

Analog DAQ and control boards with the ME-FoXX technology

ME-4000 and ME-6000 series



Meilhaus Electronic - the Board-Maker: All available standard models can be found on our web-site www.meilhaus.com. Other alternative types from the table below are produced only, if ordered in higher numbers. Just call our sales team or send your E-Mail to sales@meilhaus.com.

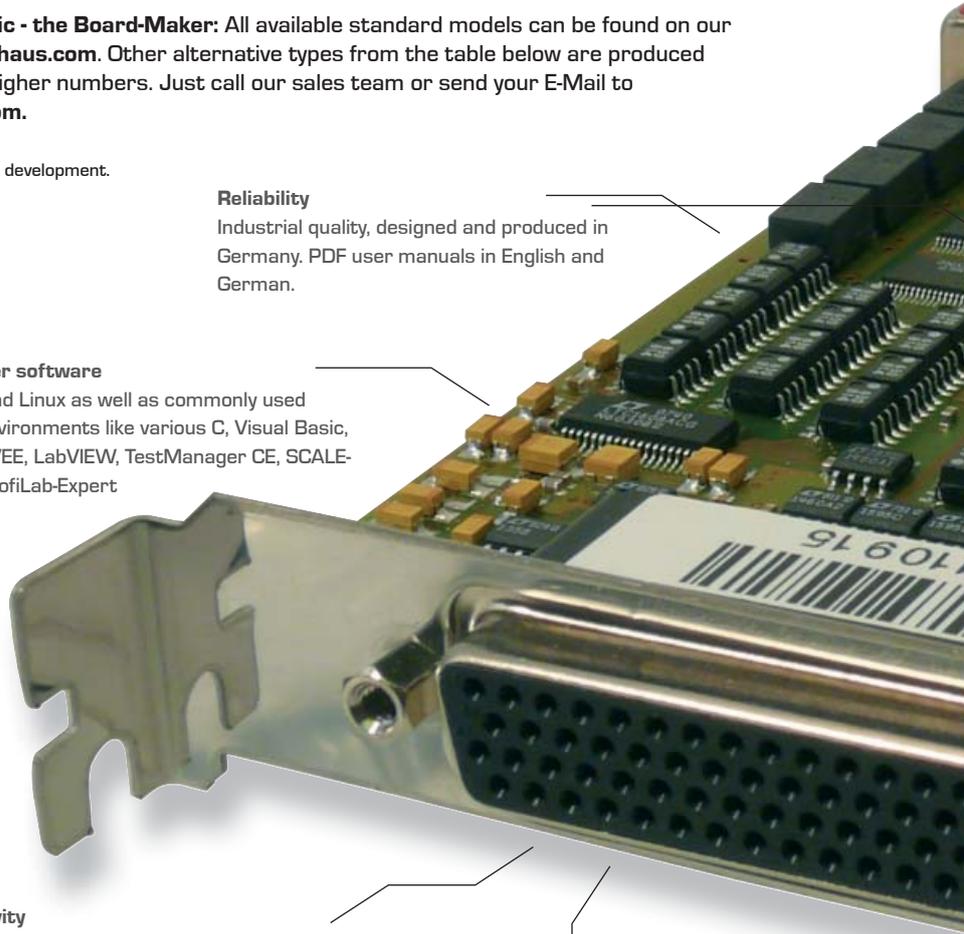
Ralf Brunnert, hardware development.

Reliability

Industrial quality, designed and produced in Germany. PDF user manuals in English and German.

Intelligent driver software

For Windows and Linux as well as commonly used development environments like various C, Visual Basic, Delphi, Agilent VEE, LabVIEW, TestManager CE, SCALE-RT, MATLAB, ProfiLab-Expert



Connectivity

All the right accessories available from Meilhaus Electronic for the 78-pin D-sub connector: Cables, terminal blocks, signal-conditioning.

