

# **Current Transducer HX 02..06-P**

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









All data are given with  $\mathbf{R}_{_{\mathrm{I}}}$  = 10 k $\Omega$ 

 $< \pm 1$  % of  $I_{PN}$ 

< ± 1 % of I<sub>PN</sub>

50

kHz

# $I_{PN} = 2 ... 6 A$



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Electrical data					
	ary nominal ent rms I <sub>PN</sub> (A)	Primary current measuring range $I_{PM}$ (A)	Primary conductor diameter x turns (mm)	Туре	
	2	± 6	0.5d x 30T	HX 02-	-P
	4	± 12	0.7d x 15T	HX 04-	-P
	6	± 18	1.0d x 10T	HX 06-	-P
<b>V</b> <sub>OUT</sub>	Output volta	age (Anarog) @ ± I <sub>PN</sub> , <b>F</b>	$\mathbf{R}_{\perp} = 10 \text{ k}\Omega, \mathbf{T}_{\Delta} = 25 \text{ °C}$	± 4	V
R <sub>OUT</sub>	Output inte	rnal resistance		< 50	Ω
R <sub>L</sub>	Load resista	ance		≥ 10	$k\Omega$
<b>V</b> <sub>c</sub>	Supply vol	tage (± 5 %) 1)		± 15	V
V <sub>c</sub>	Current cor	sumption		< ± 15	mΑ

	Accuracy - Dynamic performance data			
Χ	Accuracy @ $I_{PN}$ , $T_A = 25^{\circ}C$ (xcluding offset)			
$\epsilon_{\scriptscriptstyle \rm I}$	Linearity error (0 ± I <sub>PN</sub> )			

Frequency bandwidth (- 3 dB) 2)

$\mathbf{V}_{OE}$	Electorical offset voltage $\bigcirc$ $I_P = 0$ , $T_A = 25^{\circ}C$	$< \pm 40$	mV
<b>V</b> <sub>OH</sub>	Hysteresis offset voltage @ I <sub>P</sub> = 0		
	after an excursion of 1 x I <sub>PN</sub>	< ± 15	mV
TCV	Temperature coefficient of <b>V</b> <sub>OF</sub>	< ± 1.5	mV/K
TCV	Temerature coefficient of <b>V</b> <sub>OUT</sub> (% of reading)	± 0.1	%/K
t,	Response time to 90% of I <sub>PN</sub> step	≤ 3	μs

#### **General data**

BW

$T_{_{\rm A}}$	Ambient operating temperature	- 25 + 85	°C
T <sub>s</sub>	Ambient storage temperature	- 25 + 85	°C
m	Mass	8	g
	Standards	EN 50178: 1997	

 $^{1)}$  Also operate at ±12V power supples, measuring range reduced to ± 2.5 x  $I_{PN}$ . Note:

#### **Features**

- · Galvanic isolation between primary and secondary circuit
- Hall effect measuring principle
- Isolation voltage 3000V
- Low power consumption
- Extended measuring range (3 x
- Power supply from ±12V to ±15V
- Isolated plastic case recognized according to UL 94-V0.

#### **Advantages**

- Low insertion losses
- Easy to mount with automatic handling system
- · Small size and space saving
- · Only one design for wide current ratings range
- High immunity to external interference

#### **Applications**

- Switched Mode Power Supplies (SMPS)
- AC variable speed drives
- Uninterruptible Power Supplies (UPS)
- Electrical appliances
- Battery supplied applications
- DC motor drives

#### **Application domain**

Industrial.

<sup>2)</sup> Small signal only to avoid excssive heating of the magnetic cores.



#### **Current Transducer HX 02..06-P**

Is	Isolation characteristics			
$oldsymbol{V}_{ ext{d}} \ oldsymbol{V}_{ ext{e}} \ oldsymbol{\hat{V}}_{ ext{w}}$	Rms voltage for AC isolation test, 50 Hz, 1 min Partial discharge extinction voltage rms @ 10 pC Impulse withstand voltage 1.2/50 µs	> 3 ≥ 1 ≥ 6	kV kV kV	
dCp dCl CTl	Creepage distance Clearance distance Comparative Tracking Index (group I)	≥ 5.5 ≥ 5.5 ≥ 600	mm mm	

## **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, $\hat{V}_w$	Rated insulation voltage	Nominal voltage
Basic insulation	600 V	600 V
Reinforced insulation	300 V	150 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.

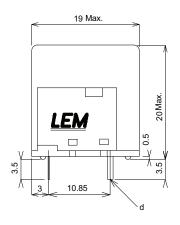
A protective housing or additional shield could be used.

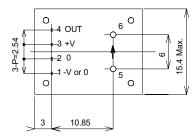
Main supply must be able to be disconnected.



### **Dimensions HX 02..06-P** (in mm. 1 mm = 0.0394 inch)







#### **Terminal Pin Identification**

1 ..... -15 V

 $2\,....\,0\,V$ 

3 ..... +15 V

4 ..... Output

5 ..... Primary input Current (+)

6 ..... Primary input Current (-)

# Primary conductor diameter

НХ	02-P	04-P	06-P
d	0.5	0.7	1.0

Secondary pins dimension 0.5 x 0.25

Top view



#### **Mechanical characteristics**

General tolerance

± 0.5 mm