

Topstek Current Transducer TKM3A .. TKM50A

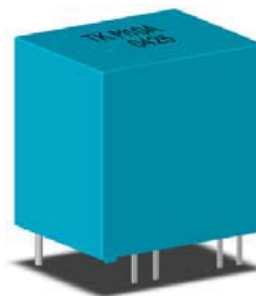
TKM 3A~50A

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

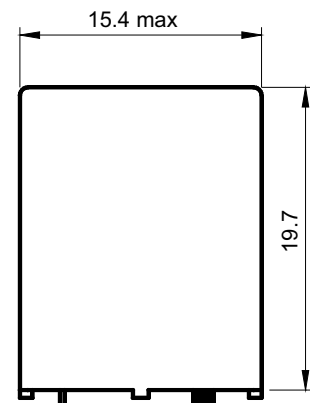
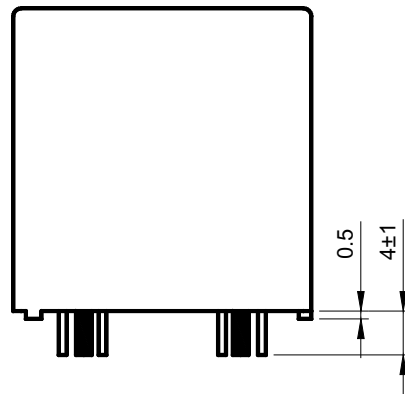
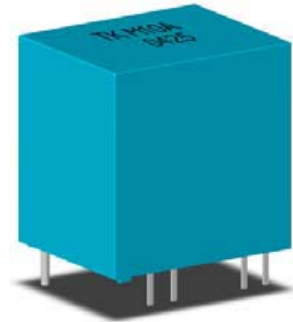
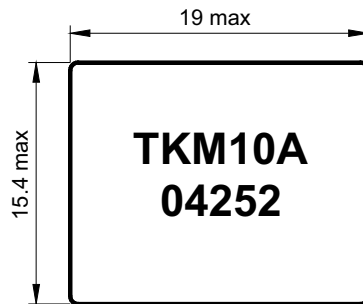
Parameter	Symbol	Unit	TKM3A .. TKM50A
Nominal Input Current	I_{fn}	A DC	3 .. 50
Linear Range	I_{fs}	A DC	$\pm 9 \dots \pm 150 = 3 \times I_{fn}$
Nominal Output Voltage	V_{hn}	V	4 V $\pm 1\%$ at $I_f = I_{fn}$ ($R_L = 10k\Omega$)
Offset Voltage	V_{os}	mV	Within ± 40 mV @ $I_f = 0$, $T_a = 25^\circ\text{C}$
Output Resistance	R_{OUT}	Ω	$< 100\Omega$
Hysteresis Error	V_{oh}	mV	Within ± 15 mV @ $I_f = I_{fn} \rightarrow 0$
Supply Voltage	V_{CC}/V_{EE}	V	$\pm 15\text{V} \pm 5\%$
Linearity	ρ	%	Within $\pm 1\%$ of I_{fn}
Consumption Current	I_{CC}	mA	± 12 mA nominal, ± 16 mA max
Response Time (90% V_{hn})	T_r	μsec	5 μsec max. @ $d I_f / dt = I_{fn} / \mu\text{sec}$
Frequency bandwidth (-3dB)	f_{BW}	Hz	DC to 50kHz
Thermal Drift of Output	-	%/ $^\circ\text{C}$	Within ± 0.1 %/ $^\circ\text{C}$ @ I_{fn}
Thermal Drift of Zero Current Offset	-	mV/ $^\circ\text{C}$	Within ± 1.5 mV/ $^\circ\text{C}$ @ I_{fn}
Dielectric Strength	-	V	AC2.5KV X 60 sec
Isolation Resistance @ 1000 VDC	R_{IS}	M Ω	> 1000 M Ω
Operating Temperature	T_a	$^\circ\text{C}$	-15°C to 80°C
Storage Temperature	T_s	$^\circ\text{C}$	-20°C to 85°C
Mass	W	g	10 g

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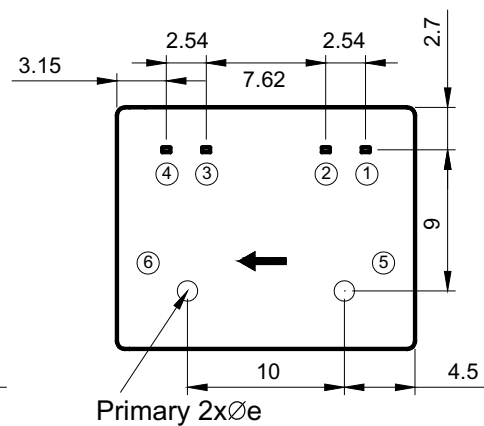
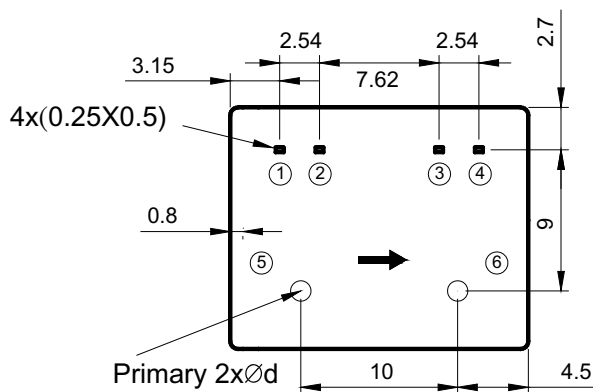
Appearance, dimensions and pin identification

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

Pin Assignment	
①	-15V
②	0V
③	+15V
④	V _{OUT}
⑤	I +
⑥	I -



Secondary pins 4x(0.25x0.5) Primary 2x $\varnothing$ d



Bottom View

3A to 25A PCB mounting hole layout

← Positive current flow direction

Part Number	TKM3A	TKM4A	TKM5A	TKM6A	TKM7.5A	TKM10A	TKM12.5A	TKM15A	TKM18.5A	TKM20A	TKM25A TKM37.5A TKM50A
d(mm)	0.6	0.8	0.8	0.8	1.0	1.2	1.2	1.4	1.4	1.6	1.6
e(mm)	1.2	1.2	1.2	1.2	1.6	1.8	1.8	2.2	2.2	2.4	2.4