

# Topstek Current Transducer TMBH100A..TMBH1200A

## TMBH 100A~1200A

### 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



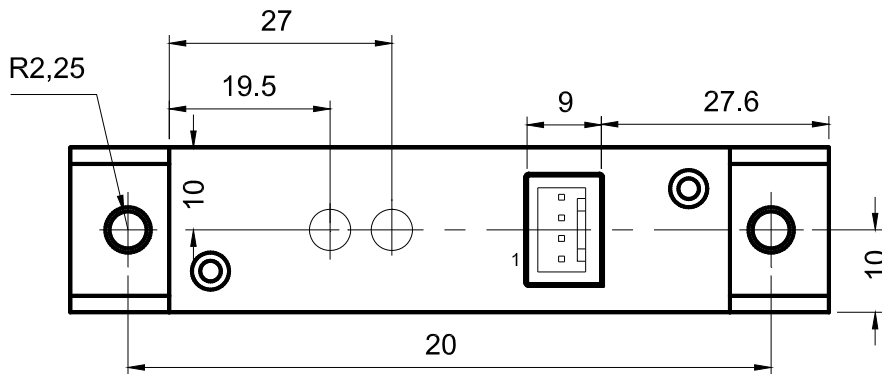
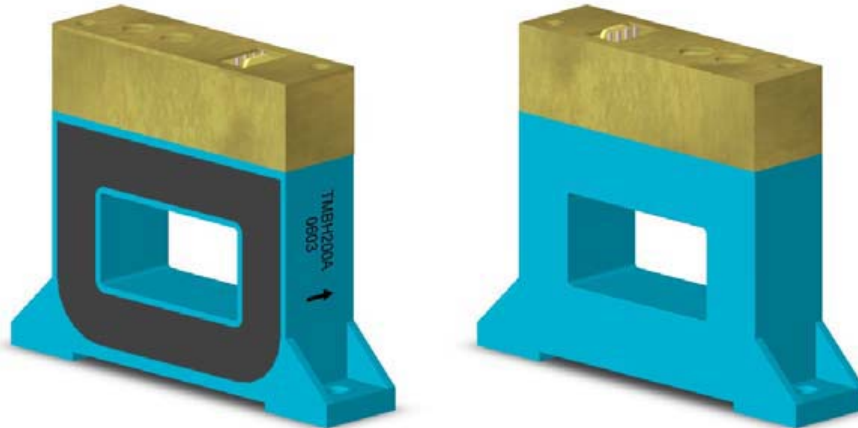
### Specifications

| Parameter                            | Symbol                           | Unit  | TMBH<br>100A                                            | TMBH<br>200A | TMBH<br>300A | TMBH<br>400A | TMBH<br>600A | TMBH<br>800A | TMBH<br>1000A | TMBH<br>1200A |
|--------------------------------------|----------------------------------|-------|---------------------------------------------------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|
| Nominal Input Current                | I <sub>fn</sub>                  | A DC  | ±100                                                    | ±200         | ±300         | ±400         | ±600         | ±800         | ±1000         | ±1200         |
| Linear Range                         | I <sub>fs</sub>                  | A DC  | ±300                                                    | ±600         | ±900         | ±1200        | ±1800        | ±2400        | ±2700         | ±2700         |
| Nominal Output Voltage               | V <sub>hn</sub>                  | V     | 4.0 V±1% at If=I <sub>fn</sub> ( R <sub>L</sub> =10kΩ)  |              |              |              |              |              |               |               |
| Offset Voltage                       | V <sub>os</sub>                  | mV    | Within ±40 mV @ I <sub>f</sub> =0, T <sub>a</sub> =25°C |              |              |              |              |              |               |               |
| Output Resistance                    | R <sub>OUT</sub>                 | Ω     | <100Ω                                                   |              |              |              |              |              |               |               |
| Hysteresis Error                     | V <sub>oh</sub>                  | mV    | Within ±25 mV @ I <sub>f</sub> =I <sub>fn</sub> →0      |              |              |              |              |              |               |               |
| Supply Voltage                       | V <sub>CC</sub> /V <sub>EE</sub> | V     | ±15V ±5%                                                |              |              |              |              |              |               |               |
| Linearity                            | ρ                                | %     | Within ±1% of I <sub>fn</sub>                           |              |              |              |              |              |               |               |
| Consumption Current                  | I <sub>CC</sub>                  | mA    | ±15 mA max                                              |              |              |              |              |              |               |               |
| Response Time (90%V <sub>hn</sub> )  | T <sub>r</sub>                   | μsec  | 10 μsec @ d I <sub>f</sub> /dt = I <sub>fn</sub> / μsec |              |              |              |              |              |               |               |
| Frequency bandwidth (-3dB)           | f <sub>BW</sub>                  | Hz    | DC to 50kHz                                             |              |              |              |              |              |               |               |
| Thermal Drift of Output              | -                                | %/°C  | Within ±0.1 %/°C @ I <sub>fn</sub>                      |              |              |              |              |              |               |               |
| Thermal Drift of Zero Current Offset | -                                | mV/°C | < ±3.0 mV/°C                                            | < ±2.0 mV/°C |              | < ±1.5 mV/°C |              |              |               |               |
| Dielectric Strength                  | -                                | V     | AC2.5KV X 60 sec                                        |              |              |              |              |              |               |               |
| Isolation Resistance @ 1000 VDC      | R <sub>IS</sub>                  | MΩ    | >1000 MΩ                                                |              |              |              |              |              |               |               |
| Operating Temperature                | T <sub>a</sub>                   | °C    | -15°C to 80°C                                           |              |              |              |              |              |               |               |
| Storage Temperature                  | T <sub>s</sub>                   | °C    | -20°C to 85°C                                           |              |              |              |              |              |               |               |
| Mass                                 | W                                | g     | 300 g                                                   |              |              |              |              |              |               |               |

