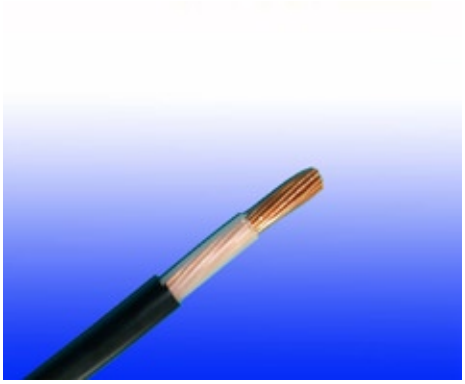
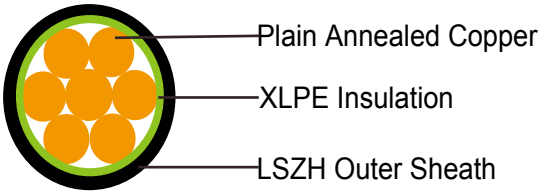
300/500V XLPE Insulated, LSZH Sheathed Power Cables (single core)

FTX300 05RZ1-R (CU/XLPE/LSZH 300/500V Class 2)





APPLICATION

The cables are mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design to IEC 60502-1

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1 ; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1*
Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)	EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4
Halogen Free	IEC 60754-1; EN 50267-2-1; DIN VDE 0482-267-2-1; CEI 20-37/2-1 ; BS 6425-1*
No Corrosive Gas Emission	IEC 60754-2; EN 50267-2-2; DIN VDE 0482-267-2-2; CEI 20-37/2-2 ; BS 6425-2*
Minimum Smoke Emission	IEC 61034-1&2; EN 61034 -1&2; DIN VDE 0482-1034-1&2; CEI 20-37/3-1&2; EN 50268-1&2*; BS 7622-1&2*
No Toxic gases	NES 02-713; NF C 20-454

Note: Asterisk * denotes superseded standard.

VOLTAGE RATING

300/500V

CABLE CONSTRUCTION

Conductor: Plain annealed copper wire, stranded according to IEC(EN) 60228 class 2.
Insulation: Extruded cross-linked XLPE compound.
Outer Sheath: Thermoplastic LSZH compound type LTS3 as per BS 7655-6.1 (Thermosetting LSZH compound type SW2-SW4 as per BS 7655-2.6 can be offered.)

COLOUR CODE

Insulation Colour as per BS7671

	with earth conductor	without earth conductor
2Cores	-	Brown,Blue
3Cores	Yellow/Green,Brown,Blue	Brown,Gray,Black
4Cores	Yellow/Green,Brown,Gray,Black	Brown,Gray,Black,Blue
5Cores	Yellow/Green,Brown,Gray,Black,Blue	Brown,Gray,Black,Blue,Black
above 5 Cores	Yellow/Green,Black Numbered	Black Numbered

Sheath Colour: Black

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: Max.90°C for XLPE
250°C in short-circuit for 5s max.
Minimum bending radius: 6 x Overall Diameter (unarmoured cable)
10 x Overall Diameter (armoured cable)

CONSTRUCTION PARAMETERS

Conductor		FTX300 05RZ1-R		
No. of Core X Cross Section	No./Nominal Diameter of Strands	Nominal Insulation Thickness	Nominal Overall Diameter	Approx. Weight
Noxmm^2	No./mm	mm	mm	kg/km
1x1.5	7/0.53	0.50	3.8	27
1x2.5	7/0.67	0.50	4.2	37
1x4.0	7/0.85	0.50	4.8	54

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 90°C
Ambient Temperature : 30°C
Current-Carrying Capacities (Amp)

Conductor cross-sectional area	Reference Method 4 (enclosed in conduit in thermally insulating wall etc)	Reference Method 3 (enclosed in conduit on a wall or in trunking etc)	Reference Method 1 (clipped direct)	Reference Method 11 (on a perforated cable tray, horizontal or vertical)	Reference Method 12 (free air)		
					Horizontal flat spaced	Vertical flat spaced	Trefoil

	2 cables, single-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c. flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or 3 c ables three phase	2 cables, single-phase a.c. or d.c. or 3 cables three phase	3 cables, trefoil 3-phase a.c.
1	2	3	4	5	6	7	8	9	10	11	12
mm^2	A	A	A	A	A	A	A	A	A	A	A
1.5	18	17	22	19	25	23	-	-	-	-	-
2.5	24	23	30	26	34	31	-	-	-	-	-
4	33	30	40	35	46	41	-	-	-	-	-

Voltage Drop (Per Amp Per Meter)

Nominal Cross Section Area	2 cables d.c.	2 cables, single-phase a.c.		3 or 4 cables, 3-phase a.c.		
		Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)	Ref. Methods 1 and 11 (clipped direct or on trays touching)	Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)	Ref. Methods 1, 11 and 12 (in trefoil)	Ref. Methods 1 and 11 (Flat and touching)
1	2	3	4	5	6	7
mm^2	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m
1.5	31	31	27	27	27	27
2.5	19	19	16	16	16	16
4	33	12	10	10	10	10

Rated Voltage

Standard

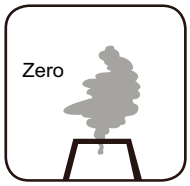

Flame Retardancy
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1


Reduced Fire Propagation
NF C32-070-2.2(C1)
IEC60332-3-24/EN50266-2-4


Low Toxicity
NES 02-713/NF C 20-454


Low Corrosivity
IEC60754-2
EN50267-2-2/3
NF C 32-074

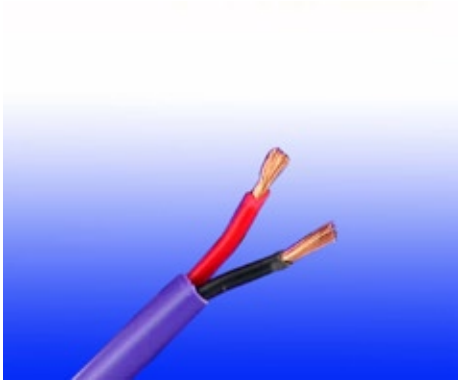

Low Smoke Emission
IEC 61034-1&2
EN 50268-1&2/NF C32-073

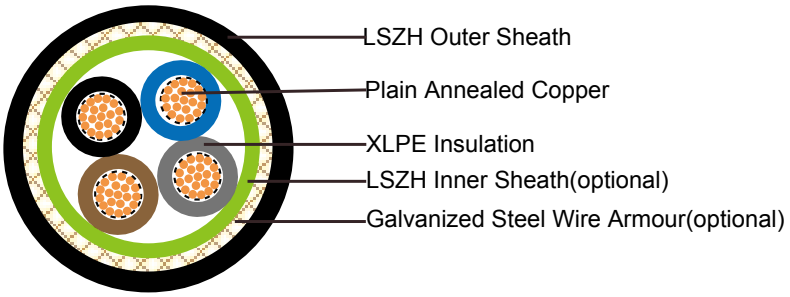


Halogen Free
IEC60754-1
EN50267-2-1

300/500V XLPE Insulated, LSZH Sheathed Power Cables (2-4cores)

FTX200 05RZ1-R (CU/XLPE/LSZH 300/500V Class 2)
FTX200 05RZ1MZ1-R (CU/XLPE/LSZH/SWA/LSZH 300/500V Class 2)





APPLICATION

The cables are mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design adapted to IEC 60502-1; BS 6724

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1 ; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1*
Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)	EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4
Halogen Free	IEC 60754-1; EN 50267-2-1; DIN VDE 0482-267-2-1; CEI 20-37/2-1 ; BS 6425-1*
No Corrosive Gas Emission	IEC 60754-2; EN 50267-2-2; DIN VDE 0482-267-2-2; CEI 20-37/2-2 ; BS 6425-2*
Minimum Smoke Emission	IEC 61034-1&2; EN 61034 -1&2; DIN VDE 0482-1034-1&2; CEI 20-37/3-1&2; EN 50268-1&2*; BS 7622-1&2*
No Toxic gases	NES 02-713; NF C 20-454

Note: Asterisk * denotes superseded standard.

VOLTAGE RATING

300/500V

CABLE CONSTRUCTION

Conductor: Plain annealed copper wire, stranded according to IEC(EN) 60228 class 2.
Insulation: Extruded cross-linked XLPE compound.
Inner Sheath (optional): LSZH Compound
Armouring (optional): Galvanized Steel Wire
Outer Sheath: Thermoplastic LSZH compound type LTS3 as per BS 7655-6.1 (Thermosetting LSZH compound type SW2-SW4 as per BS 7655-2.6 can be offered.)

COLOUR CODE

Insulation Colour as per BS7671

	with earth conductor	without earth conductor
2Cores	-	Brown,Blue
3Cores	Yellow/Green,Brown,Blue	Brown,Gray,Black
4Cores	Yellow/Green,Brown,Gray,Black	Brown,Gray,Black,Blue
5Cores	Yellow/Green,Brown,Gray,Black,Blue	Brown,Gray,Black,Blue,Black
above 5 Cores	Yellow/Green,Black Numbered	Black Numbered

Sheath Colour: Black

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: Max.90°C for XLPE
250°C in short-circuit for 5s max.
Minimum bending radius: 6 x Overall Diameter (unarmoured cable)
10 x Overall Diameter (armoured cable)

CONSTRUCTION PARAMETERS

Conductor			FTX200 05RZ1-R		FTX200 05RZ1MZ1-R			
			Unarmoured		Armoured			
No. of Core X Cross Section	No./Nominal Diameter of Strands	Nominal Insulation Thickness	Nominal Overall Diameter	Approx. Weight	Diameter Under Armour	Armour Wire Diameter	Nominal Overall Diameter	Approx. Weight
Noxmm^2	No./mm	mm	mm	kg/km	mm	mm	mm	kg/km
2x1.5	7/0.53	0.50	6.5	65	6.5	0.9	11.2	246
2x2.5	7/0.67	0.50	7.3	91	7.3	0.9	12.0	292
2x4	7/0.85	0.50	8.4	131	8.4	0.9	13.1	360
3x1.5	7/0.53	0.50	6.9	81	6.9	0.9	11.6	275
3x2.5	7/0.67	0.50	7.8	116	7.8	0.9	12.5	331
3x4	7/0.85	0.50	9.0	169	9.0	0.9	13.7	413
4x1.5	7/0.53	0.50	7.6	101	7.6	0.9	12.3	309
4x2.5	7/0.67	0.50	8.6	144	8.6	0.9	13.3	380
4x4	7/0.85	0.50	9.9	213	9.9	0.9	14.6	479

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 90°C
Ambient Temperature : 30°C

FTX200 05RZ1-R

Current-Carrying Capacities (Amp)

Conductor cross-sectional area	Reference Method 4 (enclosed in conduit in thermally insulating wall etc)		Reference Method 3 (enclosed in conduit on a wall or in trunking etc)		Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated cable tray, horizontal or vertical)		Reference Method 12 (free air)		
									Horizontal flat spaced	Vertical flat spaced	Trefoil
	2 cables, single-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c. flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or 3 c ables three phase	2 cables, single-phase a.c. or d.c. or 3 cables three phase	3 cables, trefoil 3-phase a.c.
1	2	3	4	5	6	7	8	9	10	11	12
mm^2	A	A	A	A	A	A	A	A	A	A	A
1.5	18	17	22	19	25	23	-	-	-	-	-
2.5	24	23	30	26	34	31	-	-	-	-	-
4	33	30	40	35	46	41	-	-	-	-	-

Voltage Drop (Per Amp Per Meter)

Nominal Cross Section Area	2 cables d.c.	2 cables, single-phase a.c.		3 or 4 cables, 3-phase a.c.		
		Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)	Ref. Methods 1 and 11 (clipped direct or on trays touching)	Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)	Ref. Methods 1, 11 and 12 (in trefoil)	Ref. Methods 1 and 11 (Flat and touching)
1	2	3	4	5	6	7
mm^2	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m
1.5	31	31	27	27	27	27
2.5	19	19	16	16	16	16
4	33	12	10	10	10	10

FTX200 05RZ1MZ1-R

Current-Carrying Capacities (Amp)

Conductor cross-sectional area	Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated horizontal cable tray or Reference Method 13 [free air])		In single-way ducts		Laid direct in ground	
	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.
1	2	3	4	5	6	7	8	9
mm^2	A	A	A	A	A	A	A	A
1.5	27	23	29	25	-	23	-	28
2.5	36	31	39	33	-	30	-	36
4	49	42	52	44	-	40	-	48

Voltage Drop (Per Amp Per Meter)

Nominal Cross Section Area	2 cables d.c.	2 cables, single-phase a.c.	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c.	3 or 4 cables, 3-phase a.c.
				In ducts or in ground	In ducts or in ground
1	2	3	4	5	6
mm^2	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m
1.5	31	31	27	31	25
2.5	19	19	16	19	15
4	12	12	10	12	9.7

Rated Voltage

Standard

Standard

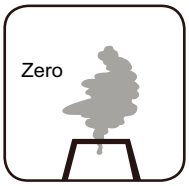

Flame Retardancy
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1


Reduced Fire Propagation
NF C32-070-2.2(C1)
IEC60332-3-24/EN50266-2-4


Low Toxicity
NES 02-713/NF C 20-454


Low Corrosivity
IEC60754-2
EN50267-2-2/3
NF C 32-074

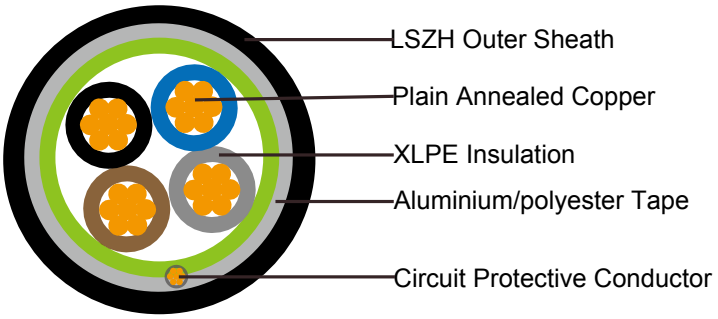

Low Smoke Emission
IEC 61034-1&2
EN 50268-1&2/NF C32-073



Halogen Free
IEC60754-1
EN50267-2-1

300/500V XLPE Insulated, LSZH Sheathed, Screened Power Cables (2-4cores)

FTX200 05ROZ1-R (CU/XLPE/OSCR/LSZH 300/500V Class 2)



APPLICATION

The cables are mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design to BS 5308

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1 ; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1*
Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)	EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4
Halogen Free	IEC 60754-1; EN 50267-2-1; DIN VDE 0482-267-2-1; CEI 20-37/2-1 ; BS 6425-1*
No Corrosive Gas Emission	IEC 60754-2; EN 50267-2-2; DIN VDE 0482-267-2-2; CEI 20-37/2-2 ; BS 6425-2*
Minimum Smoke Emission	IEC 61034-1&2; EN 61034 -1&2; DIN VDE 0482-1034-1&2; CEI 20-37/3-1&2; EN 50268-1&2*; BS 7622-1&2*
No Toxic gases	NES 02-713; NF C 20-454

Note: Asterisk * denotes superseded standard.

VOLTAGE RATING

300/500V

CABLE CONSTRUCTION

Conductor: Plain annealed copper wire, stranded according to IEC(EN) 60228 class 2.
Insulation: Extruded cross-linked XLPE compound.
Filler, binder(if any): PP, Mylar tape
Circuit Protective Conductor: Annealed plain copper (class 2)
Overall Screen: Aluminium/polyester tape
Outer Sheath: Thermoplastic LSZH compound type LTS3 as per BS 7655-6.1 (Thermosetting LSZH compound type SW2-SW4 as per BS 7655-2.6 can be offered.)

COLOUR CODE

Insulation Colour as per BS7671

	with earth conductor	without earth conductor
2Cores	-	Brown,Blue
3Cores	Yellow/Green,Brown,Blue	Brown,Gray,Black
4Cores	Yellow/Green,Brown,Gray,Black	Brown,Gray,Black,Blue
5Cores	Yellow/Green,Brown,Gray,Black,Blue	Brown,Gray,Black,Blue,Black
above 5 Cores	Yellow/Green,Black Numbered	Black Numbered

Sheath Colour: Black

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: Max.90°C for XLPE
250°C in short-circuit for 5s max.
Minimum bending radius: 6 x Overall Diameter

CONSTRUCTION PARAMETERS

Conductor			FTX200 05ROZ1-R					
No. Of Core X Cross Section	No./ Nominal Diameter Of Strands	Nominal Overall Diameter Conductor	Nominal Insulation Thickness	Cross-Section Area Of Circuit Protective Conductor	Nominal Sheath Thickness	Nominal Overall Diameter	Max.Dc Resistance Of Conductor @20°C	Approx. Weight
Noxmm^2	No./mm	mm	mm	mm^2	mm	mm	Ω/km	kg/km
2x1.0	7/0.44	1.32	0.6	1.0	0.9	8.1	18.1	79
2x1.5	7/0.53	1.59	0.7	1.5	0.9	9.1	12.1	102
2x2.5	7/0.67	2.01	0.8	2.5	1.0	10.5	7.41	146
2x4.0	7/0.85	2.55	0.8	4.0	1.1	11.8	4.61	205
3x1.0	7/0.44	1.32	0.6	1.0	0.9	8.6	18.1	98
3x1.5	7/0.53	1.59	0.7	1.5	0.9	9.6	12.1	129

3x2.5	7/0.67	2.01	0.8	2.5	1.0	11.1	7.41	185
3x4.0	7/0.85	2.55	0.8	4.0	1.1	12.5	4.61	262
4x1.0	7/0.44	132	0.6	1.0	1.0	9.5	18.1	123
4x1.5	7/0.53	1.59	0.7	1.5	1.0	10.6	12.1	162
4x2.5	7/0.67	2.01	0.8	2.5	1.1	12.3	7.41	233
4x4.0	7/0.85	2.55	0.8	4.0	1.2	13.9	4.61	329

ELECTRICAL PROPERTIES
Conductor Operating Temperature : 90°C
Ambient Temperature : 30°C
Current-Carrying Capacities (Amp)

Conductor cross-sectional area	Reference Method 4 (enclosed in conduit in thermally insulating wall etc)		Reference Method 3 (enclosed in conduit on a wall or in trunking etc)		Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated cable tray, horizontal or vertical)		Reference Method 12 (free air)		
									Horizontal flat spaced	Vertical flat spaced	Trefoil
	2 cables, single-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c. flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or 3 cables three phase	2 cables, single-phase a.c. or d.c. or 3 cables three phase	3 cables, trefoil 3-phase a.c.
1	2	3	4	5	6	7	8	9	10	11	12
mm^2	A	A	A	A	A	A	A	A	A	A	A
1.5	18	17	22	19	25	23	-	-	-	-	-
2.5	24	23	30	26	34	31	-	-	-	-	-
4	33	30	40	35	46	41	-	-	-	-	-

Voltage Drop (Per Amp Per Meter)

Nominal Cross Section Area	2 cables d.c.	2 cables, single-phase a.c.		3 or 4 cables, 3-phase a.c.		
		Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)	Ref. Methods 1 and 11 (clipped direct or on trays touching)	Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)	Ref. Methods 1, 11 and 12 (in trefoil)	Ref. Methods 1 and 11 (Flat and touching)
1	2	3	4	5	6	7
mm^2	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m
1.5	31	31	27	27	27	27
2.5	19	19	16	16	16	16
4	33	12	10	10	10	10

Rated Voltage

Standard


Flame Retardancy
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1


Reduced Fire Propagation
NF C32-070-2.2(C1)
IEC60332-3-24/EN50266-2-4


Low Toxicity
NES 02-713/NF C 20-454

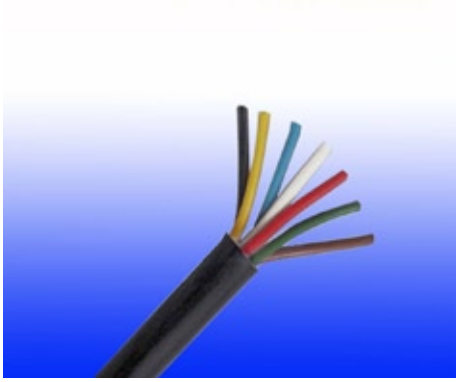

Low Corrosivity
IEC60754-2
EN50267-2-2/3
NF C 32-074

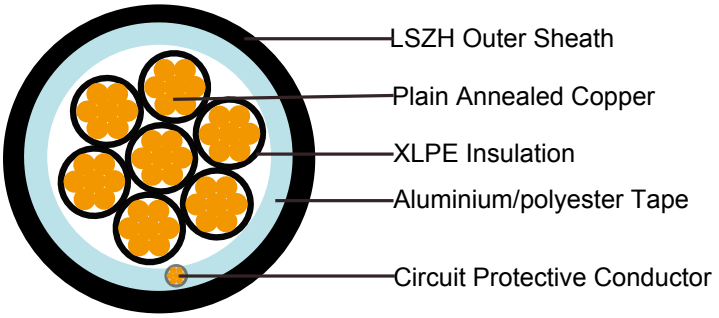

Low Smoke Emission
IEC 61034-1&2
EN 50268-1&2/NF C32-07

Halogen Free
IEC60754-1
EN50267-2-1

300/500V XLPE Insulated, LSZH Sheathed, Screened Power Cables (multicore)

FTX200 05ROZ1-R (CU/XLPE/OSCR/LSZH 300/500V Class 2)





APPLICATION

The cables is mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design to BS 5308

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1 ; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1*
Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)	EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4
Halogen Free	IEC 60754-1; EN 50267-2-1; DIN VDE 0482-267-2-1; CEI 20-37/2-1 ; BS 6425-1*
No Corrosive Gas Emission	IEC 60754-2; EN 50267-2-2; DIN VDE 0482-267-2-2; CEI 20-37/2-2 ; BS 6425-2*
Minimum Smoke Emission	IEC 61034-1&2; EN 61034 -1&2; DIN VDE 0482-1034-1&2; CEI 20-37/3-1&2; EN 50268-1&2*; BS 7622-1&2*
No Toxic gases	NES 02-713; NF C 20-454

Note: Asterisk * denotes superseded standard.

