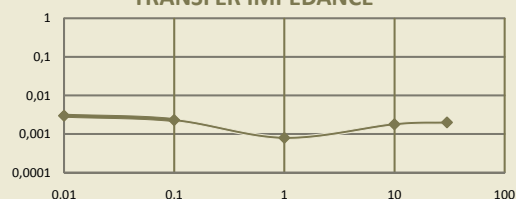
MECHANICAL CHARACTERISTICS

- Allowable traction : 80 daN.
- Minimum bend radius : 110 mm.

BEHAVIOUR TO FIRE

- a-Reaction to fire : category A according to IEC 60332-3.
- b-Opacity of fumes : test passed according to IEC 61034-2.
- c-Toxicity of gas emitted during the combustion process : conventional index of the toxicity < 10.
- d-Corrosivity of fumes : test according to IEC 60754-2 passed.

TRANSFER IMPEDANCE



FREQUENCY
MHz

TRANSFER IMPEDANCE
Ω / m

0.01	0.003
0.1	0.0023
1	0.0008
10	0.0018
30	0.002

Composite cable

EXAMPLE OF A Z_T OPTIMIZED COMPOSITE CABLE

As a specialist in composite cables, AXON' offer custom designed constructions. Please contact us

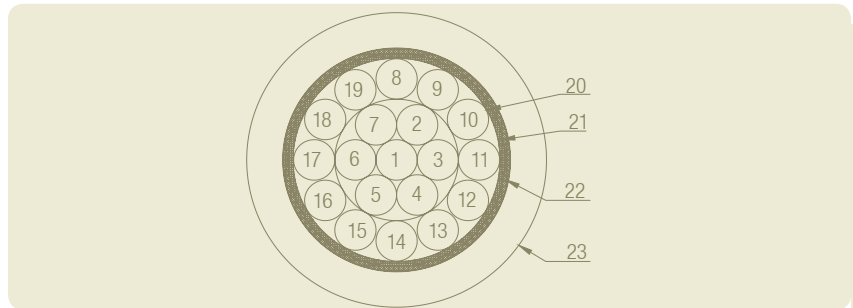
TYPE XZT 19x2.94 / AWG 12 LSZH Z_T OPTIMIZED

Insulation : ASC3 - 16X

Operating temperature : -40°C up to +95°C

Voltage rating : 600 V AC / 850 V DC

Standard colour : black.



Example of construction

1 TO 19 - SINGLE WIRES

AWG 12 / X 1291 TPC.
Conductor : tin plated copper.
Construction : 91 x 0.203 mm.
Diameter : 2.15 mm.
Area : 2.94 mm².
Resistance : 0.7 Ω/ 100 m.
Insulation : POLIAX™.
Diameter : 2.90 mm.

20 - POLYESTER SEPARATING TAPE

21 & 22 - SHIELDING

tin plated copper double braid,
Z_T optimized. (see table below).

23 - BLACK ASC3-16X JACKET

LSZH thermoplastic elastomer.

Main characteristics

DIMENSIONS AND WEIGHT

- Diameter on assembled wires : 14.50 mm.
- Diameter on shielding : 16.00 mm.
- Diameter on outer jacket : 18.40 ± 0.90 mm.
- Nominal cable weight : 880 g/m.

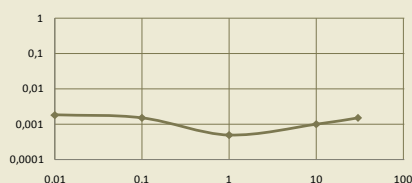
MECHANICAL CHARACTERISTICS

- Allowable traction : 160 daN.
- Minimum bend radius : 110 mm.

BEHAVIOUR TO FIRE

- a-Reaction to fire : category A according to IEC 60332-3.
- b-Opacity of fumes : test passed according to IEC 61034-2.
- c-Toxicity of gas emitted during the combustion process : conventional index of the toxicity < 10.
- d-Corrosivity of fumes : test passed according to IEC 60754- 2.

