Voltage Transducer CV 4-4000

V_{PN} = 2828 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

V_{PN}	Primary nominal voltage rms	2828	V
V_{PM}	Primary voltage, measuring range	0 .. ± 4000	V
V_S	Secondary analog voltage @ $V_{P\ maxi}$	10	V
K_N	Conversion ratio	4000 V / 10 V	
R_L	Load resistance	≥ 2	kΩ
C_L	Capacitive loading	≤ 5	nF
V_C	Supply voltage (± 5 %)	± 15	V
I_C	Current consumption	35 + V_S / R_L	mA

Accuracy - Dynamic performance data

			Maxi	
X_G	Overall accuracy @ $V_{P\ maxi}$	T_A = 25°C	± 1	%
		- 25°C .. + 70°C	± 2	%
V_O	Offset voltage @ V_P = 0	T_A = 25°C	± 30	mV
		- 25°C .. + 70°C	± 60	mV
t_r	Response time [1] to 90 % of V_{PN} step		≅ 25	µs
BW	Frequency bandwidth (- 3 dB) @ 50 % of V_{PN}		DC .. 11	kHz

General data

T_A	Ambient operating temperature	- 25 .. + 70	°C
T_S	Ambient storage temperature	- 40 .. + 85	°C
P	Total primary power loss	2.86	W
R_1	Primary resistance	2.8	MΩ
m	Mass	600	g
	Standards	EN 50155: 1995 EN 50178: 1997	

Features

- Closed loop (compensated) voltage transducer
- Isolated plastic case recognized according to UL 94-V0
- Patent pending.

Advantages

- Very good linearity
- Low thermal drift
- Low response time
- High bandwidth.

Applications

- AC variable speed drives and servo motor drives
- Static converters for DC motor drives
- Uninterruptible Power Supplies (UPS)
- Power supplies for welding applications
- Railway overhead line voltage measurement.

Application Domain

- Traction
- Industrial.

Note: [1] With a dv/dt of 1000 V/µs.

LEM reserves the right to carry out modifications on its transducers, in order to improve them, without prior notice.

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Isolation characteristics

V_d	Rms voltage for AC isolation test, 50 Hz, 1 min	9[1)]	kV
dCp	Creepage distance	188	mm
dCl	Clearance distance	124	mm
CTI	Comparative Tracking Index (Group I)	600	

Application 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
dCp, dCl, $\hat{V}_w$	Rated isolation voltage	Nominal voltage
Single isolation	8000 V	1000 V
Reinforced isolation	5600 V	1000 V

Note: [1)] Between primary and secondary.

Safety

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 built-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.

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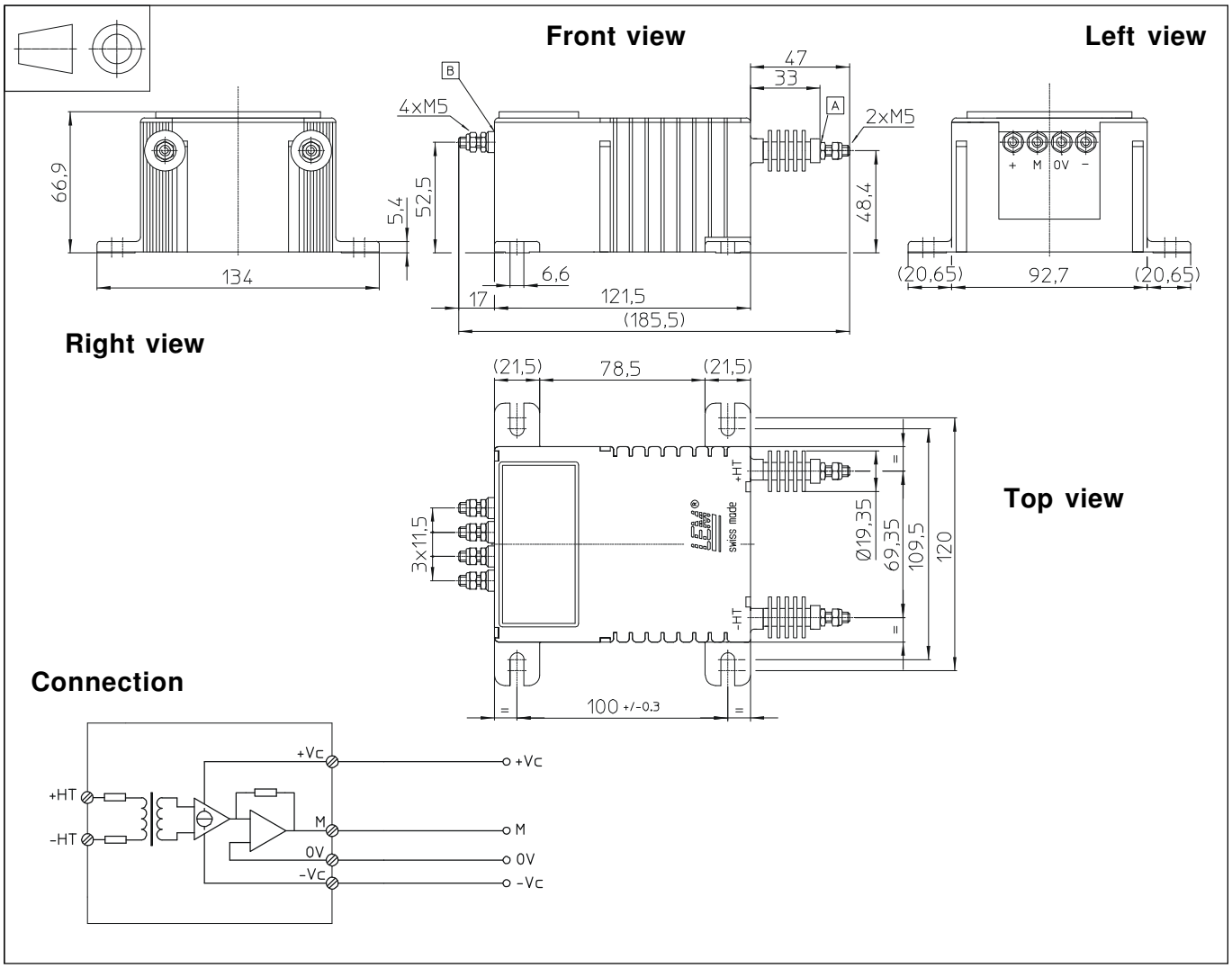
Dimensions CV 4-4000 (in mm. 1 mm = 0.0394 inch)



Mechanical characteristics

• General tolerance	± 0.5 mm
• Transudcer fastening	4 slots ∅ 6.5 mm
	4 M6 steel screws
Recommended fastening torque	5 Nm or 3.7 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

- $\mathbf{V}_S$ is positive when $\mathbf{V}_P$ is applied on terminal +HT.
- This is a standard model. For different versions (supply voltages, turns ratios, unidirectional measurements...), please contact us.

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