

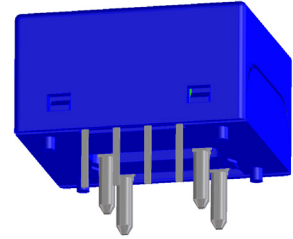
Current Transducer HXS 10-NP/SP3

For the electronic measurement of currents: DC, AC, pulsed..., with galvanic separation between the primary circuit and the secondary circuit.



All data are given with $R_L = 10\text{ k}\Omega$

$I_{PN} = 10, 20\text{ A}$
DUAL PHASE



Electrical data

| | | Serial | Parallel | |
|-----------|--|--|-------------|------------|
| | | ± 10 | ± 20 | |
| I_{PN} | Primary nominal RMS current | Serial | Parallel | |
| | | ± 30 | ± 60 | A |
| I_{PM} | Primary current, measuring range | 0.625 | V/I_{PN} | |
| G_{th} | Theoretical sensitivity | $V_{OE} \pm (0.625 \cdot I_p/I_{PN})V$ | | |
| V_{out} | Output voltage (Analog) @ I_p | 2.5 | ± 0.025 | V |
| V_{ref} | Reference voltage ¹⁾ | Typ. 200 | | Ω |
| | Output impedance | 200 | | k Ω |
| | Load impedance | 2 | | k Ω |
| R_L | Load resistance | < 5 | | Ω |
| R_{out} | Output internal resistance | 4.7 | | nF |
| C_L | Capacitive loading ($\pm 20\%$) | 5 | | V |
| U_C | Supply voltage ($\pm 5\%$) ²⁾ | 19 | | mA |
| I_C | Current consumption @ $U_C = 5\text{ V}$ | | | |

Accuracy - Dynamic performance data

| | | | | |
|--------------------|---|--|-------------|----------------|
| X | Accuracy ³⁾ @ $I_{PN}, T_A = 25\text{ }^\circ\text{C}$ | ± 1 | | % |
| ϵ_L | Linearity error | 0 ... I_{PN} | ± 0.5 | % |
| | | 0 ... $3 \times I_{PN}$ | ± 1 | % |
| TCV_{OE} | Temperature of coefficient of V_{OE} (+25 ... 85 °C) | (-40 ... +25 °C) | ± 0.4 | mV/K |
| | | | ± 0.525 | mV/K |
| TCV_{ref} | Temperature of coefficient of V_{ref} (+25 ... 85 °C) | (-40 ... +25 °C) | ± 0.01 | %/K |
| | | | ± 0.015 | mV/K |
| TCV_{OE}/V_{ref} | Temperature of coefficient of V_{OE}/V_{ref} | ± 0.15 | | mV/K |
| TCG | Temperature of coefficient of G | $\pm 0.05\%$ | | % of reading/K |
| V_{OE} | Electrical offset voltage @ $I_p = 0, T_A = 25\text{ }^\circ\text{C}$ | $V_{ref} \pm 0.0125$ | | V |
| V_{OM} | Magnetic offset voltage @ $I_p = 0$ | | ± 0.7 | % |
| | | after an overload of $3 \times I_{PN}$ | | |
| V_{no} | Output RMS noise voltage | (DC ... 10 kHz) | < 20 | mVpp |
| | | (DC ... 1 MHz) | < 40 | mVpp |
| t_{ra} | Reaction time to 10 % of I_{PN} | < 3 | | μs |
| t_r | Step response time to 90 % of I_{PN} ⁴⁾ | < 5 | | μs |
| BW | Frequency bandwidth (-3 dB) ⁵⁾ | DC ... 50 | | kHz |

Notes: ¹⁾ It is possible to overdrive V_{ref} with an external reference voltage between 1.5 - 2.8 V providing its ability to sink or source approximately 5 mA

²⁾ Maximum supply voltage (not operating) < 6.5 V

³⁾ Excluding offset and magnetic offset voltage

⁴⁾ For a $di/dt = 50\text{ A}/\mu\text{s}$

⁵⁾ Small signal only to avoid excessive heatings of the magnetic core.

