Electro Optical Components, Inc.

5460 Skylane Boulevard, Santa Rosa, CA 95403
Toll Free: 855-EOC-6300
www.eoc-inc.com | info@eoc-inc.com

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Datasheet	LUCI-10

USB to D-Sub Control Interface for FEMTO Amplifiers
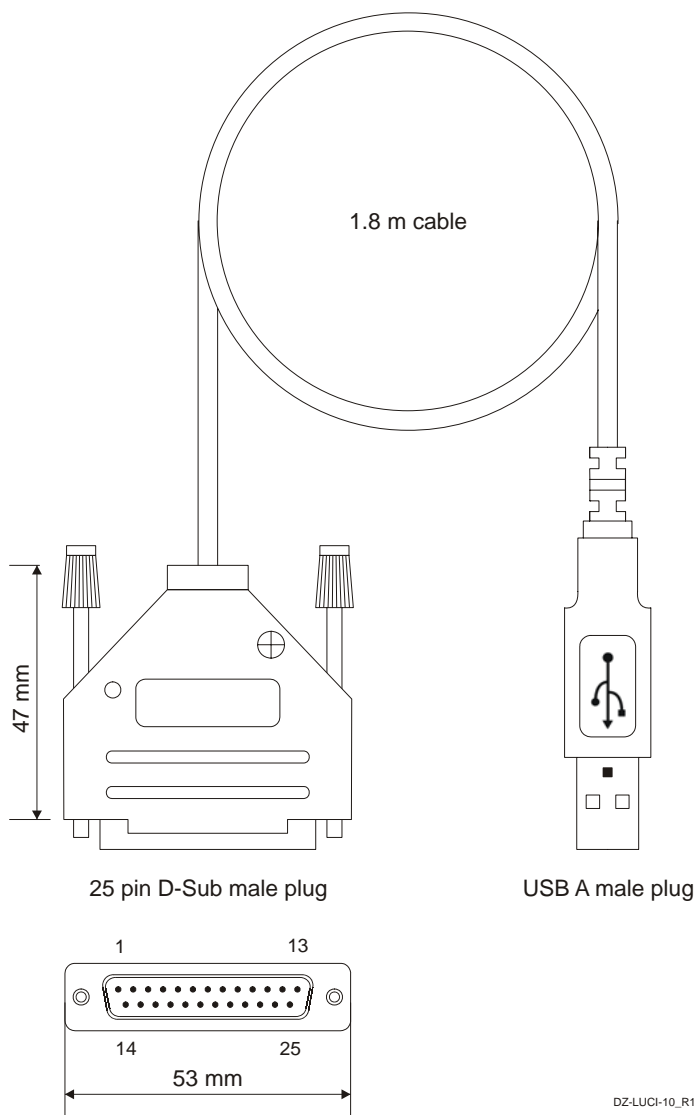
LabVIEW
COMPATIBLE WITH

Features	• **Compact Digital I/O Interface for USB Remote Control of FEMTO Amplifiers**
	• **Supports Opto-Isolation of Amplifier Signal Path from PC USB Port**
	• **16 Digital Outputs, 3 Opto-Isolated Digital Inputs**
	• **Bus-Powered Operation**
	• **System Driver, Application Software and VI's for use with LabVIEW™ Included**

Applications	• **Remote Control of FEMTO® Amplifiers and Photoreceivers Directly from a PC**

Block Diagram	

+ 5 V, Bus Powered
Microcontroller
USB Type A
USB Cable
USB Controller
Digital I/O
Digital Out 16 Bit
Digital In 3 Bit
LED
Opto-Isolation
Opto-Isolation
D-Sub 25 Pin Male
Amplifier Control Bits
Amplifier Status Bits
Windows PC
LUCI-10
FEMTO Amplifier
BS-LUCI-10_R1

Hardware Specifications		
General Characteristics	Bus Interface	USB 2.0 (full-speed)
	Digital I/O Channels	16 output lines
		3 opto-isolated input lines
	Supply	PC USB port, + 5 V, typ. 100 mA, bus-powered
		(no auxiliary power supply required)
	Connectors	USB type A
		D-Sub, 25 pin, male
	Cable	AWG 28, length 1.8 m
Output	Number of Channels	16 output lines, supporting opto-isolation inside FEMTO amplifiers and photoreceivers
	Output Voltage Range	LOW bit: 0 … + 0.5 V (@ 0 … 2 mA output current)
		HIGH bit: + 4 … + 5.5 V (@ 0 … 2 mA output current)
	Max. Current	6 mA per channel
	Writing Rate	max. 800 operations per second

