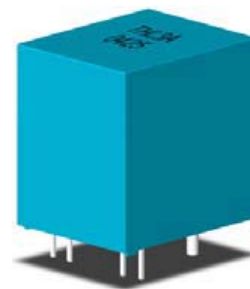




THL 3A~50A



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

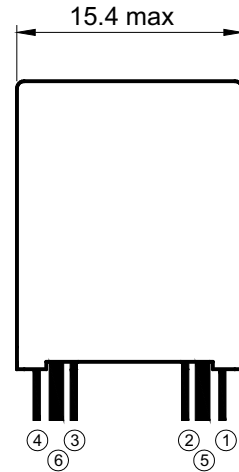
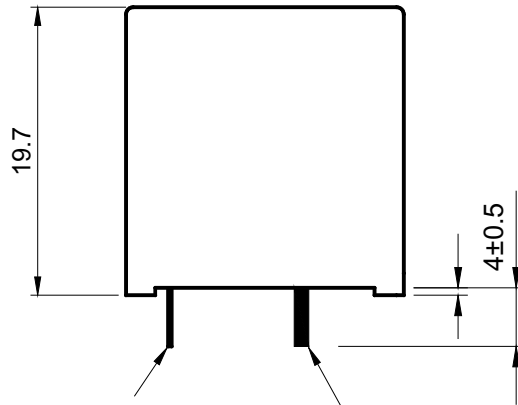
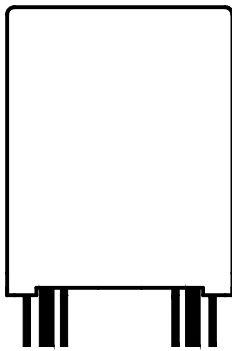
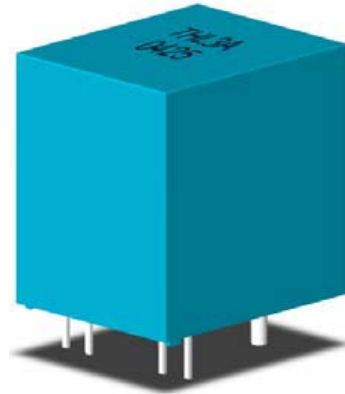
| Parameter | Symbol | Unit | THL3A .. THL50A |
|--------------------------------------|-----------------|-----------------|---|
| Nominal Input Current | I_{fn} | A DC | 3 .. 50 |
| Linear Range | I_{fs} | A DC | $\pm 9 .. \pm 150 = 3 \times I_{fn}$ |
| Nominal Output Voltage | V_{hn} | V | 4 V $\pm 1\%$ at $I_f = I_{fn}$ ($R_L = 10k\Omega$) |
| Offset Voltage | V_{os} | mV | Within ± 40 mV @ $I_f = 0$, $T_a = 25^\circ C$ |
| 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 | 5 μsec 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 ± 0.1 $\% / ^\circ C$ @ I_{fn} |
| Thermal Drift of Zero Current Offset | - | $mV / ^\circ C$ | Within ± 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 |



Topstek Current Transducer THL3A .. THL50A

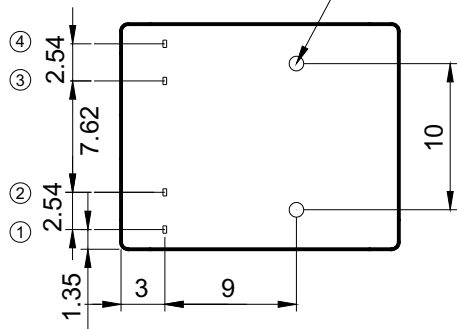
Appearance, dimensions and pin identification

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

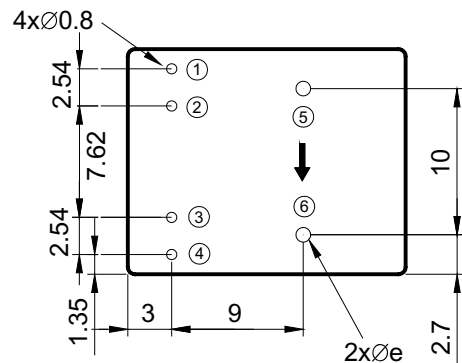


Secondary pins 4x(0.5x0.25) Primary 2x∅d

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



Bottom View



PCB mounting hole layout

← Positive current flow direction

| Part Number | THL3A | THL4A | THL5A | THL6A | THL7.5A | THL10A | THL12.5A | THL15A | THL18.5A | THL20A | THL25A | THL30A : THL50A |
|-------------|-------|-------|-------|-------|---------|--------|----------|--------|----------|--------|--------|--------------------|
| d(mm) | 0.6 | 0.8 | 0.8 | 0.8 | 1.0 | 1.2 | 1.2 | 1.4 | 1.4 | 1.6 | 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 | 2.4 |

