

IRPS

28th May 2009

Infra Red reflective proximity sensor

This simple IR proximity sensor uses 'modulated burst' sensing method to avoid false triggering and interference.

It has a range of about 4 -12cm (depending on the type of reflective surface), and will not respond at all to matt black. Response time is around 10mS, and a small amount of hysteresis (about 1cm) is included to avoid 'chattering' at limit range. Vertical and horizontal axis of 'sight' versions will be available.



Figure 1: IRPS

Features

- Up to 12cm range
- Simple interface (2.7 - 3.6V at 7mA nominal, cmos output).
- Low current consumption: 6mA average (20mA peak)
0.5mA (reset)
- Small size: 22 x 17 x 13 mm

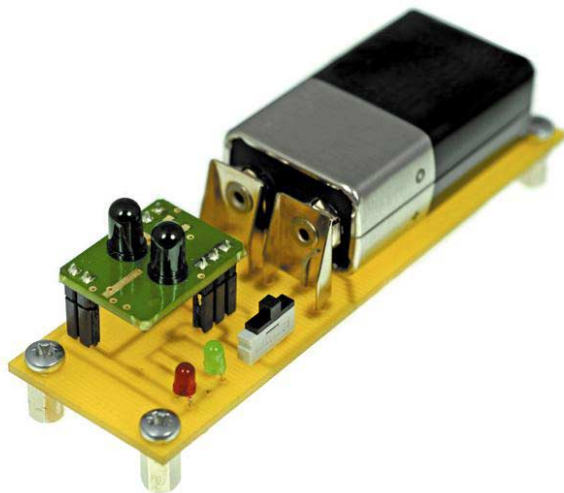


Figure 2: IRPS demo board

Applications

- Robotics
- Alarms
- Optical switches
- Industrial sensing

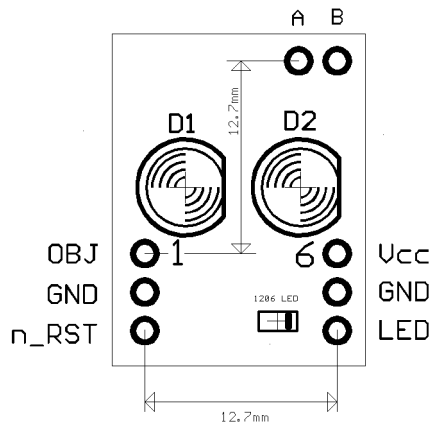


Figure 3: IRS footprint (top view)

Pin description

Pin	Name	Function
1	OBJ	'high' when reflective object is in view
2	GND	Ground
3	RST	pull low to reset, and disable, the module
4	LED	as pin 4, with series 470R resistor
5	GND	Ground
6	Vcc	2.7 -3.6v in (4 - 5v version available)
A	GND	Ground
B	GND	Ground

Notes:

1. Pin 1 (OBJ) is a cmos logic output
2. Pin 3 (n_RST) has a 100K pullup to Vcc
3. An optional light emitting diode (low current, 1206 package) can be fitted on the PCB
When fitted, it is connected between Pin 4 (LED) and GND
4. The module pinout fits on a 0.1" pitch matrix
5. Vertical and horizontal view versions are available

Technical Specifications

Range	2 - 8cm initial detection (depending on surface sensed) approx 1-2cm of hysteresis is present
Emission	940nm OOK modulated datastream (approx 20kbit/sec)
Response time	< 10mS
Supply	<i>voltage</i> 2.7 - 3.6v (4 - 5v version available)
	<i>current</i> 6mA average (20mA peak) 0.5mA (reset)
Interface	<i>user</i> 3, 3, 2 pin 0.1" pitch headers
Operating temperature	-20 to +70 degrees centigrade (Storage -30 to +70 degrees)
Size	22 x 17 x 13 mm (vertical view version)

Radiometrix Ltd
Hartcran House
231 Kenton Lane
Harrow, Middlesex
HA3 8RP
ENGLAND

Tel: +44 (0) 20 8909 9595
Fax: +44 (0) 20 8909 2233

sales@radiometrix.com
www.radiometrix.com

Copyright notice

This product data sheet is the original work and copyrighted property of Radiometrix Ltd. Reproduction in whole or in part must give clear acknowledgement to the copyright owner.

Limitation of liability

The information furnished by Radiometrix Ltd is believed to be accurate and reliable. Radiometrix Ltd reserves the right to make changes or improvements in the design, specification or manufacture of its subassembly products without notice. Radiometrix Ltd does not assume any liability arising from the application or use of any product or circuit described herein, nor for any infringements of patents or other rights of third parties which may result from the use of its products. This data sheet neither states nor implies warranty of any kind, including fitness for any particular application. These radio devices may be subject to radio interference and may not function as intended if interference is present. We do NOT recommend their use for life critical applications.

The Intrastat commodity code for all our modules is: 8542 6000.

R&TTE Directive

After 7 April 2001 the manufacturer can only place finished product on the market under the provisions of the R&TTE Directive. Equipment within the scope of the R&TTE Directive may demonstrate compliance to the essential requirements specified in Article 3 of the Directive, as appropriate to the particular equipment.

Further details are available on The Office of Communications (Ofcom) web site:

<http://www.ofcom.org.uk/radiocomms/ifi/>

Information Requests
Ofcom
Riverside House
2a Southwark Bridge Road
London SE1 9HA
Tel: +44 (0)845 456 3000 or 020 7981 3040
Fax: +44 (0)20 7783 4033
information.requests@ofcom.org.uk

European Radiocommunications Office (ERO)
Peblingehus
Nansensgade 19
DK 1366 Copenhagen
Tel. +45 33896300
Fax +45 33896330
ero@ero.dk
www.ero.dk