

Five USB Instruments in One

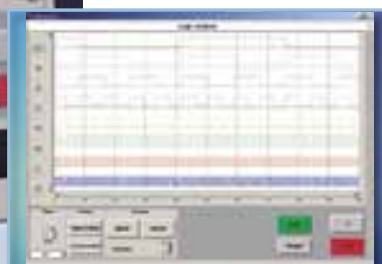
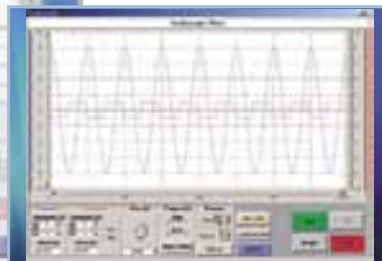
MEphisto Scope

2-Channel Multi-Functional Device



**Product of the year
2005, 1. price (category
DAQ & test - German
"Elektronik" magazine)**

- Mobile & low power: Ideal for notebooks.
- Robust, metal housing.
- 16 bit resolution. USB 2.0 full-speed.



Scope

Volt Meter

Data Logger

Logic Analyser

Digital Switchbox

In one!

MEasurement starts with ME.


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Five USB Instruments in One...

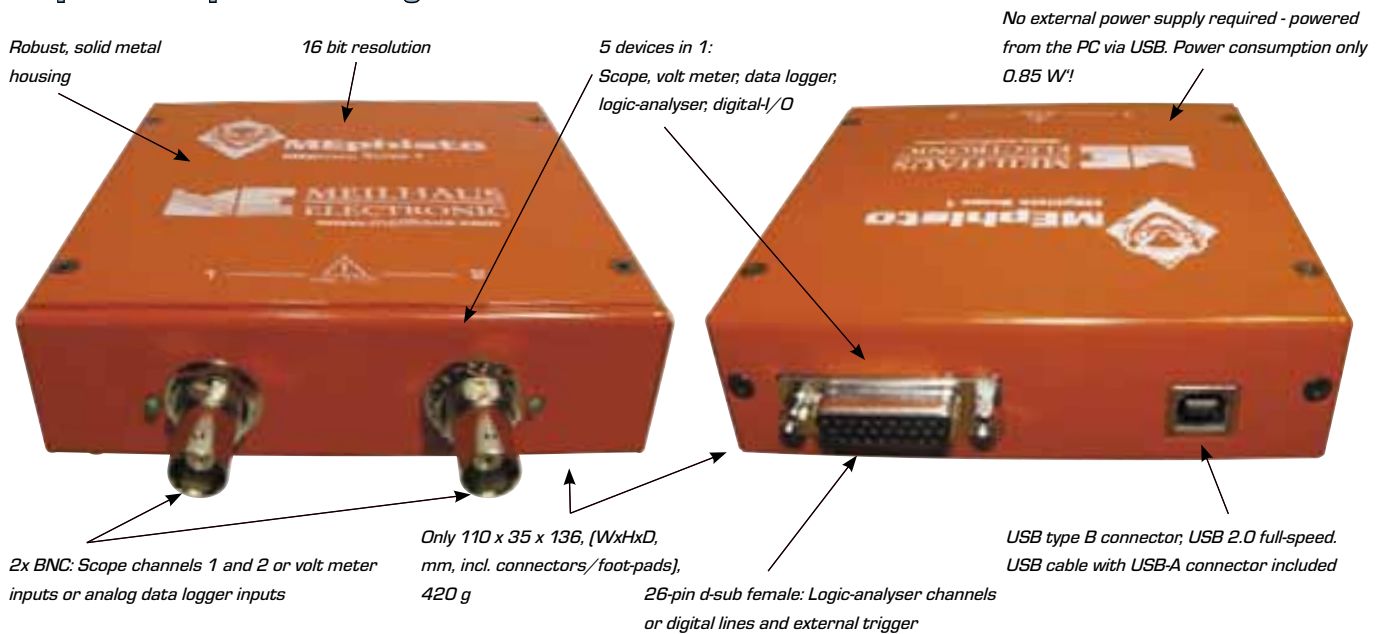


The MEphisto Scope 1 (UM202) has developed from a 2-channel USB scope into a multifunctional instrument: Now it includes a 16 bit digital storage oscilloscop, a volt meter, a logic-analyser, a data logger and a digital switchbox with 24 I/O lines.

