

Current Transducer HTA 100-S/SP5

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

$I_{PN} = 100 A$



Electrical data

| | | | |
|----------------|--|----------------|------------|
| \hat{I}_{PN} | Primary nominal current peak | 100 | A |
| I_{PM} | Primary current, measuring range | 0 .. ± 100 | A |
| V_{OUT} | Output voltage (Analog) @ $\pm I_{PN}$ | ± 10 | V |
| R_L | Load resistance | > 2.5 | k Ω |
| V_C | Supply voltage ($\pm 10\%$) | ± 15 | V |
| I_C | Current consumption | < 25 | mA |
| R_{IS} | Isolation resistance @ 500 V _{DC} | > 500 | M Ω |

Accuracy - Dynamic performance data

| | | | |
|-----------------|--|--------------|------------|
| X | Accuracy ¹⁾ @ I_{PN} , $T_A = 25^\circ C$ | ± 1 | % |
| \mathcal{E}_L | Linearity error ¹⁾ ($0 .. \pm I_{PN}$) | ± 0.5 | % |
| V_{OE} | Electrical offset voltage, @ $I_P = 0$, $T_A = 25^\circ C$ | $< \pm 10$ | mV |
| V_{OH} | Hysteresis offset voltage @ $I_P = 0$, after an excursion of $3 \times I_{PN}$ | $< \pm 10$ | mV |
| TCV_{OE} | Temperature coefficient of V_{OE} $T_A = -25 .. +70^\circ C$ | $< \pm 2$ | mV/K |
| TCV_{OUT} | Temperature coefficient of V_{OUT} $T_A = -25 .. +70^\circ C$ | $< \pm 0.05$ | %/K |
| t_r | Response time to 90 % of I_{PN} step | < 3 | μs |
| di/dt | di/dt accurately followed | > 50 | A/ μs |
| BW | Frequency bandwidth (-3 dB) ²⁾ | DC .. 25 | kHz |

General data

| | | | |
|----------|---|---------------|---------------|
| T_A | Ambient operating temperature | -25 .. +70 | °C |
| T_S | Ambient storage temperature | -25 .. +85 | °C |
| m | Mass | 300 | g |
| γ | Vibration | IEC77 (3.1.3) | |
| | Standards | EN 50178:1994 | |
| | Deviation in output when tested to EN 61000-4-3 | < 25 | % of I_{PN} |

Notes: ¹⁾ Excludes the electrical offset

²⁾ Refer to derating curves in the technical file to avoid excessive core heating at high frequency.

Features

- Open loop transducer using Hall effect
- Panel mounting-Horizontal or Vertical
- Isolated plastic case recognized according to UL 94-V0.

Special features

- $V_{OUT} = \pm 10 V$
- 4 core screened cable 2m long.

Advantages

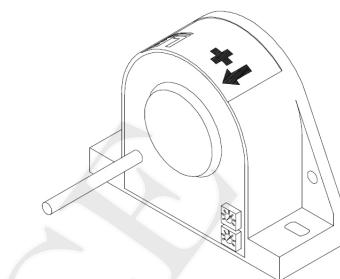
- Very good linearity
- Very good accuracy
- Low temperature drift
- Wide frequency bandwidth
- Very low insertion losses
- High immunity to external interference
- Current overload capability
- Low power consumption.

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 HTA 100-S/SP5

Isolation characteristics

| | | | |
|-------------|---|-------|----|
| V_d | Rms voltage for AC insulation test ¹⁾ , 50 Hz, 1 min | 4.0 | kV |
| \hat{V}_w | Impulse withstand voltage 1.2/50 μ s | > 7.3 | kV |
| | | Min | |
| dCp | Creepage distance | 7.2 | mm |
| dCI | Clearance | 7.2 | mm |
| CTI | Comparative Tracking Index (group I) | 600 | |

Note: ¹⁾ With the primary conductor located in the upper half of the aperture.

