Installation Guide

BV10

Performance Endpoint Unit

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EXPERTISE REACHING OUT

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Units of Measurement

Units of measurement in this publication conform to SI standards and practices.

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Certification Information

North America Regulatory Statement

This unit was certified by an agency approved in both Canada and the United States of America. It has been evaluated according to applicable North American approved standards for product safety for use in Canada and the United States.

Electronic test and measurement equipment is exempt from FCC part 15, subpart B compliance in the United States of America and from ICES-003 compliance in Canada. However, EXFO Inc. makes reasonable efforts to ensure compliance to the applicable standards.

The limits set by these standards are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the user guide, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

European Community Declaration of Conformity

An electronic version of the declaration of conformity for your product is available on our website at **www.exfo.com**. Refer to the product's page on the Web site for details.

Laser

This product complies with 21 CFR 1040.10 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007 and with IEC/EN 60825-1.

Installation Instructions

This document describes the basic steps for installing the BV10. Refer to the BV10 user guide for more information.

Contents

1 Getting Started

Installing the BV10 in a Rack

The BV10 can be mounted in a rack using the rack mount accessory kit (ordered separately). The accessory kit shelf holds up to four BV10.

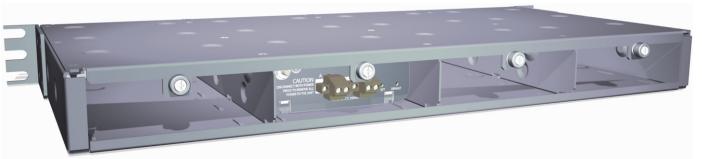
To install the BV10 in a rack:

1. Attach the brackets of the supplied shelf unit to your rack using the supplied screws.

2. If cables have been attached to the BV10, disconnect all of them as well as the ground lug from the unit.

3. Slide the unit into the desired slot from front to back.

4. With the unit completely inserted into the slot, tighten the thumb screw at the back of the unit.



5. Connect all cables and the ground lug, as explained in the next sections.

Connecting the Power

The BV10 is available with either an AC power supply, DC +24 V connector, or DC –48 V connector.

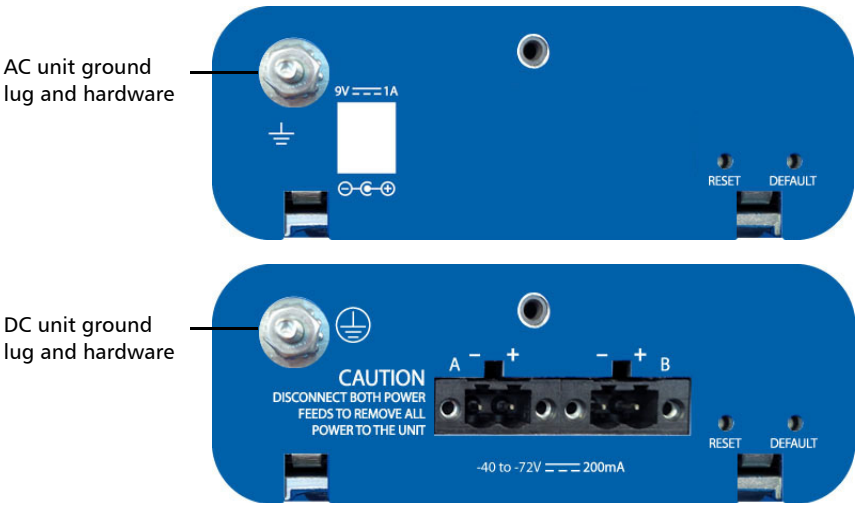
As soon as the BV10 is connected to a live power supply, the **POWER** LED turns on. If the **POWER** LED does not turn on, there is a power failure at the source or the unit is damaged. The **STATUS** LED indicates whether or not the unit is ready for use. If the **STATUS** LED is off the unit is booting up. If it is green or red the unit has booted (refer to *STATUS* on page 12).

Grounding the BV10

The BV10 is equipped with a ground lug and hardware attached to the back of the unit. The grounding hardware consists of a washer with external teeth facing the unit and a locking nut. You will need to supply a #12 AWG wire.

WARNING

The BV10 DC version is intended to be grounded. Ensure that the unit is connected to earth ground during normal use.



To ground the BV10:

1. Loosen the locking nut on the grounding lug.
2. Using a #12 AWG wire, twist the wire around the lug so that it is touching the flat surface of the washer. The wire must be twisted between the washer and the locking nut.
3. Tighten the locking nut.
4. Connect the other end of the wire to the ground distribution network.

Connecting the BV10 using an AC/DC Power Source

The typical output voltage of the external brick AC power supply is 9 V DC.

To connect the BV10 to an AC power source:

1. Connect the supplied AC power cord to the AC/DC adapter and the other end to an AC wall outlet.
2. Connect the other end of the power supply to the DC barrel power connector on the BV10.

Connecting the BV10 using a DC Power Source

The BV10 DC version is equipped with either +24 V DC or –48 V DC connector.

