



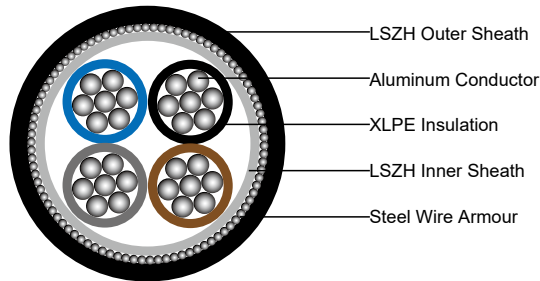
Caledonian

FIRETOX LSZH Flame Retardant Power & Control Cables

www.caledonian-cables.co.uk www.addison-cables.com

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

FTX400 1ARZ1MZ1-R (AL/XLPE/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. This product type is TUV approved.

STANDARDS

Basic design to IEC 60502-1



Approvals:

TUV Certification (No.R 50471427)

FIRE PERFORMANCE

Flame Retardance (Single vertical wire or cable test)	IEC 60332-1-2; EN 60332-1-2
Reduced Fire Propagation (Vertically-mounted bundled wires & cables test)	IEC 60332-3-24; EN 60332-3-24
Halogen Free	IEC 60754-1; EN 50267-2-1
No Corrosive Gas Emission	IEC 60754-2; EN 50267-2-2
Minimum Smoke Emission	IEC 61034-2; EN 61034-2

VOLTAGE RATING

600/1000V

CABLE CONSTRUCTION

Conductor: Annealed aluminum wire, stranded according to BS EN 60228 class 2.

Insulation: Thermosetting XLPE material as per IEC 60502-1.

Bedding: Extruded layer of polymeric material.

Armouring: Galvanized steel wire.

Outer Sheath: Thermoplastic halogen free compound ST8 as per IEC 60502-1.

Outer Sheath Option: UV resistance, hydrocarbon resistance, oil resistance, anti-rodent and anti-termite properties can be offered as option.

Marking: CALEDONIAN ELECTRIC CABLE 600/1000V IEC 60502-1 CU/XLPE/SWA/LSZH FTX400 1ARZ1MZ1-R
 ...(cores)X....(cross section) ... (internal order no.) ...(year) *****M

COLOUR CODE

Insulation Colour

2-core: Brown and blue.

3-core: Brown, black and grey.

4-core: Blue, brown, black and grey.

Sheath Colour: Black; other colours can be offered upon request.

PHYSICAL AND THERMAL PROPERTIES

Maximum temperature range during operation: 90°C

Maximum short circuit temperature (5 Seconds): 250°C

Minimum bending radius: 12 × Overall Diameter

CONSTRUCTION PARAMETERS

Conductor		FTX400 1ARZ1MZ1-R					
No. of Cores × Cross-sectional Area	Conductor Class	Nominal Insulation Thickness	Nominal Bedding Thickness	Nominal Steel Wire Armour Diameter	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Weight
No. × mm ²		mm	mm	mm	mm	mm	kg/km
2 Cores							
2×16	2	0.7	1.0	1.25	1.8	21.1	650
2×25	2	0.9	1.0	1.25	1.8	23.2	915
2×35	2	0.9	1.0	1.6	1.8	25.9	1255
2×50	2	1.0	1.0	1.6	1.8	26.2	1430
2×70	2	1.1	1.0	1.6	1.9	29.0	1780
2×95	2	1.1	1.2	2.0	2.0	32.7	1950
3 Cores							
3×16	2	0.7	1.0	1.25	1.8	20.9	760
3×25	2	0.9	1.0	1.6	1.8	22.7	1020
3×35	2	0.9	1.0	1.6	1.8	24.4	1200
3×50	2	1.0	1.0	1.6	1.8	29.3	1350
3×70	2	1.1	1.0	1.6	1.9	32.7	1750
3×95	2	1.1	1.2	2.0	2.1	37.3	2420
3×120	2	1.2	1.2	2.0	2.2	40.3	2820
3×150	2	1.4	1.4	2.5	2.3	45.2	3660
3×185	2	1.6	1.4	2.5	2.4	49.2	4350
3×240	2	1.7	1.4	2.5	2.6	54.0	5220
3×300	2	1.8	1.6	2.5	2.7	58.4	6200
4 Cores							
4×16	2	0.7	1.0	1.25	1.8	22.4	980
4×25	2	0.9	1.0	1.6	1.8	27.1	1220
4×35	2	0.9	1.0	1.6	1.8	29.5	1420



