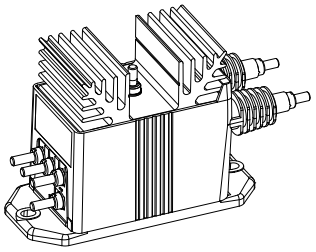
Voltage Transducer LV 100-4000/SP6

V_{PN} = 4000 V

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			4000	V
V_{PM}	Primary voltage, measuring range			0 .. ± 6000	V
I_{PN}	Primary nominal current rms			2.5	mA
R_M	Measuring resistance			$R_{M\,min}$ $R_{M\,max}$	
	with ± 15 V	@ ± 4000 V $_{max}$		0 210	Ω
		@ ± 6000 V $_{max}$		0 120	Ω
	with ± 24 V	@ ± 4000 V $_{max}$		0 410	Ω
		@ ± 6000 V $_{max}$		110 250	Ω
I_{SN}	Secondary nominal current rms			50	mA
K_N	Conversion ratio			4000 V / 50	mA
V_C	Supply voltage (± 10 %)			± 15 .. 24	V
I_C	Current consumption			< 37 (@ ± 24 V) + I_S	mA

Accuracy - Dynamic performance data

			Typ	Max	
X_G	Overall accuracy @ V_{PN}, T_A = 25°C		± 1		%
ε_L	Linearity error		< 0.1		%
I_O	Offset current @ I_P = 0, T_A = 25°C			± 0.2	mA
I_{OT}	Temperature variation of I_O	- 25°C .. + 70°C	± 0.4	± 0.6	mA
		- 40°C .. + 85°C		± 1.0	mA
t_r	Response time to 90 % of V_{PN} step		200		µs

General data

T_A	Ambient operating temperature		- 40 .. + 85	°C
T_S	Ambient storage temperature		- 40 .. + 90	°C
N	Turns ratio		40000 : 2000	
P	Total primary power loss		10	W
R_1	Primary resistance	@ T_A = 25°C	1.6	MΩ
R_S	Secondary coil resistance	@ T_A = 85°C	57	Ω
m	Mass		790	g
	Standards		EN 50155: 1995	

Features

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

Special features

- V_C = ± 15 .. 24 (± 10%) V
- V_d = 12 kV [1)]
- V_d = 2 kV [2)]
- T_A = - 40°C .. + 85°C
- Connection to primary circuit by extra-long studs
- Connection primary and to secondary circuit on M5 threaded studs
- Shield between primary and secondary.

Advantages

- Excellent accuracy
- Very good linearity
- Low thermal drift
- High immunity to external interference.

Applications

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

Application Domain

- Traction.

VoltageTransducer LV 100-4000/SP6

Isolation characteristic

V_d	Rms voltage for AC isolation test, 50 Hz, 1 min	12 [1)]	kV
		2 [2)]	kV
		Min	
dCp	Creepage distance	164.8	mm
dCl	Clearance distance	47.1	mm
CTI	Comparative Tracking Index (group I)	600	

Notes: [1)] Between primary and secondary + shield
[2)] Between shield and secondary.

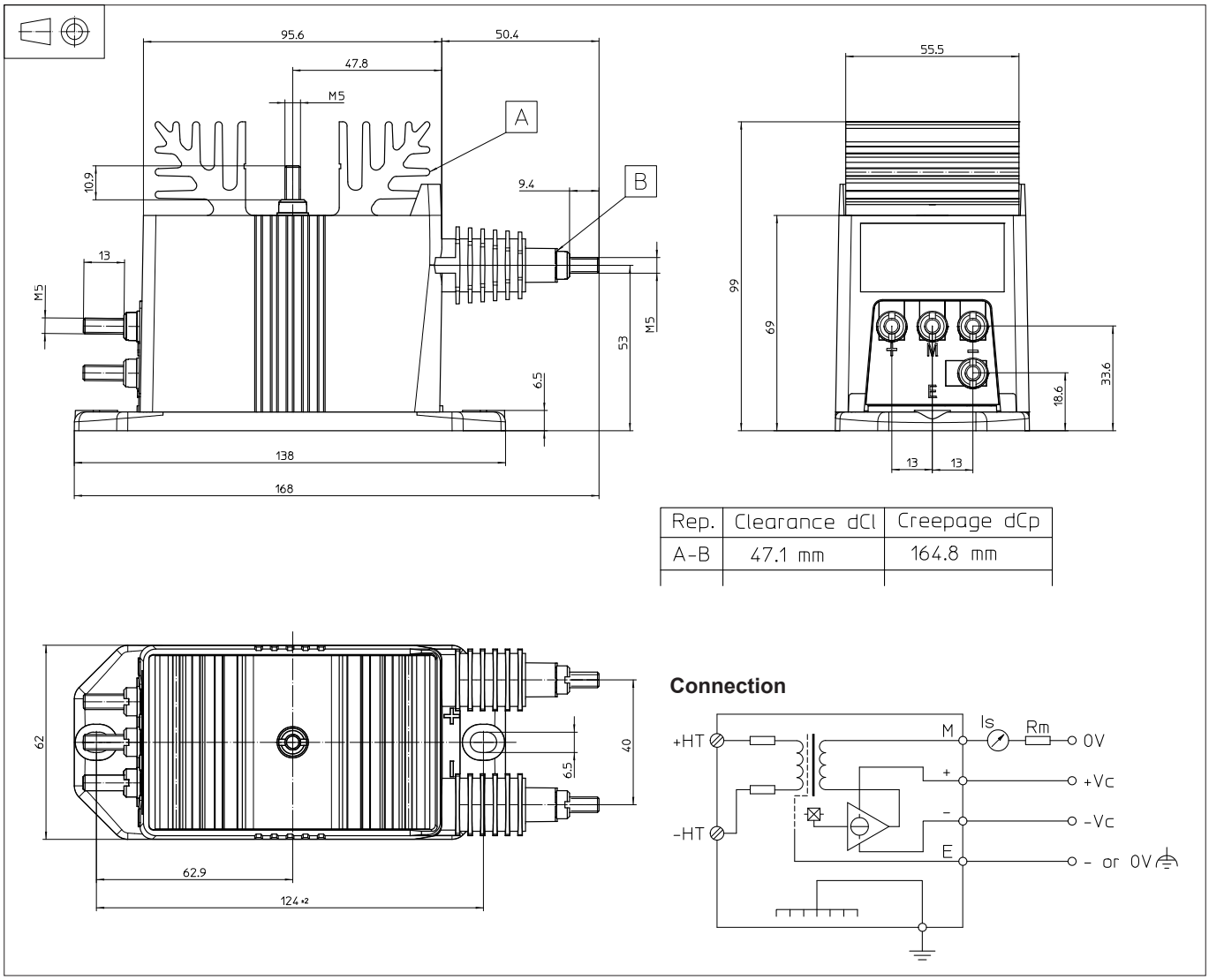
Safety

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 100-4000/SP6 (in mm.)



Rep.	Clearance dCl	Creepage dCp
A-B	47.1 mm	164.8 mm

Mechanical characteristics

- General tolerance ± 0.3 mm
- Transducer fastening 2 holes Ø 6.5 mm
  2 x M6 steel screws
  Recommended fastening torque 5 Nm
- Connection of primary 2 M5 threaded studs
- Connection of secondary 4 M5 threaded studs
- Connection to the ground M5 threaded stud
  Recommended fastening torque 2.2 Nm

Remarks

- I_S is positive when I_P is applied on terminal + HT.
- Temperature of the primary conductor should not exceed 100°C.