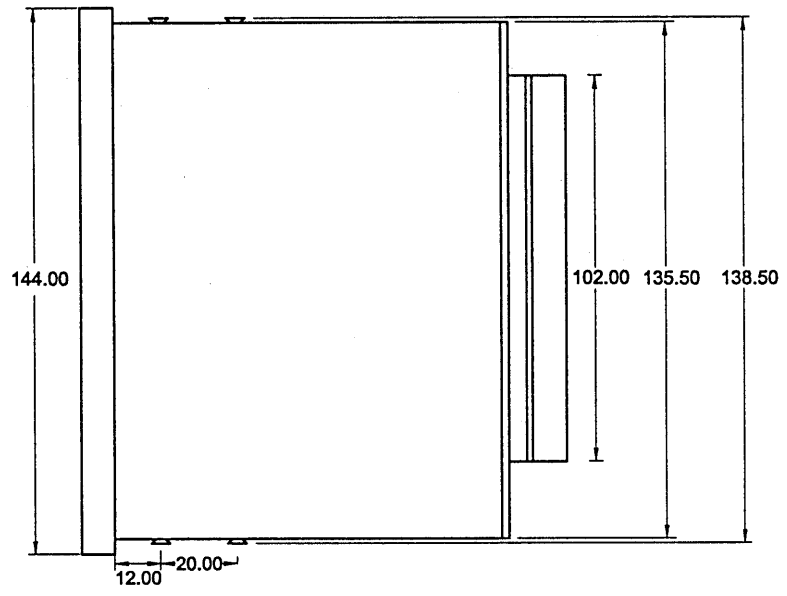
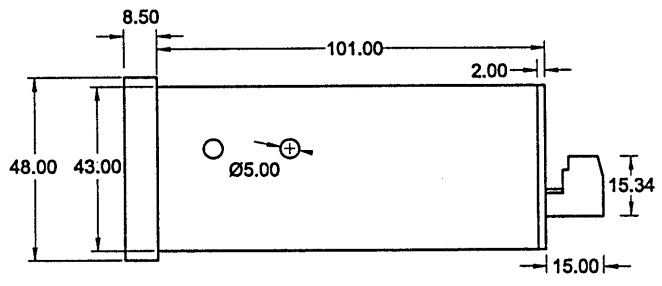


Digital Bargraph Indicators,  
Programmable

Dimensions

LEA / LZA 43/50



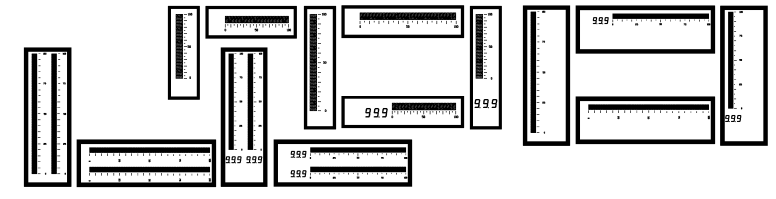
Dimensions in mm

– Specifications subject to change without notice; date of issue 04/07 –

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LEA 20  
... ..  
LEA 50  
LZA 43  
LZA 50



Product Outline

mA / V DC	LEA	20	A	1	0	R	H		
mA / V DC	LEA	23 30	A	1 2	0 1 2 7 8 D H R S	R	H		-M
mA / V DC	LEA	43 50	A	1 2	0 8 R	R	H		-M
2x mA / V DC	LZA	43 50	A	1 2	0 8 R	R	H		-M

Technical Data refer to Product Guide No. 720.U.001.##

Installation

Mounting

Insert the device through cutout from the front of the panel. Fit the two screw clamps supplied to the countersunk screws located on the meter case and tighten the screw spindles.

Connection

**Caution** All connection leads shall be voltage-free prior to connecting the meter. Verify input configuration and auxiliary supply (see type label on the meter).

**Note** To avoid measuring errors by interference voltages, or when measuring low Amps or Volts ( $\leq 2$  mA,  $\leq 2$  V), use – if necessary – screened or twisted leads positioned away from interference-subjected lines if strong interference sources are straying.

