

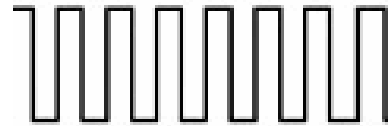
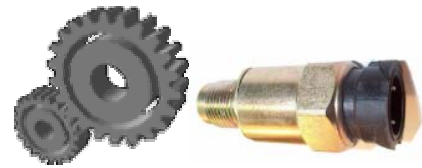
## Hall Effect Gear Tooth Sensors CYGTS99

CYGTS99 Hall Effect Gear Tooth Sensor uses 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.

The units function under power supply from 6V to 24V DC. 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  $-40^{\circ}\text{C} \sim +135^{\circ}\text{C}$ .



### Applications

#### Automotive and Heavy Duty Vehicles:

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

#### Industrial Areas:

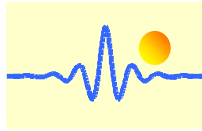
- Sprocket speed
- Chain link conveyor speed/distance
- Stop motion detector
- High speed low cost proximity
- Tachometers, counters.

### Absolute Maximum Ratings

Supply Voltage	$-30\text{V} \sim +30\text{V}$
Output Voltage	$-0.5\text{V} \sim +30\text{V}$
Output Current	Sinking 12mA
Operating Temperature Range	$-40^{\circ}\text{C} \sim +135^{\circ}\text{C}$ ( $-40^{\circ}\text{C} \sim +150^{\circ}\text{C}$ realizable)

### Order Guide

Part number	Flat pins: CYGTS99-F, CYGTS99-xxxx-F Round pins: CYGTS99-R, CYGTS99-xxxx-R
Supply Voltage	6V~24V
Output Saturation Voltage	0.4V (Load off)
Sense Distance	1mm~2mm ( $-40^{\circ}\text{C} \sim 135^{\circ}\text{C}/150^{\circ}\text{C}$ , 10~8000rpm Use reference target wheel)
Cross Reference	Siemens VDO Sensors



## Reference Target Wheel

Tooth Height	Tooth Width	Tooth Spacing	Target Thickness	Teeth Number
0.20in (5.08mm)	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

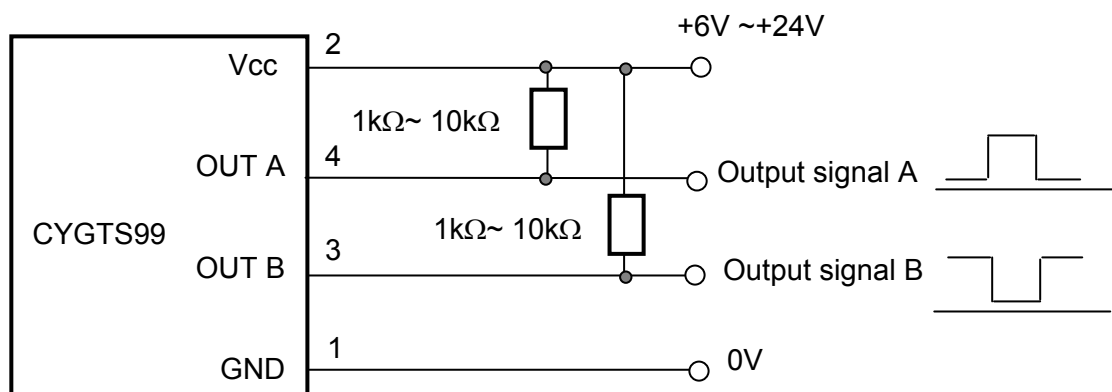
Air gap	0.04 to 0.08 in. (1.02 to 2.03mm)
Voltage Supply	+6V to +24V
RPM	10 min., 3600 max.

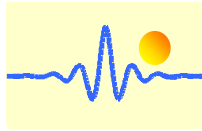
Optimum sensor performance is dependent on the following variables which must be considered in combination:

- 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 ( $1\text{k}\Omega \sim 10\text{k}\Omega$ ) should be connected to the sensor output circuit (between power supply + and output).



