

Voltage Transducer LV 100-2000/SP6

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

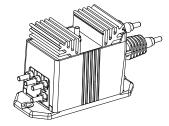


Electrical data Primary nominal rms voltage 2000 V $V_{_{\mathrm{PN}}}$ $V_{\scriptscriptstyle{\mathrm{PM}}}$ 0 ... ±3000 Primary voltage, measuring range V $I_{\rm PN}$ Primary nominal rms current 5 mΑ $R_{\scriptscriptstyle \rm M}$ Measuring resistance $R_{\mathrm{M}\,\mathrm{max}}$ @ ±1000 V _{max} 450 with ±15 V 0 Ω 210 @ $\pm 2000 \text{ V}_{max}$ 0 Ω @ ±3000 V _{max} 120 Ω @ ±1000 V _{max} with ±24 V 0 770 Ω @ ±2000 V _{max} 0 410 Ω @ ±3000 V _{max} 110 250 Ω Secondary nominal rms current 50 mΑ Conversion ratio 2000 V:50 mΑ Supply voltage (±10 %) ±15 ... 24 V Current consumption $< 37 (@ \pm 24 V) + I_s mA$

Accuracy - Dynamic performance data								
$X_{_{\mathrm{G}}}$	Overall accuracy @ V_{PN} , $T_{A} = 25$	°C	±0.9		%			
$\boldsymbol{\varepsilon}_{\!\scriptscriptstyle L}$	Linearity error		< 0.1		%			
_			Тур	Max				
$I_{_{ m O}}$	Offset current @ I_P = 0, T_A = 25 °	С		±0.2	mA			
$I_{_{ m O} au}$	Temperature variation of $I_{\scriptscriptstyle m O}$	−25 +70 °C	±0.4	±0.6	mA			
	Ç .	−40 +85 °C		±1.0	mA			
$t_{_{ m r}}$	Step response time to 90 % of $V_{\rm F}$	PN .	70		μs			

General data							
T_{A}	Ambient operating temperature	-40 +85	°C				
$T_{\rm s}$	Ambient storage temperature	− 45 +90	°C				
$N_{\rm P}/N_{\rm S}$	Turns ratio	20000 : 2000					
P_{P}	Total primary power loss	10	W				
R _₁	Primary resistance @ T_A = 25 °C	400	kΩ				
$R_{\rm s}$	Resistance of secondary winding @ T_A = 85 °C	57	Ω				
m	Mass	790	g				
	Standard	EN 50155: 199	EN 50155: 1995				





Features

- Closed loop (compensated)
 voltage transducer using the Hall
 effect
- Insulating plastic case recognized according to UL 94-V0
- Primary resistor R₁ incorporated within the housing.

Special features

- $U_{\rm C}$ = ±15 ... 24 (±10 %) V
- $U_d = 12 \text{ kV (to see note}^{-1)}, \text{ page 2)}$
- $T_A = -40^{\circ}\text{C} \dots +85^{\circ}\text{C}$
- Connection to secondary circuit on M5 threaded studs
- Shield between primary and secondary
- DTR N°0000122104.

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.



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Insulation coordination					
$U_{_{ m d}}$	Rms voltage for AC insulation test, 50 Hz, 1 min	12 ¹⁾	kV		
		1 ²⁾	kV		
		Min			
$d_{_{\mathrm{Cp}}}$	Creepage distance	164.8	mm		
$oldsymbol{d}_{ extsf{CP}} \ oldsymbol{d}_{ extsf{CI}}$	Clearance	47.1	mm		
CTI	Comparative Tracking Index (group I)	600			

Notes:

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 (eg. primary connections, 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.

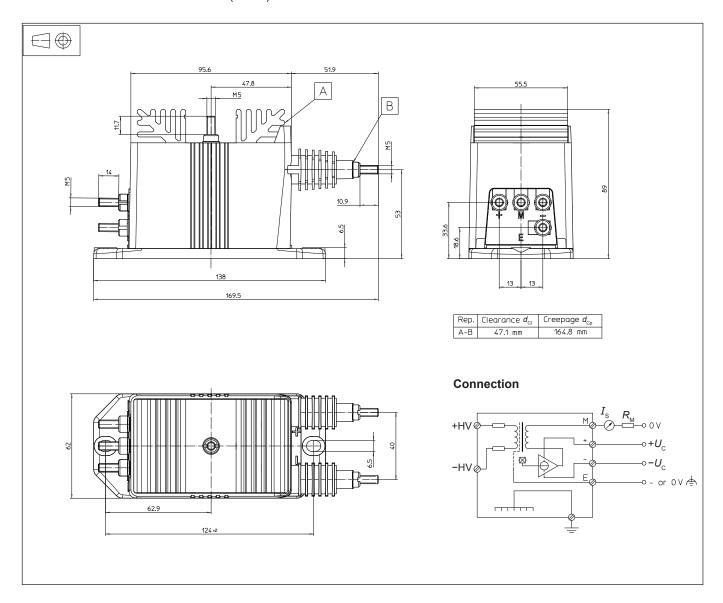
Main supply must be able to be disconnected.

¹⁾ Between primary and secondary + shield + heatsink

²⁾ Between secondary and shield.



Dimensions LV 100-2000/SP6 (in mm)



Mechanical characteristics

- General tolerance
- Transducer fastening

Recommended fastening torque 5 N·m

- Connection of primary
- Connection of secondary
- Connection of ground Recommended fastening torque 2.2 N·m

±0.5 mm

2 holes ø 6.5 mm

2 M6 steel screws

2 M5 threaded studs

4 M5 threaded studs

M5 threaded stud

Remarks

- $I_{\rm S}$ is positive when $V_{\rm P}$ is applied on terminal +HV.
- 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.