Terminals screw terminals on terminal block  
Wire cross-section 2.5 mm<sup>2</sup> max.

Connect the device following the pin assignment on the meter label.

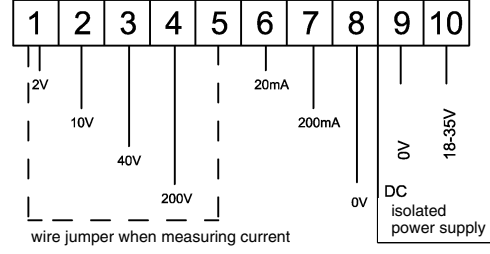
**Caution** Verify meter connections before applying power to the indicator. Adjust an activated meter by means of an **isolated screw driver** only.



Digital Bargraph Indicators,  
Programmable

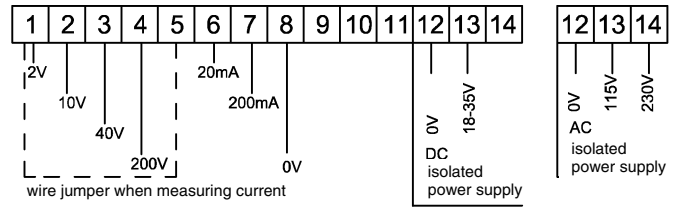
Terminal Connection

LEA 20



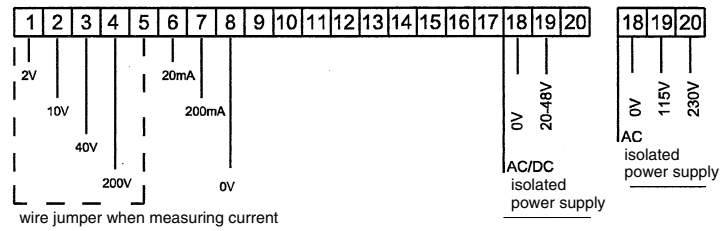
Terminal	Ri
1	100 kOhm
2	560 kOhm
3	2,2 MOhm
4	10 MOhm
6	100 Ohm
7	10 Ohm

LEA 23/30



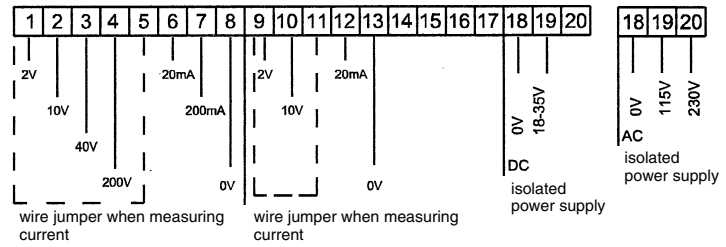
Terminal	Ri
1	100 kOhm
2	560 kOhm
3	2,2 MOhm
4	10 MOhm
6	100 Ohm
7	10 Ohm

LEA 43/50



Terminal	Ri
1	100 kOhm
2	560 kOhm
3	2,2 MOhm
4	12 MOhm
6	100 Ohm
7	10 Ohm

LZA 43/50



Terminal	Ri
1 + 9	100 kOhm
2 + 10	560 kOhm
3	2,2 MOhm
4	12 MOhm
6 + 12	100 Ohm
7	10 Ohm

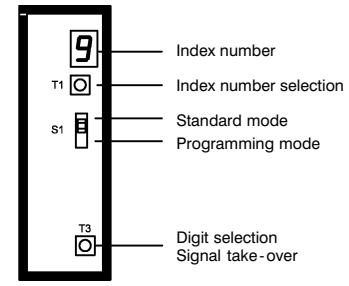
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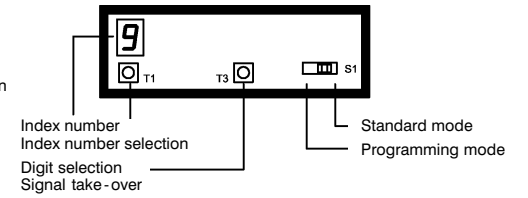
Operating Elements and Displays

Operating elements are located behind detachable display lens.

