Isolated USB 2 or 4 Port to RS-232 Converters
Models BB-USO9ML2-2P, BB-USO9ML2-4P

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.

Connect legacy RS-232 devices to a USB port and with 2000 V RMS port-to-port optical isolation from voltage spikes and ground loops.

Models BB-USO9ML2-2P and BB-USO9ML2-4P offer this solution. Simply plug the converter into an available USB port on your computer or USB hub and install the drivers. Automatic configuration - the device will show up as additional COM ports in the Windows Device Manager which are fully compatible with your Windows applications. A USB cable is included.

Powered can be supplied by USB port powering or an external power source (not included, sold separately).

**FEATURES**
- Connect multiple RS-232 devices to your USB port
- 2000 V RMS optical isolation; 15 KV ESD surge protection
- RS-232 data rates up to 460.8 kbps
- Supports USB 2.0 (backward compatible), 12 Mbps
- Desk or panel mount (flanges attached)
- USB port-powered or external power supply (not included, sold separately)
- High retention USB port ensures reliable connections
- Includes one USB cable, 2 m (6 ft)

**ORDERING INFORMATION**

<table>
<thead>
<tr>
<th>MODEL NUMBER</th>
<th>DESCRIPTION</th>
</tr>
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<tbody>
<tr>
<td>BB-USO9ML2-2P</td>
<td>Isolated USB to 2-Port RS-232 Converter</td>
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<tr>
<td>BB-USO9ML2-4P</td>
<td>Isolated USB to 4-Port RS-232 Converter</td>
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</tbody>
</table>

**ACCESSORIES - sold separately**
- BB-MDR-20-24 - Power Supply, 24 VDC, 1 A, DIN Rail Mount
- BB-USBAMBM-3F - 1 m (3 ft) USB Cable
- BB-USBAMBM-6F - 2 m (6 ft) USB Cable (one included)
- BB-9PAMF6 - 2 m (6 ft) DB9 Male to DB9 Female Cable
- BB-9PAMF10 - 3 m (10 ft) DB9 Male to DB9 Female Cable
- BB-232NM9 - 3 m (6 ft) DB9 Female to DB9 Female Null Modem Cable
- BB-232NM9MF10 - 3 m (10 ft) DB9 Male to DB9 Female Null Modem Cable
- BB-TBKT1 - Replacement Terminal Block - 2-position, 5.08mm, 8A, 30

**RS-232 PIN-OUT (DTE / DB9 MALE)**

<table>
<thead>
<tr>
<th>PIN</th>
<th>Direction</th>
<th>Signal Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Input</td>
<td>DCD (Receive Line Signal Detector)</td>
</tr>
<tr>
<td>2</td>
<td>Input</td>
<td>RD (Receive Data)</td>
</tr>
<tr>
<td>3</td>
<td>Output</td>
<td>TD (Transmit Data)</td>
</tr>
<tr>
<td>4</td>
<td>Output</td>
<td>DTR (DTE Ready)</td>
</tr>
<tr>
<td>5</td>
<td>n/a</td>
<td>SG (Signal Ground)</td>
</tr>
<tr>
<td>6</td>
<td>Input</td>
<td>DSR (DCE Ready)</td>
</tr>
<tr>
<td>7</td>
<td>Output</td>
<td>RTS (Request to Send)</td>
</tr>
<tr>
<td>8</td>
<td>Input</td>
<td>CTS (Clear to Send)</td>
</tr>
<tr>
<td>9</td>
<td>Input</td>
<td>RI (Ring Indicator)</td>
</tr>
</tbody>
</table>

All product specifications are subject to change without notice.
BB-USO9ML2-2P & BB-USO9ML2-4P_0920ds
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SPECIFICATIONS

SERIAL TECHNOLOGY
RS-232 Configuration DTE
RS-232 Connector DB9 Male (DTE)
Data Rate 460.8 kbps (maximum)
Isolation 2000 V Optical (port-to-port)
Surge Protection 15 KV ESD

USB TECHNOLOGY
Connector USB Type B female, high retention withdrawal > 15 N
Standard 1.1 and 2.0 Compatible
Data Rate 12 Mbps

POWER
Source USB Port or External Source
(Power supply not included, sold separately)
Input Voltage 5 VDC from USB Port or 10 - 30 VDC External Power Supply
Consumption Higher Power Device (>100 mA)
BB-USO9ML2-2P: 3 Watts, External Power Supply
BB-USO9ML2-4P: 5 Watts, External Power Supply

SOFTWARE
Driver O/S Support Windows 10 (32/64 bit), Server 2016, Server 2019

MECHANICAL - continued

Dimensions – with flanges 19.10L x 7.09W x 2.95H cm (7.52L x 2.79W x 1.16H in)
Weight BB-USO9ML2-2P: 331.1 g (0.73 lbs)
BB-USO9ML2-4P: 349.3 g (0.77 lbs)

ENVIRONMENTAL
Operating Temperature 0 to +70 °C (+32 to +158 °F)
Storage Temperature -40 to +85 °C (-40 to +185 °F)
Operating Humidity 0 to 95%, non-condensing

MEANTIME BETWEEN FAILURES (MTBF)
MTBF BB-USO9ML2-2P: 118245 hours
BB-USO9ML2-4P: 61861 hours

APPROVALS, DIRECTIVES, STANDARDS
FCC, UL508
CE Standards EMC:
EN 55032 Class B - Electromagnetic compatibility of multimedia equipment – Emission requirements
EN 55024 - Information Technology Equipment – Immunity Characteristics – Limits and methods of measurement
CE Directives 2014/30/EU Electromagnetic Compatibility Directive
2012/19/EU Waste Electrical and Electronic Equipment (WEEE)