6491X / H07V-R / H07V-U EN 50525-2-31 Cable

Eland Product Group: A2X

APPLICATION

6491X Cable H07V-R/H07V-U is suitable for power and lighting circuits and building wiring. The cable is intended for use in semi-flush exposed conduits and embedded conduits as well as in closed installation ducts, and is ideal for the internal wiring of appliances.

CHARACTERISTICS

Voltage Rating Uo/U
450/750V

Temperature Rating
-15°C to +70°C

Minimum Bending Radius
Up to 10mm²: 3 x overall diameter
10mm² to 25mm²: 4 x overall diameter
Above 25mm²: 5 x overall diameter

CONSTRUCTION

Conductor
Class 2 stranded copper conductor

Insulation
PVC (Polyvinyl Chloride)

Insulation Colour
Red ● Black ● Blue ● Yellow ○ White ◐ Green/Yellow
● Grey ● Brown

Note
5mm² to 10mm² also available as H07V-U Class 1 solid copper conductor

CABLE THIRD-PARTY ACCREDITATION

We supply BASEC approved products
Cables are tested and certified by BASEC, The British Approvals Service for Cables

STANDARDS

EN 50525-2-31

Flame Retardant according to IEC/EN 60332-1-2

THE CABLE LAB®

AN ISO/IEC 17025 AND IECEE CBTL ACCREDITED FACILITY

Our world-class testing facility assures the quality and compliance of this cable through a continuous and rigorous testing regime.

SUSTAINABILITY COMMITMENT

We are on a journey to Net Zero.

We've committed to near-term emissions reductions and a net-zero target with the Science Based Targets initiative and we're a signatory to the United Nations Global Compact Sustainable Development Goals.

Learn more about embodied carbon and our carbon emissions reduction actions, our comprehensive recycling services, and wider ESG activities for sustainable operations at: www.elandcables.com/company/about-us/esg-sustainability

REGULATORY COMPLIANCE

This cable is compliant with European Regulation EN 50575, the Construction Products Regulation.

This cable meets the requirements of the Low Voltage Directive 2014/35/EU, the RoHS Directive 2015/65/EU and Reach Directive EC 1907/2006. RoHS compliance has been tested and confirmed by The Cable Lab®.

DIMENSIONS

ELAND PART NO.	NOMINAL CROSS SECTIONAL AREA mm²	NOMINAL THICKNESS OF INSULATION mm	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km
A2X*0015	1.5	0.7	2.9	22
A2X*0025	2.5	0.8	3.6	32
A2X*0040	4	0.8	4.1	50
A2X*0060	6	0.8	4.7	71
A2X*010	10	1	5.9	110
A2X*016	16	1	6.8	164
A2X*025	25	1.2	8.4	256
A2X*035	35	1.2	9.4	346
A2X*050	50	1.4	11	473
A2X*070	70	1.4	12.7	674
A2X*095	95	1.6	14.7	913
A2X*120	120	1.6	16.2	1150
A2X*150	150	1.8	18	1416
A2X*185	185	2	20	1749
A2X*240	240	2.2	23	2317
A2X*300	300	2.4	25.2	3049
A2X*400	400	2.6	28.4	3657
A2X*500	500	2.8	31.8	4700
A2X*630	630	2.8	38.1	5890

* Designates the sheath colour. For each Eland Cables part number replace with the colour code as listed below. e.g. A2XRD0040 = 4mm² Red

COLOUR CODES

COLOUR	Black	Blue	Grey	Green/Yellow	Red	Yellow	Brown	White
CODE	BK	BL	GR	GY	RD	YW	BR	WH

CONDUCTORS

Class 2 Stranded Conductors for Single Core and Multi-Core Cables

NOMINAL CROSS SECTIONAL AREA mm²	MINIMUM NO. OF WIRES IN CONDUCTOR mm						MAXIMUM RESISTANCE OF CONDUCTOR AT 20°C ohms/km
	Circular		Circular Compacted		Shaped		Annealed Copper Conductor
	Cu	Al	Cu	Al	Cu	Al	Plain Wires
1.5	7	-	6	-	-	-	12.1
2.5	7	-	6	-	-	-	7.41
4	7	-	6	-	-	-	4.61
6	7	-	6	-	-	-	3.08
10	7	7	6	6	-	-	1.83
16	7	7	6	6	-	-	1.15
25	7	7	6	6	6	6	0.727
35	7	7	6	6	6	6	0.524
50	19	19	6	6	6	6	0.387
70	19	19	12	12	12	12	0.268
95	19	19	15	15	15	15	0.193
120	37	37	18	15	18	15	0.153
150	37	37	18	15	18	15	0.124
185	37	37	30	30	30	30	0.0991
240	37	37	34	30	34	30	0.0754

