

Topstek Current Transducers TP25A .. TP300A

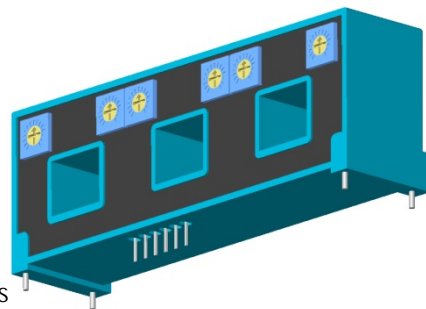
TP 25A~300A

Features

- ◆ Highly reliable Hall Effect device
- ◆ Compact and light weight. Three sensors in one package
- ◆ Fast response time
- ◆ Excellent linearity of the output voltage over a wide input range
- ◆ Excellent frequency response (> 50 kHz)
- ◆ Low power consumption (33 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



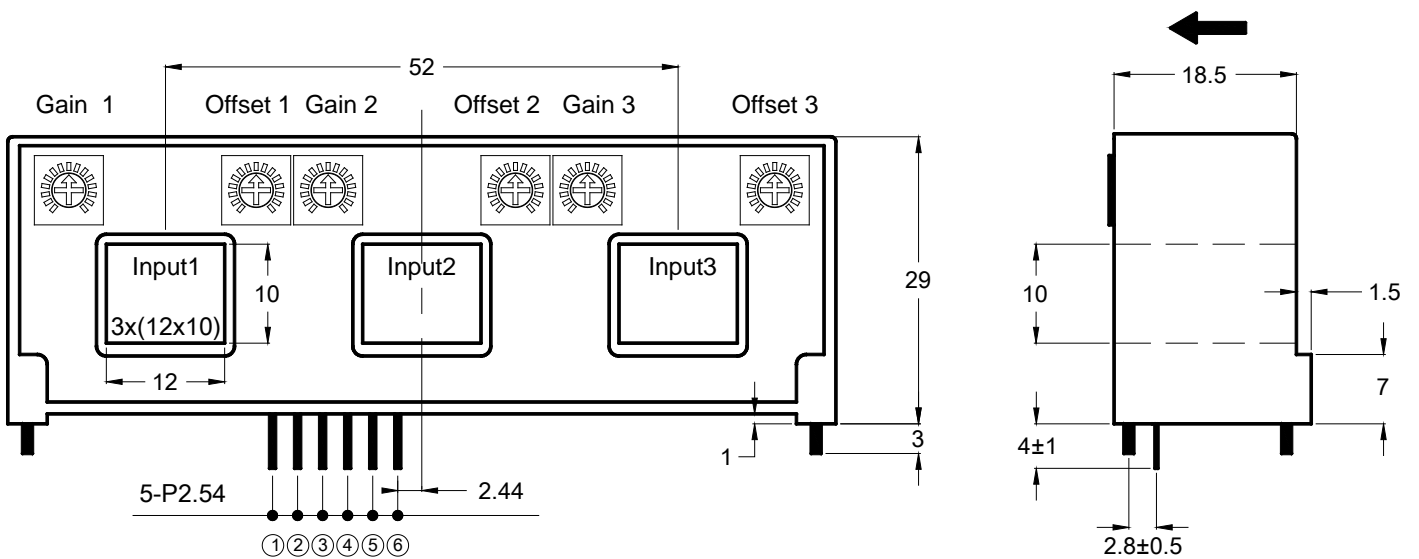
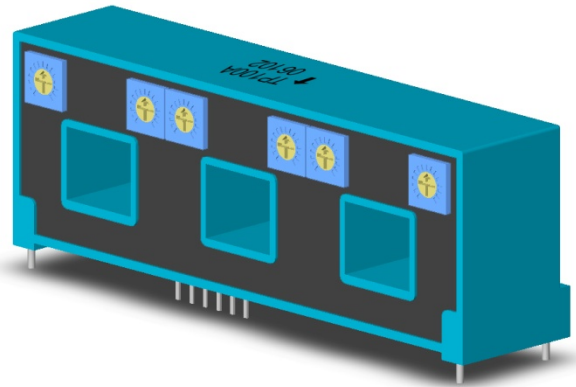
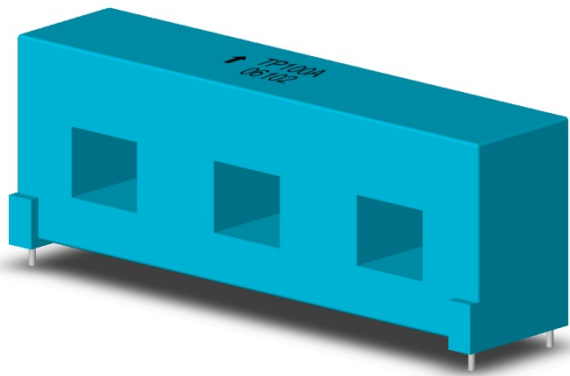
Specifications

