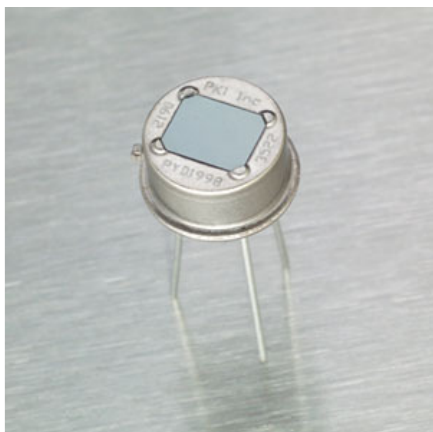


# DigiPyro™

## 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.

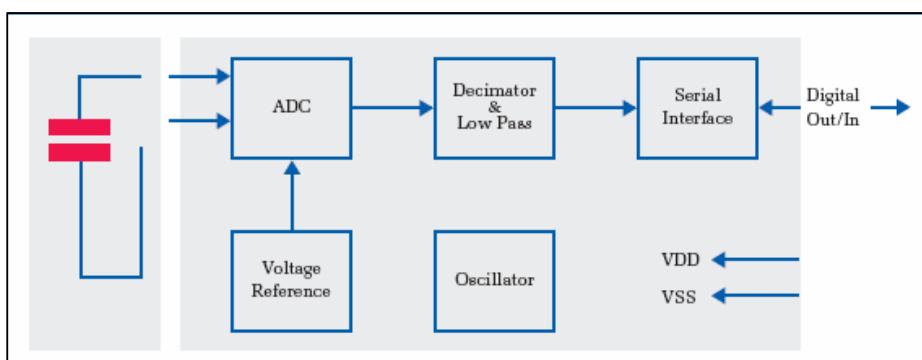
The move from analog to digital technology enables the DigiPyro to deliver a number of advantages including space savings from fewer components and significantly improved EMI immunity. The PYD 1998's fully digital, integrated processing technology continues the high quality standard tradition that customers 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 mm<sup>2</sup> Elements
- 1 mm Spacing
- Infrared Window
- 5.5...14 μm Transmission
- Window Size 5,2 x 4,2 mm<sup>2</sup>
- High level electrical performance
- Low EMI Sensitivity
- Unique Responsivity

### Applications

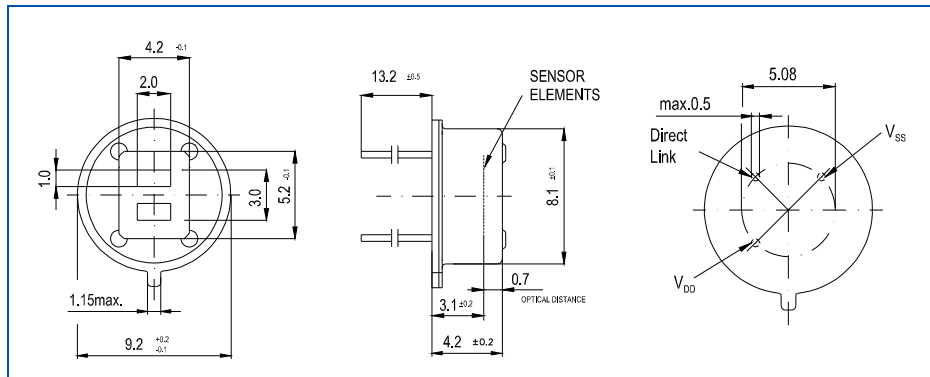
- Intrusion Alarm Applications
- Motion Activated Light Switches
- Door Openers



## 1 Technical Data

Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Responsivity		3.3	4.0		kV/W	
Noise			20	50	$\mu$ Vpp	
Operating Voltage	$V_{DD}$	3.0	5.0	5.5	V	
Supply Current	$I_{DD}$		30	40	$\mu$ A	$V_{DD} = 5$ V
Field of View			100		Degree	
Operating Temperature	$T_o$	-40		85	$^{\circ}$ C	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	$\mu$ V/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	$\mu$ A	Input to $V_{SS} / V_{DD}$
Data Setup Time	$t_s$	25			$\mu$ s	
Match				10	%	
LPF Cut-Off Frequency			10		Hz	
Internal Clock Frequency	$f_{CLK}$	60	70	90	kHz	
Storage Temperature	$T_s$	-40		85	$^{\circ}$ C	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.

**North America Customer Support Hub**  
**PerkinElmer Optoelectronics**  
 22001 Dumberry Road  
 Vaudreuil-Dorion, Québec  
 Canada J7V 8P7  
 Telephone: +1 450-424-3300, (+1) 866-574-6786 (toll-free)  
 Fax: +1 450-424-3345  
 Email: [opto@perkinelmer.com](mailto:opto@perkinelmer.com)  
[www.optoelectronics.perkinelmer.com](http://www.optoelectronics.perkinelmer.com)

**European Headquarters**  
**PerkinElmer Optoelectronics**  
 Wenzel-Jaksch-Str. 31  
 65199 Wiesbaden, Germany  
 Telephone: (+49) 611-492-247  
 Fax: (+49) 611-492-170  
 Email: [opto.Europe@perkinelmer.com](mailto:opto.Europe@perkinelmer.com)

**Asia Headquarters**  
**PerkinElmer Optoelectronics**  
 47 Ayer Rajah Crescent #06-12  
 Singapore 139947  
 Telephone: (+65) 6775-2022  
 Fax: (+65) 6775-1008  
 Email: [opto.Asia@perkinelmer.com](mailto:opto.Asia@perkinelmer.com)



For a complete listing of our global offices, visit [www.optoelectronics.perkinelmer.com](http://www.optoelectronics.perkinelmer.com)

©2007 PerkinElmer, Inc. All rights reserved. The PerkinElmer logo and design are registered trademarks of PerkinElmer, Inc. All other trademarks not owned by PerkinElmer, Inc. or its subsidiaries that are depicted herein are the property of their respective owners. PerkinElmer reserves the right to change this document at any time without notice and disclaims liability for editorial, pictorial or typographical errors.  
 600119\_07 DTS0707