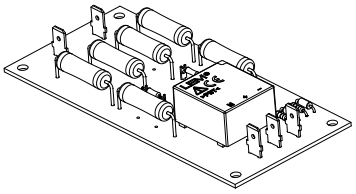
Voltage Transducer LV 25-1000/SP1

V_{PN} = 1000 V

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



Electrical data

V_{PN}	Primary nominal RMS voltage			1000	V
V_{PM}	Primary voltage, measuring range			0 ... ±1500	V
I_{PN}	Primary nominal RMS current			8	mA
R_M	Measuring resistance			$R_{M\,min}$ $R_{M\,max}$	
	with ±12 V	@ ±1000 V $_{max}$		0 165	Ω
		@ ±1500 V $_{max}$		0 70	Ω
	with ±15 V	@ ±1000 V $_{max}$		0 255	Ω
		@ ±1500 V $_{max}$		0 135	Ω
I_{SN}	Secondary nominal RMS current			25	mA
K_N	Conversion ratio			1000 V : 25 mA	
U_C	Supply voltage (±5 %)			±12 ... 15	V
I_C	Current consumption			10 (@ ±15 V) + I_S	mA

Accuracy - Dynamic performance data

			Typ	Max	
X_G	Overall accuracy @ V_{PN}, T_A = 25 °C		±1		%
ε_L	Linearity error		< 0.2		%
I_O	Offset current @ V_P = 0, T_A = 25 °C			±0.15	mA
I_{OT}	Temperature variation of I_O	−30 °C ... +25 °C	±0.10	±0.50	mA
		+25 °C ... +70 °C	±0.10	±0.40	mA
t_r	Step response time to 90 % of V_{PN}		< 40		us
BW	Frequency bandwidth (−1 dB)		DC ... 10		kHz

General data

T_A	Ambient operating temperature	−30 ... +70	°C
T_S	Ambient storage temperature	−40 ... +85	°C
N_P/N_S	Turns ratio	3116 : 998	
P_P	Total primary power loss	8	W
R_P	Resistance of primary @ T_A = 25 °C	125	kΩ
R_S	Resistance of secondary winding @ T_A = 70 °C	110	Ω
m	Mass	60	g
	Standards	EN 50178: 1997 EN 50155: 2001 UL 508: 2010	

Features

- Closed loop (compensated) voltage transducer using the Hall effect
- Insulating plastic case recognized according to UL 94-V0
- Primary resistor and transducer mounted on printed circuit board 128 × 60 mm.

Special features

- T_A = −30 ... +70 °C
- Coated.

Advantages

- Excellent accuracy
- Very good linearity
- Low temperature drift
- High immunity to external interference.

Applications

- AC variable speed drives and servo motor drives
- Static converters for DC motor drives
- Uninterruptible Power Supplies (UPS)
- Power supplies for welding applications.

Application domains

- Industrial
- Traction.

Insulation coordination

U_d	RMS voltage for AC insulation test, 50 Hz, 1 min	4.1 Min	kV
d_{Cp}	Creepage distance [1)]	13.8	mm
d_{Cl}	Clearance	13.8	mm
CTI	Comparative tracking index (group IIIa)	175	

Note: [1)] Between primary and secondary.

Applications examples

According to EN 50178 and IEC 61010-1 standards and following conditions:

- Over voltage category OV 3
- Pollution degree PD2
- Non-uniform field

	IEC 50178	IEC 61010-1
d_{Cp}, d_{Cl}, $\hat{U}_W$	Rated insulation voltage	Nominal voltage
Basic insulation	1500 V	NA
Reinforced insulation	600 V	600 V

Safety

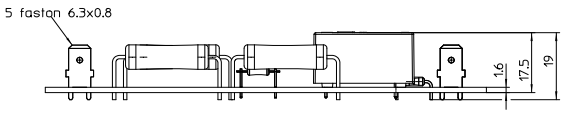
This transducer must be used in limited-energy secondary circuits according to IEC 61010-1.

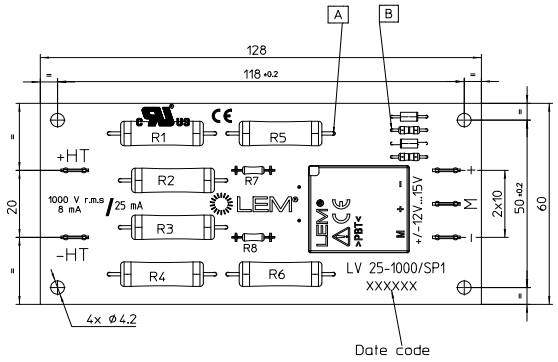
This transducer must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the manufacturer's operating instructions.

Caution, risk of electrical shock

When operating the transducer, certain parts of the module can carry hazardous voltage (eg. primary 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 25-1000/SP1 (in mm)

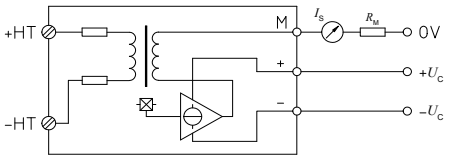




The mounting must be done on a adapted holder with four M4 screws

Rep.	d_{Cl}	d_{Cp}
A-B	13.8 mm	13.8 mm

Connection



Mechanical characteristics

- General tolerance ±0.3 mm
- Transducer fastening 4 holes ⌀ 4.2 mm the mounting must be done on a adapted holder with four M4 screws
- Connection of primary Faston 6.3 × 0.8 mm
- Connection of secondary Faston 6.3 × 0.8 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**.