

Topstek Current Transducer TKL3A .. TKL25A

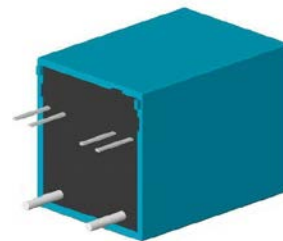
TKL 3A~25A

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



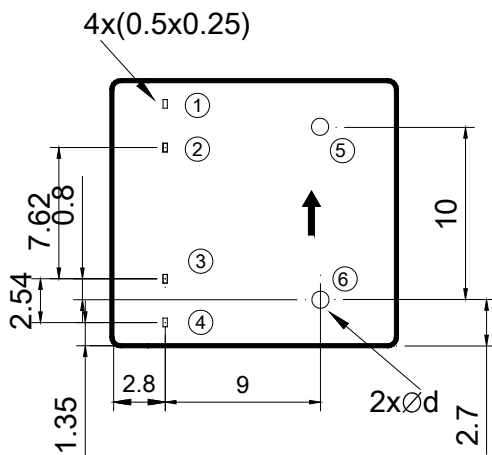
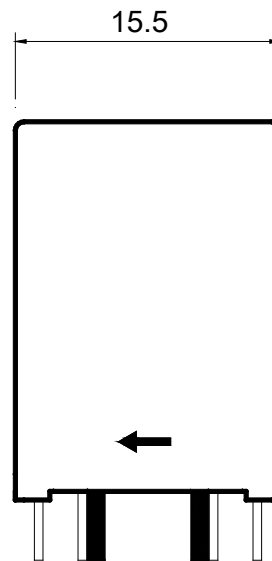
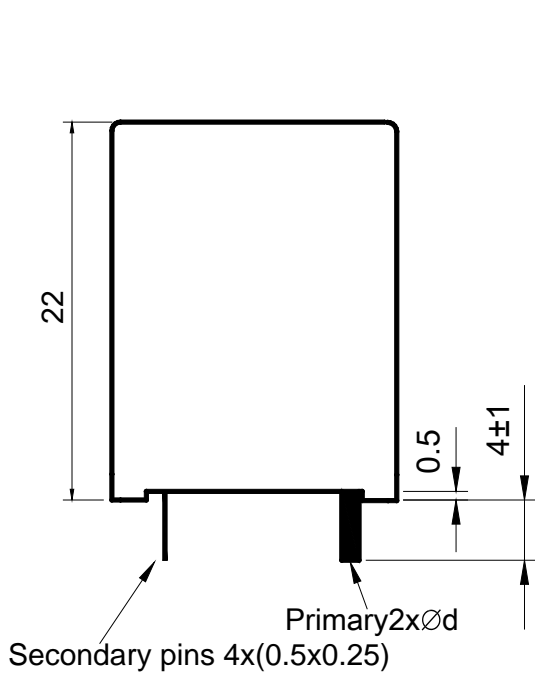
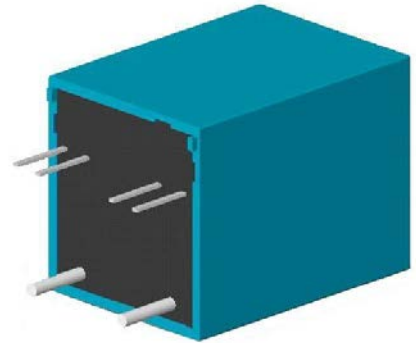
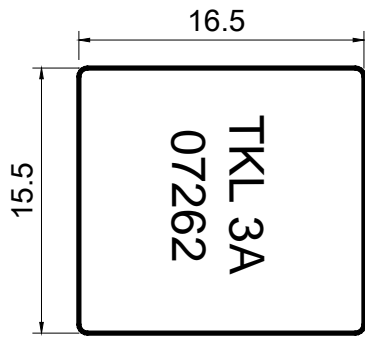
Specifications

Parameter	Symbol	Unit	TKL3A .. TKL25A
Nominal Input Current	I_{fn}	A DC	3 .. 50
Linear Range	I_{fs}	A DC	$\pm 9 .. \pm 150 = 3x I_{fn}$
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 @ $I_f = 0$, $T_a = 25^\circ C$
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	$\pm 15V \pm 5\%$
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	$3 \mu sec$ max. @ $d I_f / dt = I_{fn} / \mu sec$
Frequency bandwidth (-3dB)	f_{BW}	Hz	DC to 50kHz
Thermal Drift of Output	-	$\% / ^\circ C$	Within $\pm 0.1 \%$ $ / ^\circ C$ @ I_{fn}
Thermal Drift of Zero Current Offset	-	$mV / ^\circ C$	Within $\pm 1.5 mV / ^\circ C$ @ I_{fn}
Dielectric Strength	-	V	AC2.5KV X 60 sec
Isolation Resistance @ 1000 VDC	R_{IS}	$M\Omega$	$> 1000 M\Omega$
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	10 g

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Appearance, dimensions and pin identification

All dimensions in mm ± 0.5 , holes -0 , $+0.2$ except otherwise noted.



