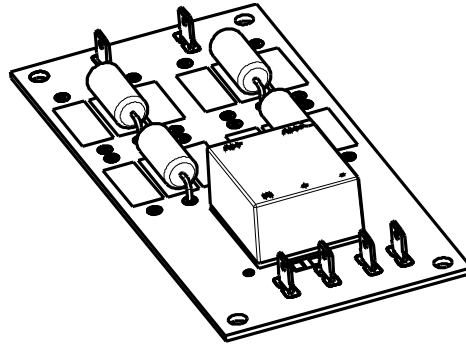# VN2A 1100 PB03

## Current Sensor

## Model Number：

VN2A 1100 PB03

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

## Features

- ✧ Closed loop (compensated) voltage sensor using the Hall Effect
- ✧ Insulating plastic case recognized according to UL 94-V0
- ✧ Small size
- ✧ High accuracy
- ✧ Supply voltage:±15V
- ✧ Very good linearity
- ✧ Very low offset drift over temperature
- ✧ Standards:
  - ■ EN50178: 1997
  - ■ IEC 61010-1: 2000
  - ■ UL 508: 2010

## Applications

- ✧ AC variable speed
- ✧ Uninterruptible Power Supplies (UPS)
- ✧ Static converters for DC motor drives
- ✧ Switch Mode Power Supplies (SMPS)
- ✧ Power supplies for welding applications

## Safety

This sensor must be used according to IEC61010-1.

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.

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# VN2A 1100 PB03

## Absolute maximum ratings(not operating)

| Parameter | Symbol | Unit | Value |
|---|---|---|---|
| Supply voltage | $V_C$ | V | ±15 |

※ 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 | $T_A$ | ℃ | –40 | | 85 | |
| Ambient storge temperature | $T_S$ | ℃ | –45 | | 100 | |
| Mass | $m$ | g | | 60 | | |
| Standards | EN 50178, UL 508 | | | | | |

## Insulation coordination

| Parameter | Symbol | Unit | Value | Comment |
|---|---|---|---|---|
| Rms voltage for AC insulation test @ 50Hz,1min | $V_d$ | kV | 4.1 | |
| Plastic case | - | - | UL94-V0 | |
| Comparative tracking index | $CTI$ | PLC | 3 | |
| Application example | - | - | 600V CAT Ⅲ PD2 | Reinforced insulation, according to EN50178，IEC 61010-1 |
| Application example | - | - | 1500V CAT Ⅲ PD2 | Basic insulation, according to EN 50178，IEC 61010-1 |

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# VN2A 1100 PB03

## Electrical data

※ With $T_A$ = 25℃, $V_C$ = ±15V, $R_L$ = 10kΩ, unless otherwise noted.

| Parameter | Symbol | Unit | Min | Typ | Max | Comment |
|---|---|---|---|---|---|---|
| Primary nominal rms voltage | $V_{PN}$ | V | | ±1100 | | |
| Maximum measuring voltage | $V_{PM}$ | V | −1500 | | 1500 | |
| Output nominal rms voltage | $V_{SN}$ | V | | ±4 | | |
| Supply voltage | $V_C$ | V | | ±15V | | @ ±5% |
| Conversion ratio | $K_N$ | - | | 1100V:4V | | |
| Coil turn ratio | $N_P / N_S$ | - | | 2500:1000 | | |
| Current consumption@ $V_{PN}$ | $I_C$ | mA | | 25 | | |
| Offset voltage | $V_0$ | mV | 0 | | 40 | |
| Temperature drift of offset voltage | $V_{0T}$ | mV | 0 | 15 | 80 | @ −25℃~85℃ |
| | | | 0 | 20 | 120 | @ −40℃~85℃ |
| Sensitivity error | $\varepsilon_G$ | % | −0.4 | | 0.4 | |
| Linearity error | $\varepsilon_L$ | % of $I_{PN}$ | −0.2 | | 0.2 | |
| Accuracy@ $I_{PN}$ | $X$ | % of $I_{PN}$ | −0.6 | | 0.6 | |
| Response time@ 90% of $I_{PN}$ | $t_r$ | μs | | 25 | | |

# VN2A 1100 PB03

## Dimensions(Unit mm)
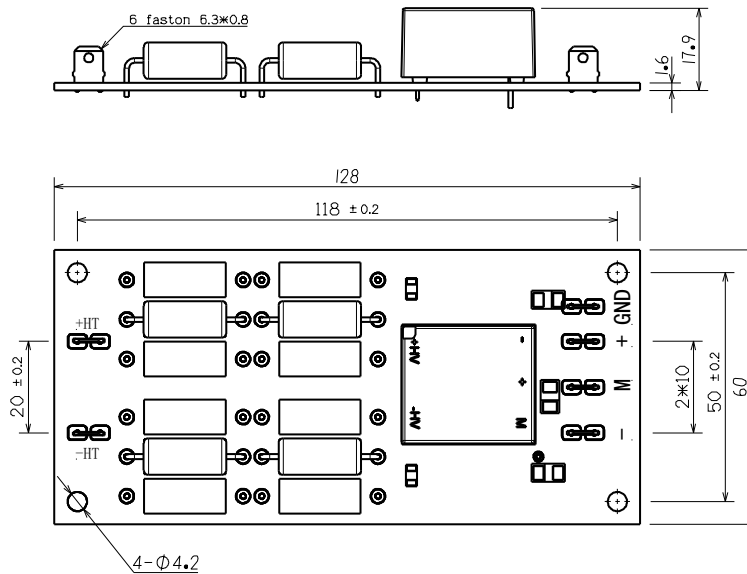


## Mechanical characteristic

| | |
|---|---|
| ◇ General tolerance | ±0.3 mm |
| ◇ Sensor | 4pc Φ4.2 mm through-hole |
| ◇ Primary connection | 2pc Faston 6.3×0.8mm |
| ◇ Secondary connection | 3pc Faston 6.3×0.8mm |

## Remarks

◇  $V_S$ is positive when $V_P$ is connected to +HV.

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

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