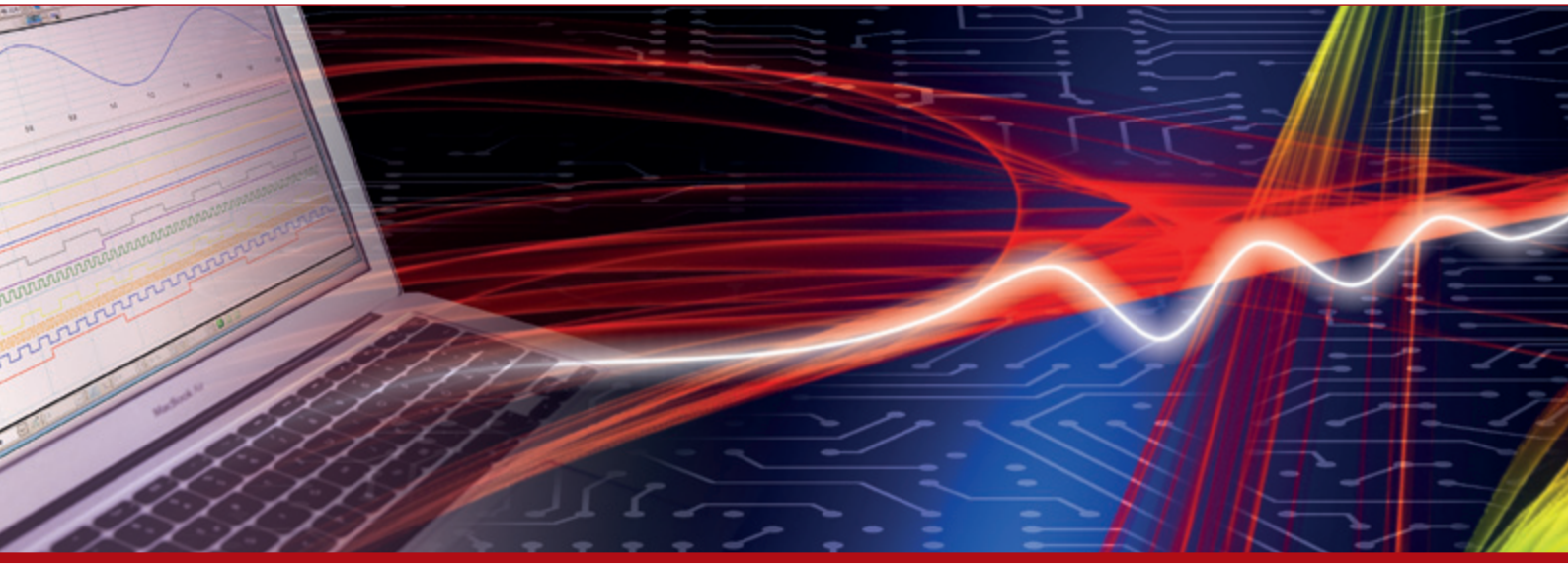
Product Datasheet - Technical Specifications



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ME-63Xtend, 16 Relays

- 16 channels per module.
- 16 Relays.
- With DIN rail mountable card carrier.
- Matching, reliable expansion, low price and very compact.
- Spring terminals for the I/O lines, easy to open.
- 1 status LED per channel.
- No changes in software required.

Model	I/O	For digital boards
ME-631 EXT	16 Relays	ME-8200 und MEphisto Opto, ME-6x00, ME-FoXX/ME-46x0, ME-Jekyll/ME-4610, ME-1400/ ME-5314 and MEphisto Digi, ME-1000/ME-5310, ME-630 and MEphisto Switch
ME-632 EXT	16 opto inputs	ME-8200 und MEphisto Opto, ME-6x00, ME-FoXX/ME-46x0, ME-Jekyll/ME-4610, ME-1400/ ME-5314 and MEphisto Digi, ME-1000/ME-5310, ME-630 and MEphisto Switch
ME-633 EXT	16 opto inputs	ME-8200 und MEphisto Opto, ME-6x00, ME-FoXX/ME-46x0, ME-Jekyll/ME-4610, ME-1400/ ME-5314 and MEphisto Digi, ME-1000/ME-5310, ME-630 and MEphisto Switch
ME-634 EXT	8 opto inputs, 8 opto outputs	ME-8200 und MEphisto Opto, ME-6x00, ME-FoXX/ME-46x0, ME-Jekyll/ME-4610, ME-1400/ ME-5314 and MEphisto Digi, ME-630 and MEphisto Switch
ME-635 EXT	16 solid state relays	ME-8200 und MEphisto Opto, ME-6x00, ME-FoXX/ME-46x0, ME-Jekyll/ME-4610, ME-1400/ ME-5314 and MEphisto Digi, ME-1000/ME-5310, ME-630 and MEphisto Switch

