

Flat Festoon Crane Cables



APPLICATION

- Festoon gantry cranes
- Wharf & port facilities
- Mine sites & cold stores
- Container Cranes
- Timber & refuse cranes
- Rubber tyred gantries
- Trippers
- Steelworks & ladle cranes

DESIGN

PLANOFLEX cables consist of extra finely stranded copper conductors with a short length of lay to provide a high degree of flexibility.

PROTOLON elastomer R-EP-90 insulation provides improved current carrying capacities and the cable is sheathed overall with HD-PCP-90 Polychloroprene which is oil resistant and flame retardant, remaining flexible at sub-zero temperatures, and withstands high ambient. The construction is in accordance with the Australian Standards AS 1125, AS 3116, AS 3191 and DIN VDE 0250 pt 809. PLANOFLEX is UL approved, Certificate File No. E113313.

OPERATING TEMPERATURE

- Minimum permissible ambient temperature -55°C
- Maximum permissible conductor temperature 90°C
- Maximum permissible short circuit temperature 250°C
- Minimum ambient temperature for optimum fully flexible operation -35°C

MINIMUM BENDING RADII

The recommended minimum bending radii is dependent on the cable thickness and should be observed to ensure operating reliability.

cables up to 8mm thick	=	3 x cable thickness
cables up to 12mm thick	=	4 x cable thickness
cables above 12mm thick	=	5 x cable thickness

CURRENT CARRYING CAPACITY

Current ratings are based on a continuous operating ambient temperature of 40°C. At other temperatures these values must be converted using the following table.

°C	15	20	25	30	35	40	45	50	55	60	65	70	75	80
Factor	1.26	1.20	1.15	1.10	1.05	1.00	0.94	0.88	0.81	0.73	0.65	0.57	0.47	0.34

TENSILE STRENGTH

The maximum allowable tensile stress is 15N/mm².

This ensures no conductor damage will occur in operation.

VOLTAGE RATING

- Rated Voltage:

(multicore control)	U ₀ /U	= 380/660V
(power)	U ₀ /U	= 0.6/1kV
- AC test voltage = 2kV

* The cable is designated 300/500V in accordance with VDE/IEC and meets or exceeds the Australian Standard AS 3116 for the stated voltage ratings.

SCREENED CONTROL/DATA CORES

Individually screened and twisted screened pair constructions have been developed to enable interference free data/PLC transmission. Screens consist of tinned copper wire braid with 95% coverage with an extruded polymer skin to bond the screen to the insulation and enable greater internal screen protection. Attenuation data for these screened cores at various transmission rates is listed in tables 6.8 and 6.9 on Page 172/173. Integrated fibre optics are also available.

CORE COLOUR IDENTIFICATION

Control cables (up to 2.5mm²) - black cores sequentially numbered, including a green/yellow earth

4 Core - blue, brown, black and green/yellow
 7 Core - black cores sequentially numbered, including a green/yellow earth core

NOTES

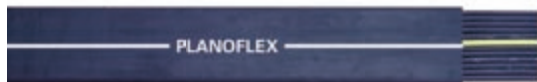
The 7 core design permits two three phase supplies to be incorporated within a single cable, each circuit sharing the full size earth. For the system design the length of cable required for a festoon is approximately +10% on the total trolley length. For large or fast moving systems the stronger power cables should have a shorter loop depth than the lighter control cables. These types of festoons must always be fitted with tow ropes to limit whiplash and conductor stress on acceleration and braking.

