

ACCESSORIES



CURRENT AMPLIFIERS

VOLTAGE AMPLIFIERS

GHZ-WIDEBAND
AMPLIFIERS

PHOTORECEIVERS

LOCK-IN AMPLIFIERS

ACCESSORIES

SOPHISTICATED TOOLS FOR SIGNAL RECOVERY

www.femto.de

LUCI-10 USB Control Interface



- Compact digital I/O interface for USB remote control of FEMTO amplifiers and photoreceivers
- Supports opto-isolation of amplifier signal path from PC USB port
- Bus-powered operation
- System driver, application software and VI's for use with LabVIEW™ included

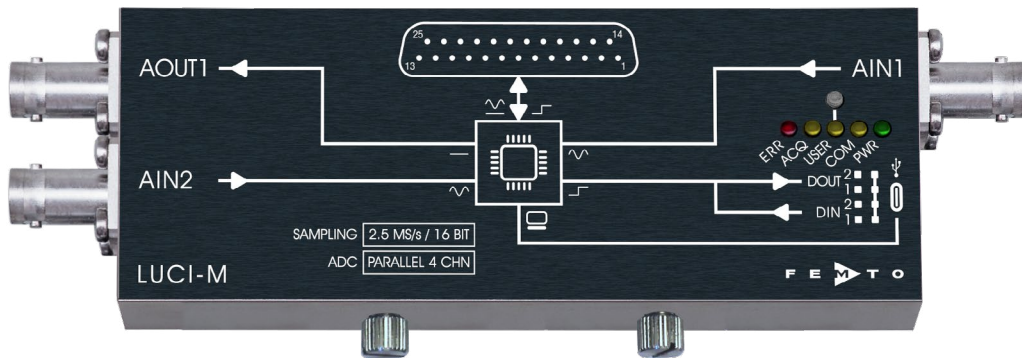
Model	LUCI-10
Bus Interface	USB 2.0 (full-speed)
Digital I/O Interface	16 output lines, 3 opto-isolated input lines
Supply	PC USB bus powered
Connectors	USB type A and D-Sub, 25 pin, male
Case	Zinc die-cast hood, nickel plated, with jack screws, weight 130 g (0.3 lbs)
Software, Included on CD	Device driver for Microsoft® Windows 32 bit & 64 bit operating system, Dynamic link library (DLL), Graphical user interface (GUI) programs, Sample VI's and FEMTO Library for use in LabVIEW™
System Requirements	Microsoft® Windows XP SP 3 or higher, compatible with Windows 10, Intel Pentium III or AMD Athlon or better, 1 GB RAM or more, 5 GB of hard disk space, USB 1.1 or 2.0 port
Optional Requirements	For development of own application programs a development environment like LabVIEW™ Version 2012 (or higher) or C/C++ is required.

PS-15-25-L Remote Power Supply

- Input voltage 100 - 240 VAC
- Output ± 15 V, $+500/-400$ mA
- Shielded output cord with Lemo® plug
- Floating design to avoid ground loops
- Short-circuit protected
- Ripple typ. 15 mV_{RMS}
- Suitable for all FEMTO modules
- Available as European, Australian and US version

