

# Current Transducer HX 03..50-P/SP2

$$I_{PN} = 3 \dots 50 \text{ A}$$

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



## Electrical data

Primary nominal current rms $I_{PN}$ (A)	Primary current, measuring range <sup>1)</sup> $I_{PM}$ (A)	Primary conductor diameter x turns (mm)	Type	RoHS since date code
3	± 9	0.6d x 20T	<b>HX 03-P/SP2</b>	46128
5	± 15	0.8d x 12T	<b>HX 05-P/SP2</b>	46019
10	± 30	1.1d x 6T	<b>HX 10-P/SP2</b>	45352
15	± 45	1.4d x 4T	<b>HX 15-P/SP2</b>	46133
20	± 60	1.6d x 3T	<b>HX 20-P/SP2</b>	planned
25	± 75	1.6d x 2T	<b>HX 25-P/SP2</b>	46233
50	± 150	1.2 x 6.3 x 1T	<b>HX 50-P/SP2</b>	46152

$V_{OUT}$	Output voltage (Analog) @ $\pm I_{PN}$ , $R_L = 2 \text{ k}\Omega$ , $T_A = 25^\circ\text{C}$	$V_{OE} \pm 0.625$	V
$R_{OUT}$	Output internal resistance	< 50	$\Omega$
$R_L$	Load resistance	$\geq 2$	k $\Omega$
$V_C$	Supply voltage ( $\pm 5 \%$ )	+ 12 .. 15	V
$I_C$	Current consumption	< 15	mA
$V_d$	Rms voltage for AC isolation test, 50 Hz, 1 min	> 3	kV
$V_e$	Partial discharge extinction voltage rms @ 10 pC	$\geq 1$	kV
$\hat{V}_W$	Impulse withstand voltage, 1.2/50 $\mu\text{s}$	$\geq 6$	kV

## Accuracy-Dynamic performance data

<b>X</b>	Accuracy @ $I_{PN}$ , $T_A = 25^\circ\text{C}$ (excluding offset)	< $\pm 1$	% of $I_{PN}$
<b>e<sub>L</sub></b>	Linearity error (0 .. $\pm I_{PN}$ )	< $\pm 1$	% of $I_{PN}$
<b>V<sub>OE</sub></b>	Electrical offset voltage @ $T_A = 25^\circ\text{C}$	+ 2.5V $\pm$ 50	mV
<b>V<sub>OH</sub></b>	Hysteresis offset voltage @ $I_p = 0$ ; after an excursion of $1 \times I_{PN}$	< $\pm 10$	mV
<b>TCV<sub>OE</sub></b>	Temperature coefficient of $V_{OE}$	< $\pm 1.5$	mV/K
<b>TCV<sub>OUT</sub></b>	Temperature coefficient of $V_{OUT}$ (% of reading)	$\pm 0.1$	%/K
<b>t<sub>r</sub></b>	Response time to 90% of $I_{PN}$ step	$\leq 3$	$\mu\text{s}$
<b>BW</b>	Frequency bandwidth (- 3 dB) <sup>2)</sup>	50	kHz

## General data

<b>T<sub>A</sub></b>	Ambient operating temperature	- 25 .. + 85	$^\circ\text{C}$
<b>T<sub>S</sub></b>	Ambient storage temperature	- 25 .. + 85	$^\circ\text{C}$
<b>m</b>	Mass	8	g
<b>dCp</b>	Creepage distance	$\geq 5.5$	mm
	Isolation material group	I	
	Standards	EN50178: 1997	

## Features

- Galvanic isolation between primary and secondary circuit
- Hall effect measuring principle
- Isolation voltage 3000V
- Low power consumption
- Extended measuring range (3x  $I_{PN}$ )
- Isolated plastic case recognized according to UL94-V0.

