

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

| | | | |
|-------------|---|--------------------|------------|
| V_{OUT} | Output voltage (Analog) @ $\pm I_{PM}$, $R_L = 2 \text{ k}\Omega$, $T_A = 25^\circ\text{C}$ | $V_{OE} \pm 0.625$ | V |
| R_{OUT} | Output internal resistance | < 50 | Ω |
| R_L | Load resistance | ≥ 2 | k Ω |
| V_C | Supply voltage (± 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 | ≥ 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 @ $T_A = 25^\circ\text{C}$ | + 2.5V ± 50 | mV |
| V_{OH} | Hysteresis offset voltage @ $I_P = 0$; after an excursion of 1 x I_{PN} | < ± 10 | 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 (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

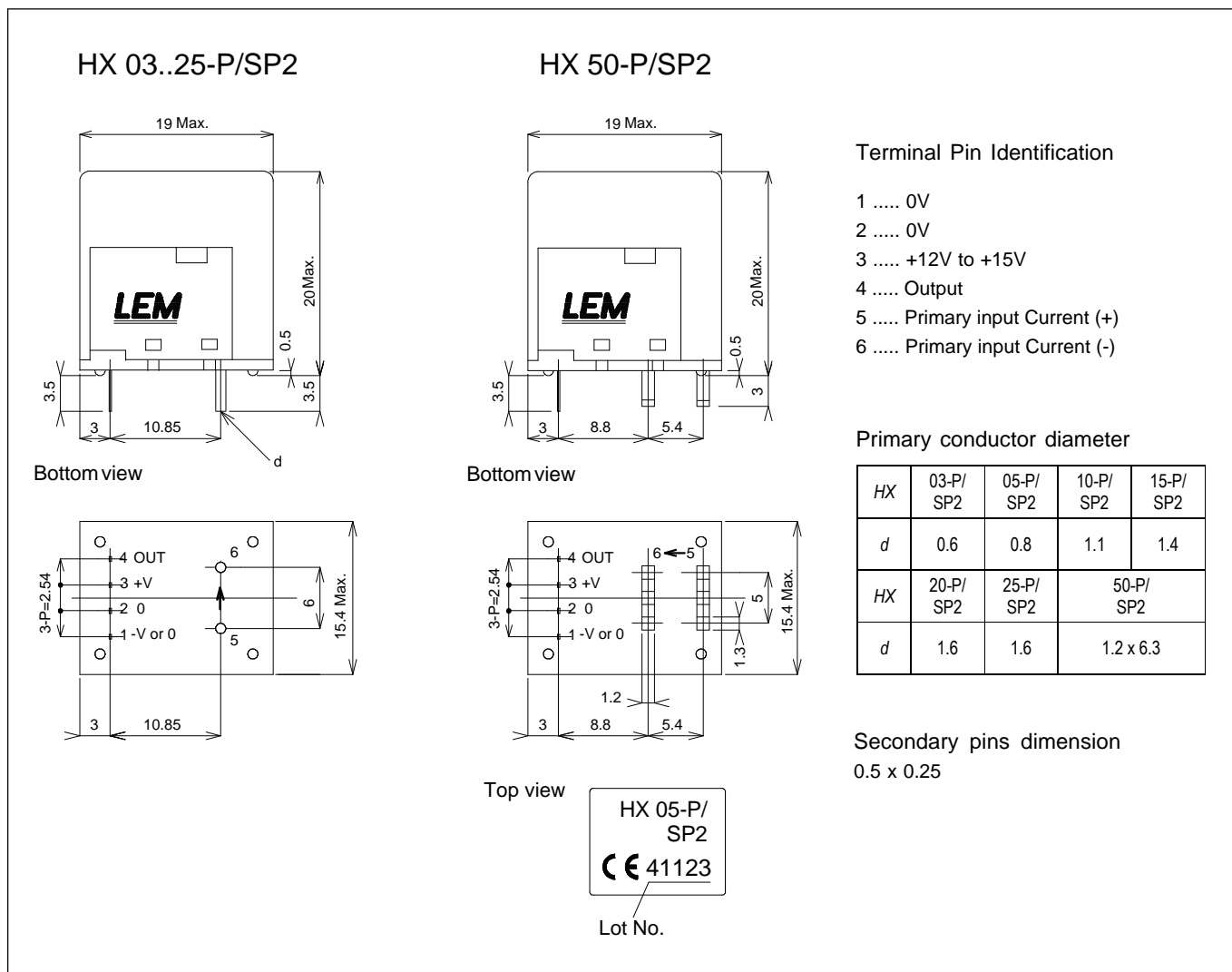
Application domain

- Industrial

Notes : ¹⁾ With $R_L = 2 \text{ k}\Omega$

²⁾ 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.