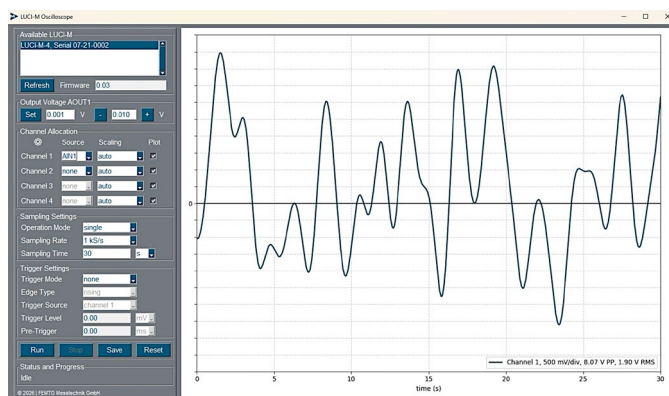


LUCI-M Data Acquisition and Digital Control System

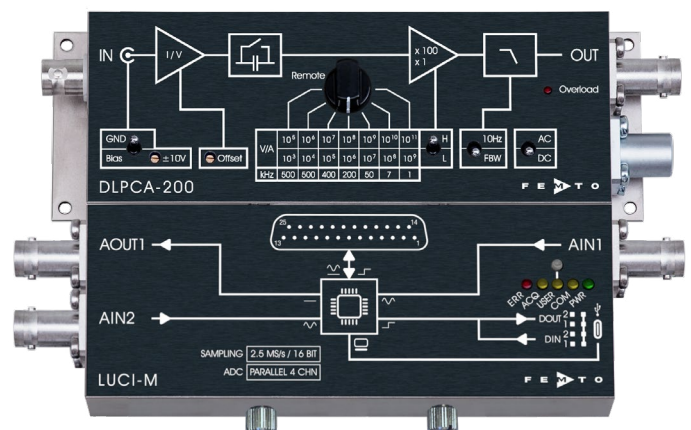


- USB DAQ and control device
- 2 or 4 parallel channels (depending on model), 16 bit ADC with 2.5 MS/s
- 3-channel, 12 bit DAC
- Internal memory of 64 MB for more than 16 million samples
- Galvanic isolation from Computer
- A total of 19 digital outputs
- A total of 5 digital inputs
- SCPI commands and therefore no binding to specific hardware, operation system or programming language
- Python source code examples and GUIs are available as optional downloads

Model	LUCI-M
Bus Interface	USB 2.0 (Hi-speed)
Digital I/O Interface	A total of 19 outputs and 5 inputs
Supply	USB port or USB PD (5 V, 3 A required)
Connectors	USB type C, D-Sub 25-pin connector, 3 BNC female, 8-pin port for digital I/O
Analog-digital converter	2 or 4 parallel channels (depending on model) , 16 bit, 1.1 MHz analogue bandwidth, 2.5 MS/s, downsampling to 500, 100, 10 and 1 kS/s selectable
Analog inputs	A total of 6, 2 BNC, 4 on pins of the D-Sub connector. All can be assigned to the ADC channels as required
Digital-to-analog converter	3 channels, 12 bit
Analog outputs	3 in total, 1 BNC, 2 on pins of the D-Sub connector
Digital I/O	A total of 19 outputs and 5 inputs
Command set	SCPI-compatible



Programming example: Oscilloscope



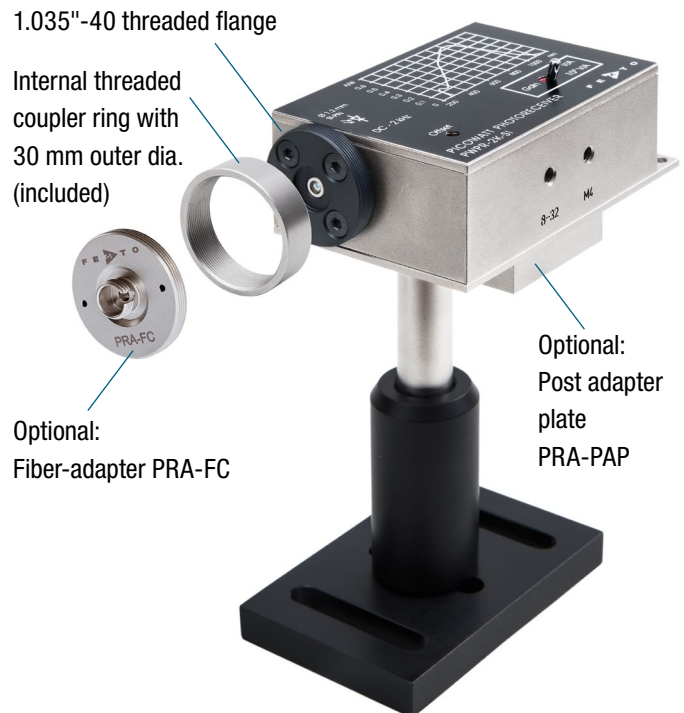
Application example: LUCI-M in combination with DLPCA-200

Accessories for Photoreceivers

All FEMTO photoreceivers offered with free space input are delivered with 1.035"-40 threaded flange (FST) input – for highest flexibility on the optical bench! For example converting the free-space FST input to an optical fiber input is easily done by screwing on one of the optionally available FEMTO fiber-adapters PRA-FC, PRA-FCA and PRA-FSMA.

The post adapter plate PRA-PAP expands the optical bread-board mounting options for FEMTO photoreceivers. Even for photoreceivers that are already equipped with post mounting threads the post adapter plate enlarges the mounting position options. Due to the integrated M4 and 8-32 UNC tapped holes, standard posts for breadboard systems can be easily mounted to the photoreceiver via the adapter plate.

The picture shows the PWPR-2K-SI-FST being easily turned into a fiber coupled model.



