

Super small size DC small current sensor

Super small size DC small current for PCB mounting with primary coil corresponding to $\pm 15V$ power supply

DC current sensor

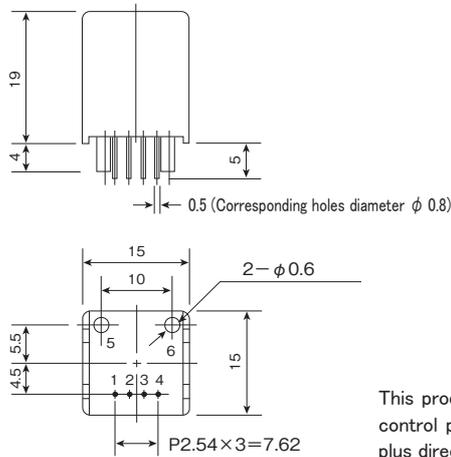


Model HPS-01-AP

[Features]

- Corresponding to $\pm 15V$ control power supply
- Possible to measure $\pm 100mA$ small current with many windings for primary coil
- Possible to measure with isolation
- Possible to measure until bandwidth of DC $\sim 20kHz$ high frequency
- Linearity until 300% max (However, guarantee of accuracy is until rating current, and not beyond rating current for continuous use)

[Outline drawing]



[Terminal arrangement]

No.1	+ 15V
No.2	- 15V
No.3	OUTPUT
No.4	GND
No.5	INPUT (+)
No.6	INPUT (-)

This product needs $\pm 15V$ (+15V and -15V DC bi-polar power supply) as control power supply. Even though the case of current detection of only plus direction, $\pm 15V$ needs. In any case, it is not operated with only +15V.

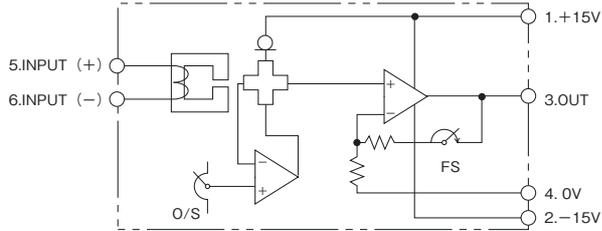
[Specification]

Model	HPS-01-AP
Rating current (FS)	$\pm 100mA$
Under saturated maximum current	$\pm 300mA$
Output voltage	$\pm 4V$ /Rating current, $\pm 12V$ /Maximum current (Recommended load resistor $\geq 10k \Omega$)
Residual voltage	Within $\pm 30mV$ (no load)
Noise level	Less than $40mV_{p-p}$ (no load)
Accuracy	Within $\pm 1\%FS$
Linearity	Within $\pm 1\%FS$
Hysteresis(FS \rightarrow 0)	Within $\pm 30mV$
Response time	Less than 10ms (at $di/dt = FS/2 \mu s$)
Output voltage temperature coefficient	$\pm 0.2\%$ / $^{\circ}C$ typ
Residual voltage temperature coefficient	$\pm 3mV$ / $^{\circ}C$ typ
Power supply	DC $\pm 15V \pm 5\%$ (25mA typ) bi-polar power supply
Primary windings diameter	$\phi 0.6$
Primary windings resistance	15 Ω typ
Inductance	4.3mH typ
Maximum pulse current	Rating current X 10 times/50msec
Withstand voltage	AC2000V(50/60Hz), 1min (Primary coil-output terminal in a lump)
Insulation resistance	DC500V, $\geq 500M \Omega$ (Primary coil-output terminal in a lump)
Operating temperature	$-10^{\circ}C \sim +60^{\circ}C$, $\leq 85\%RH$, no condensation
Storage temperature	$-15^{\circ}C \sim +65^{\circ}C$, $\leq 85\%RH$, no condensation
Mass	approximately 8g

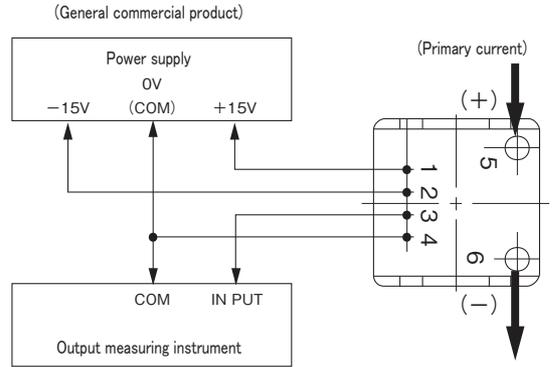
- [Remark]**
- (1) After overcurrent more than rating current, offset drift occur by proportional to that current, with hysteresis of core.
 - (2) Recommend to use more than 5% of nominal for practical range, because output includes various variation factors.
 - (3) There is possibility of heating by core loss for the application of high frequency and high current. Please check by contacting us. $T_a=25^{\circ}C$

HPS-01-AP characteristic

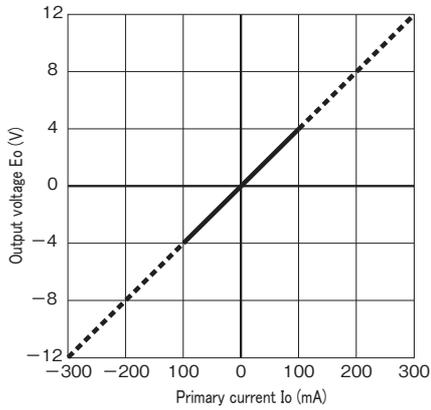
[Circuit diagram]



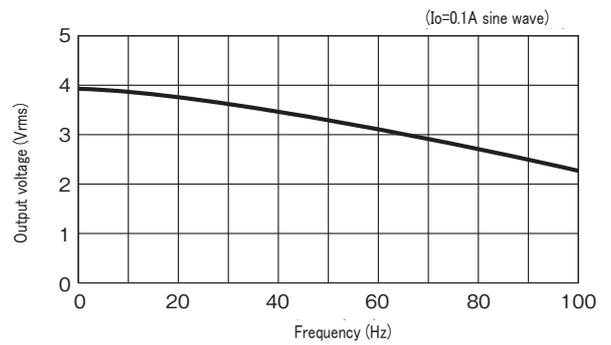
[Connection]



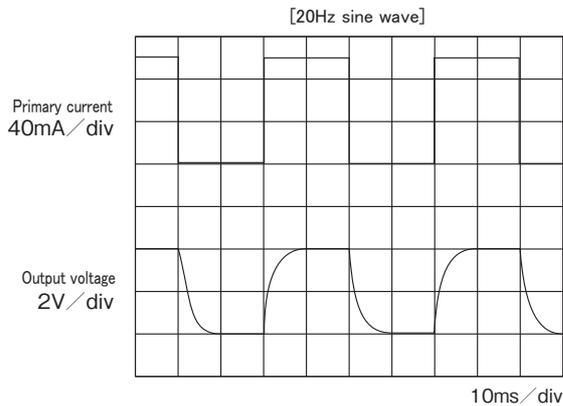
[Output voltage characteristic]



[Frequency characteristic]



[Output waveform] -1



[Output waveform] -2

