

Product Datasheet - Technical Specifications



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Your contact

**Technical and commercial sales, price information,
quotations, demo/test equipment, consulting:**

Tel.: **+49 - 81 41 - 52 71-0**

FAX: **+49 - 81 41 - 52 71-129**

E-Mail: sales@meilhaus.com

Downloads:

www.meilhaus.com/en/infos/download.htm

Meilhaus Electronic GmbH
Am Sonnenlicht 2
82239 Alling/Germany

Tel. **+49 - 81 41 - 52 71-0**
Fax **+49 - 81 41 - 52 71-129**
E-Mail sales@meilhaus.com

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ME-630 Relay and Digital-I/O DAQ Board/Control Board

- PC board for isolated, digital data acquisition and control as well as switching with relays.
- 16 or 8 relays type C (change-over). For signals up to 2 A/30 V, short time/single relay up to 3.5 A.
- 8 TTL digital inputs, opto-isolated on versions „-O“.
- 16 TTL digital I/O channels, expandable with relays or opto-isolation.
- 8 opto-isolated inputs (24 V level).
- The 16 opto-isolated inputs of the models „-O“ are the ideal solution for status checks of the relay channels.
- 2 additional interrupt inputs. (TTL or opto-isolated on versions „-O“).
- PC DAQ board for PCI, PCI-Express or 3 U CompactPCI/PXI.

Model	Relays	Digital-I/O	Opto-I/O	IRQ In	Bus platform
ME-630/8 PCIe	8	16 TTL-I/O, 8 TTL inputs	8 inputs (24 V)	2 (TTL)	PCI-Express
ME-630/8 PCI	8	16 TTL-I/O, 8 TTL inputs	8 inputs (24 V)	2 (TTL)	StandardPCI
ME-630/8 cPCI	8	16 TTL-I/O, 8 TTL inputs	8 inputs (24 V)	2 (TTL)	3 HE CompactPCI
ME-630/16 PCIe	16	16 TTL-I/O, 8 TTL inputs	8 inputs (24 V)	2 (TTL)	PCI-Express
ME-630/16-O PCIe	16	16 TTL-I/O	16 inputs (24 V)	2 (TTL)	PCI-Express
ME-630/16 PCI	16	16 TTL-I/O, 8 TTL inputs	8 inputs (24 V)	2 (TTL)	StandardPCI
ME-630/16 cPCI	16	16 TTL-I/O, 8 TTL inputs	8 inputs (24 V)	2 (TTL)	3 HE CompactPCI

Specification

PC Interface

Bus system	PCI-Bus (32 bit, 33 MHz)
(depends on model)	CompactPCI bus (32 bit, 33 MHz) PCI-Express x1, Specification Rev. 2.0
Plug&Play operation	fully supported

Relays

Number	8 resp. 16 form C relays
Relay type	NAIS APE3005 or compatible compliant with EN 60255, EN 60335, EN 60730, EN 60950, EN 60065, EN 50178
Permanent load	DC: max. 30 VDC/2 A; AC: max. 30 VAC/2 A
Peak load	short time up to 30 V/3.5 A (see also chapter "3.3 Relays")
Resistance per relay channel type	typ. 200 mΩ; max. 250 mΩ
Isolation resistance	min. 103 MΩ at 500 VDC
Breakdown voltage	contact to contact: 1.000 V contact to coil: 4.000 V
Operating time	ca. 5 ms (depends on contact rating)
Release time	ca. 3 ms (depends on contact rating)
Switching cycles	> 5 x 10 ⁶
Monitoring	Relay registers can be read back by software.

Digital Inputs (TTL)

Number	8 (only ME-630 „Standard“)
Input level (TTL)	low: 0 V... + 0.8 V ($I_{IL\ max.} = \pm 10\ \mu A$)
	high: + 2.0 V... + 5.5 V ($I_{IH\ max.} = \pm 10\ \mu A$)
Reference to ground	PC ground (PC_GND)

Digital Inputs (opto-isolated)

Number	ME-630 "Standard": 8 ME-630 "-O": 16
Input level	low: 0 V... + 12 V high: + 13 V... + 24 V
Input current	typ. 7.5 mA at 24 V
Isolation voltage	500 VDC
Signal frequency	max. 1 kHz
Reference to ground	ground of the appropriate channel group (GND...)

