

# Current Transducer HAW 03 .. 20-P

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

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 r.m.s. current $I_{PN}$ (A)	Primary current measuring range $I_p$ (A)	Primary Conductor Diameter (mm)	Type
3	$\pm 7.5$	0.8	HAW 03-P
5	$\pm 13$	0.9	HAW 05-P
10	$\pm 25$	1.1	HAW 10-P
15	$\pm 38$	1.4	HAW 15-P
20	$\pm 50$	1.6	HAW 20-P

$V_C$	Supply voltage ( $\pm 5\%$ )	$\pm 15$	V
$I_C$	Current consumption	$< \pm 18$	mA
$V_d$	R.m.s. voltage for AC isolation test, 50/60Hz, 1 mn	2.0	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
$R_{OUT}$	Output internal resistance	100	$\Omega$
$R_L$	Load resistance	$> 10$	k $\Omega$

## Features

- Hall effect measuring principle
- Galvanic isolation between primary and secondary circuit
- Isolation voltage 2000 V
- Low power consumption
- Extended measuring range ( $2.5 \times I_{PN}$ )

## Advantages

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

## Applications

- DC motor drives
- Switched Mode Power Supplies (SMPS)
- AC variable speed drives
- Uninterruptible Power Supplies (UPS)
- Battery supplied applications
- Inverters

## Accuracy-Dynamic performance data

<b>X</b>	Accuracy @ $I_{PN}$ , $T_A = 25^\circ\text{C}$ (without offset)	$< \pm 1$	% of $I_{PN}$
<b><math>\epsilon_L</math></b>	Linearity ( $0 \dots \pm I_{PN}$ )	$< \pm 1$	% of $I_{PN}$
<b><math>V_{OE}</math></b>	Electrical offset voltage, $T_A = 25^\circ\text{C}$	$< \pm 40$	mV
<b><math>V_{OH}</math></b>	Hysteresis offset voltage @ $I_p = 0$ ; after an excursion of $1 \times I_{PN}$	$< \pm 20$	mV
<b><math>V_{OT}</math></b>	Thermal drift of $V_{OE}$ max.	$\pm 1.5$	mV/K
<b><math>TCE_G</math></b>	Thermal drift of the gain (% of reading)	$\pm 0.1$	%/K
<b><math>t_r</math></b>	Response time @ 90% of $I_p$	$< 3$	$\mu\text{s}$
<b>f</b>	Frequency bandwidth (-3 dB) <sup>1)</sup>	DC .. 50	kHz

## General data

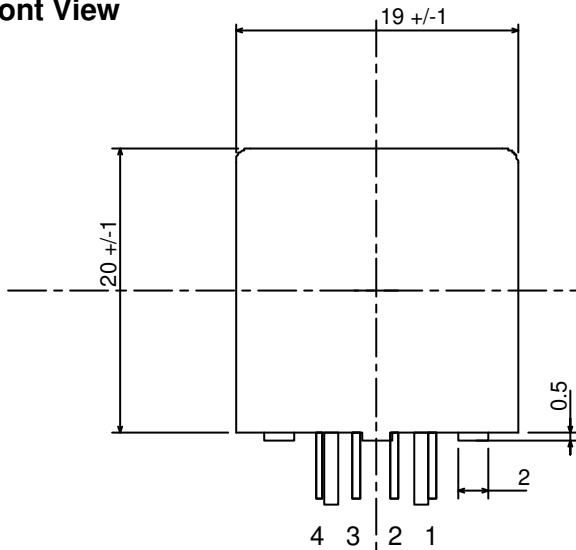
<b><math>T_A</math></b>	Ambient operating temperature	- 10 .. + 75	$^\circ\text{C}$
<b><math>T_S</math></b>	Ambient storage temperature	- 15 .. + 85	$^\circ\text{C}$
<b>m</b>	Mass	12	g

Notes : EN 50178 approval pending

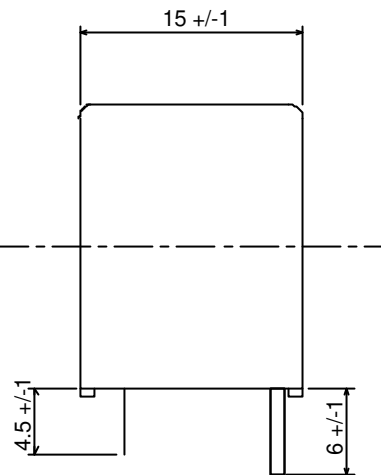
<sup>1)</sup> Derating is needed to avoid excessive core heating at high frequency.

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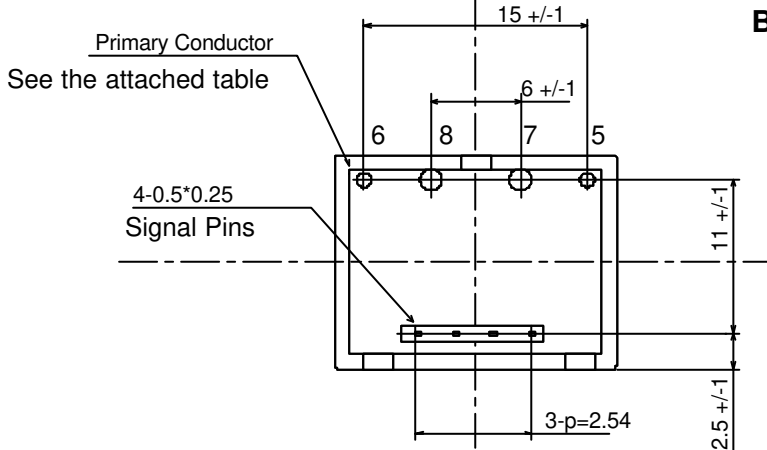
**Front View**



**Right View**



**Bottom View**



**Terminal Pin Identification**

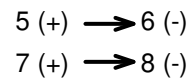
**Primary Conductor**

Part No.	Pin No.	Diameter
HAW 03-P	5-6	0.8 d
HAW 05-P	5-6	0.9 d
HAW 10-P	7-8	1.1 d
HAW 15-P	7-8	1.4 d
HAW 20-P	7-8	1.6 d

**Signal Pins**

1	-Vcc
2	0V
3	+Vcc
4	Output

**Direction of Current Flow**



UNIT : mm