



Models: *USO9ML2-2 & USO9ML2-4*
**Isolated USB to 2 or 4 Port RS-232
 Converter**



Features

- ✓ Connects multiple RS-232 devices to your USB Port
- ✓ 3000 V RMS Port-to-port Optical Isolation
- ✓ 15 KV ESD Surge Protection
- ✓ USB Port Powered
- ✓ Supports USB 2.0 (Backward Compatible)
- ✓ RS-232 Data Rates up to 460.8 kbps
- ✓ LED's to indicate data flow on RS-232 ports
- ✓ High retention USB interface ensures a reliable connection
- ✓ Automatic Configuration on Windows 98, ME, 2000, XP, and Vista



Functional Description

Connect legacy RS-232 devices to a USB port and gain 3000 V RMS isolation from voltage spikes and ground loops. Universal Serial Bus (USB) has become the connectivity workhorse of today's PCs, replacing the familiar serial ports. However, many commercial and industrial devices still use the RS-232 interface. To connect these devices to modern PCs and provide protection from electrical transients, you need a simple and reliable conversion solution. The USO9ML2-2 and USO9ML2-4 offer this solution. Simply plug the converter into an available USB port on your computer or USB hub and install the drivers supplied on CD ROM. The device will show up as additional COM ports in the Windows Device Manager which are fully compatible with your Windows applications. A one meter USB cable is included.

Ordering Information

Model Number	Description
USO9ML2-2	Isolated USB to 2 Port RS-232 Converter
USO9ML2-4	Isolated USB to 4 Port RS-232 Converter
Accessory Items	
USBAMBM-3F (One Included)	1 m (3ft) USB Cable
USBAMBM-6F	2 m (6ft) USB Cable
9PAMF6	2 m (6 ft) DB9 Male to DB9 Female Cable
9PAMF10	3 m (10 ft) DB9 Male to DB9 Female Cable
232NM9	3 m (6 ft) DB9 Female to DB9 Female Null Modem Cable
232NM9MF10	3 m (10 ft) DB9 Male to DB9 Female Null Modem Cable



International Headquarters: 707 Dayton Road PO Box 1040 Ottawa, IL 61350 USA
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Operation

- Drivers are included on the Compact Disk included with the converter. Simply connect the converter to an available USB port and insert the CD into the drive. The "Found New Hardware Wizard" will guide you through the installation process. These drivers are not available via Microsoft Windows Updates. When prompted to connect to Windows Updates to search for drivers, select "No, not at this time" and follow the instructions for installing from the CD.
- When the driver software is installed, the USO9ML2-2 or USO9ML2-4 will show up in Windows Device Manager as the next available COM ports (labeled RS-232). Configure the COM ports for your application. The USO9ML2-2 or USO9ML2-4 will also be listed under USB Controllers.
- To uninstall the drivers, follow the instructions contained in the uninstall "read me" file.
- The RS-232 connection uses a DB9 Male DTE connector and supports all handshake lines. For more information concerning DTE and DCE connections and the RS-232 standard in general, visit B&B's technical library at http://www.bb-elec.com/technical_library.asp

Table 1
RS-232 Pin-out (DTE / DB9 Male)

PIN	Direction	Signal Name
1	Input	DCD (Receive Line Signal Detector)
2	Input	RD (Receive Data)
3	Output	TD (Transmit Data)
4	Output	DTR (DTE Ready)
5	N/A	SG (Signal Ground)
6	Input	DSR (DCE Ready)
7	Output	RTS (Request to Send)
8	Input	CTS (Clear to Send)
9	Input	RI (Ring Indicator)

General Specifications

Input Power	5VDC from USB Port
Power Consumption	Lower Power Device (<100 mA)
Isolation	3 KV (Port-to-port) Optical
Surge Protection	15 KV ESD
Operating Temperature	32 to 158 °F (0 to 70 °C)
Operating Humidity	0 to 95% Non-condensing
USB Connector	USB type B Female (High Retention)
RS-232 Connector	DB9 Male (DTE)
USB Data Rate	12 Mbps
RS-232 Data Rate	460.8 kbps (max)
USB Standard	2.0 (Backward Compatible)
RS-232 Configuration	DTE
Dimensions w/o Flanges	6.5 x 1.2 x 3.1 in (16.4 x 3.0 x 8.0 cm)
Dimensions w/Flanges	7.5 x 1.2 x 3.1 in (19.0 x 3.0 x 8.0 cm)
MTBF (USO9ML2-2)	118245 hours
MTBF (USO9ML2-4)	61861 hours
Approvals	CE, FCC

CE Declaration of Conformity

Manufacturer's Name:	B&B Electronics Manufacturing Company
Manufacturer's Address:	PO Box 1040 707 Dayton Road Ottawa, IL 61350 USA
Model Number:	USO9ML2-2 / USO9ML2-4
Description:	Isolated USB to Multi-Port RS-232 Converter
Type:	Light Industrial ITE Equipment
Application of Council Directive:	89/336/EEC
Standards:	EN55022 EN 61000-6-1 EN 61000 (-4-2, -4-3, -4-4, -4-5, -4-6, -4-8, -4-11)



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