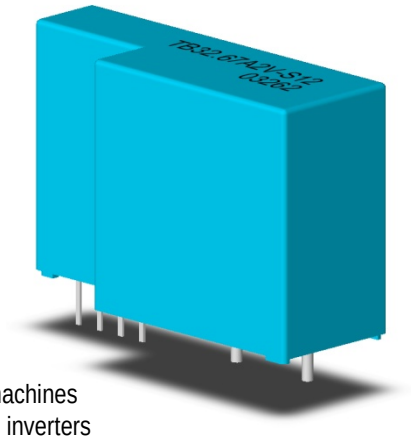
Topstek Current Transducer TB5A .. 50A 2V-S12

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

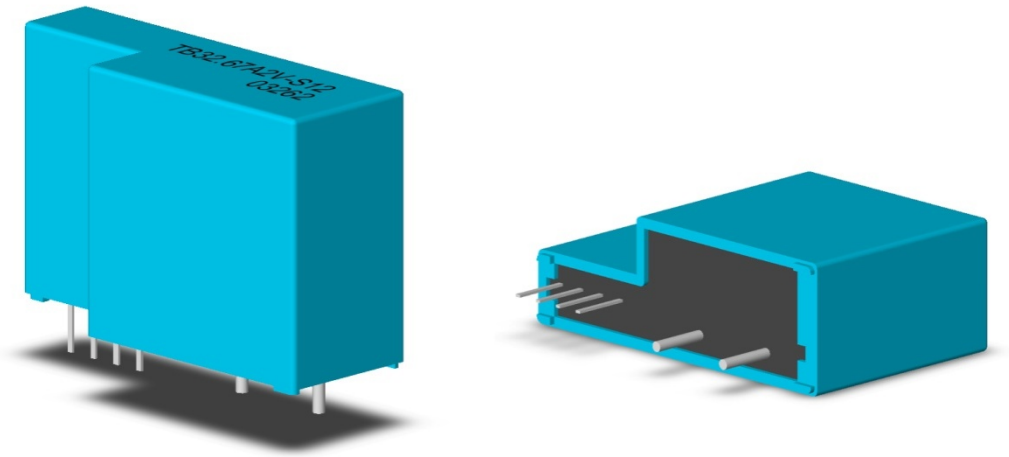
- ♦ UPS systems
- ♦ Industrial robots
- ♦ NC tooling machines
- ♦ Elevator controllers
- ♦ Process control devices
- ♦ AC and DC servo systems
- ♦ Motor speed controller
- ♦ Electrical vehicle controllers
- ♦ Inverter-controlled welding machines
- ♦ General and special purpose inverters
- ♦ Power supply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

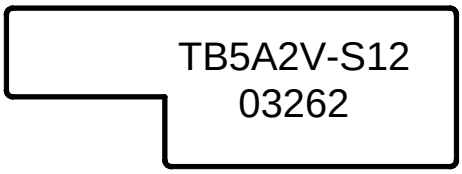
Specifications

Parameter		Symbol	Unit	TB14.52A2V-S12	TB21.78A2V-S12	TB32.67A2V-S12
Nominal Input Current		I_{fn}	A DC	±14.52	±21.78	±32.67
Linear Range		I_{fs}	A DC	±15.98	±23.96	±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~±15.98	0~±23.96	0~±35.94
Output Voltage @ (R_L=10kΩ, T_a=25°C	$I_f = I_{fn}$	V_{hn+}	V	V_{hn0} + 2.0 V ± 40mV		
	$I_f = 0$	V_{hn0}	V	2.5 V ± 40 mV		
	$I_f = -I_{fn}$	V_{hn-}	V	V_{hn0} - 2.0 V ± 40mV		
Offset Voltage		V_{os}	mV	Within 2.5V±40 mV @ I_f=0, T_a=25°C		
Output Resistance		R_{OUT}	Ω	< 100Ω(50Ωnominal)		
Hysteresis Error		V_{oh}	mV	Within ±20 mV @ I_f=I_{fn}→0		
Supply Voltage		V_{CC}	V	+12V ±5%		
Linearity (Within ±I_{fn})		ρ	%	Within ±1% of I_{fn}		
Consumption Current		I_{CC}	mA	12 mA nominal		
Response Time (90%V_{hn})		T_r	μsec	3 μsec max. @ $d I_f / dt = I_{fn}$ / μsec		
Thermal Drift of Output		-	%/°C	Within ±0.1 %/°C @ I_{fn}		
Thermal Drift of Zero Current Offset		-	mV/°C	Within ±2 mV/°C @ I_{fn}		
Dielectric Strength		-	V	AC2.5KV X 60 sec		
Isolation Resistance		R_{IS}	MΩ	>1000 MΩ@ 1000 VDC		
Operating Temperature		T_a	°C	-15°C to 80°C		
Storage Temperature		T_s	°C	-20°C to 85°C		
Mass		W	g	14 g		

