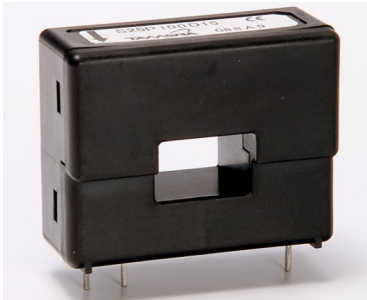


Hall Effect Current Sensors S25P***D15Y Series



Features:

- Closed Loop type
- Current or voltage output
- Conversion ratio $K_N = 1:2000$
- Printed circuit board mounting
- Aperture
- Insulated plastic case according to UL94V0
- UL Recognition

Advantages:

- Excellent accuracy and linearity
- Low temperature drift
- Wide frequency bandwidth
- No insertion loss
- High Immunity to external interferences
- Optimised response time
- Current overload capability

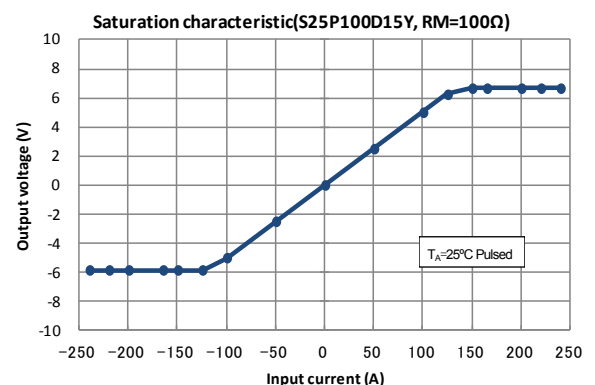
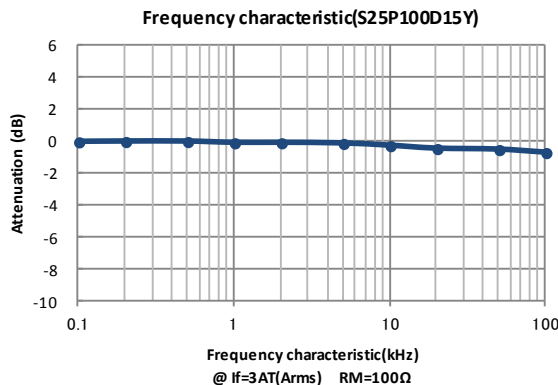
Specifications

 $T_A=25^{\circ}\text{C}, V_{CC}=\pm 15\text{V}$

| Parameters | Symbol | S25P100D15Y | S25P150D15Y |
|--|--------------|---|--|
| Primary nominal current | I_f | 100A | 150A |
| Maximum current ¹ (at 85°C) | I_{fmax} | $\pm 150\text{A}$ (at $20\Omega \leq R_M \leq 25\Omega$) | $\pm 200\text{A}$ ((at $0\Omega \leq R_M \leq 40\Omega$)) |
| Measuring resistance ($I_f = \pm A_{DC}$ at 85°C) | R_M | 0Ω ~ 42Ω (at $V_{CC} = \pm 12\text{V}$) 20Ω ~ 102Ω (at $V_{CC} = \pm 15\text{V}$) | 0Ω ~ 15Ω (at $V_{CC} = \pm 12\text{V}$) 0Ω ~ 55Ω (at $V_{CC} = \pm 15\text{V}$) |
| Conversion Ratio | K_N | 1 : 2000 | |
| Rated output current | I_o | 50mA | 75mA |
| Output current accuracy ² (at I_f) | X | $I_o \pm 0.5\%$ | |
| Offset current ³ (at $I_f=0\text{A}$) | I_{of} | $\leq \pm 0.1\text{mA}$ | $\leq \pm 0.2\text{mA}$ |
| Output linearity ² (0A ~ I_f) | ϵ_L | $\leq \pm 0.15\%$ (at I_f) | $\leq \pm 0.25\%$ (at I_f) |
| Power supply voltage ¹ | V_{CC} | $\pm 12\text{V}.. \pm 15\text{V} \pm 5\%$ | |
| Consumption current | I_{CC} | $\leq \pm 16\text{mA}$ (Output current is not included) | |
| Response time ⁴ | t_r | $\leq 1.0\mu\text{s}$ (at $di/dt = 100\text{A} / \mu\text{s}$) | |
| Thermal drift of gain ⁵ | T_{clo} | $\leq \pm 0.01\% / ^{\circ}\text{C}$ | |
| Thermal drift of offset current | T_{clof} | $\leq \pm 0.5\text{mA}$ (at $T_A = -40^{\circ}\text{C} \leftrightarrow +85^{\circ}\text{C}$) | |
| Hysteresis error | I_{oH} | $\leq 0.3\text{mA}$ (at $I_f=0\text{A} \rightarrow I_f \rightarrow 0\text{A}$) | |
| Insulation voltage | V_d | AC 3000V, for 1minute (sensing current 0.5mA), inside of through hole \leftrightarrow terminal | |
| Insulation resistance | R_{IS} | $\geq 500\text{M}\Omega$ (at DC 500V) , inside of through hole \leftrightarrow terminal | |
| Secondary coil resistance | R_s | 120Ω (at $T_A = 70^{\circ}\text{C}$) 128Ω (at $T_A = 85^{\circ}\text{C}$) | 95Ω (at $T_A = 70^{\circ}\text{C}$) 85Ω (at $T_A = 85^{\circ}\text{C}$) |
| Ambient operation temperature | T_A | $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$ | |
| Ambient storage temperature | T_s | $-40^{\circ}\text{C} \sim +90^{\circ}\text{C}$ | |

