

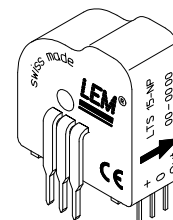
# Current Transducer LTS 15-NP

$$I_{PN} = 5 - 7.5 - 15 \text{ A}$$

For the electronic measurement of currents : DC, AC, pulsed, mixed, with a galvanic isolation between the primary circuit (high power) and the secondary circuit (electronic circuit).



Preliminary



## Electrical data

$I_{PN}$	Primary nominal r.m.s. current	15	At
$I_P$	Primary current, measuring range	0 .. $\pm 45$	At
$V_{OUT}$	Analog output voltage	$I_P = 0$	2.5 <sup>1)</sup> V
		$\pm I_{PN}$	2.5 $\pm$ 0.625 V
$N_S$	Number of secondary turns ( $\pm 0.1$ %)	2000	
$R_L$	Load resistance	$\geq 2$	k $\Omega$
$R_{IM}$	Internal measuring resistance ( $\pm 0.5$ %)	83.33	$\Omega$
$TCR_{IM}$	Thermal drift of $R_{IM}$	< 50	ppm/K
$V_C$	Supply voltage ( $\pm 5$ %)	5	V
$I_C$	Current consumption @ $V_C = 5$ V	Typ 20 + $I_S$	mA
$V_d$	R.m.s. voltage for AC isolation test, 50/60 Hz, 1 mn	2.5	kV
$V_b$	R.m.s. rated voltage	525 <sup>2)</sup>	V

## Accuracy - Dynamic performance data

$X$	Accuracy @ $I_{PN}, T_A = 25^\circ\text{C}$	$\pm 0.2$	%
	Accuracy with $R_{IM}$ @ $I_{PN}, T_A = 25^\circ\text{C}$	$\pm 0.7$	%
$e_L$	Linearity	< 0.1	%
$TCV_{OUT}$	Thermal drift of $V_{OUT}$ @ $I_P = 0$	- 10 $^\circ\text{C}$ .. + 85 $^\circ\text{C}$	Typ 75 ppm/K
		- 10 $^\circ\text{C}$ .. + 85 $^\circ\text{C}$	Max 150 ppm/K
$TCE_G$	Thermal drift of the gain	- 10 $^\circ\text{C}$ .. + 85 $^\circ\text{C}$	50 <sup>3)</sup> ppm/K
$V_{OM}$	Residual voltage @ $I_P = 0$ , after an overload of $3 \times I_{PN}$	$5 \times I_{PN}$	$\pm 0.5$ mV
		$10 \times I_{PN}$	$\pm 2.0$ mV
			$\pm 2.0$ mV
$t_{ra}$	Reaction time @ 10 % of $I_{P \max}$	< 50	ns
$t_r$	Response time @ 90 % of $I_{P \max}$	< 200	ns
$di/dt$	di/dt accurately followed	> 100	A/ $\mu\text{s}$
$f$	Frequency bandwidth (0 .. - 0.5 dB)	DC .. 100	kHz
		DC .. 200	kHz

## General data

$T_A$	Ambient operating temperature	- 10 .. + 85	$^\circ\text{C}$
$T_S$	Ambient storage temperature	- 25 .. + 100	$^\circ\text{C}$
$m$	Mass	10	g
	Standards	EN 50178	

## Features

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

Notes : 1) Absolute value @  $T_A = 25^\circ\text{C}$ ,  $2.4750 < V_{OUT} < 2.5250$