| Parameter | Symbol | Unit | TP 25A | TP 37.5A | TP 50A | TP 75A | TP 100A | TP 125A | TP 150A | TP 175A | TP 200A | TP 250A | TP 300A |
|--------------------------------------|-----------------|----------------------|--|----------|--------|---------------------------|---------|---------|---------|---------|---------|---------|---------|
| Nominal Input Current | I_{fn} | A DC | 25 | 37.5 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 250 | 300 |
| Saturation Current | I_{fs} | A DC | ±75 | ±112.5 | ±150 | ±225 | ±300 | ±375 | ±450 | ±525 | ±600 | ±600 | ±600 |
| Linear Range | I_{fs} | A DC | ±75 | ±112.5 | ±150 | ±225 | ±300 | ±375 | ±450 | ±450 | ±450 | ±450 | ±450 |
| Nominal Output Voltage | V_{hn} | V | 4 V±1% @ $I_f=I_{fn}$ ($R_L=10k\Omega$) | | | | | | | | | | |
| Offset Voltage | V_{os} | mV | Within ±35 mV @ $I_f=0$, $T_a=25^\circ\text{C}$ | | | | | | | | | | |
| Output Resistance | R_{OUT} | Ω | <100 Ω (50 Ω nominal) | | | | | | | | | | |
| Hysteresis Error | V_{oh} | mV | Within ±25 mV @ $I_f=I_{fn}\rightarrow 0$ | | | | | | | | | | |
| Supply Voltage | V_{CC}/V_{EE} | V | ±15V ±5% | | | | | | | | | | |
| Linearity | ρ | % | Within ±1% of I_{fn} | | | | | | | | | | |
| Consumption Current | I_{CC} | mA | ±33 mA nominal, ±45 mA max | | | | | | | | | | |
| Response Time (90% V_{hn}) | T_r | μsec | 10 μsec max. @ $dI_f/dt = I_{fn}/\mu\text{sec}$ | | | | | | | | | | |
| Response Performance | - | % | 5% Overshoot max. | | | | | | | | | | |
| 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/ $^\circ\text{C}$ | < ±3 | <±2 | < ±1.5 | < ±1 mV/ $^\circ\text{C}$ | | | | | | | |
| 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 $^\circ\text{C}$ to 80 $^\circ\text{C}$ | | | | | | | | | | |
| Storage Temperature | T_s | $^\circ\text{C}$ | -20 $^\circ\text{C}$ to 85 $^\circ\text{C}$ | | | | | | | | | | |
| Mass | W | g | 90 g | | | | | | | | | | |

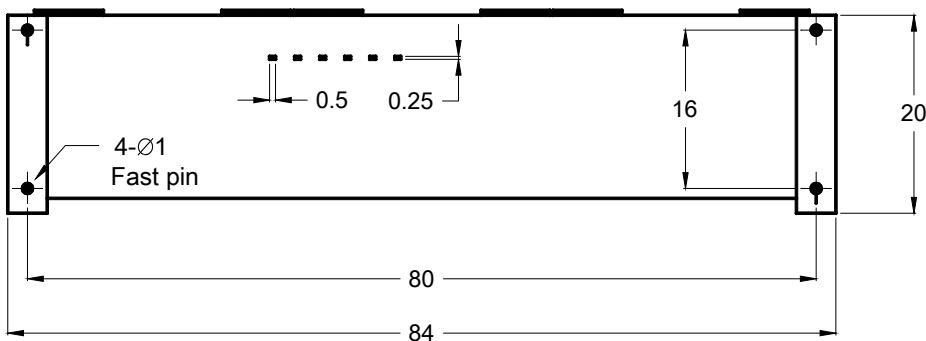
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Appearance, dimensions and pin identification

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



← Positive current flow direction



| Pin Assignment | |
|----------------|---------|
| ① | +15V |
| ② | -15V |
| ③ | GND |
| ④ | Output1 |
| ⑤ | Output2 |
| ⑥ | Output3 |