

## LDI3 INSTRUCTION FOLDER

### INTRODUCTION

LDI3.AV5/AV1, LDI3.F1K and LDI3.AV6 are  $\mu$ -processor based digital panel meters with a double input for the measurement of both AC current and AC voltage for the first one, autoranging frequency measurement for the second one and both DC current and DC voltage for the third one. All parameters are selectable by means of dip-switches. For a correct and long-lived working of this instrument, follow scrupulously the below mentioned instructions.

**NOTE:** only for LDI3.F1K (frequency meter), no parameters setting is requested because it performs an autoranging selection of the display scale, from 1 to 999Hz. Connect the measuring input as indicated in figure 4.

### 1. INSTALLATION

Insert the instrument into the panel and fasten it by fixing the two lateral brackets (1) supplied with the instrument to the appropriate location (2).

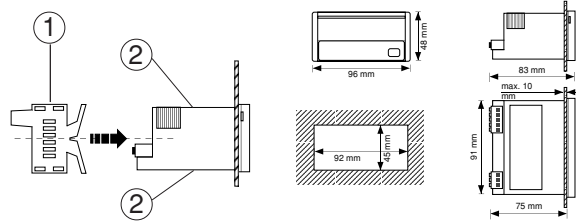


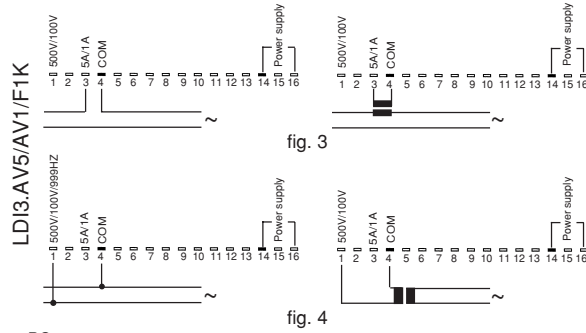
fig. 1

fig. 2

Figure 2 shows the overall dimensions and the panel cut-out.

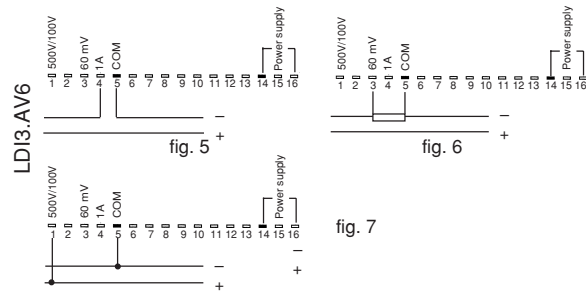
**AC measurements and frequency measurements**

Figure 3 shows the wiring diagrams of LDI3.AV5/AV1 connected as an ammeter and figure 4 its connections as a voltmeter (fig. 4 on the left also refers to LDI3.F1K frequency meter).



**DC measurements**

Figure 5 and 6 show the wiring diagrams of LDI3.AV6 connected as an ammeter: figure 5 shows the direct connection (max. 1A), fig.6 the shunt connection (60mV), and figure 7 the connection of the instrument as a voltmeter.



## 2. POWER SUPPLY

POWER SUPPLY TYPE	SCREW CONNECTOR
230 VAC (standard)	14, 16
115 VAC (standard)	14, 16
48 VAC (on request)	14, 16
24 VAC (on request)	14, 16

## 3. PRELIMINARY OPERATIONS

Before supplying the instrument, make sure that the supply voltage correspond to what is shown on the label (see figure 8).

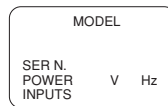


fig. 8

Only for the models LDI3.AV6 and LDI3.AV5/AV1 remove the front cover to set the relevant parameters.

### Engineering unit window

To insert the interchangeable engineering unit in the special window, proceed as follows: remove the front cover by inserting a suitable screw driver in the special lot on the short sides of the front panel; force gently until the front cover is completely removed. Insert the desired engineering unit by means of a pair of tweezers. Replace the front cover by inserting it first in the lower part and then in the upper part of the locking system.




## AC measurements (LDI3.AV5/AV1)

### 4A. INPUTS

As indicated before, the instruments are suitable to measure both 1A / 5A currents and voltages up to 100V / 500V in the same case,







according to the model. Use inputs 3 and 4 for current measurements and inputs 1 and 4 for voltage measurements as indicated in paragraph 1.

