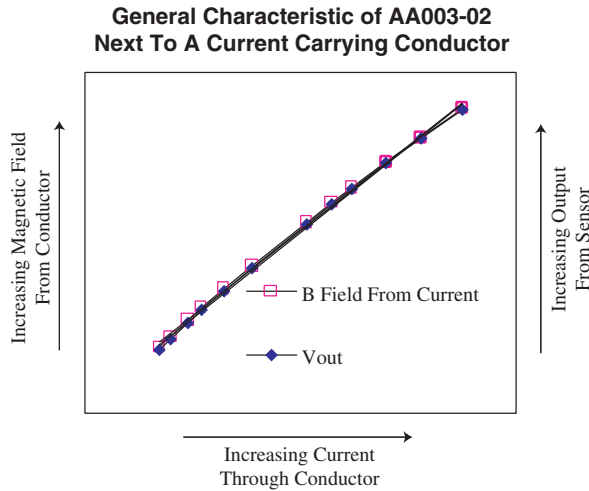


NVE's Giant Magnetoresistive Current Sensor offers unique and unparalleled current sensing capabilities. The sensor can be placed directly over a PCB trace or next to a wire and detect AC and DC currents non-intrusively. NVE's Current Sensor provides high sensitivity, AC and DC sensing, temperature stability, low power consumption, and non-intrusive sensing.

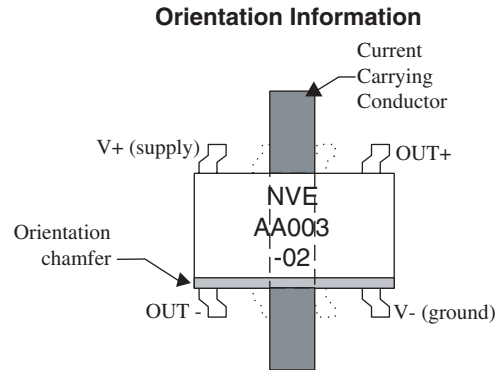
NVE's Current Sensors have been applied to:

- Switch Mode Power Supplies
- Industrial Controls
- Feedback and Over Current Detection
- Ground Fault Interrupt
- Printed Circuit Board Traces
- Clamp-On Sensors

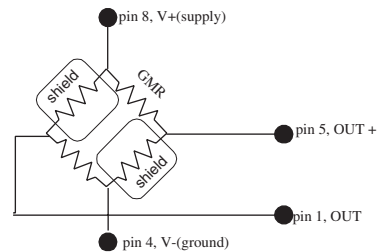
**Please note that all of our AA00X-02 sensors can be used as current sensors.*



Typical output from NVE's Current Sensor due to a DC current source. For more information, see Note 8.



Functional Block Diagram

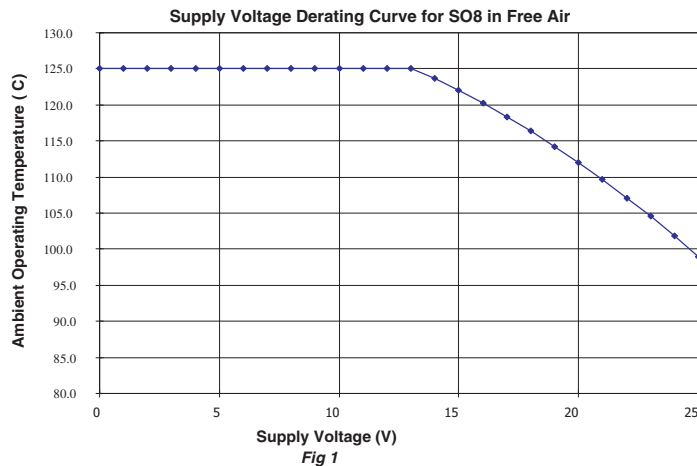


Magnetic Characteristics (5 kΩ ± 20% bridge)

Part Number	Saturation Field (Oe)	Specified Linear Range (Oe)		Sensitivity		Package ²	Die ³ Size (μm)
		min	max	min	max		
AA003-02	20	0	14	2	3.2	SO8	436x3370

General Characteristics of Current Sensor

Property	Min	Nominal	Max	Unit
Input Voltage Range			±25 ⁴	V
Current Sensing Frequency	DC		>1 ⁵	MHz
Temperature Range	-40		125 ⁴	°C
Electrical Offset (V)	-4		4	mV/V
Max Output at Saturation		45 ¹		mV/V
Nonlinearity			2 ⁶	% (unipolar)
Hysteresis			4 ⁶	% (unipolar)
TCR		+0.14		% / K
TCOI		+0.03		% / K
TCOV		-0.1		% / K
Off-axis Characteristic		Cos. β ⁷		
ESD		400		V pin to pin HBM



Notes:

- The output is differential. The use of a common ground for power and output will result in an output that is not within specifications.
- For SO8 package dimensions, see package dimension bulletin.
- Sensors can be provided in die/wafer form by special request.
- See Fig 1.
- GMR has been tested to 1 MHz.
- Output measured at bipolar saturation. Normal unipolar use will result in significantly smaller values.
- Beta (β) is any angle from sensitive axis.
- The GMR Current Sensor can be used to sense both AC and DC currents. DC current sensing results in a linear output while an AC current results in a fully rectified output. For more information regarding physical configurations and output characteristics, please refer NVE's Engineering & Application Notes.