

# Panel Meters and Controllers

## DC Current and Voltage Meter/Controller

### Type LDI35 AV0



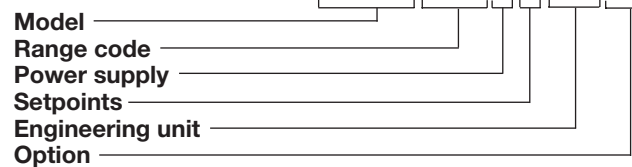
- 3 1/2-dgt meter or 3-dgt + dummy zero for DC current and voltage measurements
- Indicator or controller
- 200 mV, 20 V, 200 VDC and 2 mA, 20 mADC ranges
- All functions selectable by key-pad
- Password protection of programming parameters
- 48 x 96 mm
- Degree of protection: IP 50 (IP 65 on request)

### Product Description

3 1/2-dgt or 3-dgt + dummy zero multi-range  $\mu$ P-based meter for DC current and voltage measurements. Selectable input range. Ensures a degree of protection of IP 50 (IP 65 on request).

### Ordering Key

**LDI35AV0D0 XX XX**



### Type Selection

Range code	Power supply	Options
See Range Table	<b>A:</b> 24 VAC, -15% +10%, 50/60 Hz <sup>1)</sup>	<b>XX:</b> None (standard)
<b>Setpoints</b>	<b>B:</b> 48 VAC, -15% +10%, 50/60 Hz <sup>1)</sup>	<b>IX:</b> Degree of protection IP 65
<b>0:</b> 0 setpoints	<b>C:</b> 115 VAC, -15% +10%, 50/60 Hz <sup>1)</sup>	<b>AX:</b> Excitation output
<b>1:</b> 1 setpoint	<b>D:</b> 230 VAC, -15% +10%, 50/60 Hz (standard)	<b>XT:</b> Tropicalization
<sup>1)</sup> Power supply on request	<b>E:</b> 120 VAC, -15% +10%, 50/60 Hz <sup>1)</sup>	
	<b>F:</b> 240 VAC, -15% +10%, 50/60 Hz <sup>1)</sup>	
	<b>3:</b> 9 to 32 VDC with galvanic insulation <sup>1)</sup>	
	<b>6:</b> 40 to 150 VDC with galvanic insulation <sup>1)</sup>	

### Input Specifications

<b>Rated input</b>	200 mVDC 20 VDC 200 VDC 2 mADC 20 mADC	<b>Sampling rate</b>	4 times/s, dual slope, 16 bits A/D converter
<b>Overload protection</b>	Cont. Current: 1.2 x rated input Voltage: 1.2 x rated input For 1s Current: 5 x rated input Voltage: 2 x rated input	<b>Max. and. min indication</b>	3 1/2 dgt: Max. 1999 Min. -1999 3 + 0 dgt: Max. 9990 Min. -1990
<b>Accuracy</b> (@ 25°C $\pm$ 5°C, R.H. $\leq$ 60%)	$\pm$ 0.3% f.s., $\pm$ 1 dgt	<b>Key-pad</b>	3 keys: "S" for menu selection "UP" and "DOWN" for value programming/function selection.
<b>Temperature drift</b>	$\pm$ 200 ppm/°C		
<b>Display</b>	7-segment LED, h 14.2 mm, 3 1/2 digits or 3 digits + dummy zero selectable by means of the front key-pad		

## Output Specifications

<b>Excitation output voltage</b>	
Voltage	15 VDC non-stabilized/ 40 mA max. (on request)
Insulation	100 V <sub>rms</sub> output to measuring input 4000 V <sub>rms</sub> output to AC supply input 500 V <sub>rms</sub> output to DC supply input
<b>Alarms</b>	
Number of setpoints	0 (1 on request)
Alarm types	Over range, up alarm, down alarm, down alarm with dis- abling at power-on, up alarm with latch, down alarm with latch
Setpoint adjustment	0 to 100% of the displayed range
Hysteresis	0 to 100% of the displayed range
On-time delay	0 to 255 s
Off-time delay	0 to 255 s
Relay status	Normally energized/de-ener- gized
Output type	
Contact	1 x SPDT
Rating	5A, 250 VAC/VDC, 40 W/ 1200 VA, 130.000 cycles
Min. response time	≤ 500 ms, filter excluded, set- point on-time delay: "0"
Insulation	2000 V <sub>rms</sub> output to measuring inputs 2000 V <sub>rms</sub> output to excitation output

