

HITRONIC® HRM-FD Breakout Cable

DB_HRM-FD_EN (version 3.0)
valid from: 01.09.2014

1. Product Description

Cable designation: A/J-V(ZN)H(ZN)11Y or U-V(ZN)H(ZN)11Y

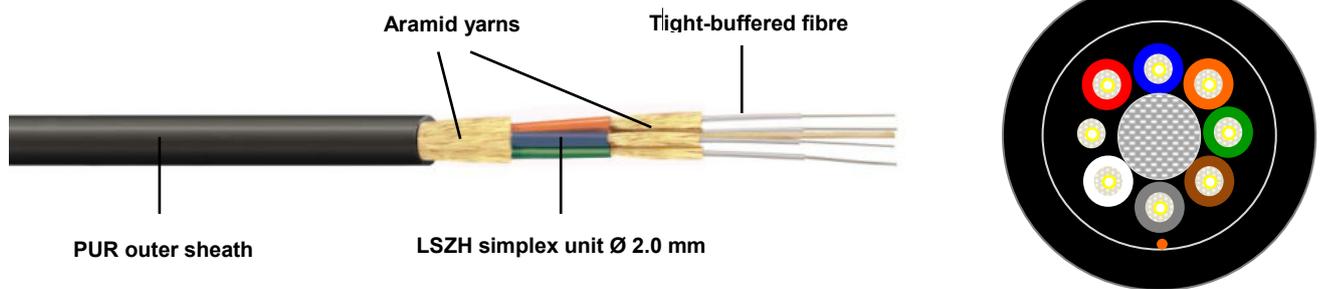
Universal mobile breakout cable for direct connector assembly (based on military norm MIL-C-85045), with up to 12 tight-buffered simplex units, flame-retardant and halogen-free sheaths, high flexibility, UV-resistant, and excellent mechanical resistance

2. Application

For use in outdoors or indoors, as links between moving parts

Methods of deployment: laying in drag chains, trunking, ducts, trays, building riser, empty plastic pipes, raised floors and plenums for short distances

3. Product Design



Cable core	Up to 12 tight-buffered simplex units enclosed by individual aramid fibres and LSZH sheaths (Ø 2.0 mm), and an overall PUR outer sheath
Cable inner sheath	LSZH, halogen-free, flame-retardant, low smoke
Cable outer sheath	Polyurethane (PUR), halogen-free, flame-retardant, UV-resistant
Colour of inner sheath	Blue, orange, green, brown, grey, white, red, black, yellow, violet, pink, turquoise
Colour of outer sheath	Black
Identification of simplex units	Colour-coded (refer to colour of inner sheath)
Strain relief	Aramid yarns
Type of armouring	-

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4. Optical and Physical Properties of Cabled Fibre (and Bare Fibre)

Multimode fibre		50/125 µm	50/125 µm	50/125 µm	62.5/125 µm
		OM4	OM3	OM2	OM1
Attenuation	@ 850 nm dB/km	≤ 3.5 (2.5)	≤ 3.5 (2.5)	≤ 3.5 (2.5)	≤ 3.5 (3.0)
	@ 1300 nm dB/km	≤ 1.5 (0.7)	≤ 1.5 (0.7)	≤ 1.5 (0.7)	≤ 1.5 (0.7)
Bandwidth	@ 850 nm MHz-km	≥ 3500	≥ 1500	≥ 500	≥ 200
	@1300 nm MHz-km	≥ 500	≥ 500	≥ 500	≥ 500
Numerical aperture		0.2 ± 0.015	0.2 ± 0.015	0.2 ± 0.015	0.275 ± 0.015
Core diameter	µm	50 ± 2.0	50 ± 2.0	50 ± 2.0	62.5 ± 2.5
Cladding diameter	µm	125 ± 1.0	125 ± 1.0	125 ± 1.0	125 ± 2
Primary coating diameter	µm	242 ± 5	242 ± 5	242 ± 5	245 ± 10
Single-mode fibre		9/125 µm			
		(ITU-T G.652.D)			
Attenuation	@ 1310 nm dB/km				≤ 0.4 (0.35)
	@ 1550 nm dB/km				≤ 0.4 (0.21)
Chromatic dispersion	@ 1310 nm ps/(nm-km)				≤ 3.0
	@ 1550 nm ps/(nm-km)				≤ 18
Zero dispersion wavelength	Nm				1300 – 1322
Cut-off wavelength	Nm				≤ 1260
PMD	ps/km				≤ 0.1
Mode field diameter	µm				9.0 ± 0.4
Cladding diameter	µm				125 ± 1
Primary coating diameter	µm				242 ± 7