#### 5A. DECIMAL POINT SELECTION




ON OFF		999	Remove the front cover of LDI3 as indicated in paragraph 3. For the decimal point selection, use dip-switches 4 and 5 as shown in the figure on the left.
		99.9	
		9.99	

#### 6A. CT / VT PRIMARY AND DIRECT CONNECTION SELECTION

##### Current measurements

ON OFF		150 (A)	<u>CT connection:</u> set dip-switches 1, 2 and 3 according to what is shown in the figure on the left. The different position of the decimal point allows you to change these scales into either: <b>15.0 - 25.0 - 40.0 - 50.0 - 60.0 - 99.9</b> or <b>1.50 - 2.50 - 4.00 - 5.00 - 6.00 - 9.99 .</b> <u>Direct connection:</u> set the dip-switches for 5A measurements as per 5.00 (A), for 1A measurements as per 999 (mA).
		250 (A)	
		400 (A)	
		500 (A)	
		600 (A)	
		999 (A, mA)	

##### Voltage measurements

ON OFF		220 (V)	<u>VT connection:</u> set dip-switches 1, 2 and 3 according to what is shown in the figure on the left. The 100VAC input can be connected to a VT with a secondary of 100VAC and a primary of 220V, 380V or 1000V; the relating primary selection must be carried out as indicated on the left.
		380 (V)	
		999 (V)	

Direct connection: set the dip-switches for both 500VAC and 100VAC measurements as per 999 (V), and only for 100VAC, the decimal point position must be "99.9".

**NOTE: the minimum measuring values for both the current and voltage inputs are 3% of the full scale (f.s.) except for the 500VAC input where the minimum measuring value is 5% of f.s.**

#### 7A. SWITCHING ON

After setting the whole instrument, replace the front cover of LDI3. Subsequently power the instrument; as soon as it is powered, it will show for a few seconds the selected primary range, for example "400" in case of "400 A" selection, and subsequently the measured value. If the display shows "000", it means that the primary range is of "999" and dip-switches 1, 2 and 3 are all in "ON" position, see paragraph 6.

### DC measurements (LDI3.AV6)

#### 4B. INPUTS

As indicated above, the instruments are suitable to measure a current up to 1 A (direct connection), a voltage up to 60mV (shunt connection for current measurement) and voltages up to 100V / 500V in the same case. Use inputs 4 and 5 for current measurements (1A), inputs 3 and 5 for current measurements (60 mV), and inputs 1 and 5 for voltage measurements as indicated in paragraph 1.

#### 5B. DECIMAL POINT SELECTION

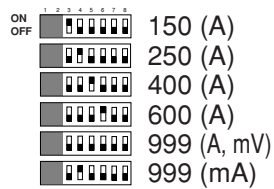
	1 2 3 4 5 6 7 8	
ON	<input type="checkbox"/>	999
OFF	<input type="checkbox"/>	99.9
	<input type="checkbox"/>	9.99

For the decimal point selection use dip-switches 1 and 2 as shown in the figure on the left.

#### 6B. SHUNT AND DIRECT CONNECTION SELECTION

Current measurements

Shunt connection: set dip-switches



3, 4, 5, 6, 7 and 8 according to what is shown in the figure on the left. The different position of the decimal point allows you to change these scales into either:

**15.0 - 25.0 - 40.0 - 60.0 - 99.9** or **1.50 - 2.50 - 4.00 - 6.00 - 9.99.**

Direct connection: set the dip-switches for 1A measurement as per 999 (mA).

#### Voltage measurements



Direct connection: set dip-switches 3, 4, 5, 6, 7 and 8 according to what is shown in the figure on the left. Only for the 100V measurement, the decimal point position must be "99.9".

**NOTE: the measuring ranges for both the current and voltage inputs are from -99 to 999 in accordance with the dip-switch selection.**

#### 7B. SWITCHING ON

After setting the whole instrument, connect it to the power supply; as soon as powered, it will show for a few seconds " - - - ", and subsequently the measured value.

#### NOTE

Inside the instrument there are some calibration potentiometers that are factory adjusted. To avoid any accuracy loss, please do not touch them.



#### WARNING

**Do not touch the inside parts of the instrument when power supply and measuring inputs have already been connected to an electrical installation and the latter has been powered.**