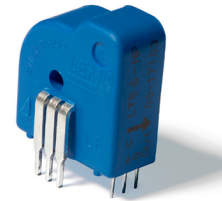


## Current Transducer LTS 6-NP

For the electronic measurement of currents: DC, AC, pulsed, mixed with galvanic separation between the primary circuit and the secondary circuit.



$$I_{PN} = 6 At$$



### Electrical data

$I_{PN}$	Primary nominal RMS current	6	At
$I_{PM}$	Primary current, measuring range	0 ... ± 19.2	At
$I_P$	Overload capability	250	At
$V_{out}$	Output voltage (Analog) @ $I_P$	2.5 ± (0.625 · $I_P / I_{PN}$ )	
$V$	$I_P = 0$	2.5 <sup>1)</sup>	V
$G$	Sensitivity	104.16	mV/A
$N_S$	Number of secondary turns (±0.1 %)	2000	
$R_L$	Load resistance	≥ 2	kΩ
$R_{IM}$	Internal measuring resistance (±0.5 %)	208.33	Ω
$TCR_{IM}$	Temperature coefficient of $R_{IM}$	< 50	ppm/K
$U_C$	Supply voltage (±5 %)	5	V
$I_C$	Current consumption @ $U_C = 5 V$	Typ	28 + $I_S^{(2)} + (V_{out} / R_L)$ mA

### Accuracy - Dynamic performance data

$X$	Accuracy @ $I_{PN}$ , $T_A = 25 °C$	±0.2	%		
	Accuracy with $R_{IM}$ @ $I_{PN}$ , $T_A = 25 °C$	±0.7	%		
$\epsilon_L$	Linearity error	< 0.1	%		
		Typ	Max		
$TCV_{out}$	Temperature coefficient of $V_{out}$ @ $I_P = 0$	-10 °C ... +85 °C	80	200	ppm/K
		-40 °C ... -10 °C		250	ppm/K
$TCG$	Temperature coefficient of $G$	-40 °C ... +85 °C		50 <sup>3)</sup>	ppm/K
$V_{OM}$	Magnetic offset voltage @ $I_P = 0$ , after an overload of	3 × $I_{PN}$	± 0.5	mV	
		5 × $I_{PN}$	± 2.0	mV	
		10 × $I_{PN}$	± 2.0	mV	
$t_{ra}$	Reaction time @ 10 % of $I_{PN}$	< 100	ns		
$t_r$	Step response time to 90 % of $I_{PN}$ <sup>4)</sup>	< 400	ns		
$BW$	Frequency bandwidth (0 ... -0.5 dB)	DC ... 100	kHz		
	(-0.5 ... 1 dB)	DC ... 200	kHz		

### General data

$T_A$	Ambient operating temperature	-40 ... +85	°C
$T_S$	Ambient storage temperature	-40 ... +100	°C
$m$	Mass	10	g
	Standards	EN 50178: 1997 IEC 60950-1: 2001	

Notes: 1) Absolute value @  $T_A = 25 °C$ ,  $2.475 < V_{out} < 2.525$

2)  $I_S = I_P / N_S$

3) Only due to  $TCR_{IM}$

4) For a  $di/dt = 15 A/\mu s$

### Features

- Closed loop (compensated) multi-range current transducer using the Hall effect
- Unipolar voltage supply
- Insulating plastic case recognized according to UL 94-V0
- Compact design for PCB mounting
- Incorporated measuring resistance
- Extended measuring range.

### Advantages

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

### Applications

- AC variable speed drives and servo motor drives
- Static converters for DC motor drives
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Switched Mode Power Supplies (SMPS)
- Power supplies for welding applications.

### Application domain

- Industrial.

## Current Transducer LTS 6-NP

### Insulation coordination

$U_d$	RMS voltage for AC insulation test, 50 Hz, 1 min	3	kV
$\hat{U}_w$	Impulse withstand voltage 1.2/50 $\mu$ s	> 8	kV
		Min	
$U_e$	Partial discharge extinction RMS voltage @ 10pC	> 1.5	kV
$d_{cp}$	Creepage distance <sup>1)</sup>	15.5	mm
$d_{cl}$	Clearance <sup>2)</sup>	6.35	mm
$CTI$	Comparative Tracking Index (group IIIa)	175	

Notes: <sup>1)</sup> On housing  
<sup>2)</sup> On PCB with soldering pattern UTEC93-703.

### Applications 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
$d_{cp}, d_{cl}, \hat{U}_w$	Rated insulation voltage	Nominal voltage
Basic insulation	600 V	600 V
Reinforced insulation	300 V	300 V

### Safety

This transducer must be used in limited-energy secondary circuits according to IEC 61010-1.



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.



