

Product Datasheet - Technical Specifications



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ME-UB Terminal Boxes - Passive, with Opto-Isolation, with Relays

- 15- or 37-pin D-sub female connector, for connection to digital-I/O lines of DAQ-board/USB minilab.
- Spring terminals for the I/O lines, easy to open. Ideal for permanent wiring or flexible wiring during system development.
- Compact desktop boxes.

Boxes with additional Functions for Digital-I/O Channels

- 8 channels per module. Available with opto-inputs, opto-outputs or relays.
- Matching, reliable expansion, low price and very compact.
- 1 status LED per channel.
- No changes in software required.
- An external power supply (not included, see accessories) is always required for use with models ME-UBRE, ME-UBOI and ME-UBOO and USB DAQ boxes or DAQ boards!

Model			I/O	For digital boards/boxes
Terminal boxes				
ME-UB15	15-pin D-sub female	Terminal strip	-	Boards with 15-pin D-sub male, eg. ME-96, or (together with other ME-UB) at ME-630, ME-8200, ME-1400, ME-Jekyll/ME-4610, ME-FoXX/ME-46xx, ME-6x00, MEphisto Scope (UM20x), LabJack U12, RedLab-1008 and others
ME-UB37	37-pin D-sub female	Terminal strip	-	RedLab-1008 and others with 37-pin D-sub
Terminal boxes with additional functions				
ME-UBRE	15-pin D-sub female	Terminal strip	8 relays	ME-8200 and MEphisto Opto, ME-6x00, ME-FoXX/ME-46x0, ME-Jekyll/ME-4610, ME-1400 and MEphisto Digi, ME-630 and MEphisto Opto as well as USB modules: MEphisto Scope UM20x, RedLab 1008, LabJack U12
ME-UBOI	15-pin D-sub female	Terminal strip	8 opto inputs	ME-8200 and MEphisto Opto, ME-6x00, ME-FoXX/ME-46x0, ME-Jekyll/ME-4610, ME-1400 and MEphisto Digi, ME-630 and MEphisto Opto as well as USB modules: MEphisto Scope UM20x, RedLab 1008, LabJack U12
ME-UBOO	15-pin D-sub female	Terminal strip	8 opto outputs	ME-8200 and MEphisto Opto, ME-6x00, ME-FoXX/ME-46x0, ME-Jekyll/ME-4610, ME-1400 and MEphisto Digi, ME-630 and MEphisto Opto as well as USB modules: MEphisto Scope UM20x, RedLab 1008, LabJack U12

Specification

ME-UBRE

Maximum Ratings

Conditions: $T_A = 25\text{ °C}$

Measurement Values	Test Conditions	MIN	MAX	Unit
Operating voltage U_b	non-destructive	-0.5	+16	V
Input voltage U_{in}	non-destructive	-0.5	30	V
Switching voltage U_{out}	non-destructive		240	VAC
Switching voltage U_{out}	non-destructive		30	VDC
Permanent current I_{out}	non-destructive		5	A
Isolation voltage coil/contact U_{ISO}			4.000	$V_{ac,rms}$
Certification	CE			

Recommended Operating Conditions

Conditions: $U_b = 8...12\text{ V}$, $T_A = 25\text{ °C}$

Measurement Values	Test Conditions	MIN	MAX	Unit
U_{out}		12	240	VAC
I_{out}	time unlimited, all channels	100	5.000	mA
Stripping length	protected against contact (IP20)	5	6	mm

Static Values

Conditions: $U_b = 8...12\text{ V}$, $T_A = 25\text{ °C}$

Measurement Values	Test Conditions	MIN	Type	MAX	Unit
$U_{in,H}$		3.5		5	V
$U_{in,L}$				1.5	V
$I_{in,H}$	$U_{in} = 3.85\text{ V}$		0.93	1.35	mA

