

Current Transducer LTS 25-NP

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).



$$I_{PN} = 8 - 12 - 25 \text{ A}$$

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Electrical data

I_{PN}	Primary nominal r.m.s. current	25	At
I_P	Primary current, measuring range	0 .. ± 80	At
V_{OUT}	Analog output voltage @ I_P $I_P = 0$	$2.5 \pm (0.625 \cdot I_P / I_{PN})$ V $2.5^{(1)}$ V	
N_S	Number of secondary turns (± 0.1 %)	2000	
R_L	Load resistance	≥ 2	k Ω
R_{IM}	Internal measuring resistance (± 0.5 %)	50	Ω
TCR_{IM}	Thermal drift of R_{IM}	< 50	ppm/K
V_C	Supply voltage (± 5 %)	5	V
I_C	Current consumption @ $V_C = 5$ V	Typ $23 + I_S^{(2)} + (V_{OUT} / R_L)$ mA	
V_d	R.m.s. voltage for AC isolation test, 50/60 Hz, 1 mn	3	kV
V_e	R.m.s. voltage for partial discharge extinction @ 10 pC	> 1.5	kV
\hat{V}_w	Impulse withstand voltage 1.2/50 μ s	> 8	kV

Accuracy - Dynamic performance data

X	Accuracy @ I_{PN} , $T_A = 25^\circ\text{C}$	± 0.2	%
	Accuracy with R_{IM} @ I_{PN} , $T_A = 25^\circ\text{C}$	± 0.7	%
ϵ_L	Linearity	< 0.1	%
TCV_{OUT}	Thermal drift of V_{OUT} @ $I_P = 0$	- 10°C .. $+ 85^\circ\text{C}$	Typ 50 100 ppm/K
TCE_G	Thermal drift of the gain	- 10°C .. $+ 85^\circ\text{C}$	50 ⁽³⁾ ppm/K
V_{OM}	Residual voltage @ $I_P = 0$, after an overload of $3 \times I_{PN}$ $5 \times I_{PN}$ $10 \times I_{PN}$	± 0.5 ± 2.0 ± 2.0	mV mV mV
t_{ra}	Reaction time @ 10 % of I_{PN}	< 50	ns
t_r	Response time @ 90 % of I_{PN}	< 400	ns
di/dt	di/dt accurately followed	> 60	A/ μ s
f	Frequency bandwidth (0 .. - 0.5 dB) (- 0.5 .. 1 dB)	DC .. 100 DC .. 200	kHz kHz

General data

T_A	Ambient operating temperature	- 10 .. $+ 85$	$^\circ\text{C}$
T_S	Ambient storage temperature	- 25 .. $+ 100$	$^\circ\text{C}$
	Insulating material group	III a	
m	Mass	10	g
	Standards ⁽⁴⁾	EN 50178 EN 60950	

Notes : ⁽¹⁾ Absolute value @ $T_A = 25^\circ\text{C}$, $2.475 < V_{OUT} < 2.525$

⁽²⁾ Please see the operation principle on the other side

⁽³⁾ Only due to TCR_{IM}

⁽⁴⁾ Specification according to IEC 1000-4-3 are not guaranteed between 180 and 220 MHz.