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NOMINAL CROSS SECTIONAL AREA mm²	MINIMUM NO. OF WIRES IN CONDUCTOR mm						MAXIMUM RESISTANCE OF CONDUCTOR AT 20°C ohms/km
	Circular		Circular Compacted		Shaped		Annealed Copper Conductor
	Cu	Al	Cu	Al	Cu	Al	Plain Wires
300	61	61	34	30	34	30	0.0601
400	61	61	53	53	53	53	0.047
500	61	61	53	53	53	53	0.0366
630	91	91	53	53	53	53	0.0283

The above table is in accordance with EN 60228

ELECTRICAL CHARACTERISTICS

Current Carrying Capacity

NOMINAL CROSS SECTIONAL AREA mm²	REFERENCE METHOD A (ENCLOSED IN CONDUIT IN THERMALLY INSULATING WALL ETC) Amps		REFERENCE METHOD B (ENCLOSED IN CONDUIT IN WALL OR IN TRUNKING ETC) Amps		REFERENCE METHOD C (CLIPPED DIRECT) Amps		REFERENCE METHOD F (IN FREE AIR OR ON A PERFORATED CABLE TRAY ETC HORIZONTAL OR VERTICAL ETC) Amps				
							Touching			Spaced by one diameter	
										2 Cables Single-Phase AC or DC or 3 Cables Three-Phase AC flat	
	2 Cables Single-Phase AC or DC	3 or 4 Cables Three-Phase AC	2 Cables Single-Phase AC or DC	3 or 4 Cables Three-Phase AC	2 Cables Single-Phase AC or DC	3 or 4 Cables Three-Phase AC	2 Cables Single-Phase AC or DC flat	3 Cables Three-Phase AC flat	3 Cables Three-Phase AC trefoil	Horizontal	Vertical
1.5	14.5	13.5	17.5	15.5	20	18	-	-	-	-	-
2.5	20	18	24	21	27	25	-	-	-	-	-
4	26	24	32	28	37	33	-	-	-	-	-
6	34	31	41	36	47	43	-	-	-	-	-
10	46	42	57	50	65	59	-	-	-	-	-
16	61	56	76	68	87	79	-	-	-	-	-
25	80	73	101	89	114	104	131	114	110	146	130
35	99	89	125	110	141	129	162	143	137	181	162
50	119	108	151	134	182	167	196	174	167	219	197
70	151	136	192	171	234	214	251	225	216	281	254
95	182	164	232	207	284	261	304	275	264	341	311
120	210	188	269	239	330	303	352	321	308	396	362
150	240	216	300	262	381	349	406	372	356	456	419
185	273	245	341	296	436	400	463	427	409	521	480
240	321	286	400	346	515	472	546	507	485	615	569
300	367	328	458	394	594	545	629	587	561	709	659
400	-	-	546	467	694	634	754	689	656	852	795
500	-	-	626	533	792	723	868	789	749	982	920
630	-	-	720	611	904	826	1005	905	855	1138	1070

Ambient temperature: 30°C
Conductor operating temperature: 70°C

The above table is in accordance with Table 4D1A of the 18th Edition of IEE Wiring Regulations BS7671 and IEC 60364-5-52.

