





LIN-31 bargraph indicator



OPERATION MANUAL

SYMBOL	DESCRIPTION
	CAUTION or WARNING: Tells you about the risk of electrical shock.
	CAUTION, WARNING or IMPORTANT: Tells you of circumstances or practices than can effect the instrument's functionality and must refer to technical documentation.
	INFORMATION: Helpful information.
	INFORMATION: Discarded electronic equipment collecting



READ THE MAUAL CAREFULLY BEFORE INSTALLATION AND USE!

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1. INTRODUCTION

1.1 General description.

LIN31 is a panel mount electronic device intended for industrial measurement and indication of standard electric, voltage and current signals. The indicator equipped with 31 LED bargraph. The lowest segment of the bargraph is permanently lighted as „power on” indicator. When input signal is applied, proportional to signal value number of LEDs are lighted. The highest, 31-st segment is lighted when input signal approaches full scale value. LIN-31 has five fixed input ranges. Zero and full scale levels can be adjusted within 50% of each range.

The electronic circuit of LIN-31 consist of switchable input dividers, input amplifier, flash A/D converter with direct LED output and isolated DC/DC converter. LIN-31 is supplied with 0-100% vertical or horizontal scale. Instrument housing is made of glass-reinforced black ABS. Input and supply connectors, configuration jumpers and adjustment potentiometers are placed on the rear wall .

1.2 Safety considerations



Indicator is dedicated for SELV installations only!

1.3 EMC consideration



Instrument meets EN-61326 EMC requirements for industrial environment.

Follow listed below instructions to provide proper operation in real conditions:

- do not install the product near devices generating strong electromagnetic fields,
- wire the lines connected to the meter separately from power lines carrying high voltages or currents,
- use twisted or shielded signal lines in noisy environment,
- always apply functional grounding,
- apply external surge protectors close to the unit if long lines are connected,
- apply additional filtering in noisy environment.

1.4 Oznaczenia

LIN-31-V	LIN-31 indicator with vertical scale
LIN-31-H	LIN-31 indicator with horizontal scale

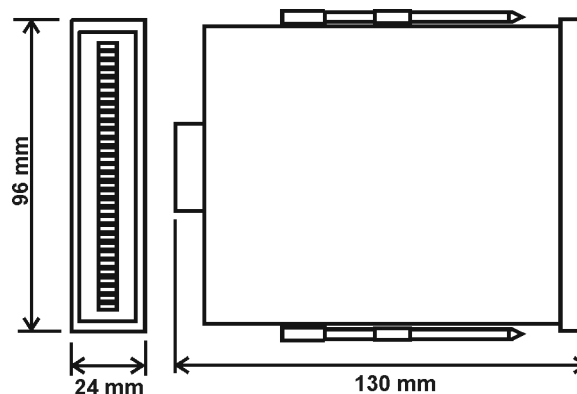
2. INSTALLATION AND WIRING

2.1 Unpacking

Unpack the instrument and check it for obvious signs of damage. If any damage occur notify the supplier and do not attempt further use. If the unit appears to be in good condition read the Operating Manual before installation and use.

The original box contains:

- indicator 1 pcs
- fittings 2 pcs
- operation manual 1 pcs



2.2 Installation

The unit is designed for front panel mounting. It requires panel cut-out according to the specification with proper distance to other devices.

LIN31 is fixed in panel cut-out with two snap-in, screw type fixings (included).

The input and supply connectors are placed on the rear wall. The terminal strips may be unplugged for wiring.

Mounting procedure:

- put the meter from the front side into the panel cut-out,
- attach 2 fixing clips on brass rivets,
- tighten the screws just enough to hold the housing firmly in place.

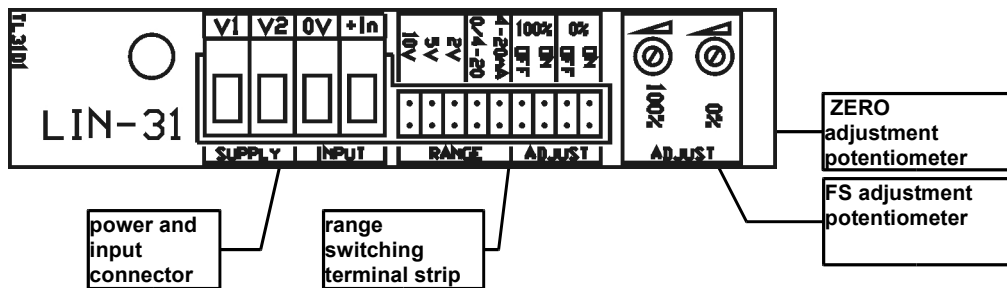
2.3 Electrical connections



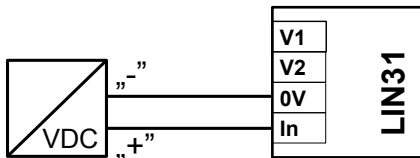
Disconnect power supply before installation and wiring. Check power supply voltage on instrument's label.

