Tri-Rated Cable - BS6231, UL, CSA, PVC - 0.5mm² to 400mm²



Description

The British standard Tri-Rated cable is sometimes referred to as panel wiring cable due to its application and purpose. It is a high temperature, flame retardant cable designed for use in instrumentation panels, motor starters or power switchgear. The cable features flexible plain annealed copper conductors and a circular high temperature PVC outer sheath. UL & CSA approved also to BS6231. Bi-Rated cables UL and CSA Approval.

Key Features

Voltage Rating
600/1000 Volts

Minimum Bending Radius
6 x overall diameter

Flame Retardancy
BS EN/IEC 60332-1-2

Temperature Limits
UL CSA: -15°C to +105°C
BS 6231: -15°C to +90°C

Core Colours

0.5mm- 2.5mm -	Brown	Blue	Green Yellow	Black	Grey	Orange		
	Red	Yellow	White	Violet	Pink	Green	Lightblue	
4mm -	Brown	Blue	Green Yellow	Black	Grey	Red	Yellow	
	White	Lightblue						
6mm -	Brown	Blue	Green Yellow	Black	Grey	Yellow	Red	
	White							
10mm - 50mm	Brown	Blue	Green Yellow	Black	Grey	Red		
	White							
70mm - 120mm	Brown	Blue	Green Yellow	Black	Grey			
150mm - 300mm	Green Yellow	Black						
400mm -	Black							

Standards

- CSA C22.2
- UL Style number 758
- UL Style number 1015
- BS EN/IEC 60228
- BS EN/IEC 60332-1-2
- BS6231

Construction

- **Conductor**: Class 5 flexible, stranded copper
- **Sheath**: PVC (Polyvinyl Chloride)
- **Sheath Colour**: Various

Training & Testing Lab

AN ISO/IEC 17025 ACCREDITED FACILITY

Cleveland Cable Test & Training Lab
Our state-of-the-art cable testing facility ensures that every cable meets the highest standards of quality and compliance through continuous, rigorous testing.

ISO/IEC 17025 Accredited Testing Laboratory

CPR
Cleveland Cable Company is committed to compliance with the Construction Products Regulation (CPR). Where applicable, all cables manufactured after 1st July 2017 have been assessed in accordance with CPR requirements, with full supporting documentation available.

Our Sustainability Commitment

We are committed to the journey to Net Zero as a business partner, an employer and a community member.

By thinking and acting sustainably, we deliver excellent customer service while reducing carbon emissions in collaboration with our customers and suppliers.

CLEVELAND CABLE COMPANY

ecovadis
Cleveland Cable Company has been independently assessed by EcoVadis, a globally recognised provider of business sustainability ratings. Our score places us among the top 35% of companies evaluated worldwide, reflecting our strong commitment to environmental, social, and ethical performance

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Tri-Rated Cable - BS6231, UL, CSA, PVC - 0.5mm² to 400mm² - Dimensions

Reference	Conductor Size (mm2)	No Of Cores	Stranding(mm)	Overall Diameter(mm)	Weight(Kg/Km)	Gland Size
TRI0/5	0.5	1	16/0.20	2.7	12	NONE
TRI/75	0.75	1	24/0.20	2.9	15	NONE
TRI1	1	1	32/0.20	3.1	18	NONE
TRI1/5	1.5	1	30/0.25	3.3	23	20/16
TRI2/5	2.5	1	50/0.25	3.7	34	20/16
TRI4	4	1	56/0.30	4.3	50	20/16
TRI6	6	1	84/0.30	4.9	71	20/16
TRI10	10	1	80/0.40	6.3	123	20/16
TRI16	16	1	126/0.40	9	207	20S
TRI25	25	1	196/0.40	10.4	303	20S
TRI35	35	1	276/0.40	11.9	412	20
TRI50	50	1	396/0.40	14.7	607	25
TRI50RD	50	1	396/0.40	14.7	607	11.5
TRI70	70	1	360/0.50	16.8	837	25
TRI95	95	1	475/0.50	18.8	1079	25
TRI120	120	1	608/0.50	19.9	1280	32
BI150	150	1	756/0.50	22.9	1619	32
BI185	185	1	925/0.50	24.1	1948	32
BI240	240	1	1221/0.50	28.6	2518	40
BI300	300	1	1525/0.50	32.2	3112	50S
BI400BK	400	1	2013/0.50	36	4051	50

Multi core non-armoured 90 °C and 180°C thermosetting insulated flexible cables with sheath Reproduced from BS7671:2018 Wiring Regulations

TABLE 4F2A

CURRENT-CARRYING CAPACITY (Amps)

