

Voltage Transducer LV 100-4000/SP2

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





Electrical data Primary nominal RMS voltage

Supply voltage (±5 %)

Current consumption

PN					-
V_{PM}	Primary voltage, measuring range		0 ±6000		V
I_{PN}	Primary nominal RMS	current	2.5		mA
R_{M}	Measuring resistance		$R_{ m Mmin}$	$R_{ m M\ max}$	
	with ±15 V	@ ±4000 V _{max}	0	210	Ω
		@ ±6000 V max	0	120	Ω
	with ±24 V	@ ±4000 V max	0	410	Ω
		@ ±6000 V max	110	250	Ω
I_{SN}	Secondary nominal R	MS current	50		mΑ
K_{N}	Conversion ratio		4000 V	' : 50 mA	
				_	

4000

±15 ... 24

< 37 (@ ±24 V) + I_S mA

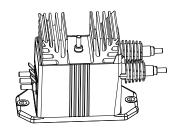
Accuracy - Dynamic performance data

X	Accuracy @ V_{PN} , T_{A} = 25 °C	±0.9		%
\mathcal{E}_{I}	Linearity error	< 0.1		%
-		Тур	Max	
I_{O}	Offset current @ V_P = 0, T_A = 25 °C		±0.2	mA
I_{OT}	Temperature variation of $I_{\rm O}$ = -25 °C +70 °C	±0.3	±0.6	mA
$t_{\rm r}$	Step response time to 90 % of $V_{\rm PN}$	200		μs

General data

T_{A}	Ambient operating temperature		− 25 + 70	°C
$T_{\rm S}$	Ambient storage temperature		− 40 +85	°C
$N_{\rm P}/N_{\rm S}$	Turns ratio		40000 : 2000	
P_{P}	Total primary power loss		10	W
R_{P}	Resistance of primary winding	@ $T_A = 25 ^{\circ}\text{C}$	1.6	$M\Omega$
$R_{\rm S}$	Resistance of secondary winding	@ $T_A = 70 ^{\circ}\text{C}$	55	Ω
m	Mass		790	g
	Standard		EN 50155: 1995	

$V_{PN} = 4000 \text{ V}$



Features

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

Special features

- $U_{\rm C}$ = ±15 ... 24 (±5 %) V
- $T_A = -25 \,^{\circ}\text{C} \dots +70 \,^{\circ}\text{C}$.

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
- Proplusion and braking choppers
- Proplusion converters
- Auxiliary converters
- · Battery chargers.

Application domain

Traction.



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Insulation coordination				
$U_{\rm d}$	RMS voltage for AC insulation test, 50 Hz, 1 min	12 Min	kV	
d_{Cp}	Creepage distance	164.8	mm	
d_{CI}	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 connections, power supply).

Ignoring this warning can lead to injury and/or cause serious damage.

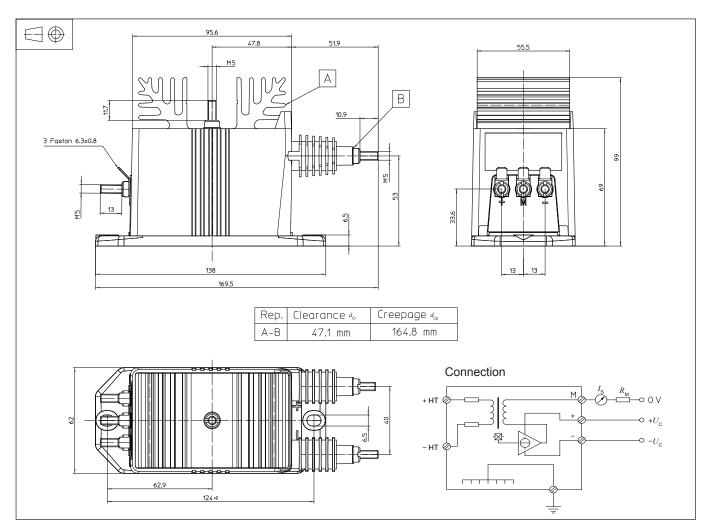
This transducer is a build-in device, whose conducting parts must be inaccessible after installation.

A protective housing or additional shield could be used.

Main supply must be able to be disconnected.



Dimensions LV 100-4000/SP2 (in mm)



Mechanical characteristics

- General tolerance
- Transducer fastening

Recommended fastening torque

- Connection of primary
 Recommended fastening torque
- Connection of secondary
- Connection of ground Recommended fastening torque

±0.5 mm 2 holes Ø 6.5 mm 2 M6 steel screws 5 N·m M5 threaded studs 2.2 N·m Faston 6.3 × 0.8 mm M5 threaded stud 2.2 N·m

Remarks

- $I_{\rm S}$ is positive when $V_{\rm P}$ 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.