

## Voltage Transducer LV 100-3500/SP2

For the electronic measurement of voltages: DC, AC, pulsed..., with galvanic isolation between the primary circuit (high voltage) and the secondary circuit (electronic circuit).



### Electrical data

$V_{PN}$	Primary nominal voltage rms	3600	V
$V_{PM}$	Primary voltage, measuring range	0 .. $\pm 4500$	V
$I_{PN}$	Primary nominal current rms	2.26	mA
$R_M$	Measuring resistance	$R_{M \min}$ $R_{M \max}$	
	with $\pm 24$ V	@ $\pm 3600$ V $_{\max}$	0 420 $\Omega$
		@ $\pm 4500$ V $_{\max}$	0 330 $\Omega$
$I_{SN}$	Secondary nominal current rms	50	mA
$K_N$	Conversion ratio	3600 V : 50 mA	
$V_C$	Supply voltage (+ 5/- 10 %)	$\pm 24$	V
$I_C$	Current consumption	< 37 (@ $\pm 24$ V) + $I_S$	mA

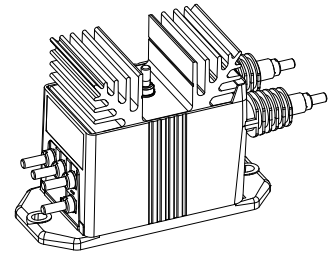
### Accuracy - Dynamic performance data

$X_G$	Overall accuracy @ $V_{PN}$ , $T_A = 25^\circ\text{C}$	$\pm 0.9$	%
$\varepsilon_L$	Linearity error	< 0.1	%
$I_O$	Offset current @ $I_p = 0$ , $T_A = 25^\circ\text{C}$	Typ $\pm 0.2$	mA
$I_{OT}$	Temperature variation of $I_O$ - $25^\circ\text{C}$ .. $+ 70^\circ\text{C}$	Max $\pm 0.5$	mA
$t_r$	Response time to 90 % of $V_{PN}$ step	100	$\mu\text{s}$

### General data

$T_A$	Ambient operating temperature	- 25 .. + 70	$^\circ\text{C}$
$T_S$	Ambient storage temperature	- 40 .. + 85	$^\circ\text{C}$
$N_P$	Turns ratio	36000 : 1666	
$P$	Total primary power loss	8.2	W
$R_1$	Primary resistance @ $T_A = 25^\circ\text{C}$	1.592	M $\Omega$
$R_S$	Secondary coil resistance @ $T_A = 70^\circ\text{C}$	44	$\Omega$
$m$	Mass	790	g
	Standards	EN 50155: 1995	

$$V_{PN} = 3600 \text{ V}$$



### Features

- Closed loop (compensated) voltage transducer using Hall effect
- Isolated plastic case recognized according to UL 94-V0
- Primary resistor  $R_1$  incorporated within the housing.

### Special features

- $V_{PN} = 3600$  V
- $N_P = 36000 : 1666$
- $V_C = \pm 24 (+ 5/- 10 \%)$  V
- $T_A = - 25^\circ\text{C} .. + 70^\circ\text{C}$
- Connection to secondary circuit on M5 threaded studs
- Shield between primary and secondary
- VRT Burn-in.

### Advantages

- Excellent accuracy
- Very good linearity
- Low temperature drift
- Optimized response time
- Wide frequency bandwidth
- No insertion losses
- High immunity to external interference.

### Applications

- Single or three phase inverter
- Propulsion and braking chopper
- Propulsion converter
- Auxiliary converter
- Battery charger.

### Application Domain

- Traction.

## Voltage Transducer LV 100-3500/SP2

### Isolation characteristics

<b>V<sub>d</sub></b>	Rms voltage for AC isolation test, 50 Hz, 1 min	12 <sup>1)</sup>	kV
		1 <sup>2)</sup>	kV
		Min	
<b>dCp</b>	Creepage distance	164.8	mm
<b>dCl</b>	Clearance distance	47.1	mm
<b>CTI</b>	Comparative Tracking Index (group I)	600	

**Notes:** <sup>1)</sup> Between primary and secondary + shield + heatsink

<sup>2)</sup> Between shield 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).

