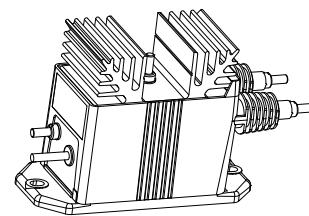


Voltage Transducer LV 100-250/SP5

For the electronic measurement of voltages: DC, AC, pulsed..., with galvanic separation between the primary circuit and the secondary circuit.



$V_{PN} = 250 \text{ V}$



Electrical data

V_{PN}	Primary nominal RMS voltage	250	V
V_{PM}	Primary voltage, measuring range	0 ... ± 375	V
I_{PN}	Primary nominal RMS current	40	mA
R_M	Measuring resistance	$R_{M \min}$	$R_{M \max}$
	with $\pm 15 \text{ V}$	0	210
		0	120
	with $\pm 24 \text{ V}$	0	410
		0	250
I_{SN}	Secondary nominal RMS current	50	mA
K_N	Conversion ratio	250 V : 50 mA	
U_C	Supply voltage ($\pm 10 \text{ %}$)	$\pm 15 \dots 24$	V
I_C	Current consumption	< 37 (@ $\pm 24 \text{ V}$) + I_S	mA

Accuracy - Dynamic performance data

X	Accuracy @ V_{PN} , $T_A = 25 \text{ }^\circ\text{C}$	± 0.9	%
ε_L	Linearity error	< 0.1	%
I_O	Offset current @ $V_P = 0$, $T_A = 25 \text{ }^\circ\text{C}$	Typ	Max
I_{OT}	Temperature variation of I_O	± 0.4	± 0.2
t_r	Step response time to 90 % of V_{PN}	< 70	μs

Test circuit

N_T	Number of turns (test winding)	100	
R_T	Resistance of test winding @ $T_A = 70 \text{ }^\circ\text{C}$	4	Ω
I_T	Test current @ 10 % of V_{PM} (during 1 s)	0.1	A

General data

T_A	Ambient operating temperature	-25 ... +70	$^\circ\text{C}$
T_S	Ambient storage temperature	-40 ... +85	$^\circ\text{C}$
N_P/N_S	Turns ratio	2500 : 2000	
P_P	Total primary power loss	10	W
R_P	Resistance of primary winding @ $T_A = 25 \text{ }^\circ\text{C}$	6.25	$\text{k}\Omega$
R_S	Resistance of secondary winding @ $T_A = 70 \text{ }^\circ\text{C}$	55	Ω
m	Mass	840	g
	Standard	EN 50155: 1995	

Features

- Closed loop (compensated) voltage transducer using the Hall effect
- Insulating plastic case recognized according to UL 94-V0
- Primary resistor R_P incorporated within the housing.

Special features

- $U_C = \pm 15 \dots 24 (\pm 10 \text{ %}) \text{ V}$
- $T_A = -25 \text{ }^\circ\text{C} \dots +70 \text{ }^\circ\text{C}$
- $N_T = 100$ turns
- Shield around secondary connection.

Advantages

- Excellent accuracy
- Very good linearity
- Low temperature drift
- Optimized response time
- Wide frequency bandwidth
- No insertion losses
- High immunity to external interference.

Applications

- Single or three phase inverters
- Propulsion and braking choppers
- Propulsion converters
- Auxiliary converters
- Battery chargers.

Application Domain

- Traction.

Voltage Transducer LV 100-250/SP5

Insulation coordination

U_d	RMS voltage for AC insulation test, 50 Hz, 1 min		
	Between primary and secondary + test	6	kV
	Between secondary and test	100	V
	Between secondary + test and to external shield	500	V
U_e	Partial discharge extinction RMS voltage @ 10 pC	≥ 510	V
		Min	
d_{Cp}	Creepage distance	164.8	mm
d_{Cl}	Clearance	47.1	mm
CTI	Comparative tracking index (group I)	600	

Safety



This transducer must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the manufacturer's operating instructions.