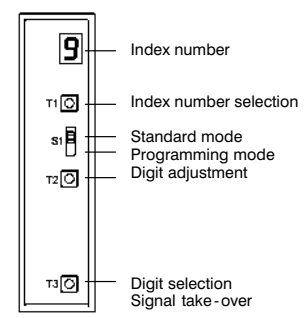
LEA 20 ... H



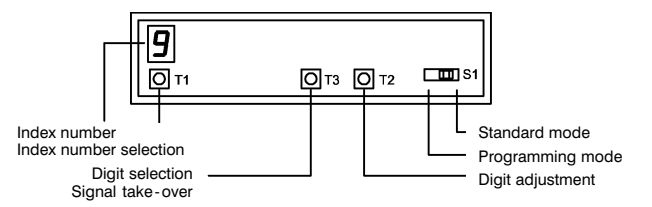
LEA 20 ... Q



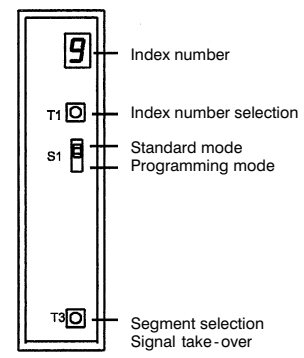
LEA 23 ... H



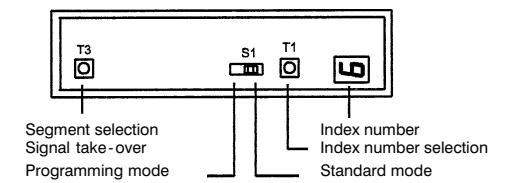
LEA 23 ... Q



LEA 30 ... H

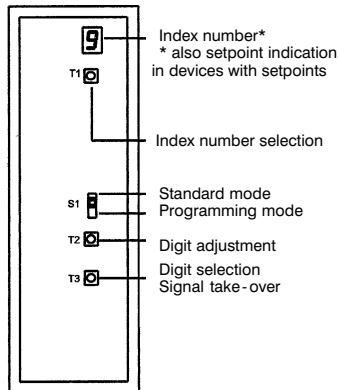


LEA 30 ... Q

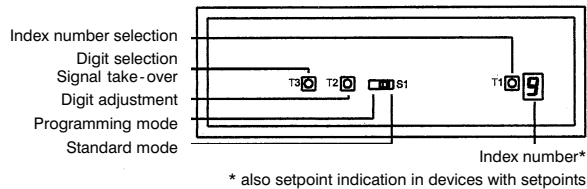


Digital Bargraph Indicators,  
Programmable

LEA 43/50 ... H

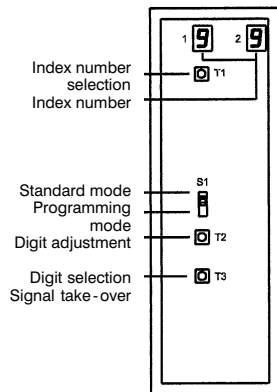


LEA 43/50 ... Q

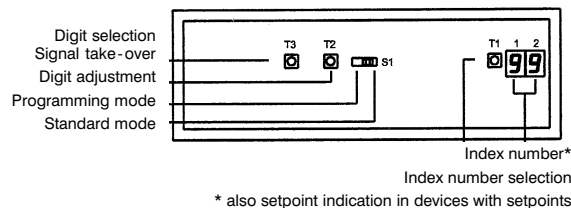


(In LEA 50, T2 is not present/required.)

LZA 43/50 ... H



LZA 43/50 ... Q



(In LZA 50, T2 is not present/required.)

Display Messages

Display	Bargraph	Description
EPP	■ ■ □ □ ■ ■ □ □ ..	EEPROM is being programmed
----	■ □ ■ □ ■ □ ■ □ ..	Overflow
-    -	■ ■ □ □ ■ ■ □ □ ..	Line-break indication (25% fall of measured value)

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Programming

The input signal and display ranges are determined applying the minimum and maximum input signal to the measuring input.

