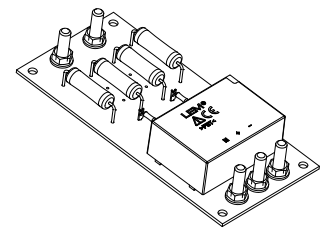


# Voltage Transducer LV 25-1000/SP3

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



$$U_{PN} = 1000 \text{ V}$$



## Electrical data

$U_{PN}$	Primary nominal RMS voltage	1000	V
$U_{PM}$	Primary voltage, measuring range	0 ... $\pm 1500$	V
$I_{PN}$	Primary nominal RMS current	6.6	mA
$R_M$	Measuring resistance	$R_{M \min}$ $R_{M \max}$	$\Omega$
	with $\pm 24 \text{ V}$	@ $\pm 1000 \text{ V}$ $\text{max}$	100   350
		@ $\pm 1500 \text{ V}$ $\text{max}$	100   215
$I_{SN}$	Secondary nominal RMS current	50	mA
$N_P/N_S$	Turns ratio	1000 V : 50 mA	
$U_C$	Supply voltage ( $\pm 5 \%$ )	$\pm 24$	V
$I_C$	Current consumption	20 (@ $\pm 24 \text{ V}$ ) + $I_S$	mA

## Accuracy - Dynamic performance data

$\epsilon_{\text{tot}}$	Total error @ $U_{PN}, T_A = 25 \text{ }^\circ\text{C}$	$\pm 0.8$	%
$\epsilon_L$	Linearity error	< 0.2	%
$I_O$	Offset current @ $U_P = 0, T_A = 25 \text{ }^\circ\text{C}$	Typ	Max
$I_{OT}$	Temperature variation of $I_O$ -40 $^\circ\text{C}$ ... +85 $^\circ\text{C}$	$\pm 0.20$	$\pm 0.80$ mA
$t_{D90}$	Delay time to 90 % of $U_{PN}$	< 19	us

## General data

$T_A$	Ambient operating temperature	-40 ... +85	$^\circ\text{C}$
$T_{Ast}$	Ambient storage temperature	-45 ... +90	$^\circ\text{C}$
$P_P$	Total primary power loss	8.3	W
$R_P$	Resistance of primary @ $T_A = 25 \text{ }^\circ\text{C}$	153	k $\Omega$
$R_S$	Resistance of secondary winding @ $T_A = 85 \text{ }^\circ\text{C}$	61	$\Omega$
$m$	Mass	110	g
	Standards	EN 50155: 2007 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 x 60 mm.

## Special features

- $U_C = \pm 24 (\pm 5 \%) \text{ V}$
- $N_P/N_S = 1000 \text{ V} : 50 \text{ mA}$
- $T_A = -40 \text{ }^\circ\text{C} \dots +85 \text{ }^\circ\text{C}$
- Coated
- Connection to primary and secondary by stud M5
- Railway equipment.

## 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 Domain

- Railway (fixed installations and onboard).

**Voltage Transducer LV 25-1000/SP3**

**Insulation coordination**

$U_d$	RMS voltage for AC insulation test <sup>1)</sup> , 50 Hz, 1 min	4.1 Min	kV
$d_{cp}$	Creepage distance	13.8	mm
$d_{cl}$	Clearance	13.8	mm
$CTI$	Comparative tracking index (group IIIb)	< 175	

Note: <sup>1)</sup> Between primary and secondary.

