Honeywell

Honeywell Sensing and Control

HOA0902-012

Actual product appearance may vary.

HOA Series Infrared Transmissive Encoder Sensor, Two tachometer Outputs, Two Mounting Tabs, Plastic Package

Features

- Dual channel IC
- Direct TTL interface
- Resolution to 0.018 in [0.457 mm]
- Internal temperature compensation
- 0.126 in [3.2 mm] slot width
- Two mounting configurations

Description

The HOA0902 assembly consists of a dual channel IC detector and an IRED encased in a black thermoplastic housing. The device is typically used with an interrupter strip or disk (code wheel) to encode the rate and direction of mechanical motion. Applications include linear and rotary encoders; it is especially suited for the encoding function in an optical mouse.

The detector is a monolithic IC which consists of two narrow adjacent photodiodes, amplifiers stages and quadrature logic circuitry which provides two outputs; (1) a fixed-duration, low level active tachometer (counting) pulse which is generated whenever the illumination level passes through the sensing threshold, and (2) a direction output which is set to a logic high or low level dependent on which of the two channels is illuminated first. The tachometer output is an NPN collector which is internally connected to Vcc through a 10 kOhm (nominal) resistor; the direction output is a totem-pole configuration. Both outputs are capable of directly driving TTL loads. The IC design incorporates circuitry to compensate the sensitivity for the output power vs. temperature characteristic of the IRED.

The tachometer pulse is generated at both the increasing and decreasing illumination thresholds of the sensing channel, resulting in two tach pulses for each mechanical period of the interrupter. For additional component information see SEP8506 and HCL2705.

Housing material is polycarbonate. Housings are soluble in chlorinated hydrocarbons and ketones. Recommended cleaning agents are methanol and isopropanol.

Product Specifications	
Series Name	Encoder Sensor
Product Type	IR Component
Turn-on Threshold Irradiance	0.05 mW/cm² to 2.0 mW/cm²
Output Option	Speed and Direction
Package Style	Chassis Mount
Package Components	Plastic
Continuous Forward Current	50 mA
Reverse Breakdown Voltage	3 V
Power Dissipation	100 mW
Operating Temperature Range	-40 °C to 85 °C [-40 °F to 185 °F]
Operating Supply Voltage	4.5 V to 5.5 V
Supply Voltage	5.5 Vdc
Operating Point Temperature Coeffient	-0.76 %/°C
Duration of Output Short Vcc or Ground	1.0 second
Tach Output, Inactive	4.5 V
Tach Pulse Level, Active	0.4 V
Tach Pulse Width	3.0 µs to 20 µs
Comment	The radiation source is IRED with a peak wavelength of 880 nm.
Availability	Global
Resolution	0,46 mm [0.018 in]
Supply Current max.	12 mA @ 25 °C