Electrical connection procedure:

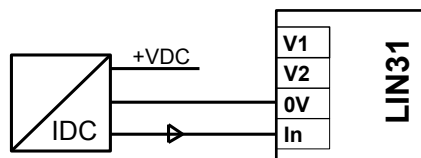
- check proper mechanical installation of the unit,
- unplug terminal blocks on the rear wall,
- make required connections according to wiring table and diagrams,
- replug terminal blocks,
- check the connections before applying power **INCORRECT CONNECTIONS CAN DAMAGE YOUR METER!**



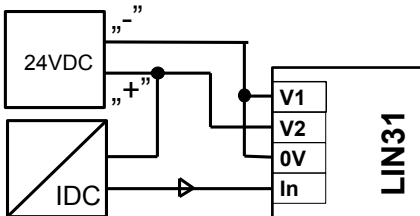
Ozn.	Opis	Wartość znamionowa	Rodzaj
V1	supply terminal 1	24VDC or 24VAC 50Hz	Power supply
V2	supply terminal 2		
0V	„-” input terminal (signal ground)		Input
In	„+” input terminal	0-10V or 0-20mA	Input



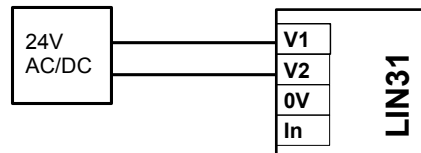
Voltage transducer connection.



3 terminal current transducer connection.



2 wire current transducer connection powered from indicator's supply.



Power connection

3. OPERATION

3.1 Setting for use



The power must be disconnected during range switching procedure!

The proper input configuration should be set according to the table below prior to power and signal source connection.

Strip position								Setting				
1	2	3	4	5	100%		0%					
10V	5V	2V	0(4)-20mA	4-20mA	OFF	ON	OFF	ON				
<input type="checkbox"/>	-	-	-	-	<input type="checkbox"/>	-	<input type="checkbox"/>	-	0 - 10,00V range			
-	<input type="checkbox"/>	-	-	-	<input type="checkbox"/>	-	<input type="checkbox"/>	-	0 - 5,00V range			
-	-	<input type="checkbox"/>	-	-	<input type="checkbox"/>	-	<input type="checkbox"/>	-	0 - 2,00V range			
-	-	-	<input type="checkbox"/>	-	<input type="checkbox"/>	-	<input type="checkbox"/>	-	0 - 20,00mA range			
-	-	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>	-	4 - 20,00mA range (default)			
n	n	n	n	n	-	<input type="checkbox"/>	<input type="checkbox"/>	-	FS adj. ON, ZERO adj. OFF			
n	n	n	n	n	<input type="checkbox"/>	-	-	<input type="checkbox"/>	FS adj. OFF, ZERO adj. ON			
n	n	n	n	n	-	<input type="checkbox"/>	-	<input type="checkbox"/>	FS adj. ON, ZERO adj. ON			
<input type="checkbox"/> _jumper installed, - _ no jumper n_ depending of the range (as above)												

LIN-31 has 4-20mA factory setting.



Zero and full scale adjustment.

LIN-31 has two, 10-turn potentiometers for zero and 100% of range adjustment. 0% adjustment do not influence 100% setting and similarly 100% adjustment do not alter 0% setting. 0% level can be set from 0 to 50% of the chosen range. 100% level can be adjusted withing 50 and 100% of current range.



Options.

LIN-31, for special demand can be supplied in reversed scaling version. In this case 100% (full bargraph) is indicated with zero value of input signal and 0% with nominal FS value of selected range. This version is marked with „reversed” statement on the label.

Reversed version of the indicator can not be switched to normal mode by the user.

4. TECHNICAL SPECIFICATION

Parameter	Value	Comments
<i>input fixed ranges</i>	0-2V, Ri=100kom	Uwe _{max} =+/- 60VDC
	0-5V, Ri=250kom	
	0-10V, Ri=500kom	
	0-20mA, Ri=100om	Iwe _{max} =+/- 50mA
	4-20mA, Ri=100om	
<i>accuracy</i>	+/- 1% FS	of fixed range value
<i>rozdzielczość wskazań</i>	3.3% FS	of fixed range value
<i>0% adjustment</i>	0-50% FS	of fixed range value
<i>100% adjustment</i>	50-100% FS	of fixed range value
<i>display</i>	31 diod LED	30 diod zielonych +1 dioda czerwona (100%)
<i>supply voltage</i>	20- 24 -35VDC lub <u>24</u> VAC	
<i>power consumption</i>	2.8 W	
<i>dimensions</i>	24x96x130mm	
<i>mounting hole</i>	21,5x91,5mm	
<i>mounting spacing</i>	20mm	horizontally
	20mm	vertically
<i>protection class</i>	IP-40 (front)	
	IP-00 (rear)	
<i>operating temperature</i>	0-50C	
<i>weight</i>	250g	
<i>EMC</i>	EN 61010-1:2001+AC:2002	industrial environment, class A
<i>input line lenght</i>	<30m	

5. DISCARDED ELECTRONIC EQUIPMENT COLLECTING INFORMATION.



This equipment should be collected and treated according to 2002/96/EC European Directive on waste electric and electronic equipment (WEEE).

Material and substances to be removed:

Material, substance	Quantity	Comments
Printed circuit boards	100,6 cm ²	

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