Current Transducer LT 2000-S/SP45

I_{PN} = 2000 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).

CE

Electrical data

I_{PN}	Primary nominal r.m.s. current		2000		A
I_P	Primary current, measuring range		0 .. ± 4000		A
R_M	Measuring resistance		$R_{M\,min}$	$R_{M\,max}$	
	with ± 24 V	@ ± 2000 A_{max}	0	25	Ω
		@ ± 4000 A_{max}	0	5	Ω
I_{SN}	Secondary nominal r.m.s. current		400		mA
K_N	Conversion ratio		1 : 5000		
V_C	Supply voltage (± 20 %)		± 24		V
I_C	Current consumption		< 35 + I_S		mA

Accuracy - Dynamic performance data

X_G	Overall accuracy @ I_{PN} , T_A = 25°C	< ± 0.3		%
ε_L	Linearity error	< 0.1		%
		Typ	Max	
I_O	Offset current @ I_P = 0, T_A = 25°C		± 0.8	mA
I_{OT}	Thermal drift of I_O T_A - 40°C .. + 70°C	± 0.4	± 0.8	mA
t_r	Response time [1] @ 90 % of I_{PN}	< 1		µs
di/dt	di/dt accurately followed	> 50		A/µs
f	Frequency bandwidth (-1dB)	DC .. 100		kHz

General data

T_A	Ambient operating temperature	- 40 .. + 70	°C
T_S	Ambient storage temperature	- 50 .. + 85	°C
R_S	Secondary coil resistance @ T_A = 70°C	18	Ω
m	Mass	6	kg
	Standards	EN 50178 : 1997	

Note : [1] With a di/dt ≥ 100 A/µs.

Features

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

Special features

- I_P = 0 .. ± 4000 A
- T_A = - 40°C .. + 70°C
- Trought hole∅ 114 mm
- Protection class IP54
- Different housing.

Advantages

- 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.

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Isolation characteristics

V_d	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn	10 [2)]	kV
		1 [3)]	kV
$\hat{V}_w$	Impulse withstand voltage 1.2/50 µs	43.6	kV
		Min	
dCp	Creepage distance[4)]	69.9	mm
dCl	Clearance distance[4)]	64.1	mm
CTI	Comparative Tracking Index (Group I)	600	

Application examples

According to EN 50178 and CEI 61010-1 standards and following conditions :

- Over voltage category OV 3
- Pollution degree PD2
- Non-uniform field

	EN 50178	CEI 61010-1
dCp, dCl, $\hat{V}_w$	Rated isolation voltage	Nominal voltage
Single isolation	8000 V	8000 V
Reinforced isolation	4000 V	4000 V

Notes : [2)] Between primary and secondary + shield
[3)] Between shield and secondary
[4)] Distance between "A" and "B" see drawing outline.

Safety

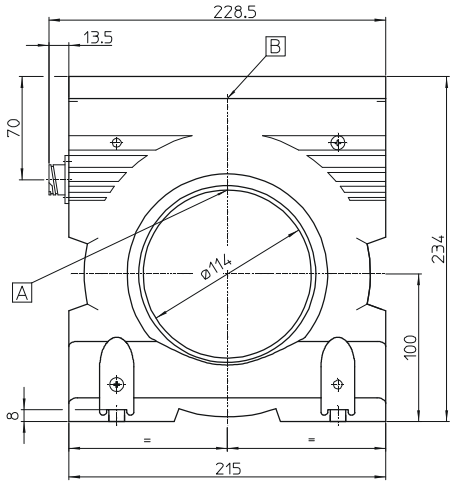
This transducer must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the following manufacturer's operating instructions.

Caution, risk of electrical shock

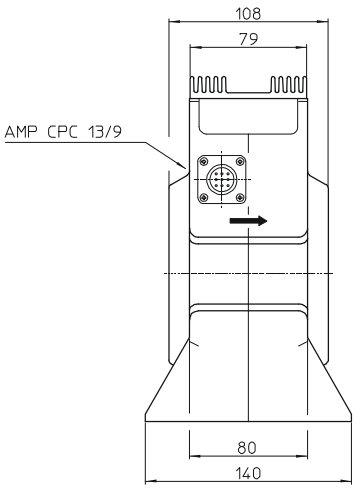
When operating the transducer, certain parts of the module can carry hazardous voltage (eg. primary busbar, power supply). Ignoring this warning can lead to injury and/or cause serious damage.
This transducer is a built-in device, whose conducting parts must be inaccessible after installation.
A protective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

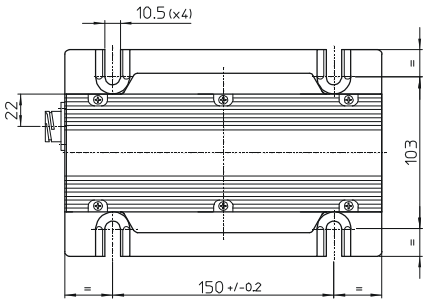
Dimensions LT 2000-S/SP45 (in mm. 1 mm = 0.0394 inch)

Front view



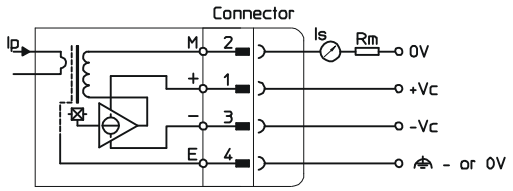
Left view





Top view

Connection



Mechanical characteristics

• General tolerance	± 1 mm
• Transducer fastening	4 slots ∅ 10.5 mm 4 M10 steel screws
Recommended fastening torque	11.5 Nm or 8.48Lb - Ft
• Connection of primary	through-hole ∅ 114mm
• Connection of secondary	AMP CPC 13/9

Remarks

- $\mathbf{I}_S$ is positive when $\mathbf{I}_P$ 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 ba completely filling the primary hole.

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