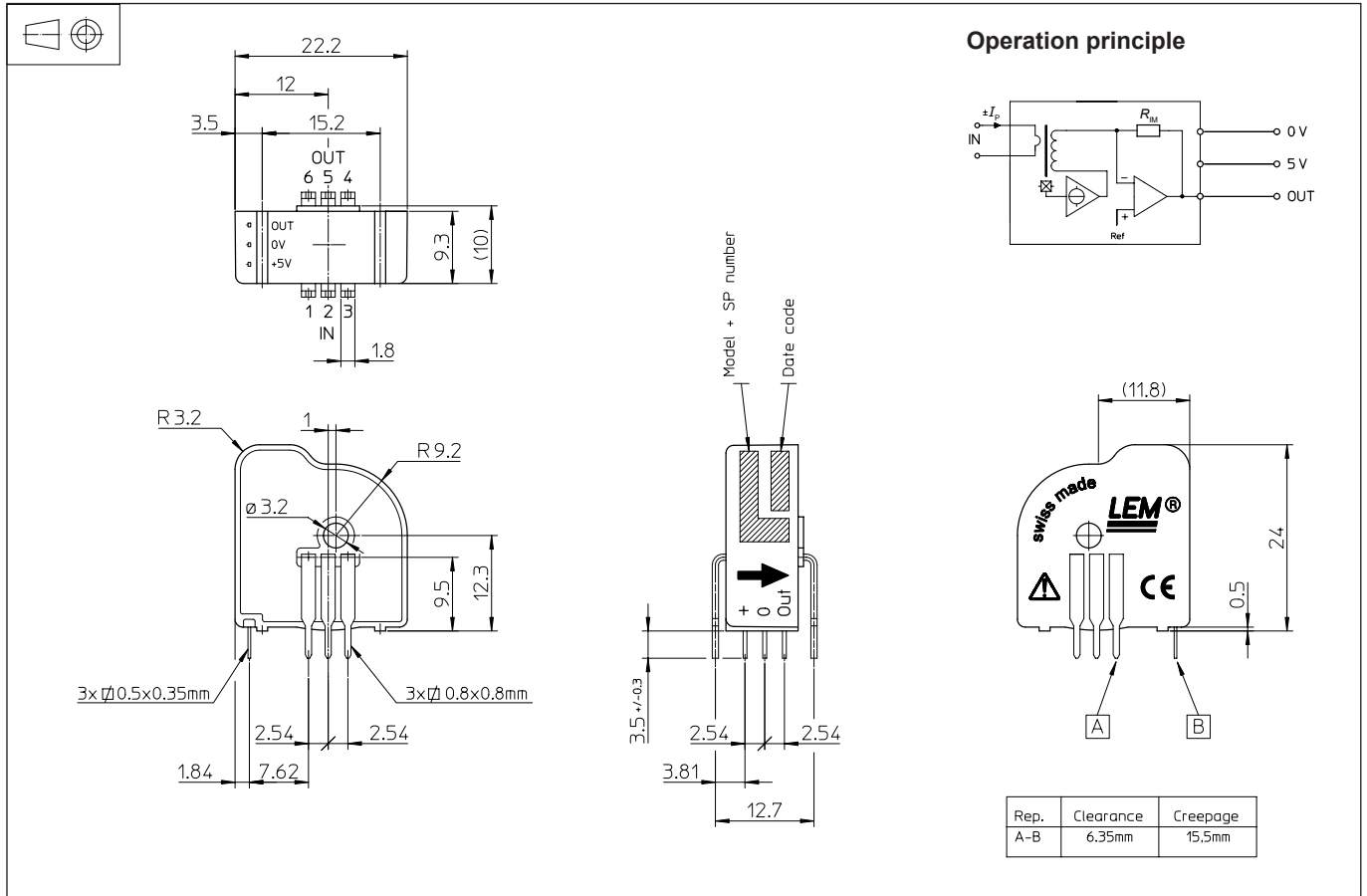
Caution, risk of electrical shock

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 LTS 6-NP (in mm)



Number of primary turns	Primary nominal RMS current $I_{PN}$ [A]	Nominal output voltage $V_{out}$ [V]	Primary resistance $R_p$ [mΩ]	Primary insertion inductance $L_p$ [μH]	Recommended connections
1	±6	2.5 ± 0.625	0.18	0.013	
2	±3	2.5 ± 0.625	0.81	0.05	
3	±2	2.5 ± 0.625	1.62	0.12	

## Mechanical characteristics

- General tolerance  $\pm 0.2$  mm
- Fastening & connection of primary  
Recommended PCB hole 1.3 mm
- Fastening & connection of secondary  
Recommended PCB hole 0.8 mm
- Additional primary through-hole  $\varnothing 3.2$  mm

## Remarks

- $V_{out}$  swings above 2.5 V when  $I_p$  flows from terminals 1, 2, 3 to terminals 6, 5, 4 (with the arrow).
- Temperature of the primary conductor should not exceed 100 °C.

## Output Voltage - Primary Current

