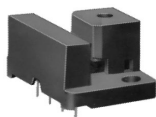


Solid State Sensors
Hall Effect Vane Position Sensors

4AV Series



- FEATURES
- Operated by vane interrupter
  - -40 to +125°C temperature range
  - Current sinking output
  - Smaller size than 2AV
  - Four pin in-line printed circuit board terminals or leadwires
  - Closely controlled differential to predict pulse width
  - 4.5 to 5.5 or 6 to 16 VDC power supply

4AV ORDER GUIDE

| Catalog Listings         | 4AV11C     | 4AV12C     | 4AV11A   | 4AV12A   |
|--------------------------|------------|------------|----------|----------|
| Supply Voltage (VDC)     | 4.5 to 5.5 | 4.5 to 5.5 | 6 to 16  | 6 to 16  |
| Supply Current (mA max.) | 7.0        | 7.0        | 13.0     | 13.0     |
| Output Type              | Sink       | Sink       | Sink     | Sink     |
| Output Voltage (V)       | 0.4        | 0.4        | 0.4      | 0.4      |
| Current per Output (mA)  | 4          | 8          | 10       | 20       |
| Termination              | PC Board   | Leadwire   | PC Board | Leadwire |

AV MECHANICAL CHARACTERISTICS

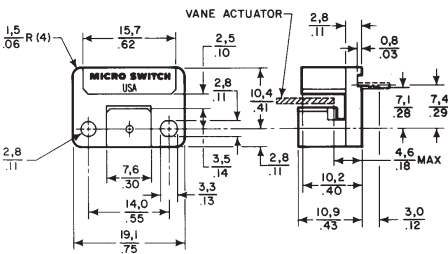
| Series | Left Operate a | Mag. Release b | Slope Diff. | Right Operate d | Release c | Diff.    | L-R Diff. |
|--------|----------------|----------------|-------------|-----------------|-----------|----------|-----------|
| 4AV*   | 5,4/.213       | 6,0/.237       | 0,6/.024    | 8,6/.337        | 7,9/.313  | 0,6/.024 | 2,5/.100  |

\* Operating characteristics of the 4AV are adjusted to produce a .100±.010 dimension between the operate point on one side of the switch, to the release point on the other side. The actuator can be designed to produce a specific pulse width for timing or sequencing operations.

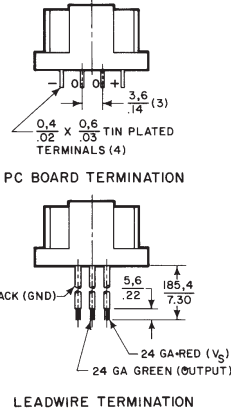
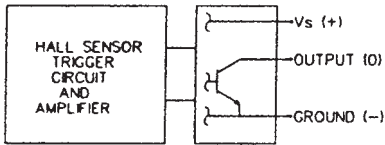
| VANE DIMENSIONS (mm/in.) | Thickness | Min. Window | Min. Tooth | Min. Tooth Depth |
|--------------------------|-----------|-------------|------------|------------------|
|                          | 1,0/.04   | 10,2/.40    | 10,2/.40   | 9,3/.37          |
|                          | 1,6/.06   | 10,2/.40    | 6,3/.25    |                  |

Vane material:  
Cold rolled steel, 1018 or low in carbon (annealed).

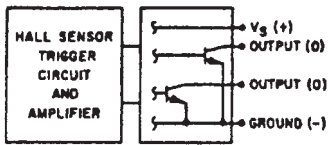
MOUNTING DIMENSIONS (For reference only)



BLOCK DIAGRAM Leadwire



PC Board

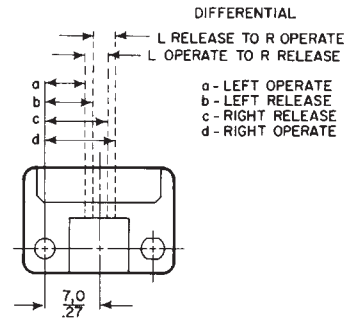


GENERAL INFORMATION

AV vane operated integral magnet position sensors are operated by passing a ferrous vane through the gap between the Hall sensor and the magnet, shunting the magnetic flux away from the sensor. AVs can be used as limit switches by operating with a single large vane; as tachometer sensors by using toothed wheels; or as synchronizing elements by using cams or sectors. AV Series have many features in common such as:

- Operation by a low cost, easy to fabricate ferrous vane
- Magnet and sensor incorporated in same rugged package
- Sealed construction . . . unaffected by dust or dirt
- 0 to 100 kHz operating speed . . . no minimum speed of operation
- On and Off times programmable by vane dimensioning
- Precision mechanical operating characteristics

VANE OPERATION



1. With no vane in the gap the output is conducting (Sinking is Low, Sourcing is High).
2. Vane movement from left to right. When leading edge reaches "b", the output stops conducting (Sinking goes High, Sourcing goes Low).
3. After leading edge reaches "b":  
A. If the vane moves on through the gap; when the trailing edge reaches "d", the output will be conducting.  
B. If direction of vane travel reverses; "a", output will be conducting.
4. For vane movement from right to left, output is non-conducting when the leading edge reaches "c", and is conducting when the trailing edge reaches "a".

Integral Magnet