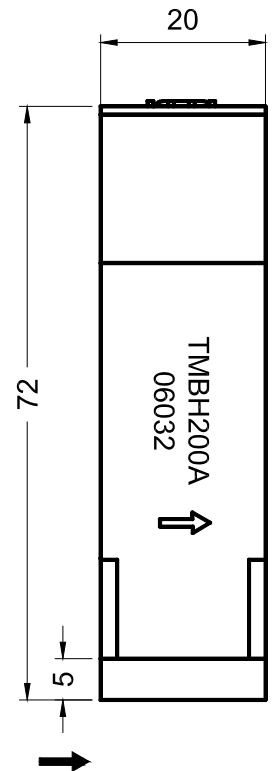
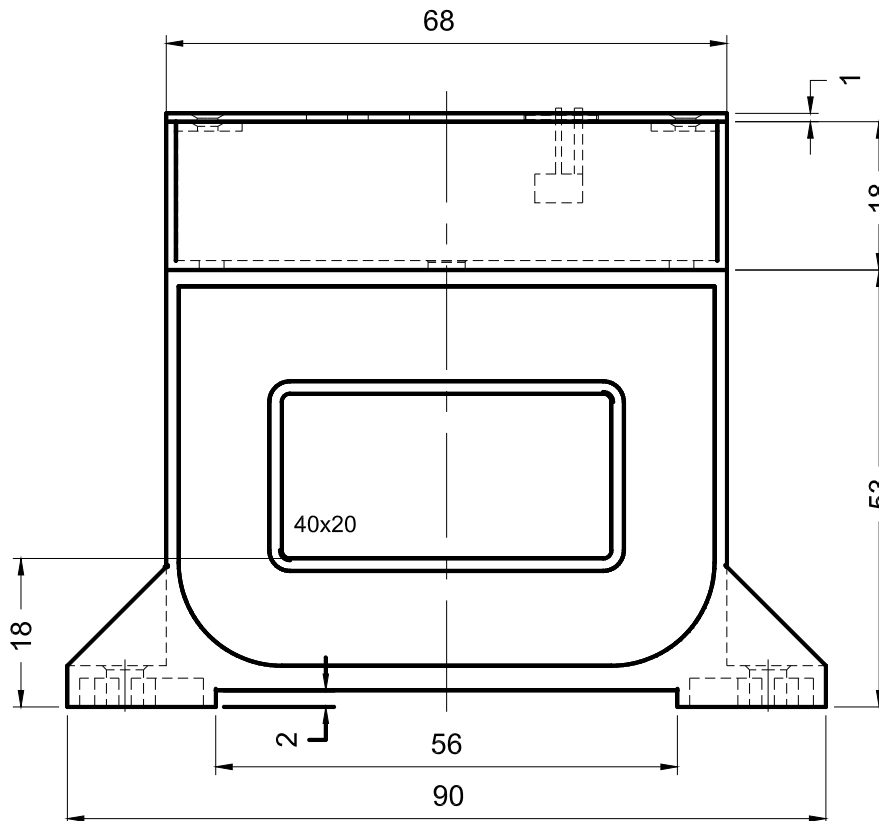
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## Appearance, dimensions and pin identification

II dimensions in mm  $\pm 0.5$ , holes  $-0, +0.5$  except otherwise noted.



| Pin Assignment |                  |
|----------------|------------------|
| 1              | +15V             |
| 2              | -15V             |
| 3              | V <sub>out</sub> |
| 4              | 0V               |



Positive current flow direction