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 µP-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

LDI35AV0D0XXXX

- **Model**
- **Range code**
- **Power supply**
- **Setpoints**
- **Engineering unit**
- **Option**

Type Selection

Range code

See Range Table

Setpoints

0: 0 setpoints
1: 1 setpoint

[1] Power supply on request

Power supply

A: 24 VAC, -15% +10%, 50/60 Hz [1]
B: 48 VAC, -15% +10%, 50/60 Hz [1]
C: 115 VAC, -15% +10%, 50/60 Hz [1]
D: 230 VAC, -15% +10%, 50/60 Hz (standard)
E: 120 VAC, -15% +10%, 50/60 Hz [1]
F: 240 VAC, -15% +10%, 50/60 Hz [1]
3: 9 to 32 VDC with galvanic insulation [1]
6: 40 to 150 VDC with galvanic insulation [1]

Options

XX: None (standard)
IX: Degree of protection IP 65
AX: Excitation output
XT: Tropicalization

Input Specifications

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

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Output Specifications

Excitation output voltage	
Voltage	15 VDC non-stabilized/ 40 mA max. (on request)
Insulation	100 V_{rms} output to measuring input 4000 V_{rms} output to AC supply input 500 V_{rms} output to DC supply input
Alarms	
Number of setpoints	0 (1on request)
Alarm types	Over range, up alarm, down alarm, down alarm with disabling 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-energized
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, setpoint on-time delay: “0”
Insulation	2000 V_{rms} output to measuring inputs 2000 V_{rms} output to excitation output

Software Functions

Password	Numeric code of max. 3 digits; 2 protection levels of the programming data.
1st level:	Password “0”, no protection.
2nd level:	Password from 1 to 255, all data protected.
Scaling factor	
Operating mode	Electrical scale compression, compression/expansion of the displayed scale (max. 2 without digital filter, > 2 with digital 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.
Diagnostics	The display flashes when the limits of the displayed range are exceeded, the data are updated up to the maximum read-out.
Over range:	EEE
Under range:	- EE
Filter	
Filter operating range	From 0 to 1999/9990
Filtering coefficient	From 1 to 255
Max. data hold	Automatic storage (RAM only) of the max. value measured after last reset

Supply Specifications

AC supply	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_{rms} supply input to all other inputs/outputs
DC supply	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_{rms} supply input to all other inputs/outputs
Power consumption	6.5 VA

General Specifications

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

Specifications are subject to change without notice

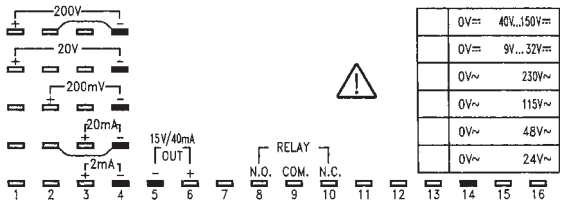
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Range Table

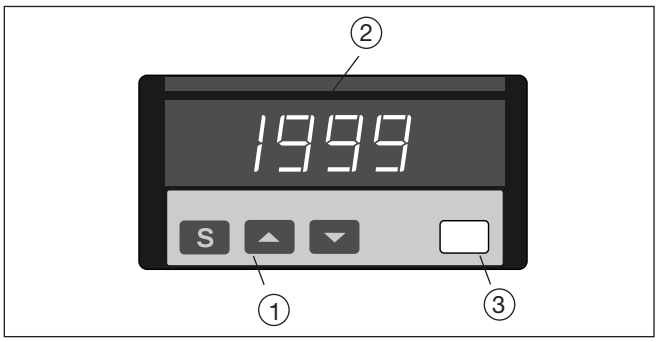
Rated inputs	Ranges (3 1/2 dgt)	Impedances
200 mVDC	-199.9 mV to 199.9 mVDC	≥ 1 kΩ
20 VDC	-19.99 V to 19.99 VDC	≥ 120 kΩ
200 VDC	-199.9 V to 199.9 VDC	≥ 120 kΩ
2 mADC	-1.999 mA to 1.999 mADC	≤ 90 Ω
20 mADC	-19.99 mA to 19.99 mADC	≤ 90 Ω

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.

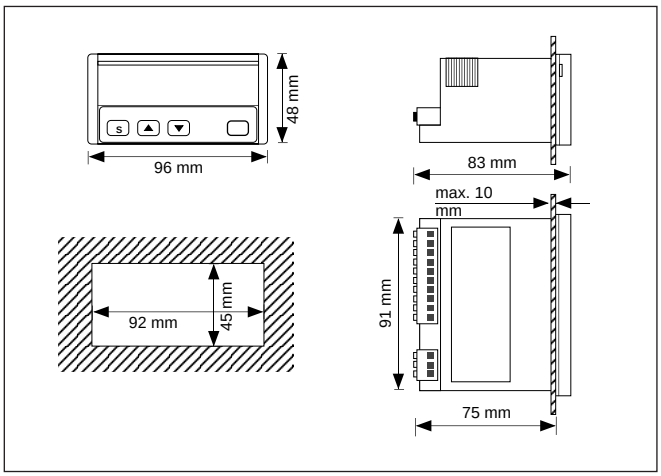
2. **Display**
   3 1/2-dgt or 3-dgt + dummy zero (maximum read-out 1999/9999).

   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^3/min = 37	cos ϕ = 45
A = 06	Ω = 14	°C = 22	kg/cm^2 = 30	m^3/h = 38	m^3 = 46
mW = 07	kΩ = 15	°F = 23	mm H_2O = 31	mm = 39	µs = 47

Dimensions



Excitation Output