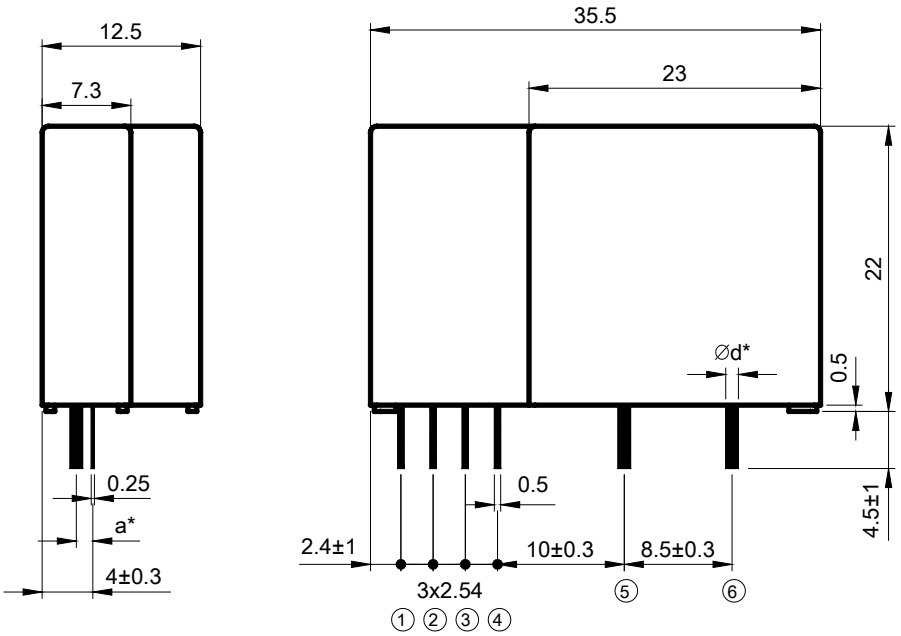
Appearance, dimensions and pin identification

All dimensions in mm ±0.5, holes –0, +0.2 except otherwise noted

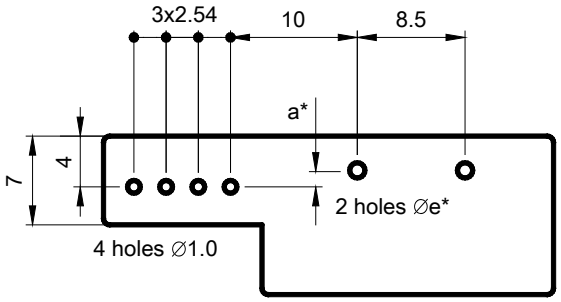




Model number and date code marking



Pin Assignment	
①	0V
②	0V
③	+12V
④	VOUT
⑤	I+
⑥	I-



5A to 50A PCB mounting hole layout

Part Number	a* (mm)	d* (mm)	e* (mm)
TB10A2V	1.2	ø0.8	ø1.4
TB15.A2V	1.2	ø0.8	ø1.6
TB18A2V	1.3	ø1.0	ø1.8
TB22.5A2V	1.3	ø1.0	ø1.8
TB25A2V	1.4	ø1.2	ø1.8
TB33.0A2V	1.4	ø1.2	ø1.8
TB35A2V	1.5	ø1.4	ø2.0
TB50A2V	1.5	ø1.4	ø2.0