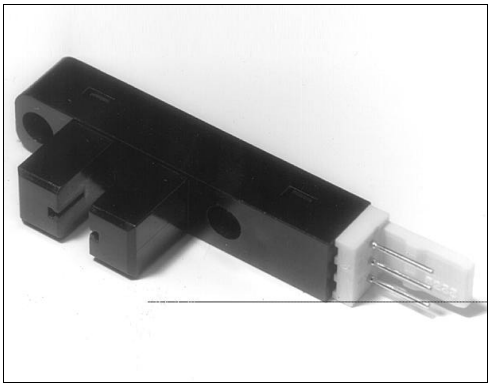
HOA7720/7730

Connectorized Transmissive Optoschmitt Sensor

FEATURES

- Direct TTL interface
- No interface circuits required
- Inverting logic
- Two device output options
- High resolution
- 0.118 in.(3.00 mm) slot width



INFRA-85.TIF

DESCRIPTION

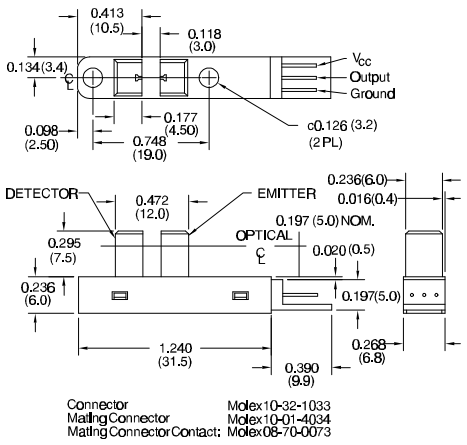
The HOA7720/7730 Series consists of an infrared emitting diode facing an Optoschmitt detector encased in a black thermoplastic housing. The photodetector consists of a photodiode, amplifier, voltage regulator and Schmitt trigger with two output configurations. The user can choose from available options of totem pole (HOA7720-M22) or open collector (HOA7730-M22) output. The totem pole output is well suited for applications which require fast transition times. The open collector allows the output of the sensor to interface with circuit elements driven by supply voltages other than Vcc supply. The inverting logic provides a high output when the optical path is interrupted, and a low output when the path is clear. The infrared emitting diode is biased internally eliminating the need for any external circuitry. Interconnection is simplified through the use of an integral Molex three pin connector.

Both emitter and detector have a 0.020 in.(.508 mm) x 0.070 in.(1.78 mm) vertical aperture. The narrow aperture is ideal for use in applications in which maximum rejection of ambient light is important, and maximum position resolution is desired. The HOA7720/7730 series employ plastic molded components. For additional component information see SEP8506, SDP8014 and SDP8314.

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

OUTLINE DIMENSIONS in inches (mm)

Tolerance	3 plc decimals	±0.010(0.25)
	2 plc decimals	±0.020(0.51)



DIM_073.ds4

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Honeywell reserves the right to make changes in order to improve design and supply the best products possible.

HOA7720-M22

Connectorized Transmissive Optoschmitt Sensor
Totem-Pole Output

ELECTRICAL CHARACTERISTICS (-40°C to +70°C unless otherwise noted)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Operating Supply Voltage	V_{CC}	4.5		5.5	V	T_A=25°C
Supply Current	I_{CC}			40	mA	V_{CC}=5.5 V
Low Level Output Voltage	V_{OL}			0.4	V	V_{CC}=4.5 V, I_{OL}=12.8 mA
High Level Output Voltage	V_{OH}	2.4			V	V_{CC}=4.5 V, I_{OH}=-800 µA (2)
Short Circuit Output Current	I_{OS}	-20		-100	mA	V_{CC}=5.25 V, Output=GND
Hysteresis (3)	HYST		50		%	
Propagation Delay, Low-High, High-Low	t_{PLH}, t_{PHL}		5		µs	V_{CC}=5 V
Output Rise Time, Output Fall Time	t_r, t_f		70		ns	RL=8 TTL Loads

Notes
1. It is recommended that a bypass capacitor, 0.1 µF typical, be added between V_{CC} and GND near the device in order to stabilize power supply line.
2. Output is HI when the optical path is interrupted.
3. Hysteresis is defined as the difference between the operating and release threshold intensities, expressed as a percentage of the operate threshold intensity.