TRANSFER IMPEDANCE



FREQUENCY MHz	TRANSFER IMPEDANCE Ω/m
0.01	0.0018
0.1	0.0015
1	0.0005
10	0.001
30	0.0015

Composite cable

EXAMPLE OF A Z_T OPTIMIZED COMPOSITE CABLE

As a specialist in composite cables, AXON' offer custom designed constructions. Please contact us

TYPE XZT 30 PBLG0.38 / AWG 22

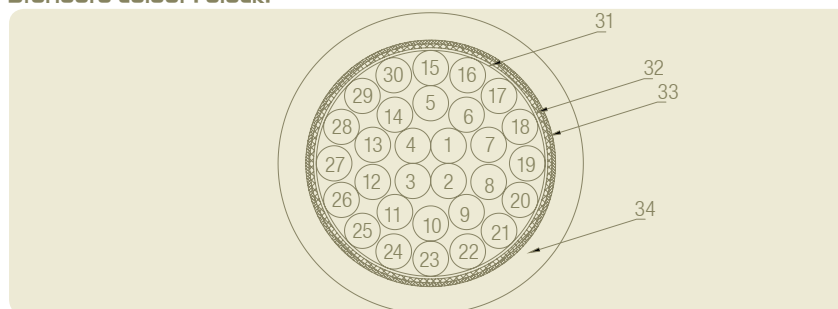
LSZH - Z_T OPTIMIZED

Insulation : ASC3 - 16X

Operating temperature : -40°C up to +95°C

Voltage rating : 600 V AC / 850 V DC

Standard colour : black.



Example of construction

1 TO 30 - 30 SHIELDED JACKETED TWISTED PAIRS

AWG 22 / X 2237TSTX2.

Single wire

Conductor : tin plated copper.

Construction : 37 x 0.114 mm.

Diameter : 0.78 mm.

Area : 0.38 mm².

Resistance : 5.93 Ω / 100 m.

Insulation : POLIAX™.

Diameter : 1.20 mm.

Shielding : tin plated copper.

Outer jacket : POLIAX™

Diameter : 3.35 mm

31 - POLYESTER

SEPARATING TAPE

32 & 33 - SHIELDING

tin plated copper double braid, Z_T optimized. (see table below).

34 - BLACK ASC3-16X JACKET

LSZH thermoplastic elastomer.

Main characteristics

DIMENSIONS AND WEIGHT

- Diameter on assembled wires : 21.50 mm.
- Diameter on shielding : 23.00 mm.
- Diameter on outer jacket : 26.20 ± 1.30mm.
- Nominal cable weight : 1160 g/m.

ELECTRICAL CHARACTERISTICS

Impedance between the pair wires : 50 Ω.

Impedance between the pair wires and the shielding of the pairs : 30 Ω.

Capacity between the pair wires : 130 pF/m.

Capacity between the pair wires and the shielding of the pair : 210 pF/m.

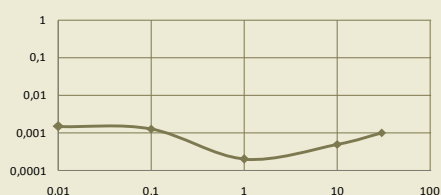
MECHANICAL CHARACTERISTICS

- Allowable traction : 180 daN.
- Minimum bend radius : 265 mm.

BEHAVIOUR TO FIRE

- a-Reaction to fire : category A according to IEC 60332-3.
- b-Opacity of fumes : test passed according to IEC 61034-2.
- c-Toxicity of gas emitted during the combustion process : conventional index of the toxicity < 10.
- d-Corrosivity of fumes : test passed according to IEC 60754- 2 .

TRANSFER IMPEDANCE



FREQUENCY MHz

TRANSFER IMPEDANCE Ω/ m

0.01	0.0015
0.1	0.0013
1	0.0002
10	0.0005
30	0.001

>> BRAZIL

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FAX: +34 91 556 28 80
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>> UNITED KINGDOM

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