LEM

Voltage Transducer LV 25-P/SP2

I_{PN} = 10 mA
V_{PN} = 10 .. 1500 V

For the electronic measurement of voltages : DC, AC, pulsed..., with a galvanic isolation between the primary circuit (high voltage) and the secondary circuit (electronic circuit).

LEM TRANSDUCERS 5 YEARS WARRANTY — CE — RoHS COMPLIANT 2002/95/EC

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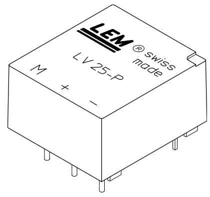

Electrical data

I_{PN}	Primary nominal r.m.s. current	10		mA
I_P	Primary current, measuring range	0 .. ± 14		mA
R_M	Measuring resistance	$R_{M\,min}$	$R_{M\,max}$	
	with ± 15 V @ ± 10 mA $_{max}$	100	343	Ω
	@ ± 14 mA $_{max}$	100	183	Ω
I_{SN}	Secondary nominal r.m.s. current	25		mA
K_N	Conversion ratio	2500 : 1000		
V_C	Supply voltage (± 5 %)	± 15		V
I_C	Current consumption	10 + I_S		mA
V_d	R.m.s. voltage for AC isolation test , 50 Hz, 1 mn	4.1		kV

Accuracy - Dynamic performance data

X_G	Overall Accuracy @ I_{PN} , T_A = 25°C		± 0.8		%
e_L	Linearity error		< 0.2		%
			Typ	Max	
I_O	Offset current @ I_P = 0, T_A = 25°C			± 0.15	mA
I_{OT}	Thermal drift of I_O	+ 25°C .. + 85°C	± 0.15	± 0.60	mA
		- 40°C .. + 25°C	± 0.10	± 0.80	mA
t_r	Response time [1] @ 90 % of V_{PN}		25		μs

General data

T_A	Ambient operating temperature	- 40 .. + 85	°C
T_S	Ambient storage temperature	- 45 .. + 90	°C
R_P	Primary coil resistance @ T_A = 85°C	300	Ω
R_S	Secondary coil resistance @ T_A = 85°C	117	Ω
m	Mass	22	g
	Standards	EN 50155 : 1995	

Note : [1] R_1 = 25 kΩ (L/R constant, produced by the resistance and inductance of the primary circuit).

Features

- Closed loop (compensated) voltage transducer using the Hall effect
- Insulated plastic case recognized according to UL 94-V0.

Special features

- V_d = 4.1 kV
- T_A = - 40°C .. + 85°C
- Railway equipment.

Principle of use

- For voltage measurements, a current proportional to the measured voltage must be passed through an external resistor R_1 which is selected by the user and installed in series with the primary circuit of the transducer.

Advantages

- Excellent accuracy
- Very good linearity
- Low thermal drift
- Low response time
- High bandwidth
- High immunity to external interference
- Low disturbance in common mode.

Applications

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

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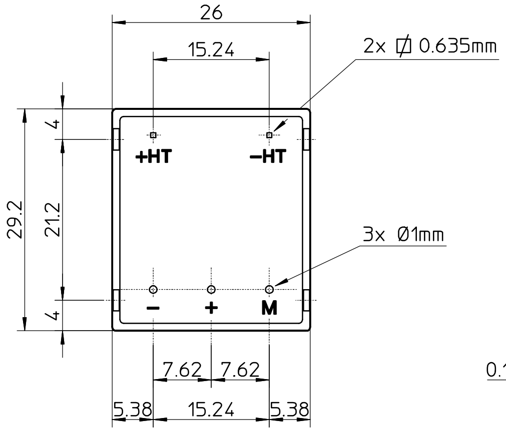
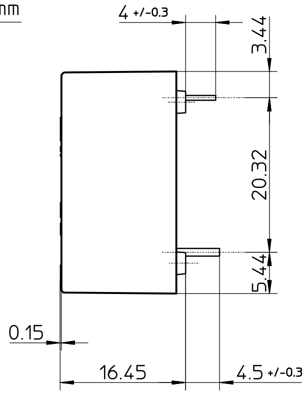
Dimensions LV 25-P/SP2 (in mm. 1 mm = 0.0394 inch)

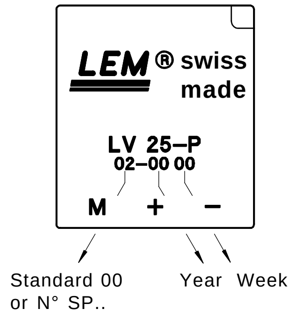
Bottom view

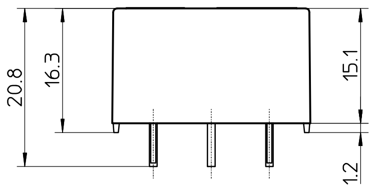


Right view



Top view



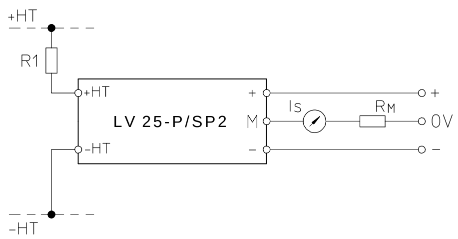


Back view

Secondary terminals

Terminal + : supply voltage + 15 V
Terminal M : measure
Terminal - : supply voltage - 15 V

Connection



Mechanical characteristics

- General tolerance ± 0.2 mm
- Fastening & connection of primary 2 pins 0.635 x 0.635 mm
- Fastening & connection of secondary 3 pins ∅ 1 mm
- Recommended PCB hole 1.2 mm

Remark

- I_S is positive when V_P is applied on terminal +HT.

Instructions for use of the voltage transducer model LV 25-P/SP2

Primary resistor R_1 : the transducer's optimum accuracy is obtained at the nominal primary current. As far as possible, R_1 should be calculated so that the nominal voltage to be measured corresponds to a primary current of 10 mA.

Example: Voltage to be measured V_{PN} = 250 V
a) R_1 = 25 kΩ / 2.5 W, I_P = 10 mA Accuracy = ± 0.8 % of V_{PN} (@ T_A = + 25°C)
b) R_1 = 50 kΩ / 1.25 W, I_P = 5 mA Accuracy = ± 1.6 % of V_{PN} (@ T_A = + 25°C)

Operating range (recommended) : taking into account the resistance of the primary windings (which must remain low compared to R_1, in order to keep thermal deviation as low as possible) and the isolation, this transducer is suitable for measuring nominal voltages from 10 to 1500 V.

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