

## Voltage Transducer CV 4-6000/SP1

$$V_{PN} = 4200 \text{ V}$$

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 .. $\pm 6000$	V
$I_{SN}$	Secondary nominal current rms	70	mA
$K_N$	Conversion ratio	4200 V / 70	mA
$R_M$	Measuring resistance	$R_{Mmin}$ $R_{Mmax}$	
	with $\pm 24 \text{ V}$	@ $\pm 4200 \text{ V}_{max}$	50 100 $\Omega$
		@ $\pm 6000 \text{ V}_{max}$	50 70 $\Omega$
$V_C$	Supply voltage ( $\pm 10 \%$ )	$\pm 24$	V
$I_C$	Current consumption	$50 + I_S$	mA

### Accuracy - Dynamic performance data

$X_G$	Overall accuracy @ $V_{Pmax}$	$T_A = 25^\circ\text{C}$	Max $\pm 0.40$	%
		- $40^\circ\text{C}$ .. + $70^\circ\text{C}$	$\pm 1.00$	%
$I_O$	Offset current @ $V_P = 0$	$T_A = 25^\circ\text{C}$	$\pm 0.10$	mA
		- $40^\circ\text{C}$ .. + $70^\circ\text{C}$	$\pm 0.25$	mA
$t_r$	Response time <sup>1)</sup> to 90 % of $V_{PN}$ step		$\cong 50$	$\mu\text{s}$
<b>BW</b>	Frequency bandwidth (- 3 dB) @ 50 % of $V_{PN}$		DC .. 6	kHz

### General data

$T_A$	Ambient operating temperature	- 40 .. + 70	$^\circ\text{C}$
$T_S$	Ambient storage temperature	- 50 .. + 85	$^\circ\text{C}$
<b>P</b>	Total primary power loss @ $V_{PN}$	4.2	W
$R_1$	Primary resistance	4.2	M $\Omega$
<b>m</b>	Mass	660	g
	Standards	EN 50155: 1995	
		EN 50178: 1997	

Note: <sup>1)</sup> With a  $dv/dt$  of 1000 V/ $\mu\text{s}$ .

### Features

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

### Special features

- $I_{SN} = 70 \text{ mA}$
- $V_C = \pm 24 (\pm 10 \%) \text{ V}$
- $X_G = \pm 0.40 \%$
- $T_A = - 40^\circ\text{C} \dots + 70^\circ\text{C}$
- 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 <sup>2)</sup>	kV
$V_e$	Partial discharge extinction voltage rms @ 10pC	3.75	kV
		Min	
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: <sup>2)</sup> 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).

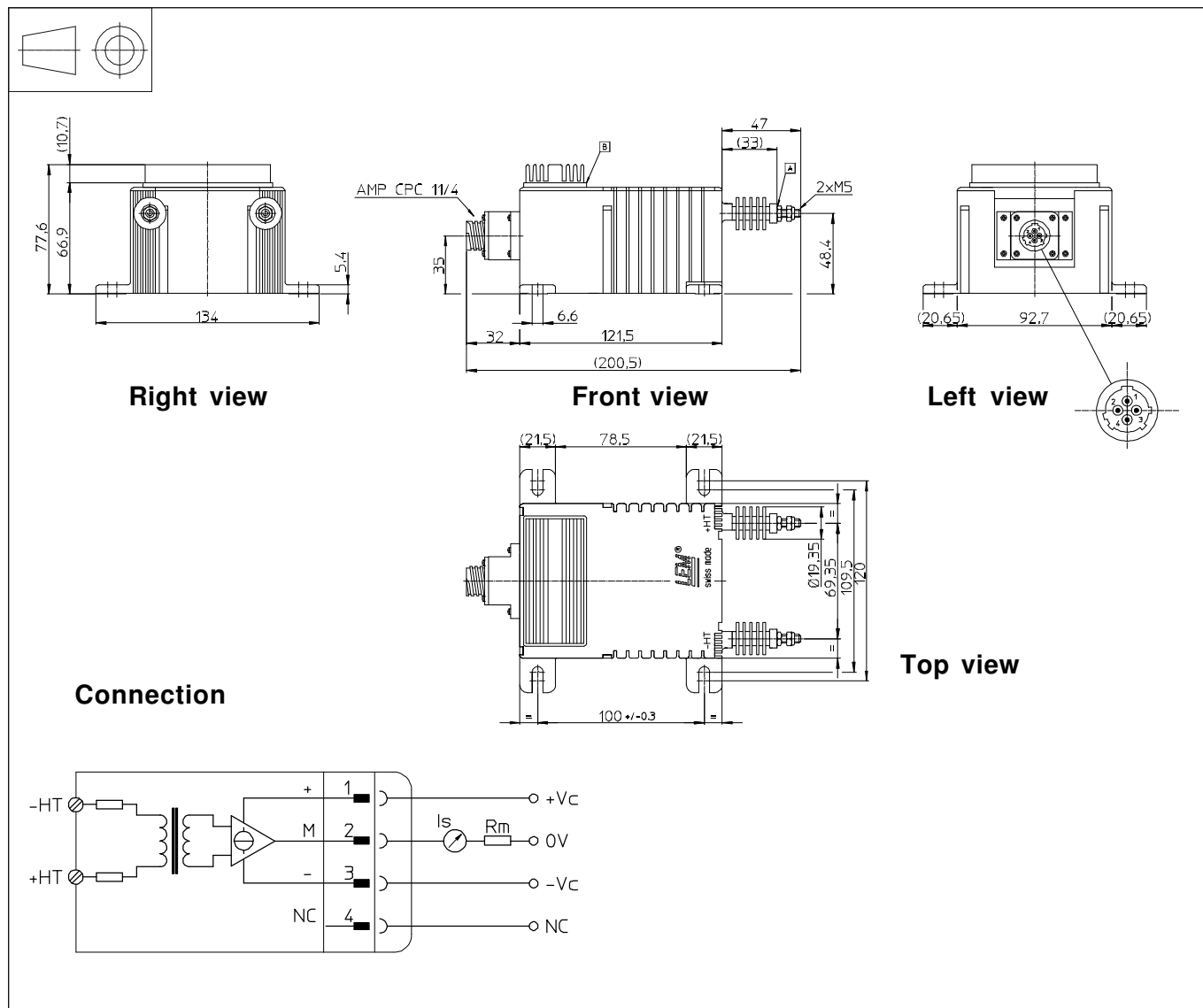
Ignoring this warning can lead to injury and/or cause serious damage.

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  $\pm 0.5$  mm
- Fastening of transducer
  - 4 slots  $\varnothing 6.6$  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

- $I_s$  is positive when  $V_p$  is applied on terminal +HT.