The one - digit display serves as an **index number** for programming. In standard mode, it also indicates the switching state of the breakover point resp. of the setpoint alarm. See Option 7, 8, R

**Operating elements** All operating elements are front accessible after front bezel and display lens have been removed.

**S1 slide switch** Switch - over between standard mode and programming mode. Index number "0" will be displayed when entering programming mode. "EEP" will flash on the display when leaving the programming mode; while the values programmed will be stored in the EEPROM.

**T1 key** Select programming step / index number

**T3 key** Select digit / decimal point to be set. (The digit selected will be accentuated by the flashing decimal point.)

**Additional function:** By pressing key T3 the initial display value resp. end value will be assigned to the minimum resp. maximum input signal applied at the measuring input.

**T2 key** Set selected digit.

LEA 20

Index No.	Bargraph	Description
0		Apply minimum input signal to measuring input – take-over by T3
1		Apply maximum input signal to measuring input – take-over by T3
2	■ □ □ □ □ □ ... ■ ■ □ □ □ □ ... ■ ■ ■ □ □ □ ... ...	Averaging of 1 ... 20 measurements: Averaging off Averaging of 2 measurements Averaging of 3 measurements ...
3	□ □ □ □ □ □ ... ■ □ ■ □ ■ □ ...	Line - break indication off Line - break indication when measuring value falls by 25%

LEA 23

Index No.	Display	Description
0		Input display initial value Select digit by T3, set digit by T2
1	P – L	Apply minimum input signal to measuring input – take-over by T3
2		Input display end value and decimal point Select digit by T3, set digit by T2
3	P – H	Apply maximum input signal to measuring input – take-over by T3
4	001 ... 500	Averaging of 1 to 500 measurements

Digital Bargraph Indicators,  
Programmable

5	__ 0	Rounding of last position off
	-- 2	Rounding of last position in steps two by two
	-- 5	Rounding of last position in steps five by five
	_ 1 0	Rounding of last position in steps ten by ten
6	__ 0	Bar graph bottom to top or left to right
	-- 1	Inverse to measuring signal: 3-digit display and bargraph
	-- 2	Inverse to measuring signal: 3-digit display only
	-- 3	Inverse to measuring signal: bargraph only
	__ 4	Point graph bottom to top or left to right
	-- 5	Inverse to measuring signal: 3-digit display and bargraph
	-- 6	Inverse to measuring signal: 3-digit display only
	-- 7	Inverse to measuring signal: bargraph only
	__ 8	Bar graph top to bottom or right to left
	-- 9	Inverse to measuring signal: 3-digit display and bargraph
	-- A	Inverse to measuring signal: 3-digit display only
	-- b	Inverse to measuring signal: bargraph only
	__ c	Point graph top to bottom or right to left
-- d	Inverse to measuring signal: 3-digit display and bargraph	
-- E	Inverse to measuring signal: 3-digit display only	
-- F	Inverse to measuring signal: bargraph only	
__ 0 _	Line-break indication off	
_ 1 _	Line-break indication when measuring value falls by 25%	

LEA 30

Index No.	Bargraph	Description
0		Apply minimum input signal to measuring input – take-over by T3
1		Apply maximum input signal to measuring input – take-over by T3
2	■□□□□□... ■■□□□□... ■■■□□□... ...	Averaging of 1 ... 30 measurements: Averaging off Averaging of 2 measurements Averaging of 3 measurements ...
3	□□□□□□... ■□■□■□...	Line-break indication off Line-break indication when measuring value falls by 25%
4	■□□□□□... □■□□□□... □□■□□□... □□□■□□...	Bar graph display Point graph display Bar graph display – centered zero Point graph display – centered zero