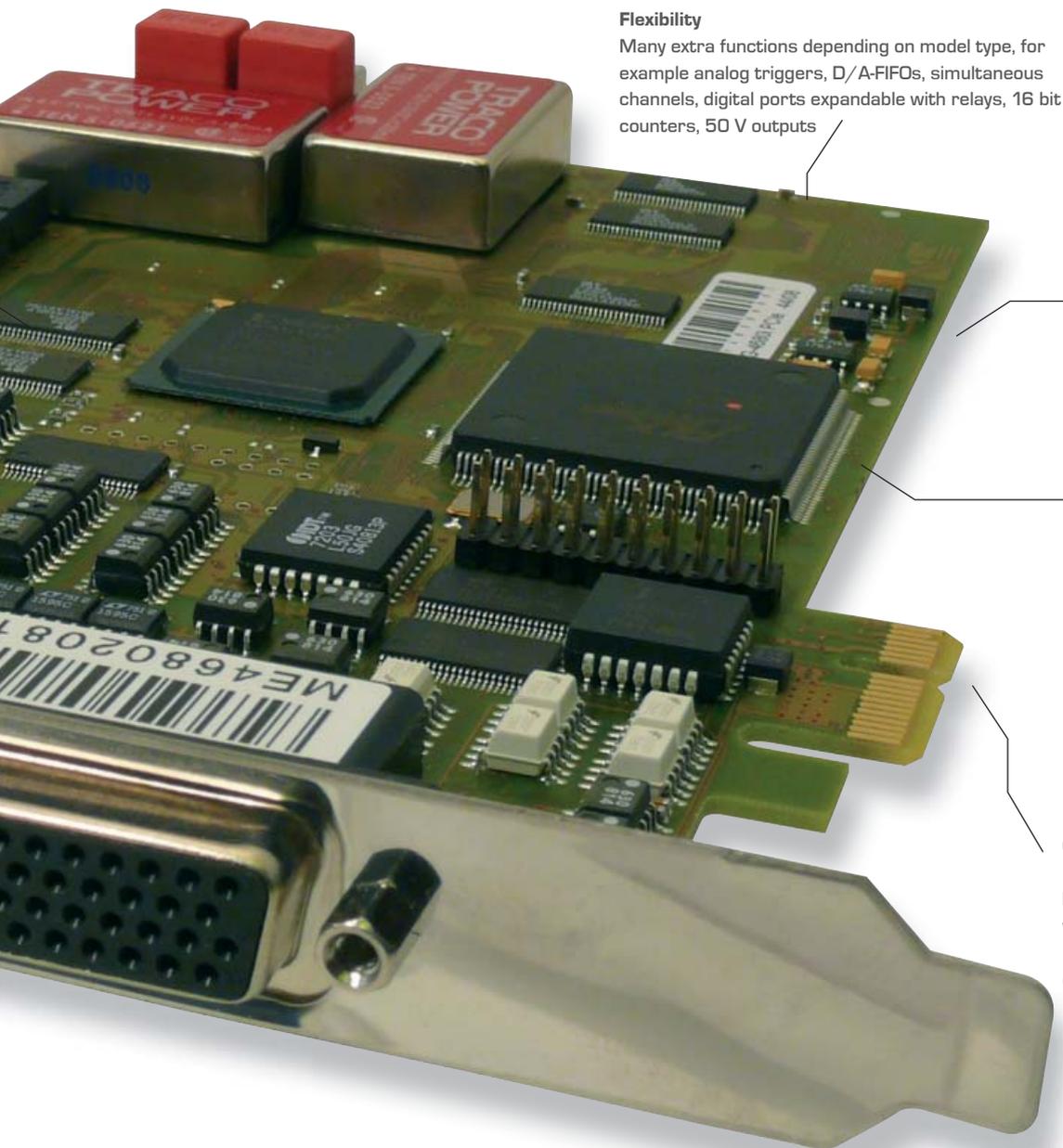
Full series - wide choice

From economy models up to highend top models with complete functionality.

Model overview

(for a list of the available standard models see our website!)

