# CURRENT SENSOR

PRODUCT SERIES: STK-HO/4

PRODUCT PARNUMBER: STK-50HO/4, STK-100HO/4
STK-150HO/4, STK-200HO/4
STK-240HO/4, STK-250HO/4

REVISION: Ver 1.1

Sinomags Technology Co., Ltd.
Web site: www.sinomags.com

# CONTENT

1. Description ..... 2
2. Electrical performance of STK-50HO/4 ..... 3
3. Electrical performance of STK-100HO/4 ..... 5
4. Electrical performance of STK-150HO/4 ..... 7
5. Electrical performance of STK-200HO/4 ..... 9
6. Electrical performance of STK-240HO/4 ..... 11
7. Electrical performance of STK-250HO/4 ..... 13
8. Output voltage VS primary current of STK-HO/4 ..... 15
9. Frequency bandwidth ..... 18
10. Step response time ..... 18
11. Dimensions & Pins & Footprint ..... 19
12. General information on OCD ..... 22

# 1. Description

STK-HO/4 current sensor is based on the open loop principle. DC, AC, pulses and any kind of irregular wave can be measured by the current sensor under the isolated conditions.

## Typical application

- AC Variable speed drives
- Power supplies for welding applications
- Switched model power supplies (SMPS)
- Battery supplied applications
- UPS
- MPPT
- Static converters for DC motor drives
- Combiner box

## General parameters

| Parameter | Symbol | Unit | Value |
|---|---|---|---|
| Working temperature | T_a | ℃ | -40 ~ 105 |
| Storage temperature | T_stg | ℃ | -40 ~ 105 |
| Mass | m | g | 32 |

## Absolute parameters

| Parameters | Symbol | Unit | Value |
|---|---|---|---|
| Supply voltage (not-destructive) | V_c | V | 6 |
| ESD rating (HBM) | U_esd | kV | 4 |

Remark: the unrecoverable damage may occur when the product works on the conditions over the absolute maximum ratings. Long-time working on the absolute maximum ratings may cause the degradation on performance and reliability.

## Isolation parameters

| Parameter | Symbol | Unit | Value | Remark |
|---|---|---|---|---|
| RMS voltage for AC test | Ud | kV | 4.3 | @ 50Hz/1 min |
| Impulse withstand voltage | Ûw | kV | 8 | 1.2/50μs |
| Case material | - | - | V0 | According to UL 94 |
| Comparative tracking index | CTI | - | 600 | |
| Clearance (pri. - sec.) | D_ci | mm | >8 | Shortest distance through air |
| Creepage distance (pri. - sec.) | D_cp | mm | >8 | When mounted on PCB with recommended layout |

## 2. Electrical performance of STK-50HO/4

Vcc = 5 V, T_A = 25℃

| Parameter | Symbol | Unit | Min | Typ | Max | Comment |
|---|---|---|---|---|---|---|
| Primary nominal current rms | I_pn | A | | 50 | | |
| Primary current measuring range | I_pm | A | -125 | | 125 | |
| Supply voltage | Vcc | V | 4.75 | 5 | 5.25 | |
| Current consumption | Icc | mA | | 6 | 10 | |
| Reference voltage (output) | Vref | V | 2.48 | 2.5 | 2.52 | Output function |
| Electrical offset voltage @ I P = 0 A | Voe | mV | -8 | | 8 | Vout – Vref @ Vref = 2.5 V |
| Electrical offset current referred to primary | Ioe | A | -0.5 | | 0.5 | |
| Output voltage range @ I P M | V_FS | V | -2 | | 2 | ((Vout - Vref )@ I_pm) – Voe |
| Internal Vref resistance | R_ref | Ω | 4.5 | 12 | 19.5 | Series |
| Internal output resistance | R_out | Ω | 4.5 | 12 | 19.5 | Series |
| Difference of output resistance (R_ref – R_out) | Roe | Ω | -5 | | 5 | Series |
| OCD output mask time ① | Tmask | μs | | 2 | | |
| OCD output hold time ② | Thold | ms | | 1.5 | | |
| Theoretical gain | G | mV/A | | 16 | | 800 mV @ I P N |
| Temperature drift of Voe | Voe_TRange | mV | -10 | | 10 | -40℃ ~ 105℃ |
| Error of gain | Err_G | %G_th | -0.5 | | 0.5 | Trimmed in the factory @ 25℃ |
| Temperature drift of gain | G_TR | %G_th | -1 | | 1 | @ -40℃~105℃ |
| Rated linearity error | Non-L_pn | %I_pn | -0.5 | | 0.5 | Within ±I_pn |
| Linearity error @ I_pm | Non-L_pm | %I_pm | -0.5 | | 0.5 | ±I_pm |
| Step response time | t_res | μs | | 1.5 | 2 | @ 90% of I_pn |
| Frequency bandwidth (-3dB) | BW | kHz | | 200 | | No RC circuit |
| Output voltage noise | Vnoise | mVpp | | 4.4 | | @140kHz Sampling Rate |
| Primary current, detection threshold ③ | I_pth | A | | 2.93 * I_pn | | Peak value ±10% overcurrent detection OCD |
| Accuracy @ 25℃ | X | % of I_pn | -1 | | 1 | @ 25℃ |
| Accuracy @ -40℃~105℃ ④ | X_TRange | % of I_pn | -3 | | 3 | -40℃ ~ 105℃ |

Remarks:

① ②. To prevent nuisance tripping, a tmask time is used. If an over current occurs, but does not persist for the duration of tmask, it does not trigger the fault pin. This prevents short transient spikes from causing erroneous fault detections. In the event where transient error reporting is desired, the tmask can be disabled. If the fault is triggered, it will remain active for a minimum time of thold and up to the end of the fault condition, whichever is greater.

③. STK-50HO/4 products may be ordered on request with a dedicated setting of the Trigger current . The product has a built-in overcurrent detection function, When the output voltage detected by the product exceeds the threshold, it is judged to be overcurrent and the output of fault pin changes to low level .

④. the accuracy @ -40℃~105℃, X_TRange = (((Vout – Vref)@ In @ T_x) – Voe@ 25℃ – G_th * In) / V_FS, where T_x represents present temperature, G_th is fitted gain at room temperature .