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

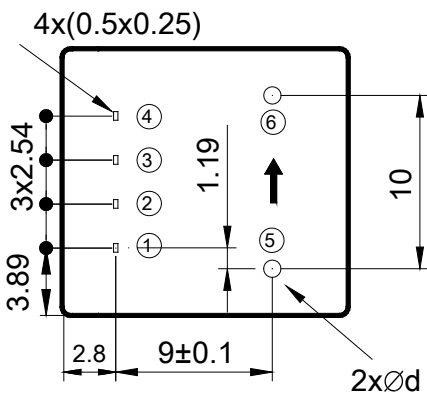
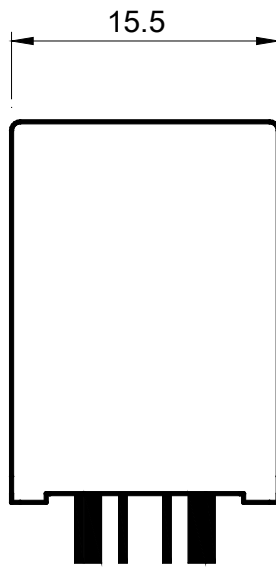
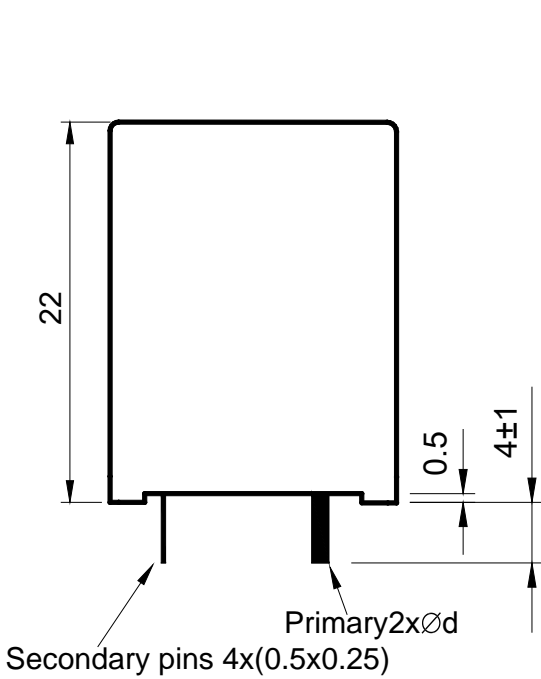
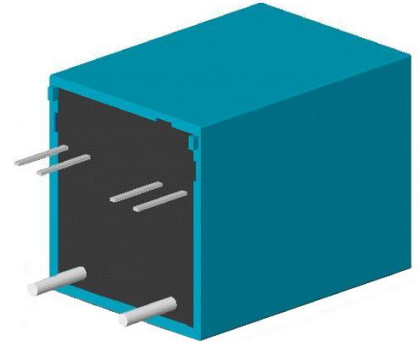
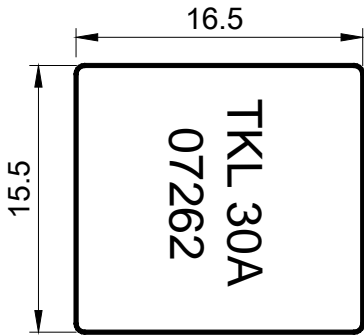
Bottom View

Nominal Primary Current	3-4A	5-7A	7.5-12A	12.5-20A	21-25A
d (mm)	0.6	0.8	1.0	1.2	1.6
e (mm)	1.2	1.4	1.6	1.8	2.2

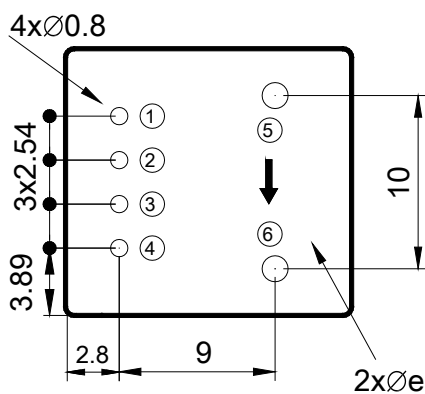
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Appearance, dimensions and pin identification for TKL 30A..TKL 50A models

All dimensions in mm ± 0.5 , holes -0 , $+0.2$ except otherwise noted.



Bottom View



PCB mounting hole layout

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

Nominal Primary Current	30—37.5A	40-50A
d (mm)	1.6	2.0
e (mm)	2.2	2.6