Ambient temperature: 30 °C
Conductor operating temperature: 90 °C

Conductor cross sectional area	Single-phase AC or DC	Three-phase AC	Single-phase AC or DC
	1 x 2 core cable, with or without protective conductor	1 x 3 core, 4 core or 5 core cable	2 single-core cables, touching
(mm^2)	(A)	(A)	(A)
4	42	37	-
6	55	49	-
10	76	66	-
16	103	89	-
25	136	119	-
35	-	146	200
50	-	177	250
70	-	225	310
95	-	273	369
120	-	316	432
150	-	363	497
185	-	414	564
240	-	487	673
300	-	560	773
400	-	-	924
500	-	-	1062
630	-	-	1242

NOTES:

1 The current ratings tabulated are for cables in free air but may also be used for cables resting on a surface. If the cable is to be wound on a drum on load the ratings should be reduced in accordance with ***NOTE 2*** below and for cables which may be covered, ***NOTE 3 below.***

2 **Flexible cables wound on reeling drums**
The current ratings of cables used on reeling drums are to be reduced by the following factors:

a) Radial type drum
ventilated: 85 %
unventilated: 75 %

b) Ventilated cylindrical type drum
I layer of cable: 85 %
2 layers of cable: 65 %
3 layers of cable: 45 %
4 layers of cable: 35 %

A radial type drum is one where spiral layers of cable are accommodated between closely spaced flanges; if fitted with solid flanges the ratings given above should be reduced and the drum is described as non-ventilated. If the flanges have suitable apertures the drum is described as ventilated.

A ventilated cylindrical cable drum is one where layers of cable are accommodated between widely spaced flanges and the drum and end flanges have suitable ventilating apertures.

3 Where cable may be covered over or coiled up whilst on load, or the air movement over the cable restricted, the current rating should be reduced.

It is not possible to specify the amount of reduction but the table of rating factors for reeling drums can be used as a guide.

4 For 180 °C cables, the rating factors for ambient temperature allow a conductor operating temperature up to 150 °C.
Consult the cable manufacturer for further information.

5 Where it is intended to connect the cables in this table to equipment or accessories designed to operate at a temperature lower than the maximum operating temperature of the cable, the cables should be rated at the maximum operating temperature of the equipment or accessory (see Regulation 512.1.5).

6 Where it is intended to group a cable in this table with other cables, the cable should be rated at the lowest of the maximum operating temperatures of any of the cables in the group (see Regulation 512.1.5).

TABLE 4F2B

VOLTAGE DROP (per ampere per metre):

Conductor operating temperature: 90 °C

Conductor cross-sectional area	Two-core cable or 2 x Single core cables DC	2 core cable, single-phase AC			1 x 3 core, 4 core or 5 core cable, three-phase AC			2 single-core cables, touching Single-phase AC*		
(mm^2)	(mV/Nm)	(mV/Nm)			(mV/Nm)			(mV/Nm)		
4	13.20	13.20			11.10			-		
6	8.50	8.50			7.40			-		
10	5.10	5.10			4.40			-		
16	3.20	3.20			2.70			-		
		r	x	z	r	x	z	r	x	z
25	2.03	2.03	0.175	2.04	1.73	0.150	1.73	-	-	-
35	1.420	-	-	-	1.22	0.150	1.23	1.44	0.21	1.46
50	1.000	-	-	-	0.91	0.145	0.93	1.00	0.21	1.02
70	0.710	-	-	-	0.62	0.140	0.64	0.71	0.20	0.73
95	0.540	-	-	-	0.47	0.135	0.49	0.54	0.195	0.57
120	0.420	-	-	-	0.37	0.135	0.39	0.42	0.190	0.46
150	0.340	-	-	-	0.29	0.130	0.32	0.34	0.190	0.39
185	0.270	-	-	-	0.24	0.130	0.27	0.27	0.190	0.33
240	0.210	-	-	-	0.188	0.130	0.23	0.210	0.185	0.28
300	0.167	-	-	-	0.147	0.125	0.195	0.173	0.180	0.25
400	0.127	-	-	-	-	-	-	0.132	0.175	0.22
500	0.100	-	-	-	-	-	-	0.107	0.170	0.20
630	0.074	-	-	-	-	-	-	0.085	0.170	0.190

NOTES:

1 The voltage drop figures given above are based on a conductor operating temperature of 90 °C and are therefore not accurate when the operating temperature is in excess of 90 C. In the case of the 180 °C cables with a conductor temperature of 150 °C the above resistive values should be increased by a factor of 1.2.

2 *A larger voltage drop will result if the cables are spaced.

THE INFORMATION CONTAINED WITHIN THIS DATASHEET IS FOR GUIDANCE ONLY AND IS SUBJECT TO CHANGE WITHOUT NOTICE OR LIABILITY. WE BELIEVE THE INFORMATION IS CORRECT AT THE TIME OF PUBLICATION. PLEASE NOTE WHEN SELECTING CABLE ACCESSORIES THAT ACTUAL CABLE DIMENSIONS MAY VARY DUE TO MANUFACTURING TOLERANCES.