



# 2491X / H05V-K / H07V-K EN 50525-2-31 Flexible Cable



Eland Product Group: A3X

## APPLICATION

PVC panel wiring for use in the switch control, relay and instrumentation panels of power switchgear and for purposes such as internal connectors in rectifier equipment, motor starters and controllers.

## CHARACTERISTICS

**Voltage Rating** U<sub>o</sub>/U  
H05V-K: 300/500V  
H07V-K: 450/750V

**Temperature Rating**  
Fixed: -30°C to +70°C  
Flexed: -5°C to +70°C

**Minimum Bending Radius**  
Fixed: 6 x overall diameter

## CONSTRUCTION

**Conductor**  
Class 5 flexible copper conductor

**Insulation**  
PVC (Polyvinyl Chloride)

**Insulation Colour**  
● Red ● Black ● Blue ● Orange ● Yellow ○ White  
● Green/Yellow ● Grey ● Brown ● Violet ● Pink

## 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, EN 60228

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

## THE CABLE LAB<sup>®</sup>

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](http://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 2015/863/EU and Reach Directive EC 1907/2006. RoHS compliance has been tested and confirmed by The Cable Lab<sup>®</sup>.





## DIMENSIONS

### H05V-K

ELAND PART NO.	NOMINAL CROSS SECTIONAL AREA mm <sup>2</sup>	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km
A3X*00050	0.5	2.20	9.1
A3X*00075	0.75	2.40	11.7
A3X*0010	1	2.55	14.4

### H07V-K

ELAND PART NO.	NOMINAL CROSS SECTIONAL AREA mm <sup>2</sup>	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km
A3X*0015	1.5	3.00	20.1
A3X*0025	2.5	3.65	31.5
A3X*0040	4	4.20	46.2
A3X*0060	6	4.80	65.1
A3X*010	10	6.25	109.4
A3X*016	16	7.40	165.2
A3X*025	25	9.40	253.4
A3X*035	35	10.40	345.5
A3X*050	50	12.55	492.4
A3X*070	70	14.10	669.3
A3X*095	95	17.20	910.4
A3X*120	120	17.70	1129.4
A3X*150	150	19.60	1401.0
A3X*185	185	23.00	1741.0
A3X*240	240	26.40	2267.5

\*Designates the sheath colour. For each Eland Cables part number replace with the colour code as listed below: e.g. A3XRD0015 = 1.5mm<sup>2</sup> Red

## COLOUR CODES

COLOUR	Black	Blue	Grey	Green/ Yellow	Orange	Red	Pink	Yellow	Violet	Brown	White
CODE	BK	BL	GR	GY	OR	RD	PK	YW	VI	BR	WH

## CONDUCTORS

### Class 5 Flexible Copper Conductors for Single Core and Multi-Core Cables

NOMINAL CROSS SECTIONAL AREA mm <sup>2</sup>	MAXIMUM DIAMETER OF WIRES IN CONDUCTOR mm	MAXIMUM RESISTANCE OF CONDUCTOR AT 20°C ohms/km
		Plain Wires
0.5	0.21	39
0.75	0.21	26
1	0.21	19.5
1.5	0.26	13.3
2.5	0.26	7.98
4	0.31	4.95
6	0.31	3.3
10	0.41	1.91
16	0.41	1.21
25	0.41	0.78
35	0.41	0.554
50	0.41	0.386
70	0.51	0.272

NOMINAL CROSS SECTIONAL AREA mm <sup>2</sup>	MAXIMUM DIAMETER OF WIRES IN CONDUCTOR mm	MAXIMUM RESISTANCE OF CONDUCTOR AT 20°C ohms/km	
		Plain Wires	
95	0.51	0.206	
120	0.51	0.161	
150	0.51	0.129	
185	0.51	0.106	
240	0.51	0.0801	

The above table is in accordance with EN 60228

## ELECTRICAL CHARACTERISTICS

### Current Carrying Capacity

NOMINAL CROSS SECTIONAL AREA mm <sup>2</sup>	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				
	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	Touching			Spaced by one diameter	
							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

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.

NOTE 2.4 - For Class 5 flexible conductors the tabulated values for current carrying capacity or voltage drop are multiplied by the following factors:

CABLE SIZE ≤ 16mm <sup>2</sup>	CURRENT CARRYING CAPACITY: 0.95	VOLTAGE DROP: 1.10
CABLE SIZE ≥ 25mm <sup>2</sup>	CURRENT CARRYING CAPACITY: 0.97	VOLTAGE DROP: 1.06

## VOLTAGE DROP

NOMINAL CROSS SECTIONAL AREA mm <sup>2</sup>	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					
r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
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			
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	0.10	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 16mm<sup>2</sup> 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 16mm<sup>2</sup>, 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

The information contained within this datasheet is for guidance only and is subject to change without notice or liability. All the information is provided in good faith and is believed to be correct at the time of publication. When selecting cable accessories, please note that actual cable dimensions may vary due to manufacturing tolerances.