

LMI-Light 96-8.1 (16.2) Installation

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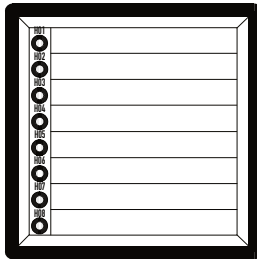
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Description of the LMI-Light 96-8.1 (16.2)

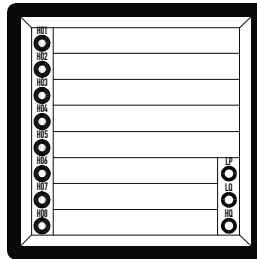
The LMI-Light is a microprocessor-controlled LED annunciator panel for front-panel mounting. Depending on the variant, it can display up to 16 optical signals. The integrated relay outputs are used for the connection of a group signal indicator lamp and a horn. Optionally, the unit can be supplied with integrated key buttons for LED checking, acknowledgement of the signals and the relay output for the horn connection. Various operating modes can be set by means of the dip-switches, which are accessible from the front. The integrated microprocessor allows a flexible adaptation to special requirements.

Variants

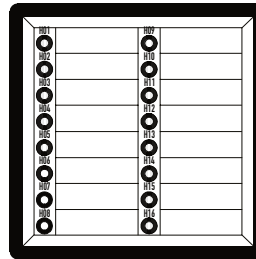
LMIL96-8.1



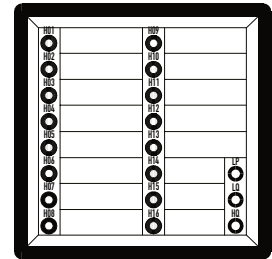
LMIL96-8.1T



LMIL96-16.2



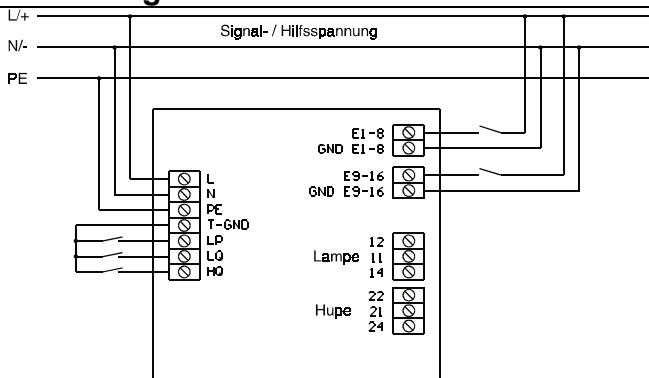
LMIL96-16.2T



Technical data

Standard auxiliary voltage	24V AC/DC	230V AC
Power consumption	max. 3VA	
AC frequency	50 – 60 Hz	
Signal inputs	8 or 16, opto-isolated, unidirectional	
Signal voltage	24V AC/DC	230V AC
Signal input current	max. 6mA	max 2mA
Relay outputs	potential-free changeover contacts	
Max. switching voltage	250V AC	
Max. switching current	5A	
Control panel cutout	91 x 91mm	
Installation depth	130,5mm	

Pin configuration



Terminal designation

Inputs E1-8	Signal inputs, L/+
Inputs GND E1-8	Reference potential for inputs 1-8
Inputs E9-16	(For type ..16.2 only) signal inputs, L/+
Inputs GND E9-16	Reference potential for the inputs 9-16
Inputs L, N, PE	Auxiliary voltage input
Input T-GND	Reference potential for keys
Inputs LP, LQ, HQ	Connection for external keys
Output 11/12/14	Group signal (indicator lamp)
Output 21/22/24	New value signal (horn)

Please see the installation instructions on the next page for a detailed terminal description.



LMI-Light 96-8.1 (16.2) Installation instructions

Please read the following notes carefully before beginning the initial start-up. The incorrect feeding of voltages may lead to the destruction of electrical components!

Please go through the installation instructions step by step in the predetermined order to avoid faults.

1. **Wiring of input terminals:** The value of the signal voltage can be found on the type plate. Common terminals **GND 1-8**, **GND 9-16** are connected with (-U) signal (switched plus) or the reference conductor of the alternating voltage. The signal lines are connected to the terminals **E01** to **E16**

2. **External operating keys:** The key buttons for LED-checking (**LP**), LED-acknowledgement (**LQ**) and horn-acknowledgement (**HQ**) are connected to the terminals **LP**, **LQ** and **HQ**. The common ground for these contacts is the terminal **T-GND**. Potential-free make-contact relays are to be used as contacts. Units of identical execution and voltage can be linked. The current is 2.5 mA per input.

