

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

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 I_{PM} (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 (± 5 %) ²⁾	+ 12 .. 15	V
I_C	Current consumption	< 15	mA
V_d	Rms voltage for AC isolation test, 50 Hz, 1 min	2.5	kV
R_{IS}	Isolation resistance @ 500 VDC	> 500	MΩ
V_{OUT}	Output voltage (Analog) @ ± I_{PN} , $R_L = 10$ kΩ, $T_A = 25^\circ\text{C}$	$V_{OE} \pm 1.667$	V
R_{OUT}	Output internal resistance	100	Ω
R_L	Load resistance	≥ 10	kΩ

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 @ $T_A = 25^\circ\text{C}$	$V_C/2 \pm 30$	mV	
V_{OH}	Hysteresis offset voltage @ $I_p = 0$, after an excursion of $1 \times I_{PN}$	< ± 0.5	% of I_{PN}	
TCV_{OE}	Temperature coefficient of V_{OE}	HTB50-(T)P/SP5 HTB100-(T)P..400-P/SP5	< ± 1.0 < ± 0.5	mV/K mV/K
TCV_{OUT}	Temperature coefficient of V_{OUT} (% of reading)	< ± 0.05	%/K	
t_r	Response time to 90% of I_{PN} step	< 3	μs	
BW	Frequency bandwidth (0 .. -3 dB) ³⁾	DC .. 50	kHz	

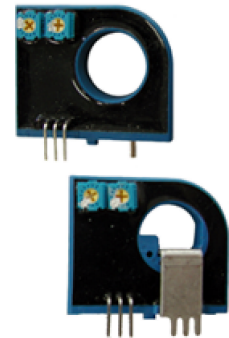
General data

T_A	Ambient operating temperature	- 25 .. + 85	°C
T_S	Ambient storage temperature	- 25 .. + 85	°C
m	Mass (-TP version)	< 30 (< 36)	g

Notes :

- 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.

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



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 feature

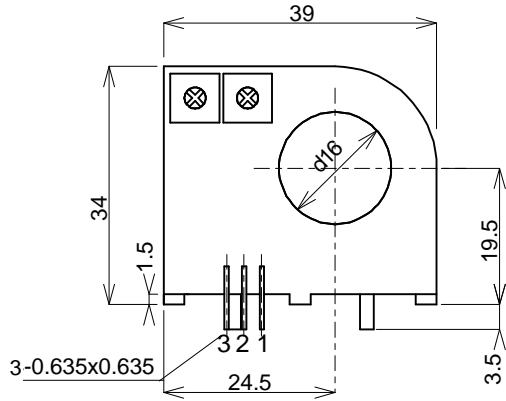
- Single power supply from 12V to 15V

Advantages

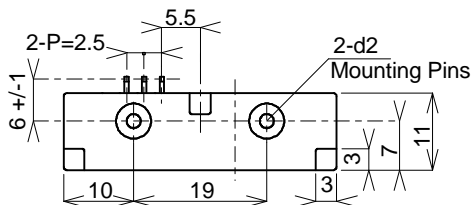
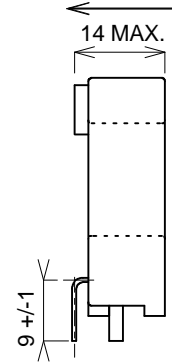
- Small size and space saving
- Only one design for wide current ratings range
- High immunity to external interference.

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.

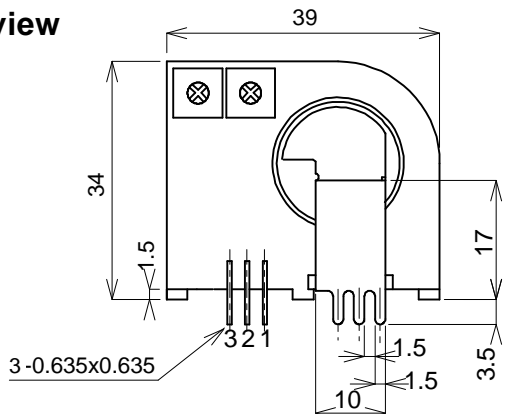
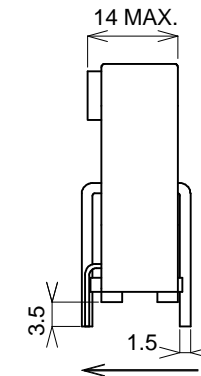
Dimensions HTB 50..400-P/SP5 and HTB 50..100-TP/SP5 (in mm. 1 mm = 0.0394 inch)
HTB 50..400-P/SP5
Back view

Left view

Positive Current Flow

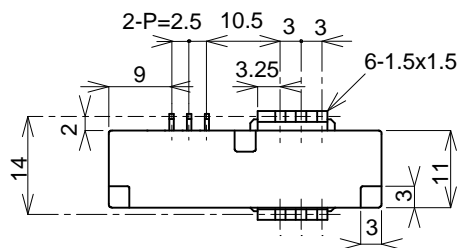


Secondary Pin Identification

- 1 +Vc
- 2 0V
- 3 Output

Bottom View
HTB 50..100-TP/SP5
Back view

Left view


Positive Current Flow



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- 1 +Vc
- 2 0V
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Bottom view