

Passive Optical Network

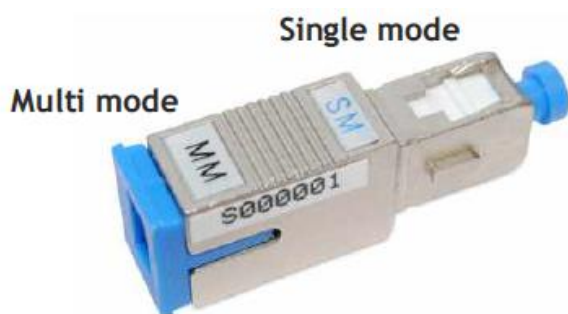


Passive converter designed for hybrid SM/MM transmission

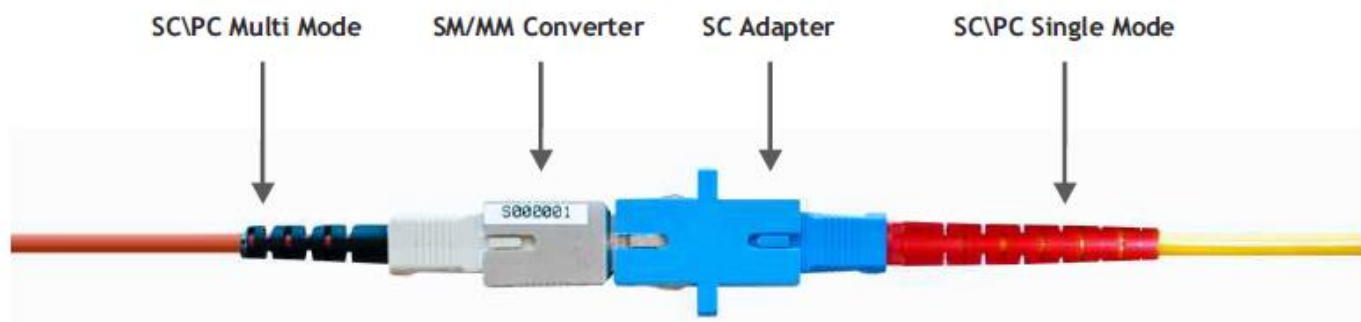
Singlemode and multimode connections, in majority of cases, require the use of OEO active media converters, which quickly detect optical signal coming from one fiber type, and then they regenerate this signal by using a laser. Obviously, it means higher costs of using such solution, and even limits its usage to places where power supply is available. The necessity of using active media converters is caused by various core diameters of singlemode fiber (approx. 9µm), and multimode (50 µm or 62.5 µm), which determine number of ports. In case of singlemode fiber it is obviously one fiber, in case of multimode fiber, the number of modes can reach even a few thousand. Also, it is worth mentioning that number and type of modes can fluctuate in time depending on non-stability light source, mechanical vibrations of a cable, temperature change etc.

Especially in case of converting from singlemode into multimode transmission, which means high and variable optical losses. The attenuation of such connection can reach a few dB to even more than 20dB, depending on applied light source (LED diode, singlemode and multimode laser, VCSEL) or even worse it can influence the rise of attenuation. Consequently, stating adequate power and guarantee of constant transmission is impossible, as even a fiber which seems to be stable for a limited time can promptly loss the transmission.

Fibrain company as the only company in Poland has in its offer passive converters MPC designed for hybrid transmission on single and multimode fibers. Thanks to the use of unique photonics fiber optic technology such devices provides the possibility of connecting single and multimode sections and therefore guarantee low-loss and stable transmission. They are available in the same form as optical adapter attenuators in SC PC standard (male connector- on SM side, female connection on MM side).



SC/PC Multi Mode Converter SM/MM Adapter SC SC/PC Singlemode. To arrange hybrid SM-MM transmission, it is necessary to use PK-SM-MM converters, so the section of multimode fiber is inside and those two ends are singlemode (It is enough to use short SM patchcord from the light source up to connection with MM cable, if the connection does not have SM-MM-SM configuration).



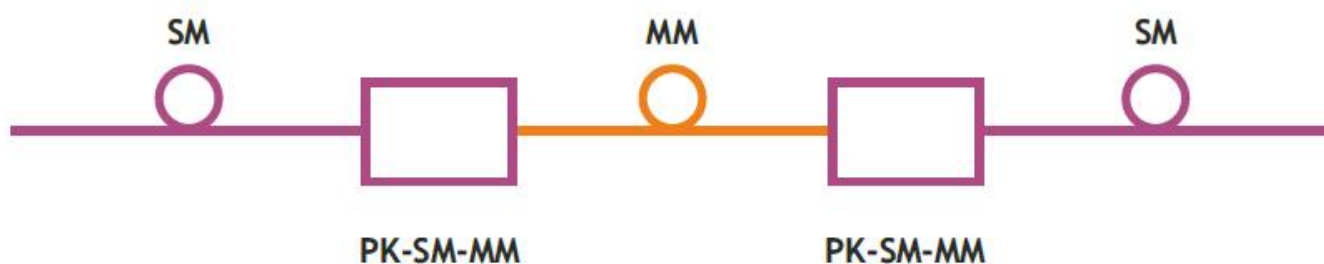
Passive Optical Network

APPLICATION FIELDS:

- ✓ FTTH access networks
- ✓ HFC and cable networks
- ✓ Other optical telecommunication networks

FEATURES AND ADVANTAGES:

- ✓ Low Insertion loss
- ✓ Available with different type of fiber optic connectors
- ✓ Completely passive solution



TECHNICAL SPECIFICATION:

Parameter	Unit	Value
Insertion Loss IL ¹	dB	≤ 2.5
Polarization dependent loss PDL	dB	≤ 1.0
Return Loss RL	dB	≥ 40
Storage temperature	°C	-20 - +70 °C
Operating temperature	°C	-20 - +70 °C
Fiber type SM/MM ²		G.652D / OM2
Maximum length of multimode fiber for transmission bandwidth 1Gbps ³	m	1000

¹ maximum insertion loss of pair SM/MM converters with optical connectors

² possibility of ordering a different type of SM and MM fibers

³ limited power and intermodal dispersion of multimode section, converters not guarantees stable transmission for bandwidth > 1Gbps

AVAILABLE HOUSING:



Converter SM/MM in adapter housing



Converter SM/MM in a form of hybrid 900 μm patchcord SCAPC-SCUPC – Inline version

Type:	Converter SM/MM	REV: 1.1
Date:	17/04/2023	MD
Modification:		
Reference:	MPC-, see ref. system below	

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ORDERING INFORMATION:

Series	Quality	SM fiber type	MM fiber type	Operating window	Type	Connector on SM side	Connector on MM side
MPC	G0	1 – G.652D	4 – 50 µm	35 – 1310/1550	A – Adapter	SCA	SC
					I20 – Inline 2.0mm	SC	LC
					I90 – Inline 900µm	LCA	XX
						LC	
						E2A	
						E20	
						XX	

Example of reference:

MPC-G0-1-4-35-A-SC-SC- FIBRAIN PASSIVE MODE CONVERTER SM/MM (MALE/FEMALE), SET OF TWO CONVERTERS (ONE PAIR), 1310/1550, SC PC HYBRID ADAPTER.

Important notice

Buyer and/or user of this product has to make sure before using this product that it is suitable for the intended use. All questions of liability relating to this product are subject – in accordance with the prevailing – to the Term of Sale of the selling Fibrain subsidiary.