! External voltage on these terminals may lead to the destruction of the unit

When the **LP**-key button is pressed, the LEDs are lit independent of the set operating mode. When a signal is received and signal storage is switched-on, the respective LED is lit until the **LQ**-key button is pressed, even if the signal only existed briefly. Also, in the operating modes "New value signal and first-up value signal", flashing signals become permanent light signals, as long as the signal in question still exists. In the operating mode "actual value signal" without storage this key has no function. The horn relay, which is activated with each occurring signal, can be switched off with the **HQ**-key button. When the signal storage is switched off, the horn relay is released automatically when the last message in line is discontinued.

3. **Internal operating key buttons:** In the units with optional internal operating keys the terminals described under (2) may be used as input and output. Up to 5 further units of the same variant may be connected to such a unit. To this end, terminals with identical terminal designations are to be connected with one another. At the same time, external operating key buttons as described in (2) can be used.

4. **Lamp relay:** (Group signal) This relay has the function of a potential-free group signal contact. The relay is activated with the first signal arriving and is reset automatically when the last signal in line is discontinued. In the operating mode signal storage this relay is reset only after the signals have been acknowledged. The group signal relay only applies locally to the respective annunciator panel. Whenever the group signal is supposed to be carried out across several panels, the respective relay contacts must be wired in parallel. **14:** Normally open relay; **12:** Normally closed relay; **11:** Common contact; voltage/ current-carrying capacity of the contacts 230 V ac / 5 A.

5. **Horn relay:** (New value signal) This relay has the function of an acoustic or optic new value signal and is re-activated with each new signal, if it has been reset by means of the horn acknowledgement before. In the operating mode signal storage, the relay is not reset with the discontinuation of the last signal in line, but by means of the horn acknowledgement key button only. The new value signal applies only locally to the respective annunciator panel. Whenever the new value signal is supposed to be carried out across several panels, the respective relay contacts must be wired in parallel. **24:** Normally open relay; **22:** Normally closed relay; **21:** Common contact; Voltage/ current-carrying capacity of the contacts 230 V ac / 5 A.

6. The operating mode is set by means of an 8-terminal dip-switch with the annunciator panel in the voltage-free mode. Table 1 shows the function of each of the dip-switches, each combination resulting in one of the possible operating modes. Therefore, an overview of the possible operating modes is given in table 2 (0 = off; 1 = on; X = any). When several panels are cascaded, the same operating mode must be set on each of the units (DIP-switches 2 to 5). The setting of mixed operating modes is possible, but the differing effects on the lamp and the horn relay as well as on the function of the acknowledgement switches must be considered.

7. The last step is the connection of the supply voltage of 24V AC/DC or 230V AC (according to the type plate) to the contacts **L/+** and **N/-**. The **protective earth** connection **PE** must be connected to each annunciator panel separately (star-shape) to increase fault resistance.

LMI-Light 96-8.1 (16.2) Installation instructions

Table 1: Description of the dip switch functions

Nr.	Description of the dip switch function
1.	<p>Open circuit / closed circuit mode</p> <p>In the open circuit mode, the inputs E01 to E16 are programmed for signal indicators with normally open contacts. In the closed circuit mode, the inputs are switched with normally closed contacts. In addition, the output relays for lamp and horn are activated in the closed circuit mode, as long as no fault occurs. They are released as soon as an input signal is discontinued and a LED is lit.</p>
2.	<p>Actual value / signal storage indication</p> <p>The actual value display indicates the current condition at the inputs E01 to E16. In this operating mode a signal is indicated only as long as it actually exists. The LEDs, the lamp and the horn relay go out without acknowledgement, when the signal is discontinued. In the case of signal storage operation, each incoming signal is indicated permanently, until it is switched off by pressing of the LED acknowledgement key button, provided that the input signal no longer exists. Already acknowledged signals are cancelled automatically when the signal indicator is reset.</p>
3.	<p>First-up value signal on/off</p> <p>First-up value signal can be activated with signal storage indication as well as with actual value indication. The first signal occurring is indicated by 2Hz-flashing, further signals are indicated by 1Hz-flashing. When the LED acknowledgement is actuated, all flashing LEDs turn to permanent light as long as the respective signal exists. When a new signal occurs, it is indicated by 1Hz-flashing of the respective LED. When actual value indication is set, the signals are cancelled automatically when the signal indicator is reset. In the signal storage indication mode the signals must be acknowledged first.</p>
4.	<p>New value signal on/ off</p> <p>New value signal can be activated in the signal storage indication mode as well as in the actual value indication mode. Each new signal is initially indicated by 1Hz-flashing. A brief actuation of the LED acknowledgement turns the flashing displays into permanent light as long as the respective signal still exists. When a new signal occurs, it is again indicated by 1Hz-flashing. When the actual value indication mode is set, the signals are cancelled automatically when the signal indicator is reset. In the signal storage indication mode the signals must be acknowledged first.</p>
5.	<p>! Does only apply to variant LMIL 96-16.2</p> <p>Individual resetting on/off (only in combination with a storing mode of operation, dip-switch 2 on)</p> <p>In the storing mode of operation (dip-switch 2), this function divides the available 16 inputs in two groups of 8 inputs each. Signals arrive at E01 to E08 and are cancelled by means of a reset-key button on the inputs E09 to E16. A signal which arrives and is stored at E01 (E02 etc.) is cancelled by actuating the corresponding reset key button on E09 (E10 etc.). In the operating modes new value signal and first-up value signal, flashing signals must be acknowledged by means of the LQ key button, before they can be reset via the reset key buttons.</p>
6.	<p>Operating state signal on/ off</p> <p>All odd-numbered inputs are used as displays for operating state signals. The setting of the dip-switches 2 – 5 have no function for these inputs..</p>
7.	<p>Operating state signal channel 1 – 4 (1 – 8) off/ on</p> <p>The signal inputs 1—4 on units with 8 signal inputs and 1 – 8 on units with 16 inputs act as displays for operating state signals. The position of the dip-switches 2 – 5 have no function for these inputs.</p>
8.	<p>Without function</p>

