

# Digital Vane Sensor

## VN1015 Sensors

Magnetically activated digital vane sensor in a rugged, overmolded plastic housing with three pins or 3-wire flying leads



### Description

The VN1015 sensors employ a Hall Effect digital vane sensor and a permanent magnet in two small towers, separated by a 3.4 mm (0.135") air gap. The output switches when a ferrous target passes between the towers. Typical targets are linear or rotary vanes using a square saw tooth or an open slot in a solid disk or band.

### Features

- Mechanically interchangeable with typical slotted optical switches
- Robust, high speed sensing in dirty/dusty environments
- No mechanical contacts to wear out
- Open collector (sinking or NPN) output can be used with bipolar or CMOS logic circuits with suitable pull-up resistor
- RoHS compliant

### Typical Applications

- Door/gate position control
- Exercise equipment
- Printers

### Environmental Specifications

Operating Temperature (VN101501, VN101503)	-40 °C to 85 °C (-40 °F to 185 °F)
Operating Temperature (VN101502, VN101504)	-40 °C to 150 °C (-40 °F to 302 °F)
Storage Temperature (VN101501, VN101503)	-40 °C to 85 °C (-40 °F to 185 °F)
Storage Temperature (VN101502, VN101504)	-40 °C to 150 °C (-40 °F to 302 °F)

### Electrical Specifications

Supply Voltage	3.8 to 24 VDC
Maximum Input Voltage	30 VDC
Maximum Reverse Voltage	30 VDC
Supply Current	4.1 mA typ., 7.5 mA max.
Output (Sink) Current	25 mA max.
Recommended Pull-Up Resistor	See Chart

### Mechanical Specifications

Housing Material	Over-molded plastic
Sensor Orientation	Sensitive; see drawing
Recommended Vane Parameters	Low carbon material at least 1.016 mm (0.04") thick, should penetrate to a depth < 3.05 mm (0.12") from bottom of sensor slot

Part Number	Termination
VN101501	pins
VN101502*	pins
VN101503	24 AWG x 150 mm leads
VN101504*	24 AWG x 150 mm leads

\*Not commonly stocked; please contact the factory or your distributor

[www.switches-sensors.zf.com](http://www.switches-sensors.zf.com) ZF Electronics Systems Pleasant Prairie, LLC ("ZF") acquired the rights to the CHERRY branded switches and sensors in 2008. Although ZF divested its interest in the CHERRY name in 2015, the switches and sensors remain unchanged and are now sold under the ZF brand.

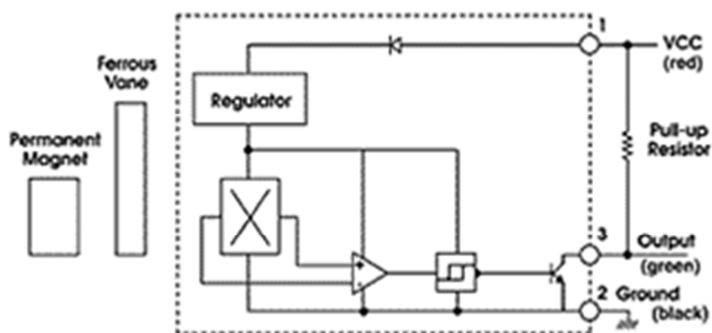


Note: An external pull-up resistor is required, the value of which is dependent on the supply voltage. The resistor should be connected between the output and Vcc. Refer to the wiring diagram for lead colors or pin numbering as applicable.

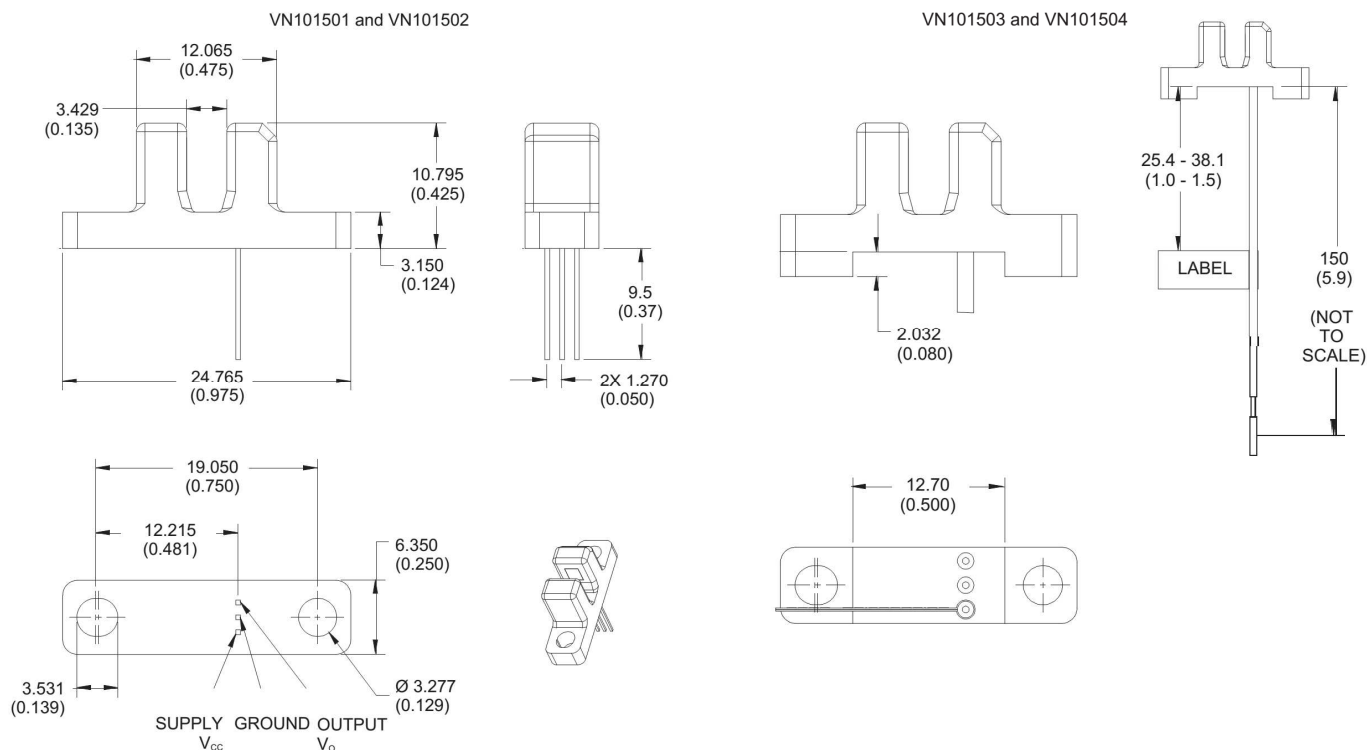
### Recommended External Pull-Up Resistor

Volts DC	5	9	12	15	24
Ohms	1k	1.8k	2.4k	3k	3k

### Open Collector Sinking Block Diagram



### Dimensions mm (inches)



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