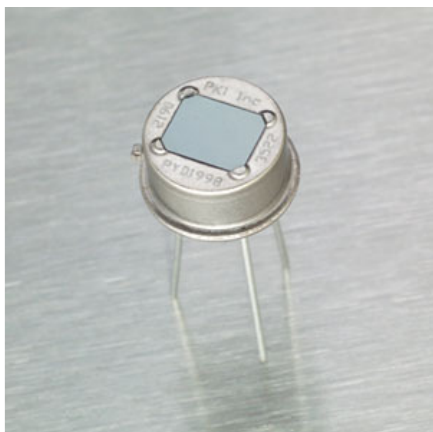# DigiPyro™
Dual Element Detector, PYD 1998

World's first digital output pyrodetector provides significantly improved technical performance. The new DigiPyro™ is truly setting the digital standard in motion detection.

Introduction

The DigiPyro™, PYD 1998, is the first within a new family of digital pyroelectric infrared detectors, brought to you from PerkinElmer.

It combines the time-proven, ceramic dual element configuration with a fully integrated A/D converter. An internal clock and control unit enable the PYD 1998 digital output pyrodetector to open a dialog with any outside microprocessor without additional components. The PYD 1998 is offered in a standard three-pin TO-5 housing.

The move from analog to digital technology enables the DigiPyro to deliver a number of advantages including space savings from fewer components and significantly improved EMI immunity. The PYD 1998's fully digital, integrated processing technology continues the high quality standard tradition that customers have come to rely upon with PerkinElmer's analog pyrodetectors. With the introduction of the DigiPyro, PYD 1998, PerkinElmer is making a real step-change in motion detection.

Features and Benefits

- Digital Output Sensor
  15 Bit Output "direct link"
  3 Pin TO-5 Housing
- Dual Element Design
  2 x 1 mm² Elements
  1 mm Spacing
- Infrared Window
  5.5...14 µm Transmission
  Window Size 5,2 x 4,2 mm²
- High level electrical performance
 Low EMI Sensitivity
  Unique Responsivity

Applications

- Intrusion Alarm Applications
- Motion Activated Light Switches
- Door Openers

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precisely.
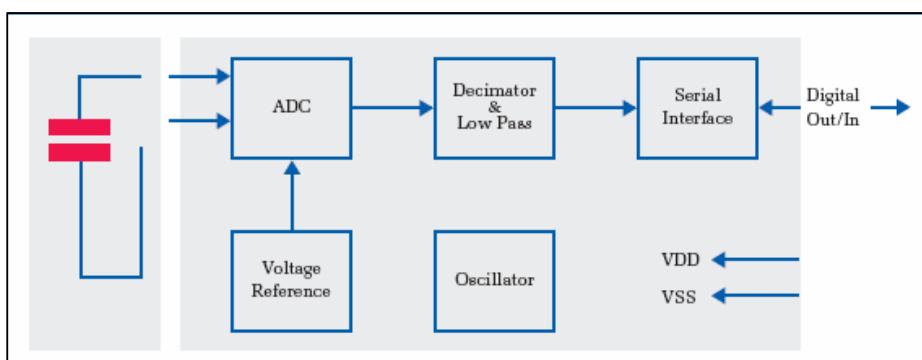
1   Technical Data

Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Responsivity		3.3	4.0		kV/W	
Noise			20	50	µVpp	
Operating Voltage	V_{DD}	3.0	5.0	5.5	V	
Supply Current	I_{DD}		30	40	µA	$V_{DD} = 5$ V
Field of View			100		Degree	
Operating Temperature	T_o	-40		85	℃	The electrical parameters may vary from specified values accordance with their temperature dependence.
ADC Resolution			14		Bits	Max Count = 2^{14}
ADC Sensitivity		6.1	6.5	7	µV/count	
ADC Offset		6200	8250	11000	Bit	
Input Low Voltage	V_{IL}			$0.2\ V_{DD}$	V	
Input High Voltage	V_{IH}	$0.8\ V_{DD}$			V	
Pull Up / Down Current		220	280	350	µA	Input to V_{SS} / V_{DD}
Data Setup Time	t_s	25			µs	
Match				10	%	
LPF Cut-Off Frequency			10		Hz	
Internal Clock Frequency	f_{CLK}	60	70	90	kHz	
Storage Temperature	T_s	-40		85	℃	Avoid storage in humid environment.

2   Physical Configuration
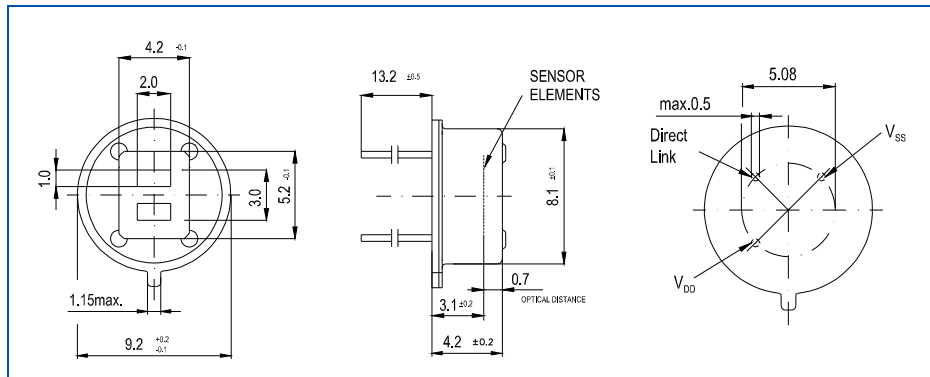
Figure 4
PIN Layout.
All measurements are in mm.

Housing: TO-5 metal housing with infrared transmissive window.

DigiPyro Application Kit

PerkinElmer Optoelectronics has designed an Application Kit that helps customers perform their first measurements with the DigiPyro. It is easy to use and does not require specialized technical know how. Please contact us to receive additional information on how to obtain the Application Kit.

All values are nominal; specifications subject to change without notice.