## 3. Electrical performance of STK-100HO/4

Vcc = 5 V, T_A = 25℃

| Parameter | Symbol | Unit | Min | Typ | Max | Comment |
|---|---|---|---|---|---|---|
| Primary nominal current rms | I_pn | A | | 100 | | |
| Primary current measuring range | I_pm | A | -250 | | 250 | |
| Supply voltage | Vcc | V | 4.75 | 5 | 5.25 | |
| Current consumption | Icc | mA | | 6 | 10 | |
| Reference voltage (output) | Vref | V | 2.48 | 2.5 | 2.52 | Output function |
| Electrical offset voltage @ I P = 0 A | Voe | mV | -8 | | 8 | Vout – Vref @ Vref = 2.5 V |
| Electrical offset current referred to primary | Ioe | A | -1.5 | | 1.5 | |
| Output voltage range @ I P M | V_FS | V | -2 | | 2 | ((Vout - Vref )@ I_pm) – Voe |
| Internal Vref resistance | R_ref | Ω | 4.5 | 12 | 19.5 | Series |
| Internal output resistance | R_out | Ω | 4.5 | 12 | 19.5 | Series |
| Difference of output resistance (R_ref – R_out) | Roe | Ω | -5 | | 5 | Series |
| OCD output mask time ① | Tmask | μs | | 2 | | |
| OCD output hold time ② | Thold | ms | | 1.5 | | |
| Theoretical gain | G | mV/A | | 8 | | 800 mV @ I P N |
| Temperature drift of Voe | Voe_TRange | mV | -10 | | 10 | -40℃ ~ 105℃ |
| Error of gain | Err_G | %G_th | -0.5 | | 0.5 | Trimmed in the factory @ 25℃ |
| Temperature drift of gain | G_TR | %G_th | -1 | | 1 | @ -40℃~105℃ |
| Rated linearity error | Non-L_pn | %I_pn | -0.5 | | 0.5 | Within ±I_pn |
| Linearity error @ I_pm | Non-L_pm | %I_pm | -0.5 | | 0.5 | ±I_pm |
| Step response time | t_res | μs | | 1.5 | 2 | @ 90% of I_pn |
| Frequency bandwidth (-3dB) | BW | kHz | | 200 | | No RC circuit |
| Output voltage noise | Vnoise | mVpp | | 4.4 | | @140kHz Sampling Rate |
| Primary current, detection threshold ③ | I_pth | A | | 2.93 * I_pn | | Peak value ±10% overcurrent detection OCD |
| Accuracy @ 25℃ | X | % of I_pn | -1 | | 1 | @ 25℃ |
| Accuracy @ -40℃~105℃ ④ | X_TRange | % of I_pn | -3 | | 3 | -40℃ ~ 105℃ |

Remarks:

① ②. To prevent nuisance tripping, a tmask time is used. If an over current occurs, but does not persist for the duration of tmask, it does not trigger the fault pin. This prevents short transient spikes from causing erroneous fault detections. In the event where transient error reporting is desired, the tmask can be disabled. If the fault is triggered, it will remain active for a minimum time of thold and up to the end of the fault condition, whichever is greater.

③. STK-100HO/4 products may be ordered on request with a dedicated setting of the Trigger current . The product has a built-in overcurrent detection function, When the output voltage detected by the product exceeds the threshold, it is judged to be overcurrent and the output of fault pin changes to low level .

④. the accuracy @ -40℃~105℃, X_TRange = (((Vout – Vref)@ In @ T_x) – Voe@ 25℃ – G_th * In) / V_FS, where T_x represents present temperature, G_th is fitted gain at room temperature .

# 4. Electrical performance of STK-150HO/4

Vcc = 5 V, T_A = 25℃

| Parameter | Symbol | Unit | Min | Typ | Max | Comment |
|---|---|---|---|---|---|---|
| Primary nominal current rms | I_pn | A | | 150 | | |
| Primary current measuring range | I_pm | A | -375 | | 375 | |
| Supply voltage | Vcc | V | 4.75 | 5 | 5.25 | |
| Current consumption | Icc | mA | | 6 | 10 | |
| Reference voltage (output) | Vref | V | 2.48 | 2.5 | 2.52 | Output function |
| Electrical offset voltage @ I P = 0 A | Voe | mV | -8 | | 8 | Vout – Vref @ Vref = 2.5 V |
| Electrical offset current referred to primary | Ioe | A | -2.56 | | 2.56 | |
| Output voltage range @ I P M | V_FS | V | -2 | | 2 | ((Vout - Vref )@ I_pm) - Voe |
| Internal Vref resistance | R_ref | Ω | 4.5 | 12 | 19.5 | Series |
| Internal output resistance | R_out | Ω | 4.5 | 12 | 19.5 | Series |
| Difference of output resistance (R_ref – R_out) | Roe | Ω | -5 | | 5 | Series |
| OCD output mask time ① | Tmask | μs | | 2 | | |
| OCD output hold time ② | Thold | ms | | 1.5 | | |
| Theoretical gain | G | mV/A | | 5.333 | | 800 mV @ I P N |
| Temperature drift of Voe | Voe_TRange | mV | -10 | | 10 | -40℃ ~ 105℃ |
| Error of gain | Err_G | %G_th | -0.5 | | 0.5 | Trimmed in the factory @ 25℃ |
| Temperature drift of gain | G_TR | %G_th | -1 | | 1 | @ -40℃~105℃ |
| Rated linearity error | Non-L_pn | %I_pn | -0.5 | | 0.5 | Within ±I_pn |
| Linearity error @ I_pm | Non-L_pm | %I_pm | -0.5 | | 0.5 | ±I_pm |
| Step response time | t_res | μs | | 1.5 | 2 | @ 90% of I_pn |
| Frequency bandwidth (-3dB) | BW | kHz | | 200 | | No RC circuit |
| Output voltage noise | Vnoise | mVpp | | 4.4 | | @140kHz Sampling Rate |
| Primary current, detection threshold ③ | I_pth | A | | 2.93 * I_pn | | Peak value ±10% overcurrent detection OCD |
| Accuracy @ 25℃ | X | % of I_pn | -1 | | 1 | @ 25℃ |
| Accuracy @ -40℃~105℃ ④ | X_TRange | % of I_pn | -3 | | 3 | -40℃ ~ 105℃ |

Remarks:

① ②. To prevent nuisance tripping, a tmask time is used. If an over current occurs, but does not persist for the duration of tmask, it does not trigger the fault pin. This prevents short transient spikes from causing erroneous fault detections. In the event where transient error reporting is desired, the tmask can be disabled. If the fault is triggered, it will remain active for a minimum time of thold and up to the end of the fault condition, whichever is greater.

③. STK-150HO/4 products may be ordered on request with a dedicated setting of the Trigger current . The product has a built-in overcurrent detection function, When the output voltage detected by the product exceeds the threshold, it is judged to be overcurrent and the output of fault pin changes to low level .

④. the accuracy @ -40℃~105℃, X_TRange = (((Vout – Vref)@ In @ T_x) – Voe@ 25℃ – G_th * In) / V_FS, where T_x represents present temperature, G_th is fitted gain at room temperature .

## 5. Electrical performance of STK-200HO/4

Vcc = 5 V, T_A = 25℃

| Parameter | Symbol | Unit | Min | Typ | Max | Comment |
|---|---|---|---|---|---|---|
| Primary nominal current rms | I_pn | A | | 200 | | |
| Primary current measuring range | I_pm | A | -500 | | 500 | |
| Supply voltage | Vcc | V | 4.75 | 5 | 5.25 | |
| Current consumption | Icc | mA | | 6 | 10 | |
| Reference voltage (output) | Vref | V | 2.48 | 2.5 | 2.52 | Output function |
| Electrical offset voltage @ I P = 0 A | Voe | mV | -8 | | 8 | Vout – Vref @ Vref = 2.5 V |
| Electrical offset current referred to primary | Ioe | A | -2 | | 2 | |
| Output voltage range @ I P M | V_FS | V | -2 | | 2 | ((Vout - Vref )@ I_pm) - Voe |
| Internal Vref resistance | R_ref | Ω | 4.5 | 12 | 19.5 | Series |
| Internal output resistance | R_out | Ω | 4.5 | 12 | 19.5 | Series |
| Difference of output resistance (R_ref – R_out) | Roe | Ω | -5 | | 5 | Series |
| OCD output mask time ① | Tmask | μs | | 2 | | |
| OCD output hold time ② | Thold | ms | | 1.5 | | |
| Theoretical gain | G | mV/A | | 4 | | 800 mV @ I P N |
| Temperature drift of Voe | Voe_TRange | mV | -10 | | 10 | -40℃ ~ 105℃ |
| Error of gain | Err_G | %G_th | -0.5 | | 0.5 | Trimmed in the factory @ 25℃ |
| Temperature drift of gain | G_TR | %G_th | -1 | | 1 | @ -40℃~105℃ |
| Rated linearity error | Non-L_pn | %I_pn | -0.5 | | 0.5 | Within ±I_pn |
| Linearity error @ I_pm | Non-L_pm | %I_pm | -0.5 | | 0.5 | ±I_pm |
| Step response time | t_res | μs | | 1.5 | 2 | @ 90% of I_pn |
| Frequency bandwidth (-3dB) | BW | kHz | | 200 | | No RC circuit |
| Output voltage noise | Vnoise | mVpp | | 4.4 | | @140kHz Sampling Rate |
| Primary current, detection threshold ③ | I_pth | A | | 2.93 * I_pn | | Peak value ±10% overcurrent detection OCD |
| Accuracy @ 25℃ | X | % of I_pn | -1 | | 1 | @ 25℃ |
| Accuracy @ -40℃~105℃ ④ | X_TRange | % of I_pn | -3 | | 3 | -40℃ ~ 105℃ |

