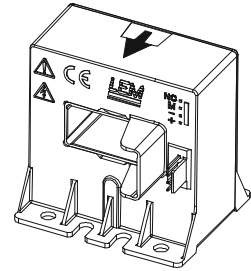


Current Transducer LA 306-S/SP1

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



$$I_{PN} = 400 \text{ A}$$



Electrical data

I_{PN}	Primary nominal current rms @ $T_A = 85^\circ\text{C}$	400	A			
I_{PM}	Primary current, measuring range	0 .. ± 640	A			
R_M	Measuring resistance	$R_{M\text{ mini}}$	$R_{M\text{ maxi}}$			
		with $\pm 15 \text{ V}$	@ $\pm 500 \text{ A}_{\text{maxi}}$	0	35	Ω
			@ $\pm 640 \text{ A}_{\text{maxi}}$	0	5	Ω
I_{SN}	Secondary nominal current rms @ $T_A = 85^\circ\text{C}$	80	mA			
K_N	Conversion ratio	1 : 5000				
V_C	Supply voltage ($\pm 5\%$)	± 15	V			
I_C	Current consumption	$25 + I_S$	mA			

Accuracy - Dynamic performance data

X_G	Overall accuracy @ $I_{PN}, T_A = 25^\circ\text{C}$	± 1.1	%
\mathcal{E}_L	Linearity error	< 0.1	%
I_O	Offset current @ $I_p = 0, T_A = 25^\circ\text{C}$	Typ	Maxi
I_{OM}	Magnetic offset current @ $I_p = 0$ and specified R_M , after an overload of $3 \times I_{PN}$		± 0.15 mA
			± 0.15 mA
I_{OT}	Temperature variation of I_O - $40^\circ\text{C} \dots + 85^\circ\text{C}$	± 0.2	± 0.50 mA
t_r	Response time @ 90 % of I_{PN} step	< 1	μs
di/dt	di/dt accurately followed	> 50	A/ μs
BW	Frequency bandwidth (- 3 dB)	DC .. 50	kHz

General data

T_A	Ambient operating temperature	- 40 .. + 85	$^\circ\text{C}$
T_S	Ambient storage temperature	- 45 .. + 90	$^\circ\text{C}$
R_S	Secondary coil resistance @ $T_A = 85^\circ\text{C}$	100	Ω
m	Mass	137	g
	Standards	EN 50178: 1997	

Features

- Closed loop (compensated) current transducer using the Hall effect
- Isolated plastic case recognized according to UL 94-V0.

Special features

- $I_{PN} = 400 \text{ A}$
- $I_{PM} = 0 \dots \pm 640 \text{ A}$
- $K_N = 1 : 5000$.

Advantages

- Excellent accuracy
- Very good linearity
- 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 LA 306-S/SP1

Isolation characteristics

$V_{A,d}$	Rms voltage for AC isolation test, 50 Hz, 1 min	5.5	kV
\hat{V}_w	Impulse withstand voltage 1.2/50 μ s	10	kV
		Mini	
dCp	Creepage distance	19	mm
dCl	Clearance distance	11.2	mm
CTI	Comparative Tracking Index (Group I)	600	

Application 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
dCp, dCl, \hat{V}_w	Rated isolation voltage	Nominal voltage
Single isolation	1000 V	1000 V
Reinforced isolation	500 V	500 V

Safety



This transducer must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the following 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).

