



**HA-FODC-LLBB-22-XX**

HYBRIFLEX™; Hybrid jumper cable, Multi-mode fibre, 6 mm<sup>2</sup> Power cable, Box to Radio Module; with LC Duplex Connectors;

**RFS' HYBRIFLEX™** cabling solution for Remote Radio Head (RRH) combines optical fibre and DC power for RRHs in a single lightweight aluminum corrugated cable, making it the world's most innovative solution for RRH deployments. It was developed to reduce installation complexity and cost at cellular sites.

**HYBRIFLEX™** cabling solutions allows mobile operators deploying RRH architecture to standardize RRH installation process and eliminates the need for and the cost of cable grounding.

The **HYBRIFLEX™** jumper is part of the cabling solution for RRH's. It consists of an armored part of length XX, a breakout part to the RRH and a breakout part to the distribution box. The breakout part to the RRH is outdoor ready and sealed according to IP68.

The jumper cables can be ordered in 1 m - 20 m armored length in 1 m incremental.



**FEATURES / BENEFITS**

- **Aluminum corrugated armor with outstanding bending characteristics**

Minimizes installation time and enables mechanical protection and shielding

- **Built in animal protection**

Improves the reliability of the installation

- **Outer conductor grounding**

Eliminates typical grounding requirement and saves on installation costs

- **Lightweight solution and compact design**

Decreases tower loads

- **Optical fibre and power cables housed in single corrugated cable**

Saves CAPEX by standardizing RRH cable installation and reducing installation equipments

- **Outdoor polyethylene jacket**

Ensure long-lasting cable protection

**Technical features**

**STRUCTURE**

<b>Cable Type</b>		Hybrid jumper
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**DC POWER CABLE SPECIFICATIONS**

<b>Number of DC Pairs</b>		1
<b>Maximum DC-Resistance Power Cable</b>	Ω/km (Ω/kft)	3.3 (1.51)
<b>Cross Section of Power Cable</b>	mm <sup>2</sup> (AWG)	6 ( )
<b>Shielding</b>		Provided by Al armor
<b>DC Wire Jacket Material</b>		Polyethylene grey / blue (colours will change to comply with British Standards)
<b>DC Wire Jacket Thickness</b>	mm (in)	0.5 (0.02)
<b>DC Cable Jacket</b>		UV stable black PE
<b>DC Standards (Meets or Exceeds)</b>		IEC 60228
<b>Current Rating</b>		42 (ambient 35°C)
<b>Power Termination End 1</b>		Only barewire without ferrule
<b>Power Termination End 2</b>		With ferrule for box connection



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**MECHANICAL SPECIFICATIONS**

<b>Cable Weight</b>	kg/m (lb/ft)	0.235 (0.158)
<b>Minimum Bending Radius, (Operating)</b>	mm (in)	70 (2.7)
<b>Minimum Bending Radius, (Installation)</b>	mm (in)	125 (5)
<b>Tensile Strength</b>	N (lb)	150 (33.7)

**CABLE JACKET**

<b>UV-Protection Individual and External Jacket</b>		External Jacket: to IEC 60754-1/-2, Inner Jacket, DC conductors + Fibre cables EN 50289-4-17:2015
<b>Jacket Material</b>		UV stable black PE CPR class F (Dca rated product to follow) .. ISO 14001:2015 RoHS 2011/65/ EU - China RoHS SJ/T 11364-2006 REACH (EC 1907/2006) UL1581 - UV Resistance Jacket
<b>Outer Diameter Nominal</b>	mm (in)	15.8 (0.622)

**ARMOR SPECIFICATIONS**

<b>Armor Type</b>		Corrugated aluminum
<b>Maximum DC-Resistance of Armor</b>	Ω/km (Ω/kft)	2.42 (0.74)
<b>Copper Equivalent Cross Section of Armor</b>	mm <sup>2</sup> (AWG)	8.45 ( )
<b>Diameter Corrugated Armor</b>	mm (in)	13.8 (0.543)

**F/O CABLE SPECIFICATIONS**

<b>F/O Cable Type</b>		Tight buffer, OM4 Multi-mode
<b>Number of F/O Pairs</b>		2
<b>Core/Clad</b>	µm	50 /125
<b>Optical Loss</b>	dB/Km	3.5 @ 850 nm 1.5 @ 1300 nm
<b>Fiber Termination End 1</b>		Duplex LC Connector
<b>Fiber Termination End 2</b>		Duplex LC Connector

**TESTING AND ENVIRONMENTAL**

<b>Storage Temperature</b>	°C (°F)	-40 to 85 (-40 to 185 )
<b>Operation Temperature</b>	°C (°F)	-40 to 85 (-40 to 185 )
<b>Installation Temperature</b>	°C (°F)	-20 to 50 (-4 to 122 )

**ADDITIONAL ASSEMBLIES**

<b>Length</b>		Model name
<b>2 m</b>		HA-FODC-LLBB-22-02
<b>3 m</b>		HA-FODC-LLBB-22-03
<b>5 m</b>		HA-FODC-LLBB-22-05
<b>7 m</b>		HA-FODC-LLBB-22-07
<b>10 m</b>		HA-FODC-LLBB-22-10



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15 m	HA-FODC-LLBB-22-15
20 m	HA-FODC-LLBB-22-20
	Other length available on request

**RECOMMENDED TOOLS**

<b>Earthing: GKSPEED20-12P</b>	Boots for Nokia RRH: AOPC HA-AOPC-01	Boots for Ericsson RRH: IP-RC HA-FOPLUG-A-04
<b>Clamps: single MBH-12S; double MBH-12D</b>		

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