Micro-Power Hall Effect Sensors
MH04, MH21 and MH11/M12

Standex-Meder Hall Effect Sensors offer solid state reliability, low power consumption, and consistent activation points over a wide temperature range in a rugged and environmentally isolated package.

Micro-Power versions operate on 2.5-3.5V battery voltage with only 5μA average supply current vs. the industry average of 5mA

Custom options include: output- switch, latch, analog, angular, etc., high temperature resistance, package design and much more.

Standex-Meder specializes in customizing designs to specific customer needs for a wide range of applications. Please contact us to provide the optimal solution for your specific needs.

Contact Information:
Standex-Meder Electronics
World Headquarters
4538 Camberwell Road
Cincinnati, OH 45209 USA

Standex Americas (OH)
+1.866.STANDEX
(+1.866.782.6339)
info@standexelectronics.com

Standex Americas (MA)
+1.800.870.5385
salesusa@standexmeder.com

Standex-Meder Asia (Shanghai)
+86.21.37820625
salesasia@standexmeder.com

Standex-Meder Europe (Germany)
+49.7731.8399.0
info@standexmeder.com

Dimensions in mm (inches)
## Electrical & Environmental Characteristics

<table>
<thead>
<tr>
<th>Specification</th>
<th>Conditions</th>
<th>Micro-Power Switch</th>
<th>Standard Switch &amp; Latch</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Min</td>
<td>Typ</td>
<td>Max</td>
</tr>
<tr>
<td>Supply Voltage</td>
<td>Operating</td>
<td>2.5</td>
<td>2.75</td>
<td>3.5</td>
</tr>
<tr>
<td>Output Leakage Current</td>
<td>( V_{\text{OUT}} = \text{Max Voltage} )</td>
<td>&lt; 1</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Output On Voltage</td>
<td></td>
<td>100</td>
<td>300</td>
<td>185</td>
</tr>
<tr>
<td>Awake Time</td>
<td></td>
<td>45</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>Period</td>
<td></td>
<td>45</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>Duty Cycle</td>
<td></td>
<td>0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chopping Frequency</td>
<td></td>
<td>340</td>
<td>500</td>
<td>10</td>
</tr>
</tbody>
</table>

<table>
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<tr>
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<th>Micro-Power</th>
<th>Standard</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Switch (Typ)</td>
<td>Switch (Typ)</td>
<td>Latch (Typ)</td>
</tr>
<tr>
<td>Supply Current</td>
<td>Chip Awake</td>
<td>2</td>
<td>4</td>
<td>mA</td>
</tr>
<tr>
<td></td>
<td>Chip Asleep</td>
<td>8</td>
<td></td>
<td>( \mu A )</td>
</tr>
<tr>
<td></td>
<td>( V_{CC} = 3.5V )</td>
<td>6.7</td>
<td>10</td>
<td>( \mu A )</td>
</tr>
<tr>
<td></td>
<td>( V_{CC} = 12V )</td>
<td>4</td>
<td></td>
<td>mA</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40</td>
<td>+85*</td>
<td>-40</td>
<td>+85*</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-65</td>
<td>+105</td>
<td>-65</td>
<td>+105</td>
</tr>
</tbody>
</table>

*Higher temperature versions available

## Magnetic Characteristics

<table>
<thead>
<tr>
<th>Specification</th>
<th>Conditions</th>
<th>Micro-Power</th>
<th>Standard</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Switch (Typ)</td>
<td>Switch (Typ)</td>
<td>Latch (Typ)</td>
</tr>
<tr>
<td>Operation Point</td>
<td>( V_{\text{OUT}} = \text{Low (Output On)} )</td>
<td>37</td>
<td>95</td>
<td>22</td>
</tr>
<tr>
<td>Release Point</td>
<td>( V_{\text{OUT}} = \text{High (Output Off)} )</td>
<td>31</td>
<td>70</td>
<td>-23</td>
</tr>
<tr>
<td>Hysteresis</td>
<td></td>
<td>5.9</td>
<td>25</td>
<td>45</td>
</tr>
</tbody>
</table>

### Circuit Diagram for 3-wire Hall Effect Sensors

- Add external pull-up resistor (R\(_{L}\)) for sinking output between \( V_{CC} \) and \( V_{\text{OUT}} \).
- Add external bypass capacitor (\( C_{\text{BYP}} \)) close to the sensor to reduce external noise as needed.

### Part Number Builder

<table>
<thead>
<tr>
<th>Series</th>
<th>Hall Model</th>
<th>Hall Function</th>
<th>Cable Length (mm)</th>
<th>Termination</th>
</tr>
</thead>
<tbody>
<tr>
<td>MH04, MH21, MH11/M12</td>
<td>10 (Micro-Power)* 11 (Standard)</td>
<td>S (Switch) L (Latch) A (Analog)</td>
<td>500*</td>
<td>W (5mm stripped and tinned)*</td>
</tr>
<tr>
<td></td>
<td>*Micro-Power version only available as switch function</td>
<td>*other lengths available</td>
<td>*other terminations available</td>
<td></td>
</tr>
</tbody>
</table>

Example Part Number: MH04-10S-500W