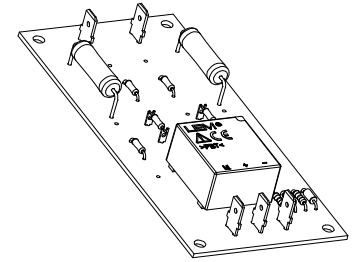


## Voltage Transducer LV 25-200

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



$$U_{PN} = 200 \text{ V}$$



### Electrical data

$U_{PN}$	Primary nominal RMS voltage	200	V		
$U_{PM}$	Primary voltage, measuring range	0 ... $\pm 300$	V		
$I_{PN}$	Primary nominal RMS current	10	mA		
$R_M$	Measuring resistance	$R_{M \min}$	$R_{M \max}$		
		with $\pm 12 \text{ V}$	@ $\pm 200 \text{ V}_{\max}$	0	153
		@ $\pm 300 \text{ V}_{\max}$	0	64	$\Omega$
	with $\pm 15 \text{ V}$	@ $\pm 200 \text{ V}_{\max}$	0	246	$\Omega$
	@ $\pm 300 \text{ V}_{\max}$	0	126	$\Omega$	
$I_{SN}$	Secondary nominal RMS current	25	mA		
$N_P/N_S$	Turns ratio	200 V : 25 mA			
$U_C$	Supply voltage ( $\pm 5 \%$ )	$\pm 12 \dots 15$	V		
$I_C$	Current consumption	10 (@ $\pm 15 \text{ V}$ ) + $I_S$	mA		

### Accuracy - Dynamic performance data

$\epsilon_{\text{tot}}$	Total error @ $U_{PN}, T_A = 25 \text{ }^\circ\text{C}$	$\pm 1$	%		
$\epsilon_L$	Linearity error	< 0.2	%		
$I_O$	Offset current @ $U_P = 0, T_A = 25 \text{ }^\circ\text{C}$	Typ	Max		
			$\pm 0.15$	mA	
$I_{OT}$	Temperature variation of $I_O$	-25 $^\circ\text{C}$ ... +25 $^\circ\text{C}$	$\pm 0.10$	$\pm 0.60$	mA
		+25 $^\circ\text{C}$ ... +70 $^\circ\text{C}$	$\pm 0.10$	$\pm 0.35$	mA
$t_{D90}$	Delay time to 90 % of $U_{PN}$	< 15	us		

### General data

$T_A$	Ambient operating temperature	-25 ... +70	$^\circ\text{C}$
$T_{A \text{st}}$	Ambient storage temperature	-40 ... +85	$^\circ\text{C}$
$N_P/N_S$	Turns ratio	2500 : 1000	
$P_P$	Total primary power loss	2	W
$R_P$	Resistance of primary @ $T_A = 25 \text{ }^\circ\text{C}$	20	k $\Omega$
$R_S$	Resistance of secondary winding @ $T_A = 70 \text{ }^\circ\text{C}$	113	$\Omega$
$m$	Mass	60	g
	Standards	EN 50178: 1997 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.

### 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

- Industrial.

## Voltage Transducer LV 25-200

### Insulation coordination

$U_d$	RMS voltage for AC insulation test <sup>1)</sup> , 50 Hz, 1 min	4.1	kV
		Min	
$d_{cp}$	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.

### 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

	EN 50178	IEC 61010-1
$d_{cp}, d_{cl}$	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.

## UL 508:Ratings and assumptions of certification

File # E189713 Volume: 2 Section: 6

### Standards

- CSA C22.2 NO. 14 - 10 INDUSTRIAL CONTROL EQUIPMENT - Edition 11 - Revision Date 2011/08/01
- UL 508 STANDARD FOR INDUSTRIAL CONTROL EQUIPMENT - Edition 17 - Revision Date 2010/04/15.

Parameter	Symbol	Unit	Value
Primary involved potential		V AC/DC	200
Max surrounding air temperature	$T_A$	°C	70
Primary voltage	$U_P$	V	According to series primary voltage
Secondary supply voltage	$U_C$	V DC	±12 to ±15
Secondary current	$I_S$	mA	25