The multifunctional instrument has a very robust metal housing: It is a device you can rely on - even in rough, mobile applications as for example in maintenance, service and education. With its low power consumption, the MEphisto is the ideal solution for mobile applications with notebooks.

Lots of DAQ know-how is integrate directly into the software's online help.

MEphisto Scope - the Intelligent USB Multifunctional Solution



Do you really still need these Stacks of unhandy, "classic" Desktop Instruments?



The MEphisto Scope includes 5 instrumentse in one. Still it is so compact, that you can hold it in one hand. Try this with 5 classic desktop instruments!

» 5-in-1 Combination - the MEphisto Scope includes the following Instruments:

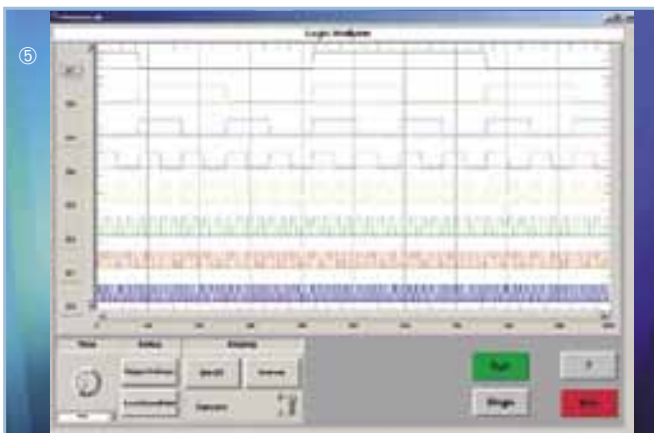
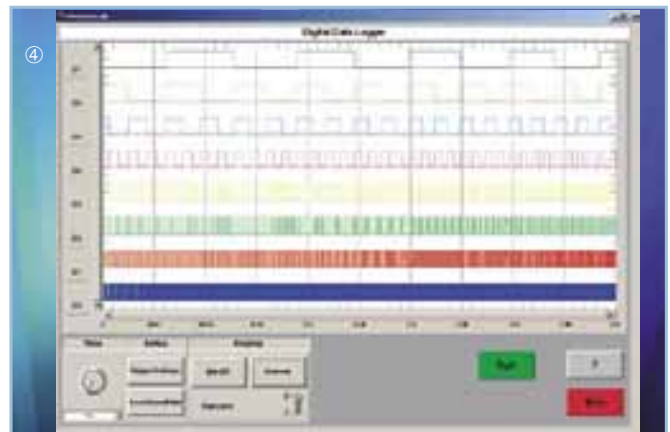
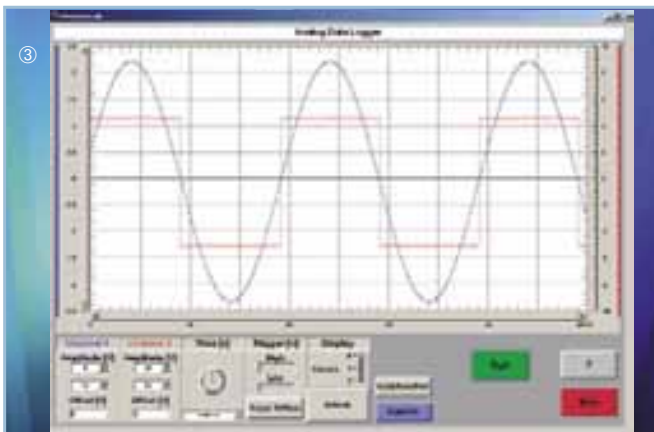
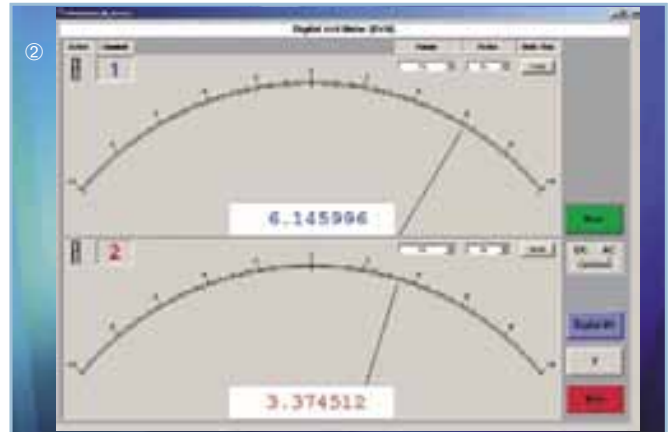
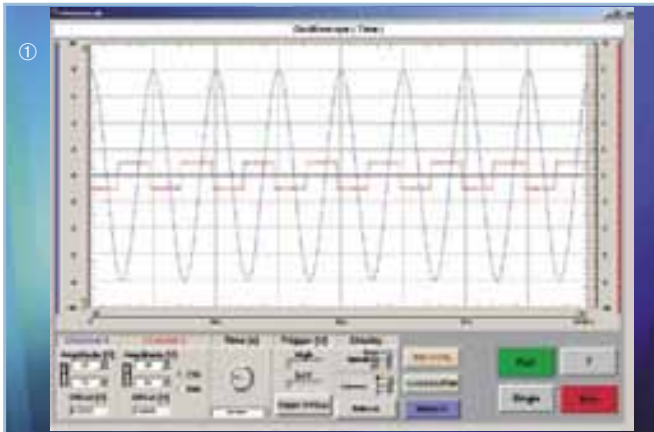
Instrument	Description
Oscilloscope (DSO)	2 channels, 16 bit, up to 500 kHz, input range 200 mV...20 V.
Volt Meter	2 channels, input range ± 100 mV... ± 10 V. 16 bit. Pointer indicator (software); DC, true RMS.
Data Logger	Analog and digital up to 100 kS/s.
Logic-Analyser	16 channels, up to 100 kHz, CMOS level.
Digital I/O Switchbox	24 discrete TTL lines, 50 kHz, each bit programmable as input or output. Expandable with optional accessory ME-UB: Add relays or opto-isolation.

