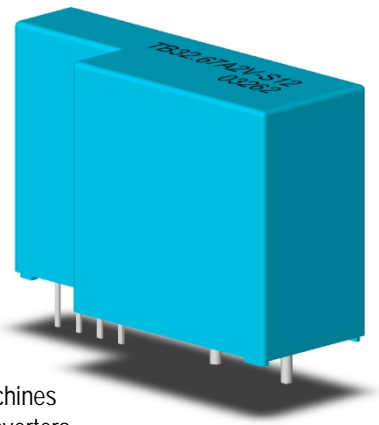




# Topstek Current Transducer TB5A .. 50A 2V-S12

## TB 5A..50A-2V-S12



### Features

- ◆ Highly reliable Hall Effect device
- ◆ Compact and light weight
- ◆ Fast response time
- ◆ Excellent linearity of the output voltage over a wide input range
- ◆ Excellent frequency response (> 50 kHz)
- ◆ Low power consumption (12 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	TB14.52A2V-S12	TB21.78A2V-S12	TB32.67A2V-S12
Nominal Input Current	$I_{fn}$	A DC	$\pm 14.52$	$\pm 21.78$	$\pm 32.67$
Linear Range	$I_{fs}$	A DC	$\pm 15.98$	$\pm 23.96$	$\pm 35.94$
Diameter of Primary Coil	d	mm	0.8	1.0	1.2
Turns of Primary Coil	T	T	6	4	3
Saturation Current	$I_s$	A DC	0~ $\pm 15.98$	0~ $\pm 23.96$	0~ $\pm 35.94$
Output Voltage @ ( $R_L=10k\Omega$ , $T_a=25^\circ C$ )	$I_f = I_{fn}$	$V_{hn+}$	V	$V_{hn0} + 2.0 V \pm 40mV$	
	$I_f = 0$	$V_{hn0}$	V	$2.5 V \pm 40 mV$	
	$I_f = -I_{fn}$	$V_{hn-}$	V	$V_{hn0} - 2.0 V \pm 40mV$	
Offset Voltage	$V_{os}$	mV	Within $2.5V \pm 40 mV$ @ $I_f=0$ , $T_a=25^\circ C$		
Output Resistance	$R_{OUT}$	$\Omega$	< $100\Omega$ ( $50\Omega$ nominal)		
Hysteresis Error	$V_{oh}$	mV	Within $\pm 20 mV$ @ $I_f=I_{fn} \rightarrow 0$		
Supply Voltage	$V_{CC}$	V	$+12V \pm 5\%$		
Linearity ( Within $\pm I_{fn}$ )	$\rho$	%	Within $\pm 1\%$ of $I_{fn}$		
Consumption Current	$I_{CC}$	mA	12 mA nominal		
Response Time (90% $V_{hn}$ )	$T_r$	$\mu sec$	3 $\mu sec$ max. @ $dI_f/dt = I_{fn}/\mu sec$		
Thermal Drift of Output	-	%/ $^\circ C$	Within $\pm 0.1 \%/^\circ C$ @ $I_{fn}$		
Thermal Drift of Zero Current Offset	-	mV/ $^\circ C$	Within $\pm 2 mV/^\circ C$ @ $I_{fn}$		
Dielectric Strength	-	V	AC2.5KV X 60 sec		
Isolation Resistance	$R_{IS}$	M $\Omega$	>1000 M $\Omega$ @ 1000 VDC		
Operating Temperature	$T_a$	$^\circ C$	-15 $^\circ C$ to 80 $^\circ C$		
Storage Temperature	$T_s$	$^\circ C$	-20 $^\circ C$ to 85 $^\circ C$		
Mass	W	g	14 g		