Dynamic Values

Conditions: $U_b = 8 \dots 12 \text{ V}$, $T_A = 25 \text{ °C}$

Measurement Values	Test Conditions	MIN	Type	MAX	Unit
f_{in}	without load			20	Hz
$\tau_{pd,on}$			5		ms
$\tau_{pd,off}$			2.5		ms
bounce time make contact			1.5		ms
bounce time break contact			5		ms
Contact life time	$I_{out} = 5 \text{ A}$, $U_{out} = 250 \text{ VAC}$, $\cos\varphi = 1$	1×10^5		1×10^7	
Contact life time	$I_{out} = 2 \text{ A}$, $U_{out} = 250 \text{ VAC}$, $\cos\varphi = 0,4$	2×10^5			
Contact life time	$I_{out} = 1 \text{ A}$, $U_{out} = 24 \text{ VDC}$	2×10^5			

ME-UBOI

Maximum Ratings

Conditions: $T_A = 25 \text{ °C}$

Measurement Values	Test Conditions	MIN	MAX	Unit
U_b	non-destructive	-0.5	+16	V
U_{in}	non-destructive	-5	70	V
I_{out}	non-destructive, 1 channel	-25	+25	mA
U_{ISO}	$f = 60 \text{ Hz}$, $t = 1 \text{ min}$		2.500	$V_{ac,rms}$

Recommended Operating Conditions

Conditions: $U_b = 7 \dots 14 \text{ V}$, $T_A = 25 \text{ °C}$

Measurement Values	Test Conditions	MIN	Type	MAX	Unit
$U_{in,max}$		0		60	V
$I_{out,max}$	$t = 1 \text{ s}$, 1 channel			± 10	mA
$I_{out,max}$	time unlimited, all channels		± 1	± 1.5	mA

Static Values

Conditions: $U_b = 7 \dots 14 \text{ V}$, $T_A = 25 \text{ }^\circ\text{C}$

Measurement Values	Test Conditions	MIN	Type	MAX	Unit
$U_{in,H}$		2.3		60	V
$U_{in,L}$				2.2	V
$I_{in,H}$	$U_{in} = 3.85 \text{ V}$		0.93	1.35	mA
$U_{out,H}$	$I_{out} = -1 \text{ mA}$	3.7	4.2	4.5	V
$U_{out,L}$	$I_{out} = 1 \text{ mA}$		0.3	0.5	V
R_{in}	$U_{in} = 24 \text{ V}$		4.3		k Ω
I_{in}	$U_{in} = 60 \text{ V}$		6.5	10	mA

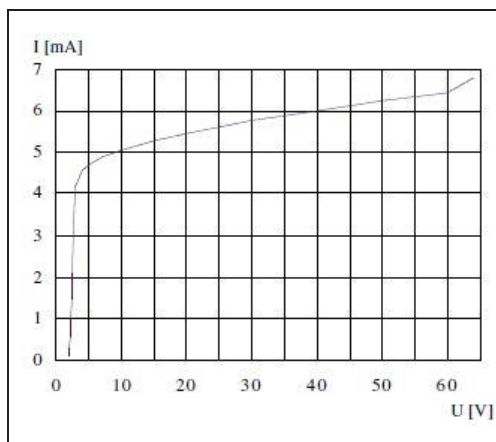
Dynamic Values

Conditions: $U_b = 7 \dots 14 \text{ V}$, $T_A = 25 \text{ }^\circ\text{C}$

Measurement Values	Test Conditions	MIN	Type	MAX	Unit
f_{in}	Output switching, duty cycle 12 %, $U_{in} = 10 \text{ V}$		20		kHz
f_{in}	Output switching, duty cycle 50 %, $U_{in} = 10 \text{ V}$		10		kHz
f_{in}	Output switching, duty cycle 50 %, $U_{in} = 2.35 \text{ V}$		60		kHz
$\tau_{pd,HL}$	$f_{in} = 1 \text{ kHz}$, $U_{in} = 10 \text{ V}$		36		μs
$\tau_{pd,LH}$	$f_{in} = 1 \text{ kHz}$, $U_{in} = 10 \text{ V}$		2		μs

