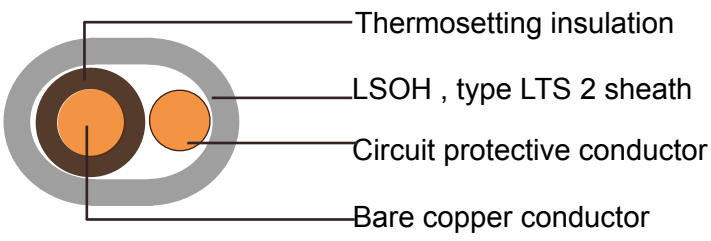
6241B/6242B/ 6243B, LSOH Flat Wiring Cables with circuit protective conductor

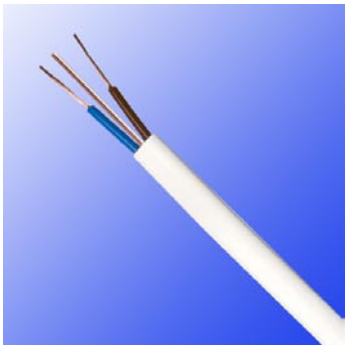
Application and Description

These cables are suitable for fixed installation particularly for situations in which low emission smoke and domestic wiring cable for the surface wiring of sockets and lighting where fire, smoke emission and toxic fumes create a potential threat to life and equipment. Can be installed in fixed installations in dry or damp premises on walls, boards or trays, in channels or embedded in plaster. Suitable for laying in conduit or trunking where mechanical protection is required.

Cable Construction



6241B



6242B

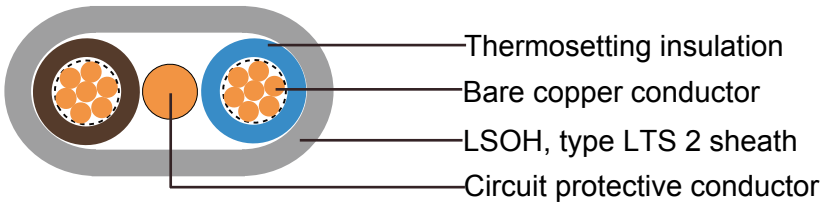
- Fine bare copper strands
- Strands to IEC 60228 Cl-1 or 2
- Thermosetting core insulation type EI5 or GP 8
- The core or cores shall be laid parallel with the uninsulated circuit protective conductor
- For twin cores, the protective conductor centrally placed between cores in same plane
- For 3 cores, the protective conductor centrally placed between black and grey cores in same plane
- LSOH sheath, type LTS 2

Insulation Colour

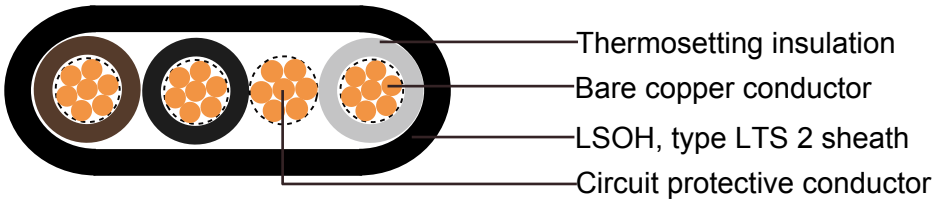
Single core: brown or blue

Twin: brown and blue, or, for 2 × 1.0 and 2 × 1.5 cables, brown and brown

3-core: brown, black (centre core) and grey



6242B



6243B

Technical Characteristics

- Working voltage: 300/500v
- Test voltage: 2000 volts
- Flexing bending radius: 15 x Ø
- Static bending radius: 10 x Ø
- Flexing temperature: +5º C to +90º C
- Short circuit temperature: +250º C
- Flame retardant: IEC 60332.1
- Insulation resistance: 10 MΩ x km
- Smoke density acc. to EN 50268 / IEC 61034
- Corrosiveness of combustion gases acc. to EN 50267-2-2, IEC 60754-2
- Flame test: flame-retardant acc. to EN 50265-2-1, IEC 60332.1

Cable Parameter

AWG	No. of Cores x Nominal Cross Sectional Area	Nominal thickness of insulation	Nominal thickness of sheath	Nominal overall dimensions		Circuit protective conductor AWG	Nominal Weight	Minimum insulation resistance at 90 °C
				lower limit	upper limit			
	# x mm²	mm	mm	mm	mm		kg/km	MΩ·km
6241B								
17	1 × 1.0	0.7	0.9	4.1 × 5.2	5.0 × 6.3	17	45	0.011
16	1 × 1.5	0.7	0.9	4.4 × 5.4	5.3 × 6.6	17	55	0.011

