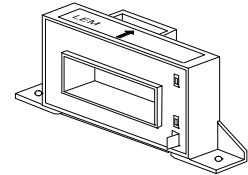


## Current Transducer HAX 500..2500-S

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).



$I_{PN} = 500..2500 \text{ A}$



### Electrical data

| Primary nominal current rms<br>$I_{PN}$ (A) | Primary current measuring range<br>$I_{PM}$ (A) | Type       |
|---------------------------------------------|-------------------------------------------------|------------|
| 500                                         | $\pm 1500$                                      | HAX 500-S  |
| 600                                         | $\pm 1800$                                      | HAX 600-S  |
| 850                                         | $\pm 2550$                                      | HAX 850-S  |
| 1000                                        | $\pm 3000$                                      | HAX 1000-S |
| 1500                                        | $\pm 4500$                                      | HAX 1500-S |
| 2000                                        | $\pm 5500$                                      | HAX 2000-S |
| 2500                                        | $\pm 5500$                                      | HAX 2500-S |

|             |                                                                              |             |            |
|-------------|------------------------------------------------------------------------------|-------------|------------|
| $V_C$       | Supply voltage ( $\pm 5\%$ ) <sup>4)</sup>                                   | $\pm 15$    | V          |
| $I_C$       | Current consumption                                                          | $< +20/-15$ | mA         |
| $\hat{I}_P$ | Overload capability                                                          | 30,000      | At         |
| $R_{IS}$    | Isolation resistance @ 500 VDC                                               | $> 1000$    | M $\Omega$ |
| $V_{OUT}$   | Output voltage @ $\pm I_{PN}$ , $R_L = 10k\Omega$ , $T_A = 25^\circ\text{C}$ | $\pm 4$     | V          |
| $R_{OUT}$   | Output internal resistance                                                   | approx. 100 | $\Omega$   |
| $R_L$       | Load resistance                                                              | $> 1$       | k $\Omega$ |

### Accuracy - Dynamic performance data

|                 |                                                                                    |             |                  |
|-----------------|------------------------------------------------------------------------------------|-------------|------------------|
| $X$             | Accuracy @ $I_{PN}$ , $T_A = 25^\circ\text{C}$ (excluding offset)                  | $< \pm 1$   | %                |
| $\varepsilon_L$ | Linearity error <sup>1)</sup> ( $0 \dots \pm I_{PN}$ )                             | $< \pm 1$   | % of $I_{PN}$    |
| $V_{OE}$        | Electrical offset voltage @ $T_A = 25^\circ\text{C}$                               | $< \pm 20$  | mV               |
| $V_{OH}$        | Hysteresis offset voltage @ $I_P = 0$ ;<br>after an excursion of $1 \times I_{PN}$ | $< \pm 30$  | mV               |
| $TCV_{OE}$      | Temperature coefficient of $V_{OE}$                                                | $< \pm 1$   | mV/K             |
| $TCV_{OUT}$     | Temperature coefficient of $V_{OUT}$ (% of reading)                                | $< \pm 0.1$ | %/K              |
| $t_r$           | Response time to 90% of $I_{PN}$ step                                              | $< 5$       | $\mu\text{s}$    |
| $di/dt$         | $di/dt$ accurately followed                                                        | $> 50$      | A/ $\mu\text{s}$ |
| $BW$            | Frequency bandwidth <sup>2)</sup> (-3 dB)                                          | DC .. 25    | kHz              |

### General data

|       |                               |                |                  |
|-------|-------------------------------|----------------|------------------|
| $T_A$ | Ambient operating temperature | -25 .. +85     | $^\circ\text{C}$ |
| $T_S$ | Ambient storage temperature   | -25 .. +85     | $^\circ\text{C}$ |
| $m$   | Mass                          | approx. 450    | g                |
|       | Standards <sup>3)</sup>       | EN 50178: 1997 |                  |

Notes : <sup>1)</sup> Linearity data exclude the electrical offset.

<sup>2)</sup> Please refer to derating curves in the technical file to avoid excessive core heating at high frequency

<sup>3)</sup> Please consult characterisation report for more technical details and application advice.

<sup>4)</sup> Operating at  $\pm 12V \leq V_C < \pm 15V$  will reduce the measuring range.

### Features

- Hall effect measuring principle
- Galvanic isolation between primary and secondary circuit
- Low power consumption
- Isolated plastic case recognized according to UL 94-V0

### Advantages

- Easy installation
- Small size and space savings
- Only one design for wide current ratings range
- High immunity against external interference

### Applications

- AC motor speed control
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Power supplies for welding, cable TV and telecommunication applications.

### Application domain

- Industrial

## Current Transducer HAX 500..2500-S

### Isolation characteristics

|             |                                                  |       |      |
|-------------|--------------------------------------------------|-------|------|
| $V_d$       | Rms voltage for AC isolation test, 50 Hz, 1 min  | 5.0   | kV   |
| $V_e$       | Partial discharge extinction voltage rms @ 10 pC | > 660 | Vrms |
| $\hat{V}_w$ | Impulse withstand voltage 1.2/50 $\mu$ s         | 8.3   | kV   |
| dCp         | Creepage distance                                | >8.5  | mm   |
| dCI         | Clearance distance                               | >8.5  | mm   |
| CTI         | Comparative Tracking Index (group IIIa)          | >275  |      |

### 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, $\hat{V}_w$ | Rated insulation voltage | Nominal voltage |
| Basic insulation      | 800 V                    | 800V            |
| Reinforced insulation | 400V                     | 300V            |

### 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.