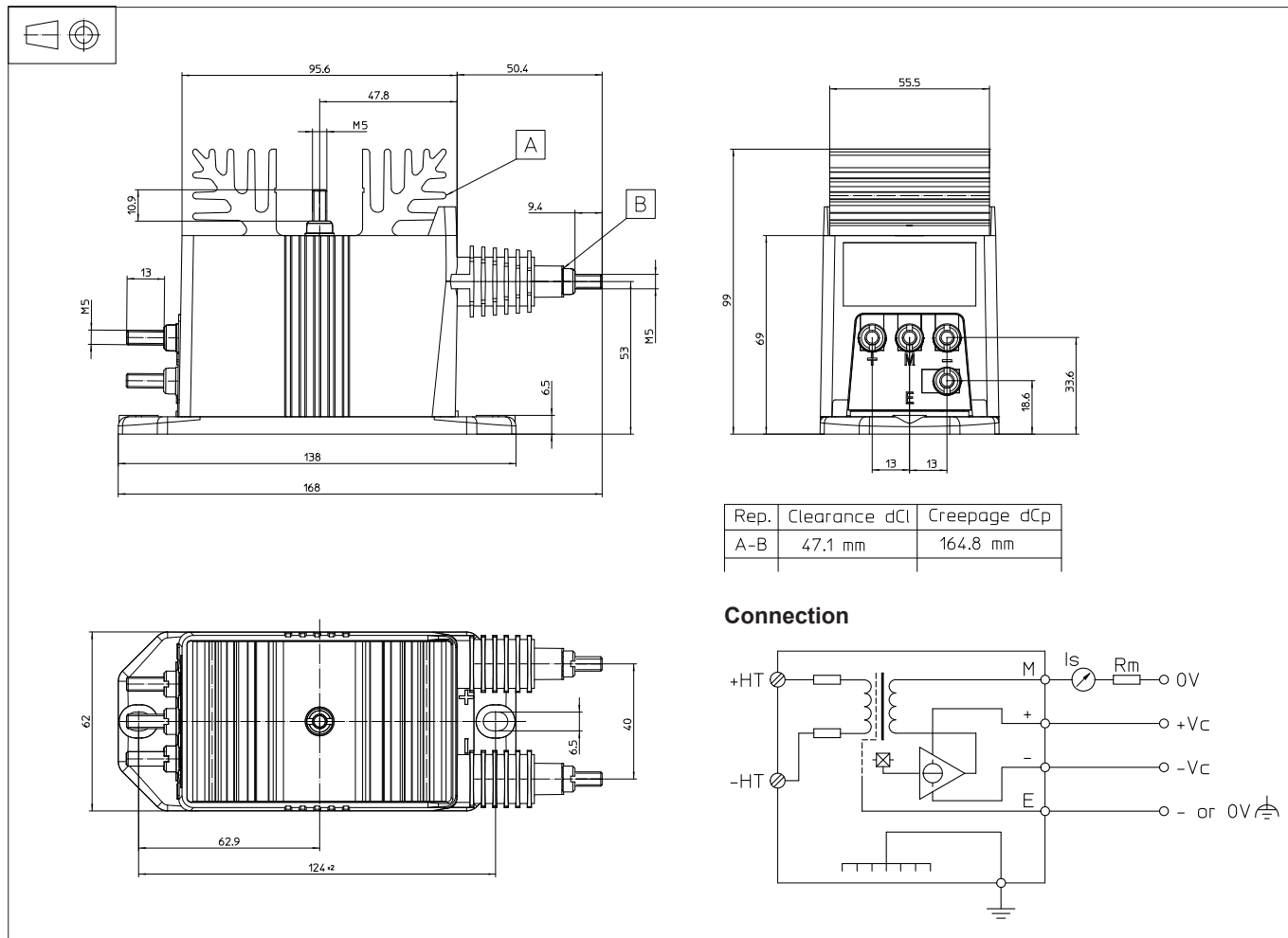
Ignoring this warning can lead to injury and/or cause serious damage.

This transducer is a build-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 LV 100-3500/SP2 (in mm)



### Mechanical characteristics

- General tolerance  $\pm 0.3$  mm
- Transducer fastening  
2 holes  $\varnothing 6.5$  mm,  
2 x M6 steel screws  
Recommended fastening torque 5 Nm
- Connection of primary M5 threaded studs
- Connection of secondary M5 threaded studs
- Connection to the ground M5 threaded stud  
Recommended fastening torque 2.2 Nm

### Remarks

- $I_s$  is positive when  $V_p$  is applied on terminal + HT.
- The primary circuit of the transducer must be link to the connections where the voltage has to be measured.