

Current Transducer HX 03..50-P

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).



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



Electrical data

Primary nominal current rms I_{PN} (A)	Primary current, measuring range I_{PM} (A)	Primary conductor diameter x turns (mm)	Type	RoHS since date code
3	± 9	0.6d x 20T	HX 03-P	planned
5	± 15	0.8d x 12T	HX 05-P	45341
10	± 30	1.1d x 6T	HX 10-P	45340
15	± 45	1.4d x 4T	HX 15-P	45352
20	± 60	1.6d x 3T	HX 20-P	45319
25	± 75	1.6d x 2T	HX 25-P	45351
50	± 150	1.2 x 6.3 x 1T	HX 50-P	45288

V_{OUT}	Output voltage (Analog) @ $\pm I_{PN}$, $R_L = 10 \text{ k}\Omega$, $T_A = 25^\circ\text{C}$	± 4	V
R_{OUT}	Output internal resistance	< 50	Ω
R_L	Load resistance	≥ 10	k Ω
V_C	Supply voltage (± 5 %) ¹⁾	± 15	V
I_C	Current consumption	< ± 15	mA
V_d	Rms voltage for AC isolation test, 50Hz, 1 min	> 3	kV
V_e	Partial discharge extinction voltage rms @ 10 pC	≥ 1	kV
$\hat{V}_W$	Impulse withstand voltage, 1.2/50 μs	≥ 6	kV

Accuracy-Dynamic performance data

X	Accuracy @ I_{PN} , $T_A = 25^\circ\text{C}$ (excluding offset)	< ± 1	% of I_{PN}
e_L	Linearity error (0 .. ± I_{PN})	< ± 1	% of I_{PN}
V_{OE}	Electrical offset voltage, $T_A = 25^\circ\text{C}$	< ± 40	mV
V_{OH}	Hysteresis offset voltage @ $I_p = 0$; after an excursion of $1 \times I_{PN}$	< ± 15	mV
TCV_{OE}	Temperature coefficient of V_{OE}	< ± 1.5	mV/K
TCV_{OUT}	Temperature coefficient of V_{OUT} (% of reading)	± 0.1	%/K
t_r	Response time to 90% of I_{PN} step	≤ 3	μs
BW	Frequency bandwidth (- 3 dB) ²⁾	50	kHz

General data

T_A	Ambient operating temperature	- 25 .. + 85	°C
T_S	Ambient storage temperature	- 25 .. + 85	°C
m	Mass	8	g
dCp	Creepage distance	≥ 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 ($3 \times I_{PN}$)
- Power supply from ±12V to ±15V
- Isolated plastic case recognized according to UL94-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

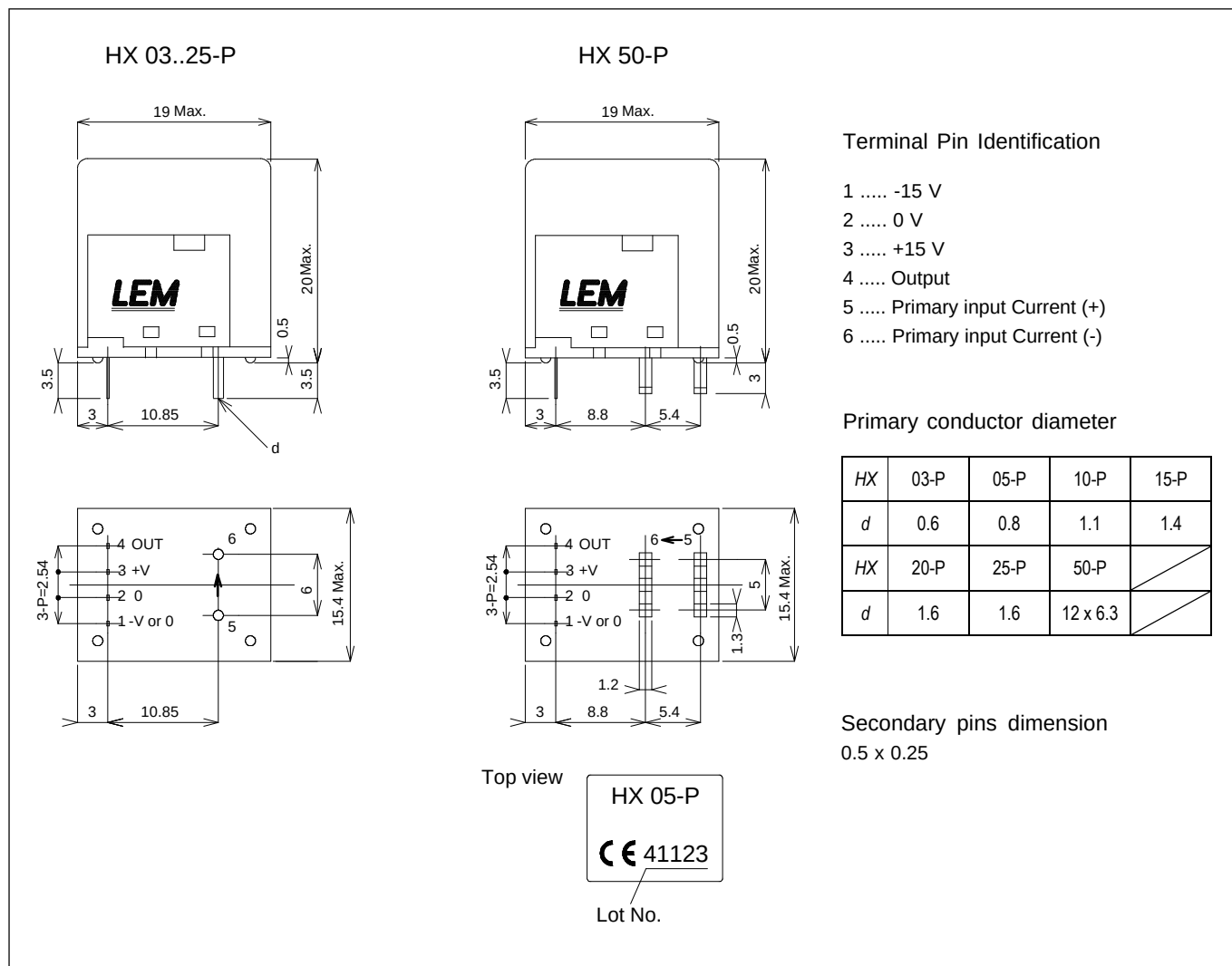
Application domain

- Industrial

Notes : ¹⁾ Also operate at ±12V power supplies, measuring range reduced to ±2.5x I_{PN}

²⁾ Small signal only to avoid excessive heating of the magnetic cores

Dimensions HX 03..50-P (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.