

DATA SHEET

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Optical USB Extension Cable

- Point-to-point fibre cables -

Description

Opticis optical extension cables link the USB signal up to 164feet (50 meters) without any repeater. They provide the simplest way to link the USB device far from the host. Owing to the advanced VCSEL and PD, USB protocol could be maintained over such a long-distance connection with cost effective. The modules have a pair of an optical-to-electrical and an electrical-to-optical converters at each end, connected by fiber-optic cables.

Opticis optical extension cables provide A plug-in to A receptacle (M2-100). In addition, hybrid fiber cables running electrical wire along are used instead only optical cables. This offers convenient extension where there is no AC power supply, adjacent at the end of devices to be supplied to USB devices and Opticis downstream modules. The model named as M2-210 supplies DC power, running through copper wire in the hybrid cables, from the host end to the downstream module as well as to USB devices.

Features

- ◆ Extend the USB signal up to 164feet (50 meters)
- ◆ No software to install: Easy to use; plug and play.
- ◆ Compatible with USB 1.1(12Mbps, 1.5Mbps)
- ◆ Cables are light-weight, almost zero EMI/RFI emissions, no spark hazard and data secure
- ◆ Wide variety models: DC power supply along cable to Rx module and Integral hub for multiple ports to be designed in by customer's inquiry

Applications

- ◆ PC link of peripherals in factory & office
- ◆ USB camera interfaces for surveillance system
- ◆ USB interface of automatic motion controls
- ◆ PC interface of digital audio systems

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Units
Storage Temperature	Tstg	- 30	+ 70	°C
Supply Voltage	VCC	- 0.3	+ 6.0	V
Input Voltage	Vin	- 0.3	VCC	V
Storage Humidity	RHsh	0	80	%

Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Units	Note
Ambient Operating Temperature	TA	-10		+55	°C	M2-1xx
		0		+50	°C	M2-2xx
Power Supply Rejection (Note1)	PSR		50		mVpp	*1
Supply Voltage	VCC	+4.5	+5	+5.5	V	
Full Speed Mode Data Rate	FS		12		Mbps	
Low Speed Mode Data Rate	LS		1.5		Mbps	

***Note1** Tested with a 50mVp-p sinusoidal signal in the frequency range from 500Hz to 500 MHz on the VCC supply with the recommended power supply filter in place. Typically less than a 0.25 dB change in sensitivity is experienced.

Power Adapter

1) M2-100 / 10S

Parameter	Symbol	Min.	Typical	Max.	Units
Power Input	Vccp	100	110	120	V
Power output	Vcc	4.5	5	5.5	V
Supply Current	ITcc	-	-	600	mA

2) M2-210 / 21S

Parameter	Symbol	Min.	Typical	Max.	Units
Power Input	Vccp	100	110	120	V
Power output	Vcc	8	9	11	V
Supply Current	ITcc	-	-	600	mA

Specification of Fibres

Parameter	M2-100/110 / 10S	M2-210 / 21S
Fiber type	MMF 62.5um/ 4 fibres	Hybrid Cable / 2 fibres + 2 power cables
Out Diameter	∅ 5.7mm	∅ 6.8mm
Use	Indoor & Outdoor	Indoor & Outdoor
Flame	Retardant	Retardant
Jacketing	PVC	PVC

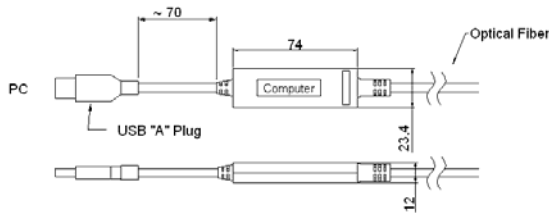
Drawing

Dimension [mm]

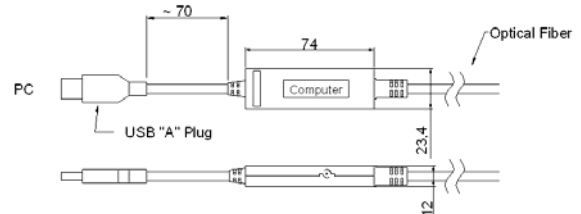
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Model name: M2-210 / 21S(A-B)

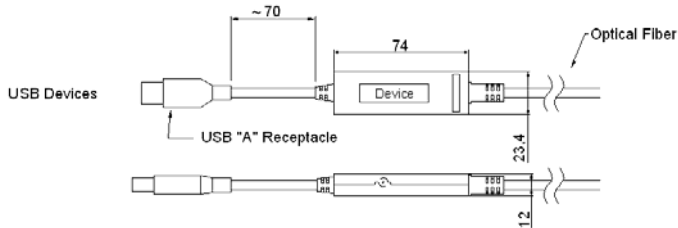
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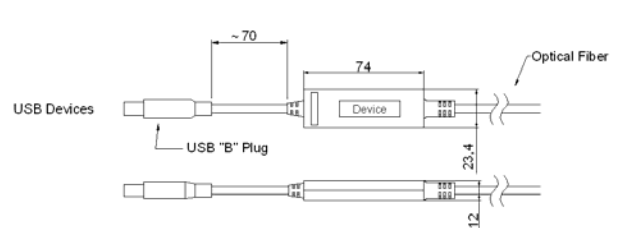
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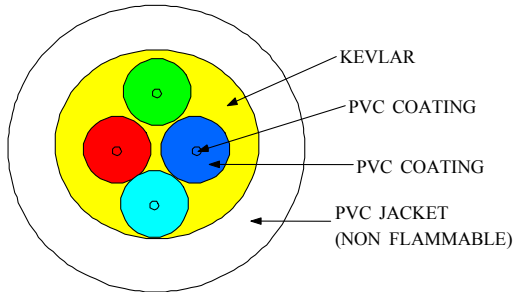
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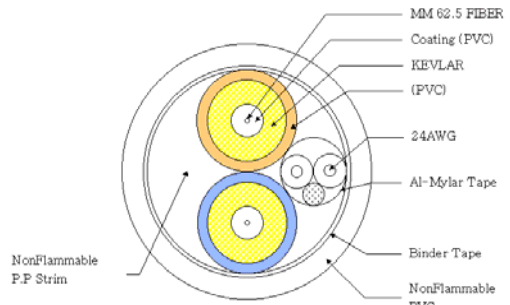
Downstream



Optical Cables for M2-100 / 10S



Hybrid Optical Cables for M2-210 / 21S



Ordering Information

Model Name: M2-XYZ-xx

X=1: use optical cable and plug DC power adapter in the downstream module.

X=2: use hybrid Fiber cable and run DC power from the host end to the downstream module.

Y=0: A plug-in in the upstream module to A receptacle in the downstream module

Y=1: A plug-in to B plug-in

Z=0: Window/Mac

Z=S: Solaris SUN

ZZ: the length of fiber cable in meter being available every 10 meters. For instance, 10 for 10 meters (32.8feet) and 30 for 30 meters (97.6feet)

Caution

Multiple Optical USB Extension Module connected in a row to a USB device may result in the device not working properly, user should verify that adding cables or devices do not affect the operation of the USB devices. Also note that only one hub can be connected with Optical USB Extension Module and more extension cable or repeater connection will make encounter improper work.