Advantages:

- **Robust, small and compact USB module with 5 instruments in one.**
- **No external power supply required, extremely low power consumption.** Powered from the PC via USB - ultra low power **0.85 W**. Ideal solution for battery-powered notebooks
- **16 bit resolution.** 2 MS/s sampling rate, up to 2x 1 MS/s simultaneous sampling. Analog bandwidth 2 MHz. Sample memory 256 kS.
- Reliable, professional **metal housing.**
- **BNC connectors** for reliable connectivity of standard probes.
- **Trigger modes** threshold, window, edge, dV/dt, external, manual.
- **USB 2.0 full-speed** (USB 1.1 compatible). USB cable incl.
- **Versatile Windows software** with instrument panels for the 5 devices. Detailed online help and lots of DAQ know-how integrated into the software.
- **Easy programming - also with Windows programming languages or VEE Pro.**



The "Control Center": MEphisto Lab Software for Windows



» Software included:

- **MEphistoLab Software:** ① 2-channel scope, ② 2-channel volt meter, ③ 2-channel analog data logger, ④ digital data logger, ⑤ 16-channel logic-analyser, ⑥ 24-channel digital I/O; for Windows.
- Instruction guide in English and German for Acrobat Reader/PDF. Online help in English or German.

» Ordering Codes, Accessory

MEphisto Scope

Model	Description	Price
MEphisto Scope 1 (UM202)	5-in-1 multifunctional instrument for USB: 16 bit, 2-channel scope, volt meter, analog/digital data logger, 16-channel logic-analyser; 24 discrete (each bit programmable) TTL digital inputs/outputs	340€
Included: Robust USB box (metal housing), ME-Power-CD with software, 26-pin D-sub counter-connector; USB cable		
Optional Accessory	Description	Price
ME-Probe LF Pair	Passive pair of probes, x1/x10 with accessories. Bandwidth 15/150 MHz, 47/15.5 pF, 1/10 MΩ. 600 Vp CAT I. BNC	47.50€
ME AK-DUB/UM202	Cable , connects 3x ME-UB boxes to a MEphisto Scope: 26-pin D-sub (HD) female and 3x 15-pin D-sub male + mini connector for external supply power for the ME-UB boxes	39€
ME-UB Serie	External expansion boxes , available with relays or opto-isolation. For the MEphisto digital lines. Use any combination of: ME-UB15 (terminal), ME-UBRE (relays), ME-UBOI (opto-inputs), ME-UBOO (opto-outputs)	from 49€
ME AB-D15F	Terminal block . 15-pin D-sub female and spring terminals. Alternative for ME-UB15, for digital ports	45€

