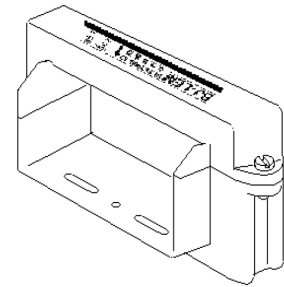


# Current Transducer HOP 500-SB/SP1 & HOP 800 to 2000-SB

$I_{PN} = 500 \dots 2000 \text{ A}$

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



## Electrical data

|           | Type                         | Primary nominal current rms | Primary current, measuring range |            |
|-----------|------------------------------|-----------------------------|----------------------------------|------------|
|           |                              | $I_{PN}$ (A)                | $I_{PM}$ (A)                     |            |
|           | HOP 500-SB/SP1               | 500                         | $\pm 1000$                       |            |
|           | HOP 800-SB                   | 800                         | $\pm 1600$                       |            |
|           | HOP 1000-SB                  | 1000                        | $\pm 2000$                       |            |
|           | HOP 1500-SB                  | 1500                        | $\pm 3000$                       |            |
|           | HOP 2000-SB                  | 2000                        | $\pm 3000$                       |            |
| $V_{OUT}$ | Output voltage (Analog)      |                             | $\pm 4$                          | V          |
| $R_L$     | Load resistance              |                             | $> 10$                           | k $\Omega$ |
| $V_C$     | Supply voltage ( $\pm 5\%$ ) |                             | $\pm 12 \dots 15$                | V          |
| $I_C$     | Current consumption (max)    |                             | 20                               | mA         |

## Accuracy - Dynamic performance data

|                |  |              |              |                  |
|----------------|--|--------------|--------------|------------------|
| $X$            | Accuracy <sup>1)</sup> @ $I_{PN}$ , $T_A = 25^\circ\text{C}$ , @ $\pm 12 \dots 15 \text{ V}$ ( $\pm 5\%$ ) | $\leq \pm 2$ |              | %                |
| $\epsilon_L$   | Linearity error <sup>1)</sup>  | $\leq \pm 1$ |              | %                |
| $V_{OE}$       | Electrical offset voltage @ $I_P = 0$ , $T_A = 25^\circ\text{C}$   | $\pm 10$     | Max $\pm 20$ | mV               |
| $V_{OM}$       | Magnetic offset voltage @ $I_P = 0$ and specified $R_M$ , after an overload of $3 \times I_{PN}$           | $\pm 10$     | $\pm 20$     | mV               |
| $V_{OT}$       | Temperature variation of $V_O$ - $10^\circ\text{C} \dots +70^\circ\text{C}$                                | $\pm 10$     | $\pm 25$     | mV               |
| $TC\epsilon_G$ | Thermal drift of the gain, $T_A = -10 \dots +70^\circ\text{C}$   | $\pm 10$     | $\pm 40$     | mV               |
| $t_r$          | Response time to 90 % of $I_{PN}$ step   | $< 10$       |              | $\mu\text{s}$    |
| $di/dt$        | $di/dt$ accurately followed  | 50           |              | A/ $\mu\text{s}$ |
| <b>BW</b>      | Frequency bandwidth (-1 dB)  | DC .. 10     |              | kHz              |

## General data

|       |                               |              |                  |
|-------|-------------------------------|--------------|------------------|
| $T_A$ | Ambient operating temperature | - 10 .. + 70 | $^\circ\text{C}$ |
| $T_S$ | Ambient storage temperature   | - 25 .. + 85 | $^\circ\text{C}$ |
| $m$   | Mass                          | 590          | g                |
|       | Standard                      | EN 50178     |                  |

## Features

- Open loop Hall effect transducer
- Busbar mounting or panel mounting
- Isolated plastic case recognized according to UL 94-V0.

## Advantages

- Low power consumption
- Split core easy for mounting
- High isolation between the primary and the secondary circuit
- Through-hole, no insertion losses.

## Applications

- Power supplies for TELECOM (monitoring & measuring)
- Uninterruptible Power Supplies (UPS)
- Switched Mode Power Supplies (SMPS)
- Electrical chemistry
- Chopper
- Battery supplied applications.

## Application domain

- Industrial.

Note: <sup>1)</sup> Excludes the electrical offset.

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### Isolation characteristics

|             |   |       |    |
|-------------|---|-------|----|
| $V_d$       | Rms voltage for AC isolation test, 50 Hz, 1 min | 3     | kV |
| $\hat{V}_w$ | Impulse withstand voltage 1.2/50 $\mu$ s        | > 6   | kV |
| $V_e$       | Partial discharge extinction voltage rms        | > 1.5 | kV |
|             |   | Min   |    |
| <b>dCp</b>  | Creepage distance <sup>1)</sup>                 | 21.2  | mm |
| <b>dCI</b>  | Clearance distance <sup>2)</sup>                | 16    | mm |
| <b>CTI</b>  | Comparative Tracking Index (group IIIa)         | 250   |    |

### Applications examples

According to EN 50178 and IEC 61010-1 standards and following conditions:

- Over voltage category OV 3
- Pollution degree PD2
- Non-uniform field

|   | EN 50178                | IEC 61010-1     |
|---|-------------------------|-----------------|
| <b>dCp, dCI, <math>\hat{V}_w</math></b> | Rated isolation voltage | Nominal voltage |
| Single isolation                        | 1000 V                  | 1000 V          |
| Reinforced isolation                    | 500 V                   | 500 V           |

Notes: <sup>1)</sup>On housing from pin to primary hole  
<sup>2)</sup>On housing from pin to primary hole.