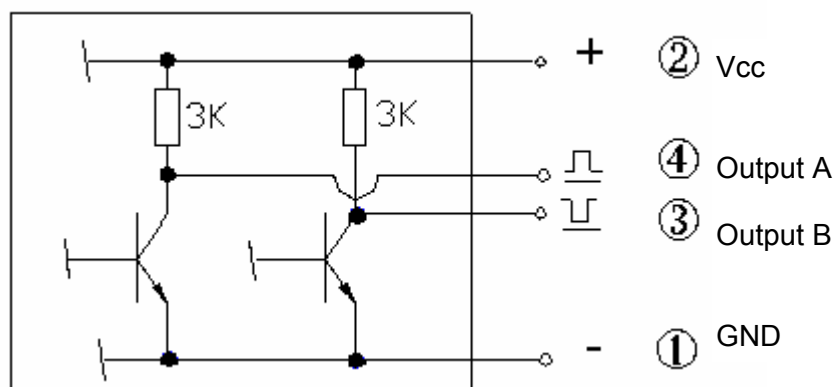
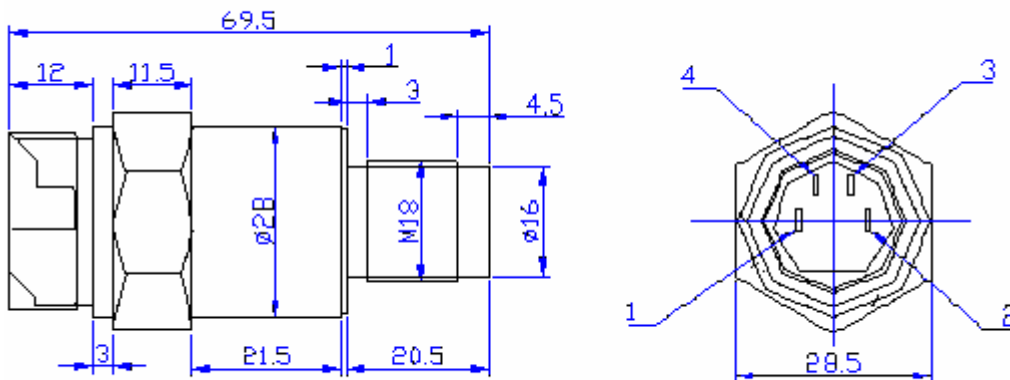


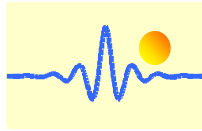
## Mounting Dimensions (for reference only)

### a) With Flat Pins









**CYGTS99-F**

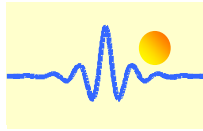




## CYGTS99 sensors with different length

Part number	Product picture	Description
CYGTS99-198-F		Gear Tooth speed sensor L: 19,8 mm
CYGTS99-250-F		Gear Tooth speed sensor L: 25 mm
CYGTS99-350-F		Gear Tooth speed sensor L: 35 mm
CYGTS99-632-F		Gear Tooth speed sensor L: 63,2mm
CYGTS99-900-F		Gear Tooth speed sensor L: 90 mm
CYGTS99-1150-F		Gear Tooth speed sensor L: 115 mm

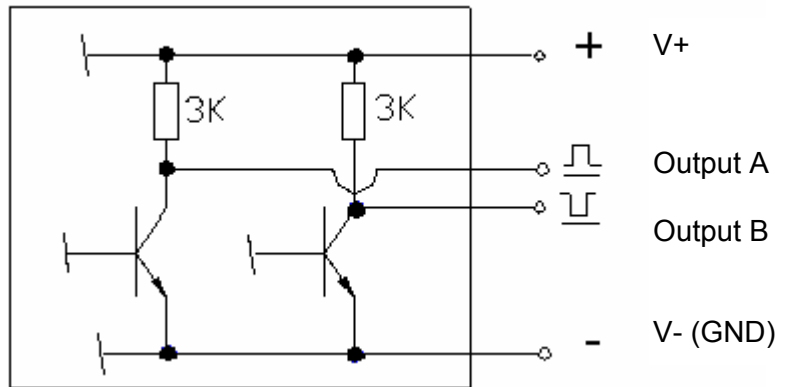




## b) With Round Pins and female connector CYGTS99C



CYGTS99-R



## Female Connector CYGTS99C

