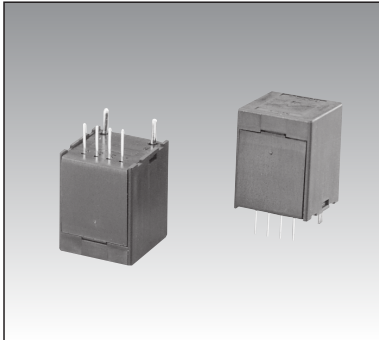


Generic DC current sensor with primary coil

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

DC current sensor

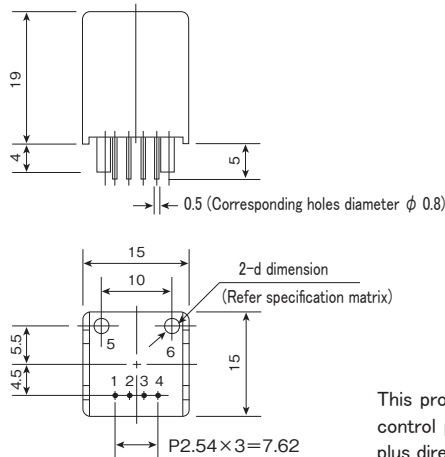


Model HPS-AP series

[Features]

- Corresponding to $\pm 15V$ control power supply
- Possible to discriminate the direction by $0 \pm 4V$ output
- Possible to measure with isolation
- Possible to measure until bandwidth of DC $\sim 20kHz$ high frequency (In the case of use with high frequency, there is the case not to use until the rating current)
- Linearity until 300% max (However, guarantee of accuracy is until rating current, and do not beyond rating current for continuous use)
- No destruction even if over current (within max pulse width)
- High speed response within $3 \mu s$

[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]

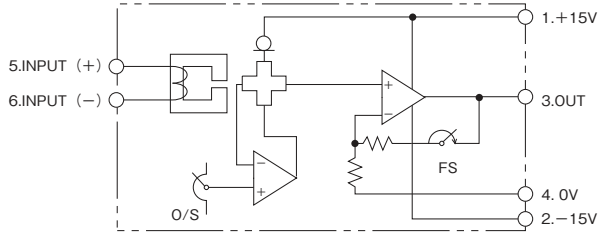
Model	HPS- (Rating current) -AP					
Rating current (FS)	$\pm 3A$	$\pm 5A$	$\pm 10A$	$\pm 15A$	$\pm 20A$	$\pm 25A$
Under saturated maximum current	$\pm 9A$	$\pm 15A$	$\pm 30A$	$\pm 45A$	$\pm 60A$	$\pm 75A$
Output voltage	$\pm 4V$ /Rating current, $\pm 12V$ /Maximum current (Recommended load resistor $\geq 10k \Omega$)					
Residual voltage	Within $\pm 30mV$ (no load)					
Noise level	Less than $40mVp-p$ (no load)					
Accuracy	Within $\pm 1\%FS$					
Linearity	Within $\pm 1\%FS$					
Hysteresis(FS \rightarrow 0)	Within $\pm 15mV$					
Response time	Less than $3 \mu s$ (at $di/dt = FS/2 \mu s$)					
Output voltage temperature coefficient	$\pm 0.1\%$ / $^{\circ}C$ typ					
Residual voltage temperature coefficient	$\pm 1.5mV$ / $^{\circ}C$ typ					
Power supply	DC $\pm 15V \pm 5\%$ (25mA typ) bi-polar power supply					
Primary windings diameter	$\phi 0.6$	$\phi 0.9$	$\phi 1.1$	$\phi 1.4$	$\phi 1.7$	$\phi 1.8$
Primary windings resistance	28m Ω typ	8.0m Ω typ	2.8m Ω typ	1.3m Ω typ	0.7m Ω typ	0.4m Ω typ
Inductance	16 μH typ	5.1 μH typ	1.5 μH typ	0.7 μH typ	0.4 μH typ	0.2 μH 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.

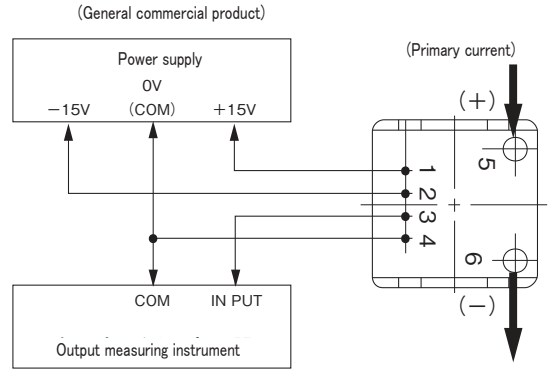
Ta=25 $^{\circ}C$

HPS-AP series typical characteristic (HPS-5-AP)

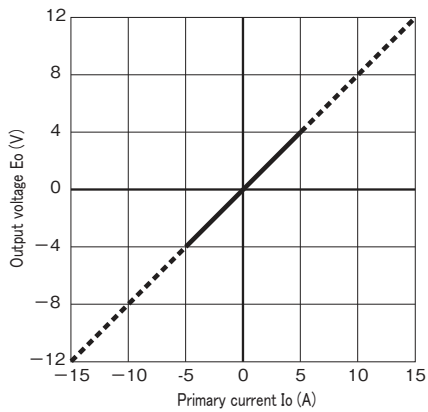
[Circuit diagram]



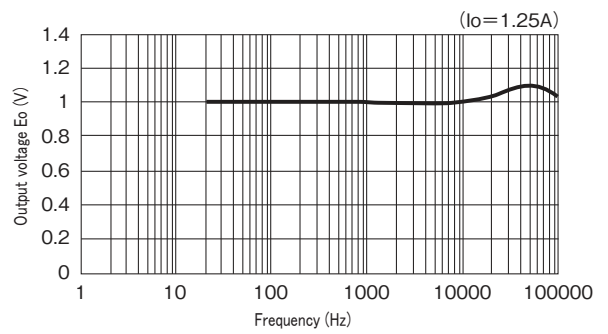
[Connection]



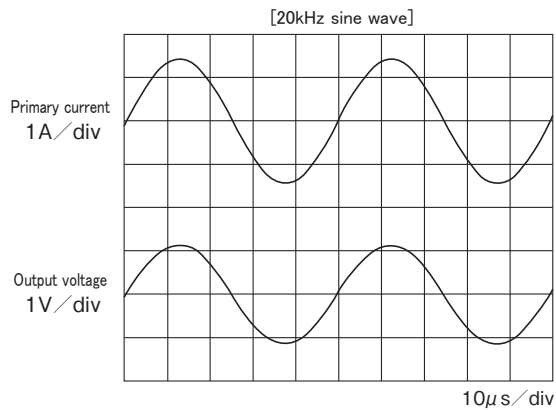
[Output voltage characteristic]



[Frequency characteristic]



[Output waveform] -1



[Output waveform] -2