Features

- Hall effect measuring principle
- Multirange current transducer through PCB pattern lay-out
- Galvanic separation between primary and secondary circuit
- Insulation test voltage 3500 V
- Extremely low profile < 11 mm
- Fixed offset & sensitivity
- Low power consumption
- Single power supply +5 V
- Insulating plastic case recognized according to UL 94-V0.

Special feature

- Two separate primary windings for dual phase measurement.

Advantages

- Small size and space saving
- Only one design for wide current ratings range
- High immunity to external interference
- V_{ref} IN/OUT.

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.

Current Transducer HXS 10-NP/SP3

General data

| | | | |
|-------|-------------------------------|----------------|----|
| T_A | Ambient operating temperature | -40 ... +85 | °C |
| T_S | Ambient storage temperature | -40 ... +85 | °C |
| m | Mass | 10 | g |
| | Standard | EN 50178: 1997 | |

Insulation coordination

| | | | | |
|----------|--|------------------------|-----|----|
| U_d | RMS voltage for AC insulation test, 50 Hz, 1 min | Primary to secondary | 3.5 | kV |
| | | Primary 1 to primary 2 | 2.5 | kV |
| | | Min | | |
| d_{cp} | Creepage distance | 5.5 | mm | |
| d_{cl} | Clearance | 5.5 | mm | |
| CTI | Comparative tracking index (group I) | 600 | | |

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

According to UL 508 standards and following conditions: Maximum voltage 600 V

- Over voltage category OV 3
- Pollution degree PD2

| | EN 50178 | IEC 61010-1 |
|-----------------------------|--------------------------|-----------------|
| $d_{cp}, d_{cl}, \hat{U}_W$ | Rated insulation voltage | Nominal voltage |
| Basic insulation | 600 V | 300 V |
| Reinforced insulation | 300 V | 150 V |

Safety

This transducer must be used in limited-energy secondary circuits according to IEC 61010-1.



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.



