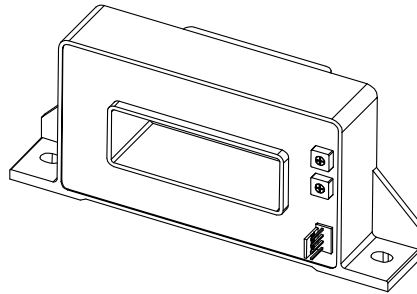


HS3V H00 SERIES

Current Sensor

Model Number:

HS3V 500 H00
 HS3V 600 H00
 HS3V 800 H00
 HS3V 1000 H00
 HS3V 1500 H00
 HS3V 2000 H00
 HS3V 2500 H00
 HS3V 3000 H00



For the electronic measurement of current: DC, AC, pulsed..., with galvanic separation between the primary and the secondary circuits.

Features

- ✧ Open loop current sensor using the Hall effect
- ✧ Galvanic separation between primary and secondary
- ✧ Insulating plastic case recognized according to UL 94-V0
- ✧ No insertion losses
- ✧ Small size
- ✧ Standards:
 - IEC 60664-1:2020
 - IEC 61800-5-1:2022
 - IEC 62109-1:2010

Applications

- ✧ AC variable speed
- ✧ Uninterruptible power supply (UPS)
- ✧ Static converters for DC motor drives
- ✧ Switch Mode Power Supplies (SMPS)
- ✧ Power supplies for welding applications
- ✧ Battery management
- ✧ Wind energy inverter

Safety

This sensor must be used according to IEC 61800-5-1.

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

Caution, risk of electrical shock!



When operating the sensor, certain parts of the module can carry hazardous voltage (e.g., Primary busbar, power supply). Ignore this warning can lead to injury and/or cause serious damage.

This sensor is a built-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.

HS3V H00 SERIES

Absolute maximum ratings(not operating)

| Parameter | Symbol | Unit | Value |
|------------------------------------|-----------|------|---------|
| Supply voltage | V_C | V | ± 15.75 |
| Primary conductor temperature | T_B | °C | 100 |
| ESD rating, Human Body Model (HBM) | V_{ESD} | kV | 4 |

- ※ Stresses above these ratings may cause permanent damage.
- ※ Exposure to absolute maximum ratings for extended periods may degrade reliability.

Environmental and mechanical characteristics

| Parameter | Symbol | Unit | Min | Typ | Max | Comment |
|-------------------------------|--------|------|-----|-----|-----|---------|
| Ambient operating temperature | T_A | °C | -40 | | 85 | |
| Ambient storage temperature | T_S | °C | -40 | | 90 | |
| Mass | m | g | | 500 | | |

Insulation coordination

| Parameter | Symbol | Unit | Value | Comment |
|---|----------|------|---------|---|
| Rms voltage for AC insulation test @ 50Hz, 1min | V_d | kV | 5 | According to IEC 60664-1 |
| Impulse withstand voltage 1.2/50μs | V_w | kV | 8.3 | According to IEC 60664-1 |
| Clearance (pri.- sec.) | d_{c1} | mm | 12.7 | |
| Creepage distance (pri.- sec.) | d_{cp} | mm | 15.7 | |
| Plastic case | - | - | UL94-V0 | |
| Comparative tracking index | CTI | PLC | 3 | |
| Application example | - | - | 600V | Reinforced insulation, according to IEC 61800-5-1, IEC 62109-1CATIII, PD2 |
| Application example | - | - | 1000V | Basic insulation, according to IEC 61800-5-1, IEC 62109-1CATIII, PD2 |