PRA-FC / PRA-FCA / PRA-FSMA Fiber-Adapters and Mounting Tool



- Compatible with all FEMTO photoreceivers with threaded 1.035"-40 free space input (FST)
- Easy mounting option for standard optical fibers
- Recommended for photosensitive areas of 0.4 mm diameter or more (coupling efficiency may be compromised for photodiodes with smaller diameter)
- Machined from solid stainless steel
- Available adapter types: PRA-FC (FC/PC, FC/UPC), PRA-FCA (FC/APC) and PRA-FSMA
- Additionally available: spanner wrench AT-W1 for convenient mounting of the adapters

PRA-PAP Post Adapter Plate



- Compatible with FEMTO photoreceiver series FWPR, PWPR, OE, LCA-S and HCA-S
- M4 and 8-32 UNC threads suitable for standard optical mounting posts
- High-tensile material
- Mounting screws included

CAB-HF1 Series RF Cables



- Double shielded coaxial design
- 100% verified RF parameters
- High shield attenuation against electromagnetic interferences (> 85 dB)
- Fully assembled with premium quality connectors
- Ultra high insulation resistance > $10^{13} \Omega$ – guaranteed
- minimises grounding problems
- Variety of lengths available: from 20 cm to 3 m
- Additional lengths are possible (min. order quantity 10 pieces)

APPLICATIONS

Sensitive measurements of small signals from DC to the GHz range, even with high EMI load or unfavourable grounding situation.

Runtime measurements (LIDAR, radar, SODAR...) | High-frequency spectroscopy and tomography (NMR, MRT, ESR ...) | Impedance spectroscopy | Fast scanning microscopy (AFM, STM, Raman ...) | Modulation spectroscopy

Length	Plug BNC – BNC
0.2 m	CAB-HF1-BB-020
0.5 m	CAB-HF1-BB-050
0.8 m	CAB-HF1-BB-080
1.5 m	CAB-HF1-BB-150
3.0 m	CAB-HF1-BB-300

CAB-SC1 Series Low-Capacitance Cables



- 150 Ω characteristic impedance
- 30 pF/m capacitance
- Fully assembled with premium quality connectors
- Ultra high insulation resistance > $10^{14} \Omega$ – guaranteed
- Variety of lengths available: from 50 cm to 10 m
- Additional lengths are possible (min. order quantity 10 pieces)

APPLICATIONS

Measurements of small signals, particularly currents from a remote signal source, where long 50 Ω coaxial cables would introduce excessive noise due to their capacitance.

Measurements of currents down to the picoampere range | Photodetectors and Ionisation | Detectors | Scanning Tunnel Microscopy (STM) | Scanning Probe Microscopy (SPM) | Spectroscopy | Piezoelectric and pyroelectric detectors

Length	Plug BNC – BNC
0.5 m	CAB-SC1-BB-050
0.8 m	CAB-SC1-BB-080
1.5 m	CAB-SC1-BB-150
3.0 m	CAB-SC1-BB-300
5.0 m	CAB-SC1-BB-500
10.0 m	CAB-SC1-BB-1000

CAB-LN1 Series Low-Noise Cables



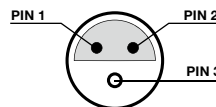
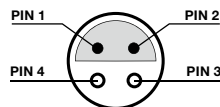
- Minimizes triboelectric and microphonic noise
- Designed for ultra sensitive current and charge measurements
- Noise level reduction by a factor of 1,000
- Highly shielding coaxial design
- Fully assembled with premium quality connectors
- Ultra high insulation resistance $> 10^{14} \Omega$ – guaranteed
- Variety of lengths available: from 10 cm to 5 m
- Additional lengths are possible (min. order quantity 10 pieces)

APPLICATIONS

Measurements of low currents down to femtoamperes | Photodetectors and ionization detectors | High resistance measurements | Scanning probe microscopy (STM, SPM, STS) | Spectroscopy | Piezo- and pyroelectric transducers

Length	Plug BNC – BNC
0.1 m	CAB-LN1-BB-010
0.2 m	CAB-LN1-BB-020
0.5 m	CAB-LN1-BB-050
1.0 m	CAB-LN1-BB-100
1.5 m	CAB-LN1-BB-150
2.0 m	CAB-LN1-BB-200
3.0 m	CAB-LN1-BB-300
5.0 m	CAB-LN1-BB-500

Lemo® Connectors



- High quality connector
- 3-pin and 4-pin versions available
- For use with shielded cables
- Suitable for all FEMTO modules