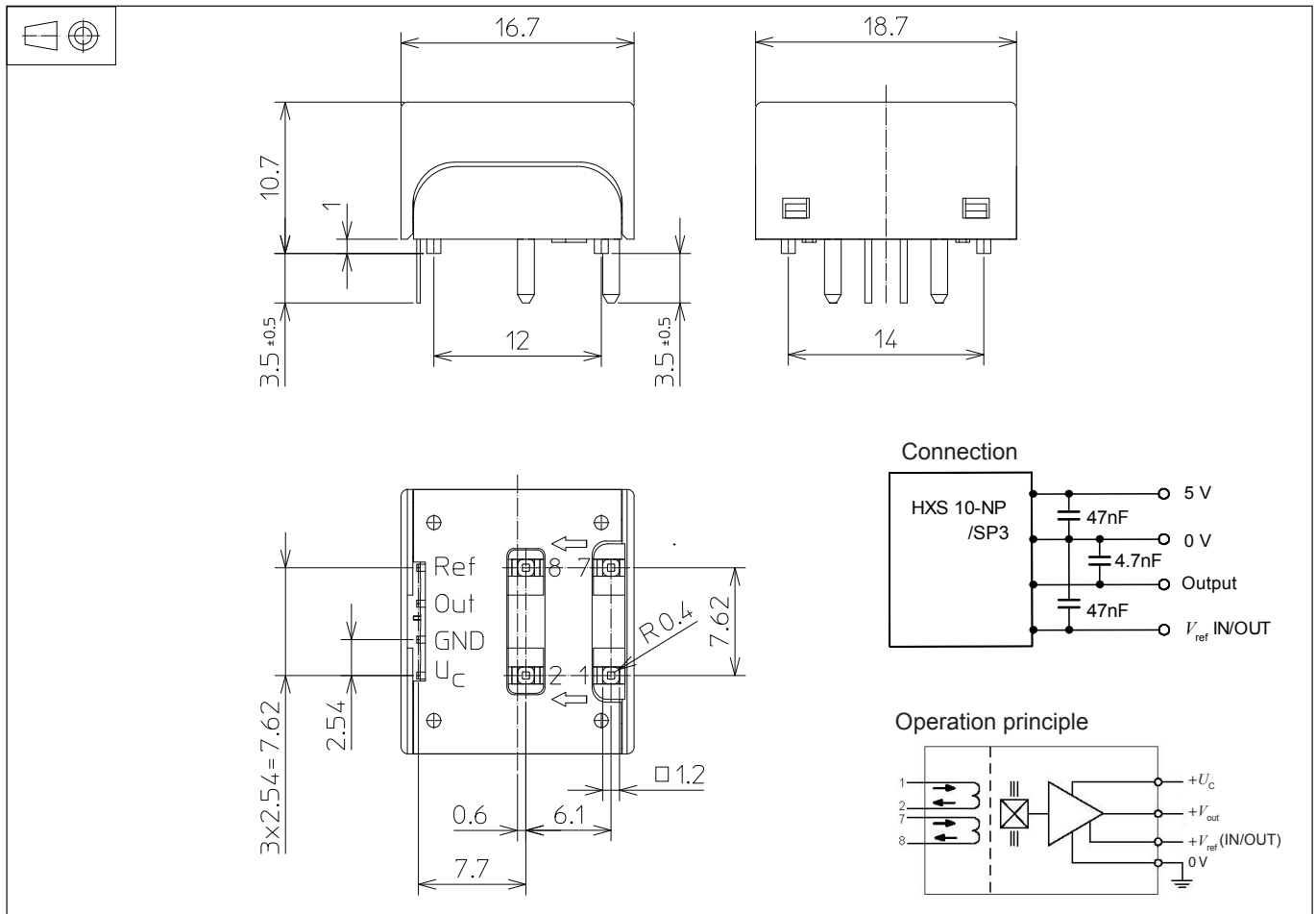
Caution, risk of electrical shock

When operating the transducer, certain parts of the module can carry hazardous voltage (e.g. primary busbar, power supply). Ignoring this warning can lead to injury and/or cause serious damage.

This transducer is a build-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 HXS 10-NP/SP3 (in mm)



| Primary connections | Primary RMS current | | Resistance of primary winding R_p [mW] | Insertion inductance L_p [μH] | Recommended PCB connections |
|---------------------|----------------------|----------------------|--|---------------------------------|-----------------------------|
| | nominal I_{PN} [A] | maximum I_{PN} [A] | | | |
| Serial | 10 | 30 | 0.2 | 0.1 | IN 1 7 2 8 OUT |
| Parallel | 20 | 60 | 0.05 | 0.025 | IN 1 7 2 8 OUT |

Mechanical characteristics

- General tolerance ± 0.2 mm
- Transducer fastening & connection of primary jumper 4 pins \times 1.2 mm (corner R 0.4 mm)
- Transducer fastening & connection of primary jumper 4 pins \times 1.2 mm (corner R 0.4 mm)

Recommended PCB hole

- Primary PCB hole $\varnothing 1.5$ mm
- Secondary PCB hole $\varnothing 0.7$ mm

Remarks

- V_{out} is positive when I_p flows from terminals 1,7 (IN) to terminals 2,8 (OUT).
- Temperature of the primary conductor should not exceed 100 °C.
- Installation of the transducer must be done unless otherwise specified on the datasheet, according to LEM Transducer Generic Mounting Rules. Please refer to LEM document N°ANE120504 available on our Web site: [Products/Product Documentation](#).

单击下面可查看定价，库存，交付和生命周期等信息

[>>LEM\(莱姆\)](#)