VOLTAGE RATING

300/500V

CABLE CONSTRUCTION

Conductor: Plain annealed copper wire, stranded according to IEC(EN) 60228 class 2.

Insulation: Extruded cross-linked XLPE compound.
Filler, binder(if any): PP, Mylar tape
Circuit Protective Conductor: Annealed plain copper (class 2)
Overall Screen: Aluminium/polyester tape
Outer Sheath: Thermoplastic LSZH compound type LTS3 as per BS 7655-6.1 (Thermosetting LSZH compound type SW2-SW4 as per BS 7655-2.6 can be offered.)

COLOUR CODE

Insulation Colour as per BS7671

	with earth conductor	without earth conductor
2Cores	-	Brown,Blue
3Cores	Yellow/Green,Brown,Blue	Brown,Gray,Black
4Cores	Yellow/Green,Brown,Gray,Black	Brown,Gray,Black,Blue
5Cores	Yellow/Green,Brown,Gray,Black,Blue	Brown,Gray,Black,Blue,Black
above 5 Cores	Yellow/Green,Black Numbered	Black Numbered

Sheath Colour: Black

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: Max.90°C for XLPE
250°C in short-circuit for 5s max.
Minimum bending radius: 6 x Overall Diameter

CONSTRUCTION PARAMETERS

Conductor			FTX200 05ROZ1-R					
No. Of Core X Cross Section	No./ Nominal Diameter Of Strands	Nominal Overall Diameter Conductor	Nominal Insulation Thickness	Cross-Section Area Of Circuit Protective Conductor	Nominal Sheath Thickness	Nominal Overall Diameter	Max.Dc Resistance Of Conductor @20°C	Approx. Weight
Noxmm^2	No./mm	mm	mm	mm^2	mm	mm	Ω/km	Kg/km
7x1.0	7*i*0.44	1.32	0.6	1.0	1.0	11.2	18.1	186
7x1.5	7*i*0.53	1.59	0.7	1.5	1.1	12.9	12.1	253
7x2.5	7*i*0.67	2.01	0.8	2.5	1.2	14.9	7.41	365
12x1.5	7*i*0.53	1.59	0.7	1.5	1.2	16.8	12.1	404
12x2.5	7*i*0.67	2.01	0.8	2.5	1.4	19.8	7.41	595
19x1.5	7*i*0.53	1.59	0.7	1.5	1.3	19.7	12.1	600
19x2.5	7*i*0.67	2.01	0.8	2.5	1.5	23.2	7.41	885

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 90°C
Ambient Temperature : 30°C
Current-Carrying Capacities (Amp)

Conductor cross-sectional area	Reference Method 4 (enclosed in conduit in thermally insulating wall etc)		Reference Method 3 (enclosed in conduit on a wall or in trunking etc)		Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated cable tray, horizontal or vertical)		Reference Method 12 (free air)		
									Horizontal flat spaced	Vertical flat spaced	Trefoil
	2 cables, single-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c. flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or 3 c ables three phase	2 cables, single-phase a.c. or d.c. or 3 cables three phase	3 cables, trefoil 3-phase a.c.
1	2	3	4	5	6	7	8	9	10	11	12
mm^2	A	A	A	A	A	A	A	A	A	A	A
1.5	18	17	22	19	25	23	-	-	-	-	-
2.5	24	23	30	26	34	31	-	-	-	-	-

Voltage Drop (Per Amp Per Meter)

Nominal Cross Section Area	2 cables d.c.	2 cables, single-phase a.c.		3 or 4 cables, 3-phase a.c.		
		Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)	Ref. Methods 1 and 11 (clipped direct or on trays touching)	Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)	Ref. Methods 1, 11 and 12 (in trefoil)	Ref. Methods 1 and 11 (Flat and touching)
1	2	3	4	5	6	7
mm^2	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m
1.5	31	31	27	27	27	27
2.5	19	19	16	16	16	16

Rated Voltage

Standard

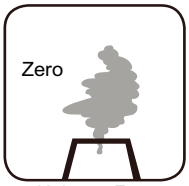

Flame Retardancy
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1


Reduced Fire Propagation
NF C32-070-2.2(C1)
IEC60332-3-24/EN50266-2-4


Low Toxicity
NES 02-713/NF C 20-454


Low Corrosivity
IEC60754-2
EN50267-2-2/3
NF C 32-074

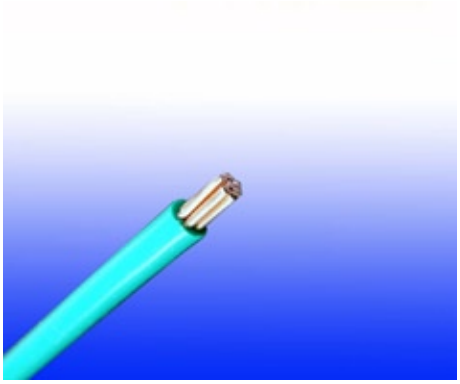

Low Smoke Emission
IEC 61034-1&2
EN 50268-1&2/NF C32-073

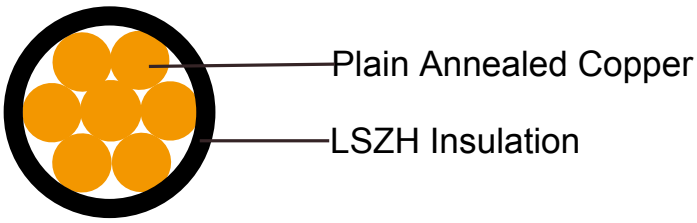


Halogen Free
IEC60754-1
EN50267-2-1

450/750V LSZH Insulated, Non-sheathed Power Cables (single core)

FTX100 07Z1-R (CU/LSZH 450/750V Class 2)





APPLICATION

This cables are mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design to BS 7211

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1 ; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1*
Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)	EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4
Halogen Free	IEC 60754-1; EN 50267-2-1; DIN VDE 0482-267-2-1; CEI 20-37/2-1 ; BS 6425-1*
No Corrosive Gas Emission	IEC 60754-2; EN 50267-2-2; DIN VDE 0482-267-2-2; CEI 20-37/2-2 ; BS 6425-2*
Minimum Smoke Emission	IEC 61034-1&2; EN 61034 -1&2; DIN VDE 0482-1034-1&2; CEI 20-37/3-1&2; EN 50268-1&2*; BS 7622-1&2*
No Toxic gases	NES 02-713; NF C 20-454

Note: Asterisk * denotes superseded standard.

VOLTAGE RATING

450/750V

CABLE CONSTRUCTION

Conductor: Plain annealed copper wire, stranded according to IEC(EN) 60228 class 2.
Insulation: LSZH compound

COLOUR CODE

Insulation Colour as per BS7671

	with earth conductor	without earth conductor
2Cores	-	Brown,Blue
3Cores	Yellow/Green,Brown,Blue	Brown,Gray,Black
4Cores	Yellow/Green,Brown,Gray,Black	Brown,Gray,Black,Blue
5Cores	Yellow/Green,Brown,Gray,Black,Blue	Brown,Gray,Black,Blue,Black
above 5 Cores	Yellow/Green,Black Numbered	Black Numbered

Sheath Colour: Black

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: Max.90°C
250°C in short-circuit for 5s max.

Minimum bending radius: 6 x Overall Diameter

CONSTRUCTION PARAMETERS

Conductor		FTX100 07Z1-R		
No. of Core X Cross Section	No./Nominal Diameter of Strands	Nominal Insulation Thickness	Nominal Overall Diameter	Approx. Weight
Noxmm^2	No./mm	mm	mm	kg/km
1x1.5	7/0.53	0.7	3.1	23
1x2.5	7/0.67	0.8	3.7	35
1x4	7/0.85	0.8	4.3	52
1x6	7/1.04	0.8	4.8	73
1x10	7/1.35	1.0	6.2	120
1x16	7/1.70	1.0	7.2	180
1x25	7/2.24	1.2	9.0	285
1x35	19/1.53	1.2	10.2	375
1x50	19/1.78	1.4	12.0	510
1x70	19/2.14	1.4	14.0	720
1x95	19/2.52	1.6	16.0	995
1x120	37/2.03	1.6	18.0	1230
1x150	37/2.25	1.8	20.0	1520
1x185	37/2.52	2.0	22.0	1900
1x240	61/2.25	2.2	25.0	2480
1x300	61/2.52	2.4	28.0	3100
1x400	61.2.85	2.6	31.5	3950
1x500	61/3.20	2.8	35.0	4950
1x630	127/2.52	2.8	39.0	6360

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 90°C

Ambient Temperature : 30°C

Current-Carrying Capacities (Amp)

Conductor cross-sectional area	Reference Method 4 (enclosed in conduit in thermally insulating wall etc)		Reference Method 3 (enclosed in conduit on a wall or in trunking etc)		Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated cable tray, horizontal or vertical)		Reference Method 12 (free air)		
									Horizontal flat spaced	Vertical flat spaced	Trefoil
	2 cables, single-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c. flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or 3 c ables three phase	2 cables, single-phase a.c. or d.c. or 3 cables three phase	3 cables, trefoil 3-phase a.c.
1	2	3	4	5	6	7	8	9	10	11	12
mm^2	A	A	A	A	A	A	A	A	A	A	A
1.5	18	17	22	19	25	23	-	-	-	-	-
2.5	24	23	30	26	34	31	-	-	-	-	-
4	33	30	40	35	46	41	-	-	-	-	-
6	43	39	51	45	59	54	-	-	-	-	-
10	58	53	71	63	81	74	-	-	-	-	-
16	76	70	95	85	109	99	-	-	-	-	-
25	100	91	126	111	143	130	158	140	183	163	138
35	125	111	156	138	176	161	195	176	226	203	171
50	149	135	189	168	228	209	293	215	274	246	209
70	189	170	240	214	293	268	308	279	351	318	270
95	228	205	290	259	355	326	375	341	426	389	330
120	263	235	336	299	413	379	436	398	495	453	385
150	300	270	375	328	476	436	505	461	570	524	445
185	341	306	426	370	545	500	579	530	651	600	511
240	400	358	500	433	644	590	686	630	769	711	606
300	459	410	573	493	743	681	794	730	886	824	701
400	-	-	684	584	868	793	915	849	1065	994	820
500	-	-	783	666	990	904	1044	973	1228	1150	936
630	-	-	900	764	1130	1033	1191	1115	1423	1338	1069

Voltage Drop (Per Amp Per Meter)

Nominal Cross Section Area	2 cables d.c.	2 cables, single-phase a.c.		3 or 4 cables, 3-phase a.c.		
		Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)	Ref. Methods 1 and 11 (clipped direct or on trays touching)	Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)	Ref. Methods 1, 11 and 12 (in trefoil)	Ref. Methods 1 and 11 (Flat and touching)

1	2	3			4			5			6			7		
mm^2	mV/A/m	mV/A/m			mV/A/m			mV/A/m			mV/A/m			mV/A/m		
1.5	31	31			27			27			27			27		
2.5	19	19			16			16			16			16		
4	33	12			10			10			10			10		
6	7.8	7.9			6.8			6.8			6.8			6.8		
10	4.7	4.7			4.7			4			4			4		
16	2.9	2.9			2.9			2.5			2.5			2.5		
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
25	1.85	1.85	0.31	1.9	1.85	0.19	1.85	1.6	0.27	1.65	1.6	0.165	1.6	1.6	0.19	1.6
35	1.35	1.35	0.29	1.35	1.35	0.18	1.35	1.15	0.25	1.15	1.15	0.155	1.5	1.15	0.18	1.15
50	0.99	1	0.29	1.05	0.99	0.18	1	0.87	0.25	0.9	0.86	0.155	0.87	0.86	0.18	0.87
70	0.68	0.7	0.28	0.75	0.68	0.175	0.71	0.6	0.24	0.65	0.59	0.15	0.61	0.59	0.175	0.62
95	0.49	0.51	0.27	0.58	0.49	0.17	0.52	0.44	0.23	0.5	0.43	0.145	0.45	0.43	0.17	0.46
120	0.39	0.41	0.26	0.48	0.39	0.165	0.43	0.35	0.23	0.42	0.34	0.14	0.37	0.34	0.165	0.38
150	0.32	0.33	0.26	0.43	0.32	0.165	0.36	0.29	0.23	0.37	0.28	0.14	0.31	0.28	0.165	0.32
185	0.25	0.27	0.26	0.37	0.26	0.165	0.3	0.23	0.23	0.32	0.22	0.14	0.26	0.22	0.165	0.28
240	0.19	0.21	0.26	0.33	0.2	0.16	0.25	0.185	0.22	0.29	0.17	0.14	0.22	0.17	0.165	0.24
300	0.155	0.175	0.25	0.31	0.16	0.16	0.22	0.15	0.22	0.27	0.14	0.14	0.195	0.135	0.16	0.21
400	0.12	0.14	0.25	0.29	0.13	0.155	0.2	0.125	0.22	0.25	0.11	0.135	0.175	0.11	0.16	0.195
500	0.093	0.12	0.25	0.28	0.105	0.155	0.185	0.1	0.22	0.24	0.09	0.135	0.16	0.088	0.16	0.18
630	0.072	0.1	0.25	0.27	0.086	0.155	0.175	0.088	0.21	0.23	0.074	0.135	0.15	0.071	0.16	0.17

Note :
r = conductor resistance at operating temperature
x = reactance
z = impedance

Rated Voltage

Standard


Flame Retardancy
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1


Reduced Fire Propagation
NF C32-070-2.2(C1)
IEC60332-3-24/EN50266-2-4


Low Toxicity
NES 02-713/NF C 20-454

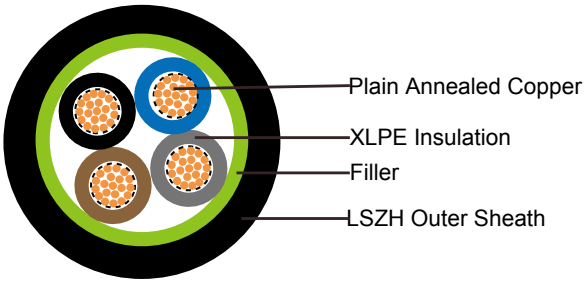

Low Corrosivity
IEC60754-2
EN50267-2-2/3
NF C 32-074


Low Smoke Emission
IEC 61034-1&2
EN 50268-1&2/NF C32-073

Halogen Free
IEC60754-1/
EN50267-2-1

450/750V XLPE Insulated, LSZH Sheathed Power Cables (2-4cores)

FTX200 07RZ1-R (CU/XLPE/LSZH 450/750V Class 2)



APPLICATION

The cables is mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design to BS 7211; IEC 60502-1

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1 ; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1*
Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)	EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4
Halogen Free	IEC 60754-1; EN 50267-2-1; DIN VDE 0482-267-2-1; CEI 20-37/2-1 ; BS 6425-1*
No Corrosive Gas Emission	IEC 60754-2; EN 50267-2-2; DIN VDE 0482-267-2-2; CEI 20-37/2-2 ; BS 6425-2*
Minimum Smoke Emission	IEC 61034-1&2; EN 61034 -1&2; DIN VDE 0482-1034-1&2; CEI 20-37/3-1&2; EN 50268-1&2*; BS 7622-1&2*
No Toxic gases	NES 02-713; NF C 20-454

Note: Asterisk * denotes superseded standard.

VOLTAGE RATING

450/750V

CABLE CONSTRUCTION

Conductor: Plain annealed copper wire, stranded according to IEC(EN) 60228 class 2.
Insulation: Extruded cross-linked XLPE compound.

Filler, binder (if any): PP, PET
Outer Sheath: Thermoplastic LSZH compound type LTS3 as per BS 7655-6.1 (Thermosetting LSZH compound type SW2-SW4 as per BS 7655-2.6 can be offered.)