### Conditions of acceptability

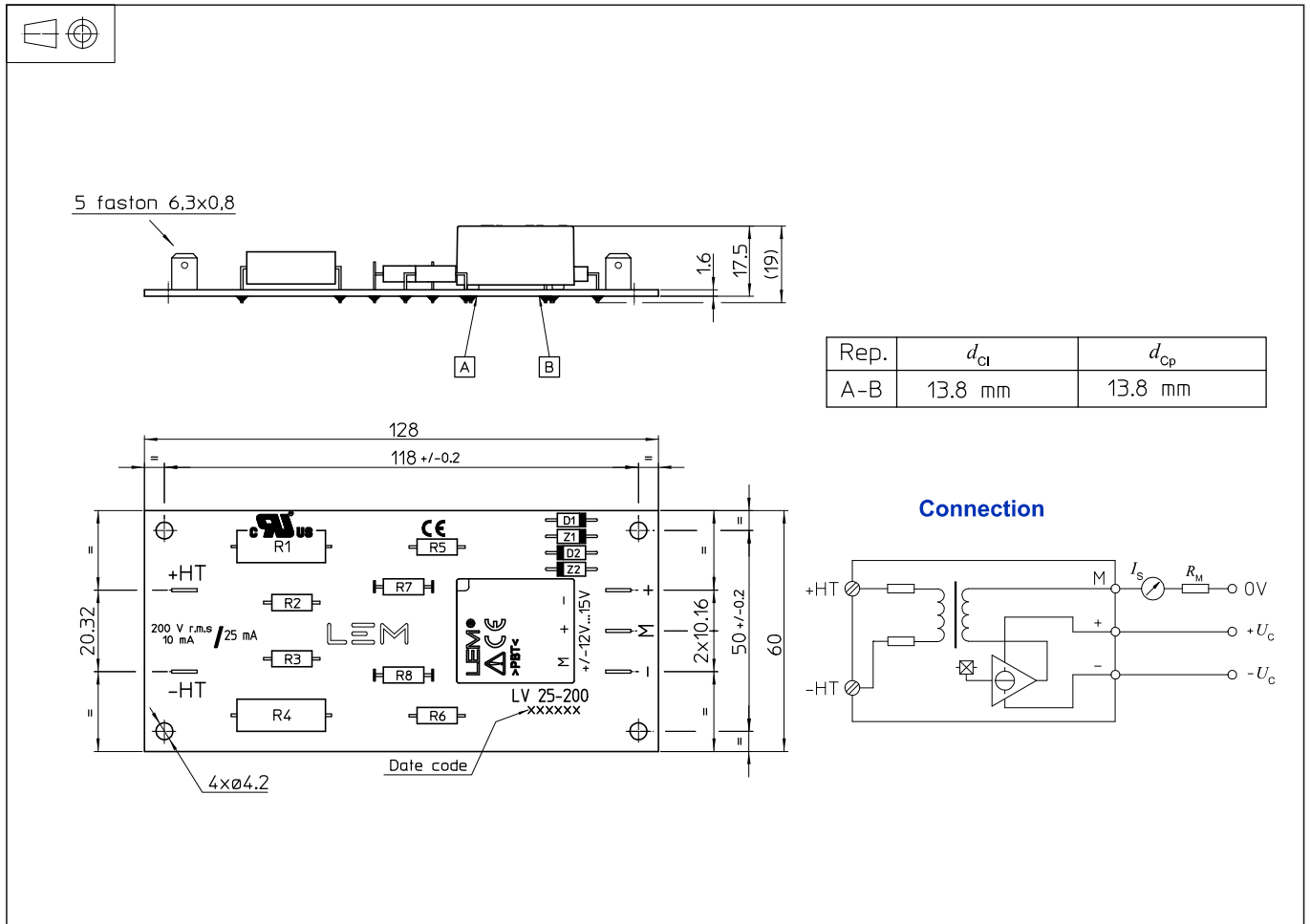
When installed in the end-use equipment, consideration shall be given to the following:

- 1 - These devices must be mounted in a suitable end-use enclosure.
- 2 - The terminals have not been evaluated for field wiring.
- 3 - The LV 25 Series shall be used in a pollution degree 2 environment when the Printed Wiring Board has not been coated.
- 4 - Low voltage circuits are intended to be powered by a circuit derived from an isolating source (such as a transformer, optical isolator, limiting impedance or electro-mechanical relay) and having no direct connection back to the primary circuit (other than through the grounding means).

### Marking

Only those products bearing the UL or UR Mark should be considered to be Listed or Recognized and covered under UL's Follow-Up Service. Always look for the Mark on the product.

## Dimensions LV 25-200 (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 Faston  $6.3 \times 0.8$  mm
- Connection of secondary Faston  $6.3 \times 0.8$  mm

### 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/>.
- This is a standard model. For different versions (supply voltages, turns ratios, unidirectional measurements...), please contact us.