ABSOLUTE MAXIMUM RATINGS

(25°C Free-Air Temperature unless otherwise noted)

Operating Temperature Range	-40°C to 70°C
Storage Temperature Range	-40°C to 85°C
Power Dissipation	220 mW
Supply Voltage	5.5 V
Supply Current	40 mA
Low Level Output Current	12.8 mA
Duration of Output	
Short to V_{CC} or Ground	1.0 sec

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HOA7730-M22

Connectorized Transmissive Optoschmitt Sensor
Open-Collector Output

ELECTRICAL CHARACTERISTICS (-40°C to +70°C unless otherwise noted)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Operating Supply Voltage	V_{CC}	4.5		5.5	V	T_A=25°C
Supply Current	I_{CC}			40	mA	V_{CC}=5.5 V
Low Level Output Voltage	V_{OL}			0.4	V	V_{CC}=4.5 V, I_{OL}=12.8 mA
High Level Output Current	I_{OH}			100	µA	V_{CC}=5.5 V V_{OH}=28 V
Hysteresis (3)	HYST		50		%	
Propagation Delay, Low-High, High-Low	t_{PLH}, t_{PHL}		5		µs	V_{CC}=5 V
Output Rise Time, Output Fall Time	t_r, t_f		70		ns	RL=8 TTL Loads

Notes
1. It is recommended that a bypass capacitor, 0.1 µF typical, be added between V_{CC} and GND near the device in order to stabilize power supply line.
2. Output is HI when the optical path is interrupted.
3. Hysteresis is defined as the difference between the operating and release threshold intensities, expressed as a percentage of the operate threshold intensity.

ABSOLUTE MAXIMUM RATINGS

(25°C Free-Air Temperature unless otherwise noted)

Operating Temperature Range	-40°C to 70°C
Storage Temperature Range	-40°C to 85°C
Power Dissipation	220 mW
Supply Voltage	5.5 V
Supply Current	40 mA
Low Level Output Current	12.8 mA
Duration of Output	
Short to V_{CC} or Ground	1.0 sec.
Applied Output Voltage	35 V

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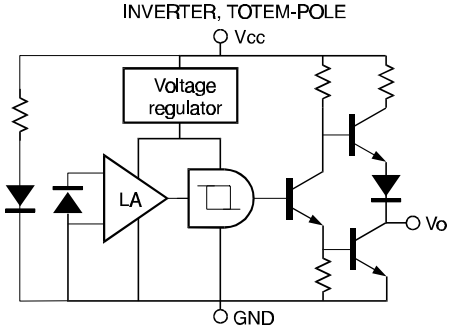
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HOA7720/7730

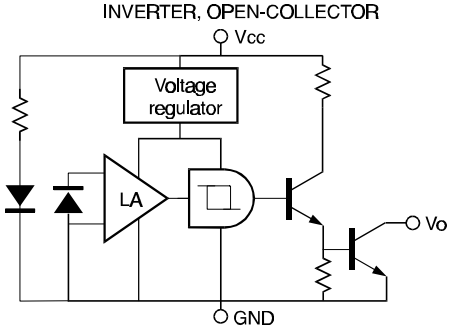
Connectorized Transmissive Optoschmitt Sensor

SCHEMATICS FOR HOA7720/7730

sch_040.cdr



sch_041.cdr



SWITCHING WAVEFORM FOR INVERTERS

cir_011.cdr

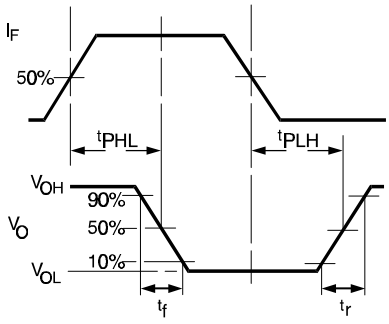


Fig. 1 Output Rise Time (t_r) and Output Fall Time (t_f) vs Temperature

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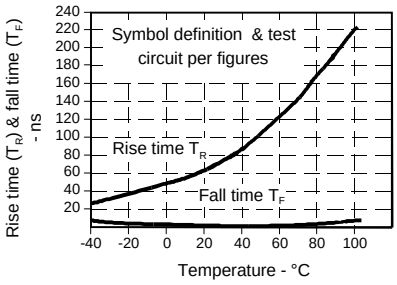
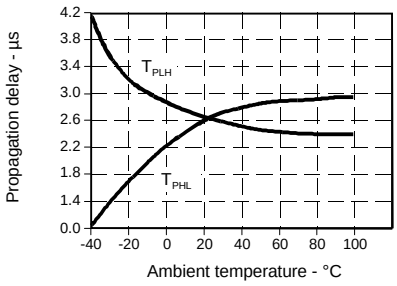


Fig. 2 Delay Time vs Temperature

gra_062.ds4



All Performance Curves Show Typical Values

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