A Specification

A1 Pinouts ST1

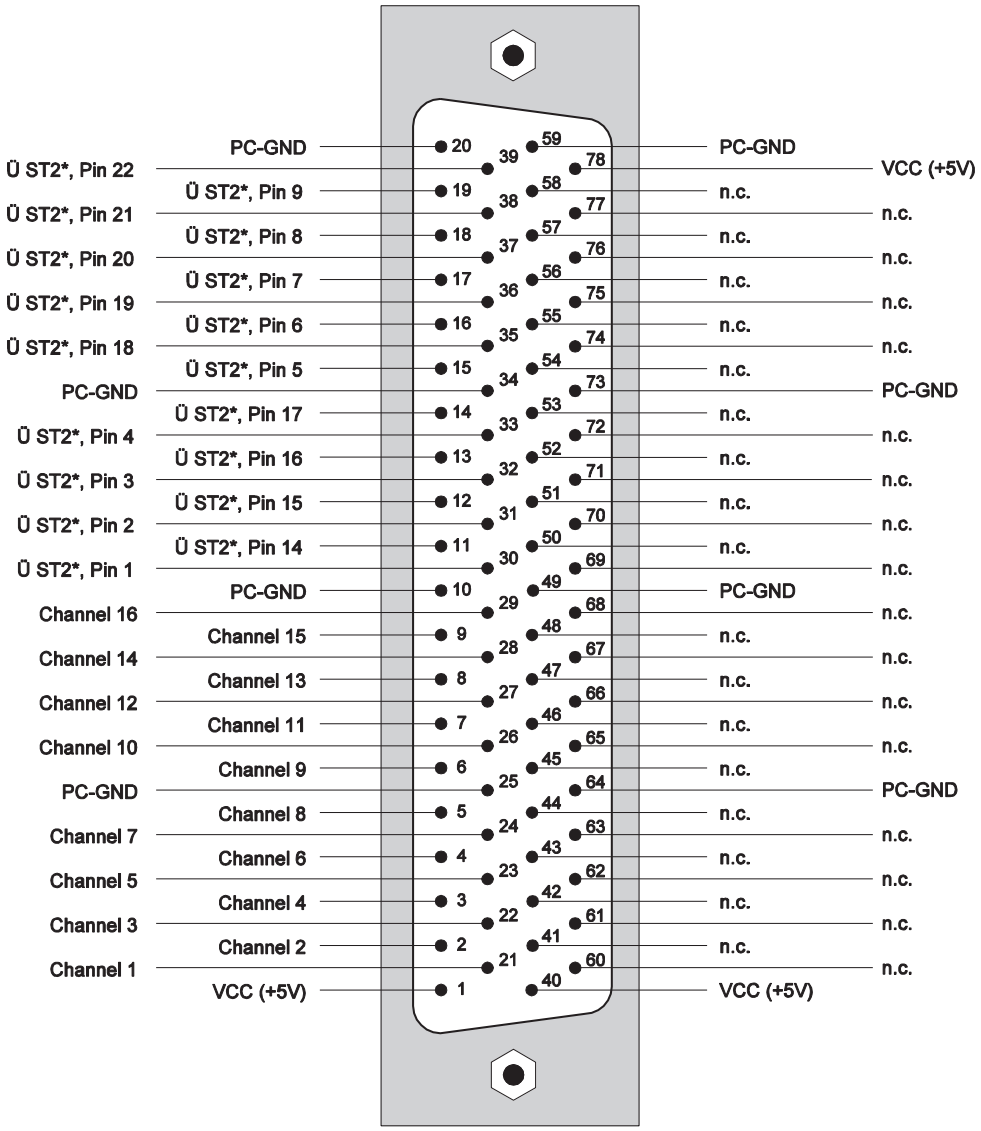


Diagram 20: Pinout 78-pin D-Sub connector ST!

