

PYRODETECTORS FOR GAS MONITORING AND MEASURING



PYS 3828 – Dual Channel DigiPyro®

Applications

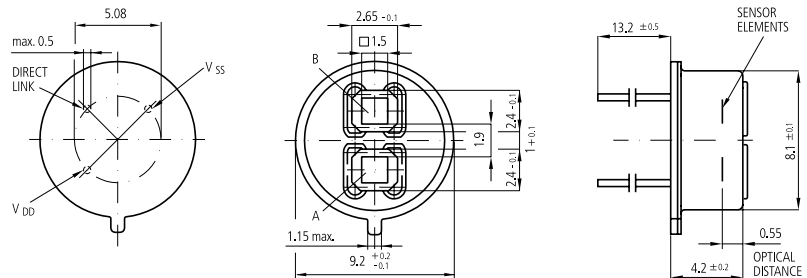
- Gas sensing and monitoring

Features and Benefits

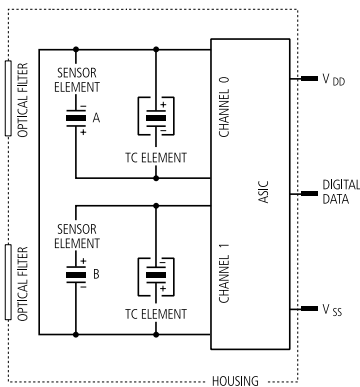
- Digital output
- Two optical channels
- Temp. reference channel
- Temperature compensated elements
- Selection of narrow band pass filters
- TO-5 metal housing

Product Description

Excelitas extends the family of DigiPyro® detectors to applications in gas sensing. This series includes a special triple channel version, in which two channels having their individual optical (narrow band) windows and an additional temperature reference signal are provided. All 3 channels are output in one 42-bit digital bit stream communicated via a single wire “direct link” interface to a suitable host microprocessor.



All dimensions in mm



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Main Parameter	Symbol	PYS 3828	Unit	Remark
Responsivity, min.	R_{min}	3.3	kV/W	$f = 1 \text{ Hz}$
Responsivity, typ.	R	4	kV/W	$f = 1 \text{ Hz}$
Match, max.	M_{max}	10	%	
Noise, max.		80	μV_{pp}	$0.4 \dots 10 \text{ Hz} / 20^\circ \text{ C}$
Field of view, horizontal	FoV	70°		Unobstructed
Field of view, vertical	FoV	85°		Unobstructed
Operating voltage	V_{DD}	$2.7 \dots 3.6$	V	
Supply current	I_{DDmax}	15	μA	$V_{DD} = 3.3 \text{ V}$
Digital Data				
Serial interface update time	t_{REP}	14	ms	
ADC resolution		14	Bits	Max. count = $2^{14}-1$
Output data format		3×14	Bits	
ADC sensitivity		$6.1 \dots 7$	$\mu V/\text{count}$	
ADC output offset		$7000 \dots 9200$	Counts	
ADC output offset, typ.		8192	Counts	
Temperature Reference				
Gain (temperature)		80	Counts/K	-20° C to $+80^\circ \text{ C}$
Linearity		$-5 \dots +5$	%	-20° C to $+80^\circ \text{ C}$
Filter, Signal Processing				
Digital filter cut off		10	Hz	see note 1)

1) A digital bandpass filter is recommended to cut off output offset.