Bidirectional Digital I/Os(TTL)

Ports	2 x 8 bit
Reference to ground	PC ground (PC_GND)
Port type	bidirectional TTL ports
Output level	
UOL	max. 0.5 V at 24 mA
UOH	min. 2.4 V at -24 mA
Input level	
UIL	max. 0.8 V at Vcc = 5 V
UIH	min. 2 V at Vcc = 5 V
Input current	$\pm 1 \mu\text{A}$

Interrupt Channels (PCI-/PCIe-/cPCI-models)

Number	2
Input level	ME-630/x „Standard“: see TTL inputs ME-630/x-O: see opto-isolated inputs
Reference to ground	ME-630/x „Standard“: PC_GND ME-630/x-O: GND_IRQ

General Information (PCI/PCIe/cPCI models)

Power consumption at +5 V	typ. 850 mA (16 relays)
Physical size (without mounting bracket and connector)	
	ME-630 PCI: 174 mm x 98 mm

	ME-630 PCIe: 167.65 mm x 111.15 mm ME-630 cPCI: 3U CompactPCI board
Connectors	78-pin D-Sub female connector ST1; 25-pin D-Sub female connector ST2 (by extra mounting bracket)

Common Specifications

Operating temperature	0...70 °C
Storage temperature	-40... 100 °C
Relative humidity	20...55 % (non-condensing)

Certification	CE
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Pinout

NC_x	break contact relay (normally closed)
NO_x	make contact relay (normally open)
COM_x	common relay contact (COMmon)
DI_Ax	digital input port A (ME-630 „Standard“: TTL, ME-630 „-O“: opto-isolated)
DI_Bx	digital input port B (opto-isolated)
DIO_Cx	bidirectional TTL port C
DIO_Dx	bidirectional TTL port D
IRQ_1	interrupt channel 1 (TTL resp. opto-isolated)
IRQ_2	interrupt channel 2 (TTL resp. opto-isolated)
GND_A0_3	ME-630 „-O“: reference to ground for opto-isolated inputs DI_A0...3
GND_A4_7	ME-630 „-O“: reference to ground for opto-isolated inputs DI_A4...7
GND_B0_3	ME-630 „-O“: reference to ground for opto-isolated inputs DI_B0...3
GND_B4_7	ME-630 „-O“: reference to ground for opto-isolated inputs DI_B4...7
GND_B0_7	ME-630 „Standard“: reference to ground for opto-isolated inputs DI_B0...7
GND_IRQ	ME-630 „-O“: reference to ground for opto-isolated interrupt inputs IRQ_x
PC_GND	PC ground
VCC_OUT	VCC output (PCI, cPCI: +5 V, PCI-Express: +3.3 V) max. 200 mA load
n.c.	pin not connected

