



Datasheet

LUCI-10

**USB to D-Sub Control Interface
for FEMTO Amplifiers**



<p>Features</p>	<ul style="list-style-type: none"> • 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 																								
<p>Applications</p>	<ul style="list-style-type: none"> • Remote control of FEMTO® amplifiers and photoreceivers directly from a PC 																								
<p>Block Diagram</p>	<p>The block diagram illustrates the system architecture. On the left, a 'Windows PC' is connected to the 'LUCI-10' device via a 'USB Type A' port and a 'USB Cable'. The LUCI-10 is powered by '+5 V, Bus Powered' from the PC. Inside the LUCI-10, a 'Microcontroller' manages the 'USB Controller', 'Digital I/O', 'Digital Out 16 Bit', and 'Digital In 3 Bit'. The 'Digital Out' is connected to an 'LED' and an 'Opto-Isolation' block. The 'Opto-Isolation' block is connected to the 'D-Sub 25 Pin Male' connector of the 'FEMTO Amplifier', which provides 'Amplifier Control Bits'. The 'FEMTO Amplifier' also provides 'Amplifier Status Bits' back to the 'Digital In' of the LUCI-10.</p>																								
<p>Hardware Specifications</p>	<table border="0"> <tr> <td data-bbox="274 1753 491 1781">General Characteristics</td> <td data-bbox="561 1753 742 1810">Bus interface Digital I/O channels</td> <td data-bbox="874 1753 1061 1810">USB 2.0 (full-speed) 16 output lines</td> </tr> <tr> <td></td> <td data-bbox="561 1834 625 1863">Supply</td> <td data-bbox="874 1810 1300 1897">3 opto-isolated input lines PC USB port, +5 V, typ. 100 mA, bus-powered (no auxiliary power supply required)</td> </tr> <tr> <td></td> <td data-bbox="561 1897 667 1926">Connectors</td> <td data-bbox="874 1897 981 1926">USB type A</td> </tr> <tr> <td></td> <td data-bbox="561 1950 619 1979">Cable</td> <td data-bbox="874 1926 1082 1984">D-Sub, 25 pin, male AWG 28, length 1.8 m</td> </tr> <tr> <td data-bbox="274 2008 343 2037">Output</td> <td data-bbox="561 2008 746 2037">Number of channels</td> <td data-bbox="874 2008 1380 2066">16 output lines, supporting opto-isolation inside FEMTO amplifiers and photoreceivers</td> </tr> <tr> <td></td> <td data-bbox="561 2066 753 2094">Output voltage range</td> <td data-bbox="874 2066 1380 2123">LOW bit: 0 ... +0.5 V (@ 0 ... 2 mA output current) HIGH bit: +4 ... +5.5 V (@ 0 ... 2 mA output current)</td> </tr> <tr> <td></td> <td data-bbox="561 2123 683 2152">Max. current</td> <td data-bbox="874 2123 1040 2152">6 mA per channel</td> </tr> <tr> <td></td> <td data-bbox="561 2152 673 2181">Writing rate</td> <td data-bbox="874 2152 1173 2181">max. 600 operations per second</td> </tr> </table>	General Characteristics	Bus interface Digital I/O channels	USB 2.0 (full-speed) 16 output lines		Supply	3 opto-isolated input lines PC USB port, +5 V, typ. 100 mA, bus-powered (no auxiliary power supply required)		Connectors	USB type A		Cable	D-Sub, 25 pin, male 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. 600 operations per second
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<p>Input</p>	<p>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. 300 operations per second</p>
<p>Power Supply</p>	<p>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®)</p>
<p>Case</p>	<p>D-Sub case metal hood (EMI/RFI shielding), with jack screws Weight 130 g (0.3 lb.) Material zinc die-cast, nickel plated</p>
<p>Temperature Range</p>	<p>Storage temperature -40 ... +100 °C Operating temperature 0 ... +50 °C</p>
<p>Absolute Maximum Ratings</p>	<p>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)</p>
<p>Connectors</p>	<p>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 </p> <p>PC port USB type A</p>