COLOUR CODE

Insulation Colour as per BS7671

	with earth conductor	without earth conductor
2Cores	-	Brown,Blue
3Cores	Yellow/Green,Brown,Blue	Brown,Gray,Black
4Cores	Yellow/Green,Brown,Gray,Black	Brown,Gray,Black,Blue
5Cores	Yellow/Green,Brown,Gray,Black,Blue	Brown,Gray,Black,Blue,Black
above 5 Cores	Yellow/Green,Black Numbered	Black Numbered

Sheath Colour: Black

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: Max.90°C for XLPE
250°C in short-circuit for 5s max.
Minimum bending radius: 6 x Overall Diameter

CONSTRUCTION PARAMETERS

Conductor			FTX200 07RZ1-R				
No. of Core X Cross Section	No./Nominal Diameter of Strands	Nominal Overall Diameter Conductor	Nominal Insulation Thickness	Nominal Sheath Thickness	Nominal Overall Diameter	Max.DC resistance of conductor @20°C	Approx. Weight
Noxmm^2	No./mm	mm	mm	mm	mm	Ω/km	kg/km
2x1.0	7/0.44	1.32	0.7	1.2	8.5	18.1	101
2x1.5	7/0.53	1.59	0.7	1.2	9.1	12.1	120
2x2.5	7/0.67	2.01	0.7	1.2	10.0	7.41	154
2x4.0	7/0.85	2.55	0.7	1.3	11.1	4.61	205
3x1.0	7/0.44	1.32	0.7	1.2	9.0	18.1	118
3x1.5	7/0.53	1.59	0.7	1.2	9.6	12.1	142
3x2.5	7/0,67	2.01	0.7	1.2	10.6	7.41	185
3x4.0	7/0.85	2.55	0.7	1.3	11.8	4.61	251
4x1.0	7/0.44	1.32	0.7	1.2	9.8	18.1	141
4x1.5	7/0.53	1.59	0.7	1.2	10.5	12.1	171
4x2.5	7/0.67	2.01	0.7	1.3	11.6	7.41	226
4x4.0	7/0.85	2.55	0.7	1.3	13.0	4.61	309

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 90°C
Ambient Temperature : 30°C

Current-Carrying Capacities (Amp)

Conductor cross-sectional area	Reference Method 4 (enclosed in conduit in thermally insulating wall etc)		Reference Method 3 (enclosed in conduit on a wall or in trunking etc)		Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated cable tray, horizontal or vertical)		Reference Method 12 (free air)		
									Horizontal flat spaced	Vertical flat spaced	Trefoil
	2 cables, single-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c. flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or 3 c ables three phase	2 cables, single-phase a.c. or d.c. or 3 cables three phase	3 cables, trefoil 3-phase a.c.
1	2	3	4	5	6	7	8	9	10	11	12
mm^2	A	A	A	A	A	A	A	A	A	A	A
1.0	13	-	-	-	15	-	-	-	-	-	-
1.5	18	17	22	19	25	23	-	-	-	-	-
2.5	24	23	30	26	34	31	-	-	-	-	-
4	33	30	40	35	46	41	-	-	-	-	-

Voltage Drop (Per Amp Per Meter)

Nominal Cross Section Area	2 cables d.c.	2 cables, single-phase a.c.		3 or 4 cables, 3-phase a.c.		
		Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)	Ref. Methods 1 and 11 (clipped direct or on trays touching)	Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)	Ref. Methods 1, 11 and 12 (in trefoil)	Ref. Methods 1 and 11 (Flat and touching)
1	2	3	4	5	6	7
mm^2	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m
1.0	46	46	-	-	-	-
1.5	31	31	27	27	27	27
2.5	19	19	16	16	16	16
4	33	12	10	10	10	10

Rated Voltage

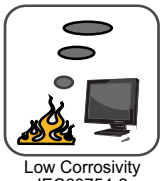
Standard

Standard


Flame Retardancy
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1


Reduced Fire Propagation
NF C32-070-2.2(C1)
IEC60332-3-24
EN50266-2-4


Low Toxicity
NES 02-713/NF C 20-454

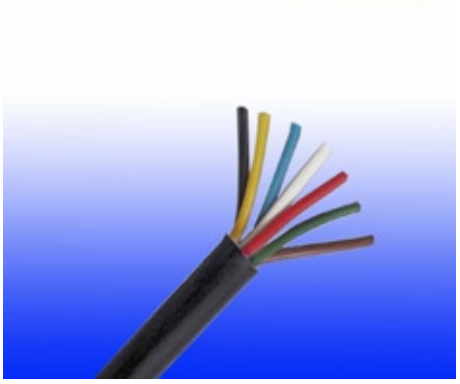

Low Corrosivity
IEC60754-2
EN50267-2-2/3
NF C 32-074

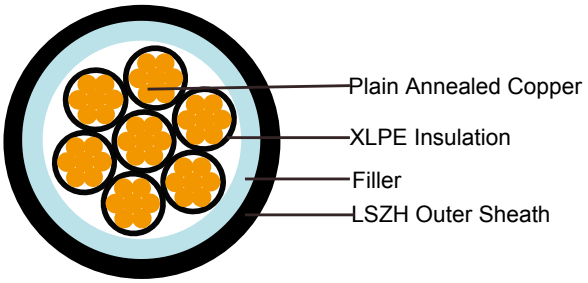

Low Smoke Emission
IEC 61034-1&2
EN 50268-1&2/NF C32-073

Halogen Free
IEC60754-1/
EN50267-2-1

450/750V XLPE Insulated, LSZH Sheathed Power Cables (multicore)

FTX200 07RZ1-R (CU/XLPE/LSZH 450/750V Class 2)





APPLICATION

The cables are mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design to BS 7211; IEC 60502-1

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1 ; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1*
Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)	EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4
Halogen Free	IEC 60754-1; EN 50267-2-1; DIN VDE 0482-267-2-1; CEI 20-37/2-1 ; BS 6425-1*
No Corrosive Gas Emission	IEC 60754-2; EN 50267-2-2; DIN VDE 0482-267-2-2; CEI 20-37/2-2 ; BS 6425-2*
Minimum Smoke Emission	IEC 61034-1&2; EN 61034 -1&2; DIN VDE 0482-1034-1&2; CEI 20-37/3-1&2; EN 50268-1&2*; BS 7622-1&2*
No Toxic gases	NES 02-713; NF C 20-454

Note: Asterisk * denotes superseded standard.

VOLTAGE RATING

450/750V

CABLE CONSTRUCTION

Conductor: Plain annealed copper wire, stranded according to IEC(EN) 60228 class 2.

Insulation: Extruded cross-linked XLPE compound.
Filler, binder (if any): PP, PET
Outer Sheath: Thermoplastic LSZH compound type LTS3 as per BS 7655-6.1 (Thermosetting LSZH compound type SW2-SW4 as per BS 7655-2.6 can be offered.)

COLOUR CODE

Insulation Colour as per BS7671

	with earth conductor	without earth conductor
2Cores	-	Brown,Blue
3Cores	Yellow/Green,Brown,Blue	Brown,Gray,Black
4Cores	Yellow/Green,Brown,Gray,Black	Brown,Gray,Black,Blue
5Cores	Yellow/Green,Brown,Gray,Black,Blue	Brown,Gray,Black,Blue,Black
above 5 Cores	Yellow/Green,Black Numbered	Black Numbered

Sheath Colour: Black

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: Max.90°C for XLPE
250°C in short-circuit for 5s max.
Minimum bending radius: 6 x Overall Diameter

CONSTRUCTION PARAMETERS

Conductor			FTX200 07RZ1-R				
No. of Core X Cross Section	No./Nominal Diameter of Strands	Nominal Overall Diameter Conductor	Nominal Insulation Thickness	Nominal Sheath Thickness	Nominal Overall Diameter	Max.DC resistance of conductor @20°C	Approx. Weight
Noxmm^2	No./mm	mm	mm	mm	mm	Ω/km	kg/km
7x1.0	7/0.44	1.32	0.7	1.3	11.6	18.1	210
7x1.5	7/0.53	1.59	0.7	1.3	12.5	12.1	258
7x2.5	7/0.67	2.01	0.7	1.3	13.8	7.41	347
12x1.5	7/0.53	1.59	0.7	1.4	16.5	12.1	413
12x2.5	7/0.67	2.01	0.7	1.5	18.3	7.41	561
19x1.5	7/0.53	1.59	0.7	1.5	19.3	12.1	609
19x2.5	7/0.67	2.01	0.7	1.6	21.6	7.41	836

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 90°C
Ambient Temperature : 30°C
Current-Carrying Capacities (Amp)

Conductor cross-sectional area	Reference Method 4 (enclosed in conduit in thermally insulating wall etc)		Reference Method 3 (enclosed in conduit on a wall or in trunking etc)		Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated cable tray, horizontal or vertical)		Reference Method 12 (free air)		
									Horizontal flat spaced	Vertical flat spaced	Trefoil
	2 cables, single-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c. flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or 3 c ables three phase	2 cables, single-phase a.c. or d.c. or 3 cables three phase	3 cables, trefoil 3-phase a.c.
1	2	3	4	5	6	7	8	9	10	11	12
mm^2	A	A	A	A	A	A	A	A	A	A	A
1.0	13	-	-	-	15	-	-	-	-	-	-
1.5	18	17	22	19	25	23	-	-	-	-	-
2.5	24	23	30	26	34	31	-	-	-	-	-

Voltage Drop (Per Amp Per Meter)

Nominal Cross Section Area	2 cables d.c.	2 cables, single-phase a.c.		3 or 4 cables, 3-phase a.c.		
		Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)	Ref. Methods 1 and 11 (clipped direct or on trays touching)	Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)	Ref. Methods 1, 11 and 12 (in trefoil)	Ref. Methods 1 and 11 (Flat and touching)
1	2	3	4	5	6	7
mm^2	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m
1.0	46	46	-	-	-	-
1.5	31	31	27	27	27	27
2.5	19	19	16	16	16	16

Rated Voltage

Standard

Standard


Flame Retardancy
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1


Reduced Fire Propagation
NF C32-070-2.2(C1)
IEC60332-3-24
EN50266-2-4


Low Toxicity
NES 02-713/NF C 20-454

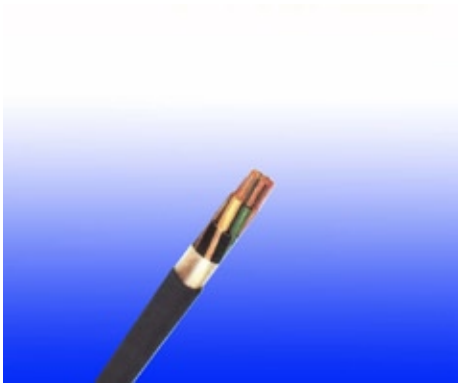

Low Corrosivity
IEC60754-2
EN50267-2-2/3
NF C 32-074

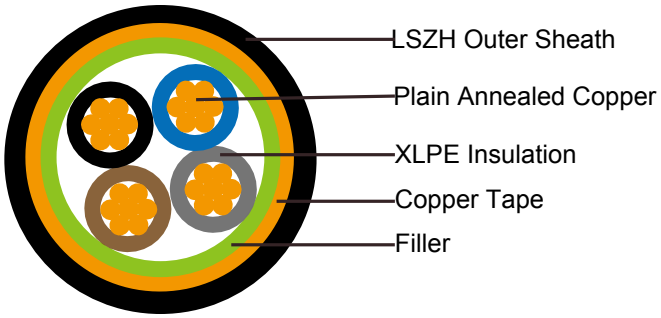

Low Smoke Emission
IEC 61034-1&2
EN 50268-1&2/NF C32-073

Halogen Free
IEC60754-1/
EN50267-2-1

450/750V XLPE Insulated, LSZH Sheathed, Screened Power Cables (2-4cores)

FTX200 07RCZ1-R (CU/XLPE/CUTO/LSZH 450/750V Class 2)





APPLICATION

The cables are mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design to BS 7211; IEC 60502-1

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1 ; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1*
Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)	EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4
Halogen Free	IEC 60754-1; EN 50267-2-1; DIN VDE 0482-267-2-1; CEI 20-37/2-1 ; BS 6425-1*
No Corrosive Gas Emission	IEC 60754-2; EN 50267-2-2; DIN VDE 0482-267-2-2; CEI 20-37/2-2 ; BS 6425-2*
Minimum Smoke Emission	IEC 61034-1&2; EN 61034 -1&2; DIN VDE 0482-1034-1&2; CEI 20-37/3-1&2; EN 50268-1&2*; BS 7622-1&2*
No Toxic gases	NES 02-713; NF C 20-454

Note: Asterisk * denotes superseded standard.

VOLTAGE RATING

450/750V

CABLE CONSTRUCTION

Conductor: Plain annealed copper wire, stranded according to IEC(EN) 60228 class 2.
Insulation: Extruded cross-linked XLPE compound.
Filler, binder (if any): PP, PET, LSZH
Overall Screen: Copper tape
Outer Sheath: Thermoplastic LSZH compound type LTS3 as per BS 7655-6.1 (Thermosetting LSZH compound type SW2-SW4 as per BS 7655-2.6 can be offered.)

COLOUR CODE

Insulation Colour as per BS7671

	with earth conductor	without earth conductor
2Cores	-	Brown,Blue
3Cores	Yellow/Green,Brown,Blue	Brown,Gray,Black
4Cores	Yellow/Green,Brown,Gray,Black	Brown,Gray,Black,Blue
5Cores	Yellow/Green,Brown,Gray,Black,Blue	Brown,Gray,Black,Blue,Black
above 5 Cores	Yellow/Green,Black Numbered	Black Numbered

Sheath Colour: Black

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: Max.90°C for XLPE
250°C in short-circuit for 5s max.
Minimum bending radius: 8 x Overall Diameter

CONSTRUCTION PARAMETERS

Conductor			FTX200 07RCZ1-R					
No. of Core X Cross Section	No./ Nominal Diameter of Strands	Nominal Overall Diameter Conductor	Nominal Insulation Thickness	Nominal Copper Tape Thickness	Nominal Sheath Thickness	Nominal Overall Diameter	Max.DC resistance of conductor @20°C	Approx. Weight
Noxmm^2	No./mm	mm	mm	mm	mm	mm	Ω/km	kg/km
2x1.0	7/0.44	1.32	0.7	0.1	1.2	10.7	18.1	172
2x1.5	7/0.53	1.59	0.7	0.1	1.3	11.3	12.1	197
2x2.5	7/0.67	2.01	0.7	0.1	1.3	12.2	7.41	239
2x4.0	7/0.85	2.55	0.7	0.1	1.3	13.4	4.61	300
3x1.0	7/0.44	1.32	0.7	0.1	1.3	11.2	18.1	194
3x1.5	7/O.53	1.59	0.7	0.1	1.3	11.8	12.1	224
3x2.5	7/0,67	2.01	0.7	0.1	1.3	12.8	7.41	276
3x4.0	7/0.85	2.55	0.7	0.1	1.3	14.1	4.61	353
4x1.0	7/0.44	1.32	0.7	0.1	1.3	12.0	18.1	224

4x1.5	7/0.53	1.59	0.7	0.1	1.4	12.7	12.1	261
4x2.5	7/0.67	2.01	0.7	0.1	1.3	13.9	7.41	326
4x4.0	7/0.85	2.55	0.7	0.1	1.3	15.3	4.61	422

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 90°C
Ambient Temperature : 30°C

Current-Carrying Capacities (Amp)

Conductor cross-sectional area	Reference Method 4 (enclosed in conduit in thermally insulating wall etc)		Reference Method 3 (enclosed in conduit on a wall or in trunking etc)		Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated cable tray, horizontal or vertical)		Reference Method 12 (free air)		
									Horizontal flat spaced	Vertical flat spaced	Trefoil
	2 cables, single-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c. flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or 3 c ables three phase	2 cables, single-phase a.c. or d.c. or 3 cables three phase	3 cables, trefoil 3-phase a.c.
1	2	3	4	5	6	7	8	9	10	11	12
mm^2	A	A	A	A	A	A	A	A	A	A	A
1.0	13	-	-	-	15	-	-	-	-	-	-
1.5	18	17	22	19	25	23	-	-	-	-	-
2.5	24	23	30	26	34	31	-	-	-	-	-
4	33	30	40	35	46	41	-	-	-	-	-

Voltage Drop (Per Amp Per Meter)

Nominal Cross Section Area	2 cables d.c.	2 cables, single-phase a.c.		3 or 4 cables, 3-phase a.c.		
		Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)	Ref. Methods 1 and 11 (clipped direct or on trays touching)	Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)	Ref. Methods 1, 11 and 12 (in trefoil)	Ref. Methods 1 and 11 (Flat and touching)
1	2	3	4	5	6	7
mm^2	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m
1.0	46	46	-	-	-	-
1.5	31	31	27	27	27	27
2.5	19	19	16	16	16	16
4	33	12	10	10	10	10

Rated Voltage

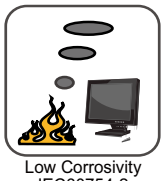
Standard

Standard


Flame Retardancy
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1


Reduced Fire Propagation
NF C32-070-2.2(C1)
IEC60332-3-24
EN50266-2-4


Low Toxicity
NES 02-713/NF C 20-454

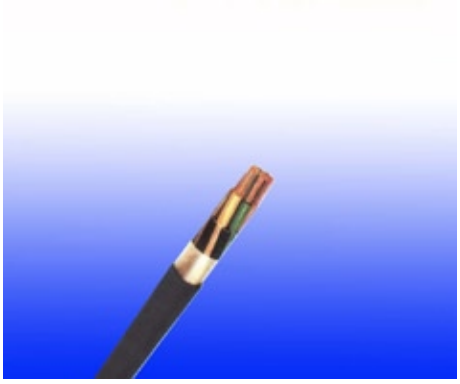

Low Corrosivity
IEC60754-2
EN50267-2-2/3
NF C 32-074

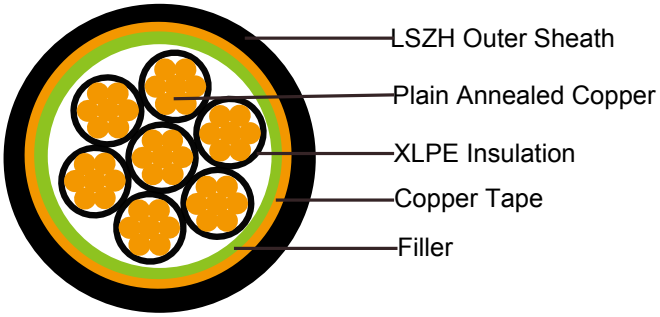

Low Smoke Emission
IEC 61034-1&2
EN 50268-1&2/NF C32-073

Halogen Free
IEC60754-1/
EN50267-2-1

450/750V XLPE Insulated, LSZH Sheathed, Screened Power Cables (multicore)

FTX200 07RCZ1-R (CU/XLPE/CUTO/LSZH 450/750V Class 2)





APPLICATION

The cables is mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design to BS 7211; IEC 60502-1

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1 ; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1*
Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)	EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4
Halogen Free	IEC 60754-1; EN 50267-2-1; DIN VDE 0482-267-2-1; CEI 20-37/2-1 ; BS 6425-1*
No Corrosive Gas Emission	IEC 60754-2; EN 50267-2-2; DIN VDE 0482-267-2-2; CEI 20-37/2-2 ; BS 6425-2*
Minimum Smoke Emission	IEC 61034-1&2; EN 61034 -1&2; DIN VDE 0482-1034-1&2; CEI 20-37/3-1&2; EN 50268-1&2*; BS 7622-1&2*
No Toxic gases	NES 02-713; NF C 20-454

Note: Asterisk * denotes superseded standard.

VOLTAGE RATING

450/750V

CABLE CONSTRUCTION

Conductor: Plain annealed copper wire, stranded according to IEC(EN) 60228 class 2.
Insulation: Extruded cross-linked XLPE compound.
Filler, binder (if any): PP, PET, LSZH
Overall Screen: Copper tape
Outer Sheath: Thermoplastic LSZH compound type LTS3 as per BS 7655-6.1 (Thermosetting LSZH compound type SW2-SW4 as per BS 7655-2.6 can be offered.)

