Voltage Transducer CV 4-4000/SP2

V_{PN} = 2800 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 r.m.s. voltage		2800		V
V_P	Primary voltage, measuring range		0 .. ± 4000		V
I_{SN}	Secondary nominal r.m.s. current @ V_{PN}		70		mA
K_N	Conversion ratio		2800 V / 70 mA		
R_M	Measuring resistance		$R_{M\,min}$	$R_{M\,max}$	
	with ± 24 V	@ ± 2800 V_{max}	50	100	Ω
		@ ± 4000 V_{max}	50	70	Ω
V_C	Supply voltage (± 10 %)		± 24		V
I_C	Current consumption		50 + I_S		mA

Accuracy - Dynamic performance data

			Typ	Max	
X_G	Overall accuracy @ $V_{P\,max}$	T_A = 25°C		± 0.40	%
		- 40°C .. + 70°C		± 1.00	%
I_O	Offset current @ V_P = 0	T_A = 25°C		± 0.10	mA
		- 40°C .. + 70°C		± 0.25	mA
t_r	Response time [1] @ 90 % of V_{PN}		≅ 50		µs
f	Frequency bandwidth (- 3 dB) @ 50 % of V_{PN}		DC .. 6		kHz

General data

T_A	Ambient operating temperature	- 40 .. + 70	°C
T_S	Ambient storage temperature	- 50 .. + 85	°C
P_{NOM}	Total primary power loss	2.8	W
R_1	Primary resistance	2.8	MΩ
m	Mass	750	g
	Standards [2]	EN 50155 : 1995	
		EN 50178 : 1997	
		EN 60010-1 : 2003	

Notes : [1] With a dv/dt of 1000 V/µs

[2] Specifications according to IEC 1000-4-3 are not guaranteed around 100 MHz. Sensitivity to induced radiation on connecting cable.

Features

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

Special features

- I_{SN} = 70 mA
- V_C = ± 24 (± 10 %) V
- X_G = ± 0.40 %
- T_A = - 40°C .. + 70°C
- Connection of secondary SUB-D 9 poles, male.

Advantages

- Excellent accuracy
- Very good linearity
- Low thermal drift.

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.

Applications Domain

- Traction and industrial.

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Isolation characteristics

$\mathbf{V}_d$	R.m.s. voltage for AC isolation test, 50/60 Hz, 1 mn	9.5	kV
$\mathbf{V}_e$	R.m.s. voltage for partial discharge extinction @ 10pC	3.75	kV
		Min	
dCp	Creepage distance	155	mm
dCl	Clearance distance	64	mm
CTI	Comparative Tracking Index (Group I)	600	

Application examples

According to EN 50178 and IEC 61010-1 standards and following conditions :

- Basic insulation
- Over voltage category OV 3
- Pollution degree PD2
- Non-uniform field
- Nominal mains voltage = 600 V rms
- Measurement category I
- Working voltage max = 4000 V

Safety

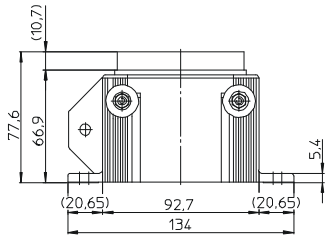
This transducer must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the following manufacturer's operating instructions.

Caution, risk of electrical shock

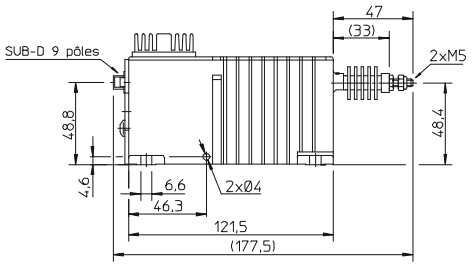
When operating the transducer, certain parts of the module can carry hazardous voltage (eg. primary busbar, power supply).
Ignoring this warning can lead to injury and/or cause serious damage.
This transducer is a built-in device, whose conducting parts must be inaccessible after installation.
A protective housing or additional shield could be used.
Main supply must be able to be disconnected.

Dimensions CV 4-4000/SP2 (in mm. 1 mm = 0.0394 inch)

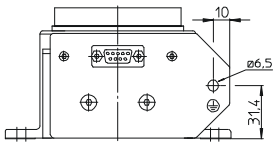
Right view



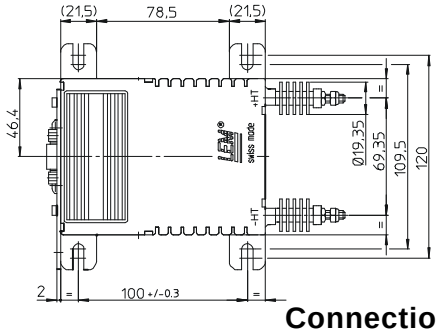
Front view



Left view



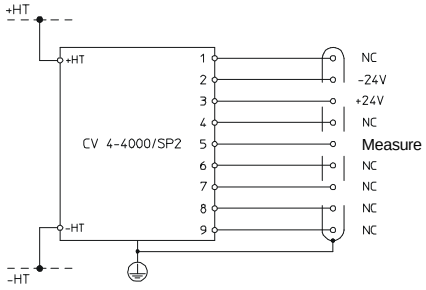
Top view



Secondary terminals

Pin	1	: NC
Pin	2	: supply voltage - 24 V
Pin	3	: supply voltage + 24 V
Pin	4	: NC
Pin	5	: measure
Pin	6	: NC
Pin	7	: NC
Pin	8	: NC
Pin	9	: NC

Connection



Mechanical characteristics

- General tolerance ± 0.5 mm
- Fastening 4 slots ∅ 6.6 mm
- Connection of primary M5 threaded studs
  Recommended fastening torque 2.2 Nm or 1.62 Lb. -Ft.
- Connection of secondary SUB-D 9 poles, male
- Connection to the ground holes ∅ 6.5 mm

Remark

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