

## Hall Effect Gear Tooth Sensors CYGTS

CYGTS Series Gear Tooth Sensors use a magnetically biased Hall Effect integrated circuit to accurately sense movement of ferrous metal targets. This specially designed integrated circuit, with bias magnet and discrete capacitor, is sealed in plastic or metal package for physical protection and cost effective installation.

Units will function from a 4.5 to 24VDC power supply. Output is digital, current sinking (open collector). Reverse polarity protection is standard. The sensor will not be damaged if power is inadvertently wired backwards.

### Features

- Sensing ferrous metal targets
- Digital current sinking output (open collector)
- Good signal-to-noise ratio
- Excellent low speed performance
- Output amplitude not dependent on RPM
- Fast operating speed, over 100kHz
- EMI resistant
- Reverse polarity protection and transient protection
- Wide operating temperature -40°C ~ +135°C.



### Applications

#### Automotive and Heavy Duty Vehicles:

- Camshaft and crankshaft speed and position
- Transmission speed
- Tachometers
- Anti-skid/traction control

#### Industrial Areas:

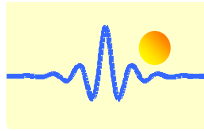
- Sprocket speed
- Chain link conveyor speed/distance
- Stop motion detector
- High speed low cost proximity
- Tachometers, counters.

### Absolute Maximum Ratings

Supply Voltage	-30V~+30V
Output Voltage	-0.5V~+30V
Output Current	Sinking 40mA GTS101DC, Sinking 12mA GTS99
Operating Temperature Range	-40°C~+135°C

### Order Guide

Characteristic	Part Number	
	CYGTS101DC	CYGTS99
Supply Voltage	4.5V~24V	6V~24V
Output Saturation Voltage	0.4V (Sinking 20mA)	0.4V (Load off)
Sense Distance	1mm~2mm (-40°C~135°C, 10~8000rpm, use reference target wheel)	
Switching time	Rise time: 10μsec. max, fall time: 2μsec. max.	
Cross Reference	1GT101DC	IVECO



## Reference Target Wheel

Tooth Height	Tooth Width	Tooth Spacing	Target Thickness	Teeth Number
0.20in (5.08)	0.10in(2.54mm)	0.70in(17.78mm)	0.25in(6.35mm)	60

Characteristics will vary due to target size, geometry, location, and material.

## Test Conditions

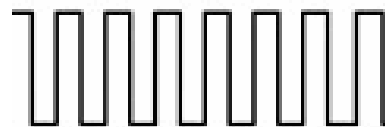
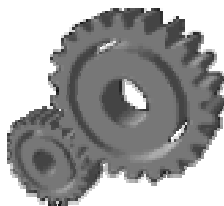
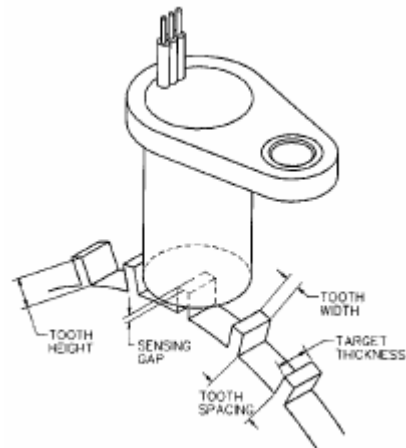
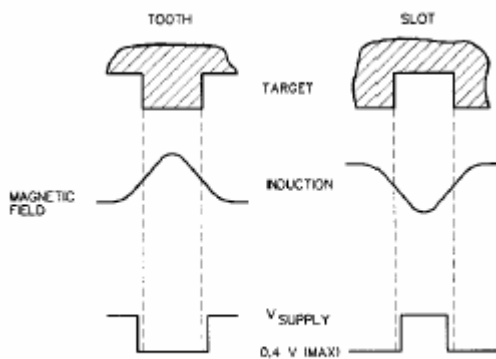
Air gap	0.04 to 0.08 in. (1.02 to 2.03mm)
Voltage Supply	+4.5 to +24V
RPM	10 min., 3600 max.

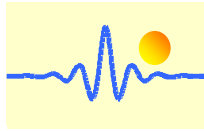
Optimum sensor performance is dependent on the following variables which must be considered in combination:

- Target material, geometry, and speed
- Gap between sensor and target
- Ambient temperature
- Magnetic material in close proximity.

## Application Notes

The output of these sensors is sinking current (open collector). A pull-up resistor ( $1k\Omega \sim 10k\Omega$ ) should be connected to the sensor output circuit (between power supply + and output).