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Table 2: Description of the operating modes

Nr.	Dip switch 1 2 3 4 5 6 7	Description of the operating mode
1.	0 X X X X X X	Inputs E01 to E16 standard normally open relay Relay outputs without fault signals in the quiescent state.
2.	1 X X X X X X	Inputs E01 to E16 standard normally closed relay Relay outputs without fault signals in the activated state.
3.	X 0 0 0 0 0 0	Actual value indication The LEDs indicate the current state of the signal inputs. The horn can be acknowledged via HQ, but it is also reset automatically. The key-button LQ is without function.
4.	X 1 0 0 0 0 0	Signal storage indication The displays must be acknowledged with LQ and go out automatically, when the respective (acknowledged) input signal is discontinued.
5.	X 0 1 0 0 0 0	First-up value signal without storage, 2 flashing frequencies Flashing displays are converted to permanent light displays with LQ – as long as the input signal exists-. Without an input signal the lights go out. The horn can be acknowledged via HQ, but it is also reset automatically.
6.	X 1 1 0 0 0 0	First-up value signal with storage, 2 flashing frequencies Flashing displays are converted to permanent light displays with LQ – as long as the input signal exists. The displays must be acknowledged with LQ and go out automatically, when the respective (acknowledged) input signal is discontinued. The horn must be acknowledged via HQ only.
7.	X 0 0 1 0 0 0	First-up value signal without storage, 1 flashing frequency Flashing displays are converted to permanent light displays with LQ – as long as the input signal exists. Without an input signal the lights go out. The horn can be acknowledged via HQ, but it is also reset automatically.
8.	X 1 0 1 0 0 0	First-up value signal with storage, 1 flashing frequency Flashing displays are converted to permanent light displays with LQ – as long as the input signal exists. The LEDs must be acknowledged with LQ and go out automatically when the respective (acknowledged) input signal no longer exists. The horn must be acknowledged via HQ only.
9.	X 1 0 0 1 0 0 Applies to LMIL 96-16.2 only	Signal storage with individual acknowledgement Stored signal displays can only be cancelled when the relevant input signal is discontinued and the respective signal has been acknowledged. The horn must be acknowledged via HQ. The key button LQ is without function Signal-inputs E01 to E08, n/o and n/c operation is possible Reset-inputs E09 to E16, n/o operation only
10.	X 1 1 0 1 0 0 Applies to LMIL 96-16.2 only	First-up value signal with storage and individual acknowledgement, 2 flashing frequencies Flashing displays are turned into permanent light displays via LQ. Stored signal displays can only be cancelled when the relevant input signal is discontinued and the respective signal acknowledgement has taken place. The horn must be acknowledged via HQ. Signal-inputs E01 to E08, n/o and n/c operation is possible Reset-inputs E09 to E16, n/o operation only
11.	X 1 0 1 1 0 0 Applies to LMIL 9616.2 only	New value signal with storage and individual acknowledgement, 1 flashing frequency. Flashing displays are turned into permanent light displays via LQ Stored signal displays can only be cancelled when the relevant input signal is discontinued and the respective signal acknowledgement has taken place. The horn must be acknowledged via HQ. Signal-inputs E01 to E08, n/o and n/c operation is possible Reset-inputs E09 to E16, n/o operation only
12.	X X X X X 1 0	Operating state signals All odd-numbered signal inputs are used for the indication of operating state signals. The setting of the dip-switches 2 – 5 has no function for these inputs.
13.	X X X X X 0 1	Operating state signal off/ on The signal inputs 1—4 in units with 8 signal inputs and 1 – 8 in units with 16 inputs are used for the display of operating state signals. The setting of the dip-switches 2 – 5 is has no function for these inputs.