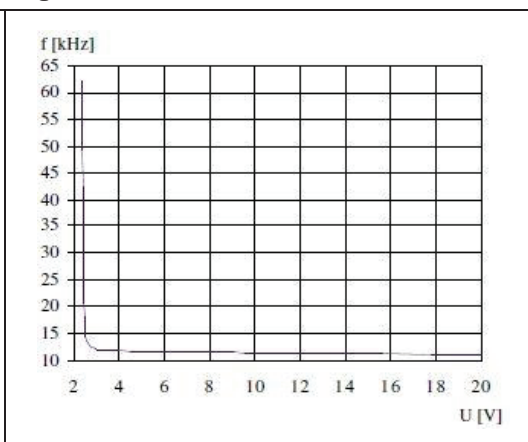
Input Current Related To Input Voltage

$T_A = 25 \text{ }^\circ\text{C}$, $U_b = 12 \text{ V}$, $f = 0 \text{ Hz}$



Maximum Input Frequency Related To Input Voltage

$T_A = 25 \text{ }^\circ\text{C}$, $U_b = 12 \text{ V}$, output switching



ME-U800

Maximum Ratings

Conditions: $T_A = 25\text{ °C}$

Measurement Values	Test Conditions	MIN	MAX	Unit
U_b	non-destructive	-0,5	+16	V
U_{in}	non-destructive	-0,5	30	V
U_{out}	non-destructive	-0,8	70	V
I_{out}	non-destructive	-200	1000	mA
U_{ISO}	f=60 Hz, t=1 min		2.500	$V_{ac,rms}$

Recommended Operating Conditions

Conditions: $U_b = 7...14\text{ V}$, $T_A = 25\text{ °C}$

Measurement Values	Test Conditions	MIN	Type	MAX	Unit
U_{out}	$I_{out,on} > 100\text{ }\mu\text{A}$	0,6		60	V
$I_{out,max}$	zeitlich unbegrenzt, alle Kanäle	0		300	mA
$I_{out,peak}$	t=1 s, 1 Kanal			400	mA

Static Values

Conditions: $U_b = 7...14\text{ V}$, $T_A = 25\text{ °C}$

Measurement Values	Test Conditions	MIN	Type	MAX	Unit
$U_{in,H}$		3.5		5	V
$U_{in,L}$				1.5	V
$U_{out,on}$	$I_{out} = 100\text{ mA}$		0.86		V
$U_{out,on}$	$I_{out} = I_{out,max}$	1.00	1.03	1.2	V
R_{on}		3	10	700	$m\Omega$
R_{off}	$U_{out} = U_{out,max}$		600		$M\Omega$

