## 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

$\left.\begin{array}{ccccc}\begin{array}{c}\text { Primary nominal } \\ \text { current rms } \\ \mathbf{I}_{\text {PN }}(\mathrm{A})\end{array} & \begin{array}{c}\text { Primary current } \\ \text { measuring range } \\ \mathbf{I}_{\mathrm{PM}}(\mathrm{A})\end{array} & \begin{array}{c}\text { Primary conductor } \\ \text { diameter } \\ (\mathrm{mm})\end{array} & \text { Type } & \\ \hline 3 & \pm 9 & 0.6 & \text { HXD 03-P } \\ 5 & \pm 15 & 0.8 & \text { HXD 05-P }\end{array}\right]$

## Accuracy - Dynamic performance data

| X | Accuracy @ $\mathrm{I}_{\mathrm{PN}}, \mathbf{T}_{\mathrm{A}}=25^{\circ} \mathrm{C}$ (excluding offset) | $< \pm 1.5$ | $\%$ of $\mathrm{I}_{\mathrm{P}}$ |
| :---: | :---: | :---: | :---: |
| $\varepsilon_{\llcorner }$ | Linearity error (0.. $\pm \mathrm{I}_{\text {PN }}$ ) | $< \pm 1$ | $\%$ of $\mathrm{I}_{\text {PN }}$ |
| $\mathrm{V}_{\text {OE }}$ | Electrical offset voltage @ $\mathrm{T}_{\mathrm{A}}=25^{\circ} \mathrm{C}$ | $< \pm 60$ | mV |
| $\mathrm{V}_{\text {OH }}$ | Hysteresis offset voltage @ $\mathrm{I}_{\mathrm{p}}=0$, after an excursion of $1 \times I_{P N}$ | $< \pm 30$ | mV |
|  | $3 \times \mathrm{I}_{\text {PN }}$ | $< \pm 90$ | mV |
| TCV ${ }_{\text {oE }}$ | Temperature coefficient of $\mathbf{V}_{\text {OE }}$ | $< \pm 2$ | $\mathrm{mV} / \mathrm{K}$ |
| TCV ${ }_{\text {OUT }}$ | Temperature coefficient of $\mathbf{V}_{\text {out }}$ (\% of reading) | $\pm 0.1$ | \%/K |
| $\mathrm{t}_{\mathrm{r}}$ | Response time to $90 \%$ of $\mathrm{I}_{\mathrm{PN}}$ step | $\leq 5$ | us |
| BW | Frequency bandwidth ( $\pm 3 \mathrm{~dB}$, small signal) ${ }^{1)}$ | DC .. 50 | kHz |

## General data

$\mathrm{T}_{\mathrm{A}} \quad$ Ambient operating temperature
$\mathrm{T}_{\mathrm{s}} \quad$ Ambient storage temperature
m Mass
UL94 Classification
Standard


## Features

- Hall effect measuring principle
- Galvanic isolation between primary and secondary circuit.
- Isolation voltage 4300 V
- Low power consumption
- Extended measuring range $\left(3 \times I_{P N}\right)$
- 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.

Notes: $:{ }^{11}$ Small signal only to avoid excessive heating of the magnetic cores.
${ }^{2}$ ) Operating at $\pm 12 \mathrm{~V}<\mathrm{V}_{\mathrm{C}}< \pm 15 \mathrm{~V}$ will reduce the measuring range.

## Current Transducer HXD 03..25-P

Isolation characteristics

| $\mathbf{V}_{\mathrm{d}}$ | Rms voltage for AC isolation test, $50 \mathrm{~Hz}, 1 \mathrm{~min}$ | 4.3 | kV |
| :--- | :--- | :--- | ---: |
| $\mathbf{V}_{\mathrm{w}}$ | Impulse withstand voltage $1.2 / 50 \mu \mathrm{~s}$ | 7.8 | kV |
| $\mathbf{V}_{\mathrm{e}}$ | Partial discharge extinction voltage rms @ 10 pC | $>1000$ | Vrms |
|  |  |  |  |
|  |  | $>8$ |  |
|  |  | $>8$ | mm |
| $\mathbf{d C p}$ | Creepage distance | $>8$ | mm |
| $\mathbf{d C l}$ | Clearance distance | $>600$ | 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, $\mathrm{V}_{\mathrm{w}}$ | 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.

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

## (4) $\square$



Terminals

1. +Vcc
2. -Vcc
3. Out 1
4. Out 2
5. OV (GND)

6. Input 1(+)
7. Input 1(-)
8. Input 2(+)
9. Input 2(-)
6... 9 Terminals

| A | $\mathrm{d}(\mathrm{mm})$ |
| :---: | :---: |
| 3 | 0.6 |
| 5 | 0.8 |
| 10 | 1.1 |
| 15 | 1.4 |
| 20 | 1.6 |
| 25 | 1.6 |

## Mechanical characteristics

- General tolerance $\pm 0.5 \mathrm{~mm}$
(Unless otherwise specified.)