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Software Specifications	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; padding: 5px;">Software (included on CD)</td> <td style="padding: 5px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; padding: 5px;">Device driver</td> <td style="padding: 5px;">dynamic link library (DLL) for integration in Microsoft Windows® 32 bit & 64 bit operating system for use with C/C++, LabWindows™ /CVI™ or LabVIEW™</td> </tr> <tr> <td style="padding: 5px;">Application software</td> <td style="padding: 5px;">GUI (graphical user interface) programs for simple remote control of FEMTO amplifiers and photoreceivers provided as executable programs and LabVIEW projects</td> </tr> <tr> <td style="padding: 5px;">LabVIEW programs</td> <td style="padding: 5px;">sample programs to control and test the LUCI-10 hardware (including front panel and block diagram)</td> </tr> <tr> <td style="padding: 5px;">LabVIEW library</td> <td style="padding: 5px;">special VI toolkit for integration in LabVIEW 32 bit & 64 bit development environment</td> </tr> </table> </td> </tr> </table> <p style="margin-top: 10px;">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.</p>	Software (included on CD)	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; padding: 5px;">Device driver</td> <td style="padding: 5px;">dynamic link library (DLL) for integration in Microsoft Windows® 32 bit & 64 bit operating system for use with C/C++, LabWindows™ /CVI™ or LabVIEW™</td> </tr> <tr> <td style="padding: 5px;">Application software</td> <td style="padding: 5px;">GUI (graphical user interface) programs for simple remote control of FEMTO amplifiers and photoreceivers provided as executable programs and LabVIEW projects</td> </tr> <tr> <td style="padding: 5px;">LabVIEW programs</td> <td style="padding: 5px;">sample programs to control and test the LUCI-10 hardware (including front panel and block diagram)</td> </tr> <tr> <td style="padding: 5px;">LabVIEW library</td> <td style="padding: 5px;">special VI toolkit for integration in LabVIEW 32 bit & 64 bit development environment</td> </tr> </table>	Device driver	dynamic link library (DLL) for integration in Microsoft Windows® 32 bit & 64 bit 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 32 bit & 64 bit development environment		
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Optional Requirements	<p>For development of own application programs an additional development environment like LabVIEW Version 2012 (or higher) or C/C++ is required.</p>												
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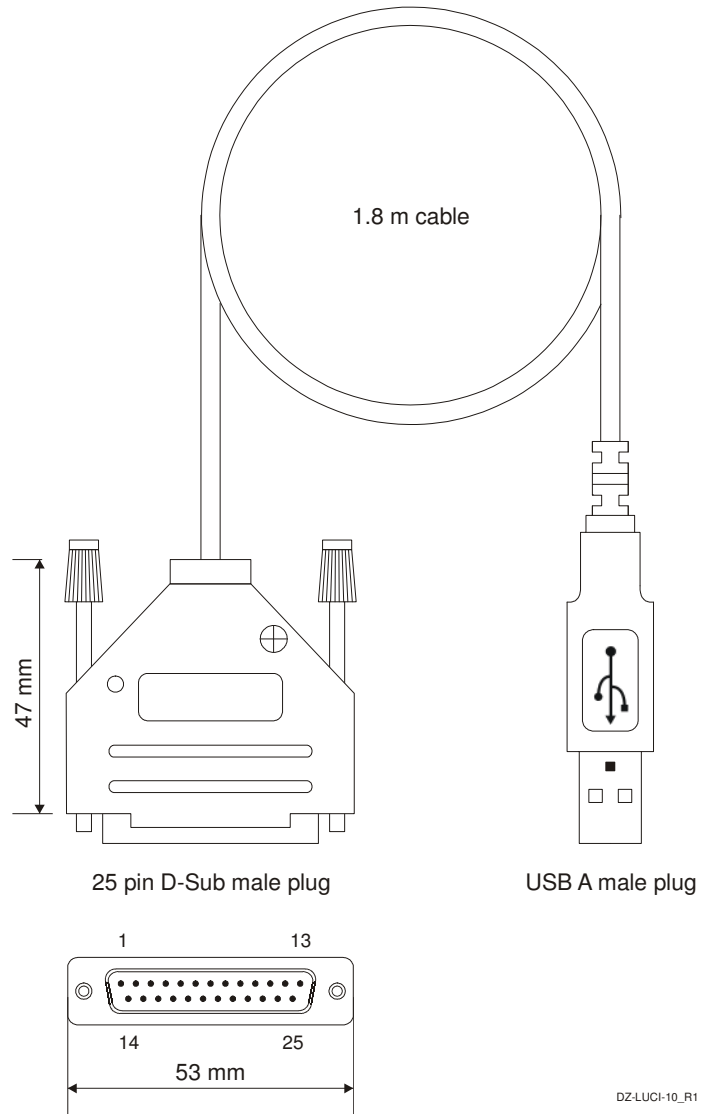


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Dimensions



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