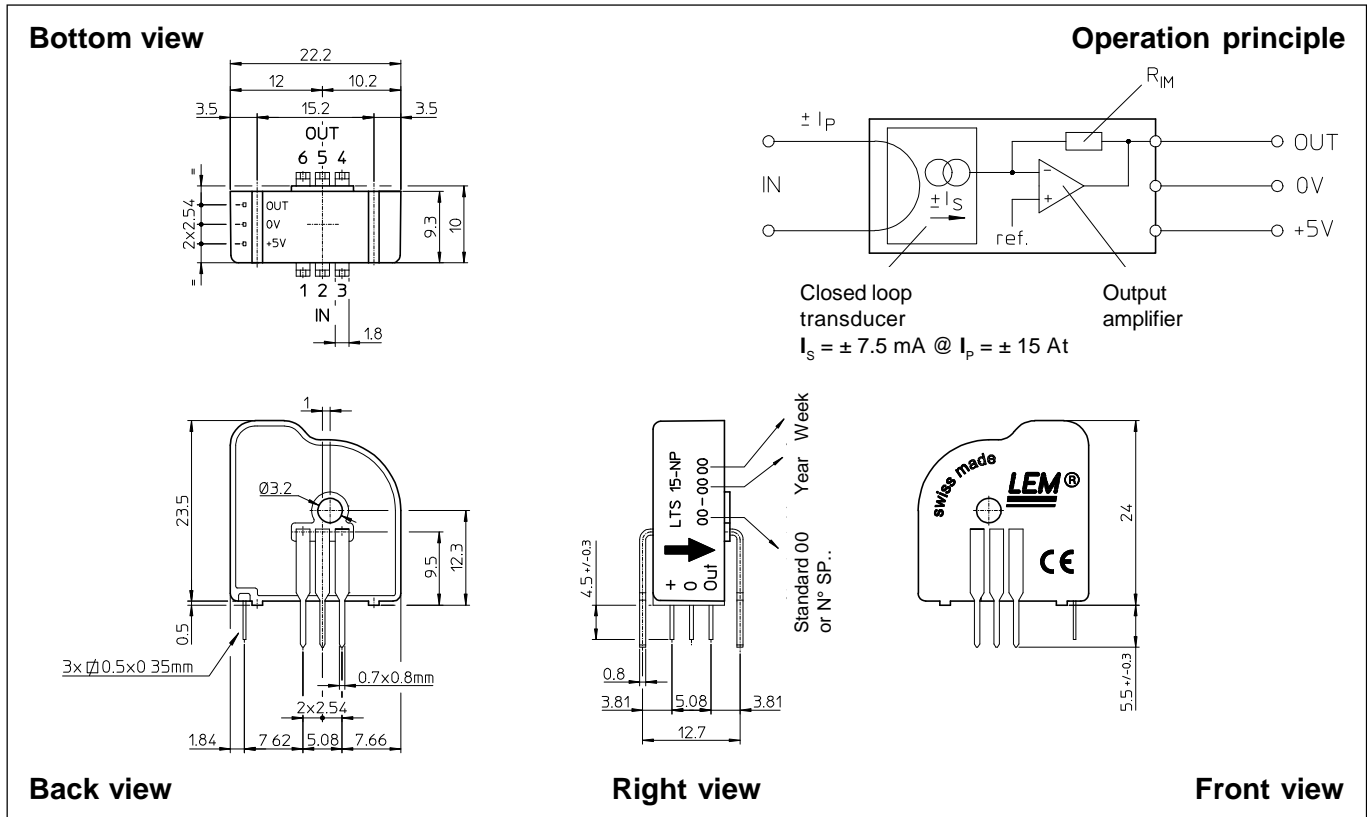
2) Pollution class 2, category III

3) Only due to  $TCR_{IM}$

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## Dimensions LTS 15-NP (in mm. 1 mm = 0.0394 inch)



Number of primary turns	Primary nominal r.m.s. current $I_{PN}$ [A]	Nominal output voltage $V_{OUT}$ [V]	Primary resistance $R_P$ [mΩ]	Primary insertion inductance $L_P$ [μH]	Recommended connections
1	$\pm 15$	$2.5 \pm 0.625$	0.18	0.013	
2	$\pm 7.5$	$2.5 \pm 0.625$	0.81	0.05	
3	$\pm 5$	$2.5 \pm 0.625$	1.62	0.12	

### Mechanical characteristics

- General tolerance  $\pm 0.2 \text{ mm}$
- Fastening & connection of primary 6 pins  $0.7 \times 0.8 \text{ mm}$   
Recommended PCB hole  $1.3 \text{ mm}$
- Fastening & connection of secondary 3 pins  $0.5 \times 0.35 \text{ mm}$   
Recommended PCB hole  $0.8 \text{ mm}$
- Additional primary through-hole  $\varnothing 3.2 \text{ mm}$

### Remark

- $V_{OUT}$  is positive when  $I_p$  flows from terminals 1, 2, 3 to terminals 6, 5, 4.

### Output Voltage - Primary Current