USB to D-Sub Control Interface
for FEMTO Amplifiers

Input	Number of Channels	3 opto-isolated input lines
	Input Voltage Range	LOW bit: - 20 … + 1.5 V
		HIGH bit: + 3 … + 20 V
	Switching Current	1 mA typ. @ 5 V
	Reading Rate	max. 400 operations per second
Power Supply	USB Port, Bus Powered	+ 4.5 … + 5.5 V DC
	Active Current	max. 200 mA / typ. 100 mA
	Suspend Current	< 0.5 mA (standby mode of Windows®)
Case	D-Sub Case	metal hood (EMI/RFI shielding), with jack screws
	Weight	130 g (0.3 lb.)
	Material	zinc die-cast, nickel plated
Temperature Range	Storage Temperature	- 40 … + 100 °C
	Operating Temperature	0 … + 50 °C

Absolute Maximum Ratings	Max. Voltage at Input	+/- 30 V
	Max. Short Circuit Output Current	+/- 20 mA per channel, 200 mA total
	Max. Isolation Voltage	+/- 60 V (Input Ground to Output Ground)

Connectors	Device Port	D-Sub, 25 pin, male
		Pin 1: NC
		Pin 2: NC
		Pin 3: GND (IN)
		Pin 4: NC
		Pin 5: Digital IN
		Pin 6: Digital IN
		Pin 7: Digital IN
		Pin 8: NC
		Pin 9: GND (OUT)
		Pin 10: Digital OUT Low Byte, LSB
		Pin 11: Digital OUT Low Byte
		Pin 12: Digital OUT Low Byte
		Pin 13: Digital OUT Low Byte
		Pin 14: Digital OUT Low Byte
		Pin 15: Digital OUT Low Byte
		Pin 16: Digital OUT Low Byte
		Pin 17: Digital OUT Low Byte, MSB
		Pin 18: Digital OUT High Byte, LSB
		Pin 19: Digital OUT High Byte
		Pin 20: Digital OUT High Byte
		Pin 21: Digital OUT High Byte
		Pin 22: Digital OUT High Byte
		Pin 23: Digital OUT High Byte
		Pin 24: Digital OUT High Byte
		Pin 25: Digital OUT High Byte, MSB
	PC Port	USB type A

SOPHISTICATED TOOLS FOR SIGNAL RECOVERY   F E M T O

USB to D-Sub Control Interface
for FEMTO Amplifiers

Software Specifications

Software (included on CD)	Device Driver	dynamic link library (DLL) for integration in Microsoft Windows® operating system for use with C/C++, LabWindows™ /CVI™ or LabVIEW™
	Application Software	GUI (graphical user interface) programs for simple remote control of FEMTO amplifiers and photoreceivers provided as executable programs and LabVIEW projects
	LabVIEW Programs	sample programs to control and test the LUCI-10 hardware (including front panel and block diagram)
	LabVIEW Library	special VI toolkit for integration in LabVIEW development environment

Note: A National Instruments LabVIEW™ license is not included in this software package. For use of the GUI application programs the LabVIEW Run-Time Engine is required. If not detected on the host PC during the installation process the LabVIEW Run-Time Engine will be installed automatically from the CD.

System Requirements	Operating System	Microsoft Windows XP with Service Pack 2, or higher
	Processor	Intel Pentium III or AMD Athlon, or better
	System Memory	512 MB of RAM, or more
	Hard Disk Space	about 200 MB
	Interface Port	USB 1.1 or USB 2.0
	Supported FEMTO Modules	any standard FEMTO amplifier or photoreceiver with 25 pin D-Sub socket, except model HLVA-100

Optional Requirements   For development of own application programs an additional development environment like LabVIEW Version 8 (or higher) or C/C++ is required.

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SOPHISTICATED TOOLS FOR SIGNAL RECOVERY   FEMTO

USB to D-Sub Control Interface
for FEMTO Amplifiers

Dimensions

1.8 m cable

47 mm

25 pin D-Sub male plug

USB A male plug

1   13

14   25

53 mm

DZ-LUCI-10_R1

SOPHISTICATED TOOLS FOR SIGNAL RECOVERY   FEMTO