

Current Transducers HTB 50 .. 400-P/SP5 and HTB 50 .. 100-TP/SP5

$I_{PN} = 50 \dots 400 \text{ A}$

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 r.m.s. current I_{PN} (A) | Primary current measuring range I_p (A) | Type |
|--|--|---|
| 50 | ± 150 | HTB 50-P/SP5, HTB 50-TP/SP5 ¹⁾ |
| 100 | ± 300 | HTB 100-P/SP5, HTB 100-TP/SP5 ¹⁾ |
| 200 | ± 500 | HTB 200-P/SP5 |
| 300 | ± 600 | HTB 300-P/SP5 |
| 400 | ± 600 | HTB 400-P/SP5 |

| | | | |
|-----------|---|--------------------|------------|
| V_C | Supply voltage ($\pm 5\%$) ²⁾ | +12 .. +15 | V |
| I_C | Current consumption | <15 | mA |
| V_d | R.m.s. voltage for AC isolation test, 50/60 Hz, 1 mn | 2.5 | kV |
| R_{IS} | Isolation resistance @ 500 VDC | >500 | M Ω |
| V_{OUT} | Output voltage @ $\pm I_{PN}$, $R_L = 10 \text{ k}\Omega$, $T_A = 25^\circ\text{C}$ | $V_{OE} \pm 1.667$ | V |
| R_{OUT} | Output internal resistance | 100 | Ω |
| R_L | Load resistance | ≥ 10 | k Ω |

Accuracy - Dynamic performance data

| | | | |
|----------|--|--|---------------------------------|
| X | Accuracy @ I_{PN} , $T_A = 25^\circ\text{C}$ (without offset) | < ± 1 | % of I_{PN} |
| e_L | Linearity ($0 \dots \pm I_{PN}$) | < ± 1 | % of I_{PN} |
| V_{OE} | Electrical offset voltage, $T_A = 25^\circ\text{C}$ | $V_C/2 \pm 30$ | mV |
| V_{OH} | Hysteresis offset voltage @ $I_p = 0$; after an excursion of $3 \times I_{PN}$ | < ± 0.5 | % of I_{PN} |
| V_{OT} | Thermal drift of V_{OE} | HTB 50-(T)P/SP5 HTB 100-(T)P..400-P/SP5 | < ± 1.0 < ± 0.5 mV/K |
| TCE_G | Thermal drift (% of reading) | < ± 0.05 | %/K |
| t_r | Response time @ 90% of I_p | <3 | μs |
| f | Frequency bandwidth (-3 dB) ³⁾ | DC .. 50 | 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 (-TP version) | <30 (<36) | g |

Notes : EN 50178 approval pending

¹⁾ -TP version is equipped with a primary bus bar.

²⁾ Operating at $+12\text{V} \leq V_C < +15\text{V}$ will reduce measuring range.

³⁾ Derating is needed to avoid excessive core heating at high frequency.

Features

- Hall effect measuring principle
- Galvanic isolation between primary and secondary circuit
- Isolation voltage 2500V
- Low power consumption
- Primary bus bar option for 50A and 100A version for ease of connection

Special Features

- Single power supply from 12V to 15V

Advantages

- Small size and space saving
- Only one design for wide current ratings range
- High immunity to external interference.

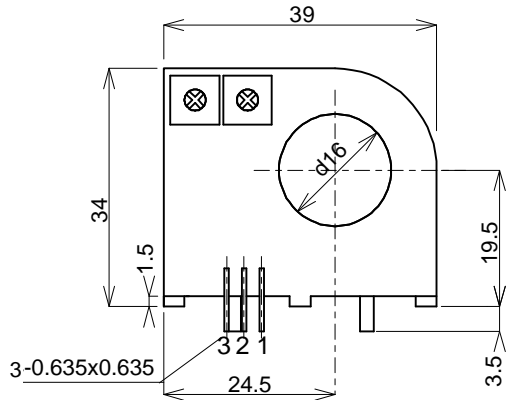
Applications

- AC variable speed drives
- Static converters for DC motor drives
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Switched Mode Power Supplies (SMPS)
- Power supplies for welding applications.

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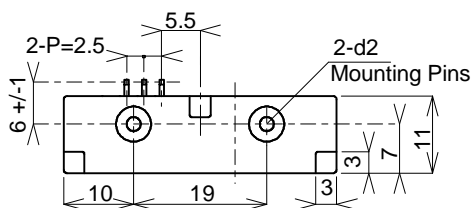
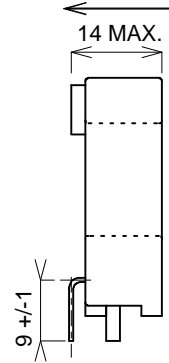
HTB 50 ... 400-P/SP5

Back view



Left view

Positive Current Flow



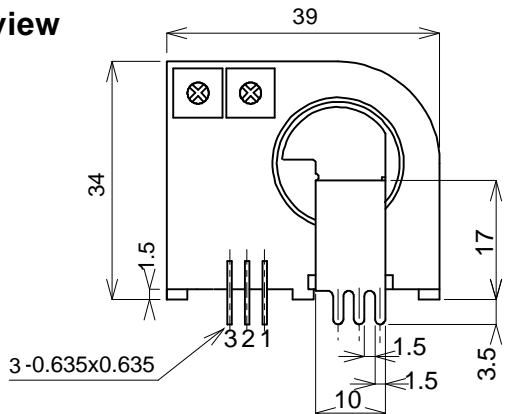
Secondary Pin Identification

- 1 +Vc
- 2 0V
- 3 Output

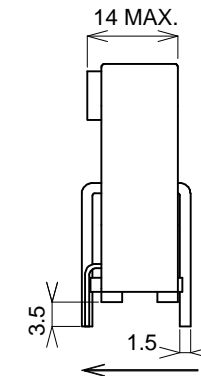
Bottom View

HTB 50 ... 100-TP/SP5

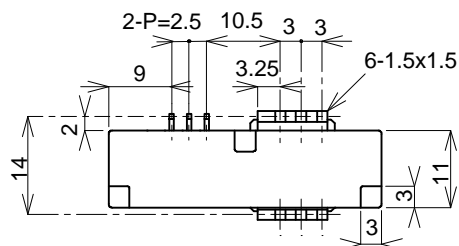
Back view



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