A2 Pinout ST2

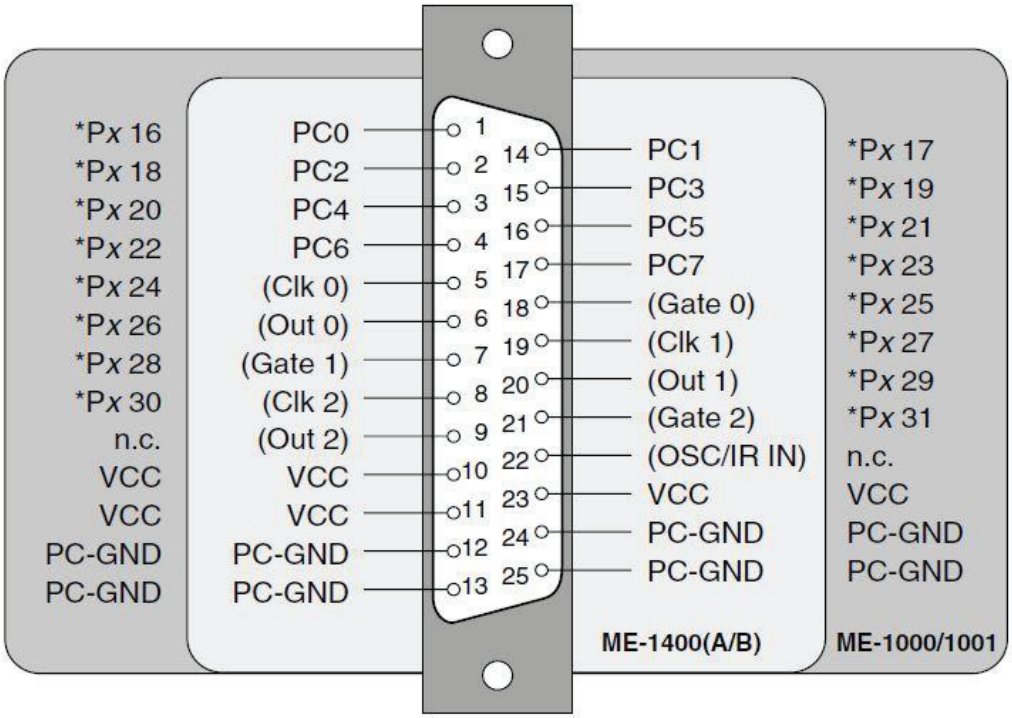


Diagram 21: Pinout of the 25-pin D-Sub connector ST2

Note for boards of ME-630, ME-4600, ME-6000 and ME-8200 series: To the 25-pin D-Sub connector (ST2) of the ME-63Xtend series no further signals are attached with exception of VCC and ground (see also Diagram 19).

***„Daisy-Chain“-operation with the ME-1000/ME-5310:**

If you connect a second board of the ME-63Xtend series to the 25-pin D-Sub connector ST2 using the special connection cable ME AK-D2578/1000 the digital I/Os Px16…31 of each port (A, B, C, D) are attached (see also chapter 2.6 "Connection Options" on page 28).

Condition is using the special connection cable ME AK-D78/1000 to connect boards of the ME-63Xtend series to the ME-1000/ME-5310/64 (up to 64 channels) resp. ME-1000/ME-5310/128 (up to 128 channels).

Note: ME-1000/ME-5310/64 + ME-1001 = ME-1000/ME-5310/128.