LEA 43

Index No.	Display	Description
0		Input display initial value Select digit by T3, set digit by T2 The minimum displayed value must be positive ( $\geq 0$ )
1	P – L	Apply minimum input signal to measuring input – take-over by T3
2		Input display end value and decimal point Select digit by T3, set digit by T2
3	P – H	Apply maximum input signal to measuring input – take-over by T3
4	001 ... 500	Averaging of 1 to 500 measurements
5	__ 0	Rounding of last position off
	-- 2	Rounding of last position in steps two by two
	-- 5	Rounding of last position in steps five by five
	_ 1 0	Rounding of last position in steps ten by ten
6	__ 0	Bar graph bottom to top or left to right
	-- 1	Inverse to measuring signal
	__ 0 _	Line-break indication off
	_ 1 _	Line-break indication when measuring value falls by 25%

LEA 50

Index No.	Bargraph	Description
0		Apply minimum input signal to measuring input – take-over by T3
1		Apply maximum input signal to measuring input – take-over by T3
2	■□□□□□... ■■□□□□... ■■■□□□... ...	Averaging of 1 ... 50 measurements: Averaging off Averaging of 2 measurements Averaging of 3 measurements ...
3	□□□□□□... ■□■□■□...	Line-break indication off Line-break indication when measuring value falls by 25%

**Digital Bargraph Indicators,  
Programmable**

**LZA 43**

Index No.	Display 1 left-hand or bottom		Display 2 right-hand or top	Description
	1	2		
0	1 7 - 2 0	5 0		Enter initial display value: positive (e.g. 175) negative (e.g. -200) Select digit by T3, set digit by T2
1	P - L			Apply minimum input signal to measuring input - take-over by T3
2	3 0 0			Input display end value and decimal point (e.g. 300)
3	P - H			Apply maximum input signal to measuring input - take-over by T3
4	001 ... 500			Averaging of 1 to 500 measurements
5	-- 0 -- 2 -- 5 _ 1 0			Rounding of last position off Rounding of last position in steps two by two Rounding of last position in steps five by five Rounding of last position in steps ten by ten
6	-- 0 -- 1			Bar graph bottom to top or left to right Inverse to measuring signal
	_ 0 _ _ 1 _			Line-break indication off Line-break indication when measuring value falls by 25%
0	-	175 200		Enter initial display value: positive (e.g. 175) negative (e.g. -200) Select digit by T3, set digit by T2
1		P - L		Apply minimum input signal to measuring input - take-over by T3
2		3 0 0		Input display end value and decimal point (e.g. 300)
3		P - H		Apply maximum input signal to measuring input - take-over by T3
4		001 ... 500		Averaging of 1 to 500 measurements
5		-- 0 -- 2 -- 5 _ 1 0		Rounding of last position off Rounding of last position in steps two by two Rounding of last position in steps five by five Rounding of last position in steps ten by ten
6		-- 0 -- 1		Bar graph bottom to top or left to right Inverse to measuring signal
		_ 0 _ _ 1 _		Line-break indication off Line-break indication when measuring value falls by 25%

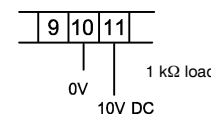
**Note** The display shows negative values up to -199. Inputs exceeding this values can only be indicated by the bargraph. The display then shows - - -.

**LZA 50**

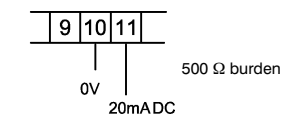
Bar-graph	Index No.		Bargraph	Description
	1	2		
left-hand or bottom	0			Apply minimum input signal to measuring input - take-over by T3
	1			Apply maximum input signal to measuring input - take-over by T3
right-hand or top	2			Apply minimum input signal to measuring input - take-over by T3
	3			Apply maximum input signal to measuring input - take-over by T3
both	4		■ □ □ □ □ □ ... ■ ■ □ □ □ □ ... ■ ■ ■ □ □ □ ... ...	Averaging of 1 ... 50 measurements: Averaging off Averaging of 2 measurements Averaging of 3 measurements ...
left-hand or bottom	5	-	□ □ □ □ □ □ ... ■ □ ■ □ ■ □ ...	Line-break indication off Line-break indication when measuring value falls by 25%
			□ □ □ □ □ □ ... ■ □ ■ □ ■ □ ...	Line-break indication off Line-break indication when measuring value falls by 25%
right-hand or top	6	-	□ □ □ □ □ □ ... ■ □ ■ □ ■ □ ...	Line-break indication off Line-break indication when measuring value falls by 25%
			□ □ □ □ □ □ ... ■ □ ■ □ ■ □ ...	Line-break indication off Line-break indication when measuring value falls by 25%