Remarks:

① ②. To prevent nuisance tripping, a tmask time is used. If an over current occurs, but does not persist for the duration of tmask, it does not trigger the fault pin. This prevents short transient spikes from causing erroneous fault detections. In the event where transient error reporting is desired, the tmask can be disabled. If the fault is triggered, it will remain active for a minimum time of thold and up to the end of the fault condition, whichever is greater.

③. STK-200HO/4 products may be ordered on request with a dedicated setting of the Trigger current . The product has a built-in overcurrent detection function, When the output voltage detected by the product exceeds the threshold, it is judged to be overcurrent and the output of fault pin changes to low level .

④. the accuracy @ -40℃~105℃, X_TRange = (((Vout – Vref)@ In @ T_x) – Voe@ 25℃ – G_th * In) / V_FS, where T_x represents present temperature, G_th is fitted gain at room temperature .

## 6. Electrical performance of STK-240HO/4

Vcc = 5 V, T_A = 25℃

| Parameter | Symbol | Unit | Min | Typ | Max | Comment |
|---|---|---|---|---|---|---|
| Primary nominal current rms | I_pn | A | | 240 | | |
| Primary current measuring range | I_pm | A | -600 | | 600 | |
| Supply voltage | Vcc | V | 4.75 | 5 | 5.25 | |
| Current consumption | Icc | mA | | 6 | 10 | |
| Reference voltage (output) | Vref | V | 2.48 | 2.5 | 2.52 | Output function |
| Electrical offset voltage @ I P = 0 A | Voe | mV | -8 | | 8 | Vout – Vref @ Vref = 2.5 V |
| Electrical offset current referred to primary | Ioe | A | -2.4 | | 2.4 | |
| Output voltage range @ I P M | V_FS | V | -2 | | 2 | ((Vout - Vref )@ I_pm) - Voe |
| Internal Vref resistance | R_ref | Ω | 4.5 | 12 | 19.5 | Series |
| Internal output resistance | R_out | Ω | 4.5 | 12 | 19.5 | Series |
| Difference of output resistance (R_ref – R_out) | Roe | Ω | -5 | | 5 | Series |
| OCD output mask time ① | Tmask | μs | | 2 | | |
| OCD output hold time ② | Thold | ms | | 1.5 | | |
| Theoretical gain | G | mV/A | | 3.333 | | 800 mV @ I P N |
| Temperature drift of Voe | Voe_TRange | mV | -10 | | 10 | -40℃ ~ 105℃ |
| Error of gain | Err_G | %G_th | -0.5 | | 0.5 | Trimmed in the factory @ 25℃ |
| Temperature drift of gain | G_TR | %G_th | -1 | | 1 | @ -40℃~105℃ |
| Rated linearity error | Non-L_pn | %I_pn | -0.5 | | 0.5 | Within ±I_pn |
| Linearity error @ I_pm | Non-L_pm | %I_pm | -0.5 | | 0.5 | ±I_pm |
| Step response time | t_res | μs | | 1.5 | 2 | @ 90% of I_pn |
| Frequency bandwidth (-3dB) | BW | kHz | | 200 | | No RC circuit |
| Output voltage noise | Vnoise | mVpp | | 4.4 | | @140kHz Sampling Rate |
| Primary current, detection threshold ③ | I_pth | A | | 2.93 * I_pn | | Peak value ±10% overcurrent detection OCD |
| Accuracy @ 25℃ | X | % of I_pn | -1 | | 1 | @ 25℃ |
| Accuracy @ -40℃~105℃ ④ | X_TRange | % of I_pn | -3 | | 3 | -40℃ ~ 105℃ |

Remarks:

① ②. To prevent nuisance tripping, a tmask time is used. If an over current occurs, but does not persist for the duration of tmask, it does not trigger the fault pin. This prevents short transient spikes from causing erroneous fault detections. In the event where transient error reporting is desired, the tmask can be disabled. If the fault is triggered, it will remain active for a minimum time of thold and up to the end of the fault condition, whichever is greater.

③. STK-240HO/4 products may be ordered on request with a dedicated setting of the Trigger current . The product has a built-in overcurrent detection function, When the output voltage detected by the product exceeds the threshold, it is judged to be overcurrent and the output of fault pin changes to low level .

④. the accuracy @ -40℃~105℃, X_TRange = (((Vout – Vref)@ In @ T_x) – Voe@ 25℃ – G_th * In) / V_FS, where T_x represents present temperature, G_th is fitted gain at room temperature .

# 7. Electrical performance of STK-250HO/4

Vcc = 5 V, T_A = 25℃

| Parameter | Symbol | Unit | Min | Typ | Max | Comment |
|---|---|---|---|---|---|---|
| Primary nominal current rms | I_pn | A | | 250 | | |
| Primary current measuring range | I_pm | A | -625 | | 625 | |
| Supply voltage | Vcc | V | 4.75 | 5 | 5.25 | |
| Current consumption | Icc | mA | | 6 | 10 | |
| Reference voltage (output) | Vref | V | 2.48 | 2.5 | 2.52 | Output function |
| Electrical offset voltage @ I P = 0 A | Voe | mV | -8 | | 8 | Vout – Vref @ Vref = 2.5 V |
| Electrical offset current referred to primary | Ioe | A | -2.5 | | 2.55 | |
| Output voltage range @ I P M | V_FS | V | -2 | | 2 | ((Vout - Vref )@ I_pm) - Voe |
| Internal Vref resistance | R_ref | Ω | 4.5 | 12 | 19.5 | Series |
| Internal output resistance | R_out | Ω | 4.5 | 12 | 19.5 | Series |
| Difference of output resistance (R_ref – R_out) | Roe | Ω | -5 | | 5 | Series |
| OCD output mask time ① | Tmask | μs | | 2 | | |
| OCD output hold time ② | Thold | ms | | 1.5 | | |
| Theoretical gain | G | mV/A | | 3.2 | | 800 mV @ I P N |
| Temperature drift of Voe | Voe_TRange | mV | -10 | | 10 | -40℃ ~ 105℃ |
| Error of gain | Err_G | %G_th | -0.5 | | 0.5 | Trimmed in the factory @ 25℃ |
| Temperature drift of gain | G_TR | %G_th | -1 | | 1 | @ -40℃~105℃ |
| Rated linearity error | Non-L_pn | %I_pn | -0.5 | | 0.5 | Within ±I_pn |
| Linearity error @ I_pm | Non-L_pm | %I_pm | -0.5 | | 0.5 | ±I_pm |
| Step response time | t_res | μs | | 1.5 | 2 | @ 90% of I_pn |
| Frequency bandwidth (-3dB) | BW | kHz | | 200 | | No RC circuit |
| Output voltage noise | Vnoise | mVpp | | 4.4 | | @140kHz Sampling Rate |
| Primary current, detection threshold ③ | I_pth | A | | 2.93 * I_pn | | Peak value ±10% overcurrent detection OCD |
| Accuracy @ 25℃ | X | % of I_pn | -1 | | 1 | @ 25℃ |
| Accuracy @ -40℃~105℃ ④ | X_TRange | % of I_pn | -3 | | 3 | -40℃ ~ 105℃ |