Dynamic Values

Conditions: $U_b = 7...14\text{ V}$, $T_A = 25\text{ °C}$

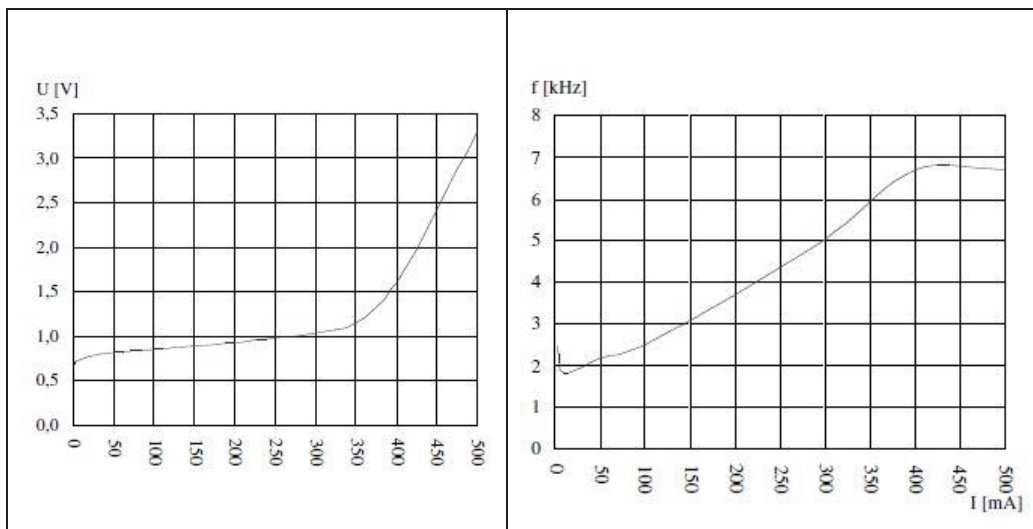
Measurement Values	Test Conditions	MIN	Type	MAX	Unit
f_{in}	$U_{out} = 90\%$, $I_{out} = 100\text{ mA}$	5.0	5.5	5.7	kHz
$f_{pd,HL}$	$I_{out} = 100\text{ mA}$, $f_{out} = 1\text{ kHz}$		90		μs

$\tau_{pd,LH}$	$I_{out} = 100 \text{ mA}$, $f_{out} = 1 \text{ kHz}$		2.2		μs
$\tau_{tr,HL}$	$I_{out} = 100 \text{ mA}$, $f_{out} = 1 \text{ kHz}$		1.4		μs
$\tau_{tr,LH}$	$I_{out} = 100 \text{ mA}$, $f_{out} = 1 \text{ kHz}$		62		μs

Forward Voltage Related To Load Current Maximum Input Frequency Related To Load Current