**Options**

**Option 1: Analogue Output 0 ... 10 V DC  
(LEA 23/30)**



**Option 2: Analogue Output 0/4 ... 20 mA DC  
(LEA 23/30)**



Initial and end values of analogue outputs are based on the minimum and maximum input signals (Index No. 1 + 3).

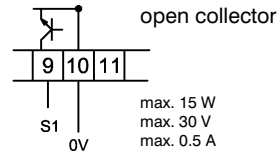
Index No.	Display	Description
6	0 _ _	Analogue output 0 ... 20 mA DC
	1 _ _	Analogue output 4 ... 20 mA DC

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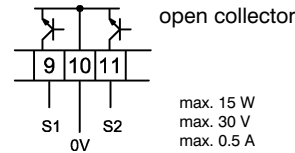
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Erlenstraße 14 D-90441 Nürnberg Telefax: 0911/42347-39  
Internet: <http://www.weigel-messgeraete.de>  
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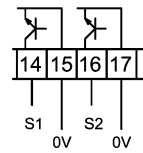
Option 7: 1 Control Output  
(LEA 23/30)



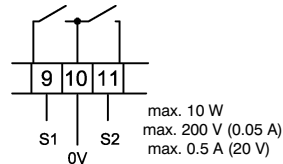
Option 8: 2 Control Outputs  
(LEA 23/30)



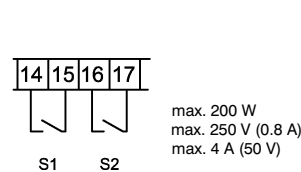
(LEA/LZA 43/50)



Option R: 2 Relay Outputs  
(LEA 23/30)



Option R: 2 Relay Outputs  
(LEA/LZA 43/50)



The following index numbers in the programming mode are used to set switching thresholds:

1<sup>st</sup> Control Output o.c. / 1<sup>st</sup> Relay Output:

Index No.	Display	Bargraph	Description
7	S1		upper switching threshold
8	S1		lower switching threshold
9	L/u * r/o *	□□□□□□□□	inactive
	-- 0	□□□□□□□□	active (left/lower bargraph)
	-- 1	□□□□□□□■	active (right/upper bargraph)
	-- 2	□□□□□□■□	open circuit current HI (Max) contact
	- 0 -	□□□□□□■□	closed circuit current HI (Max) contact
	- 1 -	□□□□□■□□	open circuit current LO (Min) contact
	- 2 -	□□□□■□□□	closed circuit current LO (Min) contact
	- 3 -	□□□■□□□□	standard display, if S1 is active
	0 -- **	□□□□□□□□	flashing display, if S1 is active
	1 -- **	□□□□□□□□	

2<sup>nd</sup> Control Output o.c. / 2<sup>nd</sup> Relay Output:

Index No.	Display	Bargraph	Description
A	S2		upper switching threshold
b	S2		lower switching threshold
c	L/u * r/o *	□□□□□□□□	inactive
	-- 0	□□□□□□□□	active (left/lower bargraph)
	-- 1	□□□□□□□■	active (right/upper bargraph)
	-- 2	□□□□□□■□	open circuit current HI (Max) contact
	- 0 -	□□□□□□■□	closed circuit current HI (Max) contact
	- 1 -	□□□□□■□□	open circuit current LO (Min) contact
	- 2 -	□□□□■□□□	closed circuit current LO (Min) contact
	- 3 -	□□□■□□□□	standard display, if S2 is active
	0 -- **	□□□□□□□□	flashing display, if S2 is active
	1 -- **	□□□□□□□□	