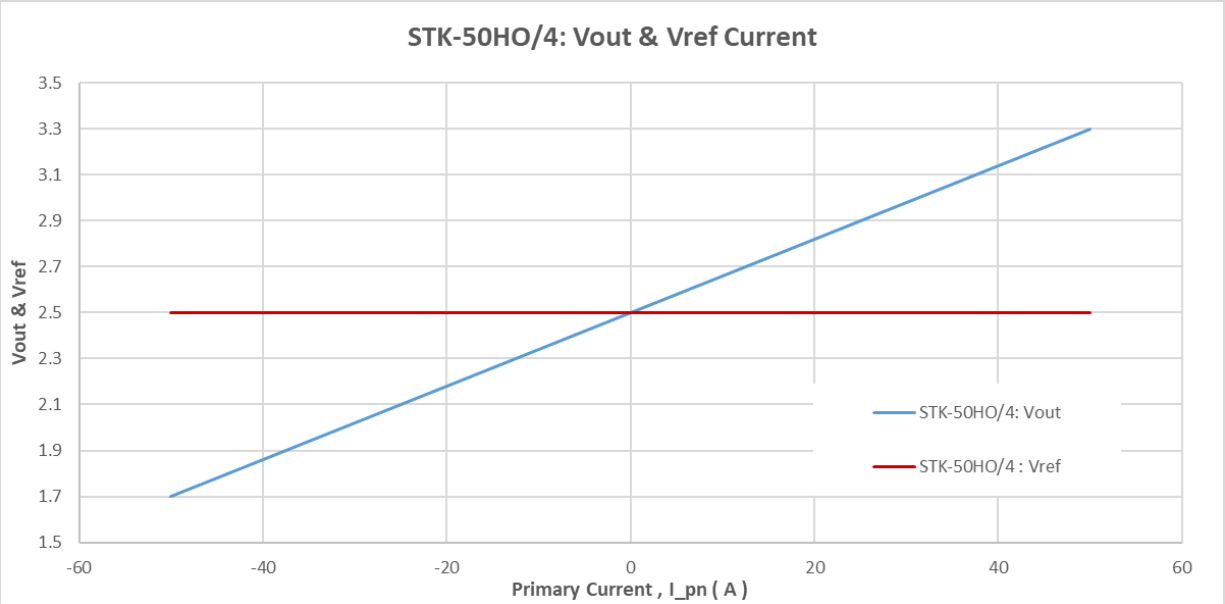
Remarks:

① ②. To prevent nuisance tripping, a tmask time is used. If an over current occurs, but does not persist for the duration of tmask, it does not trigger the fault pin. This prevents short transient spikes from causing erroneous fault detections. In the event where transient error reporting is desired, the tmask can be disabled. If the fault is triggered, it will remain active for a minimum time of thold and up to the end of the fault condition, whichever is greater.

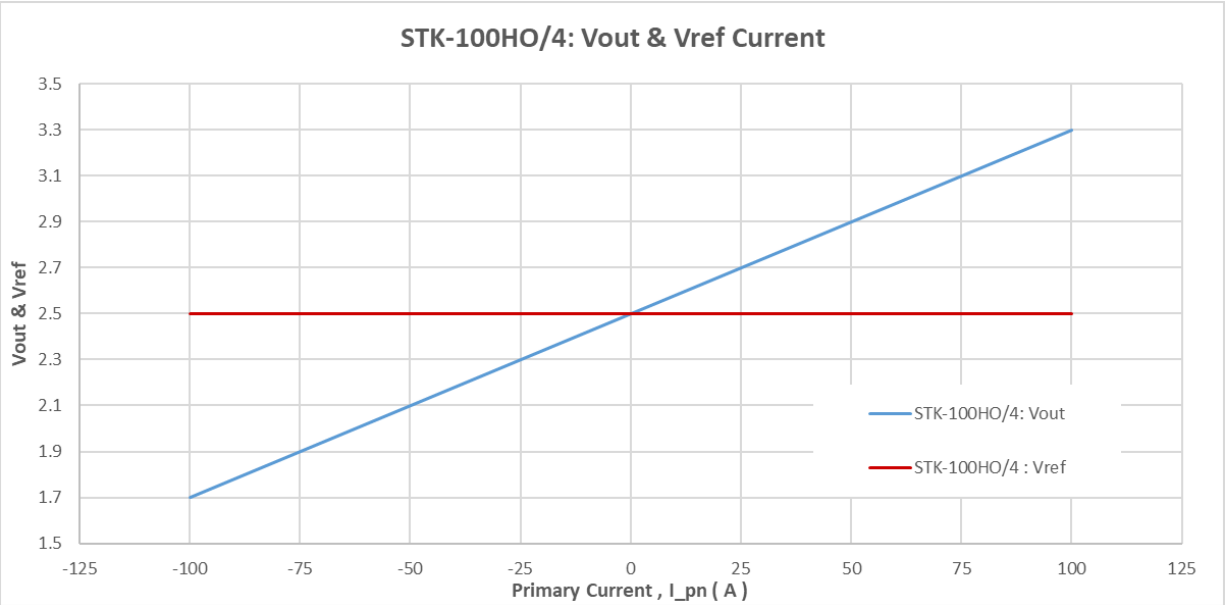
③. STK-250HO/4 products may be ordered on request with a dedicated setting of the Trigger current . The product has a built-in overcurrent detection function, When the output voltage detected by the product exceeds the threshold, it is judged to be overcurrent and the output of fault pin changes to low level .

④. the accuracy @ -40℃~105℃, X_TRange = (((Vout – Vref)@ In @ T_x) – Voe@ 25℃ – G_th * In) / V_FS, where T_x represents present temperature, G_th is fitted gain at room temperature .