» Specifications

Analog Inputs

Number, connector	2 (simultaneous), BNC
A/D resolution	16 bit, max. 500 kHz
Input range	± 100 mV... ± 10 V max.
Protection	± 300 VDC
Input impedance	850 k Ω (input capacity 14 pF)
Accuracy (25°C)	Voltage: 0.1% or 1 mV Time: 100 ppm
Sample memory	256 kS
Functions	Oscilloscope, volt meter, logger

As Oscilloscope/DSO

Sample rate	2 MS/s (2 channels), 2x 1 MS/s (simultaneous sampling)
Input range	± 100 mV... ± 10 V
Analog bandwidth	(-3 dB) 2 MHz (no anti-aliasing filter)
Time base	1 μ s...2.5 s
Trigger modes	Threshold, window, edge, dU/dt, external (on 26-pin D-sub female), manual, delay

As Volt Meter (Pointer Indicator in Software)

Sample rate	2x 1 S/s
Input range	± 100 mV... ± 10 V
Analog bandwidth	(-3 dB) DC 40 kHz, true RMS 2.3 kHz

As Analog Data Logger

Sample rate, analog bandwidth, input range, trigger modes see oscilloscop (see above)	
Time base	10 μ s...2.5 s

Digital Channels

Number, connect.	24, 26-pin D-sub female
Level	+5 V (CMOS). Output current (25°C) sink 10 mA/source 5 mA ¹⁾

As Logic-Analyser

Channels	16: 8+8 simultaneous channels, 8 of them simultaneous trigger chan.
Sampling rate	100 kS/s
Protection	+5.5 VDC/-0.5 VDC
Time base	10 μ s...2.5 s
Trigger modes	Pattern (low/high, rising/falling edge, ignore) in any combination simultaneous for 8 bit, manual, external, delay

As Digital Inputs/Outputs

Channels	24 discrete inputs/outputs. Each bit programmable as input or output. Outputs with readback
Expandability	Relays or opto-isolation with ME-UB series (see accessory)

As Digital Data Logger

See logic-analyser, see above	
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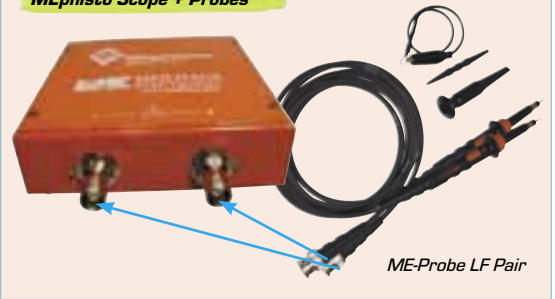
General Data

PC interface	USB 2.0 full-speed (USB 1.1 compatible)
Power supply	+5 V/0.85 W from PC via USB interface. ²⁾
Connectors	2x BNC (front side), 26-pin D-sub female (back side), type B USB connector (back side)
Size	110 x 35 x 136, (WxHxD, mm, incl. connectors/foot pads), 420 g
Temperature	0...70°C (operation), -20...85°C (storage)