B Specification

B1 ME-63Xtend Series (all models)

General Specifications

Physical size)	160 mm x 100 mm
Mounting	DIN-rail mounting kit included
Connectors	78-pin D-Sub female connector (to I/O-board)
	25-pin D-Sub female connector (for feed-through signals)
	detachable clamping blocks for inputs and outputs
Operating temperature	0…70 ºC
Storage temperature	0…50 ºC
Relative humidity	20…55 % (non-condensing)
Certification	CE

B2 ME-631

Number of relays	16 form C relays
Relay type	Nais APE3014H

Note: The index “out” refers to the clamps KL1…6, the index “in” refers to the 78-pin D-Sub female connector.

Maximum Ratings

Conditions: TA = 25 ºC

Measurement Values	**Test Conditions**	**MIN**	**MAX**	**Unit**
Operating voltage U_b	non-destructive	-0.5	+8	V
Input voltage U_{in}	non-destructive	-0.5	30	V
Switching voltage U_{out}	non-destructive		400	V_{AC}
Switching voltage U_{out}	non-destructive		300	V_{DC}
Permanent current $I_{out,max}$	non-destructive		6	A
Switching power	non-destructive, cosφ=1		1500	VA
Isolation voltage			4000	$V_{AC,rms}$

coil/contact U_{ISO}				
Isolation voltage contact/contact U_{Off}			1000	$V_{AC,rms}$

Recommended Operating Conditions
Conditions: U_b=5 V±10 %; T_A =25 ºC

Measurement Values	Test Conditions	MIN	Type	MAX	Unit
U_b			5		V
U_{out}	$I_{out} = I_{out, max}$	12[1)]		250	V
U_{out}	$I_{out} = I_{out, max}$	12[1)]		30	V_{DC}
I_{out}	time unlimited, all channels	0.1[1)]		6	A

[1)] on small load the lifetime of contacts is decreasing.

Static Values
Conditions: U_b=5 V±10 %; T_A = 25 ºC

Measurement Values	Test Conditions	MIN	Type	MAX	Unit
$U_{in,H}$		3.5		U_b 0.6	V
$U_{in,L}$				1.5	V
$I_{in,H}$	$U_{in,H}$ = 3.85 V		0.93	1.35	mA

Dynamic Values
Conditions: U_b=5 V±10 %; T_A = 25 ºC

Measurement Values	Test Conditions	MIN	Type	MAX	Unit
f_{in}	without load			20	Hz
$t_{pd,on}$			5	8	ms
$t_{pd,off}$			2.5	4	ms
Contact life time	I_{out}=6 A U_{out}=250 VAC cosφ=1	$3x10^4$		$5x10^6$	

B3 ME-632

Inputs	16 digital inputs
Opto-isolation	up to 2500 VDC

Note: The index „in“ refers to the clamps KL1…4; the index „out“ refers to the 78-pin D-Sub female connector.

Maximum Ratings
Conditions: T_A = 25 ºC

Measurement Values	Test Conditions	MIN	Type	MAX
U_b	non-destructive	-0,5	+7	V
U_{in}	non-destructive	-5	70	V
$I_{out,}$	non-destructive 1 channel	-60	+150	mA
U_{ISO}	f=60 Hz, t=1 min		2500	$V_{AC,rms}$

Recommended Operating Conditions
Conditions: U_b=5 V±10 %; T_A = 25 ºC

Measurement Values	Test Conditions	MIN	Type	MAX	Unit
U_{in}		0		60	V
I_{out}	t=1 s, 1 channel	±60	±115	±200	mA

Static Values
Conditions: U_b=5 V±10 %; T_A = 25 ºC

Measurement Values	Test Conditions	MIN	Type	MAX	Unit
$U_{in,H}$		2.30		60	V
$U_{in,L}$		0		2.20	V
U_{outH}	I_{out}=-24 mA U_b=4,5 V	2.4	3.3		V
$U_{out,L}$	I_{out}=24 mA U_b=4,5 V		0.3	0.55	V
R_{in}	U_{in}=24 V		4.3		kΩ
I_{in}	U_{in}=60 V		6.5	10	mA