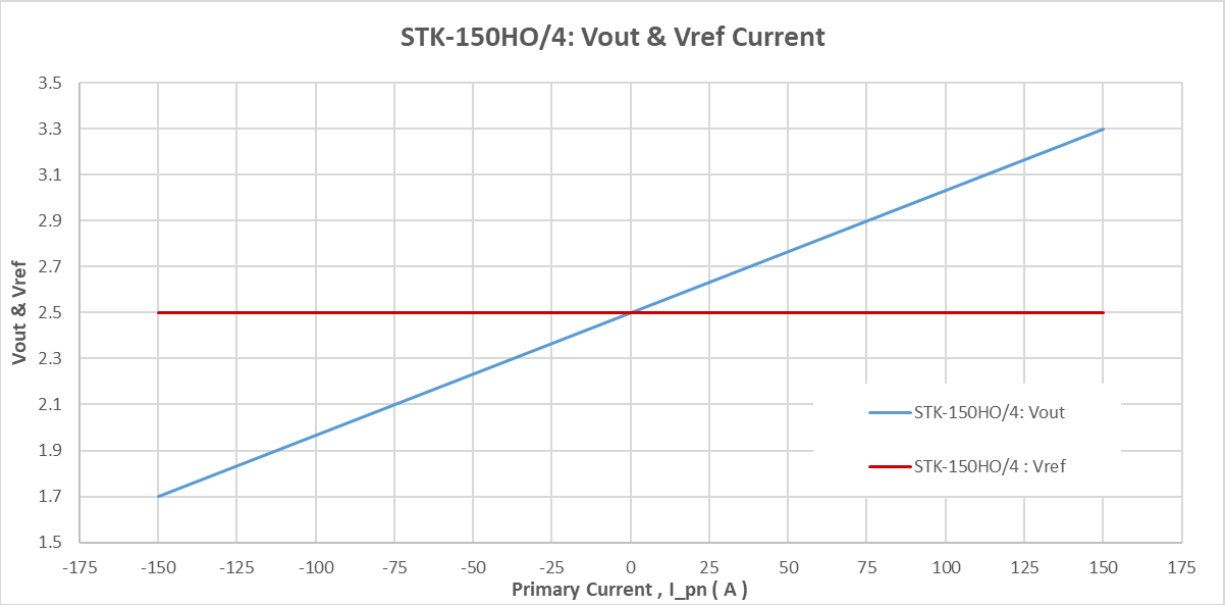
# 8. Output voltage VS primary current of STK-HO/4



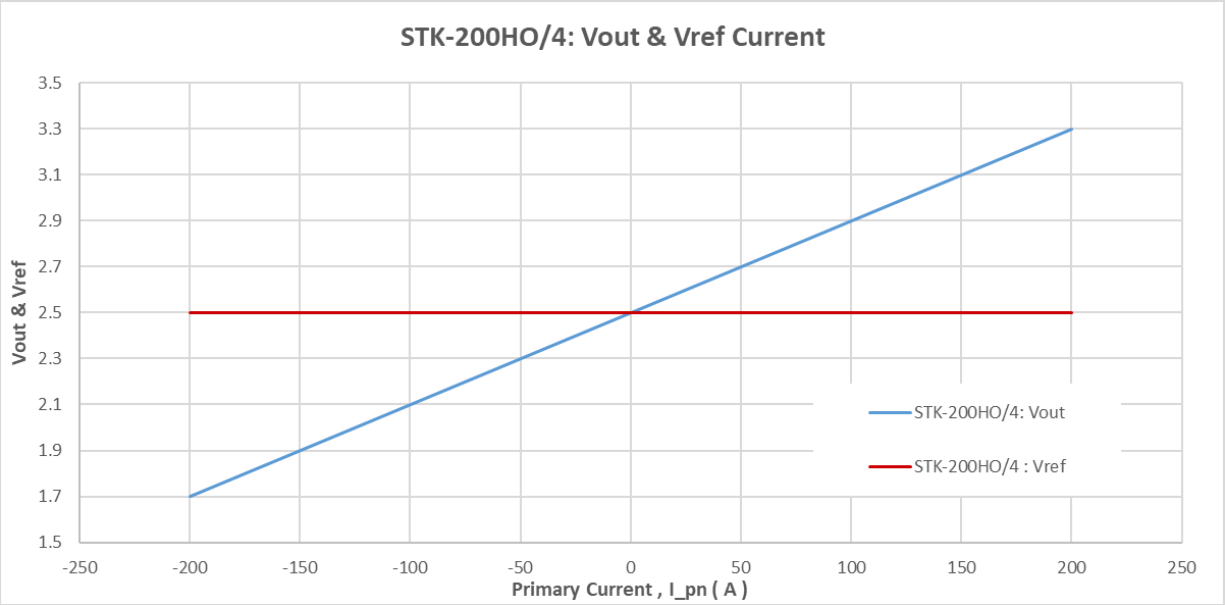

The dependence of Vout & Vref of STK-50HO/4 on the primary current.



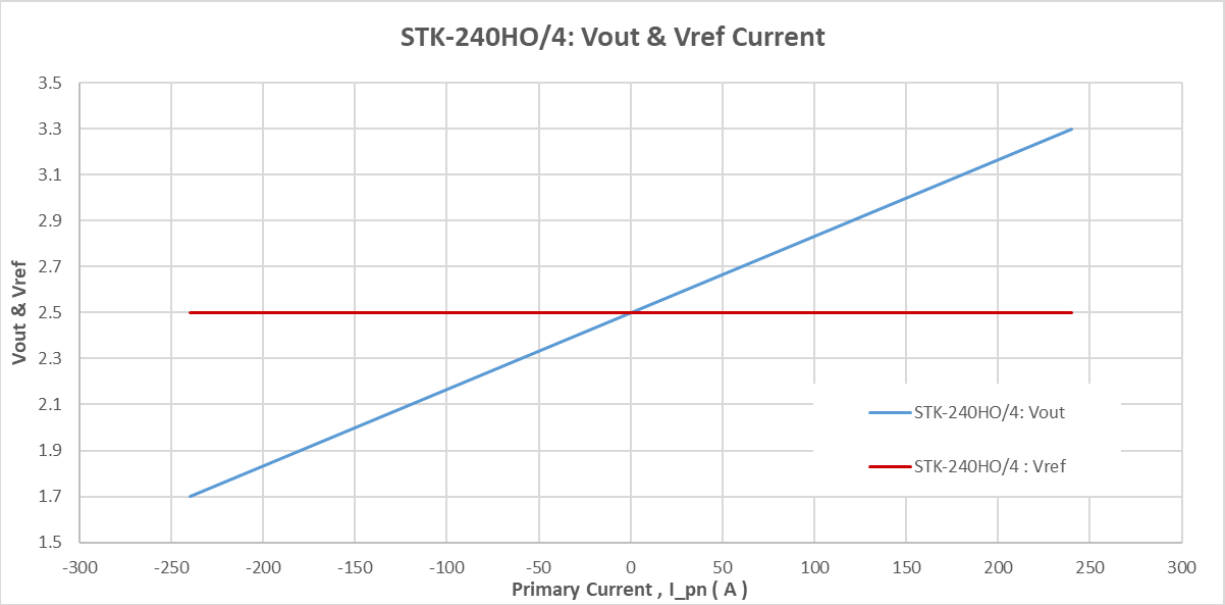

The dependence of Vout & Vref of STK-100HO/4 on the primary current.