Model	16 bit analog inputs					16 bit analog outputs			Digital-I/O		Counter		Bus platforms					
	Single-ended channels	...of them w. sample&hold	Differential channels	Isolation	External analog trigger	Channels	Isolation	FIFO	Channels	Isolation	Number	Isolation	PCI	PCI-Express	3 U CompactPCI/PXI	ME-Synapse USB	ME-Synapse LAN	ME-Synapse EXPRESS
ME-4610	16	-	-	-	-	-	-	-	32	-	3, 16 bit	-	✓	-	-	-	-	-
ME-4660	16	-	-	-	-	2	-	-	32	-	3, 16 bit	-	✓	✓	✓	✓	✓	✓
ME-4660s	16	8	-	-	-	2	-	-	32	-	3, 16 bit	-	✓	✓	✓	✓	✓	✓
ME-4660i	16	-	-	✓	-	2	standard ³⁾	-	32	16 of them	3, 16 bit	✓	✓	✓	✓	✓	✓	✓
ME-4660is	16	8	-	✓	-	2	standard ³⁾	-	32	16 of them	3, 16 bit	✓	✓	✓	✓	✓	✓	✓
ME-4670	32	-	16	-	✓	4	-	-	32	-	3, 16 bit	-	✓	✓	✓	✓	✓	✓
ME-4670s	32	8	16	-	✓	4	-	-	32	-	3, 16 bit	-	✓	✓	✓	✓	✓	✓
ME-4670i	32	-	16	✓	✓	4	standard ³⁾	-	32	16 of them	3, 16 bit	✓	✓	✓	✓	✓	✓	✓
ME-4670is	32	8	16	✓	✓	4	standard ³⁾	-	32	16 of them	3, 16 bit	✓	✓	✓	✓	✓	✓	✓
ME-4680	32	-	16	-	✓	4	-	✓	32	-	3, 16 bit	-	✓	✓	✓	✓	✓	✓
ME-4680s	32	8	16	-	✓	4	-	✓	32	-	3, 16 bit	-	✓	✓	✓	✓	✓	✓
ME-4680i	32	-	16	✓	✓	4	standard ³⁾	✓	32	16 of them	3, 16 bit	✓	✓	✓	✓	✓	✓	✓
ME-4680is	32	8	16	✓	✓	4	standard ³⁾	✓	32	16 of them	3, 16 bit	✓	✓	✓	✓	✓	✓	✓



Flexibility

Many extra functions depending on model type, for example analog triggers, D/A-FIFOs, simultaneous channels, digital ports expandable with relays, 16 bit counters, 50 V outputs

High level of safety

Models with isolation, D/A boards also with isolation and no common GNDs.

High precision

Conversion with 16 bit accuracy. Rates depending on platform/system up to 500 kHz.

Cross-platform compatibility

For the bus platforms PCI, PCI-Express, 3 U CompactPCI/PCI and with ME-Synapse for USB, Ethernet/LAN and Remote PCI-Express x1 over cable.

Model overview

(for a list of the available standard models see our website!)

Model	16 bit analog inputs					16 bit analog outputs			Digital-I/O		Counter		Bus platforms					
	Single-ended channels	...of them w. sample&hold	Differential channels	Isolation	External analog trigger	Channels	Isolation	FIFO	Channels	Isolation	Number	Isolation	PCI	PCI-Express	3 U CompactPCI/PXI	ME-Synapse USB	ME-Synapse LAN	ME-Synapse EXPRESS
ME-6000i/x	-	-	-	-	-	4, 8, 16 ¹⁾	standard ³⁾	-	16	-	-	-	✓	✓	✓	✓	✓	✓
ME-6000p/x	-	-	-	-	-	4, 8, 16 ¹⁾	full, no CGND	-	16	-	-	-	✓	✓	✓	✓	✓	✓
ME-6100i/x	-	-	-	-	-	4, 8, 16 ¹⁾	standard ³⁾	✓ ⁴⁾	16	-	-	-	✓	✓	✓	✓	✓	✓
ME-6100p/x	-	-	-	-	-	4, 8, 16 ¹⁾	full, no CGND	✓ ⁴⁾	16	-	-	-	✓	✓	✓	✓	✓	✓
ME-6200i/x	-	-	-	-	-	4 + 1, 8 + 1 ²⁾	standard ³⁾	-	16	-	-	-	✓	✓	✓	✓	✓	✓
ME-6200p/x	-	-	-	-	-	4 + 1, 8 + 1 ²⁾	full, no CGND	-	16	-	-	-	✓	✓	✓	✓	✓	✓
ME-6300i/x	-	-	-	-	-	4 + 1, 8 + 1 ²⁾	standard ³⁾	✓ ⁴⁾	16	-	-	-	✓	✓	✓	✓	✓	✓
ME-6300p/x	-	-	-	-	-	4 + 1, 8 + 1 ²⁾	full, no CGND	✓ ⁴⁾	16	-	-	-	✓	✓	✓	✓	✓	✓