**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.



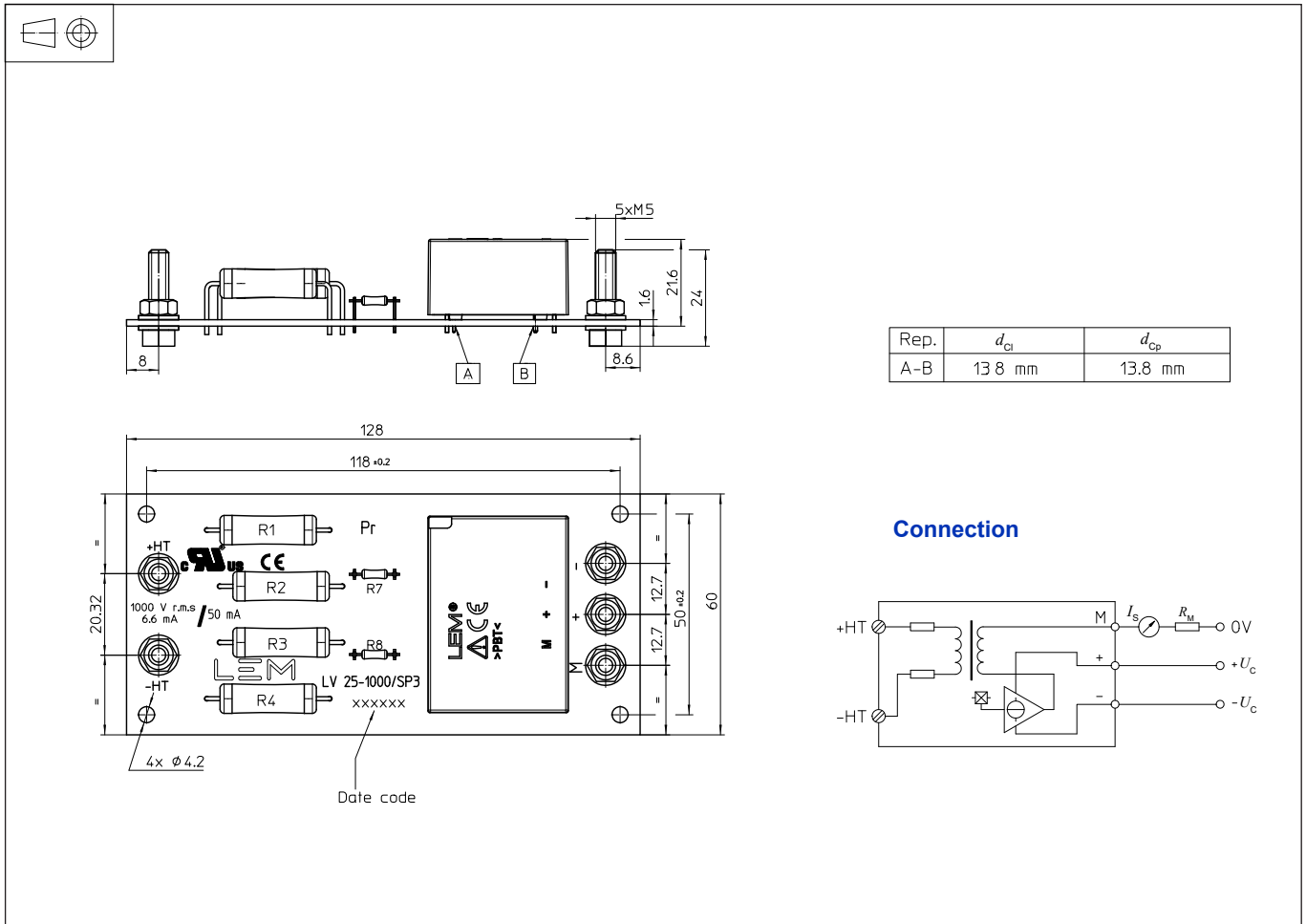
Caution, risk of electrical shock

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/SP3 (in mm)



### Mechanical characteristics

- General tolerance  $\pm 0.3$  mm
- Transducer fastening 4 holes  $\varnothing 4.2$  mm the mounting must be done on a adapted holder with four M4 screws
- Connection of primary Two M5 studs  
Faston torque 2.2 N·m
- Connection of secondary Three M5 studs  
Faston torque 2.2 N·m

### Remarks

- $I_s$  is positive when  $U_p$  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: <https://www.lem.com/en/file/3137/download/>.

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