WARNING

Powering a BV10 +24 V DC unit with a –48 V power source will permanently damage the unit. The +24 V input range is 20-32 V.

Powering a BV10 –48 V DC unit with a +24 V power source will permanently damage the unit. The –48 V input range is –40 to –72 V.

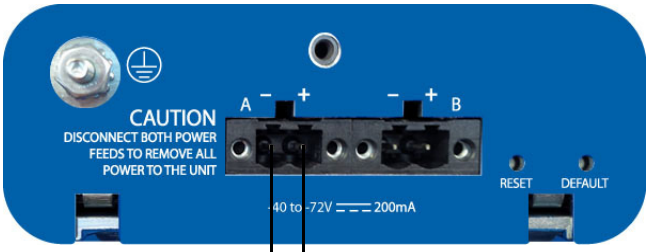
To connect the BV10 to a DC power source:

1. Using 14-16 AWG copper insulated wires and the supplied connector, insert the two stripped wires into the connector and tighten the screws firmly. Either use non-stranded wire or crimp a ferrule onto the wire. Be sure to respect the polarity.

   The positive supply wire lead must be on the right side of the connector and the negative supply wire on the left side.

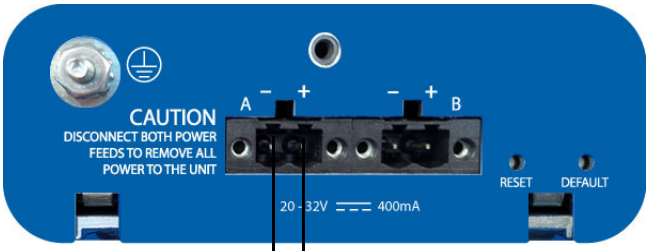
The following figures show the –48 V and +24 V DC units.

–48 V DC Unit



Supplied connector
Negative (–) supply wire lead on the left
Positive (+) supply wire lead on the right

+24 V DC Unit



Supplied connector
Negative (–) supply wire lead on the left
Positive (+) supply wire lead on the right

2. Connect the plug to one of the two DC input connectors on the BV10 unit and tighten the screws firmly.

3. Connect the other end of the wires to the DC power source.

CAUTION

The DC input feeds to the equipment must be protected by 20 A rated maximum breaker provided as part of the building installation.

Permanently connected equipment must have a switch or circuit-breaker for disconnection. If the switch is not part of the kit:

- ➤ Include a switch or circuit-breaker in the installation.
- ➤ The switch must be located easily, and placed near the equipment.
- ➤ The switch must be specified as the disconnecting device for the equipment.

4. To add a redundant DC power source on the BV10, repeat step 1 through step 3.

WARNING

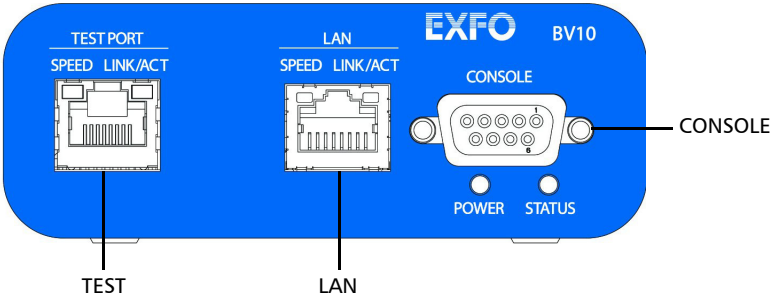
To avoid serious injuries as well as irreparable damages to your unit, ALWAYS TURN OFF BOTH DISCONNECT DEVICES BEFORE OPENING OR SERVICING THE UNIT.

2 Physical Interfaces, LEDs, and Buttons

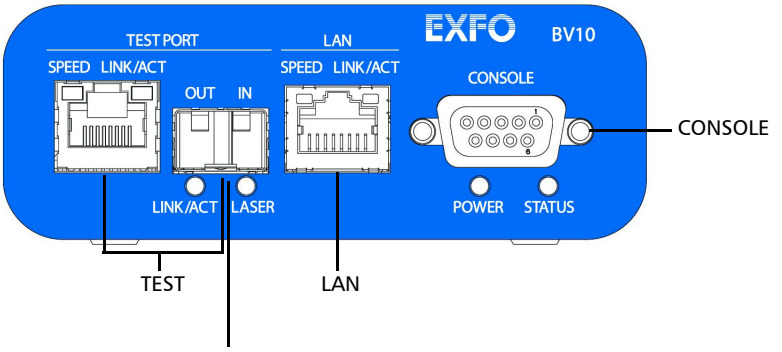
This section describes all connectors (ports), LEDs, and buttons available on the BV10-100 and BV10-1000 units.

BV10 Models

BV10-100



BV10-1000



Laser radiation emitted from this port when LASER LED is on.