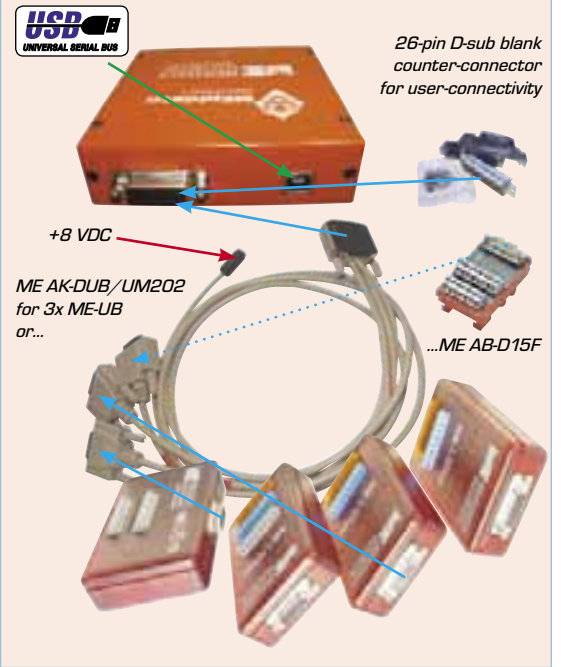
1) Logic-analyser: 1.8 V/3,3V CMOS, 12 V/24 V mit optionalem Konverter.

2) To guarantee a reliable operation also with high loads on the digital port, the device announces the max. power consumption of 2.5 W at the computer. Therefore it isn't possible to use the device with a passive/non-powered USB hub.