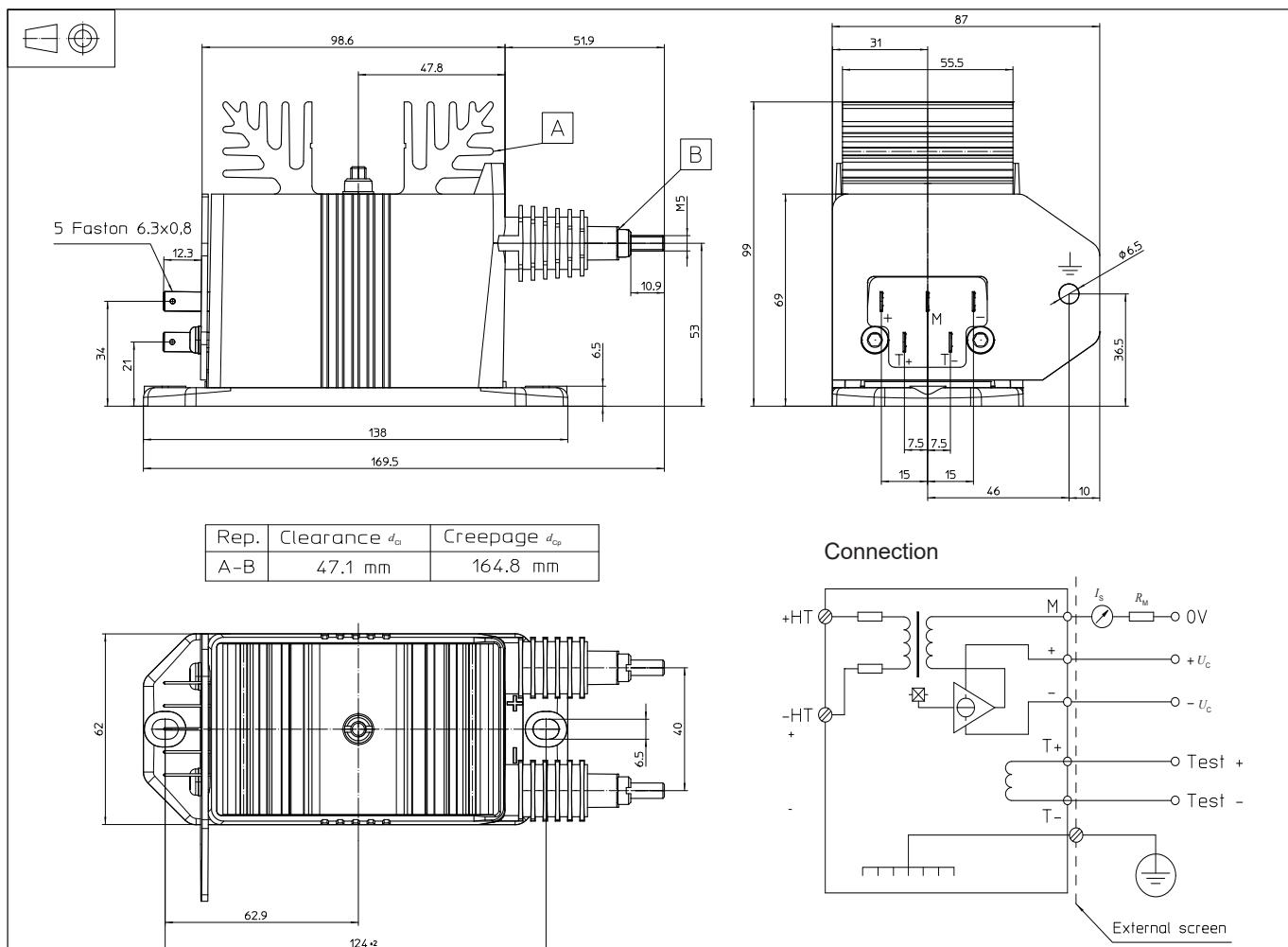
Caution, risk of electrical shock

When operating the transducer, certain parts of the module can carry hazardous voltage (e.g. primary busbar, power supply). Ignoring this warning can lead to injury and/or cause serious damage.

This transducer is a build-in device, whose conducting parts must be inaccessible after installation. A protective housing or additional shield could be used.

Main supply must be able to be disconnected.

Dimensions LV 100-250/SP5 (in mm)



Mechanical characteristics

- General tolerance ± 0.3 mm
- Transducer fastening 2 holes $\varnothing 6.5$ mm
- Recommended fastening torque 2 M6 steel screws
- Connection of primary 5 N·m
- Recommended fastening torque 2 M5 threaded studs
- Connection of secondary 2.2 N·m
- Connection of ground Faston 6.3 \times 0.8 mm
- Connection of ground hole $\varnothing 6.5$ mm

Remarks

- I_s is positive when V_p is applied on terminal +HT.
- The primary circuit of the transducer must be linked to the connections where the voltage has to be measured.
- Installation of the transducer must be done unless otherwise specified on the datasheet, according to LEM Transducer Generic Mounting Rules. Please refer to LEM document N°ANE120504 available on our Web site: [Products/Product Documentation..](#)

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