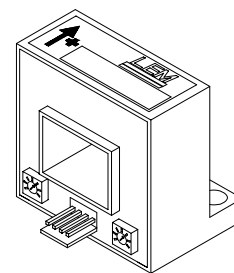


# Current Transducer HAL 50-S

$I_{PN} = 50 \text{ A}$

For the electronic measurement of DC, AC and pulsed currents, with a galvanic isolation between the primary (high power) circuit and the secondary (electronic) circuit.



## Electrical data

|             |   |                |            |
|-------------|---|----------------|------------|
| $I_{PN}$    | Primary nominal DC or rms current                 | 50             | A          |
| $I_P$       | Primary current, measuring range                  | 0 .. $\pm 150$ | A          |
| $\hat{I}_P$ | Overload capacity (Ampere Turns)                  | 30000          | A          |
| $V_{OUT}$   | Analogue output voltage @ $\pm I_{PN}$            | $\pm 4$        | V          |
| $R_L$       | Load resistance $T_A = 0 \dots +70^\circ\text{C}$ | $> 1$          | k $\Omega$ |
|             |   | $> 3$          | k $\Omega$ |
| $V_C$       | Supply voltage ( $\pm 5\%$ )                      | $\pm 15$       | V          |
| $I_C$       | Current consumption (max)                         | 25             | mA         |
| $V_b$       | Rms rated voltage <sup>1)</sup>                   | 500            | V          |
| $V_d$       | Rms voltage for AC isolation test, 50 Hz, 1 mn    | 3              | kV         |
| $R_{is}$    | Isolation resistance @ 500 V <sub>DC</sub>        | $> 500$        | M $\Omega$ |

## Accuracy - Dynamic performance data

|              |   |            |                      |
|--------------|---|------------|----------------------|
| $X$          | Accuracy <sup>2)</sup> @ $I_{PN}, T_A = 25^\circ\text{C}, @ \pm 15 \text{ V}$ | $\pm 1$    | %                    |
| $\epsilon_L$ | Linearity <sup>2)</sup>   | $\pm 0.5$  | %                    |
|              |   | Max        |                      |
| $V_{OE}$     | Electrical offset voltage @ $I_P = 0, T_A = 25^\circ\text{C}$                 | $\pm 10$   | mV                   |
| $V_{OM}$     | Residual offset voltage @ $I_P = 0$<br>after an overload of $3 \times I_{PN}$ | $\pm 10$   | mV                   |
|              |   | $\pm 2$    | mV/ $^\circ\text{K}$ |
| $TCE_G$      | Thermal drift of gain $T_A = -25 \dots +85^\circ\text{C}$                     | $\pm 0.05$ | %/ $^\circ\text{K}$  |
| $t_r$        | Response time @ 90 % of $I_P$   | $< 3$      | $\mu\text{s}$        |
| $di/dt$      | di/dt accurately followed   | $> 50$     | A/ $\mu\text{s}$     |
| $f$          | Frequency bandwidth (-3 dB) <sup>3)</sup>                                     | DC .. 50   | kHz                  |

## General data

|       |   |            |                  |
|-------|---|------------|------------------|
| $T_A$ | Ambient operating temperature                   | -25 .. +85 | $^\circ\text{C}$ |
| $T_S$ | Ambient storage temperature                     | -25 .. +85 | $^\circ\text{C}$ |
| $m$   | Mass  | 75         | g                |
|       | Standards                                       | Safety     | EN50178 (1994)   |
|       |   | EMC        | EN50082-2 (1992) |
|       |   |            | EN50081-1 (1992) |
|       | Deviation in output when tested to EN 61000-4-6 | $< 10$     | % of $I_{PN}$    |
|       | Deviation in output when tested to EN 61000-4-4 | $< 10$     | % of $I_{PN}$    |

## Features

- Open loop transducer using Hall Effect
- Panel mounting - Horizontal or Vertical
- Insulated plastic case to UL 94-V0.

## Advantages

- Very good linearity
- Very good accuracy
- Low temperature drift
- Wide frequency bandwidth
- Very low insertion losses
- High immunity to external interference
- Current overload capability
- Low power consumption
- Wide dynamic range, 50 to 600 A in one package.

## Applications

- AC variable speed drives and servo motor drives
- Static converters for DC motor drives
- Battery supplied applications
- Uninterruptable Power Supplies (UPS)
- Switched Mode Power Supplies (SMPS)
- Power supplies for welding applications.