VOLTAGE DROP

NOMINAL CROSS SECTIONAL AREA mm²	2 CABLES DC mV/A/m	2 CABLES SINGLE-PHASE AC mV/A/m						3 OR 4 CABLES THREE-PHASE AC mV/A/m													
		Reference Methods A and B enclosed in conduit or trunking)			Reference Methods C, F and G (clipped direct, on tray or in free air)						Reference Methods A and B enclosed in conduit or trunking)			Reference Methods C, F and G (clipped direct, on tray or in free air)								
					Cables Touching			Cables Spaced*						Cables touching, Trefoil			Cables touching, Flat			Cables spaced*, Flat		
1.5	28	29			29			29			25			25			25			25		
2.5	18	18			18			18			15			15			15			15		
4	11	11			11			11			9.5			9.5			9.5			9.5		
6	7.3	7.3			7.3			7.3			6.4			6.4			6.4			6.4		
10	4.4	4.4			4.4			4.4			3.8			3.8			3.8			3.8		
16	2.8	2.8			2.8			2.8			2.4			2.4			2.4			2.4		
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
25	1.75	1.80	0.33	1.80	1.75	0.20	1.75	1.75	0.29	1.80	1.50	0.29	1.55	1.50	0.18	1.50	0.15	0.25	1.55	1.50	0.32	1.55
35	1.25	1.30	0.31	1.30	1.25	0.20	1.25	1.25	0.28	1.30	1.10	0.27	1.10	1.10	0.17	1.10	1.10	0.24	1.10	1.10	0.32	1.15
50	0.93	0.95	0.30	1.00	0.93	0.19	0.95	0.93	0.28	0.97	0.81	0.26	0.85	0.80	0.17	0.82	0.80	0.24	0.84	0.80	0.32	0.86
70	0.63	0.65	0.29	0.72	0.63	0.19	0.66	0.63	0.27	0.69	0.56	0.25	0.61	0.55	0.16	0.57	0.55	0.24	0.60	0.55	0.31	0.63
95	0.46	0.49	0.28	0.56	0.47	0.18	0.50	0.47	0.27	0.54	0.42	0.24	0.48	0.41	0.16	0.43	0.41	0.23	0.47	0.40	0.31	0.51
120	0.36	0.39	0.27	0.47	0.37	0.18	0.41	0.37	0.26	0.45	0.33	0.23	0.41	0.32	0.15	0.36	0.32	0.23	0.40	0.32	0.30	0.44
150	0.29	0.31	0.27	0.41	0.30	0.18	0.34	0.29	0.26	0.39	0.27	0.23	0.36	0.26	0.15	0.30	0.26	0.23	0.34	0.26	0.30	0.40
185	0.23	0.25	0.27	0.37	0.24	0.17	0.29	0.24	0.26	0.35	0.22	0.23	0.32	0.21	0.15	0.26	0.21	0.22	0.31	0.21	0.30	0.36
240	0.18	0.20	0.26	0.33	0.19	0.17	0.25	0.19	0.25	0.31	0.17	0.23	0.29	0.16	0.15	0.22	0.16	0.22	0.27	0.16	0.29	0.34
300	0.15	0.16	0.26	0.31	0.15	0.17	0.22	0.15	0.25	0.29	0.14	0.23	0.27	0.13	0.14	0.19	0.13	0.22	0.25	0.13	0.29	0.32
400	0.11	0.13	0.26	0.29	0.12	0.16	0.20	0.12	0.25	0.27	0.12	0.22	0.25	0.11	0.14	0.18	0.11	0.21	0.24	0.10	0.29	0.31
500	0.086	0.11	0.26	0.28	0.98	0.155	0.185	0.093	0.24	0.26	0.10	0.22	0.25	0.086	0.135	0.16	0.086	0.21	0.23	0.081	0.29	0.30
630	0.068	0.094	0.25	0.27	0.081	0.155	0.175	0.076	0.24	0.25	0.08	0.22	0.24	0.072	0.135	0.15	0.072	0.21	0.22	0.066	0.28	0.29

Conductor operating temperature: 70°C

r = Resistive Component

x = Reactive Component

z = Impedance Value

*Spacings larger than one cable diameter will result in a larger voltage drop.

The above table is in accordance with Table 4D1B of the 118th Edition of IEE Wiring Regulations BS7671 and IEC 60364-5-52.

For cables having conductors of 16mm2 or less cross sectional area their inductances can be ignored and (mV/A/m)r values only are tabulated. For cables having conductors greater than 16mm2, cross sectional area the impedance values are given as (mV/A/m)z, together with the resistive component (mV/A/m)r and the reactive component (mV/A/m)x.

The above paragraph is extracted from Appendix 4 of the 18th Edition of IEE Wiring Regulations BS7671 and IEC 60364-5-52.

DE-RATING FACTORS

For Ambient Air Temperatures other than 30°C

AMBIENT TEMPERATURE	25°C	30°C	35°C	40°C	45°C	50°C	55°C
DE-RATING FACTOR	1.03	1.00	0.94	0.87	0.79	0.71	0.61

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