

# Topstek Current Transducer THP5A .. THP50A

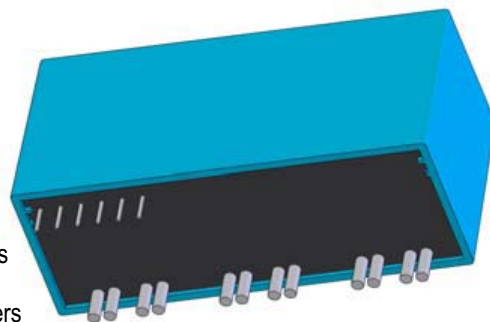
## THP 5A~50A

### Features

- ◆ Highly reliable Hall Effect device
- ◆ Compact and light weight. Three sensors in one package
- ◆ Fast response time
- ◆ Excellent linearity of the output voltage over a wide input range
- ◆ Excellent frequency response (> 50 kHz)
- ◆ Low power consumption (33 mA nominal)
- ◆ Capable of measuring both DC and AC, both pulsed and mixed
- ◆ High isolation voltage between the measuring circuit and the current-carrying conductor (AC2.5KV)
- ◆ Extended operating temperature range
- ◆ Flame-Retardant plastic case and silicone encapsulate, using UL classified materials, ensures protection against environmental contaminants and vibration over a wide temperature and humidity range

### Applications

- ◆ UPS systems
- ◆ Industrial robots
- ◆ NC tooling machines
- ◆ Elevator controllers
- ◆ Process control devices
- ◆ AC and DC servo systems
- ◆ Motor speed controller
- ◆ Electrical vehicle controllers
- ◆ Inverter-controlled welding machines
- ◆ General and special purpose inverters
- ◆ Power supply for laser processing machines
- ◆ Controller for traction equipment e.g. electric trains
- ◆ Other automatic control systems



### Specifications

Parameter	Symbol	Unit	3A	5A	7.5A	10A	15A	18.5A	20A	25A	30A	37.5A	50A
Nominal Input Current	$I_{fn}$	A DC	3	5	7.5	10	15	18.5	20	25	30	37.5	50
Linear Range	$I_{fs}$	A DC	±9	±15	±22.5	±30	±45	±56	±60	±75	±90	±113	±150
Primary Wire Diameter	$\phi d$	mm	0.6	0.8	1.0	1.2	1.6	1.6	1.6	1.6	1.6	1.6x2	1.6x2
Nominal Output Voltage	$V_{hn}$	V	4 V±1% @ $I_f=I_{fn}$ ( $R_L=10k\Omega$ )										
Offset Voltage	$V_{os}$	mV	Within ±40 mV @ $I_f=0$ , $T_a=25^\circ C$										
Output Resistance	$R_{OUT}$	$\Omega$	<100 $\Omega$ (50 $\Omega$ nominal)										
Hysteresis Error	$V_{oh}$	mV	Within ±35 mV @ $I_f=I_{fn} \rightarrow 0$										
Supply Voltage	$V_{CC}/V_{EE}$	V	±15V ±5%										
Linearity	$\rho$	%	Within ±1% of $I_{fn}$										
Consumption Current	$I_{CC}$	mA	±33 mA nominal, ±45 mA max										
Response Time (90% $V_{hn}$ )	$T_r$	$\mu sec$	3 $\mu sec$ max. @ $d I_f / dt = I_{fn} / \mu sec$										
Response Performance	-	%	10% Overshoot max.										
Frequency bandwidth (-3dB)	$f_{BW}$	Hz	DC to 50kHz										
Thermal Drift of Output	-	%/°C	Within ±0.1 %/°C @ $I_{fn}$										
Thermal Drift of Zero Current Offset	-	mV/°C	< ±2 mV/°C										
Dielectric Strength	-	V	AC2.5KV X 60 sec										
Isolation Resistance @ 1000 VDC	$R_{IS}$	M $\Omega$	>1000 M $\Omega$										
Operating Temperature	$T_a$	°C	-15°C to 80°C										
Storage Temperature	$T_s$	°C	-20°C to 85°C										
Mass	W	g	26 g										

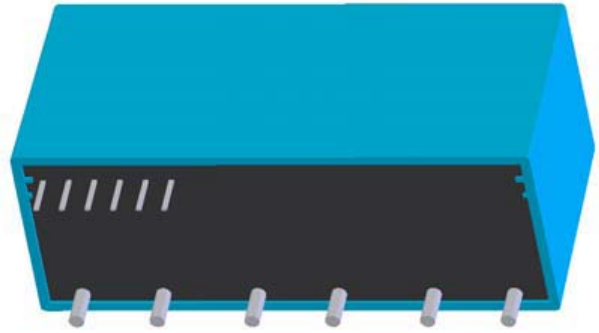
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## Appearance, dimensions and pin identification