## Special feature

- Single supply from +12V to +15V

## 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

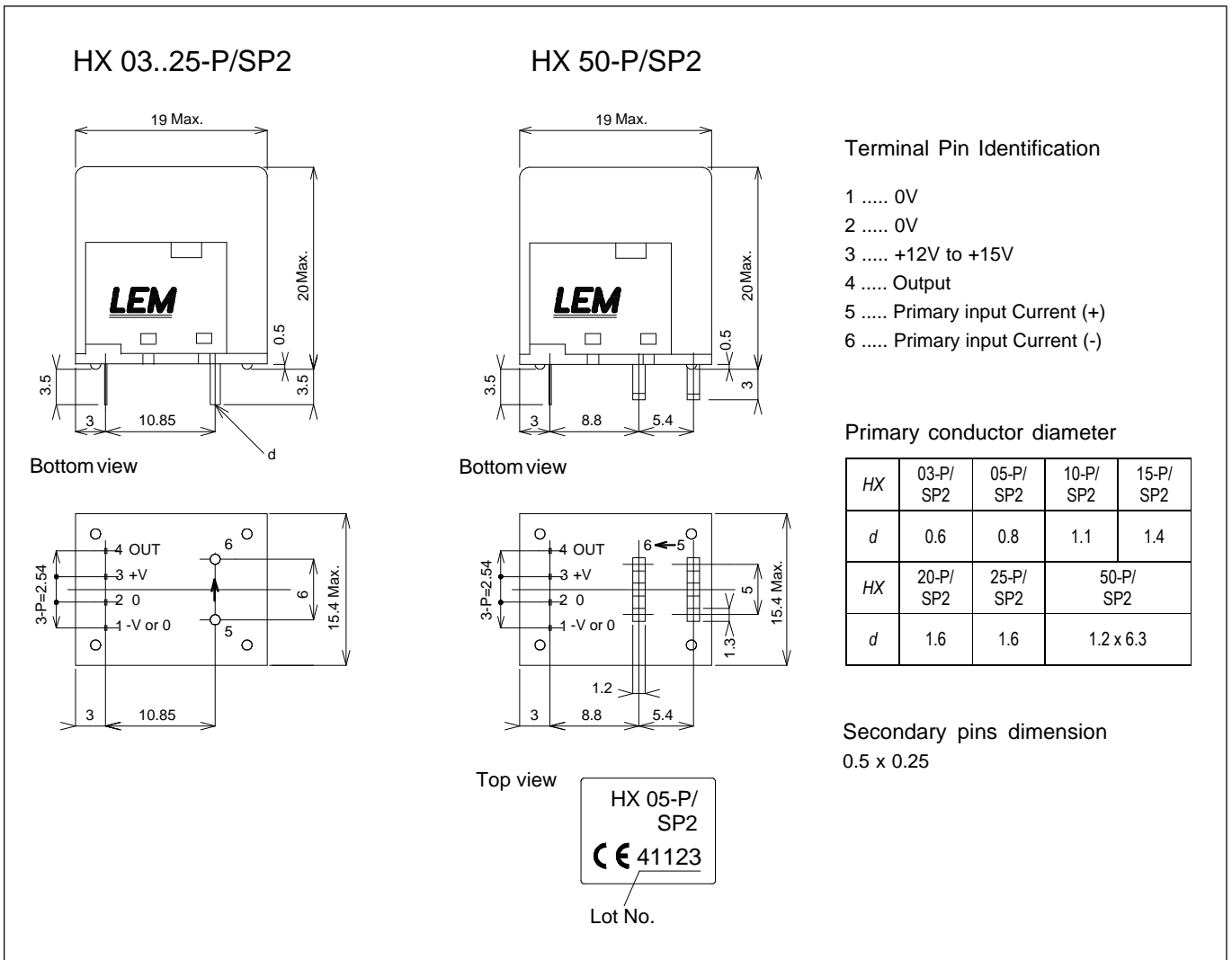
- Switched Mode Power Supplies (SMPS)
- AC variable speed drives
- Uninterruptible Power Supplies (UPS)
- Electrical appliances
- Battery supplied applications
- DC motor drives

## Application domain

- Industrial

Notes : <sup>1)</sup> With  $R_L = 2 \text{ k}\Omega$

<sup>2)</sup> Small signal only to avoid excessive heating of the magnetic core

**Dimensions HX 03..50-P/SP2** (in mm. 1 mm = 0.0394 inch)

**Mechanical characteristics**

- General tolerance ± 0.5 mm

**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.