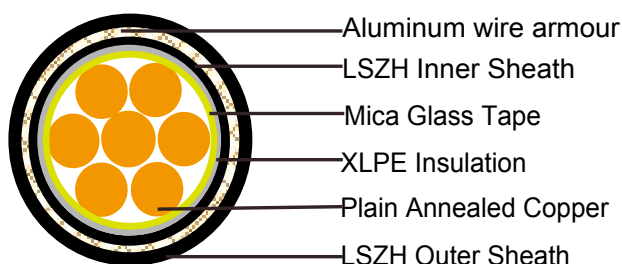


## 600/1000V Mica/XLPE Insulated, LSZH Sheathed, Armoured Power Cables (Single Core)

FFX300 1mRZ1MZ1-R (CU/MGT+XLPE/LSZH/AWA/LSZH 600/1000V Class 2)



### APPLICATION

This cable is designed for areas where the integrity of the electrical properties circuit is critical in maintaining power supply. Applications can be found in emergency lightings, control and power circuits, power stations, fire alarm systems, underground tunnels, communications systems, sewage treatment plants, lifts, escalators, and high-rise buildings.

### STANDARDS

Basic design to BS 7846

### FIRE PERFORMANCE

Circuit Integrity	IEC 60331-21; BS 6387 CWZ; DIN VDE 0472-814(FE180); CEI 20-36/2-1; SS229-1; NBN C 30-004 (cat. F3); NF C32-070-2.3(CR1)
System Circuit Integrity	DIN 4102-12, E30 depending on lay system
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Note: Asterisk \* denotes superseded standard.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

600/1000 V

### CABLE CONSTRUCTION

**Conductor:** Plain annealed copper wire, stranded according to IEC 60228 class 2.

**Insulation:** Mica glass tape covered by extruded cross-linked XLPE compound

**Inner Sheath :** Thermoplastic LSZH compound type LTS3 as per BS 7655-6.1

**Armouring :** Aluminum wire armour

**Outer Sheath:** Thermoplastic LSZH compound type LTS3 as per BS 7655-6.1

### COLOUR CODE

**Insulation Colour :** Natural

**Sheath Colour:** Black (other colors upon request)

### PHYSICAL AND THERMAL PROPERTIES

**Temperature Range During Operation:** -30°C ~ 90°C

**Temperature Range during Installation :** -5°C ~ 50°C

**Minimum Bending Radius:** 8 x OD

### ELECTRICAL PROPERTIES

Dielectric Test:	3500 V r.m.s. x 5' ( core / core )
Insulation Resistance	1000 MΩ x km ( at 20°C )
Short Circuit Temperature	250°C ( up to 5 secs )

## CONSTRUCTION PARAMETERS

Cable Code	Conductor				Approx. Overall Diameter	Approx. Weight
	No. of Core × Cross Section	No./ Nominal Diameter of Strands	Dia. of Conductor	Nominal Insulation Thickness		
	mm <sup>2</sup>	No./mm	mm	mm	mm	kg/km
FFX300 1mRZ1MZ1-R 1G1.5	1×1.5	7/0.53	1.59	0.7	-	-
FFX300 1mRZ1MZ1-R 1G2.5	1×2.5	7/0.67	2.01	0.7	-	-
FFX300 1mRZ1MZ1-R 1G4	1×4	7/0.85	2.55	0.7	-	-
FFX300 1mRZ1MZ1-R 1G6	1×6	7/1.04	3.12	0.7	-	-
FFX300 1mRZ1MZ1-R 1G10	1×10	7/1.35	4.05	0.7	-	-
FFX300 1mRZ1MZ1-R 1G16	1×16	7/1.70	5.1	0.7	-	-
FFX300 1mRZ1MZ1-R 1G25	1×25	7/2.14	6.42	0.9	-	-
FFX300 1mRZ1MZ1-R 1G35	1×35	19/1.53	7.65	0.9	-	-
FFX300 1mRZ1MZ1-R 1G50	1×50	19/1.78	8.9	1	18.5	780
FFX300 1mRZ1MZ1-R 1G70	1×70	19/2.14	10.7	1.1	20.5	1010
FFX300 1mRZ1MZ1-R 1G95	1×95	19/2.52	12.6	1.1	23	1320
FFX300 1mRZ1MZ1-R 1G120	1×120	37/2.03	14.21	1.2	24.5	1610
FFX300 1mRZ1MZ1-R 1G150	1×150	37/2.25	15.75	1.4	27	2010
FFX300 1mRZ1MZ1-R 1G185	1×185	37.2.52	17.64	1.6	29.5	2440
FFX300 1mRZ1MZ1-R 1G240	1×240	61/2.25	20.25	1.7	34.5	3060
FFX300 1mRZ1MZ1-R 1G300	1×300	61/2.52	22.68	1.8	36.9	3690
FFX300 1mRZ1MZ1-R 1G400	1×400	65/2.85	25.65	2	41.5	4780
FFX300 1mRZ1MZ1-R 1G500	1×500	61/3.20	28.8	2.2	45.5	5970
FFX300 1mRZ1MZ1-R 1G630	1×630	127/2.52	32.76	2.4	50.5	7530
FFX300 1mRZ1MZ1-R 1G800	1×800	127/2.85	37.05	2.6	56.8	9680
FFX300 1mRZ1MZ1-R 1G1000	1×1000	127/3.20	41.6	2.8	61.5	11980