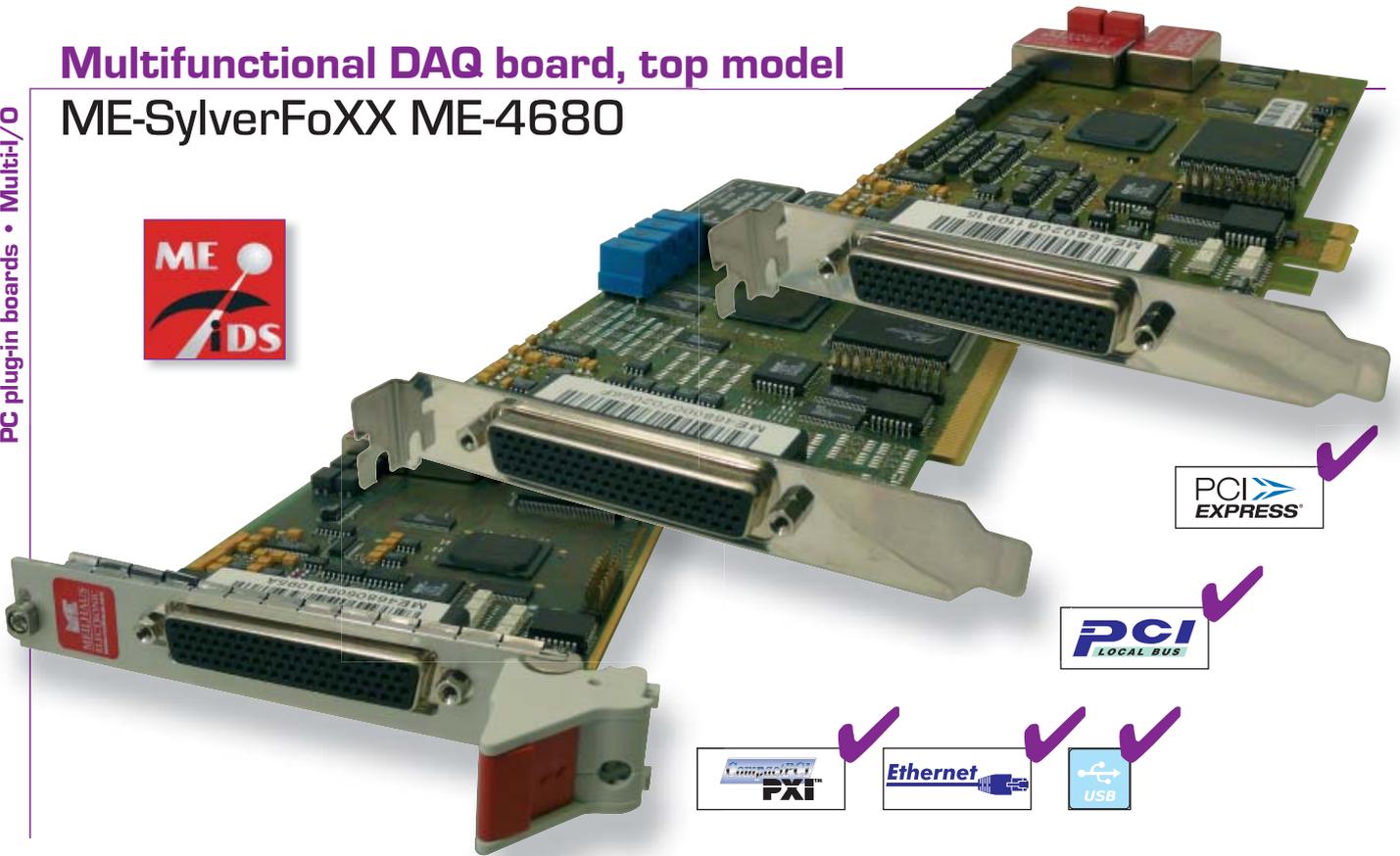
1) 16 channels only for PCI.

2) Extra channel with output range ±50 V (all others ±10 V).

