Electro Standards Laboratories
ADVANCED SYSTEMS DESIGN & SERVICES

SPECIFICATIONS
Host, Desktop Unit... Model 4167 (Cat No. 304167)
Host, DIN Rail Mounted Unit... Model 4167-DIN (Cat No. 304167-DIN)
4-Port Hub, Desktop Unit... Model 4168 (Cat No. 304168)
4-Port Hub, DIN Rail Mounted Unit... Model 4168-DIN (Cat No. 304168-DIN)
Included USB A-B Cable, 6 ft.... (Cat No. 507366)

Quad USB 2.0 Extender, Multimode Fiber, 4-Port Hub & Host

- **Extend the Distance of Four USB Devices over 500 Meters. Ideal for Platform Scale Applications.**
- **Reliably extend USB 1.0 or 2.0 signaling over Multimode fiber cable to remote USB devices.**
- **Plug-and-Play, ready to operate right out of the box.**

INTRODUCTION

The desktop units, Models 4167 and 4168 or the DIN rail mounted units, Models 4167-DIN and 4168-DIN comprise a local HOST and Remote 4-Port integrated USB HUB that directly accepts 4 USB load cells. Together, the host and remote units extend the range of USB devices from less than 5 meters to 500 meters via a high speed Fiber interface. Factory options can extend the distance up to 10 kilometers.

The units convert USB 2.0 compliant data from a standard PC Host interface over fiber to remote integrated 4-port powered USB Hub that directly accepts 4 USB load cells. Operation of the Quad USB Load Cell Extender/Isolator is plug-and-play and fully transparent to the USB Load Cell, requiring no other hardware and no PC software.
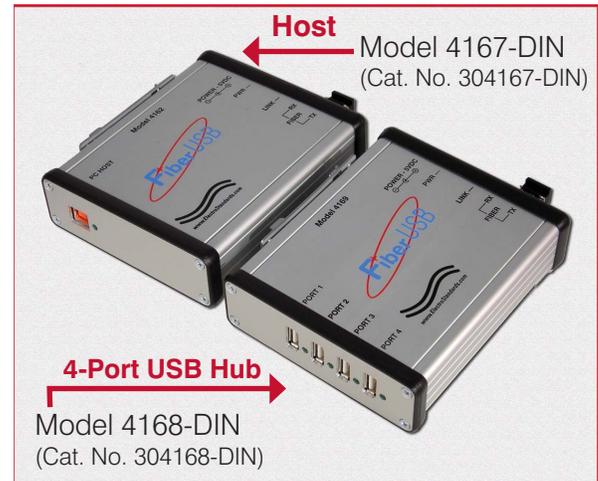
This instrumentation is ideal for PC data acquisition requiring high speed data acquisition with optical isolation from electromagnetic interference. The Model 4167 and Model 4168 system can extend a combination of USB load cells and other USB based devices using its integrated USB hub.

Host Model 4167-DIN
(Cat. No. 304167-DIN)

4-Port USB Hub
Model 4168-DIN
(Cat. No. 304168-DIN)

Applications include: industrial control, weigh tables, isolated data acquisition, and remotely located USB sensors. The units offer true plug and play operability with support for Windows**®**, MAC OS®, Linux®, and support all USB device types (Control, Interrupt, Bulk and Isochronous at up to 480 Mbps).
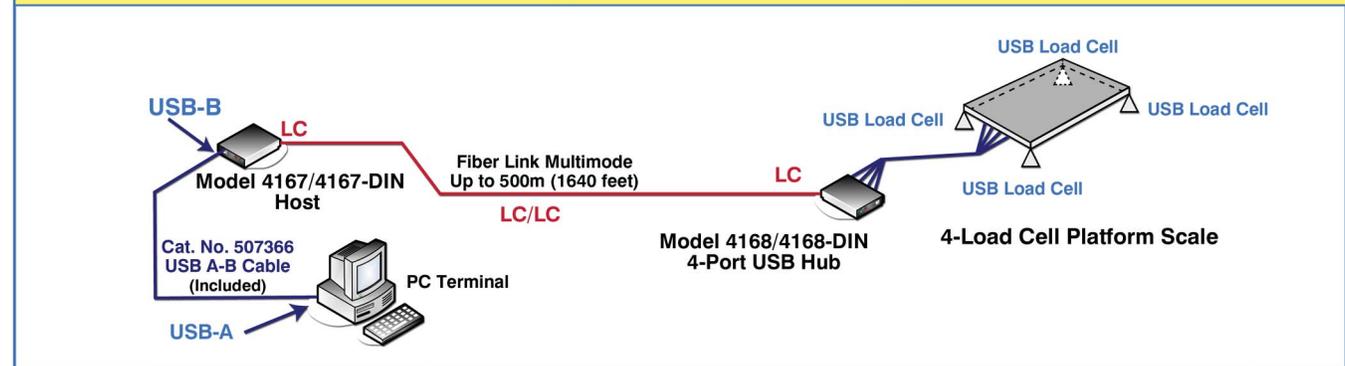
The units have been tested to operate from 0°C to +50°C (component ratings meet or exceed 0˚C to 70˚C). ESD protection circuitry is built into all copper USB I/O interfaces. Both units' power inputs are protected from transients and the 4-Port Hub (Model 4168, 4168-DIN) provides the USB standard of 500mA per port. The units feature; Power, Fiber Link Active, Host Active (Model 4167, 4167-DIN) and Port Active (Model 4168, 4168-DIN) indicator LEDs.