## ELECTRICAL PROPERTIES

Conductor Operating Temperature : 90°C

Ambient Temperature : 30°C



### Current-Carrying Capacities (Amp)

Nominal Cross Section Area	Reference Method 1 (clipped direct)		Reference Method 11 (on perforated cable tray)		Reference Method 12 (free air)	In single-way ducts		Laid direct in ground	
	2 cables singlephase a.c. or d.c. flat and touching	3 or 4 cables 3-phase a.c. flat and touching	2 cables singlephase a.c. or d.c. flat and touching	3 or 4 cables 3-phase a.c. flat and touching	3 cables 3-phase a.c. trefoil touching	2 cables singlephase a.c. or d.c. ducts touching	3 cables 3-phase a.c. trefoil touching	2 cables singlephase a.c. or d.c. touching	3 cables 3-phase a.c. trefoil touching
1	2	3	4	5	6	7	8	9	10
mm <sup>2</sup>	A	A	A	A	A	A	A	A	A
50	237	220	253	232	222	255	235	275	235
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

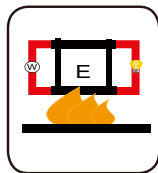
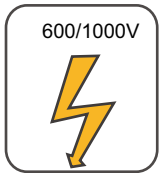
### Voltage Drop (Per Amp Per Meter)

Nominal Cross Section 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 <sup>2</sup>	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				
50	0.98	0.99	0.21	1	0.86	0.18	0.87	0.84	0.25	0.88	1.1	0.99	0.93	0.86
70	0.67	0.68	0.2	0.71	0.59	0.17	0.62	0.6	0.25	0.65	0.8	0.7	0.7	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	0.19	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	0.16	0.33	0.31	0.23	0.39	0.5	0.37	0.43	0.32
185	0.25	0.27	0.185	0.33	0.23	0.16	0.28	0.26	0.23	0.34	0.45	0.31	0.39	0.27
240	0.195	0.21	0.18	0.28	0.18	0.155	0.24	0.21	0.22	0.3	0.4	0.26	0.35	0.23
300	0.155	0.17	0.175	0.25	0.145	0.15	0.21	0.17	0.22	0.28	0.37	0.24	0.32	0.21
400	0.115	0.145	0.17	0.22	0.125	0.15	0.195	0.16	0.21	0.27	0.35	0.21	0.3	0.19
500	0.093	0.125	0.17	0.21	0.105	0.145	0.18	0.145	0.2	0.25	0.33	0.2	0.28	0.18
630	0.073	0.105	0.165	0.195	0.092	0.145	0.17	0.135	0.195	0.24	0.3	0.19	0.26	0.17
800	0.056	0.09	0.16	0.19	0.086	0.14	0.165	0.13	0.18	0.23	0.28	0.18	0.24	0.16
1000	0.045	0.092	0.155	0.18	0.08	0.135	0.155	0.125	0.17	0.21	0.26	0.17	0.22	0.15

Note: r = conductor resistance at operating temperature

x = reactance

z = impedance

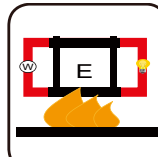
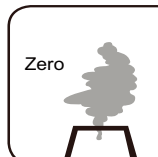


Standard

Circuit Integrity  
IEC 60331/BS 6387  
NF C32-070-2.3(CR1)

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

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

Zero  
Halogen Free  
IEC60754-1  
EN50267-2-1

Functional Integrity  
DIN 4102-12