

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).



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



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

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

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 mV/K < ± 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.

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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