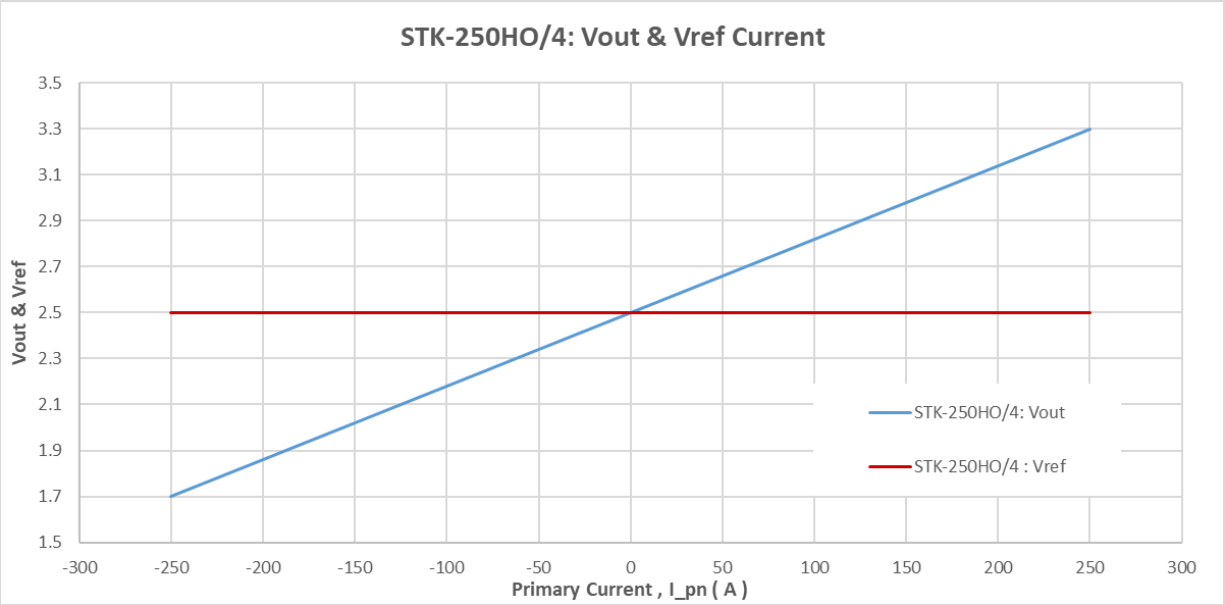

The dependence of Vout & Vref of STK-150HO/4 on the primary current.




The dependence of Vout & Vref of STK-200HO/4 on the primary current.

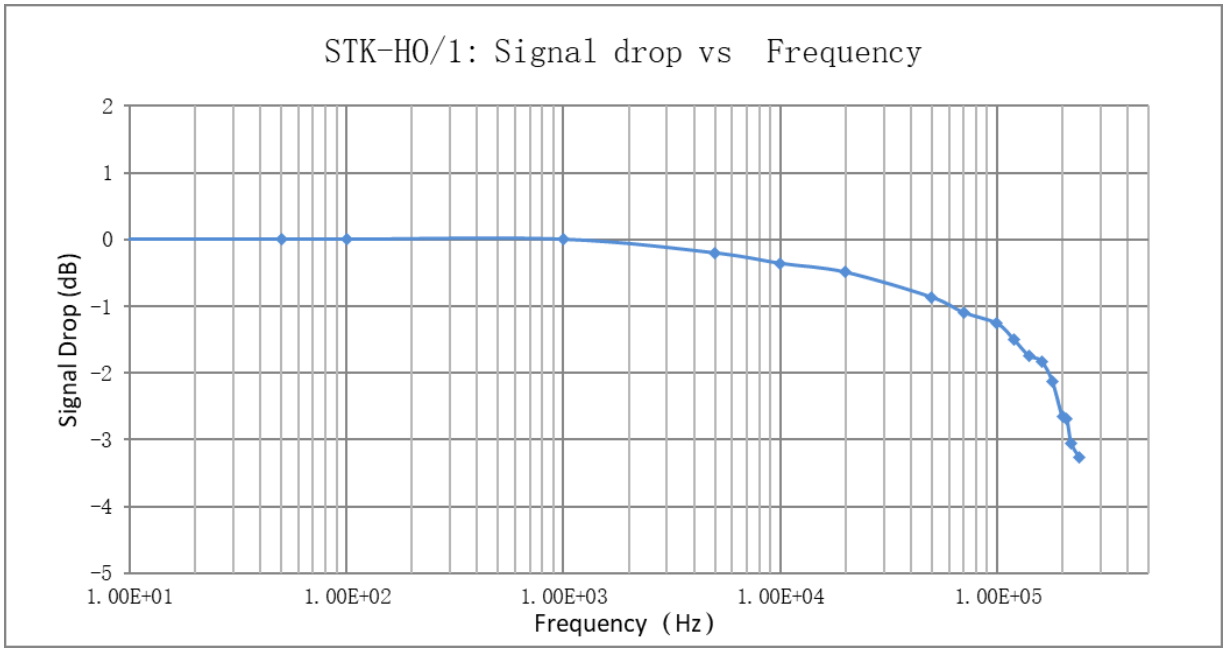



The dependence of Vout & Vref of STK-240HO/4 on the primary current.



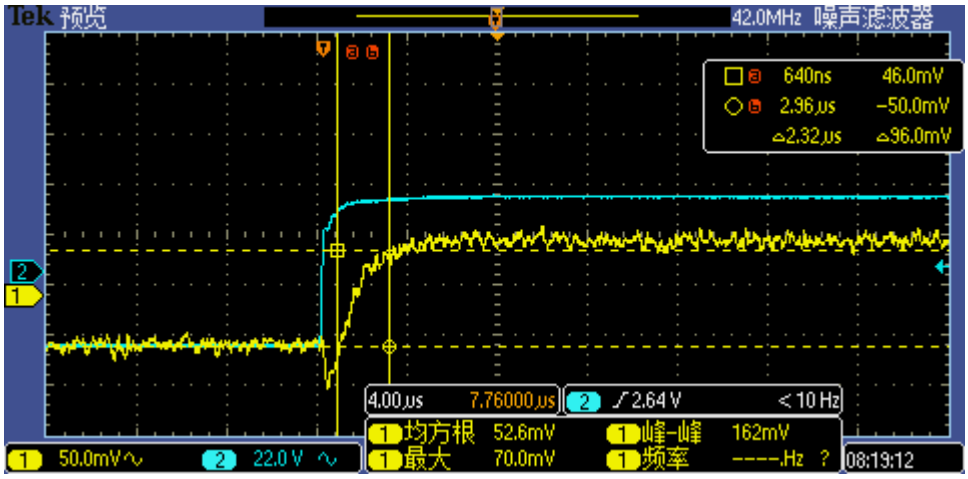

The dependence of Vout & Vref of STK-250HO/4 on the primary current.

## 9. Frequency bandwidth




The frequency band width of STK-HO/4 series current sensors.