HS3V H00 SERIES

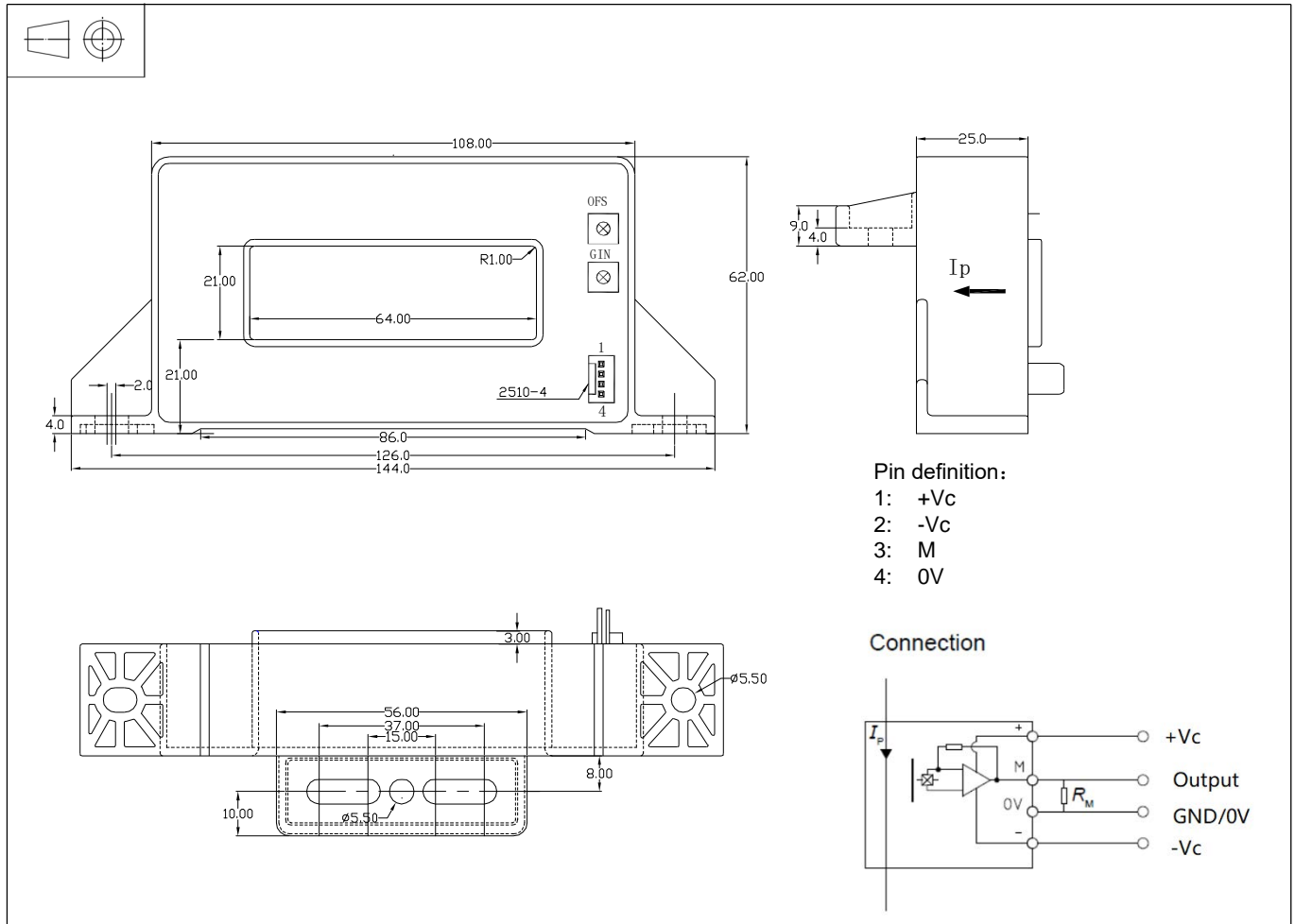
Electrical data

※ With $T_A = 25^\circ\text{C}$, $V_C = \pm 15\text{V}$, $R_L = 10\text{k}\Omega$, unless otherwise noted.