COLOUR CODE

Insulation Colour as per BS7671

	with earth conductor	without earth conductor
2Cores	-	Brown,Blue
3Cores	Yellow/Green,Brown,Blue	Brown,Gray,Black
4Cores	Yellow/Green,Brown,Gray,Black	Brown,Gray,Black,Blue
5Cores	Yellow/Green,Brown,Gray,Black,Blue	Brown,Gray,Black,Blue,Black
above 5 Cores	Yellow/Green,Black Numbered	Black Numbered

Sheath Colour: Black

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: Max.90°C for XLPE
250°C in short-circuit for 5s max.
Minimum bending radius: 8 x Overall Diameter

CONSTRUCTION PARAMETERS

Conductor			FTX200 07RCZ1-R					
No. of Core X Cross Section	No./ Nominal Diameter of Strands	Nominal Overall Diameter Conductor	Nominal Insulation Thickness	Nominal Copper Tape Thickness	Nominal Sheath Thickness	Nominal Overall Diameter	Max.DC resistance of conductor @20°C	Approx. Weight
Noxmm^2	No./mm	mm	mm	mm	mm	mm	Ω/km	kg/km
7x1.0	7/0.44	1.32	0.7	0.1	1.3	13.9	18.1	309
7x1.5	7/0.53	1.59	0.7	0.1	1.4	14.8	12.1	366
7x2.5	7/0.44	2.01	0.7	0.1	1.4	16.2	7.41	468
12x1.5	7/0.53	1.59	0.7	0.1	1.5	18.9	12.1	560
12x2.5	7/0.67	2.01	0.7	0.1	1.5	20.8	7.41	727
19x1.5	7/0.53	1.59	0.7	0.1	1.6	21.9	12.1	786
19x2.5	7/0.67	2.01	0.7	0.1	1.6	24.2	7.41	1,037

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 90°C

Ambient Temperature : 30°C

Current-Carrying Capacities (Amp)

Conductor cross-sectional area	Reference Method 4 (enclosed in conduit in thermally insulating wall etc)		Reference Method 3 (enclosed in conduit on a wall or in trunking etc)		Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated cable tray, horizontal or vertical)		Reference Method 12 (free air)		
									Horizontal flat spaced	Vertical flat spaced	Trefoil
	2 cables, single-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c. flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or 3 c ables three phase	2 cables, single-phase a.c. or d.c. or 3 cables three phase	3 cables, trefoil 3-phase a.c.
1	2	3	4	5	6	7	8	9	10	11	12
mm^2	A	A	A	A	A	A	A	A	A	A	A
1.0	13	-	-	-	15	-	-	-	-	-	-
1.5	18	17	22	19	25	23	-	-	-	-	-
2.5	24	23	30	26	34	31	-	-	-	-	-
4	33	30	40	35	46	41	-	-	-	-	-

Voltage Drop (Per Amp Per Meter)

Nominal Cross Section Area	2 cables d.c.	2 cables, single-phase a.c.		3 or 4 cables, 3-phase a.c.		
		Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)	Ref. Methods 1 and 11 (clipped direct or on trays touching)	Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)	Ref. Methods 1, 11 and 12 (in trefoil)	Ref. Methods 1 and 11 (Flat and touching)
1	2	3	4	5	6	7
mm^2	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m
1.0	46	46	-	-	-	-
1.5	31	31	27	27	27	27
2.5	19	19	16	16	16	16
4	33	12	10	10	10	10

Rated Voltage

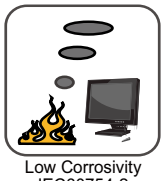
Standard

Standard


Flame Retardancy
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1


Reduced Fire Propagation
NF C32-070-2.2(C1)
IEC60332-3-24
EN50266-2-4


Low Toxicity
NES 02-713/NF C 20-454

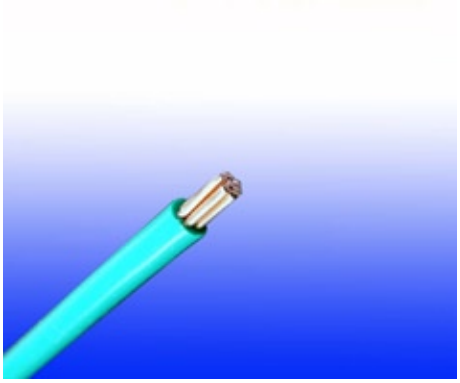

Low Corrosivity
IEC60754-2
EN50267-2-2/3
NF C 32-074

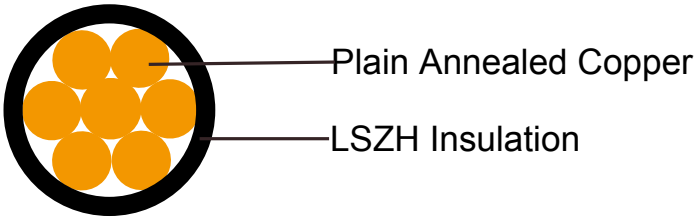

Low Smoke Emission
IEC 61034-1&2
EN 50268-1&2/NF C32-073

Halogen Free
IEC60754-1/
EN50267-2-1

600/1000V LSZH Insulated, Non-sheathed Power Cables (single core)

FTX300 1Z1-R (CU/LSZH 600/1000V Class 2)





APPLICATION

The cables is mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design to BS 7211

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1 ; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1*
Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)	EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4
Halogen Free	IEC 60754-1; EN 50267-2-1; DIN VDE 0482-267-2-1; CEI 20-37/2-1 ; BS 6425-1*
No Corrosive Gas Emission	IEC 60754-2; EN 50267-2-2; DIN VDE 0482-267-2-2; CEI 20-37/2-2 ; BS 6425-2*
Minimum Smoke Emission	IEC 61034-1&2; EN 61034 -1&2; DIN VDE 0482-1034-1&2; CEI 20-37/3-1&2; EN 50268-1&2*; BS 7622-1&2*
No Toxic gases	NES 02-713; NF C 20-454

Note: Asterisk * denotes superseded standard.

VOLTAGE RATING

600/1000V

CABLE CONSTRUCTION

Conductor: Plain annealed copper wire, stranded according to IEC(EN) 60228 class 2.
Insulation: Extruded cross-linked XLPE compound.

COLOUR CODE

Insulation Colour as per BS7671

	with earth conductor	without earth conductor
2Cores	-	Brown,Blue
3Cores	Yellow/Green,Brown,Blue	Brown,Gray,Black
4Cores	Yellow/Green,Brown,Gray,Black	Brown,Gray,Black,Blue
5Cores	Yellow/Green,Brown,Gray,Black,Blue	Brown,Gray,Black,Blue,Black
above 5 Cores	Yellow/Green,Black Numbered	Black Numbered

Sheath Colour: Black

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: Max.90°C
250°C in short-circuit for 5s max.
Minimum bending radius: 8 x Overall Diameter (unarmoured cable)
10 x Overall Diameter (armoured cable)

CONSTRUCTION PARAMETERS

Conductor		FTX300 1Z1-R		
No. of Core X Cross Section	No./Nominal Diameter of Strands	Nominal Insulation Thickness	Insulated, Non-Sheathed	
			Nominal Overall Diameter	Approx. Weight
Noxmm^2	No./mm	mm	mm	kg/km
1x1.5	7/0.53	0.7	3.1	22
1x2.5	7/0.67	0.8	3.7	34
1x4	7/0.85	0.8	4.3	50
1x6	7/1.04	0.8	4.8	70
1x10	7/1.35	1.0	6.2	116
1x16	7/1.70	1.0	7.2	174
1x25	7/2.14	1.2	9.0	276
1x35	7/2.52	1.2	10.0	366
1x50	19/1.78	1.4	11.9	502
1x70	19/2.14	1.4	13.7	706
1x95	19/2.52	1.6	16.0	974
1x120	37/2.03	1.6	17.6	1213
1x150	37/2.25	1.8	19.6	1492

1x185	37/2.52	2.0	21.8	1868
1x240	61/2.25	2.2	24.4	2443
1x300	61/2.52	2.4	27.7	3055
1x400	61/2.85	2.6	31.1	3888
1x500	61/3.20	2.8	34.6	4880
1x630	127/2.52	2.8	38.6	6229

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 90°C
Ambient Temperature : 30°C

Current-Carrying Capacities (Amp)

Conductor cross-sectional area	Reference Method 4 (enclosed in conduit in thermally insulating wall etc)		Reference Method 3 (enclosed in conduit on a wall or in trunking etc)		Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated cable tray, horizontal or vertical)		Reference Method 12 (free air)		
									Horizontal flat spaced	Vertical flat spaced	Trefoil
	2 cables, single-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c. flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or 3 c ables three phase	2 cables, single-phase a.c. or d.c. or 3 cables three phase	3 cables, trefoil 3-phase a.c.
1	2	3	4	5	6	7	8	9	10	11	12
mm^2	A	A	A	A	A	A	A	A	A	A	A
1.5	18	17	22	19	25	23	-	-	-	-	-
2.5	24	23	30	26	34	31	-	-	-	-	-
4	33	30	40	35	46	41	-	-	-	-	-
6	43	39	51	45	59	54	-	-	-	-	-
10	58	53	71	63	81	74	-	-	-	-	-
16	76	70	95	85	109	99	-	-	-	-	-
25	100	91	126	111	143	130	158	140	183	163	138
35	125	111	156	138	176	161	195	176	226	203	171

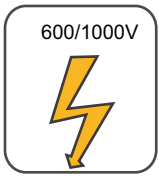
50	149	135	189	168	228	209	293	215	274	246	209
70	189	170	240	214	293	268	308	279	351	318	270
95	228	205	290	259	355	326	375	341	426	389	330
120	263	235	336	299	413	379	436	398	495	453	385
150	300	270	375	328	476	436	505	461	570	524	445
185	341	306	426	370	545	500	579	530	651	600	511
240	400	358	500	433	644	590	686	630	769	711	606
300	459	410	573	493	743	681	794	730	886	824	701
400	-	-	684	584	868	793	915	849	1065	994	820
500	-	-	783	666	990	904	1044	973	1228	1150	936
630	-	-	900	764	1130	1033	1191	1115	1423	1338	1069

Voltage Drop (Per Amp Per Meter)

Size of conductor	2 cables d.c.	2 cables, single-phase a.c.						3 or 4 cables, 3-phase a.c.								
		Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)			Ref. Methods 1 and 11 (clipped direct or on trays touching)			Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)			Ref. Methods 1, 11 and 12 (in trefoil)			Ref. Methods 1 and 11 (Flat and touching)		
1	2	3			4			5			6			7		
mm^2	mV/A/m	mV/A/m			mV/A/m			mV/A/m			mV/A/m			mV/A/m		
1.5	31	31			27			27			27			27		
2.5	19	19			16			16			16			16		
4	33	12			10			10			10			10		
6	7.8	7.9			6.8			6.8			6.8			6.8		
10	4.7	4.7			4.7			4			4			4		
16	2.9	2.9			2.9			2.5			2.5			2.5		
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
25	1.85	1.85	0.31	1.90	1.85	0.190	1.85	1.60	0.27	1.65	1.600	0.165	1.600	1.600	0.190	1.600
35	1.35	1.35	0.29	1.35	1.35	0.180	1.35	1.15	0.25	1.15	1.150	0.155	1.50	1.150	0.180	1.150
50	0.99	1.00	0.29	1.05	0.99	0.180	1.00	0.87	0.25	0.90	0.860	0.155	0.870	0.860	0.180	0.870
70	0.68	0.70	0.28	0.75	0.68	0.175	0.71	0.60	0.24	0.65	0.590	0.150	0.610	0.590	0.175	0.620
95	0.49	0.51	0.27	0.58	0.49	0.170	0.52	0.44	0.23	0.50	0.430	0.145	0.450	0.430	0.170	0.460

120	0.39	0.41	0.26	0.48	0.39	0.165	0.43	0.35	0.23	0.42	0.340	0.140	0.370	0.340	0.165	0.380
150	0.32	0.33	0.26	0.43	0.32	0.165	0.36	0.29	0.23	0.37	0.280	0.140	0.310	0.280	0.165	0.320
185	0.25	0.27	0.26	0.37	0.26	0.165	0.30	0.23	0.23	0.32	0.220	0.140	0.260	0.220	0.165	0.280
240	0.19	0.21	0.26	0.33	0.20	0.160	0.25	0.185	0.22	0.29	0.170	0.140	0.220	0.170	0.165	0.240
300	0.155	0.175	0.25	0.31	0.16	0.160	0.22	0.150	0.22	0.27	0.140	0.140	0.195	0.135	0.160	0.210
400	0.12	0.140	0.25	0.29	0.13	0.155	0.20	0.125	0.22	0.25	0.110	0.135	0.175	0.110	0.160	0.195
500	0.093	0.120	0.25	0.28	0.105	0.155	0.185	0.100	0.22	0.24	0.090	0.135	0.160	0.088	0.160	0.180
630	0.072	0.100	0.25	0.27	0.086	0.155	0.175	0.088	0.21	0.23	0.074	0.135	0.150	0.071	0.160	0.170

Note :
r = conductor resistance at operating temperature
x = reactance
z = impedance



Rated Voltage

Standard


Flame Retardancy
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1


Reduced Fire Propagation
NF C32-070-2.2(C1)
IEC60332-3-24
EN50266-2-4


Low Toxicity
NES 02-713/NF C 20-454

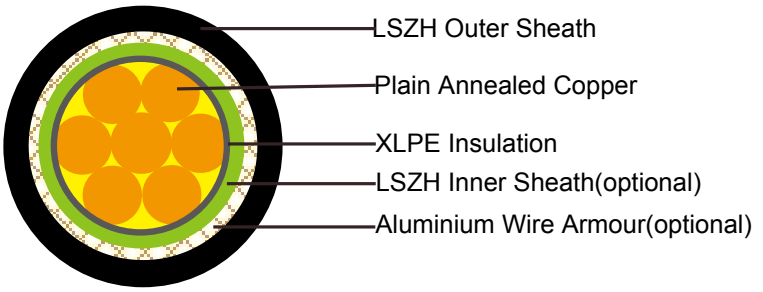

Low Corrosivity
IEC60754-2
EN50267-2-2/3
NF C 32-074


Low Smoke Emission
IEC 61034-1&2
EN 50268-1&2/NF C32-073

Halogen Free
IEC60754-1
EN50267-2-1

600/1000V XLPE Insulated, LSZH Sheathed, Armoured Power Cables (single core)

FTX300 1RZ1-R (CU/XLPE/LSZH 600/1000V Class 2)
FTX300 1RZ1MZ1-R (CU/XLPE/LSZH/AWA/LSZH 600/1000V Class 2)



APPLICATION

The cables is mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design to IEC 60502-1; BS 6724; BS 7211

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1 ; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1*
Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)	EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4
Halogen Free	IEC 60754-1; EN 50267-2-1; DIN VDE 0482-267-2-1; CEI 20-37/2-1 ; BS 6425-1*
No Corrosive Gas Emission	IEC 60754-2; EN 50267-2-2; DIN VDE 0482-267-2-2; CEI 20-37/2-2 ; BS 6425-2*
Minimum Smoke Emission	IEC 61034-1&2; EN 61034 -1&2; DIN VDE 0482-1034-1&2; CEI 20-37/3-1&2; EN 50268-1&2*; BS 7622-1&2*
No Toxic gases	NES 02-713; NF C 20-454

Note: Asterisk * denotes superseded standard.

VOLTAGE RATING

600/1000V

CABLE CONSTRUCTION

Conductor: Plain annealed copper wire, stranded according to IEC(EN) 60228 class 2.
Insulation: Extruded cross-linked XLPE compound.
Inner sheath(optional): LSZH Compound
Armouring(optional): Aluminium Wire
Outer Sheath: Thermoplastic LSZH compound type LTS3 as per BS 7655-6.1 (Thermosetting LSZH compound type SW2-SW4 as per BS 7655-2.6 can be offered.)

COLOUR CODE

Insulation Colour as per BS7671

	with earth conductor	without earth conductor
2Cores	-	Brown,Blue
3Cores	Yellow/Green,Brown,Blue	Brown,Gray,Black
4Cores	Yellow/Green,Brown,Gray,Black	Brown,Gray,Black,Blue
5Cores	Yellow/Green,Brown,Gray,Black,Blue	Brown,Gray,Black,Blue,Black
above 5 Cores	Yellow/Green,Black Numbered	Black Numbered

Sheath Colour: Black

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: Max.90°C
250°C in short-circuit for 5s max.
Minimum bending radius: 8 x Overall Diameter (unarmoured cable)
10 x Overall Diameter (armoured cable)

CONSTRUCTION PARAMETERS

Conductor		FTX300 1RZ1-R			FTX300 1RZ1MZ1-R			
No. of Core X Cross Section	No./ Nominal Diameter of Strands	Nominal Insulation Thickness	Unarmoured		Armoured			
			Nominal Overall Diameter	Approx. Weight	Diameter Under Armour	Armour Wire Diameter	Nominal Overall Diameter	Approx. Weight
mm^2	No./mm	mm	mm	kg/km	mm	mm	mm	kg/km
1x1.5	7/0.53	0.7	6	48	—	—	—	—
1x2.5	7/0.67	0.7	6.4	63	—	—	—	—
1x4	7/0.85	0.7	7.0	78	—	—	—	—
1x6	7/1.04	0.7	7.5	105	—	—	—	—
1x10	7/1.35	0.7	8.5	151	—	—	—	—
1x16	7/1.70	0.7	9.5	211	—	—	—	—
1x25	7/2.14	0.9	11.2	315	—	—	—	—
1x35	7/2.52	0.9	12.4	416	—	—	—	—
1x50	19/1.78	1.0	14	569	—	—	—	—
1x70	19/2.14	1.1	16	792	15.4	1.25	21.5	960

1x95	19/2.52	1.1	18	1068	17.3	1.25	23.4	1240
1x120	37/2.03	1.2	20	1325	19.1	1.6	25.9	1650
1x150	37/2.25	1.4	22	1627	21.1	1.6	27.9	1970
1x185	37/2.52	1.6	24.4	2021	23.2	1.6	30.1	2390
1x240	61/2.25	1.7	27.5	2617	26.2	1.6	33.2	3040
1x300	61/2.52	1.8	30.3	3252	28.8	1.6	35.8	3790
1x400	61/2.85	2.0	33.9	4131	32.7	2.0	40.9	4790
1x500	61/3.20	2.2	37.6	5175	36.2	2.0	44.6	5880
1x630	127/2.52	2.4	42.4	6631	40.6	2.0	49.2	7400
1x800	127/2.85	2.6	47.3	8412	45.7	2.5	55.7	9500
1x1000	127/3.20	2.8	52.4	10530	50.6	2.5	61.0	11750

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 90°C
Ambient Temperature : 30°C

FTX300 1RZ1-R
Current-Carrying Capacities (Amp)

Conductor cross-sectional area	Reference Method 4 (enclosed in conduit in thermally insulating wall etc)		Reference Method 3 (enclosed in conduit on a wall or in trunking etc)		Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated cable tray, horizontal or vertical)		Reference Method 12 (free air)		
									Horizontal flat spaced	Vertical flat spaced	Trefoil
	2 cables, single-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c. flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or 3 cables three phase	2 cables, single-phase a.c. or d.c. or 3 cables three phase	3 cables, trefoil 3-phase a.c.
1	2	3	4	5	6	7	8	9	10	11	12
mm^2	A	A	A	A	A	A	A	A	A	A	A
1.5	18	17	22	19	25	23	-	-	-	-	-
2.5	24	23	30	26	34	31	-	-	-	-	-
4	33	30	40	35	46	41	-	-	-	-	-
6	43	39	51	45	59	54	-	-	-	-	-
10	58	53	71	63	81	74	-	-	-	-	-

16	76	70	95	85	109	99	-	-	-	-	-
25	100	91	126	111	143	130	158	140	183	163	138
35	125	111	156	138	176	161	195	176	226	203	171
50	149	135	189	168	228	209	293	215	274	246	209
70	189	170	240	214	293	268	308	279	351	318	270
95	228	205	290	259	355	326	375	341	426	389	330
120	263	235	336	299	413	379	436	398	495	453	385
150	300	270	375	328	476	436	505	461	570	524	445
185	341	306	426	370	545	500	579	530	651	600	511
240	400	358	500	433	644	590	686	630	769	711	606
300	459	410	573	493	743	681	794	730	886	824	701
400	-	-	684	584	868	793	915	849	1065	994	820
500	-	-	783	666	990	904	1044	973	1228	1150	936
630	-	-	900	764	1130	1033	1191	1115	1423	1338	1069
800	-	-	-	-	1288	1179	1358	1275	1580	1485	1214
1000	-	-	-	-	1443	1323	1520	1436	1775	1671	1349

Voltage Drop (Per Amp Per Meter)

