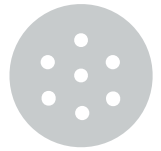
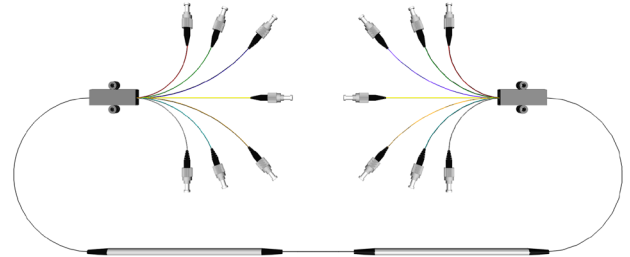


FAN OUTS



The multicore fiber fan out (MCFFO) is designed to break out each core of a multicore fiber (MCF) to enable each core to be addressed independently through standard single-mode (SM) pigtails.

This allows rapid and simplistic integration of MCF into new product developments and R&D projects which require the high bandwidth, small core-to-core pitch and reduced package size of a MCF.



Double ended fan out unit, jacketed, with break out boxes and connectorized.

FEATURES

Advantages

- Compact package size
- High data rates
- Customizable designs

Typical Applications:

- 2D/3D bend/shape sensing
- Data Centers
- Active Optical Cables (AOCs)
- High bandwidth telecommunications
- Distributed sensing
- Biomedical sensors

Product Variants

- FAN-4C
Fan out unit designed to guide light from a 4 core fiber into 4 separate SMF28 pigtails
- FAN-7C
Fan out unit designed to guide light from a 7 core fiber into 7 separate SMF28 pigtails

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SPECIFICATIONS

	FAN-4C	FAN-7C		
Operating Wavelength (nm)	1550	1310	1550	
Single Core Fiber		SMF-28 or equivalent		
Multicore Fiber	SM-4C 1500(8.0/125)/001	SM-7C 1250(5.2/125)	SM-7C 1500(6.1/125)	SSM-7C 1500(6.1/125)
Number of Cores	4	7		
Core Configuration	Square	Hexagonal plus central core		Spun Hexagonal plus central core
Insertion Loss (dB)*	1 (typical)	1-2 (typical)	1 (typical)	
Connectorization	Single core: None, LC/PC, LC/APC, FC/PC, FC/UPC, SC/PC, SC/APC, MTP/APC and others upon request Multicore: None, FC (narrow keyway), SC (all in PC or APC) and others upon request			
Operating Temperature (°C)	0 to +85			

* Measured at 1550nm over 2m of MCF and a fan out on each end.

CONFIGURATIONS

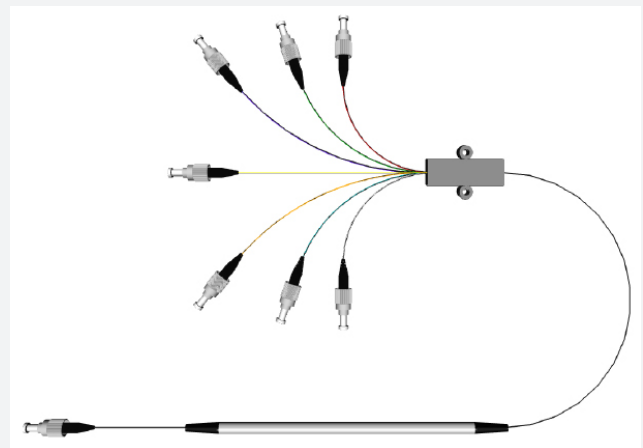
Single Fan Out Unit – Bare Fiber

For retro-reflective sensing, free space and spliced in MCF applications, a single fan out unit is typically required with SM fiber on one end and the MCF on the other. Typical applications for these devices includes: 3D shape sensing, endoscopy, microscopy and data center type transmission experiments.



Single Fan Out Unit – Jacketed and Connectorized

Jacketing provides better protection for the fiber, especially in an environment where the fibers will be handled regularly, this is typically applied when connectors are required, however, it is not a necessity. Jacketing up to 2m in length is offered as a standard option, longer lengths are possible upon request. Each single core channel is individually color coded for easy recognition. Due to the diameter of the jacketing (or furcation tubing), an intermediate mechanical breakout box is required. We offer a 1.6mm jacketing between the fan out and the break out box and 900µm colour-



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coded jacketing between the breakout box and the end of the fiber. Jacketing is sometimes called by the material trade name Hytrel® (Dupont).

Double/Paired Fan Out

For applications that wish to use the MCF primarily as a transmission medium, for example telecoms data transmission, a double or paired fan out unit is required. This includes two fan out units (one to act as a fan in and the other as a fan out) with SM fiber tails at each end. This allows full use of the MCF without requiring specialty splicing of the MCF. All of the configurations for a single fan out unit are available for a double fan out unit.



