Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

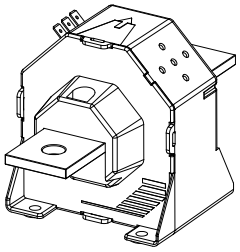
Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

Current Transducer LT 505-T

I_{PN} = 500 A

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

0623



Electrical data

I_{PN}	Primary nominal current rms			500			A
I_{PM}	Primary current, measuring range			0 .. ± 1200			A
R_M	Measuring resistance @		T_A = 70°C		T_A = 85°C		
			$R_{M\,min}$	$R_{M\,max}$	$R_{M\,min}$	$R_{M\,max}$	
	with ± 15 V	@ ± 500 A_{max}	0	65	0	60	Ω
		@ ± 800 A_{max}	0	15	0	12	Ω
	with ± 24 V	@ ± 500 A_{max}	0	145	15	140	Ω
		@ ± 1200 A_{max}	0	22	15	18	Ω
I_{SN}	Secondary nominal current rms			100			mA
K_N	Conversion ratio			1 : 5000			
V_C	Supply voltage (± 5 %)			± 15 .. 24			V
I_C	Current consumption			30 (@ ± 24V) + I_S			mA

Accuracy - Dynamic performance data

X_G	Overall accuracy @ I_{PN}, T_A = 25°C		± 0.6		%
ε_L	Linearity error		< 0.1		%
			Typ	Max	
I_O	Offset current @ I_P = 0, T_A = 25°C			± 0.4	mA
I_{OM}	Magnetic offset current @ I_P = 0, and specified R_M, after an overload of 3 x I_{PN}			± 0.2	mA
I_{OT}	Temperature variation of I_O	- 10°C .. + 85°C	± 0.3	± 0.5	mA
t_r	Response time[1] to 90 % of I_{PN} step		< 1		µs
di/dt	di/dt accurately followed		> 50		A/µs
BW	Frequency bandwidth (- 1 dB)		DC .. 150		kHz

General data

T_A	Ambient operating temperature		- 10 .. + 85	°C
T_S	Ambient storage temperature		- 25 .. + 100	°C
R_S	Secondary coil resistance @	T_A = 70°C	65	Ω
		T_A = 85°C	69	Ω
m	Mass		850	g
	Standards		EN 50178: 1997	

Note: [1] With a di/dt of 100 A/µs.

Features

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

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 LT 505-T

Isolation characteristics

$\mathbf{V_d}$	Rms voltage for AC isolation test, 50 Hz, 1 min	6	kV
		Min	
dCp	Creepage distance	51.8	mm
dCl	Clearance distance	44.1	mm
CTI	Comparative Tracking Index (group III a)	225	

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
dCp, **dCl**	Rated isolation voltage	Nominal voltage
Single isolation	5000 V	5000 V
Reinforced isolation	2500 V	2500 V

Safety

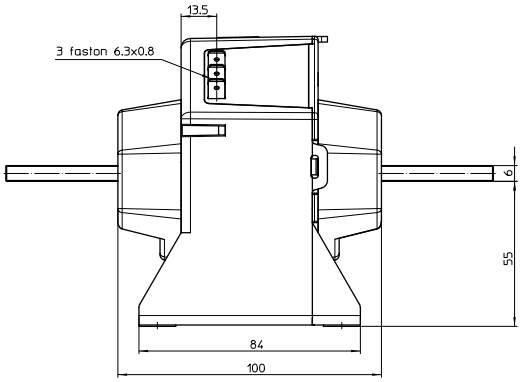
This transducer must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the manufacturer's operating instructions.

Caution, risk of electrical shock

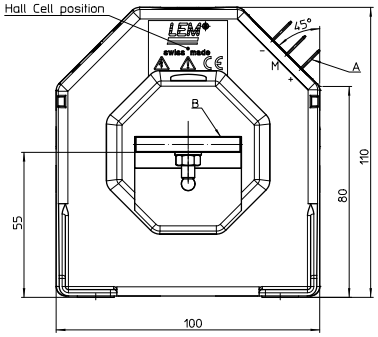
When operating the transducer, certain parts of the module can carry hazardous voltage (eg. primary busbar, power supply).
Ignoring this warning can lead to injury and/or cause serious damage.
This transducer is a build-in device, whose conducting parts must be inaccessible after installation.
A protective housing or additional shield could be used.
Main supply must be able to be disconnected.

Dimensions LT 505-T (in mm. 1 mm = 0.0394 inch)

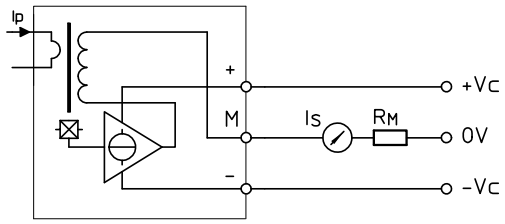
Right view



Front view

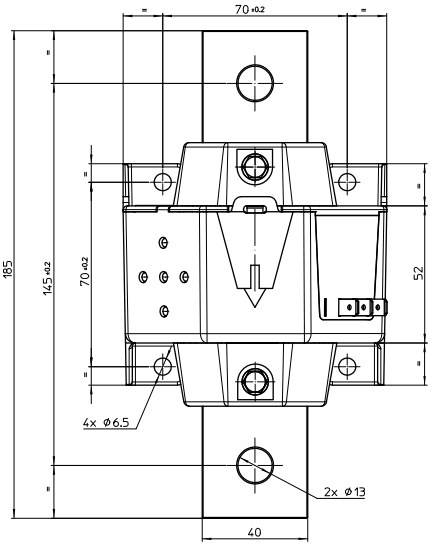


Connection



Rep.	Clearance dCl	Creepage dCp
A-B	44,1 mm	51,8 mm

Top view



Mechanical characteristics

- General tolerance ± 0.5 mm
- Transducer fastening 4 holes Ø 6.5 mm
  4 steel screws M6
  Recommended fastening torque 4.5 Nm or 3.31 Lb.-Ft.
  Or by the primary bar
- Connection of primary 2 holes Ø 13 mm
  2 steel screws M12
  Recommended fastening torque 17 Nm or 12.53 Lb.-Ft.
- Connection of secondary Faston 6.3 x 0.8 mm

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.
- This is a standard model. For different versions (supply voltages, turns ratios, unidirectional measurements...), please contact us.