

# 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**



### **Standards**

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

#### Construction

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

# **QA Lab**

#### 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. Where applicable, cables are independently tested and certified by BASEC to ensure full compliance.







#### 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.



#### ecovadi

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

# ecovadis



















# $Tri-Rated\ Cable\ -\ BS6231,\ UL,\ CSA,\ PVC\ -\ 0.5mm^2\ to\ 400mm^2\ -\ Dimensions$

Reference	Conductor Size (mm2)	No Of Cores	Stranding(mm)	Overall Diameter(mm)	Weight(Kg/Km)	Gland Size	
TRIO/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	205	
TRI25	25	1	196/0.40	10.4	303	20\$	
TRI35	35	1	276/0.40	11.9	412	20	
TRI50	50	1	396/0.40	14.7	607	25	
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

onductor cross sectional	Single-phase AC or DC	Three-phase AC	Single-phase AC or DC  2 single-core cables, touching		
area	1 x 2 core cable, with or without protective conductor	1 x 3 core, 4 core or 5 core cable			
(mm <sup>2</sup> )	(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	<u>-</u>	- 117 / 1117	924		
500			1062		
630			1242		

#### NOTES:

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 1 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:

b) Ventilated cylindrical type drum 85 % a) Radial type drum I layer of cable: 2 layers of cable: 65 % unventilated: 75 % 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.

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

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*		
(mm²)	(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	х	z	r	х	z	r	х	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			1 1 2 1 1	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:

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.

















<sup>1</sup> 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.

<sup>&</sup>lt;sup>2</sup> \*A larger voltage drop will result if the cables are spaced.