

# Current Transducers HTB 50 .. 400-P and HTB 50 .. 100-TP

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).



CE

Electrical data					
Primary nomina r.m.s. current $I_{PN}(A)$	al Primary current measuring range I <sub>P</sub> (A)	Туре			
50 100 200 300 400		HTB 50-P, HTB 50 B 100-P, HTB 100 HTB 2 HTB 3 HTB 4	)-TP <sup>1)</sup> 200-P 800-P		
<b>V</b> <sub>C</sub>	Supply voltage (±5 %) 2)	±12 ±15	V		
I <sub>C</sub>	Current consumption	<±15	mΑ		
<b>V</b> <sub>d</sub>	R.m.s. voltage for AC isolation test, 50/60 Hz, 1	mn 2.5	kV		
R <sub>IS</sub>	Isolation resistance @ 500 VDC	>500	$M\Omega$		
V <sub>OUT</sub>	Output voltage @ $\pm I_{PN}$ , $R_L = 10 \text{ k}\Omega$ , $T_A = 25^{\circ}\text{C}$	±4	V		
R <sub>OUT</sub>	Output internal resistance	100	Ω		
R <sub>L</sub>	Load resistance	≥10	kΩ		

Ac	curacy - Dynamic performance data	
X	Accuracy @ $I_{PN}$ , $T_A = 25^{\circ}C$ (without offset)	<±1 % of <b>I</b> <sub>PN</sub>
$\mathbf{e}_{\scriptscriptstyle \perp}$	Linearity (0 ± I <sub>PN</sub> )	<±1 % of <b>I</b> <sub>PN</sub>
$\mathbf{V}_{OE}$	Electrical offset voltage, $T_A = 25^{\circ}C$	<±30 mV
<b>V</b> <sub>OH</sub>	Hysteresis offset voltage	
	after an excursion of 3 x I <sub>PN</sub>	<±1 % of <b>I</b> <sub>PN</sub>
$\mathbf{V}_{OT}$	Thermal drift of V <sub>OE</sub> HTB 50-(T)P	<±2.0 mV/K
	HTB 100-(T)P400-P	<±1.0 mV/K
$TCe_{\scriptscriptstyleG}$	Thermal drift (% of reading)	<±0.1 %/K
t,	Response time @ 90% of $I_P$	<3 μs
f	Frequency bandwidth (03 dB) 3)	DC 50 kHz

General data						
$\mathbf{T}_{_{\mathrm{A}}}$	Ambient operating temperature	-20 +80	°C			
$T_{\rm s}$	Ambient storage temperature	-25 +85	°C			
m	Mass (-TP version)	<30 (<36)	g			
	2 pins of Ø2mm diameter are available on transducer					
	for PCB soldering.					

Notes: EN 50178 approval pending

- $^{\mbox{\tiny 1)}}$  -TP version is equipped with a primary bus bar.
- $^{2)}$  Operating at  $\pm 12 \text{V} \leq \text{Vc} < \pm 15 \text{V}$  will reduce measuring range.
- <sup>3)</sup> Derating is needed to avoid excessive core heating at high frequency.

## $I_{PN} = 50 ... 400 A$



#### **Features**

- Hall effect measuring principle
- Galvanic isolation between primary and secondary circuit
- Isolation voltage 2500V
- Low power consumption
- Wide power supply: ±12V to ±15V
- Primary bus bar option for 50A and 100A version for ease of connection

#### Advantages

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

### **Applications**

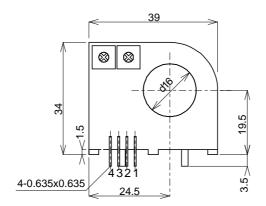
- AC variable speed drives
- Static converters for DC motor drives
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Switched Mode Power Supplies (SMPS)
- Power supplies for welding applications.

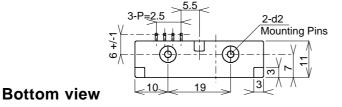
040720/9



## HTB 50 .. 400-P

#### **Back view**



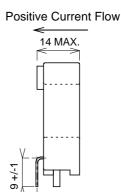


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## Left view

Left view



Secondary Pin Identification

- 1 +Vc
- 2 -Vc
- 3 Output

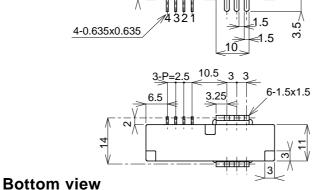
14 MAX.

4 0V

## HTB 50 .. 100-TP

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## Back view



Positive Current Flow

Secondary Pin Identification

- 1 +Vc
- 2 -Vc
- 3 Output
- 4 0V

LEM reserves the right to carry out modifications on its transducers, in order to improve them, without previous notice.