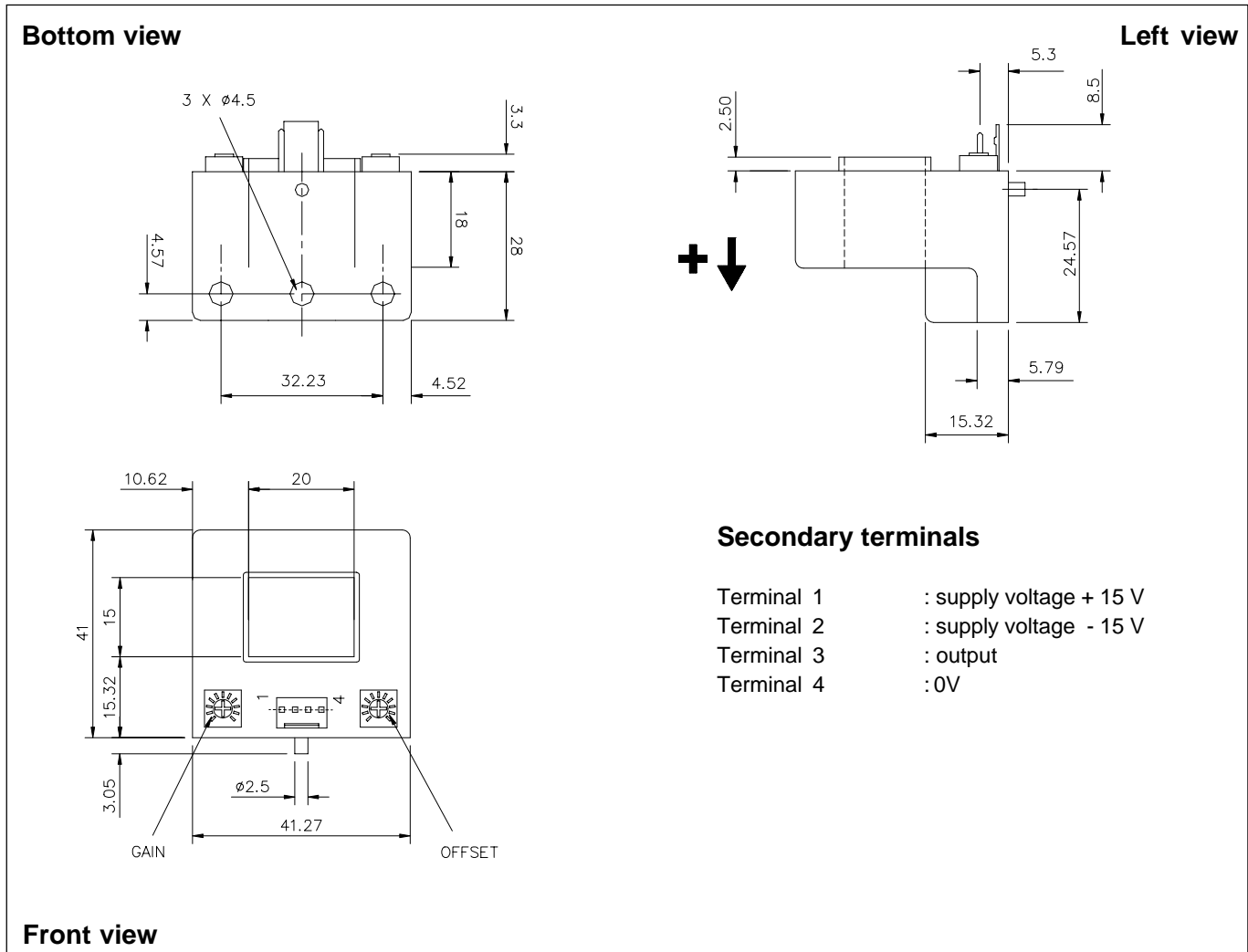
Notes : <sup>1)</sup> Overvoltage Category III, Pollution Degree 2

<sup>2)</sup> Excludes the electrical offset

<sup>3)</sup> Refer to derating curves in the technical file to avoid excessive core heating at high frequency

HAL50980903/1

## Dimensions HAL 50-S (in mm. 1 mm = 0.0394 inch)



### Mechanical characteristics

- General tolerance  $\pm 0.5$  mm
- Primary through-hole 20 mm x 15 mm
- Connection of secondary Molex 5045-04-A

### Remarks

- $V_{OUT}$  is positive when  $I_p$  flows in the direction of the arrow.
- Temperature of the primary conductor should not exceed 90°C.
- This is a standard model. For different versions (supply voltages, secondary connections, unidirectional measurements, operating temperatures, etc.) please contact us.