

# Current Transducer LA 03 .. 20-PB

$$I_{PN} = 3 \dots 20 \text{ A}$$

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).

**Preliminary**



## Electrical data

Primary nominal current (A)	Primary nominal r.m.s. current $I_{PN}$ (A)	Primary current measuring range $I_p$ (A)	Primary Conductor Diameter (mm)	Type
3	3	$\pm 4.5$	0.5	LA 03-PB
5	3	$\pm 7.5$	0.5	LA 05-PB
10	5	$\pm 15$	0.65	LA 10-PB
15	7.5	$\pm 22.5$	0.8	LA 15-PB
20	10	$\pm 30$	1.0	LA 20-PB

$V_C$	Supply voltage ( $\pm 5\%$ )	$\pm 15$	V
$I_C$	Current consumption	app. $20\text{mA} + I_{PN}/1200$	mA
$V_d$	R.m.s. voltage for AC isolation test, 50/60Hz, 1mn	2.5	kV
$R_{IS}$	Isolation resistance @ 500 VDC	$> 500$	M $\Omega$
$V_{OUT}$	Output voltage @ $\pm I_{PN}$ , $R_L = 10 \text{ k}\Omega$ , $T_A = 25^\circ\text{C}$	$\pm 4$	V
$R_L$	Load resistance	$> 10$	k $\Omega$

## Features

- Closed loop (compensation) current transducer using the Hall effect
- Voltage output
- Printed circuit board mounting

## Advantages

- Excellent accuracy
- Very good linearity
- Low temperature drift
- Optimized response time
- Wide frequency bandwidth
- No insertion losses
- High immunity to external interference
- Current overload capacity

## Accuracy-Dynamic performance data

$X$	Accuracy @ $I_{PN}$ , $T_A = 25^\circ\text{C}$ (without offset)	$< \pm 1.5\%$	of $I_{PN}$
$e_L$	Linearity ( $0 \dots \pm I_{PN}$ )	$< \pm 1\%$	of $I_{PN}$
$V_{OE}$	Electrical offset voltage, $T_A = 25^\circ\text{C}$	$< \pm 30$	mV
$V_{OH}$	Hysteresis offset voltage @ $I_p = 0$ ; after an excursion of $1 \times I_{PN}$	$< \pm 15$	mV
$V_{OT}$	Thermal drift of $V_{OE}$	max. $\pm 1$	mV/K
$TCE_G$	Thermal drift(% of reading)	$< 0.04$	%/K
$t_r$	Response time @ 90% of $I_p$	$< 3$	$\mu\text{s}$
$f$	Frequency bandwidth (-1dB) <sup>2)</sup>	DC .. 150	kHz

## General data

$T_A$	Ambient operating temperature	-10 .. +80	$^\circ\text{C}$
$T_S$	Ambient storage temperature	-15 .. +85	$^\circ\text{C}$
$m$	Mass	$< 12$	g

Notes : EN 50178 approval pending

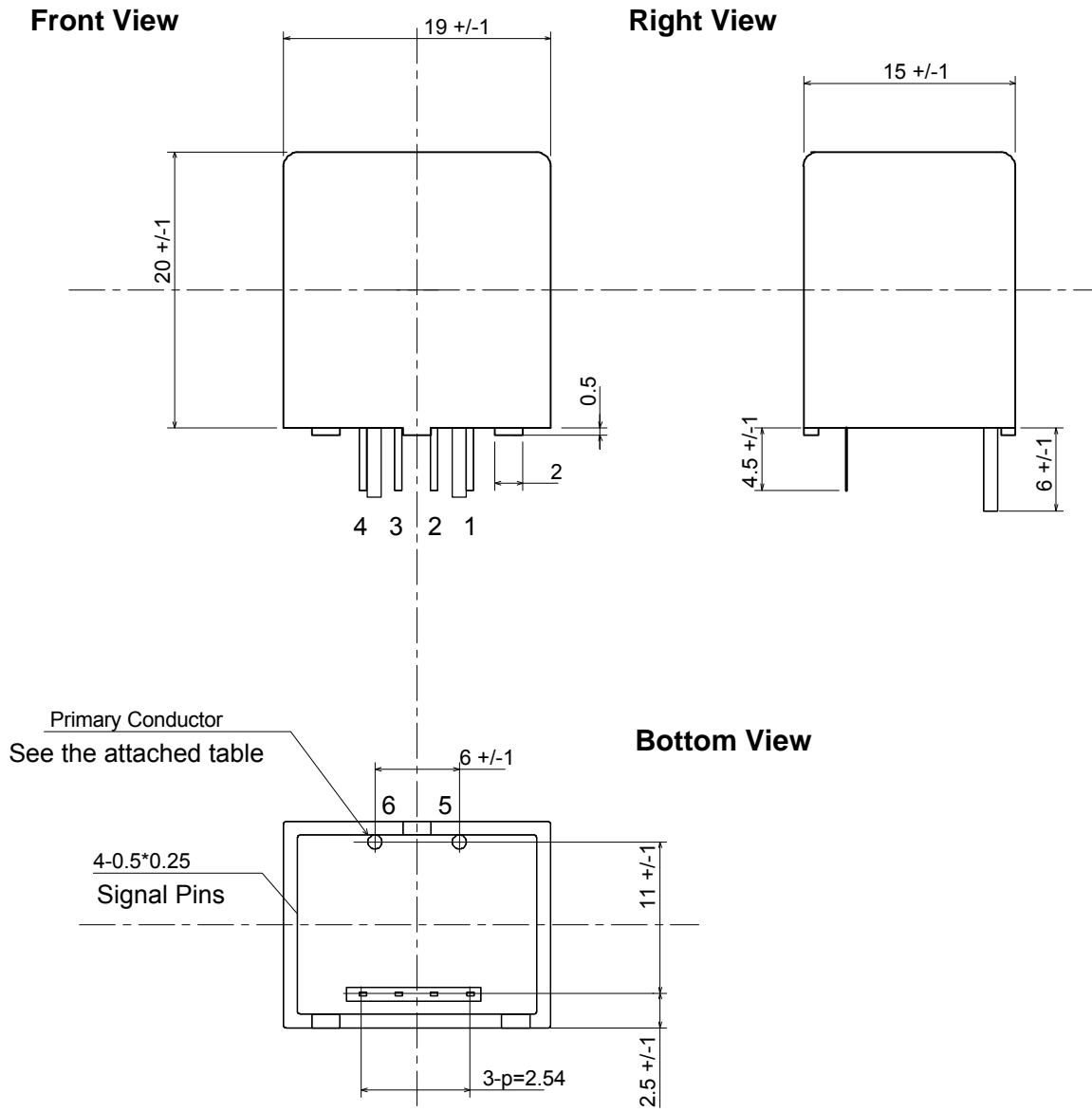
<sup>1)</sup> Calibration for 4V output is carried out at the primary nominal current.

<sup>2)</sup> Derating is needed to avoid excessive core heating at high frequency.

## 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)
- Switched Mode Power Supplies (SMPS)
- Power supplies for welding applications

# LA 03 ... 20-PB



Primary Conductor  
See the attached table

4-0.5\*0.25  
Signal Pins

### Terminal Pin Identification

Primary Conductor		Signal Pins	Direction of Current Flow
Part No.	Diameter		
LA 03PB	0.5 d	1 -Vcc	5 (+) → 6 (-)
LA 05PB	0.5 d	2 0V	
LA 10PB	0.65 d	3 +Vcc	
LA 15PB	0.8 d	4 Output	

UNIT : mm