Current Transducer HY 50-P

I_{PN} = 50 A

For the electronic measurement of currents: DC, AC, pulsed..., with galvanic separation between the primary circuit and the secondary circuit.

Electrical data

Primary nominal RMS current I_{PN} (A)	Primary current measuring range I_{PM} (A)	Primary conductor (mm)	Type	RoHS since date code
50	±150	1.6 × 3.5	**HY 50-P**	45259

U_c	Supply voltage (± 5 %)	±15	V
I_c	Current consumption	±10	mA
$\hat{I}_{P\,max}$	Primary withstand peak current (1 ms)	50 × I_{PN}	
R_{INS}	Insulation resistance @ 500 V DC	> 1000	MΩ
U_{out}	Output voltage (Analog) @ ±I_{PN}, R_L = 10 kΩ, T_A = 25 °C	±4	V
R_{out}	Output internal resistance	100	Ω
R_L	Load resistance	> 1	kΩ

Accuracy - Dynamic performance data

ε	Error @ I_{PN}, T_A = 25° C (excluding offset)	< ±1	%
ε_L	Linearity error [1] (0 ... ±I_{PN})	< ±1	% of I_{PN}
U_{OE}	Electrical offset voltage @ T_A = 25° C	< ±40	mV
U_{OM}	Magnetic offset voltage @ I_P = 0, after an excursion of 1 × I_{PN}	< ±15	mV
TCU_{OE}	Temperature coefficient of U_{OE}	typ. ±1.5	mV/K
		max. ±3	mV/K
TCU_{out}	Temperature coefficient of U_{out} (% of reading)	< ±0.1	%/K
$t_{D\,90}$	Delay time to 90 % of the final output value for I_{PN} step	< 3 [2]	µs
BW	Frequency bandwidth [3] (−3 dB)	DC ... 50	kHz

General data

T_A	Ambient operating temperature	−10 .. +80	°C
$T_{A\,st}$	Ambient storage temperature	−25 .. +85	°C
m	Mass	< 14	g
	Standard [4]	EN 50178: 1997	

Notes:
1) Linearity data exclude the electrical offset
2) For a di/dt = 50 A/µs
3) Please refer to derating curves in the technical file to avoid excessive core heating at high frequency
4) Please consult characterisation report for more technical details and application advice.

Features

- Hall effect measuring principle
- Galvanic separation between primary and secondary circuit
- Insulation voltage 2500 V ~
- Compact design for PCB mounting
- Low power consumption
- Extended measuring range (3 × I_{PN})
- Insulating plastic case recognized according to UL 94-V0.

Advantages

- Easy mounting
- Small size and space saving
- Only one design for wide current ratings range
- High immunity to external interference.

Applications

- General purpose inverters
- Switched Mode Power Supplies (SMPS)
- AC motor speed control
- Uninterruptible Power Supplies (UPS)
- Battery supplied application
- Power supplies for welding applications.

Application Domain

- Industrial.

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Insulation coordination

U_d	RMS voltage for AC insulation test, 50 Hz, 1 min	2.5	kV
U_{Nm}	Rated insulation RMS voltage	500 [1)]	V

Note: [1)] Pollution class 2, overvoltage category III.

Safety

This tran*sducer* must be used in limited-energy secondary circuits according to IEC 61010-1.

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 (e.g. 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.

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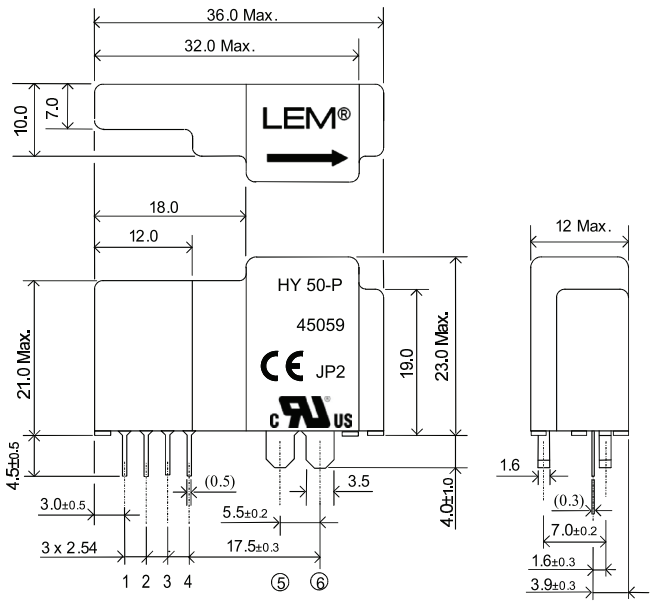
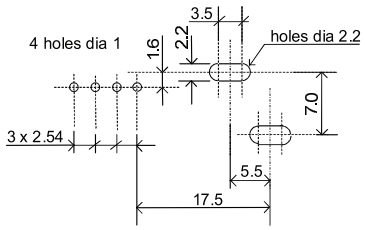
Dimensions HY 50-P (in mm)



PCB MOUNTING DIMENSIONS (in mm ±0.1, hole -0, +0.2)

HY 50-P



PIN ARRANGEMENT

1 +15V
2 --15V
3 OUTPUT
4 0V

⑤ PRIMARY IN
⑥ PRIMARY OUT

Remark

- Temperature of the primary conductor should not exceed 100 °C.

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