3) Isolation with common ground.

4) FIFOs for channel 1 - 4.

Multifunctional DAQ board, top model ME-SylverFoXX ME-4680



- ❑ **Universal multifunctional DAQ board, top model of the ME-FoXX range.**
- ❑ **High precision 16 bit A/D conversion up to max. 500 kHz.**
- ❑ **Many extras, for example: D/A FIFOs, bitpattern generator, external analog trigger.**
- ❑ **Models "i" with galvanic isolation up to 500 V.**
- ❑ **Remote adaption to ethernet/LAN, USB, PCI-Express x1 over cable.**

The top model of the ME-FoXX family combines all available functions of the "smaller" models and even has some additional extras. So the ME-4680 is a DAQ board that nearly does it all!

Specifications

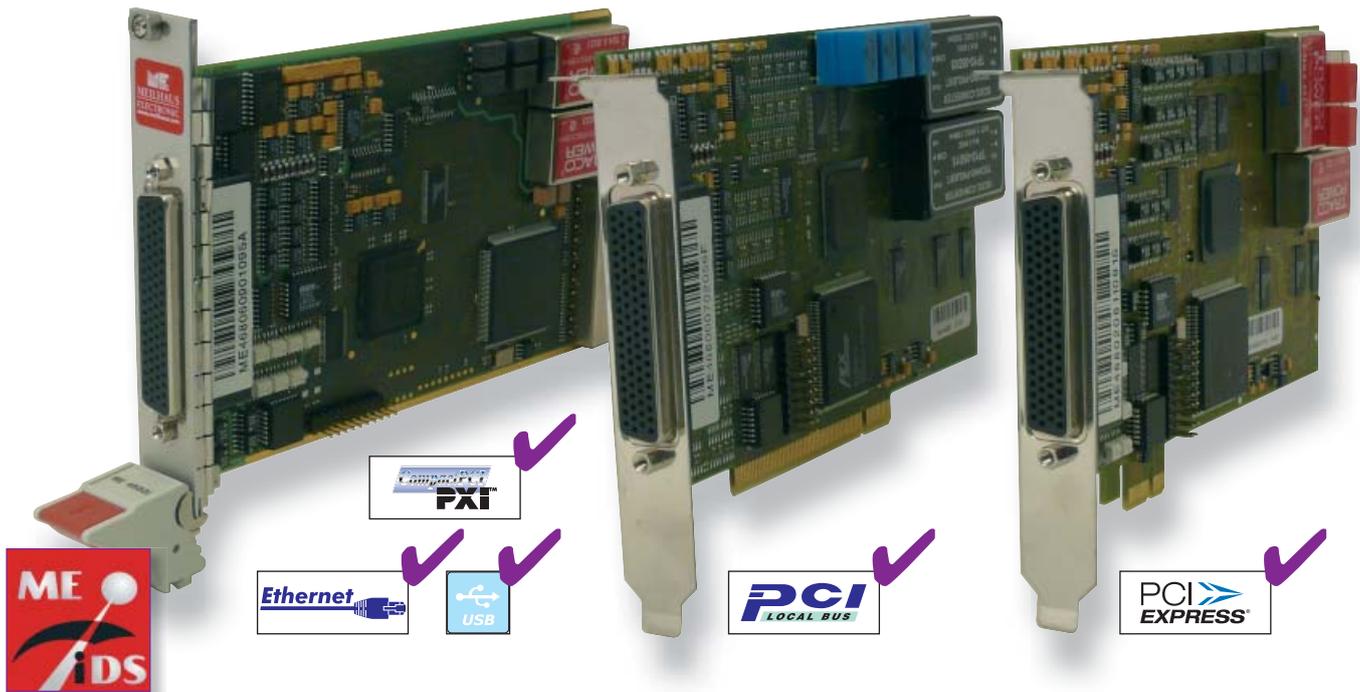
Analog inputs	32 single-ended or 16 differential. Versions "s": 8 of the channels also as single-ended channels with simultaneous sampling/sample&hold. The other channels are standard single-ended channels
Ranges	±10 V, ±2.5 V, 0...10 V, 0...2.5 V
A/D conversion	16 bit/max. 500 kHz (reduced for PCI-Express to max. 250 kHz, and with ME-Synapse USB to max. 25 kHz)
Trigger	Software, external digital, external analog
Analog outputs	4 voltage outputs
Range	±10 V; output current max. 5 mA per channel
D/A conversion	16 bit/rate depending on system; settling time full scale -10 V to +10 V max. 2 µs
Trigger	Software, external digital
FIFO	4096 values per channel D/A FIFO for streaming output
Digital-I/O	32 TTL. Versions "i": 16 TTL, 8 opto-inputs, 8 opto-outputs. Opto-channels max. 42 V depending on external supply, max. 30 mA. The digital channels are grouped in 8-bit-wide ports. For the TTL ports: Each port programmable as input or output
Special function	Timer controlled bitpattern generator
Interrupt counter	1 input, TTL, versions "i": Opto-isolated 3 TTL. Versions "i": 3 opto-isolated.
Isolation	16 bit, compatible with 8254. External clock up to 10 MHz Versions "i": Up to 500 V. A/D, D/A section (incl. triggers) and digital-I/O section isolated with common GND from PC GNC and rest of the board
Bus interface	PCI-Express or PCI or 3 U CompactPCI (compatible with PXI)
Size (mm)	PCI-Express: 111 x 168; PCI: 175 x 107; CompactPCI/PXI: 160 x 100
Connectors	78-pin D-sub female, 20-pin pinfield on board (incl. ribbon cable with 25-pin D-sub female and slot bracket; occupies an additional PC slot)
Software	Included: Driver system ME-iDS. ME-PowerLab ³ for Windows. User manual (PDF - English and German)
Included	Board, CD with software and PDF user manual, D-sub mating plug, ME AK-D25F/S