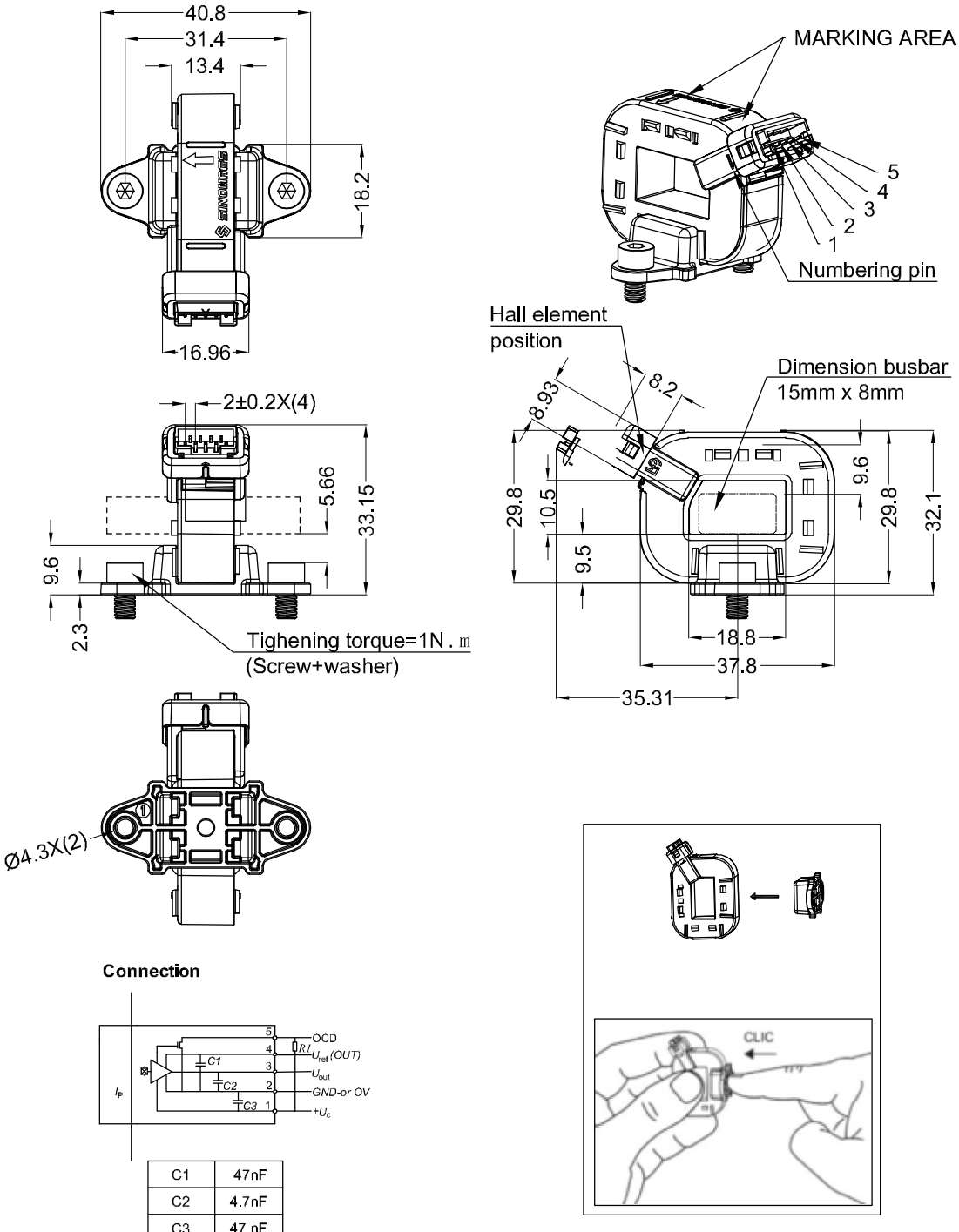
## 10. Step response time




The step response time of STK-HO/4 current sensors. The dark light blue is primary current, while the light blue is output signal of current sensor. The step response time is about 2 µs.