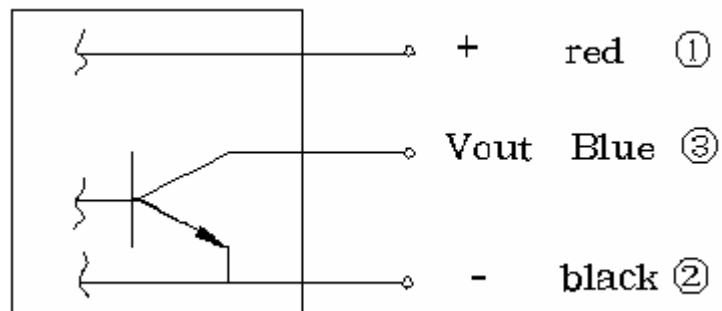
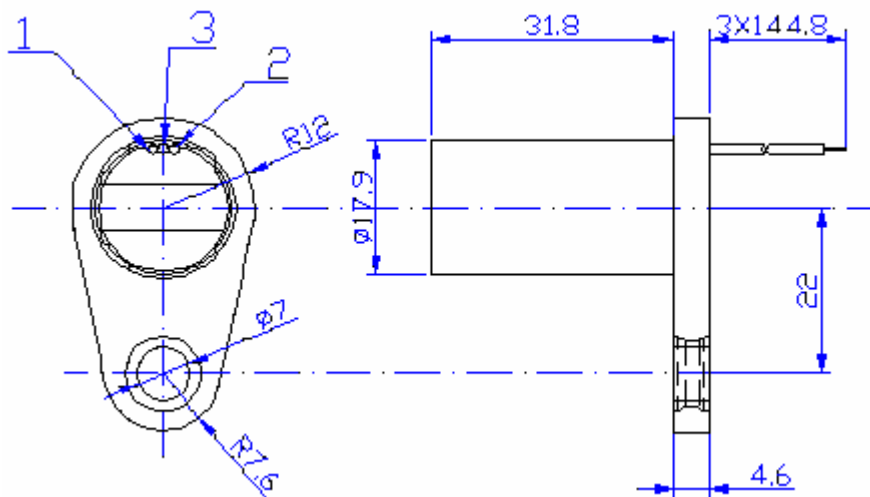


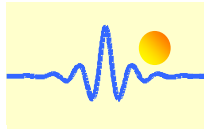


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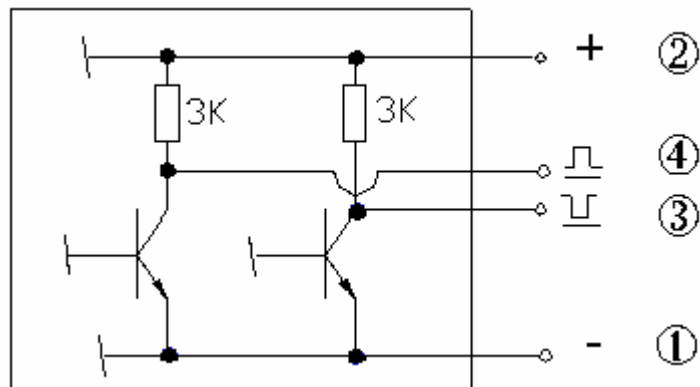
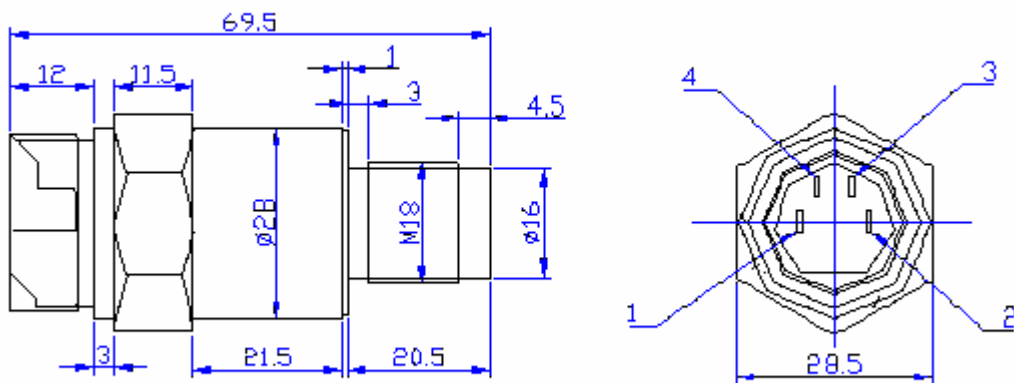
## Mounting Dimensions (for reference only)

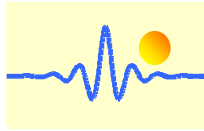
Sensor Type: CYGTS101DC





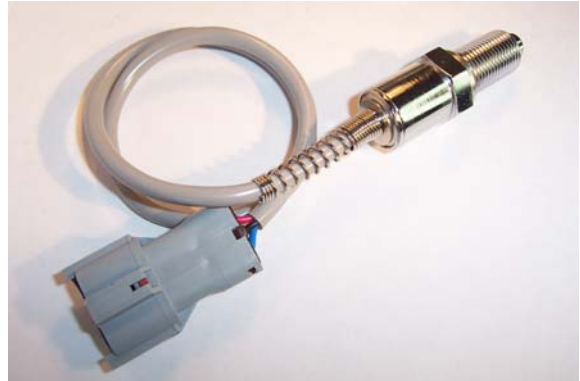
Sensor Type: CYGTS99





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## Custom GTS Sensors



CYGTS201A Gear Tooth Sensor



CYGTS211B Gear Tooth Sensor

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CYGTS9600 Gear Tooth Sensor

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