5. Thermal Properties

Operating temperature	-40°C to +70°C
Installation temperature	0°C to +50°C
Storage temperature	-40°C to +70°C

6. Mechanical Properties

Max. number of fibres	12	
Simplex cable diameter (mm)	2.0	
Outer cable diameter (mm)	refer to range overview	
Cable weight	refer to range overview	
Min. bending radius (mm)	without tensile load	15 x D
	with tensile load	20 x D
Max. tensile strength (N)	long-term	refer to range overview
	short-term	
Max. crush resistance (N)	2000	
Fire load (MJ/m) for cable diameter 13mm	4.26	

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7. Chemical Properties

LSZH inner sheath	Flame-retardant (IEC 60332-3), halogen-free, low smoke
PUR outer sheath	Flame-retardant (IEC 60332-3), halogen-free, UV-resistant

8. EC Directives

Not applicable for fibre optics

9. Approvals

- RoHS
- Environmental and mechanical tests comply to EN 187000 and IEC 60794
- Fire resistance tested according to IEC 60332-1, IEC 60332-3
- Halogen free according to IEC 60754-1

10. Product Range Overview

Article number	Article designation	No. of Fibres	Outer Ø (mm)	Weight (kg/km)	Tensile Strength long/short (N)
Multimode 50/125 µm OM4					
26300402	HITRONIC® HRM-FD800 2G 50/125 OM4	2	7.8 ± 0.3	50	800/1450
26300404	HITRONIC® HRM-FD1000 4G 50/125 OM4	4	7.8 ± 0.3	50	1000/1800
26300408	HITRONIC® HRM-FD1400 8G 50/125 OM4	8	10.4 ± 0.5	93	1400/2500
26300412	HITRONIC® HRM-FD1800 12G 50/125 OM4	12	13.0 ± 0.5	98	1800/3250
Multimode 50/125 µm OM3					
26300302	HITRONIC® HRM-FD800 2G 50/125 OM3	2	7.8 ± 0.3	50	800/1450
26300304	HITRONIC® HRM-FD1000 4G 50/125 OM3	4	7.8 ± 0.3	50	1000/1800
26300308	HITRONIC® HRM-FD1400 8G 50/125 OM3	8	10.4 ± 0.5	93	1400/2500
26300312	HITRONIC® HRM-FD1800 12G 50/125 OM3	12	13.0 ± 0.5	98	1800/3250
Multimode 50/125 µm OM2					
26300202	HITRONIC® HRM-FD800 2G 50/125 OM2	2	7.8 ± 0.3	50	800/1450
26300204	HITRONIC® HRM-FD1000 4G 50/125 OM2	4	7.8 ± 0.3	50	1000/1800
26300208	HITRONIC® HRM-FD1400 8G 50/125 OM2	8	10.4 ± 0.5	93	1400/2500
26300212	HITRONIC® HRM-FD1800 12G 50/125 OM2	12	13.0 ± 0.5	98	1800/3250
Multimode 62.5/125 µm OM1					
26300102	HITRONIC® HRM-FD800 2G 62.5/125	2	7.8 ± 0.3	50	800/1450
26300104	HITRONIC® HRM-FD1000 4G 62.5/125	4	7.8 ± 0.3	50	1000/1800
26300108	HITRONIC® HRM-FD1400 8G 62.5/125	8	10.4 ± 0.5	93	1400/2500
26300112	HITRONIC® HRM-FD1800 12G 62.5/125	12	13.0 ± 0.5	98	1800/3250
Single-mode 9/125 µm OS2					
26300902	HITRONIC® HRM-FD800 2E 9/125 OS2	2	7.8 ± 0.3	50	800/1450
26300904	HITRONIC® HRM-FD1000 4E 9/125 OS2	4	7.8 ± 0.3	50	1000/1800
26300908	HITRONIC® HRM-FD1400 8E 9/125 OS2	8	10.4 ± 0.5	93	1400/2500
26300912	HITRONIC® HRM-FD1800 12E 9/125 OS2	12	13.0 ± 0.5	98	1800/3250