Size of conductor	2 cables d.c.	2 cables, single-phase a.c.						3 or 4 cables, 3-phase a.c.								
		Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)			Ref. Methods 1 and 11 (clipped direct or on trays touching)			Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)			Ref. Methods 1, 11 and 12 (in trefoil)			Ref. Methods 1 and 11 (Flat and touching)		
1	2	3			4			5			6			7		
mm^2	mV/A/m	mV/A/m			mV/A/m			mV/A/m			mV/A/m			mV/A/m		
1.5	31	31			27			27			27			27		
2.5	19	19			16			16			16			16		
4	33	12			10			10			10			10		
6	7.8	7.9			6.8			6.8			6.8			6.8		
10	4.7	4.7			4.7			4			4			4		
16	2.9	2.9			2.9			2.5			2.5			2.5		
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
25	1.85	1.85	0.31	1.90	1.85	0.190	1.85	1.60	0.27	1.65	1.600	0.165	1.600	1.600	0.190	1.600
35	1.35	1.35	0.29	1.35	1.35	0.180	1.35	1.15	0.25	1.15	1.150	0.155	1.50	1.150	0.180	1.150
50	0.99	1.00	0.29	1.05	0.99	0.180	1.00	0.87	0.25	0.90	0.860	0.155	0.870	0.860	0.180	0.870
70	0.68	0.70	0.28	0.75	0.68	0.175	0.71	0.60	0.24	0.65	0.590	0.150	0.610	0.590	0.175	0.620
95	0.49	0.51	0.27	0.58	0.49	0.170	0.52	0.44	0.23	0.50	0.430	0.145	0.450	0.430	0.170	0.460
120	0.39	0.41	0.26	0.48	0.39	0.165	0.43	0.35	0.23	0.42	0.340	0.140	0.370	0.340	0.165	0.380
150	0.32	0.33	0.26	0.43	0.32	0.165	0.36	0.29	0.23	0.37	0.280	0.140	0.310	0.280	0.165	0.320

185	0.25	0.27	0.26	0.37	0.26	0.165	0.30	0.23	0.23	0.32	0.220	0.140	0.260	0.220	0.165	0.280
240	0.19	0.21	0.26	0.33	0.20	0.160	0.25	0.185	0.22	0.29	0.170	0.140	0.220	0.170	0.165	0.240
300	0.155	0.175	0.25	0.31	0.16	0.160	0.22	0.150	0.22	0.27	0.140	0.140	0.195	0.135	0.160	0.210
400	0.12	0.140	0.25	0.29	0.13	0.155	0.20	0.125	0.22	0.25	0.110	0.135	0.175	0.110	0.160	0.195
500	0.093	0.120	0.25	0.28	0.105	0.155	0.185	0.100	0.22	0.24	0.090	0.135	0.160	0.088	0.160	0.180
630	0.072	0.100	0.25	0.27	0.086	0.155	0.175	0.088	0.21	0.23	0.074	0.135	0.150	0.071	0.160	0.170
800	0.056	-	-	-	0.072	0.150	0.170	-	-	-	0.062	0.130	0.145	0.059	0.155	0.165
1000	0.045	-	-	-	0.063	0.150	0.165	-	-	-	0.055	0.130	0.140	0.050	0.155	0.165

FTX300 1RZ1MZ1-R

Current-Carrying Capacities (Amp)

Conductor cross-sectional area	Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated horizontal cable tray or Reference Method 13 [free air])		Reference Method 12 (free air)	In single-way ducts		Laid direct in ground	
	2 cables, single-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.	3 cables 3-phase a.c. trefoil touching	2 cables, single-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.
1	2	3	4	5	6	7	8	9	10
mm^2	A	A	A	A	A	A	A	A	A
70	303	277	322	293	285	310	280	340	290
95	367	333	389	352	346	365	330	405	345
120	425	383	449	405	402	410	370	460	389
150	488	437	516	462	463	445	405	510	435
185	557	496	587	524	529	485	440	580	490
240	656	579	689	612	625	550	500	670	560
300	755	662	792	700	720	610	550	750	630
400	853	717	899	767	815	640	580	830	700
500	962	791	1016	851	918	690	620	910	770
630	1082	861	1146	935	1027	750	670	1000	840
800	1170	904	1246	987	1119	828	735	1117	931
1000	1261	961	1345	1055	1214	919	811	1254	1038

Voltage Drop (Per Amp Per Meter)

Conductor cross-sectional area	2 cables d.c.	2 cables single-phase a.c.			3 or 4 cables three-phase a.c.						2 cables singlephase a.c.		3 or 4 cables, 3-phase a.c. touching	
		Reference Method 1 & 11 (touching)			Reference Method 1, 11 & 12 (in trefoil touching)			Reference Method 1 & 11 (Flat touching)			In ducts	In ground	In ducts	In ground
1	2	3			4			5			6	7	8	9
mm^2	mV/A/m	mV/A/m			mV/A/m			mV/A/m			mV/A/m	mV/A/m	mV/A/m	mV/A/m
		r	x	z	r	x	z	r	x	z				
70	0.67	0.68	0.20	0.71	0.59	0.17	0.62	0.6	0.25	0.65	0.80	0.70	0.70	0.61
95	0.49	0.51	0.195	0.55	0.44	0.17	0.47	0.46	0.24	0.52	0.65	0.53	0.56	0.46
120	0.39	0.41	0.190	0.45	0.35	0.165	0.39	0.38	0.24	0.44	0.55	0.43	0.48	0.37
150	0.31	0.33	0.185	0.38	0.29	0.160	0.33	0.31	0.23	0.39	0.50	0.37	0.43	0.32
185	0.25	0.27	0.185	0.33	0.23	0.160	0.28	0.26	0.23	0.34	0.45	0.31	0.39	0.27
240	0.195	0.21	0.180	0.28	0.18	0.155	0.24	0.21	0.22	0.30	0.40	0.26	0.35	0.23
300	0.155	0.17	0.175	0.25	0.145	0.150	0.21	0.17	0.22	0.28	0.37	0.24	0.32	0.21
400	0.115	0.145	0.170	0.22	0.125	0.150	0.195	0.160	0.21	0.27	0.35	0.21	0.30	0.19
500	0.093	0.125	0.170	0.21	0.105	0.145	0.180	0.145	0.20	0.25	0.33	0.20	0.28	0.18
630	0.073	0.105	0.165	0.195	0.092	0.145	0.170	0.135	0.195	0.24	0.30	0.19	0.26	0.17
800	0.056	0.090	0.160	0.190	0.086	0.140	0.165	0.130	0.180	0.23	0.28	0.18	0.24	0.16
1000	0.045	0.092	0.155	0.180	0.080	0.135	0.155	0.125	0.170	0.21	0.26	0.17	0.22	0.15

Note :
r = conductor resistance at operating temperature
x = reactance
z = impedance

Rated Voltage

Standard

Standard

Standard


Flame Retardancy
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1


Low Toxicity
NES 02-713/NF C 20-454


Low Corrosivity
IEC60754-2
EN50267-2-2/3
NF C 32-074

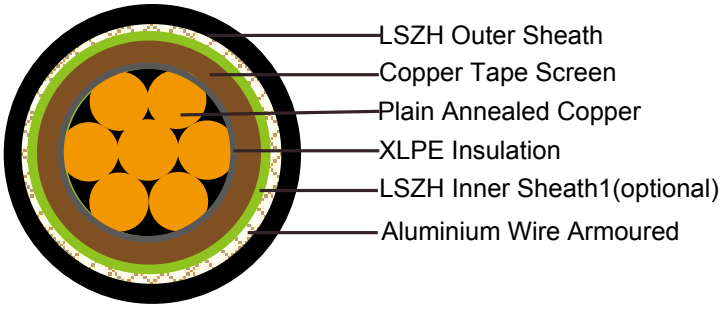

Low Smoke Emission
IEC 61034-1&2
EN 50268-1&2/NF C32-073


Reduced Fire Propagation
NF C32-070-2.2(C1)
IEC60332-3-24/EN50266-2-4

Halogen Free
IEC60754-1
EN50267-2-1

600/1000V XLPE Insulated, LSZH Sheathed, Armoured Power Cables (single core)

FTX300 1RCZ1MZ1-R (CU/XLPE/CUTO/LSZH/AWA/LSZH 600/1000V Class 2)



APPLICATION

This range of screened cables drastically reduce interferences from electrical noise, especially in Variable Speed Drive (VSD) applications and are manufactured with fixed conductors.

STANDARDS

Basic design to IEC 60502-1

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1 ; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1*
Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)	EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4
Halogen Free	IEC 60754-1; EN 50267-2-1; DIN VDE 0482-267-2-1; CEI 20-37/2-1 ; BS 6425-1*
No Corrosive Gas Emission	IEC 60754-2; EN 50267-2-2; DIN VDE 0482-267-2-2; CEI 20-37/2-2 ; BS 6425-2*
Minimum Smoke Emission	IEC 61034-1&2; EN 61034 -1&2; DIN VDE 0482-1034-1&2; CEI 20-37/3-1&2; EN 50268-1&2*; BS 7622-1&2*
No Toxic gases	NES 02-713; NF C 20-454

Note: Asterisk * denotes superseded standard.

VOLTAGE RATING

600/1000V

CABLE CONSTRUCTION

Conductor: Plain annealed copper wire, stranded according to IEC(EN) 60228 class 2.
Insulation: Extruded cross-linked XLPE compound.
Overall Screen: Copper Tape
Inner sheath: LSZH Compound
Armouring: Aluminium Wire
Outer Sheath: Thermoplastic LSZH compound type LTS3 as per BS 7655-6.1 (Thermosetting LSZH compound type SW2-SW4 as per BS 7655-2.6 can be offered.)

COLOUR CODE

Insulation Colour as per BS7671

	with earth conductor	without earth conductor
2Cores	-	Brown,Blue
3Cores	Yellow/Green,Brown,Blue	Brown,Gray,Black
4Cores	Yellow/Green,Brown,Gray,Black	Brown,Gray,Black,Blue
5Cores	Yellow/Green,Brown,Gray,Black,Blue	Brown,Gray,Black,Blue,Black
above 5 Cores	Yellow/Green,Black Numbered	Black Numbered

Sheath Colour: Black

PHYSICAL AND THERMAL PROPERTIES

Maximum conductor temperature: Max 90°C for XLPE
Minimum bending radius: 12 x Overall Diameter (for 70mm^2 to 1000mm^2)

CONSTRUCTION PARAMETERS

Conductor		FTX300 1RCZ1MZ1-R						
No. of Core X Cross Section	No./ Nominal Diameter of Strands	Nominal Insulation Thickness	Nominal Sheath Thickness	Diameter Under Screen	Diameter Over Inner Sheath	Armour Wire Diameter	Nominal Overall Diameter	Approx. Weight
mm^2	No./mm	mm	mm	mm	mm	mm	mm	kg/km
1x70	19/2.14	1.1	1.8	15.2	17.6	20.1	23.9	1400
1x95	19/2.52	1.1	1.8	17.1	19.5	22.0	25.8	1700
1x120	37/2.03	1.2	1.8	19.0	20.8	24.0	27.8	2000
1x150	37/2.25	1.4	1.8	21.0	22.8	26.0	29.8	2400
1x185	37/2.52	1.6	1.8	23.2	25.0	28.2	32.0	2800
1x240	61/2.25	1.7	1.9	26.1	27.9	31.1	35.1	3500
1x300	61/2.52	1.8	2.0	28.7	30.5	33.7	37.9	4200
1x400	61/2.85	2.0	2.1	32.5	34.3	38.3	42.7	5400
1x500	61/3.20	2.2	2.2	36.0	37.8	41.8	46.4	6500
1x630	127/2.52	2.4	2.3	40.4	42.2	46.2	51.0	8200

1x800	127/2.85	2.6	2.5	45.5	47.3	52.3	57.5	10400
1x1000	127/3.20	2.8	2.7	50.4	52.2	57.2	62.4	13000

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 90°C
Ambient Temperature : 30°C
Current-Carrying Capacities (Amp)

Conductor cross-sectional area	Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated horizontal cable tray or Reference Method 13 [free air])		Reference Method 12 (free air)	In single-way ducts		Laid direct in ground	
	2 cables, single-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.	3 cables 3-phase a.c. trefoil touching	2 cables, single-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.
1	2	3	4	5	6	7	8	9	10
mm^2	A	A	A	A	A	A	A	A	A
70	303	277	322	293	285	310	280	340	290
95	367	333	389	352	346	365	330	405	345
120	425	383	449	405	402	410	370	460	389
150	488	437	516	462	463	445	405	510	435
185	557	496	587	524	529	485	440	580	490
240	656	579	689	612	625	550	500	670	560
300	755	662	792	700	720	610	550	750	630
400	853	717	899	767	815	640	580	830	700
500	962	791	1016	851	918	690	620	910	770
630	1082	861	1146	935	1027	750	670	1000	840
800	1170	904	1246	987	1119	828	735	1117	931
1000	1261	961	1345	1055	1214	919	811	1254	1038

Voltage Drop (Per Amp Per Meter)

Conductor cross-sectional area	2 cables d.c.	2 cables single-phase a.c.	3 or 4 cables three-phase a.c.		2 cables singlephase a.c.		3 or 4 cables, 3-phase a.c. touching	
		Reference Method 1 & 11 (touching)	Reference Method 1, 11 & 12 (in trefoil touching)	Reference Method 1 & 11 (Flat touching)	In ducts	In ground	In ducts	In ground

1	2	3			4			5			6	7	8	9
mm^2	mV/A/m	mV/A/m			mV/A/m			mV/A/m			mV/A/m	mV/A/m	mV/A/m	mV/A/m
		r	x	z	r	x	z	r	x	z				
70	0.67	0.68	0.20	0.71	0.59	0.17	0.62	0.6	0.25	0.65	0.80	0.70	0.70	0.61
95	0.49	0.51	0.195	0.55	0.44	0.17	0.47	0.46	0.24	0.52	0.65	0.53	0.56	0.46
120	0.39	0.41	0.190	0.45	0.35	0.165	0.39	0.38	0.24	0.44	0.55	0.43	0.48	0.37
150	0.31	0.33	0.185	0.38	0.29	0.160	0.33	0.31	0.23	0.39	0.50	0.37	0.43	0.32
185	0.25	0.27	0.185	0.33	0.23	0.160	0.28	0.26	0.23	0.34	0.45	0.31	0.39	0.27
240	0.195	0.21	0.180	0.28	0.18	0.155	0.24	0.21	0.22	0.30	0.40	0.26	0.35	0.23
300	0.155	0.17	0.175	0.25	0.145	0.150	0.21	0.17	0.22	0.28	0.37	0.24	0.32	0.21
400	0.115	0.145	0.170	0.22	0.125	0.150	0.195	0.160	0.21	0.27	0.35	0.21	0.30	0.19
500	0.093	0.125	0.170	0.21	0.105	0.145	0.180	0.145	0.20	0.25	0.33	0.20	0.28	0.18
630	0.073	0.105	0.165	0.195	0.092	0.145	0.170	0.135	0.195	0.24	0.30	0.19	0.26	0.17
800	0.056	0.090	0.160	0.190	0.086	0.140	0.165	0.130	0.180	0.23	0.28	0.18	0.24	0.16
1000	0.045	0.092	0.155	0.180	0.080	0.135	0.155	0.125	0.170	0.21	0.26	0.17	0.22	0.15

Note :
r = conductor resistance at operating temperature
x = reactance
z = impedance

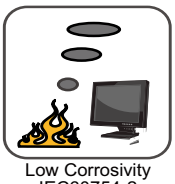
Rated Voltage

Standard


Flame Retardancy
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1


Reduced Fire Propagation
NF C32-070-2.2(C1)
IEC60332-3-24
EN50266-2-4


Low Toxicity
NES 02-713/NF C 20-454

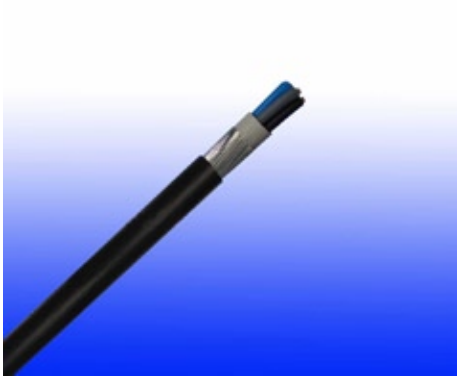

Low Corrosivity
IEC60754-2
EN50267-2-2/3
NF C 32-074

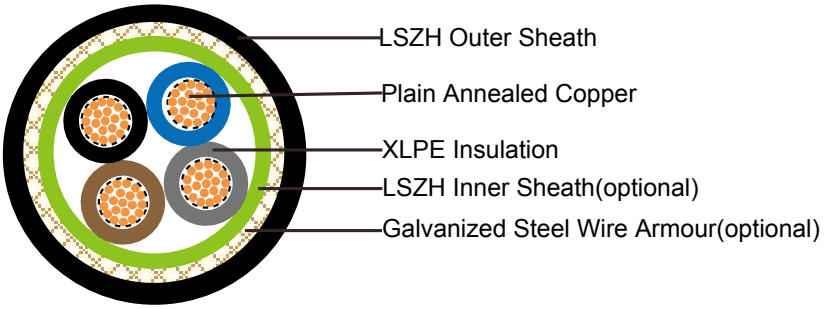

Low Smoke Emission
IEC 61034-1&2
EN 50268-1&2/NF C32-073

Halogen Free
IEC60754-1
EN50267-2-1

600/1000V XLPE Insulated, LSZH Sheathed, Armoured Power Cables (2-4cores)

FTX400 1RZ1-R (CU/XLPE/LSZH 600/1000V Class 2)
FTX400 1RZ1MZ1-R (CU/XLPE/LSZH/SWA/LSZH 600/1000V Class 2)





APPLICATION

The cables are mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design to IEC 60502-1; BS 6724

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1 ; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1*
Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)	EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4
Halogen Free	IEC 60754-1; EN 50267-2-1; DIN VDE 0482-267-2-1; CEI 20-37/2-1 ; BS 6425-1*
No Corrosive Gas Emission	IEC 60754-2; EN 50267-2-2; DIN VDE 0482-267-2-2; CEI 20-37/2-2 ; BS 6425-2*
Minimum Smoke Emission	IEC 61034-1&2; EN 61034 -1&2; DIN VDE 0482-1034-1&2; CEI 20-37/3-1&2; EN 50268-1&2*; BS 7622-1&2*
No Toxic gases	NES 02-713; NF C 20-454

Note: Asterisk * denotes superseded standard.

VOLTAGE RATING

600/1000V

CABLE CONSTRUCTION

Conductor: Plain annealed copper wire, stranded according to IEC(EN) 60228 class 2.
Insulation: Extruded cross-linked XLPE compound.
Inner Sheath(optional): LSZH Compound
Armouring(optional): Galvanized Steel Wire
Outer Sheath: Thermoplastic LSZH compound type LTS3 as per BS 7655-6.1 (Thermosetting LSZH compound type SW2-SW4 as per BS 7655-2.6 can be offered.)

