Current Transducer LT 100-P

I_{PN} = 100 A

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).

Electrical data

I_{PN}	Primary nominal r.m.s. current		100		A
I_P	Primary current, measuring range		0 .. ± 150		A
R_M	Measuring resistance		$R_{M\ min}$	$R_{M\ max}$	
	with ± 15 V	@ ± 100 A_{max}	30	85	Ω
		@ ± 150 A_{max}	30	45	Ω
I_{SN}	Secondary nominal r.m.s. current		100		mA
K_N	Conversion ratio		1 : 1000		
V_C	Supply voltage (± 5 %)		± 15		V
I_C	Current consumption		10 + I_S		mA

Accuracy - Dynamic performance data

X_G	Overall accuracy @ I_{PN}, T_A = 25°C		± 0.5		%
ε_L	Linearity error		< 0.1		%
			Typ	Max	
I_O	Offset current @ I_P = 0, T_A = 25°C			± 0.4	mA
I_{OT}	Thermal drift of I_O	0 °C .. 70°C	± 0.3	± 0.6	mA
t_r	Response time [1] @ 90 % of I_P		< 1		µs
di/dt	di/dt accurately followed		> 50		A/µs
f	Frequency bandwidth (- 1 dB)		DC .. 150		kHz

General data

T_A	Ambient operating temperature	0 .. + 70		°C
T_S	Ambient storage temperature	- 25 .. + 85		°C
R_S	Secondary coil resistance @ T_A = 70°C	30		Ω
m	Mass	50		g
	Standards	EN 50178 : 1997		

Features

- Closed loop (compensated) current transducer using the Hall effect
- Insulated self-extinguishing plastic case.

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.

Note : [1] With a di/dt of 50 A/µs.

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Isolation characteristics

V_d	R.m.s. voltage for AC isolation test, 50/60 Hz, 1 mn	3	kV
V_w	Impulse withstand voltage 1.2/50 µs	>15	kV
		Min	
dCp	Creepage distance	18.30	mm
dCl	Clearance distance	18	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	1500 V	Cat III 3200 V rms
Reinforced isolation	1000 V	Cat III 1[illegible] V rms

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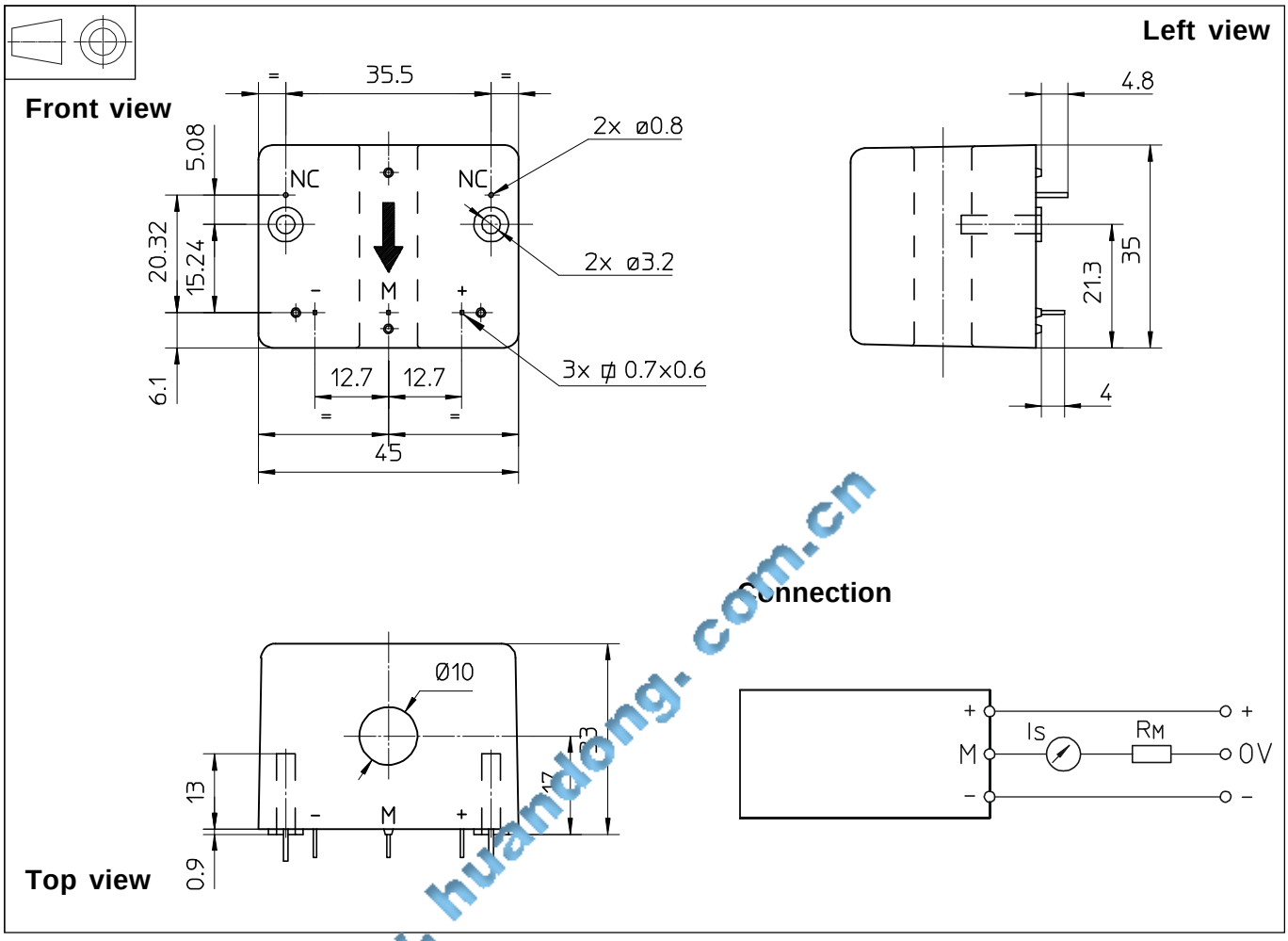
Safety

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 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 LT 100-P (in mm. 1 mm = 0.0394 inch)



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Mechanical characteristics

• General tolerance	± 0.3 mm
• Primary through-hole	∅ 10 mm
• Transducer fastening	2 pins 0.8 mm
Or	
• Supplementary fastening	2 holes ∅ 3.2 mm 2 PT KA 35 screws long. 12 mm
Recommended fastening torque	1.1 Nm or 0.81 Lb. -Ft.
• Connection of secondary	3 pins 0.7 x 0.6 mm
• Recommended PCB hole	0.9 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.
- Dynamic performances (di/dt and response time) are best with a single bar completely filling the primary hole.
- In order to achieve the best magnetic coupling, the primary windings have to be wound over the top edge of the device.
- To measure nominal currents of less than 100 A, the optimum accuracy is obtained by having several primary turns (nominal current x number of turns < 100 At).
- This is a standard model. For different versions (supply voltages, turns ratios, unidirectional measurements...), please contact us.