$T_A = 25 \text{ }^\circ\text{C}$, $U_b = 12 \text{ V}$, $f = 0 \text{ Hz}$

$T_A = 25 \text{ }^\circ\text{C}$, $U_b = 12 \text{ V}$, $\Delta U = 1 \%$



Pinout

Pinout ME-UBRE

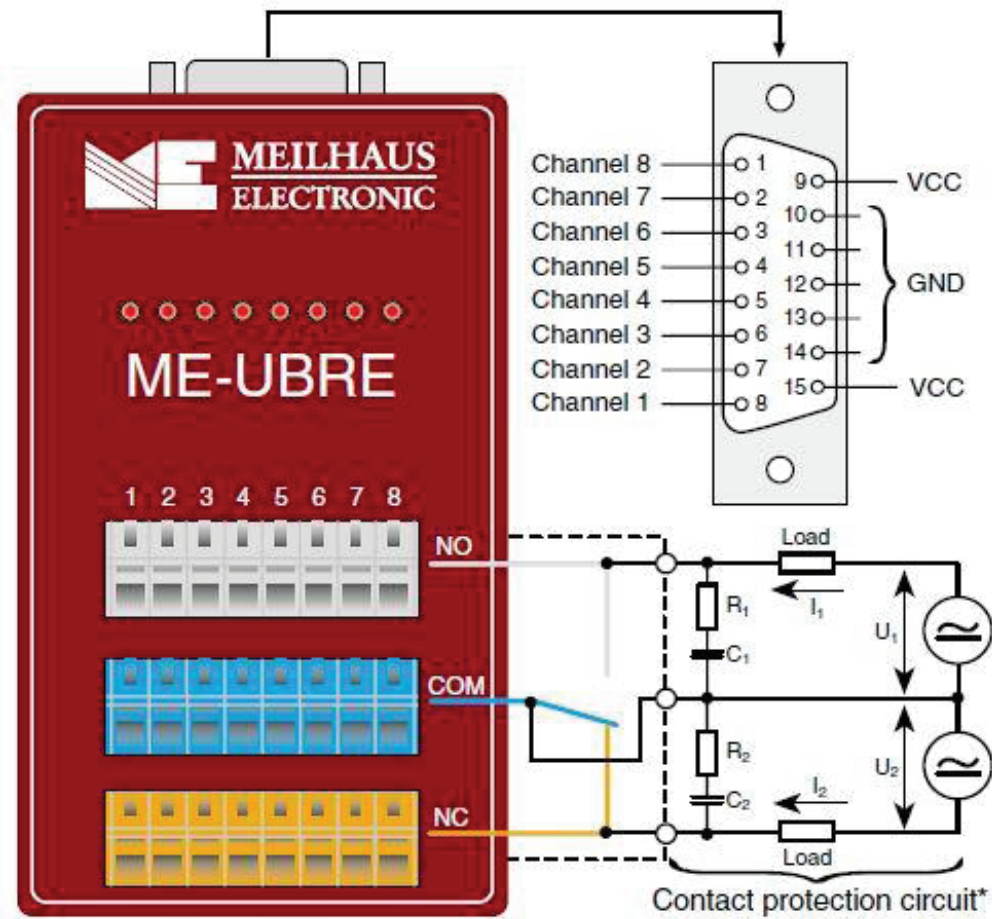