Selection and ordering data

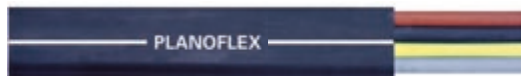
	Number of Cores x Conductor Size	Part No.	Approx. No. of Strands x Max. Strand Diameter	Diameter of Bare Conductor		Cable Overall dimension Thickness x Width		Cable Weight	Unenclosed Spaced
				Max mm	Min mm	Max mm	kg/km		
PLANOFLEX Control Cable	4 x 1.5	5DG5 711	85 x 0.16	1.7	1.7	5.2 x 14.5	6.2 x 17.0	155	20
	7 x 1.5	5DG5 714				5.2 x 24.5	6.2 x 27.0	265	20
	8 x 1.5	5DG5 715				5.2 x 27.5	6.2 x 30.5	295	20
	10 x 1.5	5DG5 717				5.8 x 35.0	7.0 x 39.0	405	20
	12 x 1.5	5DG5 718				5.8 x 41.0	7.0 x 45.0	480	20
	24 x 1.5	5DG5 720				11.5 x 50.5	13.5 x 55.5	1010	20
	4 x 2.5	5DG5 721	140 x 0.16	2.5	2.5	6.6 x 19.0	7.8 x 21.5	255	28
	7 x 2.5	5DG5 724				6.6 x 32.0	7.8 x 35.5	440	28
	8 x 2.5	5DG5 725				6.6 x 35.5	7.8 x 39.5	495	28
	12 x 2.5	5DG5 728				7.2 x 53.5	8.4 x 58.5	790	28
	24 x 2.5	5DG5 730				15.0 x 65.5	17.0 x 72.0	1690	28
	PLANOFLEX Power Cable	4 x 4				5DG5 731	290 x 0.16	2.8	2.8
4 x 6		5DG5 741	190 x 0.21	3.5	3.5	8.8 x 25.5	10.0 x 28.5	490	48
4 x 10		5DG5 765	320 x 0.21	4.5	4.5	10.0 x 31.5	12.0 x 35.0	750	66
4 x 16		5DG5 766	475 x 0.20	5.7	5.7	12.0 x 37.0	14.0 x 41.0	1080	88
4 x 25		5DG5 767	741 x 0.20	7.1	7.1	13.5 x 44.5	16.0 x 49.0	1590	120
4 x 35		5DG5 768	269 x 0.39	8.3	8.3	16.0 x 51.5	18.0 x 56.5	2110	145
4 x 50		5DG5 770	385 x 0.39	9.8	9.8	18.5 x 60.0	21.0 x 65.5	2950	180
4 x 70		5DG5 771	546 x 0.39	11.4	11.4	21.0 x 68.5	23.5 x 75.5	4020	230
4 x 95		5DG5 772	725 x 0.39	13.8	13.8	23.5 x 78.0	26.5 x 85.5	5210	285



Selection and Ordering Data



	Number of Cores x Conductor Size	Part No.	Approx. No. of Strands x Max. Strand Diameter	Diameter of Bare Conductor	Cable Overall dimension		Cable Weight	Unenclosed Spaced
					Thickness x Width			
	mm ²		mm	Max mm	Min mm	Max mm	kg/km	A
PLANOFLEX 7 Core Cable	7 x 4	5DG5 734	290 x 0.16	3.2	8.0 x 38.0	9.4 x 42.0	655	38
	7 x 6	5DG5 744	190 x 0.21	3.9	8.8 x 42.5	10.0 x 47.0	840	48
	7 x 10	5DG5 865	320 x 0.21	5.2	10.5 x 53.5	12.5 x 59.0	1350	66
	7 x 16	5DG5 866	510 x 0.21	6.3	12.5 x 65.5	14.5 x 69.6	1940	88
	7 x 25	5DG5 867	780 x 0.21	8.0	15.0 x 77.0	17.0 x 84.0	2870	120
	7 x 35	5DG5 868	280 x 0.41	9.2	16.5 x 87.5	18.5 x 96.0	3770	145



Individually Screened Data Cores and Pairs	4 x 1 (c)	5DG5 673	54 x 0.15	1.25	5.2 x 15.5	6.2 x 18.0	150	16
	4 x (2x1) (c)	5DG5 890	54 x 0.15	1.25	10.5 x 33.1	12.0 x 35.1	665	16
	12 x 1 (c)	5DG5 670	54 x 0.15	1.25	6.6 x 48.2	7.1 x 51.5	655	16
	4 x 1.5 (c)	5DG5 880	85 x 0.16	1.7	6.9 x 18.5	7.4 x 19.5	250	20
	8 x 1.5 (c)	5DG5 884	85 x 0.16	1.7	6.9 x 35.0	7.4 x 38.0	510	20
	12 x 1.5 (c)	5DG5 888	85 x 0.16	1.7	7.5 x 52.0	8.0 x 56.0	820	20
	6 x (2x2.5) (c)	5DG5 898	140 x 0.16	2.5	14.8 x 61.5	15.6 x 65.0	1800	28

(c) indicates individually screened cores or twisted screened pairs