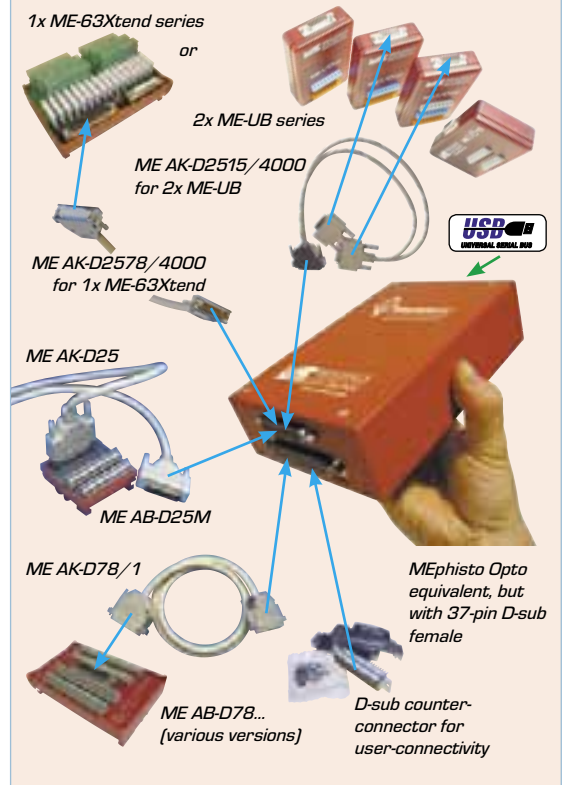
MEphisto Scope + Probes



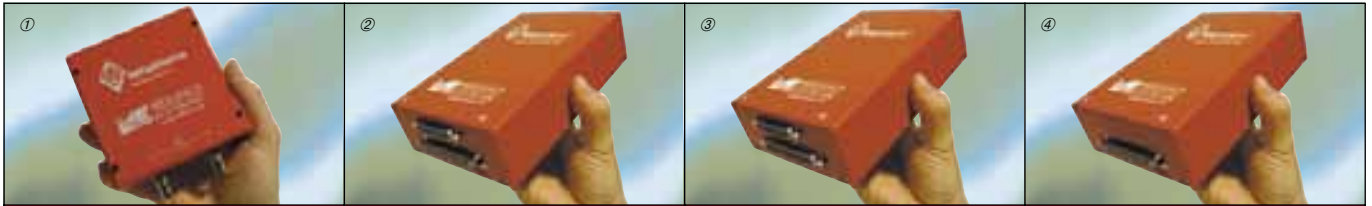
MEphisto Scope + Connectivity



MEphisto Switch and Opto Connectivity



MEphisto Series - the robust Dimension of USB



» MEphisto Series Models

	Name	Code	Functions
①	MEphisto Scope 1	UM202	The multifunctional scope - 5 USB instruments in one: 2-channel 16 bit digital storage oscilloscope, digital volt meter, analog und digital data logger, 16-channel logic analyser, 24 bit digital I/O
②	MEphisto Switch8 MEphisto Switch16	ME-630/8 USB ME-630/16 USB	The multi-digital box: 8 (Switch8) or 16 (Switch16) typy C relays, 8 opto-isolated digital inputs, 8 TTL digital inputs, 16 TTL digital I/Os (expandable with relays/opto-isolation)
③	MEphisto OptoA MEphisto OptoB	ME-8200A USB ME-8200B USB	The opto-isolated digital I/O box: 8 + 8 (OptoA) or 16 + 16 (OptoB) opto-inputs/outputs and additional 16 TTL digital I/Os (expandable with relays/opto-isolation) - available Winter 2006
④	MEphisto Digi MEphisto DigiA MEphisto DigiB	ME-1400 USB ME-1400A USB ME-1400B USB	The TTL digital I/O and counter box: 24 (Digi and DigiA) or 48 (DigiB) TTL digital I/Os and 0x (Digi), 3x (DigiA) or 6x (DigiB) counters with 16 bit resolution. Digital channels expandable with relays/opto-isolation - available Winter 2006

The MEphisto Series

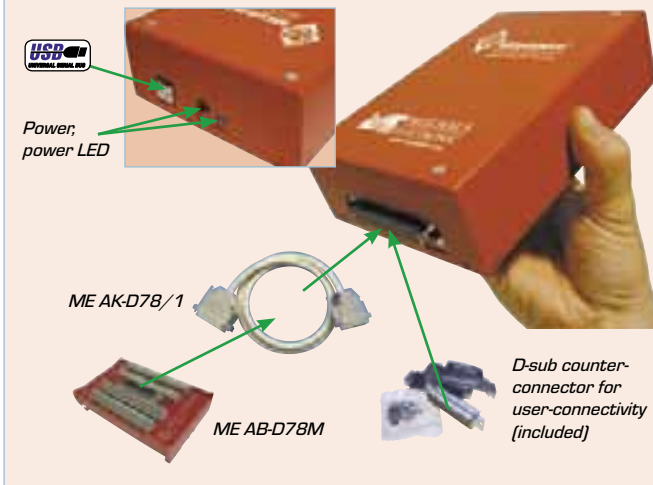
...by Meilhaus Electronic offers you a new, industrial dimension of USB DAQ and control: **Robust metal housings** instead of plastic, **professional expandability** instead of limited functionality.

The MEphisto digital boxes include the modern technology of the **proven ME PCI DAQ board series**. These boards are well-known for their industrial reliability and **good support software**. **High quality from Meilhaus Electronic - USB devices you can rely on.**
MEasurement starts with ME.

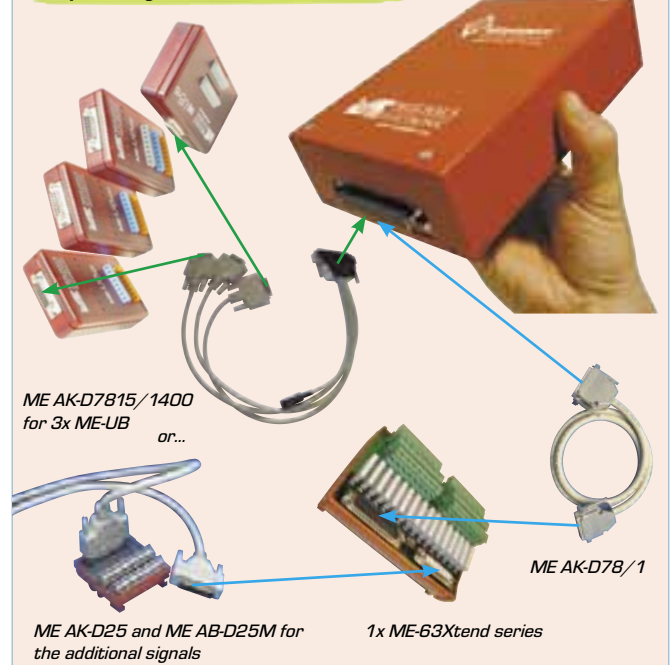


*Expands the digital channels with relays or opto-isolation:
The ME-UB series is the ideal expansion for the MEphistos!*

MEphisto Digi + Connectivity Options



MEphisto Digi + ME-UB or ME-63Xtend



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