Voltage Transducer CV 4-6000/SP1

V_{PN} = 4200 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).

0647

Electrical data

V_{PN}	Primary nominal voltage rms		4200		V
V_{PM}	Primary voltage, measuring range		0 .. ± 6000		V
I_{SN}	Secondary nominal current rms		70		mA
K_N	Conversion ratio		4200 V / 70		mA
R_M	Measuring resistance		$R_{M\,min}$	$R_{M\,max}$	
	with ± 24 V	@ ± 4200 V_{max}	50	100	Ω
		@ ± 6000 V_{max}	50	70	Ω
V_C	Supply voltage (± 10 %)		± 24		V
I_C	Current consumption		50 + I_S		mA

Accuracy - Dynamic performance data

			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] to 90 % of V_{PN} step		≅ 50	µs
BW	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	Total primary power loss @ V_{PN}	4.2	W
R_1	Primary resistance	4.2	MΩ
m	Mass	660	g
	Standards	EN 50155: 1995 EN 50178: 1997	

Note: [1] With a dv/dt of 1000 V/µs.

Features

- Closed loop (compensated) voltage transducer
- Isolated 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 to secondary circuit on AMP CPC 11/4.

Advantages

- Accuracy
- 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.

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Isolation characteristics

V_d	Rms voltage for AC isolation test, 50 Hz, 1 min	9.5 [2)]	kV
V_e	Partial discharge extinction voltage rms @ 10pC	3.75 Min	kV
dCp	Creepage distance	185.1	mm
dCl	Clearance distance	118.5	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: [2)] Between primary and secondary.

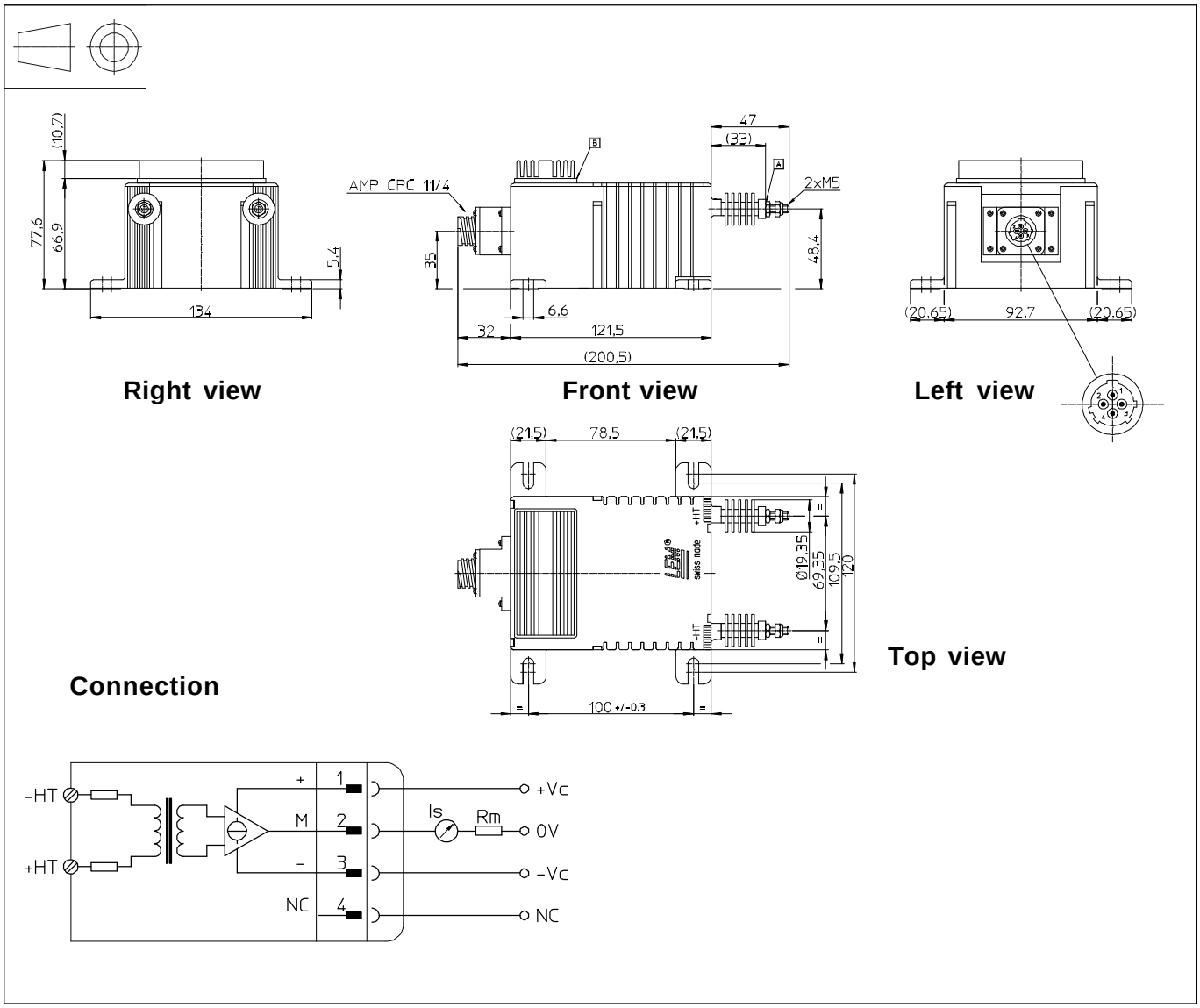
Safety

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.

Dimensions CV 4-6000/SP1 (in mm. 1 mm = 0.0394 inch)



Mechanical characteristics

• General tolerance	± 0.5 mm
• Fastening of transducer	4 slots ∅ 6.6 mm 4 M6 steel screws
Recommended fastening torque	5 Nm or 3.7 Lb.- Ft.
• Connection of primary	M5 threaded studs
Recommended fastening torque	2.2 Nm or 1.62 Lb.- Ft.
• Connection of secondary	on AMP CPC 11/4 connector

Remark

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