CONNECTORS

For the single core, SMF the connector options are:

- None
- FC
- LC
- SC (all in PC or APC)
- MTP/APC
- Others upon request.

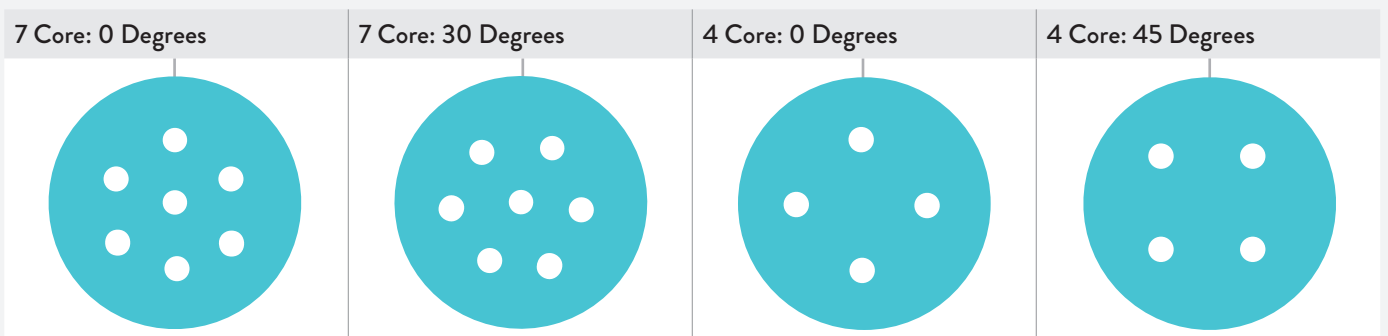
For the MCF, the connector options are:

- None
- FC (narrow keyway)
- SC (all in PC or APC)
- Others upon request.

For the MCF, a PC rather than APC type connector is recommended when connecting MCF to MCF as the angle induces additional insertion losses between the non-concentric cores.

If connectors are requested without jacketing, we typically place 3-5mm of 900µm jacketing as strain relief under the connector boot, as is industry standard.

The MCF can be connectorized and aligned in different orientations, typically the preferred options are to have the cores inline with the keyway or symmetrically offset to the keyway. The different options for 4 core and 7 core fibers is shown below.



ORDERING CODE

1 2 3 4 5 6 7 8 9 10
 MCFFO-X-XXXXXXXXX-X-XXXX-XXXX-XX-XXXXXX-X-XXXX-XXXXXXXX

	1	2	3	4	5	6	7	8	9	10
MCFFO	S	SM-4C 1500(8.0/125)/001	1	None	None	00	SMF-28	1	None	FC/PC
	D	SM-7C 1250(5.2/125)	2	900	FC/PC	30	-	2	900	FC/APC
	-	SM-7C 1500(6.1/125)	3	-	SC/PC	45	-	3	-	LC/PC
	-	SSM-7C 1500(6.1/125)	4	-	-	-	-	4	-	LC/APC
	-	-	5	-	-	-	-	5	-	SC/PC
	-	-	6	-	-	-	-	6	-	SC/APC
	-	-	Etc.	-	-	-	-	Etc.	-	MTP/APC

1	Single or double ended fan out:	S – Single ended fan out D – Double ended fan out
2	Fiber type:	SM-4C 1500(8.0/125)/001 SM-7C 1250(5.2/125) SM-7C 1500(6.1/125) SSM-7C 1500(6.1/125)
3	MCF length (meters):	<i>Enter any length in meters</i>
4	MCF jacket type:	None – No jacketing 900 – 900µm Hytrel diameter jacketing
5	MCF connector:	None FC/PC SC/PC
6	MCF connector alignment direction:	00 – 0 degree offset between keyway and cores in a line 30 – 7 core fiber only - 30 degree offset between keyway and cores 45 – 4 core fiber only - 45 degree offset between keyway and cores
7	Input/Output pigtail fiber type:	SMF-28
8	Input/Output pigtail fiber length (meters):	<i>Enter any length in meters</i>
9	Input/Output pigtail fiber jacket type:	None 900 – 900µm Hytrel® diameter jacketing (including a break out box and a 1.6mm jacket between the break out box and the fan out component)
10	Input/Output pigtail fiber connector:	None FC/PC FC/APC LC/PC LC/APC SC/PC SC/APC

FAN OUTS

RELATED PRODUCTS

- Single-Mode 4 Core
- Single-Mode 7 Core
- Spun Single-Mode 7 Core

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