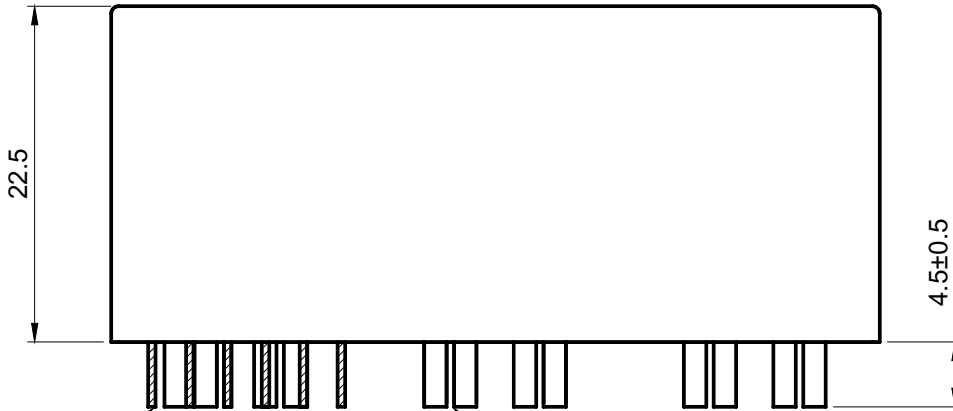
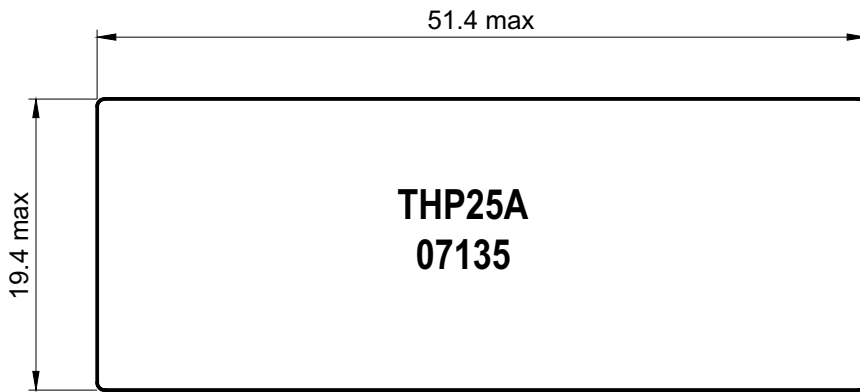
All dimensions in mm  $\pm 0.2$ , holes  $-0, +0.2$  except otherwise noted.



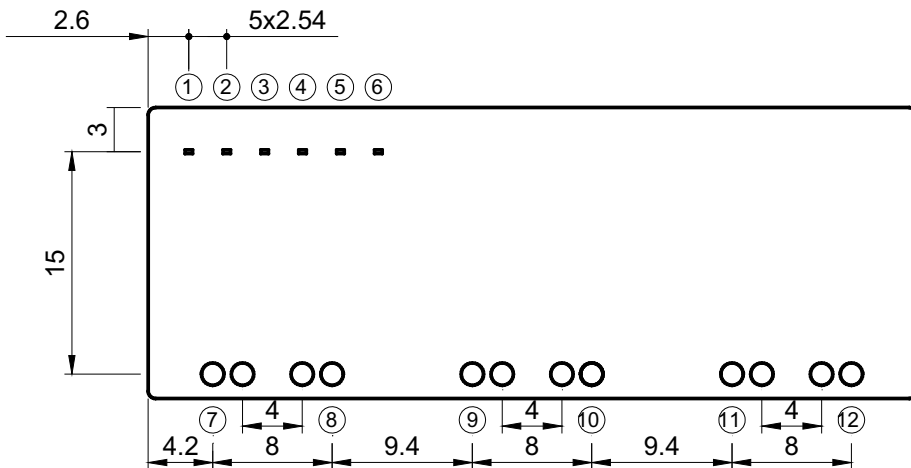
For models  $I_{fn} > 30A$  primary wire =  $1.6\phi \times 2$



For models  $I_{fn} \leq 30A$  primary wire =  $0.6\phi \sim 1.6\phi \times 1$



Secondary pins 6x(0.5x0.25)      Primary 12x $\phi d$



①	Gnd
②	+15V
③	-15V
④	VOUT1
⑤	VOUT2
⑥	VOUT3
⑦	I1+
⑧	I1-
⑨	I2+
⑩	I2-
⑪	I3+
⑫	I3-