## Software Functions

<b>Password</b>	
1st level:	Numeric code of max. 3 di- gits; 2 protection levels of the programming data.
2nd level:	Password "0", no protection. Password from 1 to 255, all data protected.
<b>Scaling factor</b>	
Operating mode	Electrical scale compression, compression/expansion of the displayed scale (max. 2 with- out digital filter, > 2 with digi- tal filter).
Electrical scale	Programmable within the whole measuring range.
Decimal point position	Programmable within the displaying range.
Displayed scale	Programmable within the whole displaying range.
<b>Diagnostics</b>	
Over range:	The display flashes when the limits of the displayed range are exceeded, the data are updated up to the maximum read-out.
Under range:	EEE - EE
<b>Filter</b>	
Filter operating range	From 0 to 1999/9990
Filtering coefficient	From 1 to 255
<b>Max. data hold</b>	Automatic storage (RAM only) of the max. value measured after last reset

## Supply Specifications

<b>AC supply</b>	
	230 VAC, -15% +10%, 50/60 Hz (standard)
	24 VAC, 48 VAC, 115 VAC, 120 VAC, 240 VAC, -15% +10%, 50/60 Hz (on request)
Insulation	4000 V <sub>rms</sub> supply input to all other inputs/outputs
<b>DC supply</b>	
	9 to 32 VDC, G.I. max. inrush current: ≤ 1.2 A/200 ms
	40 to 150 VDC, G.I., max. inrush current: ≤ 0.6 A/200 ms
Insulation	500 V <sub>rms</sub> supply input to all other inputs/outputs
<b>Power consumption</b>	6.5 VA

## General Specifications

<b>Operating temperature</b>	0° to 50°C (32° to 122°F) (R.H. < 90% non-condensing)
<b>Storage temperature</b>	-10° to 60°C (14° to 140°F) (R.H. < 90% non-condensing)
<b>Insulation reference voltage</b>	300 V <sub>rms</sub> to ground
<b>Dielectric strength</b>	4000 V <sub>rms</sub> for 1 minute
<b>Noise rejection</b>	
NMRR	40 dB, 40 to 60 Hz
CMRR	100 dB, 40 to 60 Hz
<b>EMC</b>	IEC 60801-2, IEC 60801-3, IEC 60801-4 (level 3), EN 50 081-1, EN 50 082-1
<b>Safety standards</b>	EN 61 010-1, IEC 61010-1, VDE 0411
<b>Connector</b>	Screw-type
<b>Housing</b>	
Dimensions	1/8 DIN, 48 x 96 x 83 mm
Material	ABS, self-extinguishing: UL 94 V-0
<b>Degree of protection</b>	IP 50 (IP 65 on request)
<b>Weight</b>	Approx 340 g
<b>Approvals</b>	CE, CSA

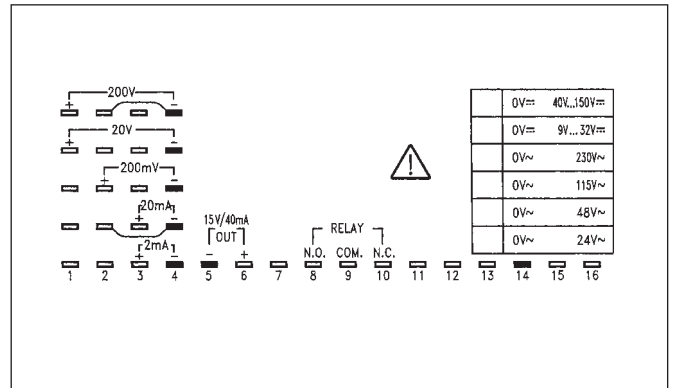
## Range Table

Rated inputs	Ranges (3 1/2 dgt)	Impedances
200 mVDC	-199.9 mV to 199.9 mVDC	≥ 1 kΩ
20 VDC	-19.99 V to 19.99 VDC	≥ 120 kΩ
200 VDC	-199.9 V to 199.9 VDC	≥ 120 kΩ
2 mADC	-1.999 mA to 1.999 mADC	≤ 90 Ω
20 mADC	-19.99 mA to 19.99 mADC	≤ 90 Ω