Diagram 11: Pinout ME-UBRE

Pinout ME-UB00

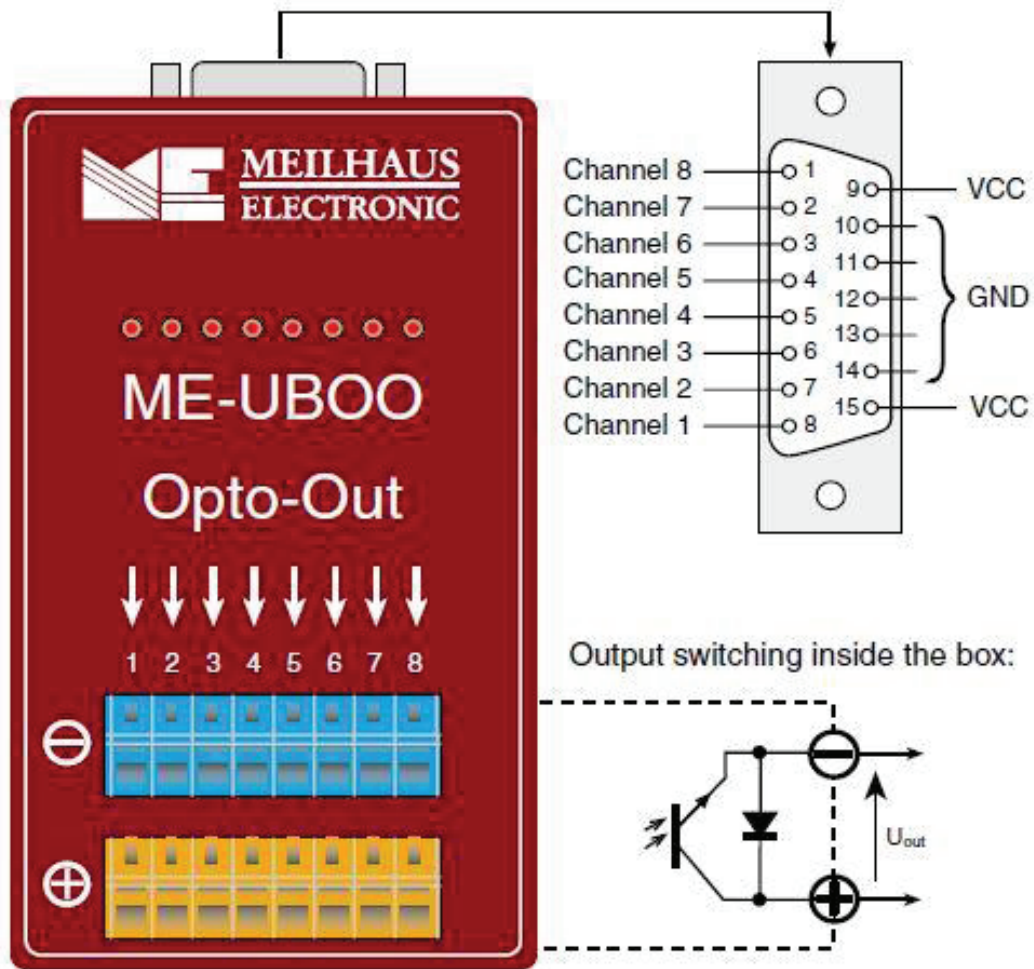


Diagram 12: Pinout ME-UB00

Pinout ME-UBOI

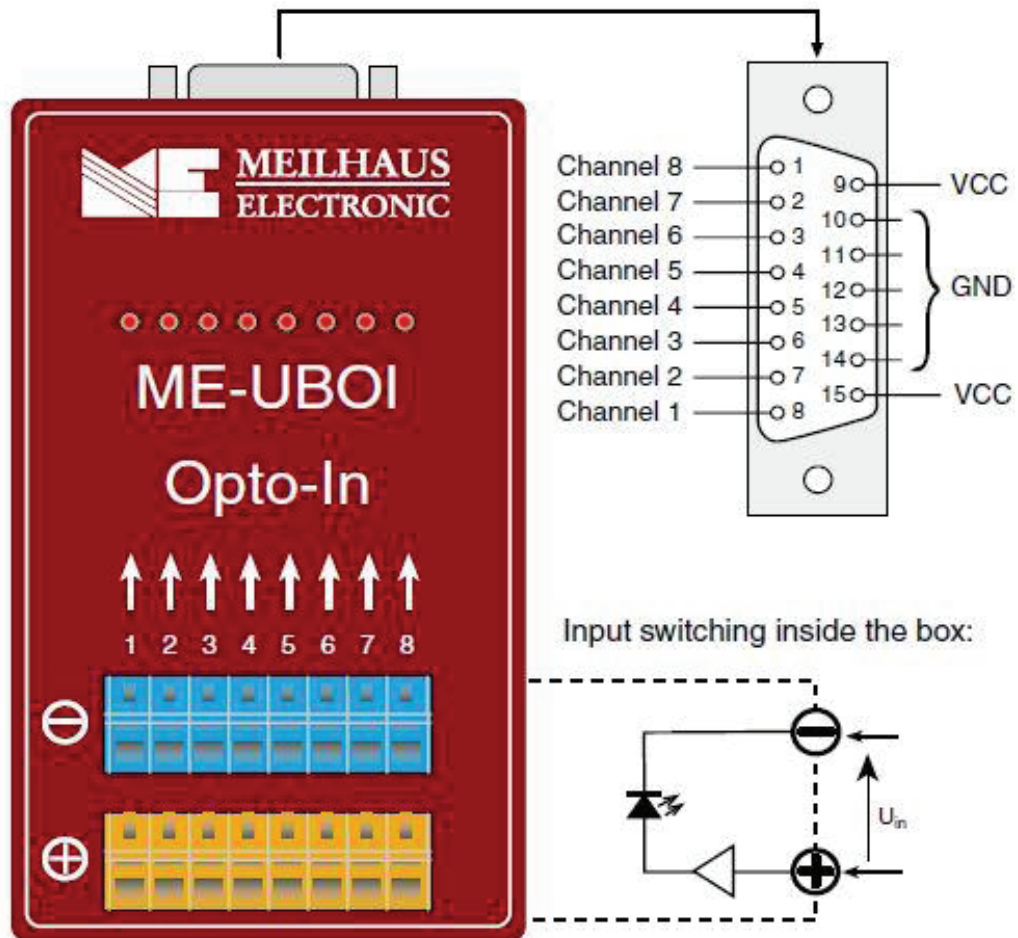


Diagram 13: Pinout ME-UBOI