Applications examples

According to EN 50178 and IEC 61010-1 standards and following conditions:

- Over voltage category III
- Pollution degree PD2
- Non-uniform field

| | EN 50178 | IEC 61010-1 |
|-----------------------|--------------------------|-----------------|
| dCp, dCI, \hat{V}_w | Rated insulation voltage | Nominal voltage |
| Basic insulation | 600 V | 600 V |
| Reinforced insulation | 300 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

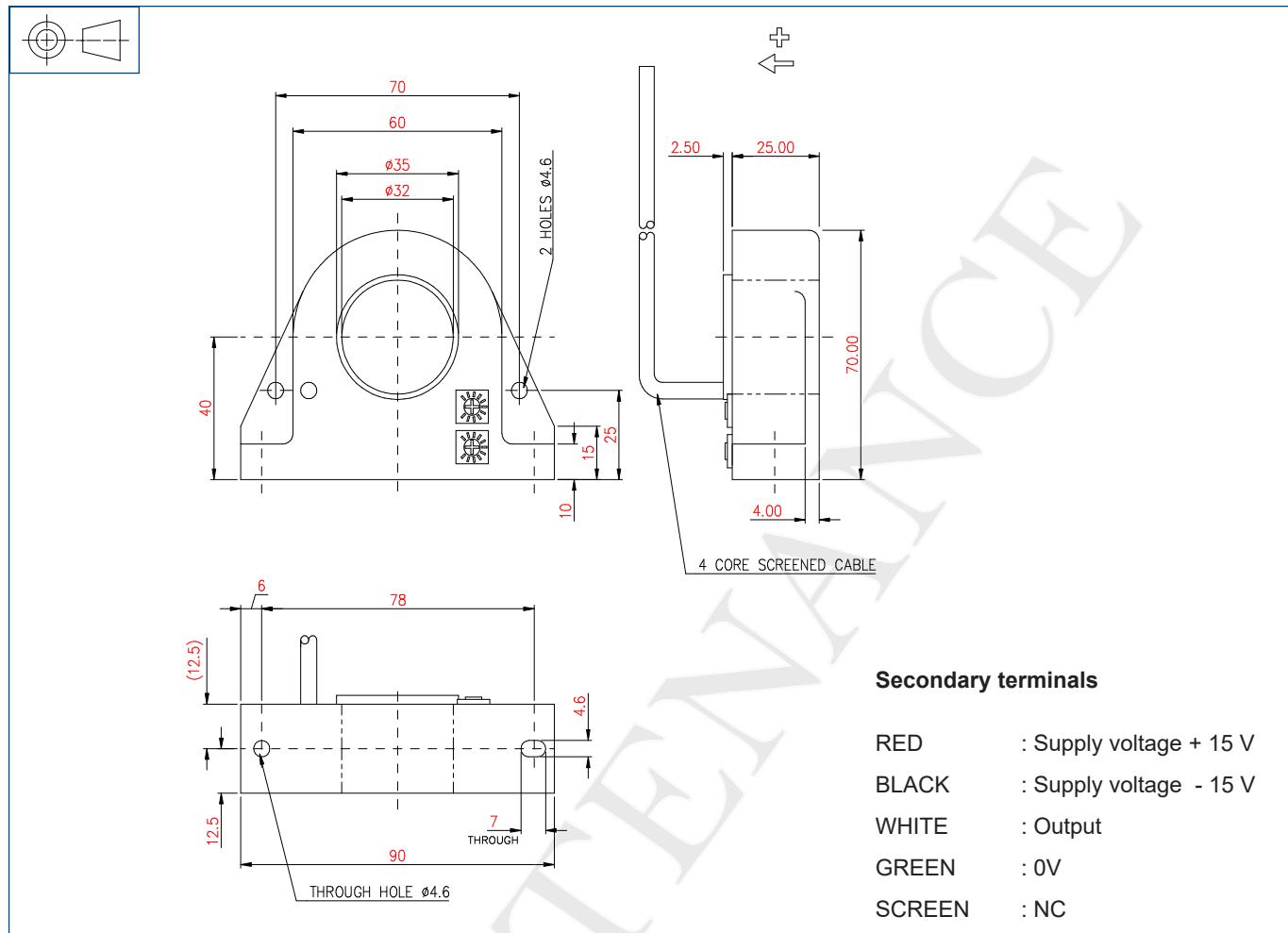
When operating the transducer, certain parts of the module can carry hazardous voltage (eg. primary busbar, power supply).

Ignoring this warning can lead to injury and/or cause serious damage.

This transducer is a 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 HTA 100-S/SP5 (in mm)

Mechanical characteristics

- General tolerance ± 0.5 mm
- Primary through-hole Ø 32 mm
- Connection of secondary via 4 core screened Halogen free cable
- 2 $^{+0.1}_{-0}$ m in length

Remarks

- V_{OUT} is positive when I_p flows in the direction of the arrow.
- Temperature of the primary conductor should not exceed 90°C.