

Tri-Rated Cable H05V2-K / H07V2-K



Application

High temperature, flame retardant cable designed for use in the switch control, relay and instrumental 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 BS6231 Cable, H07V2-K or Panel Wire.

Standards

BS6231 Type CK, UL Subj.758, CSA C22.2 Mo. 210, HD 21.7 S2*

Technical Data

UL Style Number: 1015

Conductor: Class 5 flexible plain copper conductor to BS EN 60228:2005

Insulation: PVC (Polyvinyl Chloride)

Insulation Colour:

Voltage Rating (Uo/U): BS6231: 600/1000V
UL, CSA: 600V/1000V
HD21.7 S2: 300V/500V, 450V/750V

Temperature rating: BS6231: 90°C (105°C for 15,000 hours)
UL, CSA: 105°C

Minimum Bending Radius: 6 x overall diameter

Note: HD 21.7 S2 covers conductor sizes up to 35mm", 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. In the event of the equipment or accessories having a lower temperature range the cables should be de-rated accordingly as per BS 7671 Regulation 512.1.5.

Dimensions

Part No	No. of Cores x Nominal Cross sectional Area # x mm ²	AWG	Nominal Thickness of Insulation mm	Nominal Overall Diameter mm	Nominal Weight kg/Km	UL Style Number
TRIO.5	1 x 0.50	22	0.80	2.50	12	1015
TRIO.75	1 x 0.75	20	0.80	2.70	15	1015
TRI1.0	1 x 1.00	18	0.80	2.95	18	1015
TRI1.5	1 x 1.50	16	0.80	3.20	23	1015
TRI2.5	1 x 2.50	14	0.80	3.65	34	1015

TRI 4.0	1 x 4.00	12	0.80	4.20	48	1015
TRI6.0	1 x 6.00	10	0.80	4.70	67	1015
TRI10	1 x 10.00	8	1.14	6.50	119	1015
TRI16	1 x 16.00	6	1.52	8.0	187	1015
TRI25	1 x 25.00	4	1.52	9.40	291	1015
TRI35	1 x 35.00	2	1.52	10.60	406	1015
TRI50	1 x 50.00	1	2.02	12.90	580	1015
TRI70	1 x 70.00	2/0	2.02	14.60	780	1015
TRI95	1 x 95.00	3/0	2.02	16.10	1055	1015
TRI120	1 x 120.00	4/0	2.02	17.90	1175	1015
TRI150	1 x 150.00	250 MCM	2.41	20.20	1425	1015
TRI185	1 x 185.00	350 MCM	2.41	22.85	1735	1015
TRI240	1 x 240.00	450 MCM	2.41	24.40	2310	1015

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
0.50	0.21	39.0000
0.75	0.21	26.0000
1.00	0.21	19.5000
1.50	0.26	13.3000
2.50	0.26	7.9800
4.00	0.31	4.9500
6.00	0.31	3.3000
10.00	0.41	1.9100
16.00	0.41	1.2100
25.00	0.41	0.7800
35.00	0.41	0.5540
50.00	0.41	0.3860
70.00	0.51	0.2720
95.00	0.51	0.2060
120.00	0.51	0.1610

150.00	0.51	0.1290
185.00	0.51	0.1060
240.00	0.51	0.0801

Table in accordance with BS EN 60228:2005 (previously BS6360)

Electrical Characteristics

Current Carrying Capacity (amperes) and Voltage Drop (per ampere per metre)

Nominal Cross Sectional Area (mm ²)	Current Rating (Peak) Amps	Voltage Drop mV/A/m
0.50	11	46.00
0.75	14	31.00
1.00	17	22.00
1.50	21	15.00
2.50	30	9.10
4.00	41	5.70
6.00	53	3.80
10.00	75	2.20
16.00	100	1.40
25.00	136	0.89
35.00	167	0.64
50.00	204	0.45
70.00	259	0.32
95.00	321	0.24
120.00	374	0.19
150.00	418	0.16
185.00	480	0.13
240.00	593	0.10

Current ratings are based on a conductor operation temperature of 85°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	1.0	0.97	0.90	0.82	0.73	0.63	0.52

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

Number 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

The information contained within this datasheet is for guidance only. When selecting accessories such as cleats, glands, etc please note that actual cable dimensions may vary due to manufacturing tolerances.