

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



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

Insulation
PVC (Polyvinyl Chloride) Type TI3

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, BS EN 60228

CHARACTERISTICS

Voltage Rating (U_o/U)
UL, CSA: 600/1000V
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

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

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