COLOUR CODE

Insulation Colour as per BS7671

	with earth conductor	without earth conductor
2Cores	-	Brown,Blue
3Cores	Yellow/Green,Brown,Blue	Brown,Gray,Black
4Cores	Yellow/Green,Brown,Gray,Black	Brown,Gray,Black,Blue
5Cores	Yellow/Green,Brown,Gray,Black,Blue	Brown,Gray,Black,Blue,Black
above 5 Cores	Yellow/Green,Black Numbered	Black Numbered

Sheath Colour: Black

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: Max.90°C for XLPE
250°C in short-circuit for 5s max.
Minimum bending radius: 8 x Overall Diameter (unarmoured cable)
10 x Overall Diameter (armoured cable)

CONSTRUCTION PARAMETERS

Conductor			FTX400 1RZ1-R		FTX400 1RZ1MZ1-R			
			Unarmoured		Armoured			
No. of Core X Cross Section	No./ Nominal Diameter of Strands	Nominal Insulation Thickness	Nominal Overall Diameter	Approx. Weight	Diameter Under Armour	Armour Wire Diameter	Nominal Overall Diameter	Approx. Weight
mm^2	No./mm	mm	mm	mm	mm	mm	mm	kg/km
2x1.5	7/0.53	0.7	10.0	126	8.5	0.9	13.9	350
2x2.5	7/0.67	0.7	10.8	158	9.3	0.9	14.7	400
2x4	7/0.85	0.7	11.9	205	10.4	0.9	15.8	475
2x6	7/1.04	0.7	13.0	264	11.5	0.9	16.9	560
2x10	7/1.35	0.7	14.9	378	13.4	1.25	19.5	810
2x16	7/1.70	0.7	17.0	534	15.5	1.25	21.6	980
2x25	7/2.14	0.9	20.4	650	18.9	1.6	25.7	1410
2x35	7/2.52	0.9	22.7	880	21.2	1.6	28.0	1930
3x1.5	7/0.53	0.7	10.5	145	9.0	0.9	14.4	390
3x2.5	7/0.67	0.7	11.4	185	9.9	0.9	15.3	450
3x4	7/0.85	0.7	12.5	247	11.0	0.9	16.4	540

3x6	7/1.04	0.7	13.8	323	11.6	1.25	17.7	745
3x10	7/1.35	0.7	15.8	474	14.3	1.25	20.4	950
3x16	7/1.70	0.7	18.0	682	16.5	1.25	23.0	1250
3x25	7/2.14	0.9	21.7	910	20.2	1.6	27.0	1840
3x35	7/2.52	0.9	24.0	1180	22.4	1.6	29.2	2050
3x50(S)	19/1.78	1.0	25.5	1600	24.2	1.6	31.2	2590
3x70(S)	19/2.14	1.1	29.0	2240	28.2	2.0	36.2	3560
3x95(S)	19/2.52	1.1	33.5	3050	31.7	2.0	40.1	4590
3x120(S)	37/2.03	1.2	37.5	3800	36.0	2.0	44.6	5810
3x150(S)	37/2.25	1.4	40.5	4640	39.5	2.5	49.5	6920
3x185(S)	37/2.52	1.6	45.0	5870	43.3	2.5	53.5	8340
3x240(S)	61/2.25	1.7	50.5	7670	48.4	2.5	59.0	10450
3x300(S)	61/2.52	1.8	57.0	9460	54.4	2.5	65.4	12700
3x400(S)	61/2.85	2.0	63.0	11945	57.8	2.5	70.0	15326
4x1.5	7/0.53	0.7	11.3	169	10.0	0.9	15.4	430
4x2.5	7/0.67	0.7	12.3	220	10.8	0.9	16.2	505
4x4	7/0.85	0.7	13.6	297	12.1	0.9	17.5	710
4x6	7/1.04	0.7	15.0	392	13.5	1.25	19.6	855
4x10	7/1.35	0.7	17.2	585	15.7	1.25	21.8	1120
4x16	7/1.70	0.7	19.7	851	18.2	1.6	25.0	1600
4x25	7/2.14	0.9	23.9	1200	22.4	1.6	29.2	2160
4x35(S)	7/2.52	0.9	25.0	1600	24.4	1.6	31.4	2560
4x50(S)	19/1.78	1.0	28.0	2200	28.0	1.6	35.2	3180
4x70(S)	19/2.14	1.1	32.0	3050	32.2	2.0	40.6	4490
4x95(S)	19/2.52	1.1	37.0	4070	36.0	2.0	44.6	5725
4x120(S)	37/2.03	1.2	42.0	5915	38.0	2.5	50.0	7550
4x150(S)	37/2.25	1.4	46.0	6350	42.8	2.5	53.0	8555
4x185(S)	37/2.52	1.6	50.0	7890	48.4	2.5	59.0	10560
4x240(S)	61/2.25	1.7	57.0	10400	55.0	2.5	66.0	13180
4x300(S)	61/2.52	1.8	63.0	12810	59.6	2.5	71.0	16100
4x400(S)	61/2.85	2.0	71.0	15869	66.1	3.15	79.4	20715
4x500(S)	61/3.20	2.2	78.0	20300	74.6	3.15	88.5	25347

(S) - Sectoral Stranded Conductors

ELECTRICAL PROPERTIES
Conductor Operating Temperature : 90°C
Ambient Temperature : 30°C

FTX400 1RZ1-R

Current-Carrying Capacities (Amp)

Conductor cross-sectional area	Reference Method 4 (enclosed in conduit in thermally insulating wall etc)		Reference Method 3 (enclosed in conduit on a wall or in trunking etc)		Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated cable tray, horizontal or vertical)		Reference Method 12(free air)		
									Horizontal flat spaced	Vertical flat spaced	Trefoil
	2 cables, single-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c. flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or 3 c ables three phase	2 cables, single-phase a.c. or d.c. or 3 cables three phase	3 cables, trefoil 3-phase a.c.
1	2	3	4	5	6	7	8	9	10	11	12
mm^2	A	A	A	A	A	A	A	A	A	A	A
1.5	18	17	22	19	25	23	-	-	-	-	-
2.5	24	23	30	26	34	31	-	-	-	-	-
4	33	30	40	35	46	41	-	-	-	-	-
6	43	39	51	45	59	54	-	-	-	-	-
10	58	53	71	63	81	74	-	-	-	-	-
16	76	70	95	85	109	99	-	-	-	-	-
25	100	91	126	111	143	130	158	140	183	163	138
35	125	111	156	138	176	161	195	176	226	203	171
50	149	135	189	168	228	209	293	215	274	246	209
70	189	170	240	214	293	268	308	279	351	318	270
95	228	205	290	259	355	326	375	341	426	389	330
120	263	235	336	299	413	379	436	398	495	453	385
150	300	270	375	328	476	436	505	461	570	524	445
185	341	306	426	370	545	500	579	530	651	600	511
240	400	358	500	433	644	590	686	630	769	711	606
300	459	410	573	493	743	681	794	730	886	824	701
400	-	-	684	584	868	793	915	849	1065	994	820
500	-	-	783	666	990	904	1044	973	1228	1150	936

Voltage Drop (Per Amp Per Meter)

Size of conductor	2 cables d.c.	2 cables, single-phase a.c.						3 or 4 cables, 3-phase a.c.								
		Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)			Ref. Methods 1 and 11 (clipped direct or on trays touching)			Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)			Ref. Methods 1, 11 and 12 (in trefoil)			Ref. Methods 1 and 11 (Flat and touching)		
1	2	3			4			5			6			7		
mm^2	mV/A/m	mV/A/m			mV/A/m			mV/A/m			mV/A/m			mV/A/m		
1.5	31	31			27			27			27			27		
2.5	19	19			16			16			16			16		
4	33	12			10			10			10			10		
6	7.8	7.9			6.8			6.8			6.8			6.8		
10	4.7	4.7			4.7			4			4			4		
16	2.9	2.9			2.9			2.5			2.5			2.5		
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
25	1.85	1.85	0.31	1.90	1.85	0.190	1.85	1.60	0.27	1.65	1.600	0.165	1.600	1.600	0.190	1.600
35	1.35	1.35	0.29	1.35	1.35	0.180	1.35	1.15	0.25	1.15	1.150	0.155	1.50	1.150	0.180	1.150
50	0.99	1.00	0.29	1.05	0.99	0.180	1.00	0.87	0.25	0.90	0.860	0.155	0.870	0.860	0.180	0.870
70	0.68	0.70	0.28	0.75	0.68	0.175	0.71	0.60	0.24	0.65	0.590	0.150	0.610	0.590	0.175	0.620
95	0.49	0.51	0.27	0.58	0.49	0.170	0.52	0.44	0.23	0.50	0.430	0.145	0.450	0.430	0.170	0.460
120	0.39	0.41	0.26	0.48	0.39	0.165	0.43	0.35	0.23	0.42	0.340	0.140	0.370	0.340	0.165	0.380
150	0.32	0.33	0.26	0.43	0.32	0.165	0.36	0.29	0.23	0.37	0.280	0.140	0.310	0.280	0.165	0.320
185	0.25	0.27	0.26	0.37	0.26	0.165	0.30	0.23	0.23	0.32	0.220	0.140	0.260	0.220	0.165	0.280
240	0.19	0.21	0.26	0.33	0.20	0.160	0.25	0.185	0.22	0.29	0.170	0.140	0.220	0.170	0.165	0.240
300	0.155	0.175	0.25	0.31	0.16	0.160	0.22	0.150	0.22	0.27	0.140	0.140	0.195	0.135	0.160	0.210
400	0.12	0.140	0.25	0.29	0.13	0.155	0.20	0.125	0.22	0.25	0.110	0.135	0.175	0.110	0.160	0.195
500	0.093	0.120	0.25	0.28	0.105	0.155	0.185	0.100	0.22	0.24	0.090	0.135	0.160	0.088	0.160	0.180

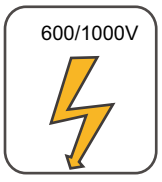
FTX400 1RZ1MZ1-R

Current-Carrying Capacities (Amp)

Conductor cross-sectional area	Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated horizontal cable trayor Reference Method 13 [free air])		In single-way ducts		Laid direct in ground	
	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.
1	2	3	4	5	6	7	8	9
mm^2	A	A	A	A	A	A	A	A
1.5	27	23	29	25	-	23	-	28
2.5	36	31	39	33	-	30	-	36
4	49	42	52	44	-	40	-	48
6	62	53	66	56	-	50	-	60
10	85	73	90	78	-	65	-	80
16	110	94	115	99	115	94	140	115
25	146	124	152	131	145	125	180	150
35	180	154	188	162	175	150	215	180
50	219	187	228	197	210	175	255	215
70	279	238	291	251	260	215	315	265
95	338	289	354	304	310	260	380	315
120	392	335	410	353	355	300	430	360
150	451	386	472	406	400	335	480	405
185	515	441	539	463	455	380	540	460
240	607	520	636	546	520	440	630	530
300	698	599	732	628	590	495	700	590
400	787	673	847	728	660	560	790	670

Voltage Drop (Per Amp Per Meter)

Conductor cross-sectional area	2-core cable d.c.	2 cables, single-phase a.c.			3 or 4 cables, 3-phase a.c.			2 cables, single-phase a.c.	3 or 4 cables, 3-phase a.c.
								In ducts or in ground	In ducts or in ground
1	2	3			4			5	6
mm^2	mV/A/m	mV/A/m			mV/A/m			mV/A/m	mV/A/m
1.5	31.0	31.0			27.0			31.0	25.0
2.5	19.0	19.0			16.0			19.0	15.0
4	12.0	12.0			10.0			12.0	9.7
6	7.9	7.9			6.8			7.9	6.5
10	4.7	4.7			4.0			4.7	3.9
16	2.9	2.9			2.5			2.9	2.6
		r	x	z	r	x	z		
25	1.850	1.350	0.160	1.900	1.600	0.140	1.650	1.900	1.600
35	1.350	1.350	0.155	1.350	1.150	0.135	1.150	1.350	1.200
50	0.980	0.990	0.155	1.000	0.860	0.135	0.870	1.000	0.870
70	0.670	0.670	0.150	0.690	0.590	0.130	0.600	0.690	0.610
95	0.490	0.500	0.150	0.520	0.430	0.130	0.450	0.520	0.450
120	0.390	0.400	0.145	0.420	0.340	0.130	0.370	0.420	0.360
150	0.310	0.320	0.145	0.350	0.280	0.125	0.300	0.350	0.300
185	0.250	0.260	0.145	0.290	0.220	0.125	0.260	0.290	0.250
240	0.195	0.200	0.140	0.240	0.175	0.125	0.210	0.240	0.210
300	0.155	0.160	0.140	0.210	0.140	0.120	0.185	0.210	0.190
400	0.120	0.130	0.140	0.190	0.115	0.120	0.165	0.190	0.180



Rated Voltage

Standard

Standard


Flame Retardancy
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1


Reduced Fire Propagation
NF C32-070-2.2(C1)
IEC60332-3-24
EN50266-2-4


Low Toxicity
NES 02-713/NF C 20-454

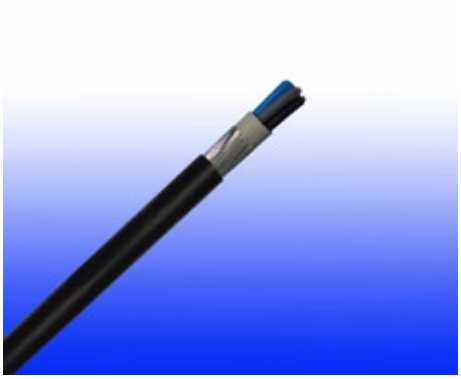

Low Corrosivity
IEC60754-2
EN50267-2-2/3
NF C 32-074

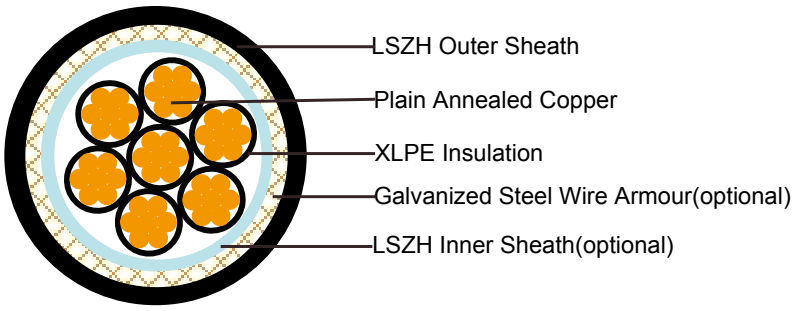

Low Smoke Emission
IEC 61034-1&2
EN 50268-1&2/NF C32-073

Halogen Free
IEC60754-1
EN50267-2-1

600/1000V XLPE Insulated, LSZH Sheathed, Armoured Power Cables (multicore)

FTX400 1RZ1-R (CU/XLPE/LSZH 600/1000V Class 2)
FTX400 1RZ1MZ1-R (CU/XLPE/LSZH/SWA/LSZH 600/1000V Class 2)





APPLICATION

The cables are mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design to IEC 60502-1; BS 6724

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1 ; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1*
Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)	EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4
Halogen Free	IEC 60754-1; EN 50267-2-1; DIN VDE 0482-267-2-1; CEI 20-37/2-1 ; BS 6425-1*
No Corrosive Gas Emission	IEC 60754-2; EN 50267-2-2; DIN VDE 0482-267-2-2; CEI 20-37/2-2 ; BS 6425-2*
Minimum Smoke Emission	IEC 61034-1&2; EN 61034 -1&2; DIN VDE 0482-1034-1&2; CEI 20-37/3-1&2; EN 50268-1&2*; BS 7622-1&2*
No Toxic gases	NES 02-713; NF C 20-454

Note: Asterisk * denotes superseded standard.

VOLTAGE RATING

600/1000V

CABLE CONSTRUCTION

Conductor: Plain annealed copper wire, stranded according to IEC(EN) 60228 class 2.
Insulation: Extruded cross-linked XLPE compound.
Inner Sheath(optional): LSZH Compound
Armouring(optional): Galvanized Steel Wire
Outer Sheath: Thermoplastic LSZH compound type LTS3 as per BS 7655-6.1 (Thermosetting LSZH compound type SW2-SW4 as per BS 7655-2.6 can be offered.)

COLOUR CODE

Insulation Colour as per BS7671

	with earth conductor	without earth conductor
2Cores	-	Brown,Blue
3Cores	Yellow/Green,Brown,Blue	Brown,Gray,Black
4Cores	Yellow/Green,Brown,Gray,Black	Brown,Gray,Black,Blue
5Cores	Yellow/Green,Brown,Gray,Black,Blue	Brown,Gray,Black,Blue,Black
above 5 Cores	Yellow/Green,Black Numbered	Black Numbered

Sheath Colour: Black

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: Max.90°C for XLPE
250°C in short-circuit for 5s max.
Minimum bending radius: 8 x Overall Diameter (unarmoured cable)
10 x Overall Diameter (armoured cable)

CONSTRUCTION PARAMETERS

Conductor			FTX400 1RZ1-R Unarmoured		FTX400 1RZ1MZ1-R Armoured			
No. of Core X Cross Section	No./ Nominal Diameter of Strands	Nominal Insulation Thickness	Nominal Overall Diameter	Approx. Weight	Diameter Under Armour	Armour Wire Diameter	Nominal Overall Diameter	Approx. Weight
mm^2	No./mm	mm	mm	kg/km	mm	mm	mm	kg/km
5x1.5	7/0.53	0.7	11.3	184	9.9	0.9	14.5	402
7x1.5	7/0.53	0.7	12.4	225	11.2	0.9	16.0	490
10x1.5	7/0.53	0.7	15.6	325	14.3	1.25	20.0	761
12x1.5	7/0.53	0.7	16.2	370	14.8	1.25	20.5	827
19x1.5	7/0.53	0.7	19.0	516	17.4	1.6	24.0	1186
27x1.5	7/0.53	0.7	22.7	712	21.3	1.6	28.1	1537
37x1.5	7/0.53	0.7	25.5	941	23.9	1.6	30.7	1856
48x1.5	7/0.53	0.7	29.0	1186	27.5	1.6	34.6	2276
5x2.5	7/0.67	0.7	12.8	237	11.2	0.9	15.8	496
7x2.5	7/0.67	0.7	13.8	303	12.4	0.9	17.2	602

10x2.5	7/0.67	0.7	17.5	426	15.9	1.25	21.8	943
12x2.5	7/0.67	0.7	18.1	489	16.5	1.25	22.4	1020
19x2.5	7/0.67	0.7	21.3	725	19.9	1.6	26.7	1498
27x2.5	7/0.67	0.7	25.5	1004	23.9	1.6	30.9	1933
37x2.5	7/0.67	0.7	28.7	1334	26.9	1.6	33.9	2372
48x2.5	7/0.67	0.7	32.9	1706	31.3	2.0	39.6	3252
5x4	7/0.85	0.7	14.2	324	12.6	1.25	18.2	712
7x4	7/0.85	0.7	15.5	422	14.1	1.25	19.8	871
10x4	7/0.85	0.7	19.7	597	18.5	1.25	24.4	1213
12x4	7/0.85	0.7	20.3	690	19.1	1.6	25.7	1462
19x4	7/0.85	0.7	24.0	1037	22.6	1.6	29.4	1931
27x4	7/0.85	0.7	28.8	1445	27.2	1.6	34.4	2532
37x4	7/0.85	0.7	32.5	1932	31.1	2.0	39.3	3448
48x4	7/0.85	0.7	37.3	2479	35.7	2.0	44.2	4273

Note : Other conductor sizes & core confi gurations are available upon request.

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 90°C
Ambient Temperature : 30°C

FTX400 1RZ1-R
Current-Carrying Capacities (Amp)

Conductor cross-sectional area	Reference Method 4 (enclosed in conduit in thermally insulating wall etc)		Reference Method 3 (enclosed in conduit on a wall or in trunking etc)		Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated cable tray, horizontal or vertical)		Reference Method 12 (free air)		
									Horizontal flat spaced	Vertical flat spaced	Trefoil
	2 cables, single-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c. flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or 3 c ables three phase	2 cables, single-phase a.c. or d.c. or 3 cables three phase	3 cables, trefoil 3-phase a.c.
1	2	3	4	5	6	7	8	9	10	11	12
mm^2	A	A	A	A	A	A	A	A	A	A	A

1.5	18	17	22	19	25	23	-	-	-	-	-
2.5	24	23	30	26	34	31	-	-	-	-	-
4	33	30	40	35	46	41	-	-	-	-	-

Voltage Drop (Per Amp Per Meter)

Nominal Cross Section Area	2 cables d.c.	2 cables, single-phase a.c.		3 or 4 cables, 3-phase a.c.		
		Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)	Ref. Methods 1 and 11 (clipped direct or on trays touching)	Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)	Ref. Methods 1, 11 and 12 (in trefoil)	Ref. Methods 1 and 11 (Flat and touching)
1	2	3	4	5	6	7
mm^2	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m
1.5	31	31	27	27	27	27
2.5	19	19	16	16	16	16
4	33	12	10	10	10	10

FTX400 1RZ1MZ1-R
Current-Carrying Capacities (Amp)

Conductor cross-sectional area	Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated horizontal cable trayor Reference Method 13 [free air])		In single-way ducts		Laid direct in ground	
	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.
1	2	3	4	5	6	7	8	9
mm^2	A	A	A	A	A	A	A	A
1.5	27	23	29	25	-	23	-	28
2.5	36	31	39	33	-	30	-	36
4	49	42	52	44	-	40	-	48

Voltage Drop (Per Amp Per Meter)

Conductor cross-sectional area	2-core cable d.c.	2 cables, single-phase a.c.	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c.	3 or 4 cables, 3-phase a.c.
				In ducts or in ground	In ducts or in ground
1	2	3	4	5	6
mm^2	mV/A/m	mV/A/m	mV/A/m	mV/A/m	mV/A/m
1.5	31.0	31.0	27.0	31.0	25.0
2.5	19.0	19.0	16.0	19.0	15.0
4	12.0	12.0	10.0	12.0	9.7

Rated Voltage

Standard

Standard

Flame Retardancy
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1

Reduced Fire Propagation
NF C32-070-2.2(C1)
IEC60332-3-24
EN50266-2-4

Low Toxicity
NES 02-713/NF C 20-454

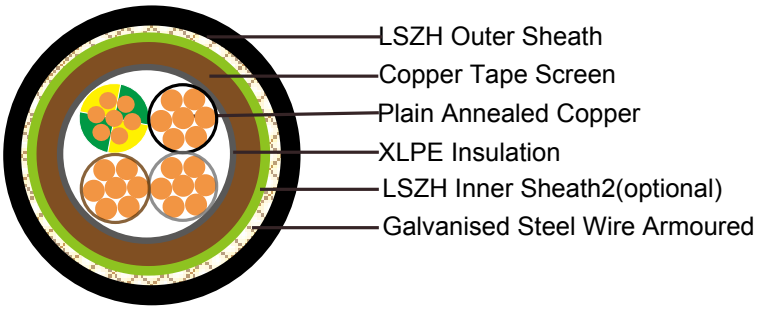
Low Corrosivity
IEC60754-2
EN50267-2-2/3
NF C 32-074

Low Smoke Emission
IEC 61034-1&2
EN 50268-1&2/NF C32-073

Halogen Free
IEC60754-1
EN50267-2-1

600/1000V XLPE Insulated, LSZH Sheathed, Screened Power Cables (4cores)

FTX400 1RCZ1MZ1-R (CU/XLPE/CUTO/LSZH/SWA/LSZH 600/1000V Class 2)



APPLICATION

This cable is designed specifi cally to suit the broad spectrum of requirements of Variable Speed Drives and also include features for reducing the transmission of electromagnetic interference.