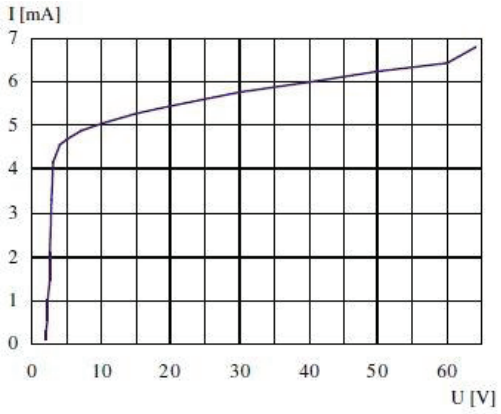
Dynamic Values
Conditions: U_b=5 V±10 %; T_A = 25 ºC

Measurement Values	Test Conditions	MIN	Type	MAX	Unit
f_{in}	output switching, duty cycle 12 %, U_{in}=10 V		23		kHz

f_{in}	output switching, duty cycle 50 %, U_{in}=10 V		10.5		kHz
f_{in}	output switching, duty cycle 50 %, U_{in}=2,35 V		62		kHz
$t_{pd,HL}$	f_{in}=1 kHz, U_{in}=10 V		36		µs
$t_{pd,LH}$	f_{in}=1 kHz, U_{in}=10 V		1.9		µs

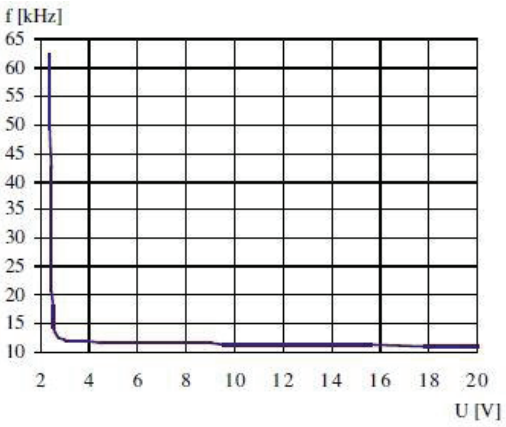
Input current related to input voltage

TA=25 ºC, Ub=5,0 V, f=0 Hz



Maximum input frequency related to input voltage

TA=25 ºC, Ub=5,0 V,
output switching



B4 ME-633

Outputs	16 digital outputs
Opto-isolation	up to 2500 VDC

Note: The index “out” refers to the clamps KL1…4; the index “in” refers to the 78-pin D-Sub female connector.

Maximum Ratings
Conditions: T_A = 25 ºC

Measurement Values	Test Conditions	MIN	Type	MAX
Operating voltage U_b	non-destructive	-0.5	+7	V
Input voltage U_{in}	non-destructive	-5	U_b + 0.5	V
U_{out}	non-destructive	-0.8	70	V
$I_{out,}$	non-destructive t = 10 s	-200	1000	mA
U_{ISO}	f=60 Hz, t=1 min		2500	$V_{AC,rms}$

Recommended Operating Conditions
Conditions: U_b=5 V±10 %; T_A = 25 ºC

Measurement Values	Test Conditions	MIN	Type	MAX	Unit
U_{out}	$I_{out, on}$ > 100 µA	0.6		60	V
I_{out}	time limited, all channels	0		300	mA
$I_{out, peak}$	t=1min, 1 channel			400	mA

Static Values
Conditions: U_b=5 V±10 %; T_A = 25 ºC

Measurement Values	Test Conditions	MIN	Type	MAX	Unit
$U_{in,H}$		2			V
$U_{in,L}$				0.8	V
U_{outon}	I_{out}=100 mA		0.86		V
$U_{out,on}$	I_{out}= $I_{out, max}$	1.00	1.03	1.2	V