Two configurations are available for each model:

(1) **Model 4167** Host Desktop Unit, for applications requiring an enclosure.
(2) **Model 4167-DIN** Host Unit for applications requiring mounting on a DIN rail.
(3) **Model 4168** 4-Port Hub Desktop Unit, for applications requiring an enclosure.
(4) **Model 4168-DIN** 4-Port Hub Unit for applications requiring mounting on a DIN rail.

Model 4167/4168 Host and 4-Port Hub Application ~ Platform/Weigh Scale

USB-B
LC
Model 4167/4167-DIN Host
Cat. No. 507366 USB A-B Cable (Included)
PC Terminal
USB-A

Fiber Link Multimode Up to 500m (1640 feet)
LC
LC/LC

Model 4168/4168-DIN 4-Port USB Hub

USB Load Cell
USB Load Cell
USB Load Cell
USB Load Cell
4-Load Cell Platform Scale

USB A-B Cable (6 FT): Included with Model 4167 / 4167-DIN is the cable ESL Cat. No. 507366. (USB Type A to USB Type B)

SPECIFICATIONS
Host, Desktop Unit... Model 4167 (Cat No. 304167)
Host, DIN Rail Mounted Unit... Model 4167-DIN (Cat No. 304167-DIN)
4-Port Hub, Desktop Unit... Model 4168 (Cat No. 304168)
4-Port Hub, DIN Rail Mounted Unit... Model 4168-DIN (Cat No. 304168-DIN)
Included USB A-B Cable, 6 ft.... (Cat No. 507366)

Quad USB 2.0 Extender, Multimode Fiber, 4-Port Hub & Host

Specifications:

USB Interface:

Connectors: Model 4167 - 1x USB Type B, High Retention
　　　　　　Model 4168 - 4x USB Type A,
　　　　　　(5V @500mA/port)

　　　　　　Model 4167-DIN - 1x USB Type B, High Retention
　　　　　　Model 4168-DIN - 4x USB Type A,
　　　　　　(5V @500mA/port)

USB Data Format:

Type: USB 2.0 Compliant (Backwards compatible USB 1.1)
Rate: Supports Low Speed (1.5 Mbps),
　　　　Full Speed (12 Mbps), and High Speed
　　　　(480 Mbps) USB Data transfer rates.

Fiber Interface:

Connectors: Fiber Optic LC SFP Transceiver
TX Power: -6.5 dBm (Typical)
RX Sensitivity: -21.5 dB (Typical)
Optical Budget: 14.5 dB
Max. Link Distance with 50/125 μm fiber: 500 Meters.
LC/LC Duplex fiber cable - Cat. No. 986147
Max. Link Distance with 62.5/125 μm fiber: 275 Meters.
LC/LC Duplex fiber cable - Cat. No. 986017
Wavelength: 850 nm, multimode

LED Indicators:

Model 4167 - Power, Fiber Link Active, Host Active
Model 4168 - Power, Fiber Link Active, Port Active

Model 4167-DIN - Power, Fiber Link Active, Host Active
Model 4168-DIN - Power, Fiber Link Active, Port Active

Input Power: Requirement

Model 4167 - 5VDC @ 2.5W
Model 4168 - 5VDC @ 15W

Model 4167-DIN - 5VDC @ 2.5W
Model 4168-DIN - 5VDC @ 15W

Power Connector:

On all models, the input power connector is a DC power
jack (Circular Barrel Type).

External Power Supply:

A wide range CE and UL Approved 100VAC/240VAC,
50Hz/60Hz table mount power module is supplied
with each unit. Ideal for international applications.

Operating Environment:

Tested operation, 0°C to +50°C; component ratings
meet or exceed 0˚C to 70˚C.

Model 4167 Mechanical (Desktop Unit):

Model 4167, Cat No 304167
Size:　5.0" x 4.25" x 1.4" (12.7 x 10.8 x 3.6 cm)
Weight:　　Approx. 11.5 oz (327g)
Mounting: Desktop Standard, DIN rail (Optional)

Model 4168 Mechanical (Desktop Unit):

Model 4168, Cat No 304168
Size:　5.0" x 4.25" x 1.4" (12.7 x 10.8 x 3.6 cm)
Weight:　　Approx. 11.5 oz (327g)
Mounting: Desktop Standard, DIN rail (Optional)

Model 4167-DIN Mechanical (DIN Rail Mounted Unit):

Model 4167-DIN, Cat No 304167-DIN
Size:　5.0" x 4.25" x 1.4" (12.7 x 10.8 x 3.6 cm)
Weight:　　Approx. 11.5 oz (327g)
Mounting: 2 Threaded Holes Standard, DIN rail
DIN Rail Bracket Size: 2.84" x 1.24" x 0.16"
DIN Rail Bracket Weight: 0.9 oz (25.5g)

Model 4168-DIN Mechanical (DIN Rail Mounted Unit):

Model 4168-DIN, Cat No 304168-DIN
Size:　5.0" x 4.25" x 1.4"(12.7 x 10.8 x 3.6 cm)
Weight:　　Approx. 11.5 oz (327g)
Mounting: 2 Threaded Holes Standard, DIN rail
DIN Rail Bracket Size: 2.84" x 1.24" x 0.16"
DIN Rail Bracket Weight: 0.9 oz (25.5g)

USB Powered Option:

Available only for the Host units, See Models 4662 and
4662-DIN Host units. (USB Powered)