| Parameter | Symbol | Unit | Min | Typ | Max | Comment |
|---|-----------------|---------------|-------------|-------------|-------------|---|
| Primary nominal rms current | I_{PN} | A | -500 | | 500 | HS3V 500 H00 |
| | | | -600 | | 600 | HS3V 600 H00 |
| | | | -800 | | 800 | HS3V 800 H00 |
| | | | -1000 | | 1000 | HS3V 1000 H00 |
| | | | -1500 | | 1500 | HS3V 1500 H00 |
| | | | -2000 | | 2000 | HS3V 2000 H00 |
| | | | -2500 | | 2500 | HS3V 2500 H00 |
| | | | -3000 | | 3000 | HS3V 3000 H00 |
| Primary current, measuring range | I_{PM} | A | -1500 | | 1500 | HS3V 500 H00 |
| | | | -1800 | | 1800 | HS3V 600 H00 |
| | | | -2400 | | 2400 | HS3V 800 H00 |
| | | | -3000 | | 3000 | HS3V 1000 H00 |
| | | | -4500 | | 4500 | HS3V 1500 H00 |
| | | | -5500 | | 5500 | HS3V 2000...3000 H00 |
| Supply voltage | V_C | V | | ± 15 | | @ 5% |
| Current consumption | I_C | mA | | 20 | | |
| Load resistance | R_L | k Ω | 10 | | | |
| Output voltage (Analog) @ I_{PN} | V_{OUT} | V | ± 3.960 | ± 4.000 | ± 4.040 | |
| Electrical offset voltage | V_{OE} | mV | -20 | | 20 | |
| Temperature coefficient of V_{OE} | TCV_{OE} | mV/K | -1 | | 1 | @ $-40^\circ\text{C} \sim 85^\circ\text{C}$ |
| Theoretical sensitivity | G_{th} | mV/A | | 8.00 | | HS3V 500 H00 |
| | | | | 6.67 | | HS3V 600 H00 |
| | | | | 5.00 | | HS3V 800 H00 |
| | | | | 4.00 | | HS3V 1000 H00 |
| | | | | 2.67 | | HS3V 1500 H00 |
| | | | | 2.00 | | HS3V 2000 H00 |
| | | | | 1.60 | | HS3V 2500 H00 |
| | | | | 1.33 | | HS3V 3000 H00 |
| Sensitivity error | ε_G | % | -1.0 | | 1.0 | Exclusive of V_{OE} |
| Temperature of G | TCG | %/K | -0.1 | | 0.1 | @ $-40^\circ\text{C} \sim 85^\circ\text{C}$ |
| Linearity error 0... I_{PN} | ε_L | % of I_{PN} | -1.0 | | 1.0 | Exclusive of V_{OE} |
| Hysteresis offset voltage @ $I_P=0$ after $1 \times I_{PN}$ | V_{OM} | mV | -30 | | 30 | |
| Accuracy @ I_{PN} | X | % of I_{PN} | -1 | | 1 | Exclusive of V_{OE} |
| Response time @ 90% of I_{PN} | t_r | μs | | | 5 | |
| Frequency bandwidth(-3dB) | BW | kHz | 25 | | | |

HS3V H00 SERIES

Dimensions (in mm. 1 mm = 0.0394 inch)



Mechanical characteristics

- ◇ General tolerance ±0.5 mm
- ◇ Connection of secondary Molex 5045-04A
- ◇ Primary hole 64mm×21mm
- ◇ Sensor 2 or 3pc Φ5.5 mm through-hole
2 or 3pc M5 metal screws

Recommended fastening torque 1.5 N•m (±10%)

Remarks

- ◇ V_{OUT} and I_P are in the same direction, when I_P flows in the direction of arrow.
- ◇ Temperature of the primary conductor should not exceed 100°C.
- ◇ Dynamic performances (di/dt and response time) are best with a single bar completely filling the primary hole.

This is a standard model. For different applications (measurement, secondary connections...), please contact CHIPSENSE.