This range of screened cables drastically reduce interferences from electrical noise, especially in Variable Speed Drive (VSD) applications and are manufactured with fixed conductors.
With shield conductivity of 1/10th of phase conductor conductivity, this range of VSD cables effectively restrain radiated and conducted radio-frequency emissions.

STANDARDS

Basic design to IEC 60502-1

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1 ; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1*
Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)	EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4
Halogen Free	IEC 60754-1; EN 50267-2-1; DIN VDE 0482-267-2-1; CEI 20-37/2-1 ; BS 6425-1*
No Corrosive Gas Emission	IEC 60754-2; EN 50267-2-2; DIN VDE 0482-267-2-2; CEI 20-37/2-2 ; BS 6425-2*
Minimum Smoke Emission	IEC 61034-1&2; EN 61034 -1&2; DIN VDE 0482-1034-1&2; CEI 20-37/3-1&2; EN 50268-1&2*; BS 7622-1&2*
No Toxic gases	NES 02-713; NF C 20-454

Note: Asterisk * denotes superseded standard.

VOLTAGE RATING

600/1000V

CABLE CONSTRUCTION

Conductor: Plain annealed copper wire, stranded according to IEC(EN) 60228 class 2.
Insulation: Extruded cross-linked XLPE compound.
Inner sheath1: LSZH Compound
Screen: Copper Tape
Inner sheath2: LSZH Compound
Armouring: Galvanised Steel Wire
Outer Sheath: Thermoplastic LSZH compound type LTS3 as per BS 7655-6.1 (Thermosetting LSZH compound type SW2-SW4 as per BS 7655-2.6 can be offered.)

COLOUR CODE

Insulation Colour as per BS7671

	with earth conductor	without earth conductor
2Cores	-	Brown,Blue
3Cores	Yellow/Green,Brown,Blue	Brown,Gray,Black
4Cores	Yellow/Green,Brown,Gray,Black	Brown,Gray,Black,Blue
5Cores	Yellow/Green,Brown,Gray,Black,Blue	Brown,Gray,Black,Blue,Black
above 5 Cores	Yellow/Green,Black Numbered	Black Numbered

Sheath Colour: Black

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: Max.90°C for XLPE
250°C in short-circuit for 5s max.
Minimum bending radius: 12 x Overall Diameter (for 1.5mm^2 to 300mm^2)

CONSTRUCTION PARAMETERS

Conductor		FTX400 1RCZ1MZ1-R						
No. of Core X Cross Section	No./ Nominal Diameter of Strands	Nominal Insulation Thickness	Nominal Sheath Thickness	Diameter Under Screen	Diameter Over Inner Sheath	Armour Wire Diameter	Nominal Overall Diameter	Approx. Weight
mm^2	No./mm	mm	mm	mm	mm	mm	mm	kg/km
4x1.5	7/0.53	0.7	1.8	9.7	12.1	13.9	17.7	640
4x2.5	7/0.67	0.7	1.8	10.7	13.1	14.9	18.7	730
4x4	7/0.85	0.7	1.8	12.0	14.4	16.2	20.0	870
4x6	7/1.04	0.7	1.8	13.4	15.8	18.3	22.1	1180
4x10	7/1.35	0.7	1.8	15.6	18.0	20.5	24.3	1490
4x16	7/1.70	0.7	1.8	18.1	20.5	23.7	27.5	2070
4x25	7/2.14	0.9	1.8	22.3	24.1	27.3	31.1	2790
4x35(S)	7/2.52	0.9	1.8	25.0	26.8	30.0	33.8	2940
4x50(S)	19/1.78	1.0	2.0	27.8	29.6	32.8	37.0	3500
4x70(S)	19/2.14	1.1	2.2	31.6	33.4	37.4	42.0	5000
4x95(S)	19/2.52	1.1	2.3	35.4	37.2	41.2	46.0	6300

4x120(S)	37/2.03	1.2	2.5	39.0	40.8	45.8	51.0	8200
4x150(S)	37/2.25	1.4	2.6	42.0	43.8	48.8	54.2	9600
4x185(S)	37/2.52	1.6	2.8	47.8	49.6	54.6	60.4	11500
4x240(S)	61/2.25	1.7	3.0	54.0	55.8	60.8	67.0	14400
4x300(S)	61/2.52	1.8	3.0	58.0	59.8	64.8	71.4	17200

(S) : Sectoral Stranded Conductors.

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 90°C
Ambient Temperature : 30°C

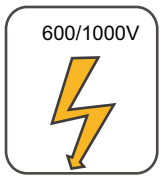
Current-Carrying Capacities (Amp)

Conductor cross-sectional area	Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated horizontal cable trayor Reference Method 13 [free air])		In single-way ducts		Laid direct in ground	
	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.
1	2	3	4	5	6	7	8	9
mm^2	A	A	A	A	A	A	A	A
1.5	27	23	29	25	-	23	-	28
2.5	36	31	39	33	-	30	-	36
4	49	42	52	44	-	40	-	48
6	62	53	66	56	-	50	-	60
10	85	73	90	78	-	65	-	80
16	110	94	115	99	115	94	140	115
25	146	124	152	131	145	125	180	150
35	180	154	188	162	175	150	215	180
50	219	187	228	197	210	175	255	215
70	279	238	291	251	260	215	315	265
95	338	289	354	304	310	260	380	315
120	392	335	410	353	355	300	430	360
150	451	386	472	406	400	335	480	405
185	515	441	539	463	455	380	540	460
240	607	520	636	546	520	440	630	530
300	698	599	732	628	590	495	700	590

Voltage Drop (Per Amp Per Meter)

Conductor cross-sectional area	2-core cable d.c.	2 cables, single-phase a.c.			3 or 4 cables, 3-phase a.c.			2 cables, single-phase a.c.	3 or 4 cables, 3-phase a.c.
								In ducts or in ground	In ducts or in ground
1	2	3			4			5	6
mm^2	mV/A/m	mV/A/m			mV/A/m			mV/A/m	mV/A/m
1.5	31.0	31.0			27.0			31.0	25.0
2.5	19.0	19.0			16.0			19.0	15.0
4	12.0	12.0			10.0			12.0	9.7
6	7.9	7.9			6.8			7.9	6.5
10	4.7	4.7			4.0			4.7	3.9
16	2.9	2.9			2.5			2.9	2.6
		r	x	z	r	x	z		
25	1.850	1.350	0.160	1.900	1.600	0.140	1.650	1.900	1.600
35	1.350	1.350	0.155	1.350	1.150	0.135	1.150	1.350	1.200
50	0.980	0.990	0.155	1.000	0.860	0.135	0.870	1.000	0.870
70	0.670	0.670	0.150	0.690	0.590	0.130	0.600	0.690	0.610
95	0.490	0.500	0.150	0.520	0.430	0.130	0.450	0.520	0.450
120	0.390	0.400	0.145	0.420	0.340	0.130	0.370	0.420	0.360
150	0.310	0.320	0.145	0.350	0.280	0.125	0.300	0.350	0.300
185	0.250	0.260	0.145	0.290	0.220	0.125	0.260	0.290	0.250
240	0.195	0.200	0.140	0.240	0.175	0.125	0.210	0.240	0.210
300	0.155	0.160	0.140	0.210	0.140	0.120	0.185	0.210	0.190

Note :
r = conductor resistance at operating temperature
x = reactance
z = impedance



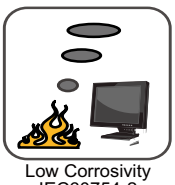
Rated Voltage

Standard


Flame Retardancy
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1


Reduced Fire Propagation
NF C32-070-2.2(C1)
IEC60332-3-24
EN50266-2-4


Low Toxicity
NES 02-713/NF C 20-454

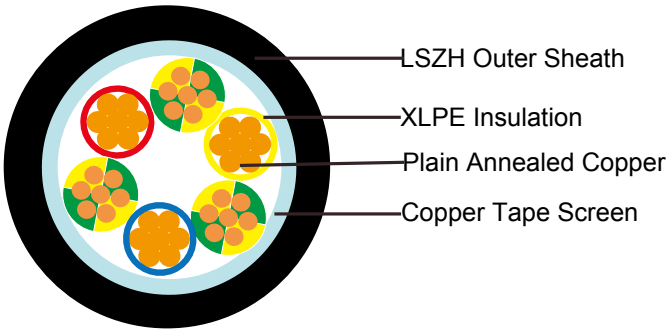

Low Corrosivity
IEC60754-2
EN50267-2-2/3
NF C 32-074


Low Smoke Emission
IEC 61034-1&2
EN 50268-1&2/NF C32-073

Halogen Free
IEC60754-1
EN50267-2-1

600/1000V XLPE Insulated, LSZH Sheathed, Screened Power Cables (3C+3E)

FTX300 1RCZ1-R (CU/XLPE/CUTO/LSZH 600/1000V Class 2)



APPLICATION

The cables are designed specifically to suit the broad spectrum of requirements of Variable Speed Drives and also include features for reducing the transmission of electromagnetic interference. These range of cables are able to reduce capacitance of power conductors and have an electrically balanced construction which includes split earths and a copper screen.

This range of screened cables drastically reduce interferences from electrical noise, especially in Variable Speed Drive (VSD) applications and are manufactured with fixed conductors.

With shield conductivity of 1/10th of phase conductor conductivity, this range of VSD cables effectively restrain radiated and conducted radio-frequency emissions.

STANDARDS

Basic design to IEC 60502-1

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1 ; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1*
Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)	EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4
Halogen Free	IEC 60754-1; EN 50267-2-1; DIN VDE 0482-267-2-1; CEI 20-37/2-1 ; BS 6425-1*
No Corrosive Gas Emission	IEC 60754-2; EN 50267-2-2; DIN VDE 0482-267-2-2; CEI 20-37/2-2 ; BS 6425-2*
Minimum Smoke Emission	IEC 61034-1&2; EN 61034 -1&2; DIN VDE 0482-1034-1&2; CEI 20-37/3-1&2; EN 50268-1&2*; BS 7622-1&2*
No Toxic gases	NES 02-713; NF C 20-454

Note: Asterisk * denotes superseded standard.

VOLTAGE RATING

600/1000V

CABLE CONSTRUCTION

Conductor: Plain annealed copper wire, stranded according to IEC(EN) 60228 class 2.
Insulation: Extruded cross-linked XLPE compound.
Screen: Copper Tape
Outer Sheath: Thermoplastic LSZH compound type LTS3 as per BS 7655-6.1 (Thermosetting LSZH compound type SW2-SW4 as per BS 7655-2.6 can be offered.)

COLOUR CODE

Insulation Colour: Red, Yellow, Blue, Green/Yellow (x3)
Outer sheath: Black or as order

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: Max.90°C for XLPE
250°C in short-circuit for 5s max.
Minimum bending radius: 10 x Overall Diameter

CONSTRUCTION PARAMETERS

Conductor			FTX300 1RCZ1-R			
No. of Core X Cross Section	No./Nominal Diameter of Strands	Combined Earth Size	Nominal Insulation Thickness	Nominal Sheath Thickness	Nominal Overall Diameter	Approx. Weight
mm^2	No./mm	mm^2	mm	mm	mm	kg/km
3x1.5	7/0.53	4.5(3x1.5)	0.7	1.8	13.6	325
3x2.5	7/0.67	4.5(3x1.5)	0.7	1.8	14.8	380
3x4	7/0.85	4.5(3x1.5)	0.7	1.8	15.8	440
3x6	7/1.04	7.5(3x2.5)	0.7	1.8	16.9	550
3x10	7/1.35	12(3x4)	0.7	1.8	18.6	750
3x16	7/1.70	18(3x6)	0.7	1.8	20.8	1000
3x25	7/2.14	30(3x10)	0.9	1.8	24.0	1470
3x35	7/2.52	30(3x10)	0.9	1.8	25.6	1890
3x50	19/1.78	30(3x10)	1.0	1.9	31.1	2300
3x70	19/2.14	48(3x16)	1.1	2.0	34.6	3200
3x95	19/2.52	48(3x16)	1.1	2.2	39.3	4200
3x120	37/2.03	75(3x25)	1.2	2.3	44.0	5400
3x150	37/2.25	75(3x25)	1.4	2.5	49.0	6400
3x185	37/2.52	105(3x35)	1.6	2.6	54.0	7900
3x240	61/2.25	150(3x50)	1.7	2.8	61.0	10200
3x300	61/2.52	150(3x50)	1.8	3.0	67.0	12300

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 90°C
Ambient Temperature : 30°C
Current-Carrying Capacities (Amp)

Conductor cross-sectional area	Reference Method 4 (enclosed in conduit in thermally insulating wall etc)		Reference Method 3 (enclosed in conduit on a wall or in trunking etc)		Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated cable tray, horizontal or vertical)		Reference Method 12 (free air)		
									Horizontal flat spaced	Vertical flat spaced	Trefoil
	2 cables, single-phase a.c. or d.c.	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c	3 or 4 cables, 3-phase a.c.	2 cables, single-phase a.c. or d.c. flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or flat and touching	3 or 4 cables, 3-phase a.c. flat and touching or trefoil	2 cables, single-phase a.c. or d.c. or 3 c ables three phase	2 cables, single-phase a.c. or d.c. or 3 cables three phase	3 cables, trefoil 3-phase a.c.
1	2	3	4	5	6	7	8	9	10	11	12
mm^2	A	A	A	A	A	A	A	A	A	A	A
1.5	18	17	22	19	25	23	-	-	-	-	-
2.5	24	23	30	26	34	31	-	-	-	-	-
4	33	30	40	35	46	41	-	-	-	-	-
6	43	39	51	45	59	54	-	-	-	-	-
10	58	53	71	63	81	74	-	-	-	-	-
16	76	70	95	85	109	99	-	-	-	-	-
25	100	91	126	111	143	130	158	140	183	163	138
35	125	111	156	138	176	161	195	176	226	203	171
50	149	135	189	168	228	209	293	215	274	246	209
70	189	170	240	214	293	268	308	279	351	318	270
95	228	205	290	259	355	326	375	341	426	389	330
120	263	235	336	299	413	379	436	398	495	453	385
150	300	270	375	328	476	436	505	461	570	524	445
185	341	306	426	370	545	500	579	530	651	600	511
240	400	358	500	433	644	590	686	630	769	711	606
300	459	410	573	493	743	681	794	730	886	824	701

Voltage Drop (Per Amp Per Meter)

Size of conductor	2 cables d.c.	2 cables, single-phase a.c.						3 or 4 cables, 3-phase a.c.								
		Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)			Ref. Methods 1 and 11 (clipped direct or on trays touching)			Ref. Methods 3 and 4 (enclosed in conduit etc, in or on a wall)			Ref. Methods 1, 11 and 12 (in trefoil)			Ref. Methods 1 and 11 (Flat and touching)		
1	2	3			4			5			6			7		
mm^2	mV/A/m	mV/A/m			mV/A/m			mV/A/m			mV/A/m			mV/A/m		
1.5	31	31			27			27			27			27		
2.5	19	19			16			16			16			16		
4	33	12			10			10			10			10		
6	7.8	7.9			6.8			6.8			6.8			6.8		
10	4.7	4.7			4.7			4			4			4		
16	2.9	2.9			2.9			2.5			2.5			2.5		
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
25	1.85	1.85	0.31	1.90	1.85	0.190	1.85	1.60	0.27	1.65	1.600	0.165	1.600	1.600	0.190	1.600
35	1.35	1.35	0.29	1.35	1.35	0.180	1.35	1.15	0.25	1.15	1.150	0.155	1.50	1.150	0.180	1.150
50	0.99	1.00	0.29	1.05	0.99	0.180	1.00	0.87	0.25	0.90	0.860	0.155	0.870	0.860	0.180	0.870
70	0.68	0.70	0.28	0.75	0.68	0.175	0.71	0.60	0.24	0.65	0.590	0.150	0.610	0.590	0.175	0.620
95	0.49	0.51	0.27	0.58	0.49	0.170	0.52	0.44	0.23	0.50	0.430	0.145	0.450	0.430	0.170	0.460
120	0.39	0.41	0.26	0.48	0.39	0.165	0.43	0.35	0.23	0.42	0.340	0.140	0.370	0.340	0.165	0.380
150	0.32	0.33	0.26	0.43	0.32	0.165	0.36	0.29	0.23	0.37	0.280	0.140	0.310	0.280	0.165	0.320
185	0.25	0.27	0.26	0.37	0.26	0.165	0.30	0.23	0.23	0.32	0.220	0.140	0.260	0.220	0.165	0.280
240	0.19	0.21	0.26	0.33	0.20	0.160	0.25	0.185	0.22	0.29	0.170	0.140	0.220	0.170	0.165	0.240
300	0.155	0.175	0.25	0.31	0.16	0.160	0.22	0.150	0.22	0.27	0.140	0.140	0.195	0.135	0.160	0.210

Note :
r = conductor resistance at operating temperature
x = reactance
z = impedance

Rated Voltage

Standard


Flame Retardancy
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1


Reduced Fire Propagation
NF C32-070-2.2(C1)
IEC60332-3-24
EN50266-2-4


Low Toxicity
NES 02-713/NF C 20-454

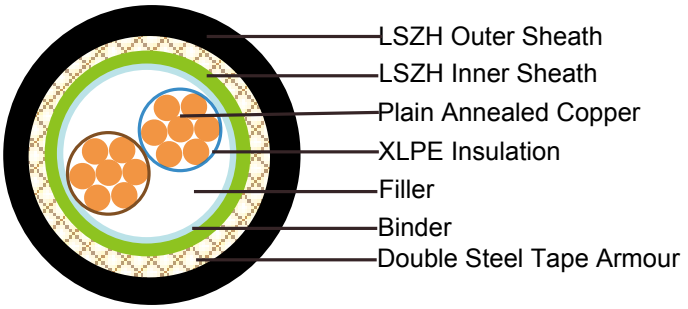

Low Corrosivity
IEC60754-2
EN50267-2-2/3
NF C 32-074


Low Smoke Emission
IEC 61034-1&2
EN 50268-1&2/NF C32-073

Halogen Free
IEC60754-1
EN50267-2-1

600/1000V XLPE Insulated, LSZH Sheathed, Double steel tape armoured Power Cables (2cores)

FTX400 1RZ1MZ1-R (CU/XLPE/LSZH/DSTA/LSZH 600/1000V Class 2)



APPLICATION

The cables is mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design to IEC 60502 -1

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1 ; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1*
Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)	EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4
Halogen Free	IEC 60754-1; EN 50267-2-1; DIN VDE 0482-267-2-1; CEI 20-37/2-1 ; BS 6425-1*
No Corrosive Gas Emission	IEC 60754-2; EN 50267-2-2; DIN VDE 0482-267-2-2; CEI 20-37/2-2 ; BS 6425-2*
Minimum Smoke Emission	IEC 61034-1&2; EN 61034 -1&2; DIN VDE 0482-1034-1&2; CEI 20-37/3-1&2; EN 50268-1&2*; BS 7622-1&2*
No Toxic gases	NES 02-713; NF C 20-454

Note: Asterisk * denotes superseded standard.