Features

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

Advantages

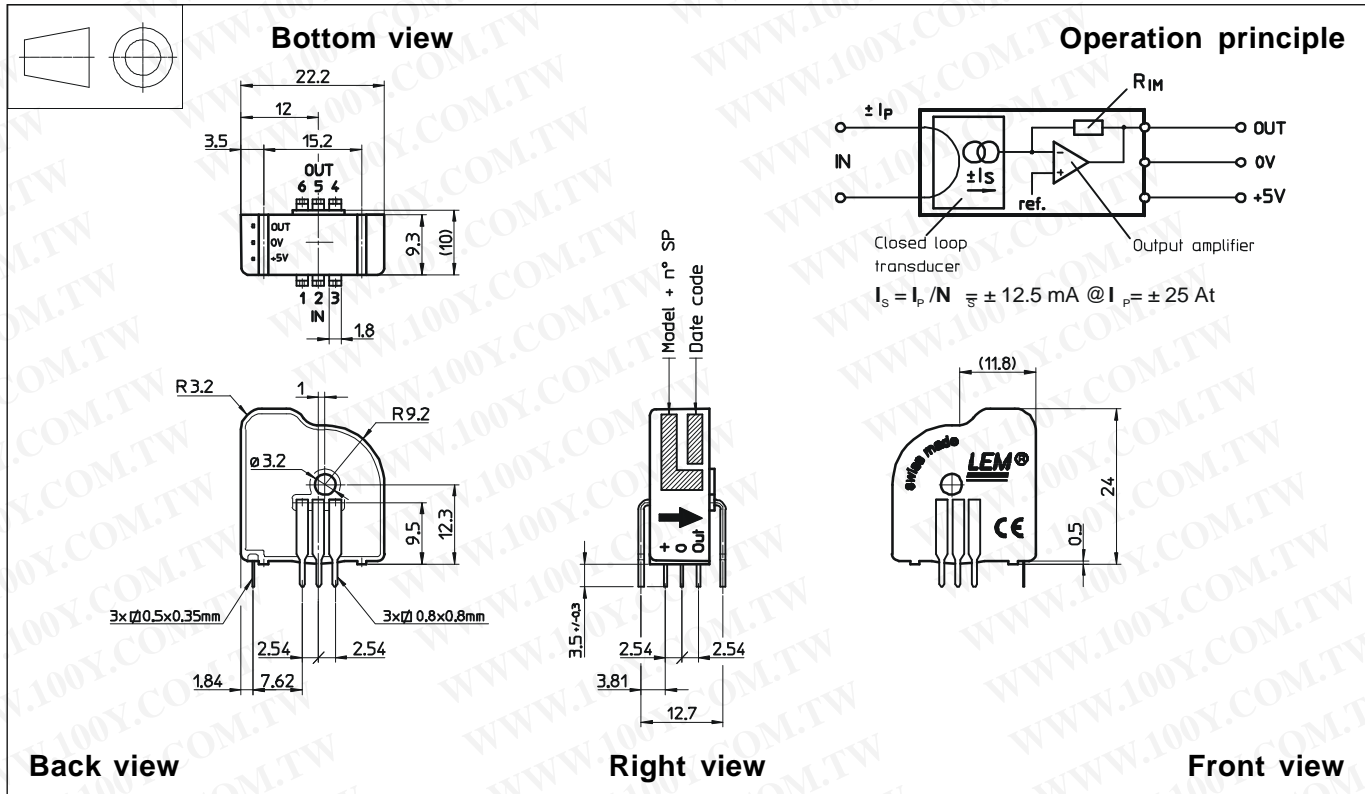
- Excellent accuracy
- Very good linearity
- Very low temperature drift
- Optimized response time
- Wide frequency bandwidth
- No insertion losses
- High immunity to external interference
- Current overload capability.

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.

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Dimensions LTS 25-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	± 25	2.5 ± 0.625	0.18	0.013	
2	± 12	2.5 ± 0.600	0.81	0.05	
3	± 8	2.5 ± 0.600	1.62	0.12	

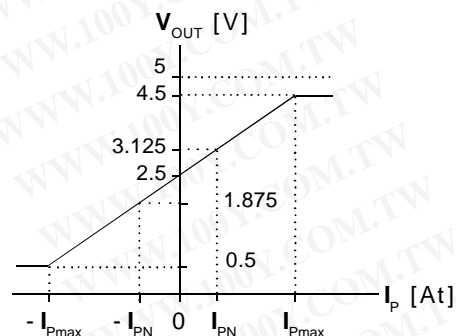
Mechanical characteristics

- General tolerance: ± 0.2 mm
- Fastening & connection of primary: 6 pins 0.8 x 0.8 mm
Recommended PCB hole: 1.3 mm
- Fastening & connection of secondary: 3 pins 0.5 x 0.35 mm
Recommended PCB hole: 0.8 mm
- Additional primary through-hole: Ø 3.2 mm

Remark

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

Output Voltage - Primary Current



LEM reserves the right to carry out modifications on its transducers, in order to improve them, without previous notice.