

Servo type DC current sensor

Zero flux type for small current and precision measurement

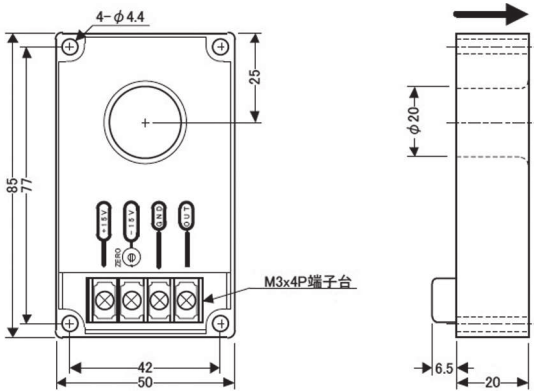


Model HCS-20-SC-A-05Z-H

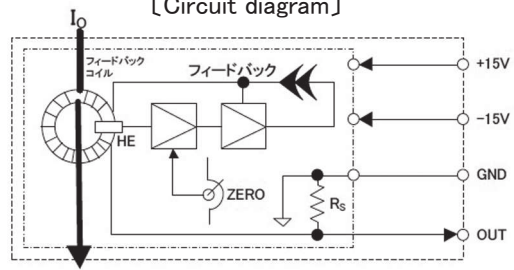
[Features]

- Zero flux type current sensor composed by magnetic path material, hall element, and feedback coil
- Possible to operate by smaller current than conventional product with adoption of high permeability magnetic path material, and decrease hysteresis
- Covering bandwidth DC ~ 20kHz. Excellent linearity.
- High speed response within 3 μ s for full scale ($di/dt=5A/2 \mu$ s)
- Excellent temperature characteristic

[Outline drawing]



[Circuit diagram]

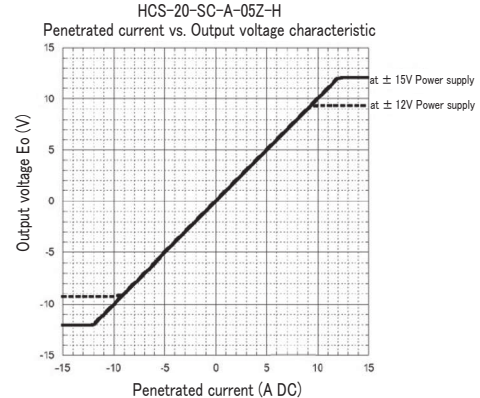


[Specification] $T_a=25^\circ\text{C}$

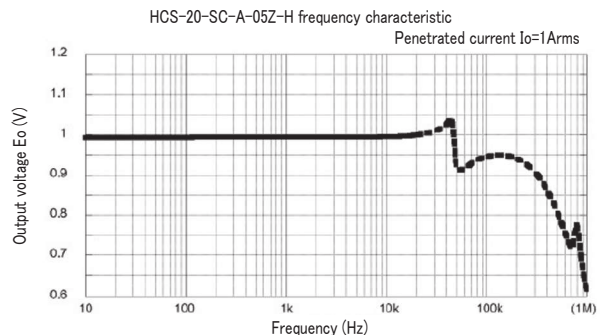
Model	HCS-20-SC-A-05Z-H	
Rating current (FS)	$\pm 5\text{A}_{dc}$	
Maximum current	$\pm 15\text{A}_{dc}$ continuous	
Output voltage	$\pm 5\text{V}/\text{Rating current}$	
Residual voltage	Within $\pm 50\text{mV}$	
Noise level	Less than 20mV_{p-p}	
Accuracy	Within $\pm 1\%FS$ (at recommended load resistor $>1\text{M}\Omega$)	
Linearity	Within $\pm 1\%FS$ (at recommended load resistor $>1\text{M}\Omega$)	
Hysteresis(FS \rightarrow 0)	Within $\pm 5\text{mV}$	
Response time	Less than $3 \mu\text{s}$ (at $di/dt = 5\text{A}/2 \mu\text{s}$)	
Output voltage temperature coefficient	$\pm 0.02\%$ / $^\circ\text{C}$ typ	
Residual voltage temperature coefficient	$\pm 3\text{mV}$ / $^\circ\text{C}$ typ	
Power supply	Voltage	DC $\pm 12 \sim \pm 15\text{V}$ (Stable bipolar power supply)
	Current consumption	within 50mA typ (both of + and - side)
Withstand voltage	AC2000V(50/60Hz), 1min (Aperture-output terminal in a lump)	
Insulation resistance	DC500V, $\geq 500\text{M}\Omega$ (Aperture-output terminal in a lump)	
Operating temperature	$-10^\circ\text{C} \sim +60^\circ\text{C}$, $\leq 85\%RH$, no condensation	
Storage temperature	$-15^\circ\text{C} \sim +65^\circ\text{C}$, $\leq 85\%RH$, no condensation	
Internal adjustment function	Calibration for zero point with zero load (Calibrated at the time of delivery)	
Screw torque	M4 : $0.7\text{N} \cdot \text{m}$, M3 : $0.3\text{N} \cdot \text{m}$	
Mass	approximately 140g	

[Remark] (1) This product is designed for general industry application. Please be careful for handling to keep application note, no dropping, no reverse connection, and no wrong wiring. It will be the cause of failure.

[Output voltage characteristic]



[Frequency characteristic]



DC current sensor