More information and accessories:
www.meilhaus.com/go/enme-4000

Multifunctional DAQ board, all-round model

ME-SlyFoXX ME-4670



- ❑ **Universal multifunctional DAQ board, versatile all-round model.**
- ❑ **High precision 16 bit A/D conversion with up to max. 500 kHz.**
- ❑ **Many extras, for example: Differential channels, external analog trigger.**
- ❑ **Models "i" with galvanic isolation up to 500 V.**
- ❑ **Remote adaption to ethernet/LAN, USB, PCI-Express x1 over cable.**

The ME-SlyFoXX is the all-round model from the ME-FoXX series. For many industrial applications it offers the best price/performance ratio. It has selectable single-ended or differential analog inputs and an external analog trigger.

Specifications

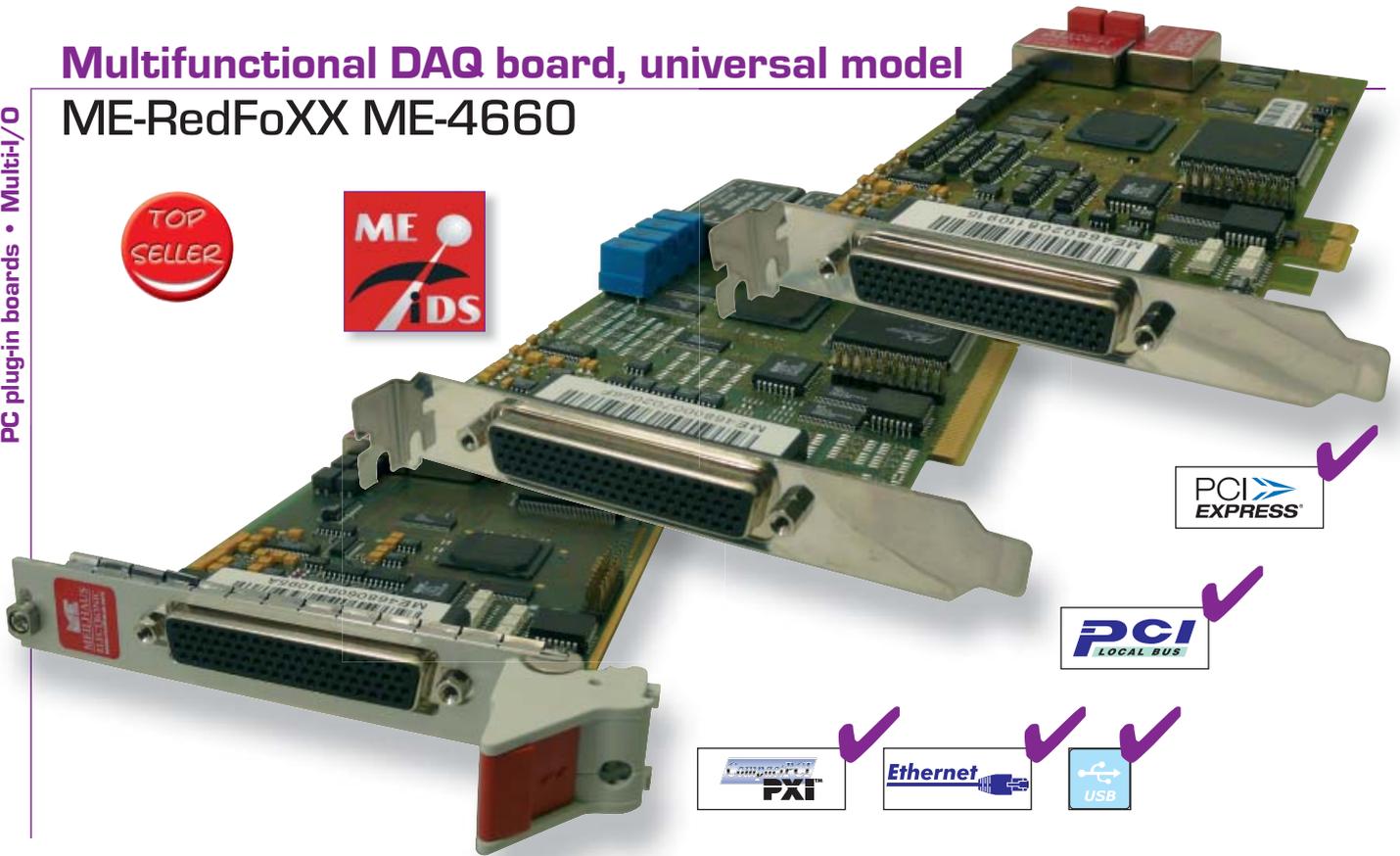
Analog inputs	32 single-ended or 16 differential
Ranges	±10 V, ±2.5 V, 0...10 V, 0...2.5 V
A/D conversion	16 bit/ max. 500 kHz (reduced for PCI-Express to max. 250 kHz, and with ME-Synapse USB to max. 25 kHz)
Trigger	Software, external digital, external analog
Analog outputs	4 voltage outputs
Range	±10 V; output current max. 5 mA per channel
D/A conversion	16 bit/ rate depending on system; settling time full scale -10 V to +10 V max. 2 µs
Trigger	Software, external digital