# 11. Dimensions & Pins & Footprint

Assembly method 1：

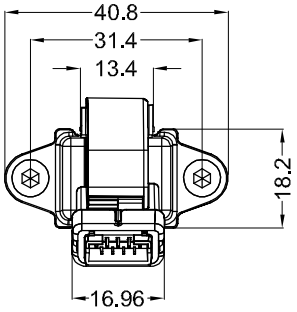


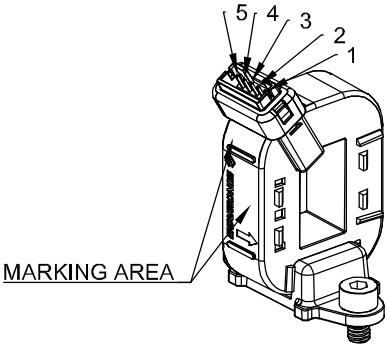

**Connection**

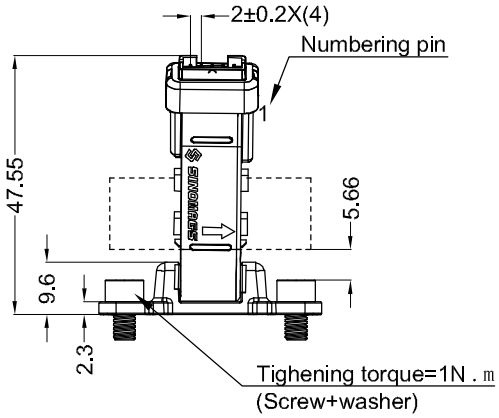


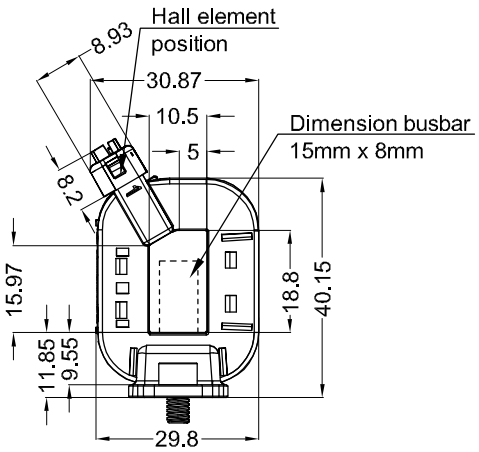

| | |
|---|---|
| C1 | 47nF |
| C2 | 4.7nF |
| C3 | 47 nF |
| R1 | 5.1KΩ |

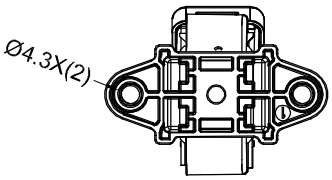
Assembly method 2：



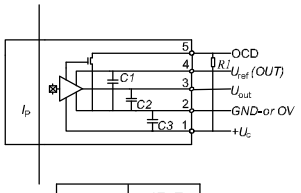



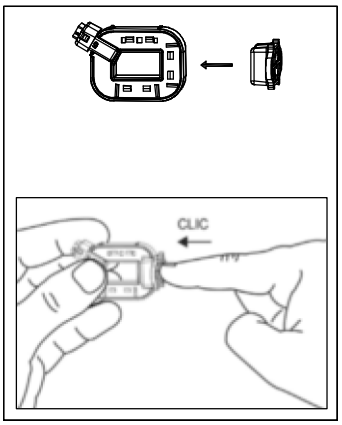



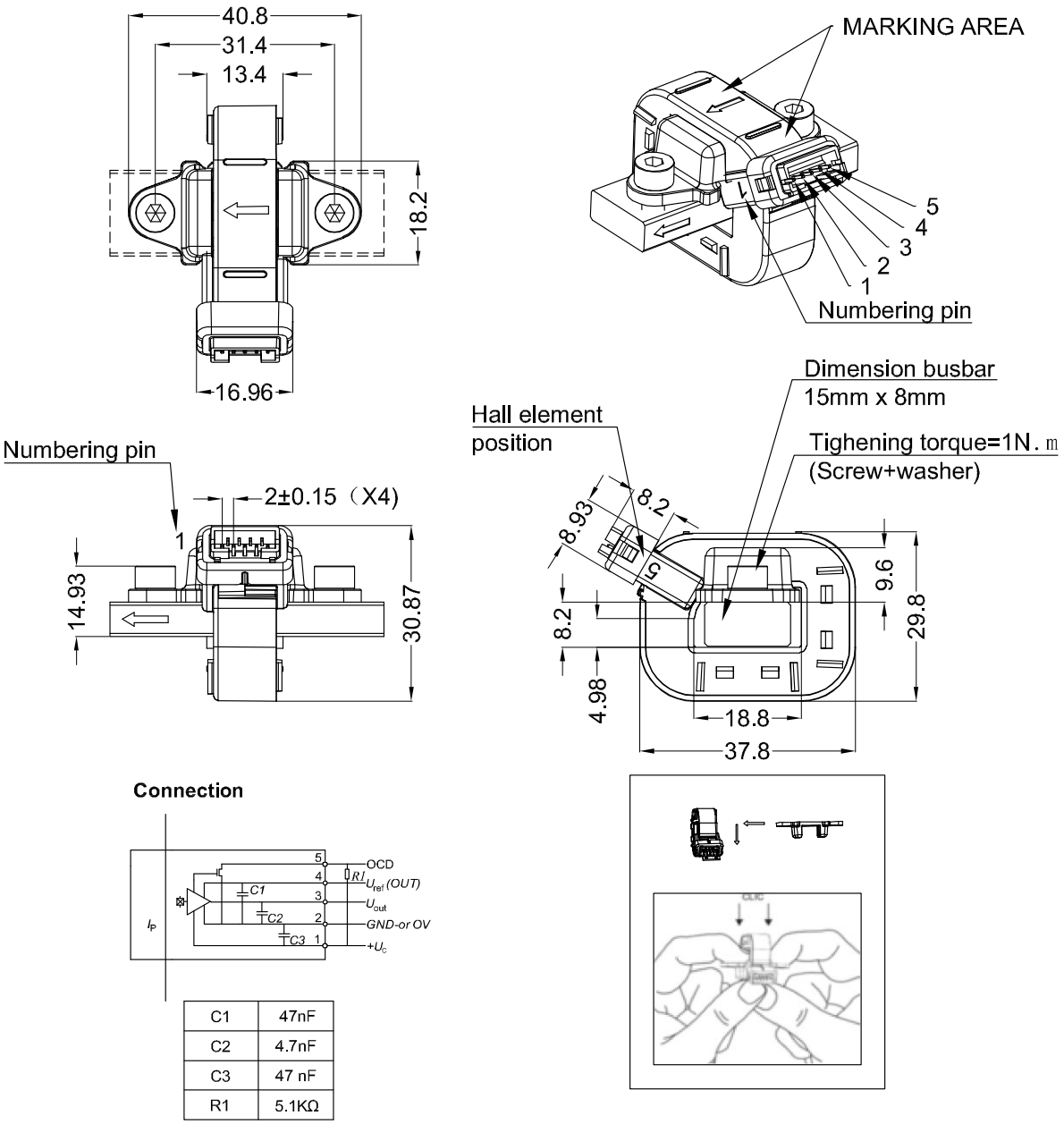

**Connection**




| | |
|---|---|
| C1 | 47nF |
| C2 | 4.7nF |
| C3 | 47 nF |
| R1 | 5.1KΩ |



Assembly method 3：



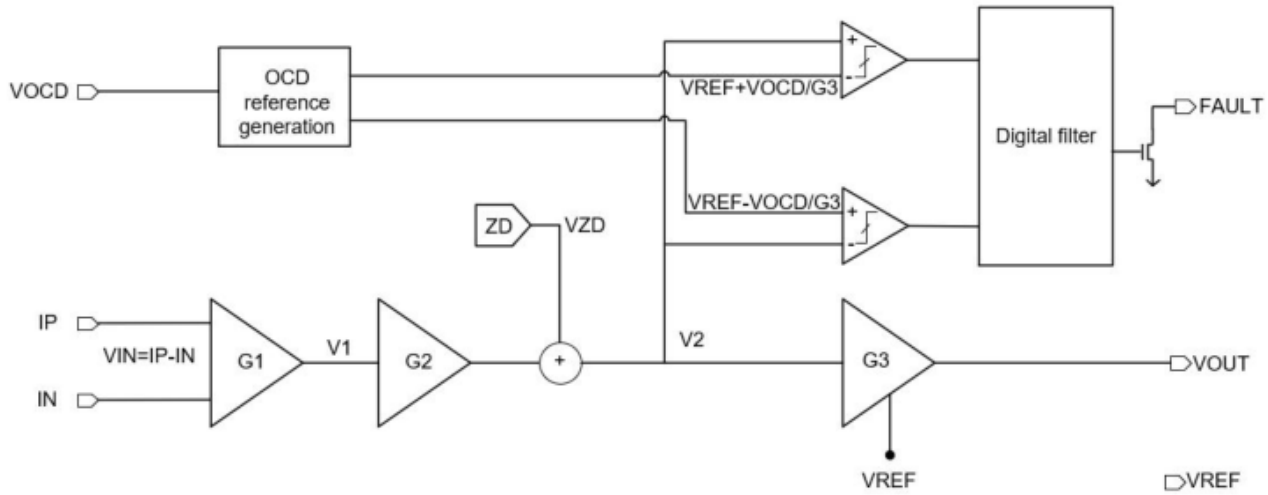

| | |
|---|---|
| C1 | 47nF |
| C2 | 4.7nF |
| C3 | 47 nF |
| R1 | 5.1KΩ |

Remarks:

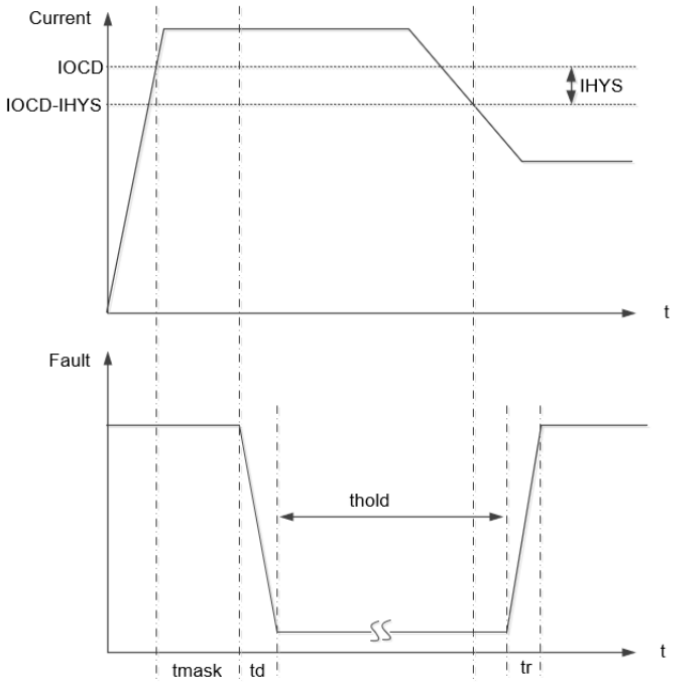
- General linear tolerance ±0.5 mm.
- The above assembly methods can be freely chosen, We do not recommend always changing the assembly method

## 12. General information on OCD

This section describes the general information on OCD function, the specific functions, which are not listed in the section of “electrical data”, can be defined per request.
Since the trigger voltage is set after the second amplifier, the OCD function supports that the trigger current can be higher than I_pn. The trigger voltage can be defined:
a) Vref = 2.5 V
b) 0.5 V ≦ VOC ≦ Vref;
c) Trigger voltage = Vref +/- VOC;
d) Trigger current = (Vref +/- VOC -Voff) / G_th;




Functional Block Diagram on OCD function when Vref = 2.5 V




The above plot shows the definition on the time in OCD function. The typical value for tmask & thold is that tmask = 2μs , and thold = 1.5ms . The overcurrent detection function can also set tmask and thold time:

a)

| Tmask:set | Value |
|---|---|
| 1 | 0μs |
| 2 | 1μs |
| 3 | 2μs |
| 4 | 3μs |

| Thold:set | Value |
|---|---|
| 1 | 0ms |
| 2 | 1.5ms |
| 3 | 3ms |
| 4 | 4.5ms |