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No. × mm ²		mm	mm	mm	mm	mm	kg/km
4×50	2	1.0	1.0	1.6	1.9	32.5	1770
4×70	2	1.1	1.2	2.0	2.1	37.8	2500
4×95	2	1.1	1.2	2.0	2.2	41.5	2980
4×120	2	1.2	1.4	2.5	2.3	46.5	3950
4×150	2	1.4	1.4	2.5	2.4	50.4	4600
4×185	2	1.6	1.4	2.5	2.6	55.2	5430
4×240	2	1.7	1.6	2.5	2.7	61.0	6660
4×300	2	1.8	1.6	2.5	2.9	66.3	7770

ELECTRICAL PROPERTIES

Conductor operating temperature: 90°C

Air ambient temperature: 30°C

Ground ambient temperature: 20°C

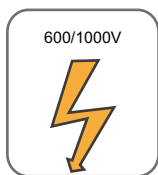
Current-Carrying Capacities (Amp) according to BS 7671:2008 table 4J4A

Conductor cross-sectional area	Ref. Method C (clipped direct)		Ref. Method E (in free air or on a perforated cable tray etc. horizontal or vertical)		Ref. Method D (direct in in groud or in ducting in groud. in or around buildings)	
	1 two-core cable, single-phase a.c. or d.c.	1 three- or four-core cable, three-phase a.c.	1 two-core cable, single-phase a.c. or d.c.	1 three- or four-core cable, three-phase a.c.	1 two-core cable, single-phase a.c. or d.c.	1 three- or four-core cable, three-phase a.c.
1 mm ²	2	3	4	5	6	7
	A	A	A	A	A	A
16	82	71	85	74	71	59
25	108	95	112	98	90	75
35	132	113	138	120	108	90
50	159	137	166	145	128	106
70	201	174	211	185	158	130
95	242	214	254	224	186	154
120	-	249	-	264	-	174
150	-	284	-	305	-	197
185	-	328	-	350	-	220
240	-	386	-	418	-	253
300	-	441	-	488	-	286

Voltage Drop (Per Amp Per Meter) according to BS 7671:2008 table 4J4B

Conductor cross-sectional area	Two-core cable, d.c.	Two-core cable, single-phase a.c.			Three- or four-core cable, three-phase a.c.		
1	2	3			4		
mm ²	mV/A/m	mV/A/m			mV/A/m		
16	4.8	4.8			4.2		
		r	x	z	r	x	z
25	3.1	3.1	0.165	3.1	2.7	0.140	2.7
35	2.2	2.2	0.160	2.2	1.90	0.140	1.95
50	1.6	1.65	0.160	1.65	1.40	0.135	1.45
70	1.1	1.1	0.155	1.15	0.96	0.135	0.97
95	0.82	0.82	0.150	0.84	0.71	0.130	0.72
120	-	-	-	-	0.56	0.130	0.58
150	-	-	-	-	0.45	0.130	0.47
185	-	-	-	-	0.37	0.130	0.39
240	-	-	-	-	0.28	0.125	0.31
300	-	-	-	-	0.23	0.125	0.26

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



Rated Voltage



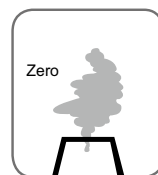
Standard



Flame Retardancy
IEC 60332-1-2



Reduced Fire Propagation
IEC 60332-3-24



Halogen Free
IEC 60754-1



Low Corrosivity
IEC 60754-2



Low Smoke Emission
IEC 61034-2