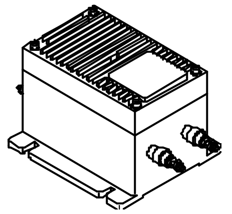
LEM

Voltage Transducer LV 200-AW/2

I_{PN} = 20 mA
V_{PN} = 100 .. 2500 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).



Electrical data

I_{PN}	Primary nominal r.m.s. current			20		mA
I_P	Primary current, measuring range			0 .. ± 40		mA
R_M	Measuring resistance			$R_{M\ min}$	$R_{M\ max}$	
		with ± 15 V	@ ± 20 mA $_{max}$	0	90	Ω
			@ ± 40 mA $_{max}$	0	25	Ω
		with ± 24 V	@ ± 20 mA $_{max}$	60	170	Ω
			@ ± 40 mA $_{max}$	60	65	Ω
I_{SN}	Secondary nominal r.m.s. current			100		mA
I_S	Secondary current @ $I_{P\ max}$			200		mA
K_N	Conversion ratio			10000 : 2000		
V_C	Supply voltage (± 10 %)			± 15 .. 24		V
I_C	Current consumption			30 (@±24 V) + I_S		mA
V_d	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn			6 [1]		kV
				1 [2]		kV
V_e	R.m.s. voltage for partial discharges extinction @ 10 pC			2.5		kV

Accuracy - Dynamic performance data

X_G	Overall Accuracy @ I_{PN} , T_A = 25 °C		± 0.5		%
ε_L	Linearity error		< 0.1		%
			Typ	Max	
I_O	Offset current @ I_P = 0, T_A = 25 °C			± 0.3	mA
I_{OT}	Thermal drift of I_O	- 25 °C .. + 70 °C	± 0.4	± 0.7	mA
t_r	Response time [3] @ 90 % of V_{PN}		20 .. 100		µs

General data

T_A	Ambient operating temperature	- 25 .. + 70	°C
T_S	Ambient storage temperature	- 40 .. + 85	°C
R_P	Primary coil resistance @ T_A = 25 °C	420	Ω
R_S	Secondary coil resistance @ T_A = 70 °C	40	Ω
m	Mass	1.6	kg
	Standards	EN 50178 (01.10.97)	

Notes : [1] Between primary and secondary + shield
[2] Between secondary and shield
[3] R_1 = 50 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
- Accessible electronic circuit
- Shield between primary and secondary circuit.

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
- High immunity to external interference

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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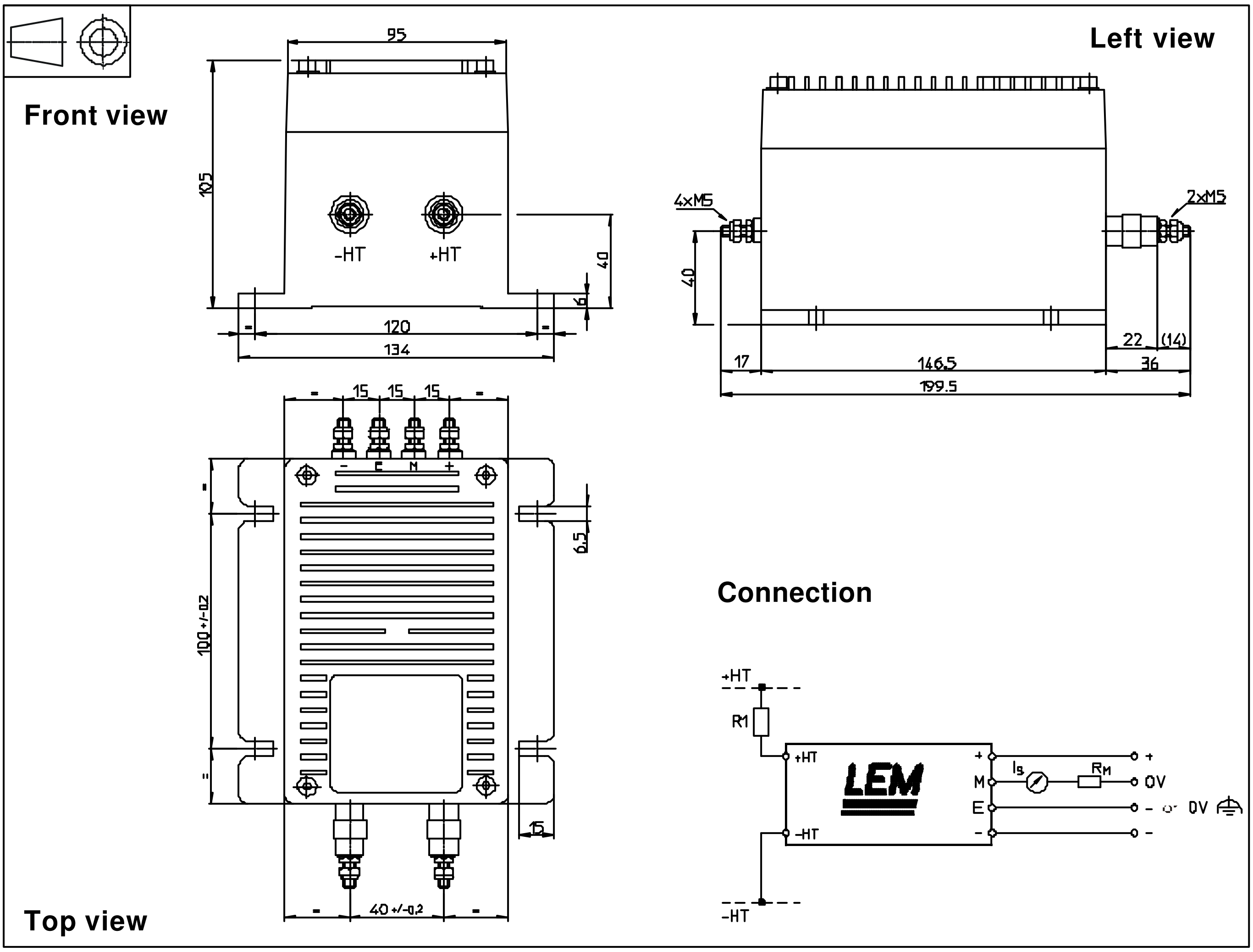
Dimensions LV 200-AW/2 (in mm. 1 mm = 0.0394 inch)



Mechanical characteristics

- General tolerance ± 0.5 mm
- Fastening of the transducer 4 slots ∅ 6.5 mm
  4 steel screws M6
  Recommended fastening torque 4.5 Nm or 3.32 Lb. - Ft.
- Connection of primary M5 threaded studs
- Connection of secondary M5 threaded studs
- Recommended fastening torque 2.2 Nm or 1.62 Lb - Ft.

Remarks

- I_S is positive when V_P is applied on terminal +HT.
- This is a standard model. For different versions (supply voltages, turns ratios, unidirectional measurements...), please contact us.

Instructions for use of the voltage transducer model LV 200-AW/2

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 20 mA.

Example: Voltage to be measured V_{PN} = 1000 V
a) R_1 = 50 kΩ/40 W, I_P = 20 mA Accuracy = ± 0.5 % of V_{PN} (@ T_A = +25°C)
b) R_1 = 200 kΩ/10 W, I_P = 5 mA Accuracy = ± 2.0 % 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 100 to 2500 V.