Port Availability on BV10

Port Label	Description	Model	
		BV10-100	BV10-1000
TEST PORT	10/100 Mbit/s electrical RJ45 Test port (10Base-T and 100Base-TX)	X	
	10/100/1000Mbit/s electrical RJ45 Test port (10Base-T, 100Base-TX and 1000Base-T)		X
	1000 Mbit/s optical SFP Test port (1000Base-SX/LX/ZX; 850/1310/1550nm)		X
LAN	10/100 Mbit/s electrical Management port	X	X
CONSOLE	RS-232 DE-9F DCE (referred as DB9) Console port	X	X

Connecting the TEST Port Interface

The BV10-100 provides an electrical 10/100 Mbit/s Ethernet Test interface while the BV10-1000 provides an electrical 10/100/1000 Mbit/s and an optical 1000 Mbit/s SFP laser Ethernet Test interfaces. The two BV10-1000 Test interfaces are mutually exclusive.

RJ45 Port

Connect the 10/100/1000 Mbit/s electrical interface to be tested to the RJ45 test port. The electrical ports is RJ45 for category 5 unshielded twisted pair (UTP). Refer to *Ethernet Cables* on page 102 for cable specifications.

Supported electrical rates are:

- For BV10-100: 10 Mbit/s and 100 Mbit/s.
- For BV10-1000: 10 Mbit/s, 100 Mbit/s, and 1000 Mbit/s.

SFP Port (BV10-1000)

The BV10-1000 provides an optional optical port for 1000Base-SX/LX/ZX testing capability. The optical port is a Small Form Factor Pluggable (SFP) slot type with LC connector.

Insert an SFP module into the SFP test port slot on the BV10. Refer to *Optical Interface* on page 95 for more information on supported SFP.

Carefully connect optical fibre cables to the SFP's IN and OUT ports. To ensure good signal quality, make sure that the optical fibre connector is fully inserted into the optical connector port.

CAUTION

To prevent exceeding the maximum input power level please use an attenuator when a loopback configuration is used.

Connecting the Management Interfaces

The management interface can be connected locally using the **CONSOLE** port or remotely using the **LAN** Port.

LAN Port

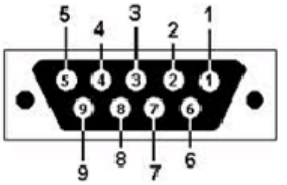
Connecting a typical management network to the 10/100 Mbit/s Ethernet **LAN** port provides remote access to the BV10 Command Line Interface (CLI) using either Telnet or SSH session.

To connect remotely to the BV10 using the **LAN** port, connect both the BV10 **LAN** port and the remote PC to the same Management network using a standard straight through Ethernet cable with RJ45 connectors.

CONSOLE Port

Connecting a PC to the **CONSOLE** port provides local access to the BV10 using CLI commands.

The following figure shows the DB9 (RS-232 DE-9F DCE) pinouts as viewed from the front of the BV10.



The following table indicates the DB9 pinouts.

Pin Number	Description
1, 4, and 6	Connected together inside the BV10
7 and 8	Connected together inside the BV10
5	Signal ground
2	TX (output of the BV10)
3	RX (input of the BV10)
9	Not internally connected
DB9 casing	Chassis ground

To connect locally, connect a PC to the **CONSOLE** port using an RS-232 straight cable with a DB9 connector.

LEDs

POWER

- On (Green) indicates that the BV10 unit is receiving power from an external source.
- Off indicates that the BV10 unit is not receiving power from the external source or the unit is damaged.

STATUS

- On (Green) indicates that the link on the test port is up.
- On (Red) indicates that the link on the test port is down.
- Off indicates that the unit is not yet booted.

SPEED

- Off indicates 10 Mbit/s
- On (Green) indicates 100 Mbit/s
- On (Amber) indicates 1000 Mbit/s (BV10-1000 only)

LINK/ACT (Electrical and Optical Ports)

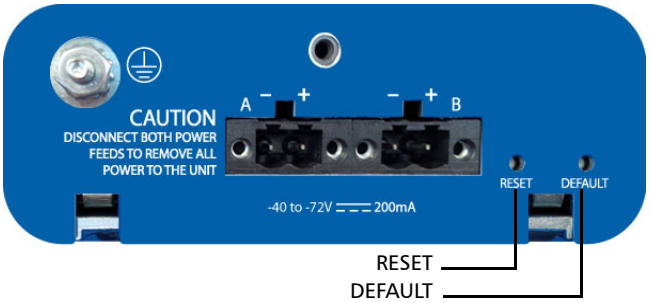
- On (Green) indicates that the link is up; there is no activity.
- Off indicates that the link is down; there is no activity.
- Blinking (Green) indicates that the link is up; there is activity.

LASER

- Off indicates that the laser is off.
- On (Red) indicates that the laser is on.

RESET and DEFAULT Buttons

The **RESET** and **DEFAULT** buttons are recessed on the back of the BV10 to avoid accidental use.



RESET Button

The **RESET** button is used to reboot the BV10. Press the **RESET** button once to reboot the BV10. While rebooting, the BV10 displays a series of messages if the unit is connected to a console.

The reboot command can also be used to reboot the BV10 (refer to reboot *on page 45*).

DEFAULT Button

The **DEFAULT** button is used to reset the BV10 to the factory default settings. Press the **DEFAULT** button once to reset the BV10 to its factory default settings then the unit reboots by itself.

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