78-pin D-Sub (ST1) – ME-630 “Standard” PCI, cPCI

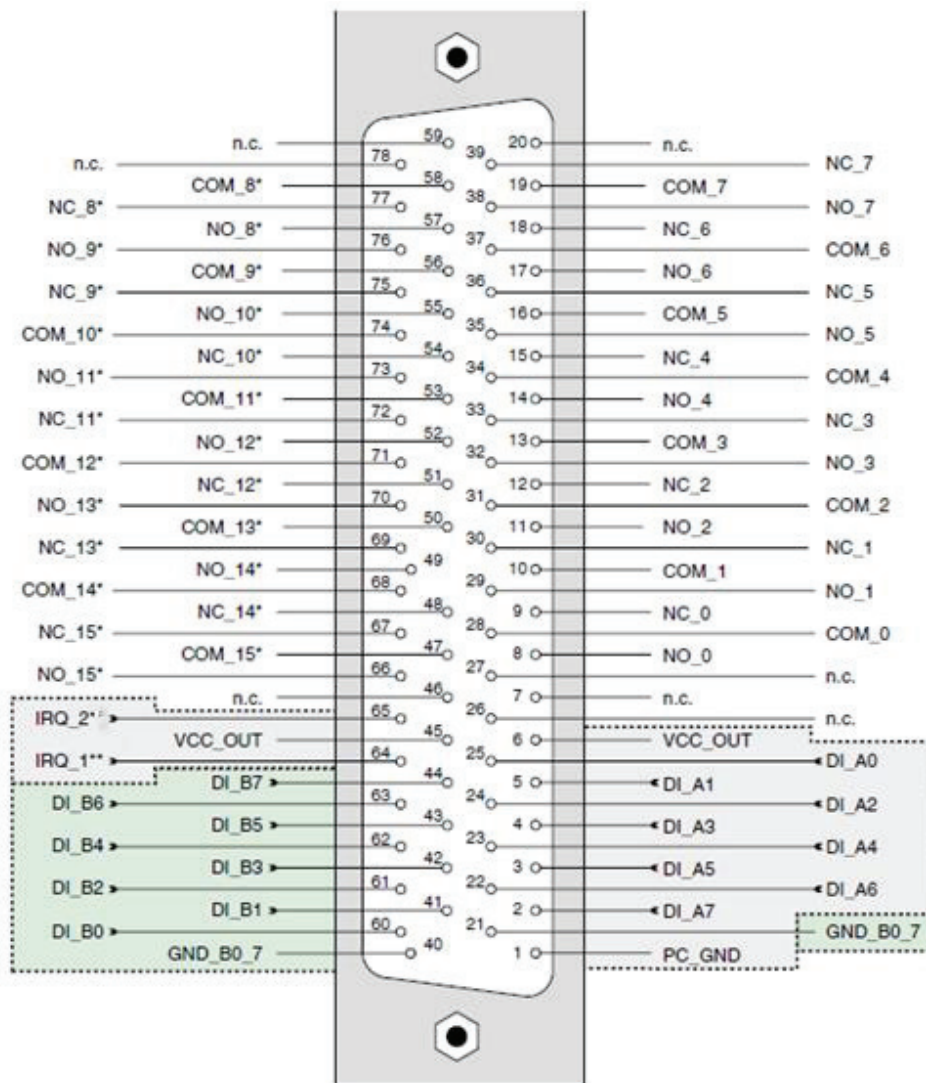


Diagram 13: Pinout of the 78-pin D-Sub female connector

*The pins of the relays 8... 15 are not connected on the ME-630/8.

Signals shaded with the same color use a common reference to ground.

78-pin D-Sub (ST1) – ME-630 “Standard” PCIe

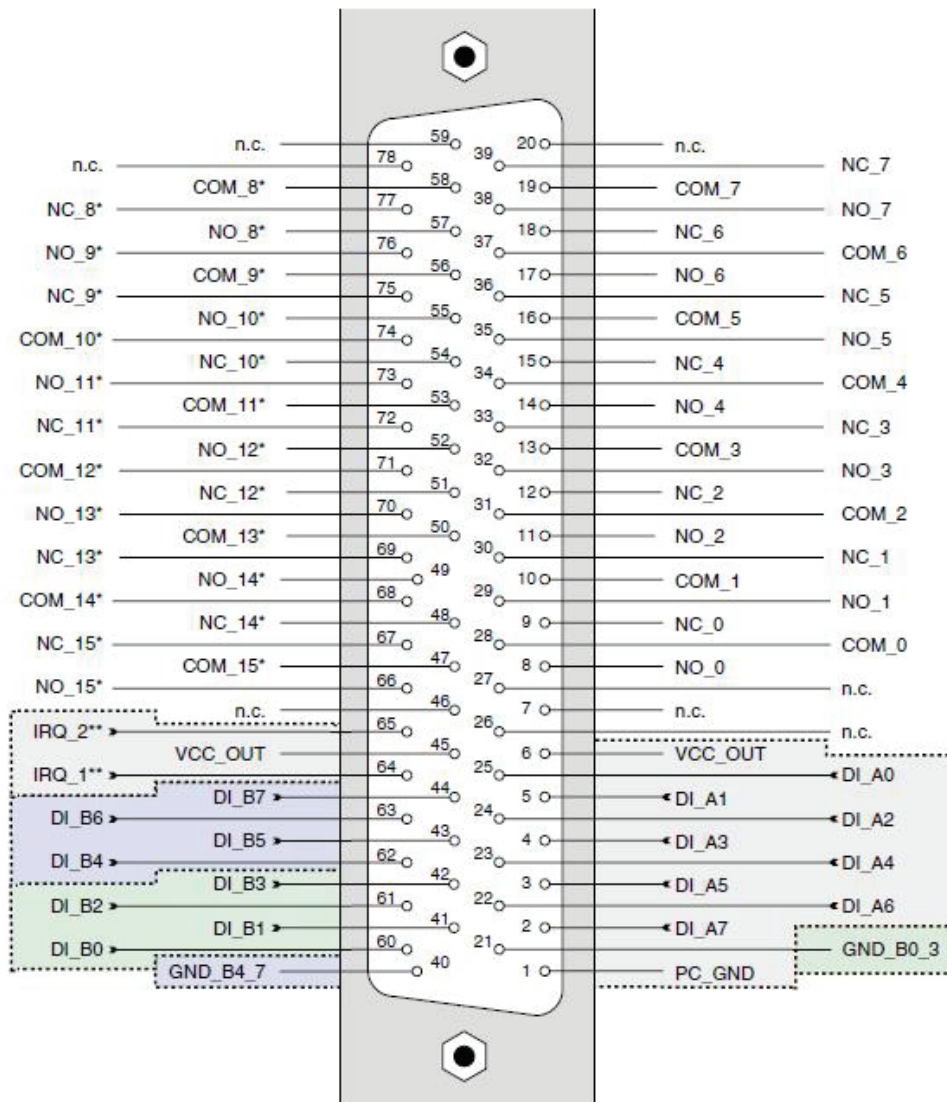


Diagram 14: Pinout of the 78-pin D-Sub female connector

*The pins of the relays 8... 15 are not connected on the ME-630/8.

