

## Shielded EMC Festoon Power Cables



### APPLICATION

For use on festoon systems, eg, on gantry cranes, hall gantry cranes, rack material handling equipment, transportation systems or machine tools, in particular for applications where there is a danger of interference to data transmission systems from power cables. The cables are used for high mechanical stresses and frequent bending, also suitable for use as a flexible motor power supply cable.

### DESIGN

The RONDoflex (C) - FC cable consists of electrolytic copper, thinned finely stranded conductors. The insulation is a PROTOLON MS which is a newly developed special compound based on high quality EPR providing improved mechanical and electrical characteristics. The overall braid screen is made of tinned copper wires with a surface coverage of greater than 80%. The inner sheath is SBR, the black outer sheath is PCP allowing it to remain flexible at sub zero temperatures and also withstand extremely high ambients. The construction is in accordance with the Australian Standards AS1125, AS3116, AS3191 and VDE certificate with VDE Reg No. 9809.

### CHEMICAL PARAMETERS

Resistance to oil	Given to DIN VDE 0473, Part 811-2-1, para. 10
Weather resistance	Unrestricted use outdoors and indoors, resistant to ozone, UV and moisture

### ELECTRICAL PARAMETERS

Rated voltage	$U_0/U = 0.6/1kV$
Max permissible operating voltage in AC systems	$U_0/U = 0.7/1.2kV$
Max permissible operating voltage in DC systems	$U_0/U = 0.9/1.8kV$
AC test voltage	2.5 kV over 5 min

### THERMAL PARAMETERS

Ambient temperature	
• Fully flexible operation	-35°C to +60°C
• Fixed installation	-50°C to +80°C
Max permissible operating temperature of the conductor	90°C
Short-circuit temperature of the conductor	200°C

### CURRENT CARRYING CAPACITY

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

### MECHANICAL PARAMETERS

Tensile load	Up to 15 N/mm <sup>2</sup>
Torsional stresses	No application
Minimum bending radii	According to DIN VDE 0298, Part 3
Travel speed	
• Gantry (reeling operation)	60 m/min
• Trolley (festoon system) - up to 180 m/min, the travel speed is determined by a number of factors and can thus not be precisely defined. Influence factors are, eg, space requirement, cable weight, loop sag, number of the festoon systems etc.	
• For speeds above 180 m/min consult the manufacturer.	
Additional tests	Bending test


## CORE COLOUR IDENTIFICATION

Black, blue, brown with green/yellow earth conductor.

## CORE ARRANGEMENT

Three main conductors laid-up (10 x D) with protective-earth conductor split into 3 in the outer filler

### Selection and ordering data

Number of Cores & Nominal Cross-section mm <sup>2</sup>	Part No.	Shield cross-section mm <sup>2</sup>	Conductor diameter mm	Overall Diameter of Cable		Approx. Net Weight for 1000 m kg	Maximum Permissible tensile force N	Unenclosed Spaced 
				Min mm	Max mm			
4x4	5DG6 682	8.0	2.45	14.8	17.8	485	240	38
4x6	5DG6 683	10.7	2.93	17.2	20.2	700	300	48
4x10	5DG6 684	12.7	3.90	19.7	22.7	925	600	66
3x16+3x2,5	5DG6 685	13.3	5.72	22.2	25.2	1150	720	88
3x25+3x4	5DG6 686	15.9	6.75	25.3	28.3	1610	1125	120
3x35+3x6	5DG6 687	21.4	8.05	29.3	32.3	2160	1575	145
3x50+3x10	5DG6 688	24.9	9.60	35.0	38.0	3090	2250	180
3x70+3x10	5DG6 690	29.8	11.50	40.9	43.9	4100	3150	230
3x95+3x16	5DG6 679	-	14.00	44.2	47.2	5040	4275	285
3x120+3x25	5DG6 680	-	15.80	48.7	51.7	5900	5400	330

Number of Cores & Nominal Cross-section mm <sup>2</sup>	Part No.	Conductor resistor Ω/km	Inductance (core/core) at 10 kHz iH/km	Capacitance (core/shield)		Transfer impedance		
				at 1 kHz iF/km	at 1 MHz mΩ/m	at 10 MHz mΩ/m	at 30 MHz mΩ/m	
4x4	5DG6 682	4.95	550	180	-	-	-	
4x6	5DG6 683	3.30	530	190	-	-	-	
4x10	5DG6 684	1.91	510	230	0.4	1.3	3.5	
3x16+3x2,5	5DG6 685	1.21	480	225	0.2	0.6	1.5	
3x25+3x4	5DG6 686	0.78	450	275	-	-	-	
3x35+3x6	5DG6 687	0.55	430	325	-	-	-	
3x50+3x10	5DG6 688	0.39	410	400	0.1	0.2	0.7	
3x70+3x10	5DG6 690	0.27	390	475	-	-	-	
3x95+3x16	5DG6 679	0.21	250	360	-	-	-	
3X120+3X16	5DG6 680	0.16	220	370	-	-	-	