MRC I/O

50Ω Cables for indoor/outdoor applications

Application

The radio-frequency cables described in this chapter are used in transmitter and receiver installations in radio communications as well as in the entire field of commercial radio-frequency technology and electronics. Due to the selection of the sheath materiel these cables can be used for indoor and outdoor applications.

Standards

EN 50117-1, IEC 61196-1

Flame resistance

EN 60332-1

Construction

		MRC 195 I/O (0.94/2.79)	MRC 200 I/O (1.12/2.95)	MRC 240 I/O (1.42/3.81)	MRC 400 I/O (2.74/7.24)	MRC 600 I/O (4.47/11.56)
Inner conductor	copper wire, bare*	0.94 mm ± 0.01	1.12 mm ± 0.01	1.42 mm ± 0.01	2.74 mm ± 0.03	4.47 mm ± 0.03
Insulation	Foam-PE	2.79 mm ± 0.1	2.95 mm ± 0.1	3.81 mm ± 0.1	7.24 mm ± 0.1	11.56 mm ± 0.1
Outer conductor		Al-PET Foil, bonded to the dielectric + Copper braid, tinned				
Sheath	Universal indoor/outdoor, UV stabilized	4.95 mm ± 0.3	4.95 mm ± 0.3	6.1 mm ± 0.3	10.3 mm ± 0.3	15.0 mm ± 0.3
Printing		DRAKA MRC 195 I/O + batch number + meter marking	DRAKA MRC 200 I/O + batch number + meter marking	DRAKA MRC 240 I/O + batch number + meter marking	DRAKA MRC 400 I/O + batch number + meter marking	DRAKA MRC 600 I/O + batch number + meter marking

* MRC 600 = Copper Clad Aluminium (CCA)

Mechanical properties

Minimum bending radius	without load	5 x D (D= outer diameter)
	with load	10 x D (D= outer diameter)
Temperature range	during operation	- 40° C to + 85° C
	during installation	- 15° C to + 55° C
Corrosivity		acc. to IEC 60754-1/2

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Electrical properties

nominal — at 20°C

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DC resistance	Inner conductor	25.3	17.6	10.5	3.0	1.7
(Ω/km)	Outer conductor	17,3	17,4	12,3	7,55	3,9
Mutual capacitance	pF/m	84	80	79.5	79.5	77
Velocity ratio	%	80	83	84	85	86
Characteristic impedance	at 200 MHz	50 Ω ± 2	50 Ω ± 2	50 Ω ± 2	50 Ω ± 2	50 Ω ± 2
Transfer impedance	at 10 MHz	≤ 5 mΩ/m	≤ 5 mΩ/m	≤ 5 mΩ/m	≤ 5 mΩ/m	≤ 5 mΩ/m
Screening factor	at 100-1000 MHz	90 dB	90 dB	90 dB	90 dB	90 dB
Operating voltage		0.7 kV_{rms}	0.8 kV_{rms}	1.0 kV_{rms}	1.2 kV_{rms}	1.5 kV_{rms}
Test voltage	Inner/Outer conductor	1.4 kV_{rms}	1.6 kV_{rms}	2.0 kV_{rms}	3.0 kV_{rms}	3.5 kV_{rms}
Insulation resistance		≥ 10 GΩ*km	≥ 10 GΩ*km	≥ 10 GΩ*km	≥ 10 GΩ*km	≥ 10 GΩ*km

Attenuation (dB/100m)

nominal — at 20°C

Frequency (MHz)	MRC 195 I/O (0.94/2.79)	MRC 200 I/O (1.12/2.95)	MRC 240 I/O (1.42/3.81)	MRC 400 I/O (2.74/7.24)	MRC 600 I/O (4.47/11.56)
30	6.5	5.8	4.4	2.2	1.4
150	14.6	13.1	9.9	5.0	3.2
220	17.7	15.9	12.0	6.1	3.9
450	25.5	22.8	17.3	8.9	5.6
900	36.5	32.6	24.8	12.8	8.2
1800	52.5	46.6	35.6	18.6	12.1
2500	62.4	55.4	42.4	22.3	15.5
5200	92.9	81.9	63.3	33.6	21.9
5800	98.1	86.5	66.8	35.5	23.8

Max. power rating (Watts)

Ambient temperature 40°C and max. inner conductor temperature 100°C

Frequency (MHz)	MRC 195 I/O (0.94/2.79)	MRC 200 I/O (1.12/2.95)	MRC 240 I/O (1.42/3.81)	MRC 400 I/O (2.74/7.24)	MRC 600 I/O (4.47/11.56)
30	890	1020	1140	3330	5510
150	380	450	660	1470	2410
220	300	370	540	1200	1970
450	220	260	380	830	1350
900	160	180	260	580	930
1800	110	130	180	400	630
2500	90	110	150	330	520
5200	63	74	105	222	338
5800	60	70	100	210	320

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Return loss (dB)

Several peaks are allowed **at 20°C**

Frequency (MHz)	MRC 195 I/O (0.94/2.79)	MRC 200 I/O (1.12/2.95)	MRC 240 I/O (1.42/3.81)	MRC 400 I/O (2.74/7.24)	MRC 600 I/O (4.47/11.56)
50-450	≥ 26	≥ 26	≥ 26	≥ 26	≥ 26
450-1000	≥ 23	≥ 23	≥ 23	≥ 23	≥ 23
1000-2500	≥ 15	≥ 15	≥ 15	≥ 15	≥ 15

Technical data

Product code	Desig-nation	Type	Brand name	Outer diameter mm	Weight kg/km	Standard delivery length m	Drum size **PWD	Copper content Kg/km	Tensile force N
1024998	02Y(St) C2Y	0.94/2.29 AFB	MRC 195 I/O	4.95	30,80	1000	400/120/ 330	17.7	88
1024999	02Y(St) C2Y	1.12/2.95 AFB	MRC 200 I/O	4.95	32,15	1000	400/120/ 330	20.0	100
1025000	02Y(St) C2Y	1.42/3.81 AFB	MRC 240 I/O	6.1	49,00	1000	500/200/ 360	32.6	163
1025001	02Y(St) C2Y	2.74/7.24 AFB	MRC 400 I/O	10.3	133,2	1000	760/470/ 500	90.4	452
1025002	02Y(St) C2Y	4.47/11.56	MRC 600 I/O	15.0	210,0	1000	1100/800 /694	89.6	448

**PWD (plywood drum)