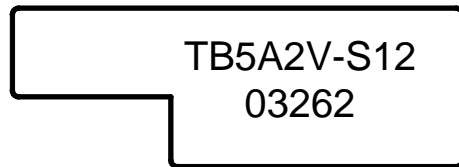
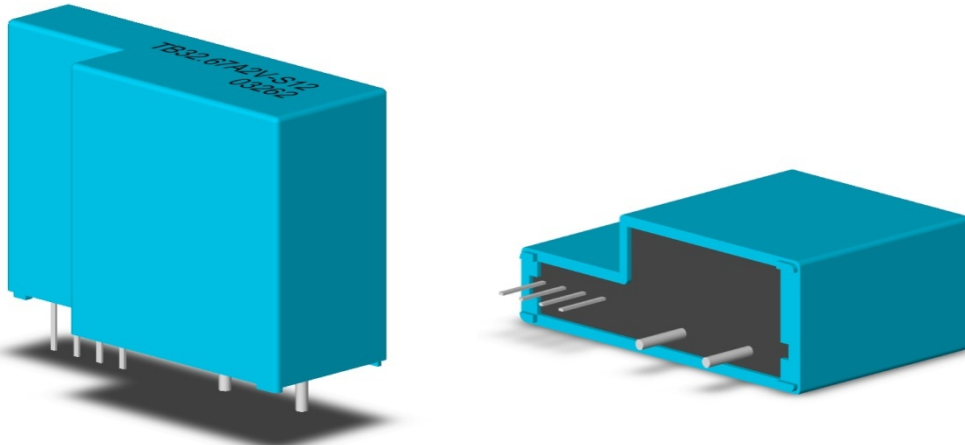




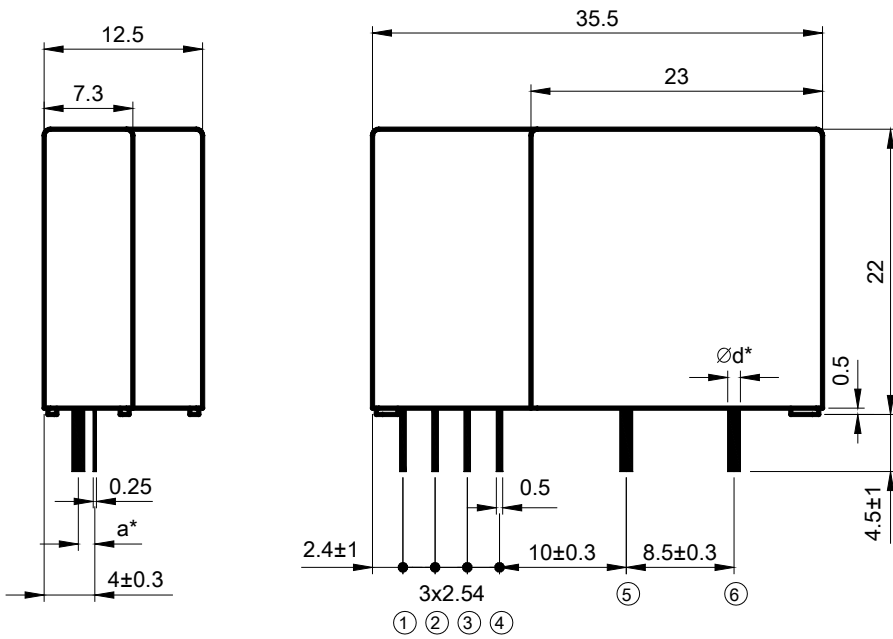
# Topstek Current Transducer TB5A .. 50A 2V-S12

## Appearance, dimensions and pin identification

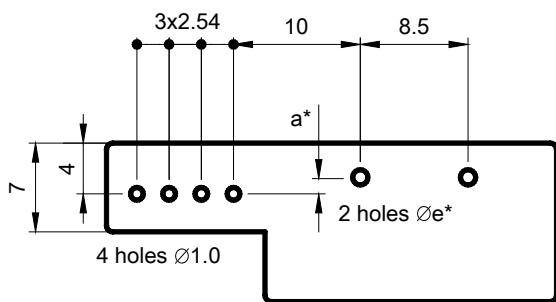
All dimensions in mm  $\pm 0.5$ , holes  $-0, +0.2$  except otherwise noted



Model number and date code marking



Pin Assignment	
①	0V
②	0V
③	+12V
④	V <sub>OUT</sub>
⑤	I+
⑥	I-



5A to 50A PCB mounting hole layout

Part Number	a* (mm)	d* (mm)	e* (mm)
TB10A2V	1.2	$\varnothing 0.8$	$\varnothing 1.4$
TB15.A2V	1.2	$\varnothing 0.8$	$\varnothing 1.6$
TB18A2V	1.3	$\varnothing 1.0$	$\varnothing 1.8$
TB22.5A2V	1.3	$\varnothing 1.0$	$\varnothing 1.8$
TB25A2V	1.4	$\varnothing 1.2$	$\varnothing 1.8$
TB33.0A2V	1.4	$\varnothing 1.2$	$\varnothing 1.8$
TB35A2V	1.5	$\varnothing 1.4$	$\varnothing 2.0$
TB50A2V	1.5	$\varnothing 1.4$	$\varnothing 2.0$