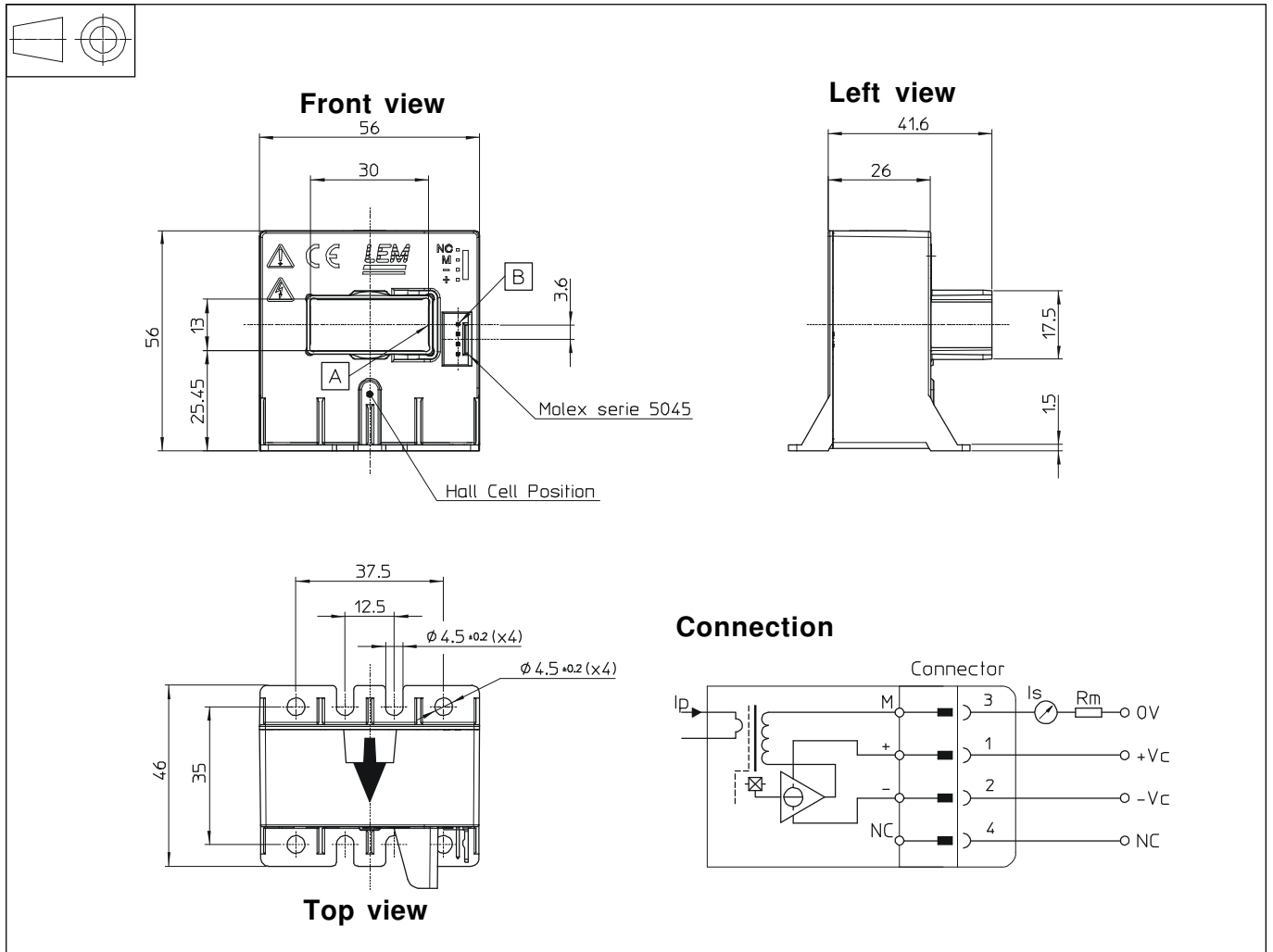
Ignoring this warning can lead to injury and/or cause serious damage.

This transducer is a built-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 LA 306-S/SP1 (in mm. 1 mm = 0.0394 inch)



Mechanical characteristics

- General tolerance ± 0.5 mm
- Transducer fastening 4 holes $\varnothing 4.5$ mm
4 steel screws M4
- Primary through-hole 13 x 30 mm
- Connection of secondary Molex 5045 connector

Remarks

- I_S is positive when I_p flows in the direction of the arrow.
- Temperature of the primary conductor should not exceed 100°C.
- Dynamic performances (di/dt and response time) are best with a single bar completely filling the primary hole.