AWG	No. of Cores x Nominal Cross Sectional Area	Nominal thickness of insulation	Nominal thickness of sheath	Nominal overall dimensions		Circuit protective conductor AWG	Nominal Weight	Minimum insulation resistance at 90 °C
				lower limit	upper limit			
	# x mm²	mm	mm	mm	mm		kg/km	MΩ·km
6242B								
17	2 × 1.0	0.7	0.9	4.1 × 7.6	5.0 × 9.1	17	68	0.011
17(7/26)	2 × 1.0	0.7	0.9	4.2 × 7.8	5.1 × 9.4	17	73	0.011
16	2 × 1.5	0.7	0.9	4.4 × 8.1	5.3 × 9.7	17	85	0.011
16(7/24)	2 × 1.5	0.7	0.9	4.5 × 8.3	5.4 × 10.0	17	90	0.011
14	2 × 2.5	0.7	1.0	4.9 × 9.3	6.0 × 11.2	16	120	0.0092
14(7/22)	2 × 2.5	0.7	1.0	5.0 × 9.5	6.1 × 11.4	16	125	0.0084
12(7/20)	2 × 4	0.7	1.0	5.5 × 10.4	6.7 × 12.6	16	175	0.0070
10(7/18)	2 × 6	0.7	1.1	6.2 × 12.0	7.5 × 14.6	14	240	0.0059
8(7/16)	2 × 10	0.7	1.2	7.3 × 14.5	8.8 × 17.6	12(7/20)	390	0.0047
6(7/14)	2 × 16	0.7	1.3	8.4 × 17.0	10.1 × 20.5	10(7/18)	560	0.0039
6243B								
17	3 × 1.0	0.7	0.9	4.1 × 10.0	5.1 × 12.1	17	91	0.011
16	3 × 1.5	0.7	0.9	4.4 × 10.7	5.3 × 12.9	17	115	0.011
14	3 × 2.5	0.7	1.0	4.9 × 12.0	6.0 × 14.6	17	170	0.0092
12(7/20)	3 × 4	0.7	1.0	5.5 × 14.0	6.7 × 16.9	16	196	0.0070
10(7/18)	3 × 6	0.7	1.1	6.2 × 16.2	7.5 × 19.5	14	291	0.0059
8(7/16)	3 × 10	0.7	1.2	7.3 × 19.5	8.8 × 23.6	12(7/20)	440	0.0047
6(7/14)	3 × 16	0.7	1.3	8.4 × 22.8	10.1 × 27.6	10(7/18)	670	0.0039

Technical Reference

Conductor Resistance:

Nominal cross-section area	Plain copper conductor wires (Ohm/km)		Tinned copper conductor wires (Ohm/km)	
mm^2	class 1 and 2	Class 5 and 6	class 1 and 2	Class 5 and 6
0.05	–	380	–	392
0.08	–	237	–	244
0.11	–	170	–	175
0.126	–	150	–	155
0.14	–	134	–	138
0.22	–	96	–	99
0.25	–	76	–	79
0.34	–	53	–	56
0.5	36	39	36.7	40.1
0.75	24.5	26	24.8	26.7
1	18.1	19.5	18.2	20
1.5	12.1	13.3	12.2	13.7
2.5	7.41	7.98	7.56	8.21
4	4.61	4.95	4.7	5.09
6	3.08	3.3	3.11	3.39
10	1.83	1.91	1.84	1.95
16	1.15	1.21	1.16	1.24
25	0.727*	0.78	0.734	0.795
35	0.524*	0.554	0.529	0.565
50	0.387*	0.386	0.391	0.393
70	0.268*	0.272	0.27	0.277
95	0.193*	0.206	0.195	0.21
120	0.153*	0.161	0.154	0.164
150	0.124*	0.129	0.126	0.132
185	0.0991	0.106	0.1	0.108
240	0.0754	0.0801	0.0762	0.0817
300	0.0601	0.0641	0.0607	0.0654
400	0.047	0.0486	0.0475	0.0495
500	0.0366	0.0384	0.0369	0.0391
630	0.0283	0.0287	0.0286	0.0292

Electrical Test:

Test	Unit	H07Z-K H07Z-R H07Z-U	H05Z-K H05Z-U	Thermosetting insulated, single-core cables	Thermosetting insulated, twin, 3-core, 4-core and 5-core circular sheathed cables	6241B 6242B 6243B
Voltage test on complete cable						
Length of sample (min.)	m	20	20	20	20	20
Period of immersion (min.)	h	1	1	1	1	1
Temperature of water	°C	20 ± 5	20 ± 5	20 ± 5	20 ± 5	20 ± 5
Applied voltage (a.c.)	V	2 500	2 000	2 500	2 500	2 000
Time of application	min	15	15	15	15	15
Voltage test on cores						
Length of sample	m	—	—	20	20	20
Period of immersion (min.)	h	—	—	1	1	1
Temperature of water	°C	—	—	20 ± 5	20 ± 5	20 ± 5
Applied voltage (a.c.)	V	—	—	2 500	2 500	2 000
Time of application	min	—	—	5	5	5
Insulation resistance						
Length of sample	m	5	5	5	5	5
Period of immersion (min.)	h	2	2	2	2	2
Temperature of water	°C	90 ± 2	90 ± 2	90 ± 2	90 ± 2	90 ± 2
Spark test						
Result to be obtained		No failure	No failure	No failure	—	—
Voltage test						
Applied voltage a.c.	V	—	—	—	2500	2000
Applied voltage d.c. (min)	V	—	—	—	5000	5000
Duration of test	min	—	—	—	5	5
Result to be obtained		—	—	—	No breakdown	No breakdown

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