Voltage Transducer LV 100/SP82

I_{PN} = 40 mA

V_{PN} = 24 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).

Preliminary

Electrical data

I_{PN}	Primary nominal r.m.s. current		40		mA
I_P	Primary current, measuring range		0 .. ± 60		mA
V_{PN}	Primary nominal r.m.s. voltage		24		V
V_P	Primary voltage, measuring range		0 .. ± 36		V
R_M	Measuring resistance		$R_{M\,min}$	$R_{M\,max}$	
	with ± 12 V	@ ± 40 mA $_{max}$	0	200	Ω
		@ ± 60 mA $_{max}$	0	150	Ω
	with ± 18 V	@ ± 40 mA $_{max}$	0	350	Ω
		@ ± 60 mA $_{max}$	0	225	Ω
I_{SN}	Secondary nominal r.m.s. current		40		mA
K_N	Conversion ratio		1200 : 1200		
V_C	Supply voltage (± 5 %)		± 12 .. 18		V
I_C	Current consumption		28 (@ ± 18V) + I_S		mA
V_d	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn		6		kV

Accuracy - Dynamic performance data

X_G	Overall Accuracy @ I_{PN}, T_A = 25°C		± 1.5		%
ε_L	Linearity error		< 0.1		%
			Typ	Max	
I_O	Offset current @ I_P = 0, T_A = 25°C			± 0.4	mA
I_{OT}	Thermal drift of I_O	- 25°C .. + 70°C	± 0.2	± 0.7	mA
t_r	Response time @ 90 % of V_{PN}		TBD [1]		

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 = 70°C		600	Ω
R_S	Secondary coil resistance @ T_A = 70°C		25	Ω
m	Mass		450	g

Note : [1] Will be defined after the first series.

Features

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

Principle of use

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

Special features

- I_{PN} = 40 mA @ V_{PN} = 24V
- K_N = 1200 : 1200
- V_C = ± 12.. 18 V (± 5%) V
- T_A = - 25°C .. + 70°C
- Temperature compensated primary
- Integrated primary resistances
- Inverted primary terminals
- M4 primary terminals.

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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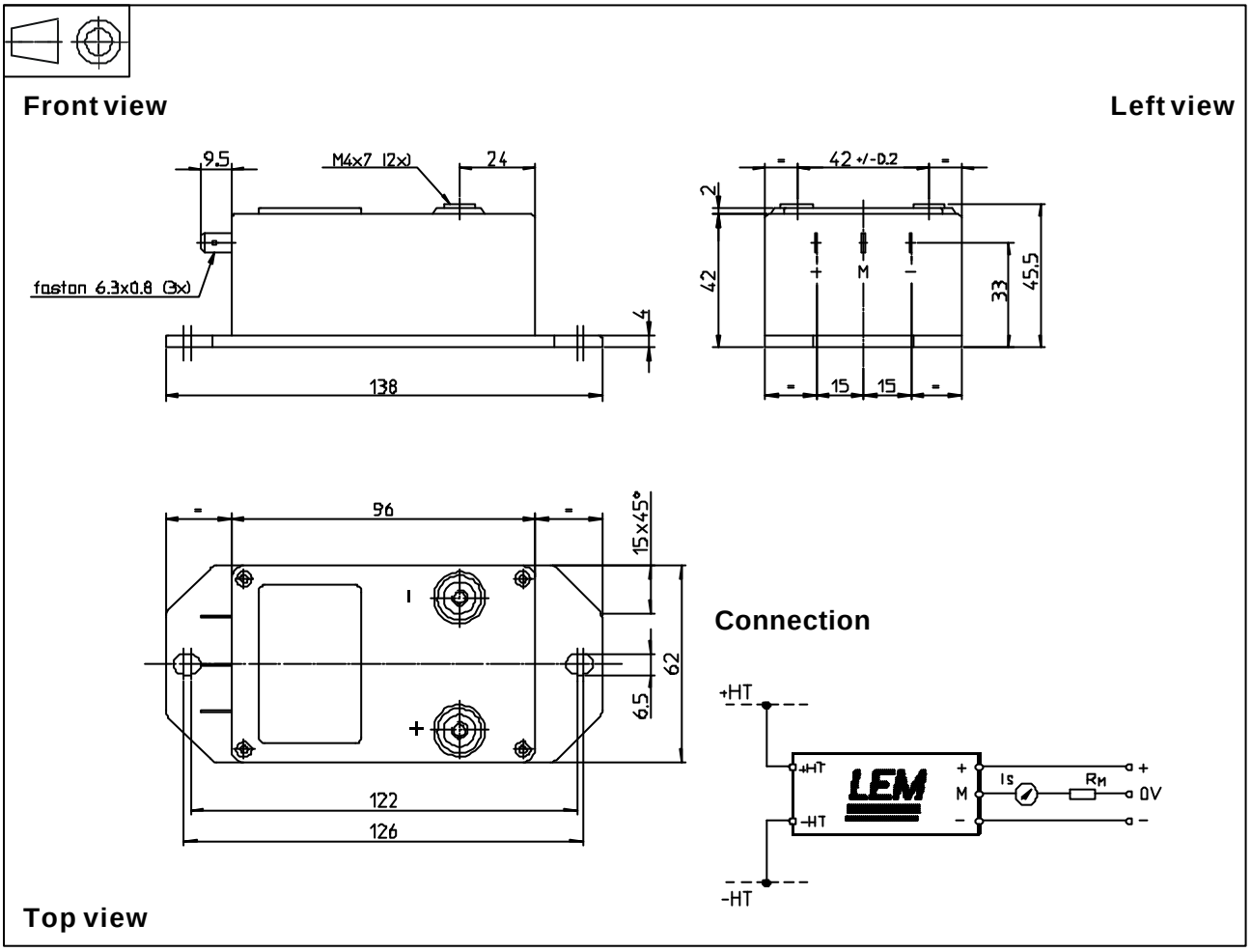
Dimensions LV 100/SP82 (in mm. 1 mm = 0.0394 inch)



Mechanical characteristics

• General tolerance	± 0.3 mm
• Transducer fastening	2 holes ∅ 6.5 mm
	2 M6 steel screws
Recommended fastening torque	5 Nm or 3.69 Lb - Ft.
• Connection of primary	2 M4 screw terminals
Recommended fastening torque	2.2 Nm or 1.62 Lb - Ft.
• Connection of secondary	Faston 6.3 x 0.8 mm

Remark

- $\mathbf{I}_S$ is positive when $\mathbf{V}_P$ is applied on terminal +HT.

Instructions for use of the voltage transducer model LV 100/SP82

Primary resistor $\mathbf{R}_1$: the transducer's optimum accuracy is obtained at the nominal primary current. As far as possible, $\mathbf{R}_1$ should be calculated so that the nominal voltage to be measured corresponds to a primary current of 40mA.

Example: Voltage to be measured $\mathbf{V}_{PN}$ = 24 V Accuracy = ± 1.5 % of $\mathbf{V}_{PN}$ (@ $\mathbf{T}_A$ = + 25°C)

Operating range (recommended) : taking into account the resistance of the primary windings (which must remain low compared to $\mathbf{R}_1$ in order to keep thermal deviation as low as possible) and the isolation, this transducer is suitable for measuring nominal voltages from 0 to 24 V.