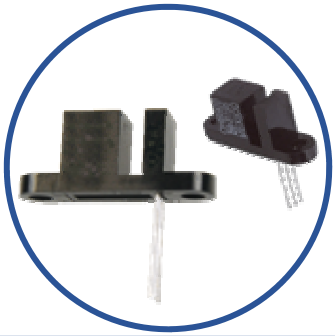
Hallogic Hall Effect Sensor Assembly
OHB900

TT electronics
OPTEK Technology

Features:



- Non-contact motion sensing
- Operates over a broad range of supply voltages
- Excellent temperature stability
- Hall element, linear amplifier, and Schmitt trigger on a single Hallogic silicon chip
- Performs in high dust and dirt environments over a wide temperature range
- 0.125” (3.18mm) wide gap

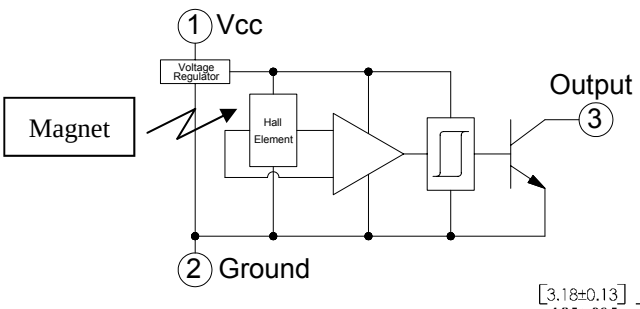
Description:

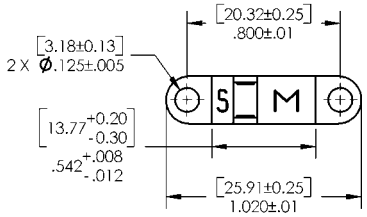
The OHB900 consists of a Hall Effect sensor similar to the OH180U and a rare earth magnet mounted in a low cost plastic housing. The magnet produces optimum magnetic flux at the Hall Effect sensor location. The sensor has an open collector transistor output which is activated when the slot is open. When the slot is blocked by a ferrous material, reducing the magnetic flux density at the Hall Effect sensor location, the open collector output transistor switches off. The device provides up to 25 mA of sink current. Output characteristics are constant at switching frequencies from DC to over 200 kHz.

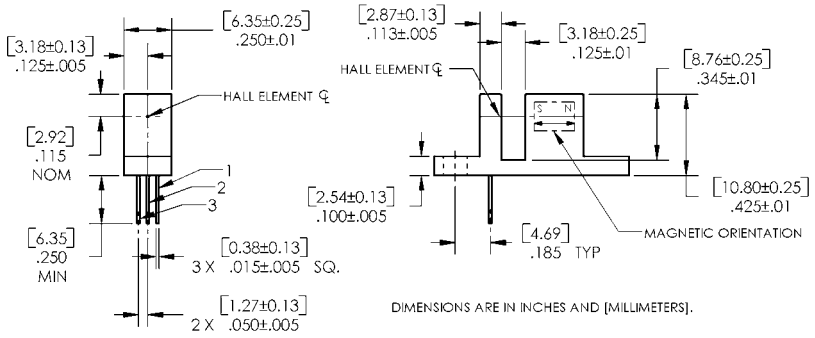
The Uni-Polar turns on with a (logic level “O”) with after a sufficient magnetic field from the south pole of a magnet approached the symbolized face of the device (Operating Point) and turns off (logic level “1”) after the magnetic field reached a minimum value. This feature makes these sensors ideal for applications in non-contact switching operations.

Absolute Maximum Ratings (TA=25°C unless otherwise noted)

Supply Voltage, Vcc	25 V
Storage Temperature Range, T_S	-50°C to +160°C
Operating Temperature Range, T_A	-50°C to +150°C
Lead Soldering Temperature (1/8 in. (3.2 mm) from case for 5 sec. with soldering iron)	260°C
Output ON Current, I_{SINK}	25 mA
Output OFF Voltage, V_{OUT}	25 V
Magnetic Flux Density, B	Unlimited







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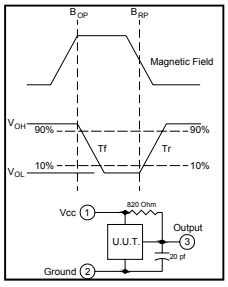
Electrical Characteristics (Vcc = 4.5 V to 24 V, T_A = 25° C unless otherwise noted)

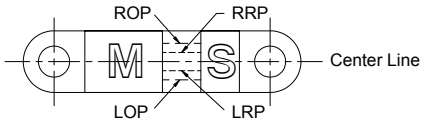
Symbol	Parameter	Min	Typ	Max	Units	Test Conditions
I_{CC}	Supply Current		4	7	mA	Vcc = 24 V, Output Off
V_{OL}	Output Saturation Voltage		100	400	mV	Vcc = 4.5 V, I_{OL} = 20 mA, Slot Open
I_{OH}	Output Leakage Current		0.1	10.0	µA	Vcc = 4.5 V, V_{OUT} = 24 V, Slot Blocked(1)
t_r	Output Rise Time		0.21	1.00	µs	R_L = 820 Ω, C_L = 20 pF
t_f	Output Fall Time		0.10	1.00	µs	

(1) Slot blocked with a ferrous material to interrupt magnetic flux.