VOLTAGE RATING

600/1000V

CABLE CONSTRUCTION

Conductor: Plain annealed copper wire, normal stranded or compact stranded according to IEC(EN) 60228 class 2.
Insulation: Extruded cross-linked XLPE compound.
Filler, binder and inner covering: PP, PET, LSZH
Armouring: Double steel tape
Outer Sheath: Thermoplastic LSZH compound type LTS3 as per BS 7655-6.1 (Thermosetting LSZH compound type SW2-SW4 as per BS 7655-2.6 can be offered.)

COLOUR CODE

Insulation Colour as per BS7671

	with earth conductor	without earth conductor
2Cores	-	Brown,Blue
3Cores	Yellow/Green,Brown,Blue	Brown,Gray,Black
4Cores	Yellow/Green,Brown,Gray,Black	Brown,Gray,Black,Blue
5Cores	Yellow/Green,Brown,Gray,Black,Blue	Brown,Gray,Black,Blue,Black
above 5 Cores	Yellow/Green,Black Numbered	Black Numbered

Sheath Colour: Black

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: Max.90°C for XLPE
250°C in short-circuit for 5s max.
Minimum bending radius: 10x Overall Diameter

CONSTRUCTION PARAMETERS

Conductor			FTX400 1RZ1MZ1-R					
No. of Core X Cross Section	No./Nominal Diameter of Strands	Diameter Overall Conducrtor	Nominal Insulation Thickness	Steel Tape Thickness	Nominal Sheath Thickness	Nominal Overall Diatemer	Max.DC resistance of conductor @20°C	Approx. Weight
mm^2	No/mm	mm	mm	mm	mm	mm	Ω/km	Kg/km
2x6	7/1.04	2.90	0.7	0.2	1.8	16.8	3.08	417
2x10	7/1.35	3.75	0.7	0.2	1.8	18.5	1.83	539
2x16	7/1.70	4.75	0.7	0.2	1.8	20.5	1.15	704
2x25	7/2.14	5.85	0.9	0.2	1.8	23.5	0.727	971
2x35	7/2.52	6.90	0.9	0.2	1.8	25.6	0.524	1,216
2x5O	19/1.78	8.15	1.0	0.2	1.8	28.5	0.387	1,582
2x70	19/2.14	9.75	1.1	0.2	1.9	32.3	0.268	2081
2x95	19/2.52	11.45	1.1	0.2	2.0	36.4	0.193	2749
2x120	37/2.03	12.85	1.2	0.5	2.2	41.1	0.153	3,727

2x150	37/2.25	14.30	1.4	0.5	2.3	45.1	0.124	4,509
2x185	37/2.52	15.95	1.6	0.5	2.5	49.9	0.0991	5,523
2x240	61/2.25	18.25	1.7	0.5	2.6	55.3	0.0754	6981
2x300	61/2.52	20.40	1.8	0.5	2.8	60.7	0.0601	8,383
2x400	61/2.85	23.35	2.0	0.5	3.0	67.9	0.0470	10,897

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 90°C
Ambient Temperature : 30°C

Current-Carrying Capacities (Amp)

Conductor cross-sectional area	Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated horizontal cable trayor Reference Method 13 [free air])		In single-way ducts		Laid direct in ground	
	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.
1	2	3	4	5	6	7	8	9
mm^2	A	A	A	A	A	A	A	A
6	62	53	66	56	-	50	-	60
10	85	73	90	78	-	65	-	80
16	110	94	115	99	115	94	140	115
25	146	124	152	131	145	125	180	150
35	180	154	188	162	175	150	215	180
50	219	187	228	197	210	175	255	215
70	279	238	291	251	260	215	315	265
95	338	289	354	304	310	260	380	315
120	392	335	410	353	355	300	430	360
150	451	386	472	406	400	335	480	405
185	515	441	539	463	455	380	540	460
240	607	520	636	546	520	440	630	530
300	698	599	732	628	590	495	700	590
400	787	673	847	728	660	560	790	670

Voltage Drop (Per Amp Per Meter)

Conductor cross-sectional area	2-core cable d.c.	2 cables, single-phase a.c.			3 or 4 cables, 3-phase a.c.			2 cables, single-phase a.c.	3 or 4 cables, 3-phase a.c.
								In ducts or in ground	In ducts or in ground
1	2	3			4			5	6
mm^2	mV/A/m	mV/A/m			mV/A/m			mV/A/m	mV/A/m
6	7.9	7.9			6.8			7.9	6.5
10	4.7	4.7			4.0			4.7	3.9
16	2.9	2.9			2.5			2.9	2.6
		r	x	z	r	x	z		
25	1.850	1.350	0.160	1.900	1.600	0.140	1.650	1.900	1.600
35	1.350	1.350	0.155	1.350	1.150	0.135	1.150	1.350	1.200
50	0.980	0.990	0.155	1.000	0.860	0.135	0.870	1.000	0.870
70	0.670	0.670	0.150	0.690	0.590	0.130	0.600	0.690	0.610
95	0.490	0.500	0.150	0.520	0.430	0.130	0.450	0.520	0.450
120	0.390	0.400	0.145	0.420	0.340	0.130	0.370	0.420	0.360
150	0.310	0.320	0.145	0.350	0.280	0.125	0.300	0.350	0.300
185	0.250	0.260	0.145	0.290	0.220	0.125	0.260	0.290	0.250
240	0.195	0.200	0.140	0.240	0.175	0.125	0.210	0.240	0.210
300	0.155	0.160	0.140	0.210	0.140	0.120	0.185	0.210	0.190
400	0.120	0.130	0.140	0.190	0.115	0.120	0.165	0.190	0.180

Note :
r = conductor resistance at operating temperature
x = reactance
z = impedance

Rated Voltage

Standard


Flame Retardancy
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1


Reduced Fire Propagation
NF C32-070-2.2(C1)
IEC60332-3-24
EN50266-2-4


Low Toxicity
NES 02-713/NF C 20-454

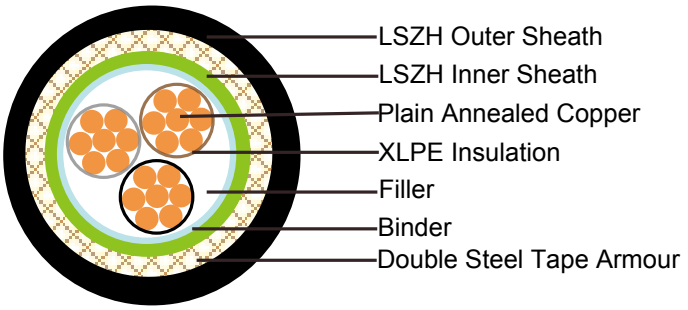

Low Corrosivity
IEC60754-2
EN50267-2-2/3
NF C 32-074


Low Smoke Emission
IEC 61034-1&2
EN 50268-1&2/NF C32-073

Halogen Free
IEC60754-1
EN50267-2-1

600/1000V XLPE Insulated, LSZH Sheathed, Double steel tape Armoured Power Cables (3cores)

FTX400 1RZ1MZ1-R (CU/XLPE/LSZH/DSTA/LSZH 600/1000V Class 2)



APPLICATION

The cables are mainly used in power stations, mass transit underground passenger systems, airports, petrochemical plants, hotels, hospitals, and high-rise buildings.

STANDARDS

Basic design to IEC 60502-1

FIRE PERFORMANCE

Flame Retardance (Single Vertical Wire Test)	EN 60332-1-2; IEC 60332-1-2; BS EN 60332-1-2; VDE 0482-332-1 ; NBN C 30-004 (cat. F1); NF C32-070-2.1(C2); CEI 20-35/1-2; EN 50265-2-1*; DIN VDE 0482-265-2-1*
Reduced Fire Propagation (Vertically-mounted bundled wires & cable test)	EN 60332-3-24 (cat. C); IEC 60332-3-24; BS EN 60332-3-24; VDE 0482-332-3; NBN C 30-004 (cat. F2); NF C32-070-2.2(C1); CEI 20-22/3-4; EN 50266-2-4*; DIN VDE 0482-266-2-4
Halogen Free	IEC 60754-1; EN 50267-2-1; DIN VDE 0482-267-2-1; CEI 20-37/2-1 ; BS 6425-1*
No Corrosive Gas Emission	IEC 60754-2; EN 50267-2-2; DIN VDE 0482-267-2-2; CEI 20-37/2-2 ; BS 6425-2*
Minimum Smoke Emission	IEC 61034-1&2; EN 61034 -1&2; DIN VDE 0482-1034-1&2; CEI 20-37/3-1&2; EN 50268-1&2*; BS 7622-1&2*
No Toxic gases	NES 02-713; NF C 20-454

Note: Asterisk * denotes superseded standard.

VOLTAGE RATING

600/1000V

CABLE CONSTRUCTION

Conductor: Plain annealed copper wire, normal stranded or compact stranded according to IEC(EN)

60228 class 2.
Insulation: Extruded cross-linked XLPE compound.
Filler, binder and inner covering: PP, PET, LSZH
Armouring: Double steel tape
Outer Sheath: Thermoplastic LSZH compound type LTS3 as per BS 7655-6.1 (Thermosetting LSZH compound type SW2-SW4 as per BS 7655-2.6 can be offered.)

COLOUR CODE

Insulation Colour as per BS7671

	with earth conductor	without earth conductor
2Cores	-	Brown,Blue
3Cores	Yellow/Green,Brown,Blue	Brown,Gray,Black
4Cores	Yellow/Green,Brown,Gray,Black	Brown,Gray,Black,Blue
5Cores	Yellow/Green,Brown,Gray,Black,Blue	Brown,Gray,Black,Blue,Black
above 5 Cores	Yellow/Green,Black Numbered	Black Numbered

Sheath Colour: Black

PHYSICAL AND THERMAL PROPERTIES

Temperature range during operation: Max.90°C for XLPE
250°C in short-circuit for 5s max.
Minimum bending radius: 10x Overall Diameter

CONSTRUCTION PARAMETERS

Conductor					FTX400 1RZ1MZ1-R					
No. of Core X Cross Section	Phases	Neutral	Nominal Diameter Overall Conducrtor		Nominal Insulation Thickness		Nominal Steel Tape Thickness	Nominal Sheath Thickness	Nominal Overall Diatemer	Approx. Weight
	No./ Nominal Diameter of Strands	No./ Nominal Diameter of Strands	Pha.	Neu.	Pha.	Neu.				
mm^2	No/mm	No/mm	mm	mm	mm	mm	mm	mm	mm	Kg/km
3xl0+lx6	7/Com	7/Com	3.75	2.90	0.7	0.7	0.2	1.8	20.1	740
3x16+1xl0	7/Com	7/Com	4.75	3.75	0.7	0.7	0.2	1.8	22.5	1,004
3x25+2x16	7/Com	7/Com	5.85	4.75	0.9	0.7	0.2	1.8	25.8	1,421
3x35+1x16	7/Com	7/Com	6.90	4.75	0.9	0.7	0.2	1.8	27.7	1,745
3x35+1x25	7/Com	7/Com	6.90	5.85	0.9	0.9	0.2	1.8	28.6	1,864
3x50+lx25	7/Com	7/Com	8.15	5.85	1.0	0.9	0.2	1.8	31.3	2,358
3x50+1x35	7/Com	7/Com	8.15	6.90	1.0	0.9	0.2	1.9	32.0	2.72
3x70+1x35	19/Com	7/Com	9.75	6.90	I.1	0.9	0.2	2.0	35.9	3166
3x70+1x50	19/Com	7/Com	9.75	8.15	I.1	1.0	0.2	2.0	36.8	3.341

3x95+lx50	19/Com	7/Com	11.4	8.15	I.1	1.0	0.5	2.1	41.4	4,611
3x120+1x70	19/Com	19/Com	12.8	9.75	1.2	I.1	0.5	2.3	45.6	5682
3x150+1x95	19/Com	19/Com	14.3	11.4	1.4	I.1	0.5	2.4	50.8	7,072
3x150+1x120	19/Com	19/Com	14.3	12.8	1.4	1.2	0.5	2.5	51.8	7,357
3xI85+1x95	37/Com	19/Com	15.9	11.4	1.6	I.1	0.5	2.6	54.7	8,348
3x185+1x120	37/Com	19/Com	15.9	12.8	1.6	1.2	0.5	2.6	55.8	8638
3x240+1x120	37/Com	19/Com	18.2	12.8	1.7	1.2	0.5	2.7	61.0	10,660
3x240+1x150	37/Com	19/Com	18.2	14.3	1.7	1.4	0.5	2.8	62.2	11024
3x300+1x150	37/Com	19/Com	20.4	14.3	1.8	1.4	0.5	2.9	66.8	12,809
3x300+1xI85	37/Com	37/Com	20.4	15.9	1.8	1.6	0.5	3.0	68.1	13,256

Notes:
1) *All conductors in accordance with IEC 60228. Compact shape (Com.) or non-compact depending on order.
2) Beside above list we can also provide others size depend on customer's requirement.

ELECTRICAL PROPERTIES

No. of Core X Cross Section	Conductor				Max.DC resistance of conductor @20°C	
	Phases	Neutral	Dia.Overall Conducrtor			
	No./Nominal Diameter of Strands	No./Nominal Diameter of Strands	Pha.	Neu.	Pha.	Neu.
mm^2	No/mm	No/mm	mm	mm	Ω/km	Ω/km
3xI0+lx6	7/Com	7/Com	3.75	2.90	1.83	3.08
3x16+1xI0	7/Com	7/Com	4.75	3.75	1.15	1.83
3x25+2x16	7/Com	7/Com	5.85	4.75	0.727	1.15
3x35+1x16	7/Com	7/Com	6.90	4.75	0.524	1.15
3x35+1x25	7/Com	7/Com	6.90	5.85	0.524	0.727
3x50+lx25	7/Com	7/Com	8.15	5.85	0.387	0.727
3x50+1x35	7/Com	7/Com	8.15	6.90	0.387	0.524
3x70+1x35	19/Com	7/Com	9.75	6.90	0268	0.524
3x70+1x50	19/Com	7/Com	9.75	8.15	0268	0.387
3x95+lx50	19/Com	7/Com	11.4	8.15	0.193	0.387
3x120+1x70	19/Com	19/Com	12.8	9.75	0.153	0.268
3x150+1x95	19/Com	19/Com	14.3	11.4	0.124	0.193
3x150+1x120	19/Com	19/Com	14.3	12.8	0.124	0.153
3xI85+1x95	37/Com	19/Com	15.9	11.4	0.0991	0.193
3x185+1x120	37/Com	19/Com	15.9	12.8	0.0991	0.153
3x240+1x120	37/Com	19/Com	18.2	12.8	0.0754	0.153
3x240+1x150	37/Com	19/Com	18.2	14.3	0.0754	0.124
3x300+1x150	37/Com	19/Com	20.4	14.3	0.0601	0.124
3x300+1xI85	37/Com	37/Com	20.4	15.9	0.0601	0.0991

ELECTRICAL PROPERTIES

Conductor Operating Temperature : 90°C
Ambient Temperature : 30°C

Current-Carrying Capacities (Amp)

Conductor cross-sectional area	Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated horizontal cable trayor Reference Method 13 [free air])		In single-way ducts		Laid direct in ground	
	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.	one 2-core cable single phase a.c. or d.c.	one 3-core or 4-core cable 3-phase a.c.
1	2	3	4	5	6	7	8	9
mm^2	A	A	A	A	A	A	A	A
10	85	73	90	78	-	65	-	80
16	110	94	115	99	115	94	140	115
25	146	124	152	131	145	125	180	150
35	180	154	188	162	175	150	215	180
50	219	187	228	197	210	175	255	215
70	279	238	291	251	260	215	315	265
95	338	289	354	304	310	260	380	315
120	392	335	410	353	355	300	430	360
150	451	386	472	406	400	335	480	405
185	515	441	539	463	455	380	540	460
240	607	520	636	546	520	440	630	530
300	698	599	732	628	590	495	700	590

Voltage Drop (Per Amp Per Meter)

Conductor cross-sectional area	2-core cable d.c.	2 cables, single-phase a.c.			3 or 4 cables, 3-phase a.c.			2 cables, single-phase a.c.	3 or 4 cables, 3-phase a.c.
								In ducts or in ground	In ducts or in ground
1	2	3			4			5	6
mm^2	mV/A/m	mV/A/m			mV/A/m			mV/A/m	mV/A/m
6	7.9	7.9			6.8			7.9	6.5
10	4.7	4.7			4.0			4.7	3.9
16	2.9	2.9			2.5			2.9	2.6
		r	x	z	r	x	z		
25	1.850	1.350	0.160	1.900	1.600	0.140	1.650	1.900	1.600
35	1.350	1.350	0.155	1.350	1.150	0.135	1.150	1.350	1.200
50	0.980	0.990	0.155	1.000	0.860	0.135	0.870	1.000	0.870
70	0.670	0.670	0.150	0.690	0.590	0.130	0.600	0.690	0.610
95	0.490	0.500	0.150	0.520	0.430	0.130	0.450	0.520	0.450
120	0.390	0.400	0.145	0.420	0.340	0.130	0.370	0.420	0.360
150	0.310	0.320	0.145	0.350	0.280	0.125	0.300	0.350	0.300
185	0.250	0.260	0.145	0.290	0.220	0.125	0.260	0.290	0.250
240	0.195	0.200	0.140	0.240	0.175	0.125	0.210	0.240	0.210
300	0.155	0.160	0.140	0.210	0.140	0.120	0.185	0.210	0.190
400	0.120	0.130	0.140	0.190	0.115	0.120	0.165	0.190	0.180

Note :
r = conductor resistance at operating temperature
x = reactance
z = impedance

Rated Voltage

Standard


Flame Retardancy
NF C32-070-2.1(C2)
IEC60332-1-2/EN50265-2-1


Reduced Fire Propagation
NF C32-070-2.2(C1)
IEC60332-3-24
EN50266-2-4


Low Toxicity
NES 02-713/NF C 20-454


Low Corrosivity
IEC60754-2
EN50267-2-2/3
NF C 32-074


Low Smoke Emission
IEC 61034-1&2
EN 50268-1&2/NF C32-073

Halogen Free
IEC60754-1
EN50267-2-1

TYPE CODES FOR FLAME RETARDANT POWER & CONTROL CABLES

FTX A-B-C-D-E-F

F Conductor
U: Solid to IEC 60228 class 1
R: Stranded to IEC 60228 class 2
F: Stranded to IEC 60228 class 5

E Sheath
Z1: Thermoplastic LSZH

D Screen
O: Overall aluminium tape screen
C: Overall copper tape screen

C Insulation
R: XLPE
Z1: Thermoplastic LSZH

B Voltage
05: 300/500V
07: 450/750V
1: 600/1000V

A Type
100: Single core unsheathed
200: 300/500V & 450/750V multicore
300: Single core sheathed
400: 600/1000V multicore