

GVS Series Speed Sensor

User Manual



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User Manual of GVS Speed sensor

Description:

Yuanben tech, Co., Ltd. has taken its years of experience of manufacturing Speed sensors for engine timing applications and has developed a line of durable products for industrial use.

Yuanben Speed sensors have the Hall-Effect speed sensor GVS series (using an integrated Hall-effect sensor in conjunction with a permanent magnet which supplies a bias field) and GVS-H series (using a Hall-effect element), that separately detect the movement of Multi-pole magnet target wheel, with 3 wire, 5~24Vdc power and Magnet-electrical speed sensor MEVS series, name as magnetic pick up, detect the movement of target Steel Gear Tooth, 2 wire, no power, using a coil and magnet. At the same time, the magnet-resistance (MR) speed sensor is developing, named as Magnetic encoder.

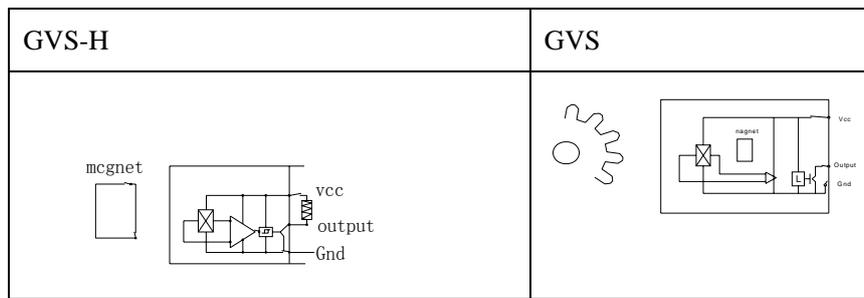
We offer the widest range of standard catalogue speed sensors to meet your various design needs. The design is flexible to easily meet all of your application requirements.

The Hall-Effect speed sensor can sense each change in target movement, regardless of speed from near zero to 15 kHz frequency range, generating a steady pulse train of frequency proportional to target speed. Typically, each time a gear tooth (or any ferrous discontinuity) passes in front of the sensor the output changes state. This type of sensor is known as a “P” type because it uses N-P-N transistor logic (as opposed to “N” type, which uses P-N-P transistor logic).

The HPS series Hall-Effect proximity switches can detect the target position that is in sense area or not, and Output On/Off signal. At the same time, we produce MPS-A, MPS-B, MPS-C, MPS-D, MPS-F series proximity switches that is made of reed switches, the reed switches used as sensor, detect the magnet target or ferrous steel plate target

Model:

GVS Speed sensor						
Model	Model simplex					Feature
GVS Speed sensor	<input type="checkbox"/>					
	I					Inner magnetic field Hall-effect speed sensor (Ignore)
	H					No-Inner magnetic field Hall-effect speed sensor
		2				Air-gap (max)(mm)
			3P			3 wire PNP Output
			3N			3 Wire NPN Output
			0			Square Wave
				M1640		Housing Code (M16*40)
				M1850		Housing Code (M18*50)
					300	Cable and Length 300mm
					M12	M12 connector



Technical Parameter

Item	Parameter	
Model	GVS-H-3-M1655	GVS-1-M1640
P/N		
Power voltage	5~24VDC	5~24VDC
Short circuit protection	yes	yes
Output signal	Square wave	Square wave
Output voltage	400mV (max)	225mV
Output current	20mA	20mA
Output Resistance		
Output inductive		
Testing range(rpm)	0~15000rpm	0~12000rpm
Frequency	100kHz	100kHz
The direction of rotary gear		
Working air-gap	3~5	0.5~2.5mm
Insulate resistance	100MOhm	100MOhm
Housing Code	M1655	M1640
Direction of sensor mounting		The mark line at the bottom of sensor, the axis of sensor is vertical the direction of rotary
Cable	500mm	Shield Cable 500mm
Temp range	-20°C~80°C	-20°C~125°C
Proof Class	IP65	IP65
Testing target	Multi-polar magnet	Low carbon steel
Gear tooth (typical dimension)		Dia.20mm , thick 6mm, gear wide 3mm, Valley wide 3mm, Valley depth 3mm
Note:		The LED working lamp selected

Applications of GVS and GVS-H Speed Sensor

- RPM/speed detectors (motor control)
- Timing measurement (photographic equipment)
- Ignition timing
- Position sensors (as low as .002" detection)
- Pulse counters (printers, motor drives)
- Valve position sensors
- Joy stick applications
- Door interlocks
- Current sensing (motor control systems)
- Fan/damper detection
- Brushless DC motors
- Flow meters (replaces reed switches)
- Relays (replaces electric/machine contacts)
- Proximity detectors
- Security (magnetic card or key entry)
- Banking machines (automatic tellers)
- Telecommunications (on/off hook detector)
- Lens position sensors
- Test equipment
- Shaft position sensors
- Vending machines
- Embossing machines

GVS-H Hall-Effect speed sensor is a non-contact, solid state device that is magnetically actuated for a variety of speed applications. The GVS-H Hall-Effect speed sensor is produced to a tight magnetic tolerance around the zero Gauss level to provide a 50% duty cycle over the operating full frequency range. With the additional advantage of low hysteresis, this device is ideal for operation with high-density multi-pole magnet target wheels and large air gap applications, along with providing the position repeatability needs for motor commutation applications. It is capable of reading speeds from zero to 100 kHz.

GVS series Gear tooth sensor provides speed sensing capabilities using an integrated Hall-effect sensor in conjunction with a permanent magnet which supplies a bias field, this ready-to use pick-up directly senses rotating ferrous gear and other similar gear type target. GVS speed sensor is a non-contact, solid state ferrous detecting device with a switched output. Its unique design provides a low cost solution for a wide range of speed sensing applications, especially those requiring true zero speed performance. This device utilizes a Hall Effect sensor that is internally biased with a permanent magnet and detects the interaction from an external ferrous target. Unlike earlier Hall based products, this device automatically detects changes in target position or symmetry and "self adjusts" to compensate for these changes. This specialized feature eliminates the need to externally calibrate or mechanically adjust each sensor for optimum performance. In addition, electronic hysteresis built into the device eliminates false triggering due to mechanical backlash and vibration. Installation of this sensor is also easier than "dual element" versions as this device operates correctly regardless of its rotational position or alignment relative to the

motion of the target.

Features:

Digital Output Signal

Gear Tooth Sensing Capability

No Rotary Orientation Concerns

Operation from -40°C to 125°C

Short Circuit Protection

Zero Speed Operation

High Speed (15kHz) Operation

6.3-24 VDC Operation

Nickel plated, Brass housing

PVC jacketed cable