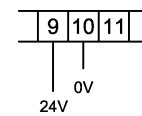
\* Indication in Index No. 2 in LZA 50 (device without display)

\*\*only in LEA 23/43, LZA 43 (device with display)

In standard mode the switching state of the setpoint contacts is indicated by a small 7-segment LED-display:

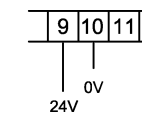
Display	Description
dark	Measured value is within "good" range, setpoint alarm is not activated, not raised over / fallen below switching threshold, both contacts inactive
1	Setpoint alarm breakover point S1, contact S1 active
2	Setpoint alarm breakover point S2, contact S2 active
1/2 alternately	Setpoint alarm breakover point S1 and S2, contacts S1 and S2 active

Option D: Blanking Input  
(LEA 23/30)



Functional Input active-high 24 V

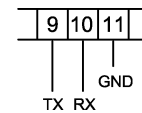
Option H: Display Hold Input  
(LEA 23/30)



Functional Input active-high 24 V

Signal	Description	Signal	Description
L signal	Display shows actual value	L signal	Display shows actual measuring value
H signal	Display blanked	H signal	Display holds latest measuring value

Option S: Serial Output RS232 (LEA 23/30)



Index No.	Display	Description
7	-- 0	Baud rate 150 bits/s
	-- 1	300 bits/s
	-- 2	600 bits/s
	-- 3	1200 bits/s
	-- 4	2400 bits/s
	-- 5	4800 bits/s
	-- 6	9600 bits/s
	-- 7	19200 bits/s
	- 0 -	Parity none, 8 data bits
	- 1 -	even, 7 data bits
	- 2 -	odd, 7 data bits
	- 3 -	even, 8 data bits
	- 4 -	odd, 8 data bits

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8	__ 0 0	Device address
	__ x	no address
	__ x	10 <sup>0</sup> address
9	__ 0	10 <sup>1</sup> address
	__ 1	Write direction
	__ 0	left to right
	__ 1	right to left
	__ 0	Sending output
	__ 1	off
	__ 2	sign – value
__ 3	STX – sign – value – ETX	
__ 4	STX – address – sign – value – ETX	
__ 4	SOH – adr. – STX – sign – value – ETX	
0	0	Transmission request
	1	off
	2	transmission after adress reception
1	1	transmission after STX/address/ETX reception
	2	transmission after STX/address/ETX reception

**Option M: Min./Max. Value Memory**

T1, T2, T3 keys are accessible through the display lens.

LEA 23/43, LZA 43 (with reference measurement):

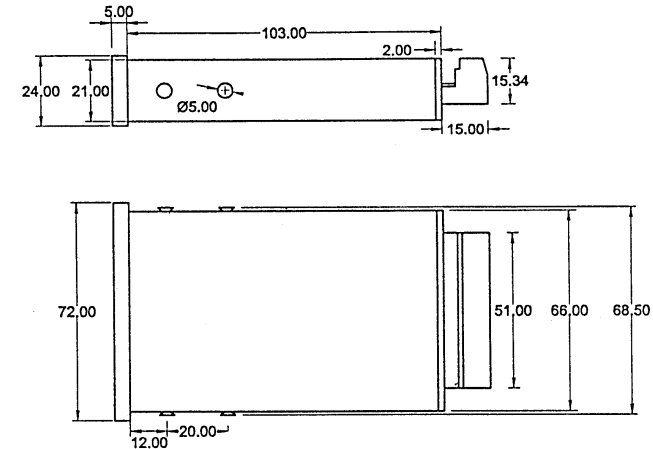
- T1 action: A reference measurement is performed.
- T2 action: Show maximum value
- T3 action: Show minimum value
- Both T2 and T3 pressed for 5 seconds:  
Minimum and maximum values are reset.  
(The value of reference measurement is kept.)

LEA 20/30/50, LZA 50:

- T2 action: Show maximum value
- T3 action: Show minimum value
- T1 action: The stored minimum and maximum values are reset.

**Dimensions**

**LEA 20**



**LEA 23/30**