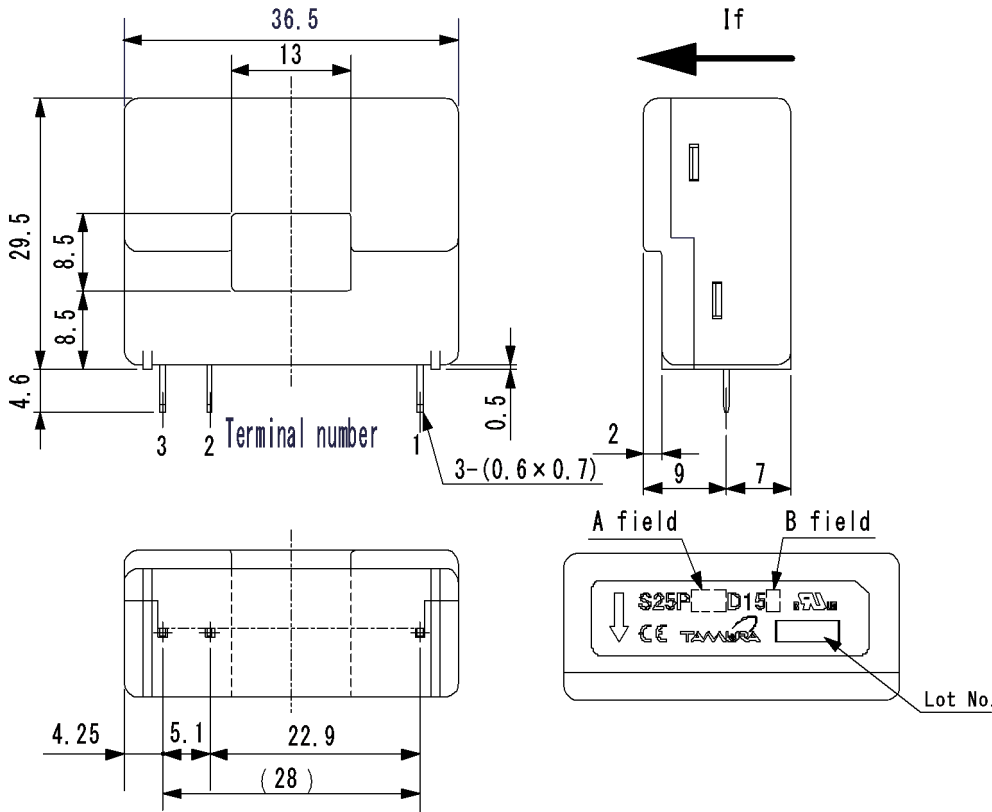
¹ Maximum current is restricted by V_{CC} — ² Without offset current — ³ After removal of core hysteresis — ⁴ Time between 90% input current full scale and 90% of sensor output full scale — ⁵ Without Thermal drift of offset current — ⁶ At Small signal

Electrical Performances



Hall Effect Current Sensors S25P***D15Y Series

Mechanical dimensions



NOTES

1. Unit is mm
2. Tolerance is 0.5mm

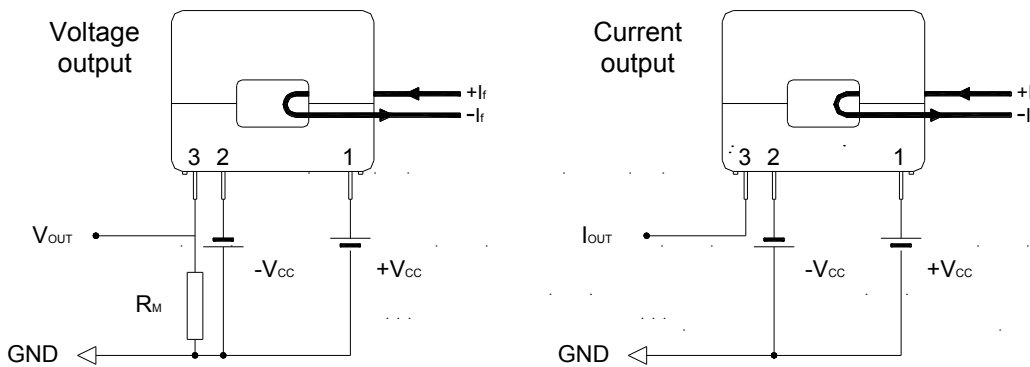
Terminal number:

1. +Vcc(+15V)
2. -Vcc(-15V)
3. I_{OUT}

| A field display | | B field display | |
|-----------------|---------|-----------------|---------|
| Current | A field | Coil turn | B field |
| 50A | 050 | 1000T | X |
| 100A | 100 | 2000T | Y |
| 150A | 150 | | |

50A is 1000T only
150A is 2000T only

Electrical connection diagram



S25P100D15Y
At $I_f = 100A$ & $V_{CC} = \pm 15V_{DC}$
 $20\Omega \leq R_M \leq 102\Omega$

S25P150D15Y
At $I_f = 150A$ & $V_{CC} = \pm 15V_{DC}$
 $0\Omega \leq R_M \leq 55\Omega$

UL Standard

- UL 508 , CSA C22.2 No.14 (UL FILE No.E243511)
- For use in Pollution Degree 2 Environment.
 - Maximum Surrounding air temperature rating, 85°C.

CAUTION

Do not wrap the primary conductor around the core part of the product to increase measured current.

Package & Weight Information

| Weight | Pcs/box | Pcs/carton | Pcs/pallet |
|--------|---------|------------|------------|
| 20g | 100 | 300 | 7200 |