Digital-I/O	32 TTL. Versions "i": 16 TTL, 8 opto-inputs, 8 opto-outputs. Opto-channels max. 42 V depending on external supply, max. 30 mA. The digital channels are grouped in 8-bit-wide ports. For the TTL ports: Each port programmable as input or output
Interrupt	1 input, TTL, Versions "i": Opto-isolated
Counter	3 TTL. Versions "i": 3 opto-isolated. 16 bit, compatible with 8254. External clock up to 10 MHz
Isolation	Versions "i": Up to 500 V. A/D, D/A section (incl. triggers) and digital-I/O section isolated with common GND from PC GNC and rest of the board
Bus interface	PCI-Express or PCI or 3 U CompactPCI (compatible with PXI)
Size (mm)	PCI-Express: 111 x 168; PCI: 175 x 107; CompactPCI/PXI: 160 x 100
Connectors	78-pin D-sub female, 20-pin pinfield on board (incl. ribbon cable with 25-pin D-sub female and slot bracket; occupies an additional PC slot)
Software	Included: Driver system ME-iDS. ME-PowerLab ³ for Windows. User manual (PDF - English and German)
Included	Board, CD with software and PDF user manual, D-sub mating plug, ME AK-D25F/S



More information and accessories:
www.meilhaus.com/go/enme-4000

Multifunctional DAQ board, universal model

ME-RedFoXX ME-4660



- ❑ Multifunctional DAQ board, economy universal model.
- ❑ High precision 16 bit A/D conversion up to max. 500 kHz.
- ❑ Models with simultaneous channels.
- ❑ Models "i" with galvanic isolation up to 500 V.
- ❑ Remote adaption to ethernet/LAN, USB, PCI-Express x1 over cable.