R_{on}		3	10	700	mΩ
R_{off}	$U_{out} = U_{out,max}$		600		MΩ

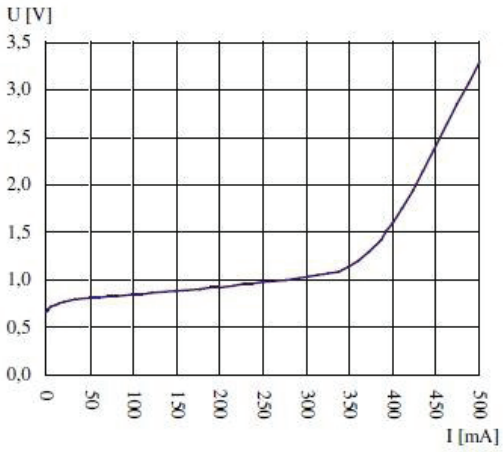
Dynamic Values

Conditions: U_b=5 V±10 %; T_A = 25 ºC

Measurement Values	Test Conditions	MIN	Type	MAX	Unit
f_{in}	U_{out}=90 % I_{out}=100 mA	5.0	5.5	5.7	kHz
$t_{pd,HL}$	U_{out}=100 mA f_{out}=1 kHz		90		µs
$t_{pd,LH}$	U_{out}=100 mA f_{out}=1 kHz		2.2		µs
$t_{tr,HL}$	U_{out}=100 mA f_{out}=1 kHz		1.4		µs
$t_{tr,LH}$	U_{out}=100 mA f_{out}=1 kHz		62		µs

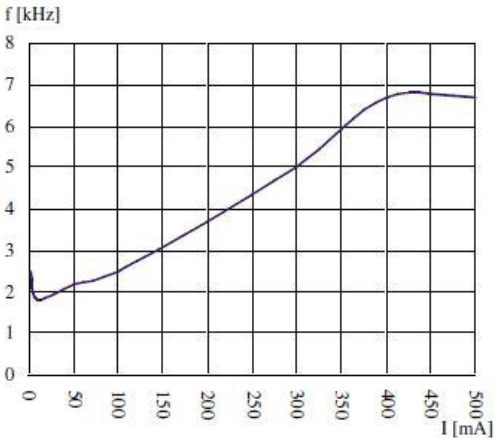
Forward voltage related to load current

T_A=25 ºC, U_b=5,0 V, f=0 Hz



Maximum input frequency related to load current

T_A=25°C, U_b=4,5 V, ΔU=1 %



B5 ME-634

Inputs	8 digital inputs
Outputs	8 digital outputs
Opto-isolation	up to 2500 VDC

- Specifications of the input channels see ME-632 on page 35.
- Specifications of the output channels see ME-633 on page 38.

B6 ME-635

Number of relays	16 solid-state relays

Note: The index “out” refers to the clamps KL1…4; the index “in” refers to the 78-pin D-Sub female connector.

Maximum Ratings
Conditions: T_A = 25 ºC

Measurement Values	**Test Conditions**	**MIN**	**Type**	**MAX**
Operating voltage U_b	non-destructive	-0.5	+8	V
Input voltage U_{in}	non-destructive	-0.5	30	V
Switching voltage U_{out}	non-destructive		280	$V_{AC,rms}$
Switching voltage $U_{out,max}$	transient		600	V_{pp}
Permanent current $I_{out,}$	non-destructive		6	A
Peak current $I_{out,}$	t = 15 ms		250	A
Isolation voltage input/output U_{ISO}	f= 50/60 Hz		4000	$V_{AC,rms}$

Recommended Operating Conditions

Conditions: U_b=5 V±10 %; T_A = 25 ºC

Measurement Values	Test Conditions	MIN	Type	MAX	Unit
Operating voltage U_b			5		
Output voltage U_{out}		12		280	$V_{AC,rms}$
Output current I_{out}	time unlimited, all channels (without forced ventilation)	60		4000	$mA_{AC,rms}$
Output current I_{out}	time unlimited, maximum each second channel in operation (without forced ventilation)	60		5000	$mA_{AC,rms}$

Static Values

Conditions: U_b=5 V±10 %; T_A = 25 ºC

Measurement Values	Test Conditions	MIN	Type	MAX	Unit
$U_{in,H}$		3.5		U_b+0.6	V
$U_{in,L}$				1.5	V
$I_{in,H}$	U_{in}=3.85 V		0.93	1.35	mA
Voltage drop at output	U_{out}= $U_{out, max}$			1.4	V_{AC}

Dynamic Values

Conditions: U_b=5 V±10 %; T_A = 25 ºC

Measurement Values	Test Conditions	MIN	Type	MAX	Unit
f_{in}				1	VAC cycle
$t_{pd,on}$				0.5	VAC cycle
$t_{pd,off}$				0.5	VAC cycle
cosφ	Maximum load	0.5		1	