Gear Tooth Sensors

For angle/speed sensing

GTS series

Issue date: August 2011

- All specifications are subject to change without notice.

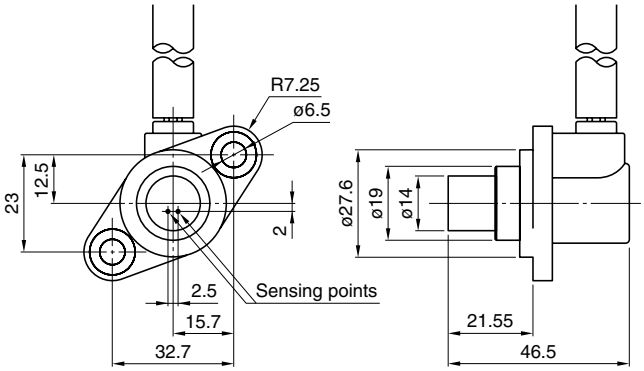
Gear Tooth Sensors
GTS Series

This low cost sensor measures the rotation angle of the cam crank. TDK's unique high performance Hall IC manufacturing method provides a sealed sensor in response to the need for automobiles with cleaner exhaust gas, improved fuel consumption, and increased engine performance.

FEATURES

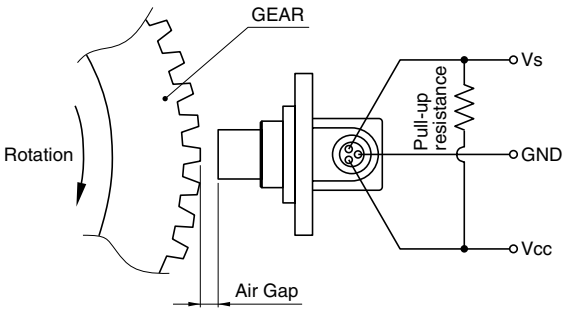
- Highly precise digital output due to integration of components into an IC package.
- Designed to tolerate extreme temperatures(–30 to +150°C)
- Probe distance can be varied over a wide range.
- Built-in surge voltage suppression circuit.
- Excellent resistance to environmental factors such as vibration, noise, moisture, etc.

SHAPES AND DIMENSIONS



Dimensions in mm

SENSOR PLACEMENT



RATINGS

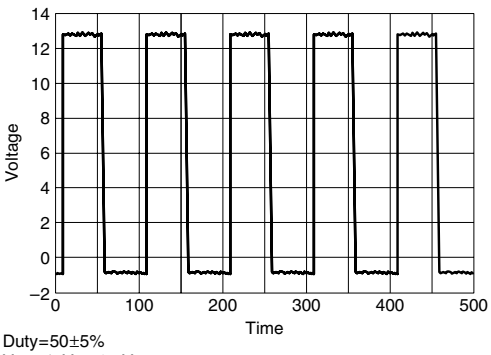
ELECTRICAL CHARACTERISTICS

Operating temperature range	–30 to +150°C
Operating power source voltage	5 to 12V
Output waveform	Open collector
Output voltage	$V_{HIGH} \geqq V_{CC}$–0.5V
	$V_{LOW} \leqq$ 0.4V
Output current	15mA max.
Duty	50±15%(According to gear's shape)
Air gap	1.5mm max.(According to gear's shape)
Response frequency	6Hz to 20kHz

RESISTANCE TO ENVIRONMENTAL EFFECTS

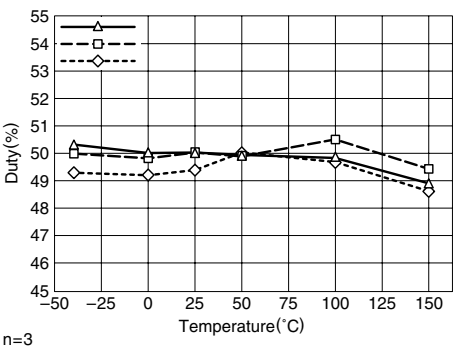
Vibration resistance	10 to 500Hz, 20G, 3 directions
Thermal shock resistance	–30 to +150°C, 700 cycles
Resistance to water damage	JIS D S2
High temperature operation	144h in oil bath at 150°C
Low temperature operation	144h in oil bath at –40°C
Overvoltage characteristics	70V, 200000µs/–260V, 2000µs
Resistance to electromagnetic radiation	100V/m, 1 to 200MHz

EXAMPLE OUTPUT WAVEFORM



Duty=50±5%
$V_{HIGH} \geqq$ Vcc-0.5V
$V_{LOW} \leqq$ 0.4V
Air gap=2mm max.
Response frequency=10 to 20kHz

EXAMPLE OF THERMAL CHARACTERISTICS



n=3
Gear module=2
Air gap=1.5mm
Rotation speed=50rpm

- All specifications are subject to change without notice.