Even the "smallest" model from the ME-FoXX family is multifunctional and can be used in many professional industrial applications. With its full compatibility with the other models of the series, an upgrade is possible at any time. And it is expandable with external multiplexers and signal conditioning!

Specifications

Analog inputs	16 single-ended. Versions "s": 8 of the channels also as single-ended channels with simultaneous sampling/sample&hold. The other channels are standard single-ended channels
Ranges	±10 V, ±2.5 V, 0...10 V, 0...2.5 V
A/D conversion	16 bit/max. 500 kHz (reduced for PCI-Express to max. 250 kHz, and with ME-Synapse USB to max. 25 kHz)
Trigger	Software, external digital
Analog outputs	2 voltage outputs
Range	±10 V; output current max. 5 mA pre channel
D/A conversion	16 bit/rate depending on system; settling time full scale -10 V to +10 V max. 2 µs
Trigger	Software, external digital
DigitalI/O	32 TTL. Versions "i": 16 TTL, 8 opto-inputs, 8 opto-outputs. Opto-channels max. 42 V depending on external supply, max. 30 mA. The digital channels are grouped in 8-bit-wide ports. For the TTL ports: Each port programmable as input or output
Interrupt	1 input, TTL, versions "i": Opto-isolated
Counter	3 TTL. Versions "i": 3 opto-isolated. 16 bit, compatible with 8254. External clock up to 10 MHz
Isolation	Versions "i": Up to 500 V. A/D, D/A section (incl. triggers) and digitalI/O section isolated with common GND from PC GNC and rest of the board
Bus interface	PCI-Express or PCI or 3 U CompactPCI (compatible with PXI)
Size (mm)	PCI-Express: 111 x 168; PCI: 175 x 107; CompactPCI/PXI: 160 x 100
Connectors	78-pin D-sub female, 20-pin pinfield on board (incl. ribbon cable with 25-pin D-sub female and slot bracket; occupies an additional PC slot)
Software	Included: Driver system ME-iDS. ME-PowerLab ³ for Windows. User manual (PDF - English and German)
Included	Board, CD with software and PDF user manual, D-sub mating plug, ME AK-D25F/S



More information and accessories:
www.meilhaus.com/go/enme-4000

Multifunctional DAQ board, economy model

ME-Jekyll ME-4610



- ❑ **DAQ board, economy model for PCI.**
- ❑ **High precision 16 bit A/D conversion up to max. 500 kHz.**
- ❑ **Additional digital-I/O ports, expandable with relays or opto-isolation.**
- ❑ **Expandable up to 256 and more analog inputs with ME-MUX32.**
- ❑ **Compatible with ME-46x0 series.**

This economy model offers you all the functions a professional DAQ board requires. In case it gets too "small" for your application one day, just replace the board with a model from the ME-FoXX ME-46x0 family. Advantages: Full compatibility of connectivity, software and functionality. Just add the new functions, or expand the board up to 256 analog inputs, using a ME-MUX32 analog multiplexer!

Specifications

Analog inputs	16 single-ended
Range	±10 V
A/D conversion	16 bit/ max. 500 kHz
Trigger	Software, external digital
Digital-I/O	32 TTL (4x 8 bit ports), each port programmable as input or output
Interrupt	1 input, TTL
Counter	3, 16 bit, compatible with 8254, TTL. External clock up to 10 MHz
Bus interface	PCI
Size (mm)	136 x 107
Connectors	78-pin D-sub female, 20-pin pinfield on board (incl. ribbon cable with 25-pin D-sub female and slot bracket; occupies an additional PC slot)
Software	Included: Driver system ME-iDS. ME-PowerLab ³ for Windows. User manual (PDF - English and German)
Included	Board, CD with software and PDF user manual, D-sub mating plug, ME AK-D25F/S



Upward compatibility:
 ME-4610 ⇒ ME-4660 ⇒ ME-4670 ⇒ ME-4680

- Same connector pin assignment.
- Same driver software.
- Same plus even more functions.



More information and accessories:
www.meilhaus.com/go/enme-jekyll