Signals shaded with the same color use a common reference to ground.

78-pin D-Sub (ST1) – ME-630/x-0

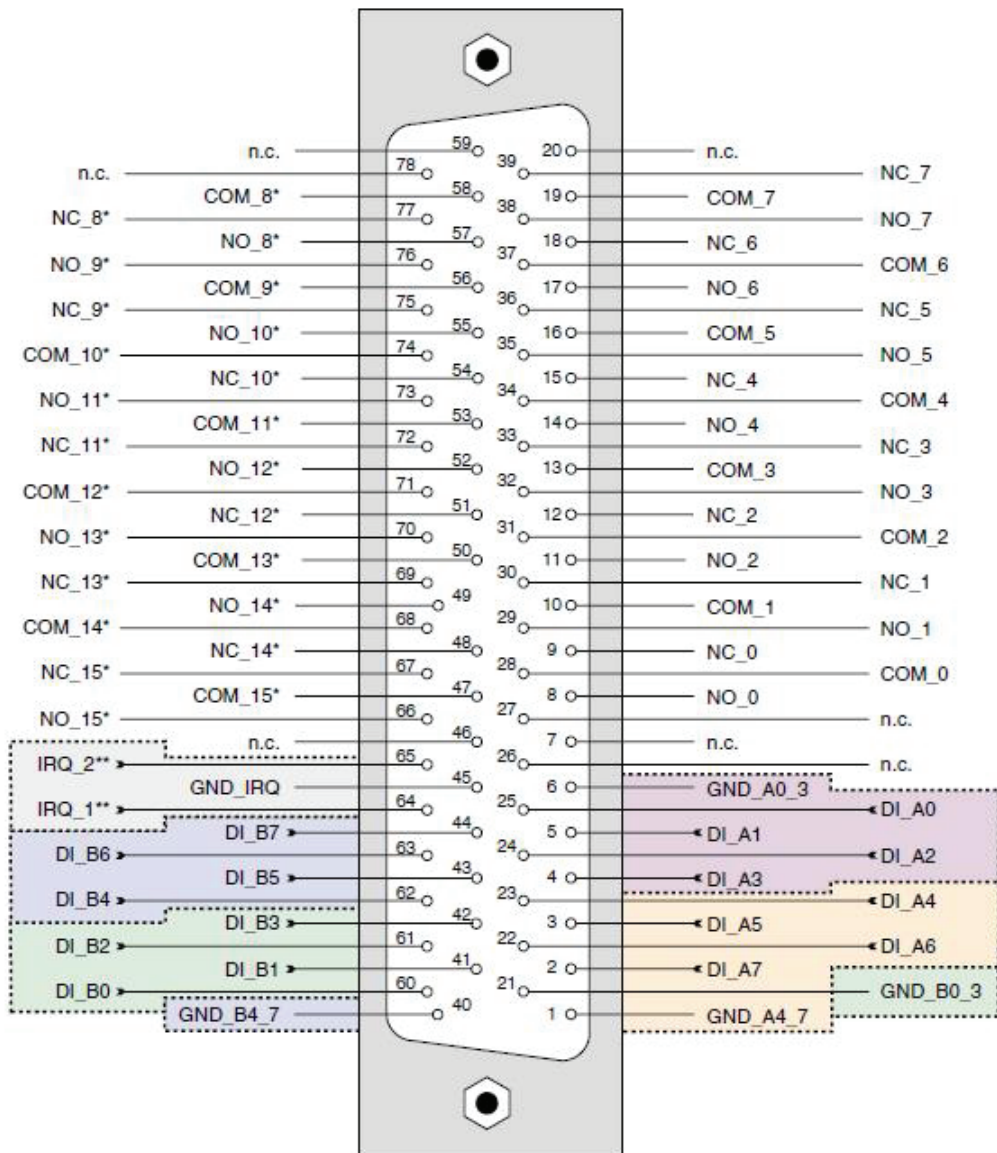


Diagram 15: Pinout of the 78-pin D-Sub female connector

*The pins of the relays 8... 15 are not connected on the ME-630/8.

Signals shaded with the same color use a common reference to ground.