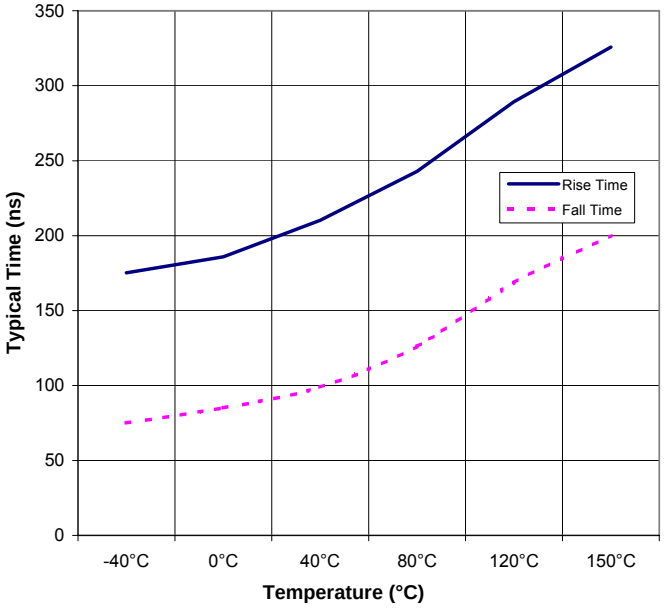
	Right Operate Point	Right Release Point	Left Release Point	Left Operate Point
Minimum	0.073" [1,85mm]	0.045" [1,14mm]	-0.045" [-1,14mm]	-0.073" [-1,85mm]
Maximum	0.003" [0,08mm]	-0.005" [-1,27mm]	0.005" [1.27mm]	-0.003" [-0,08mm]

Measurements are referenced to Center Line.

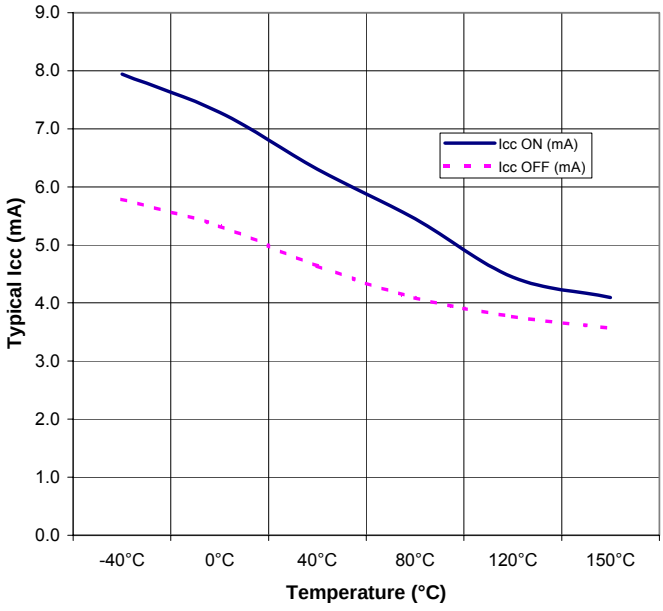


Vane - Material = 1018 Cold Rolled Steel - 0.03" [0.76mm] Thick
Location = 0.50" [1.27mm] from Bottom of Slot

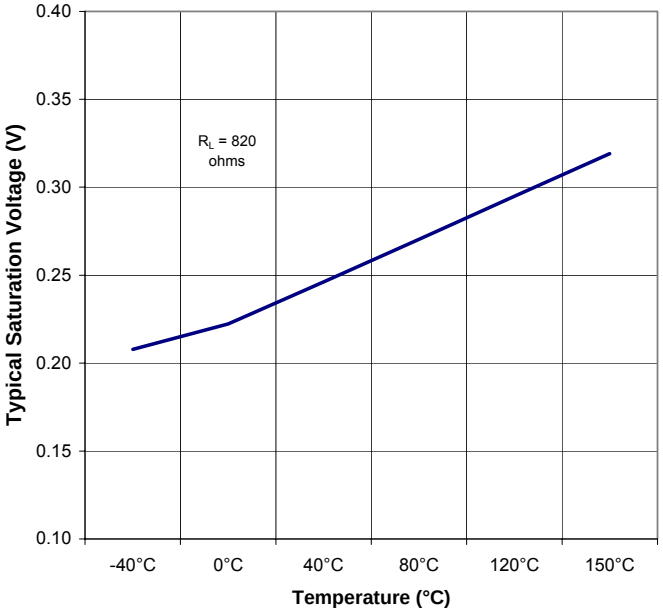
Rise & Fall Time vs Temperature



Icc vs Temperature



Saturation Voltage vs Temperature



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