

Current Transducer HXD 03..25-P

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).





Electrical data

Prima	ry nominal	Primary current	Primary conductor	Туре	
curr	ent rms	measuring range	diameter		
I,	_{>N} (A)	I _{PM} (A)	(mm)		
	3	± 9	0.6	HXD 03-P	
	5	± 15	0.8	HXD 05-P	
	10	± 30	1.1	HXD 10-P	
	15	± 45	1.4	HXD 15-P	
	20	± 60	1.6	HXD 20-P	
	25	± 75	1.6	HXD 25-P	
V _{OUT}	Output voltage (Analog)				
	@ $\pm I_{PN} R_{I} = 10 \text{ k}\Omega, T_{A} = 25^{\circ}\text{C}, V_{C} = \pm 15 \text{ V}$			± 4	V
R	Load resista	ance	-	≥ 10	kΩ
V _c	Supply voltage (± 5 %) ²⁾			± 15	V
Г _с	Current consumption			< ± 30	mA

Accuracy - Dynamic performance data

Χ ε	Accuracy @ I_{PN} , $T_A = 25^{\circ}C$ (excluding offset) Linearity error (0 $\pm I_{PN}$)		< ± 1.5 < ± 1	% of I _{PN} % of I _{PN}
V _{OE} V _{OH}	Electrical offset voltage ($\mathbf{D} \mathbf{I}_{PN}$) Hysteresis offset voltage ($\mathbf{D} \mathbf{I}_{P}$ = 0,		< ± 60	mV
TCV	after an excursion of 1 x I_{PN} $3 \times I_{PN}$ Temperature coefficient of V_{OE} Temperature coefficient of V_{OUT} (% of reading) Response time to 90 % of I_{PN} step Frequency bandwidth (± 3 dB, small signal) ¹		< ± 30 < ± 90 < ± 2 ± 0.1 ≤ 5 DC 50	mV mV mV/K %/K μs kHz
Ge	eneral data			
T _A T _s m	Ambient operating temperature Ambient storage temperature Mass UL94 Classification	app.	- 40 + 85 - 40 + 85 7 V0	°C °C g

Notes:1)Small signal only to avoid excessive heating of the magnetic cores. $^{2)}\mbox{Operating at } \pm 12\mbox{V} < \mbox{V}_{\rm C} < \pm 15\mbox{V}$ will reduce the measuring range.

I_{PN} = 3 .. 25 A



Features

- Hall effect measuring principle
- Galvanic isolation between primary and secondary circuit.
- Isolation voltage 4300 V
- Low power consumption
- Extended measuring range $(3 \times I_{PN})$
- Isolated plastic case recognized according to UL 94-V0.

Advantages

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

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.

Standard

EN 50178: 1997

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Isolation characteristics					
V _d V _w V _e	Rms voltage for AC isolation test, 50 Hz, 1 min Impulse withstand voltage 1.2/50 µs Partial discharge extinction voltage rms @ 10 pC	4.3 7.8 > 1000	kV kV Vrms		
dCp dCl CTl	Creepage distance Clearance distance Comparative Tracking Index (group I)	Min > 8 > 8 > 600	mm mm V		

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, dCI, V _w	Rated isolation voltage	Nominal voltage
Single isolation	1000 V	1000 V
Reinforced isolation	600 V	300 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 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.

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Dimensions HXD 03..25-P (in mm. 1 mm = 0.0394 inch)



Mechanical characteristics

• General tolerance ± 0.5 mm (Unless otherwise specified.)