

Tri-rated - H05V2-K / H07V2-K / BS 6231 UL1015 CSA 22.2 Flexible PVC Cable



Eland Product Group: **A2T**

APPLICATION

High temperature, flame retardant cable designed 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. Tri-rated cable is sometimes referred to as BS 6231 cable, H07V2-K or panel wire.

CONSTRUCTION

UL Style Number
1015

Conductor

Class 5 flexible copper conductor according to BS EN 60228 (previously BS 6360)

Insulation

PVC (Polyvinyl Chloride) Type Tl3 according to BS EN 50363

CABLE STANDARDS

BS EN 50525-2-31* BS 6231 Type CK, UL Subj.758, CSA C22.2 No. 210 (HD 21.7 S2) #LL246095, BS EN/IEC 60332



The electrical and dimensional properties of this product are measured by the Technical and Quality Assurance department at the Eland Cables laboratory. Cable performance in respect of conductor resistance, construction quality (workmanship), dimensional consistency, and other parameters are verified to published standards and approved product drawings. Conformance to RoHS (Restriction of the use of Hazardous Substances) is determined and confirmed.

CHARACTERISTICS

Voltage Rating (U₀/U)

UL, CSA: 450/750V

BS 6231: 600/1000V

BS EN 50525-2-31: 300/500V, 450/750V

Temperature Rating

UL, CSA: +105°C

BS 6231: +90°C

Minimum: -15°C

Minimum Bending Radius

6 x overall diameter

Sheath Colour

● Red ● Black ● Blue ● Light Blue ● Dark Blue ● Yellow
● Green/Yellow ● Grey ● Brown ● Orange ○ White ● Violet
● Green ● Pink

Note

*BS EN 50525-2-31 covers harmonised conductor sizes up to 35mm², cables above this size are generally to the specification. Where it is intended to connect cables contained within this datasheet to equipment or accessories confirmation should be obtained to ensure that they are capable of withstanding the operating temperature of the cable.

DIMENSIONS

ELAND PART NO.	NO. OF CORES	NOMINAL CROSS SECTIONAL AREA mm ²	APPROXIMATE AWG	NOMINAL THICKNESS OF INSULATION mm	NOMINAL OVERALL DIAMETER mm	NOMINAL WEIGHT kg/km
A2T*0005	1	0.5	21	0.8	2.7	11
A2T*00075	1	0.75	19	0.8	2.85	15
A2T*0010	1	1	18	0.8	3	18
A2T*0015	1	1.5	16	0.8	3.3	23
A2T*0025	1	2.5	14	0.8	3.75	35
A2T*0040	1	4	12	0.8	4.35	48
A2T*0060	1	6	10	0.8	4.85	69
A2T*010	1	10	8	1	6.3	117
A2T*016	1	16	6	1	8.1	191
A2T*025	1	25	4	1.2	9.4	281
A2T*035	1	35	2	1.2	10.9	389
A2T*050	1	50	1	1.4	13.1	560
A2T*070	1	70	2/0	1.4	15.1	774
A2T*095	1	95	3/0	1.6	16.1	991
A2T*120	1	120	4/0	1.6	17.9	1231
A2T*150	1	150	250 MCM	1.8	20.2	1534
A2T*185	1	185	350 MCM	2	22.85	1878
A2T*240	1	240	450 MCM	2.2	24.4	2381

Eland Part No. shown above designate the sheath colour (). For each colour substitute * for a colour code as listed below. e.g. A2TRD0040 = 4mm² Red

Colour Codes

COLOUR	Black	Green	Blue	Light Blue	Dark Blue	Grey	Green/Yellow	Orange	Red	Pink	Yellow	Violet	Brown	White
CODE	BK	GN	BL	LTBL	DKBL	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 ²	MAXIMUM DIAMETER OF WIRES IN CONDUCTOR mm	MAXIMUM RESISTANCE OF CONDUCTOR AT 20°C
		Plain Wires ohms/km
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
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 BS EN 60228 (previously BS 6360)

ELECTRICAL CHARACTERISTICS

Current Carrying Capacity and Voltage Drop

NOMINAL CROSS SECTIONAL AREA mm ²	CURRENT RATING (PEAK)	VOLTAGE DROP
	Amps	mV/A/m
0.5	11	46
0.75	14	31
1	17	22
1.5	21	15
2.5	30	9.1
4	41	5.7
6	53	3.8
10	75	2.2
16	100	1.4
25	136	0.89
35	167	0.64
50	204	0.45
70	259	0.32
95	321	0.24
120	374	0.19
150	429	0.16
185	496	0.13
240	595	0.1

Current ratings are based on a conductor operating temperature of 90°C and an ambient air temperature of 45°C and assumes single cable isolated in free air.

DE-RATING FACTORS

AMBIENT TEMPERATURE	45°C	50°C	55°C	60°C	65°C	70°C	75°C
DE-RATING FACTOR	1.00	0.97	0.90	0.82	0.73	0.63	0.52

Where cables are to be grouped, the following factors should be applied

NO. OF CABLES IN GROUP	2	3	4	5	6	7	8
DE-RATING FACTOR	0.80	0.70	0.65	0.60	0.56	0.53	0.50