### Safety



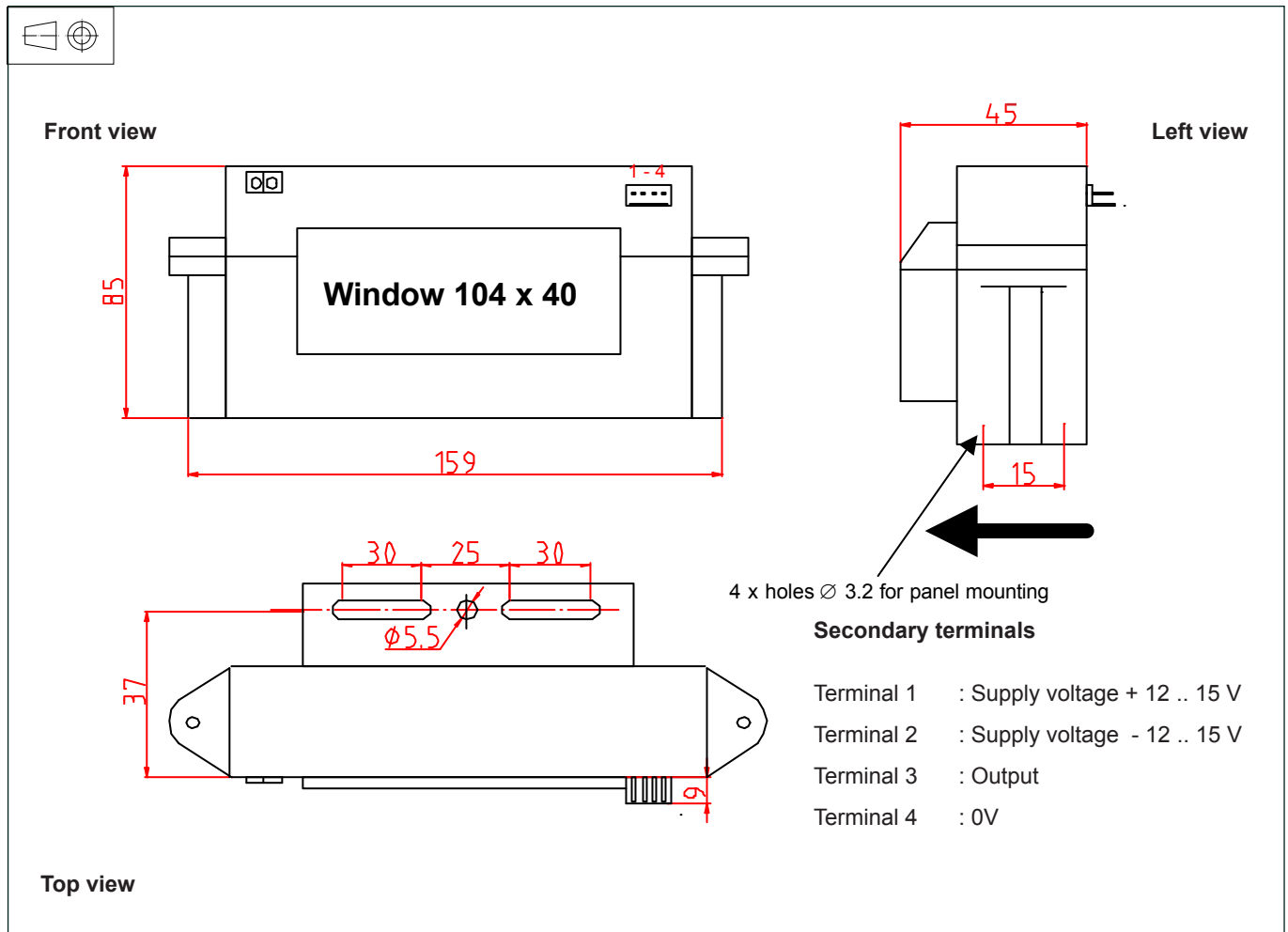
This transducer must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the manufacturer's operating instructions.



Caution, risk of electrical shock

When operating the transducer, certain parts of the module can carry hazardous voltage (eg. primary busbar, power supply). Ignoring this warning can lead to injury and/or cause serious damage. This transducer is a build-in device, whose conducting parts must be inaccessible after installation. A protective housing or additional shield could be used. Main supply must be able to be disconnected.

## Dimensions HOP 500-SB/SP1 & HOP 800 to 2000-SB (in mm. 1 mm = 0.0394 inch)



### Mechanical characteristics

- General tolerance  $\pm 1$  mm
- Primary through hole 104 x 40 mm
- Busbar fastening or panel mounting 1 hole  $\varnothing$  5.5 mm and 2 slot 5.5 x 30 mm
- Panel mounting 4 x holes 3.2 mm
- Distance between holes axes 15 x 150 mm
- Secondary connection MOLEX 5045-04AG  
"Mating connector provided with the transducer"

### Remarks

- $V_{OUT}$  is positive when  $I_p$  flows in the direction of the arrow.
- The return busbar and primary conductor elbow must be located at least at 2.5 x window length more far away from the transducer case.
- Temperature of the primary busbar cannot exceed 90°C.
- Dynamic performances are best with a primary busbar completely filling the primary aperture.