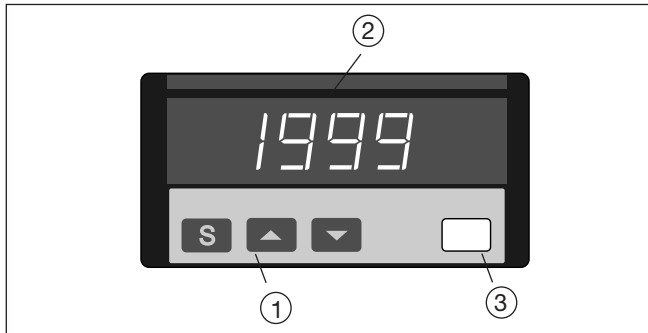
  

Rated inputs	Ranges (3 + 0 dgt)	Impedances
100 mVDC	-19.90 mV to 99.90 mVDC	≥ 1 kΩ
10 VDC	-1.990 V to 9.990 VDC	≥ 120 kΩ
100 VDC	-19.90 V to 99.90 VDC	≥ 120 kΩ
1 mADC	-199.0 mA to 999.0 μADC	≤ 90 Ω
10 mADC	-1.990 mA to 9.990 mADC	≤ 90 Ω

## Terminal Board



## Front Panel Description



**1. Key-pad**  
Set-up and programming procedures are easily controlled by the 3 pushbuttons.

- “S”
  - Selection key to select programming function (instrument configuration) or measurement and alarm detection.
- “▲” and “▼”
  - Up and down keys for increasing or decreasing programming values.

**2. Display**  
3 1/2-dgt or 3-dgt + dummy zero (maximum read-out 1999/9999).

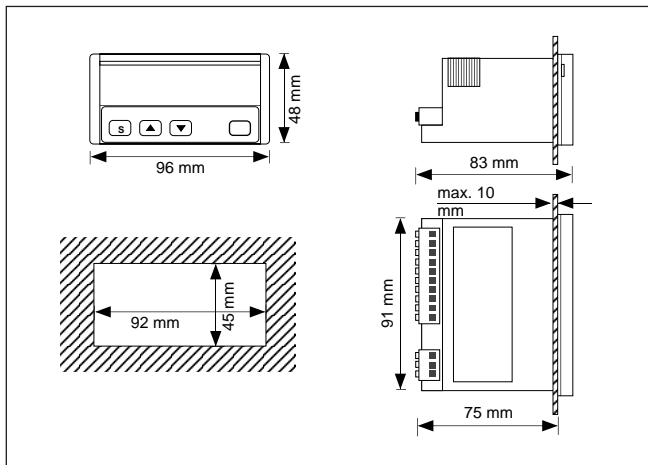
Alphanumeric indication by means of 7-segment display for:

- Displaying of the measured value, over-range, burn-out and programming indications.
- Indication of programming parameters.

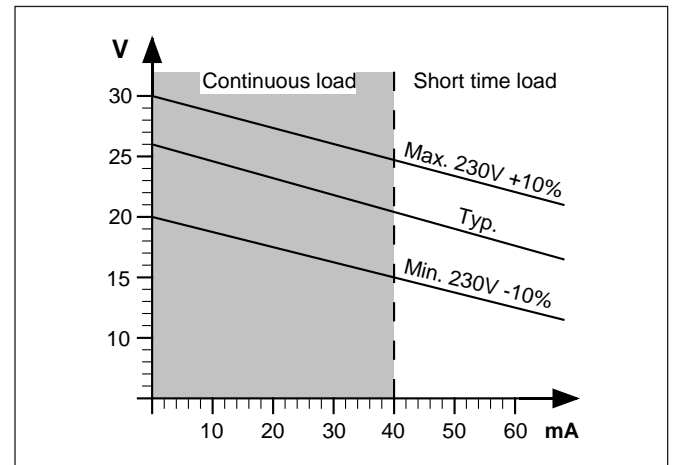
**3. Engineering unit**  
Screen for interchangeable unit label. The symbols in the shaded areas are those available on the set of engineering unit labels supplied with the LDI35 (engineering unit label to be inserted by customer).

	W = 08	MΩ = 16	% = 24	mm HG = 32	cm = 40
mV = 01	kW = 09	Hz = 17	mbar = 25	l/min = 33	m = 41
V = 02	MW = 10	kHz = 18	bar = 26	l/h = 34	kg = 42
kV = 03	var = 11	RPM = 19	psi = 27	kg/min = 35	ppm = 43
μA = 04	kvar = 12	m/s = 20	ata = 28	ton/h = 36	kA = 44
mA = 05	Mvar = 13	m/min = 21	ate = 29	m <sup>3</sup> /min = 37	cos φ = 45
A = 06	Ω = 14	°C = 22	kg/cm <sup>2</sup> = 30	m <sup>3</sup> /h = 38	m <sup>3</sup> = 46
mW = 07	kΩ = 15	°F = 23	mm H <sub>2</sub> O = 31	mm = 39	μs = 47

## Dimensions



## Excitation Output



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