R-QPD Four quadrant PIN optical detection module

Description

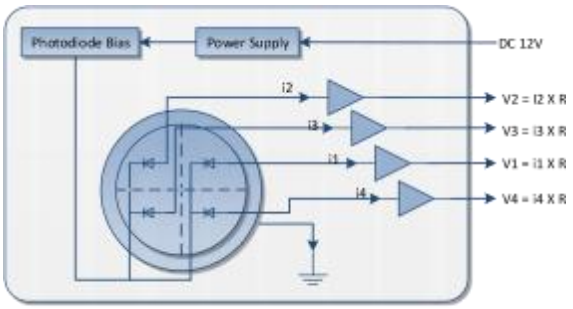
The R-QPD-A/B series four quadrant PIN optical detection module adopts imported four quadrant photodiodes, integrates power supply circuits and corresponding low-noise amplification circuits, and has the characteristics of low noise, high responsiveness, and fast response speed. It is widely used in fields such as laser collimation, laser communication, and laser guidance.R-QPD-A-20K and R-QPD-B-20K are mainly used for measuring the position of laser beams in spatial optical paths. Users can choose corresponding acquisition modules and display the spot position in real time through the upper computer software. Communication protocols can also be provided for secondary development. R-QPD-A-20M is mainly used for target capture and tracking, as well as for detecting beat frequency signals in high-precision angle measurement. The module adopts J30J DB15 connector to achieve power supply and 4-channel independent signal output.

Feture

- Spectral range 400~1700nm
- Fast response speed
- Optional photosensitive surface
- Integrate 4 independent amplification circuits
- Low noise
- Compact structure
- Single power supply

Application

- Laser collimation
- Laser guidance
- Space optical communication
- High precision angle measurement



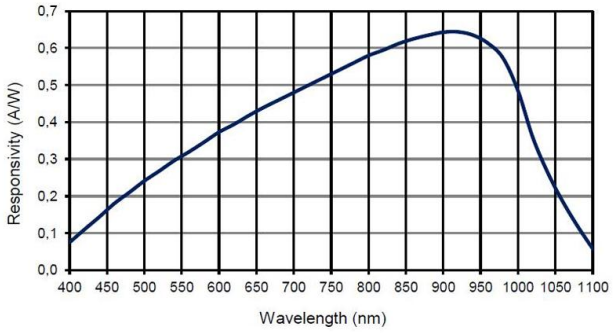
原理框图

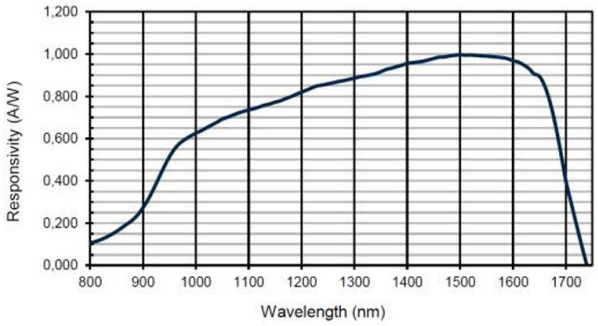
Parameter

Product Type	Four quadrant PIN optical detection module			
Parameter	R-QPD-B-20K	R-QPD-B-20M	R-QPD-A-20K	R-QPD-A-20M
Detector type	Si/PIN		InGaAs/ PIN	
Light input	Free Space		Free Space	
Wavelength range	400~1100nm		800~ 1700nm	
Responsiveness	0.64A/W@900nm		0.9A/W@1550nm	
Diameter of photosensitive surface	7.98mm		3mm	
Unit gap	42um		45um	45um
Bandwidth (3dB)*	>20KHz	>20MHz	>20KHz	>20MHz
Conversion gain*	100K V/W@900nm	2.5K V/W@900nm	10KV/W@ 1060 nm	10K V/W@ 1060 nm

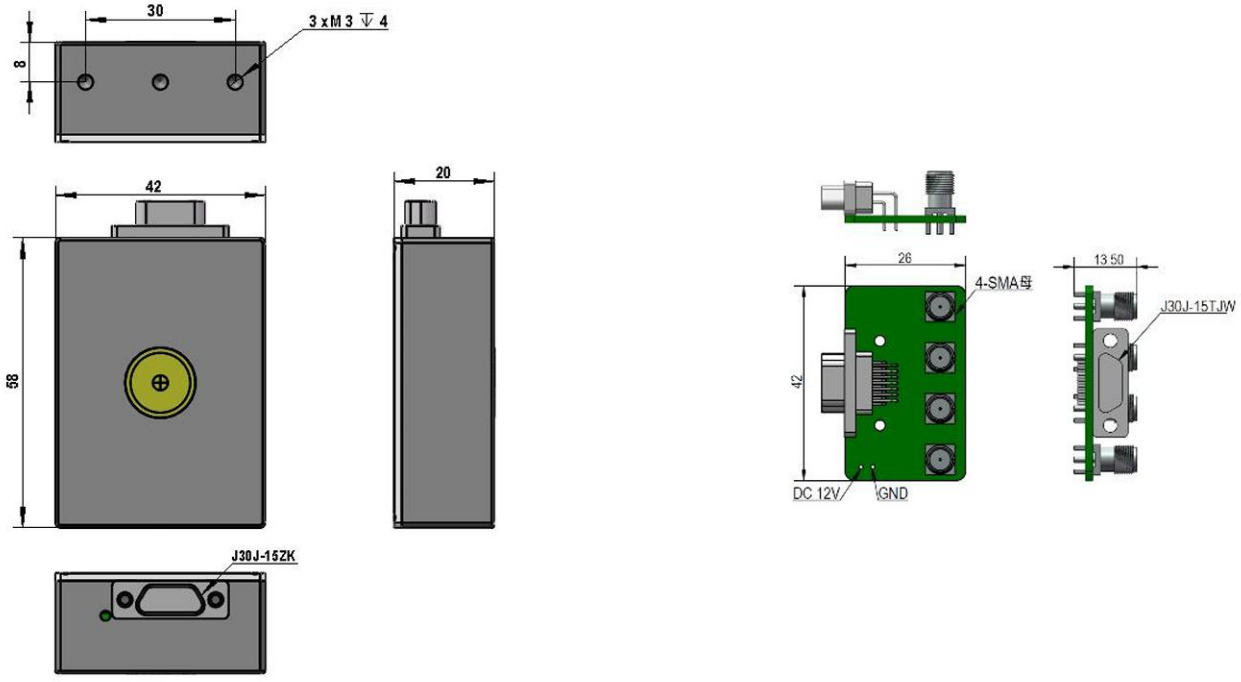
Rise time	17us	35ns	17us	18ns
Saturated optical power*	50uW	2mW	0.5mW	0.5mW
Coupling method	DC coupling		DC coupling	DC/AC coupling
Output impedance	50Ω		50Ω	50Ω
Total output noise voltage*	<1mVpp	<5mVpp	<2mVpp	<30mVpp
Maximum output voltage	5V			
Operating voltage	DC 12V @<150mA			
Signal output port	J30J DB15 connector, equipped with adapter board to SMA interface			
Size	58x42x20mm			

Characteristic curve





Size

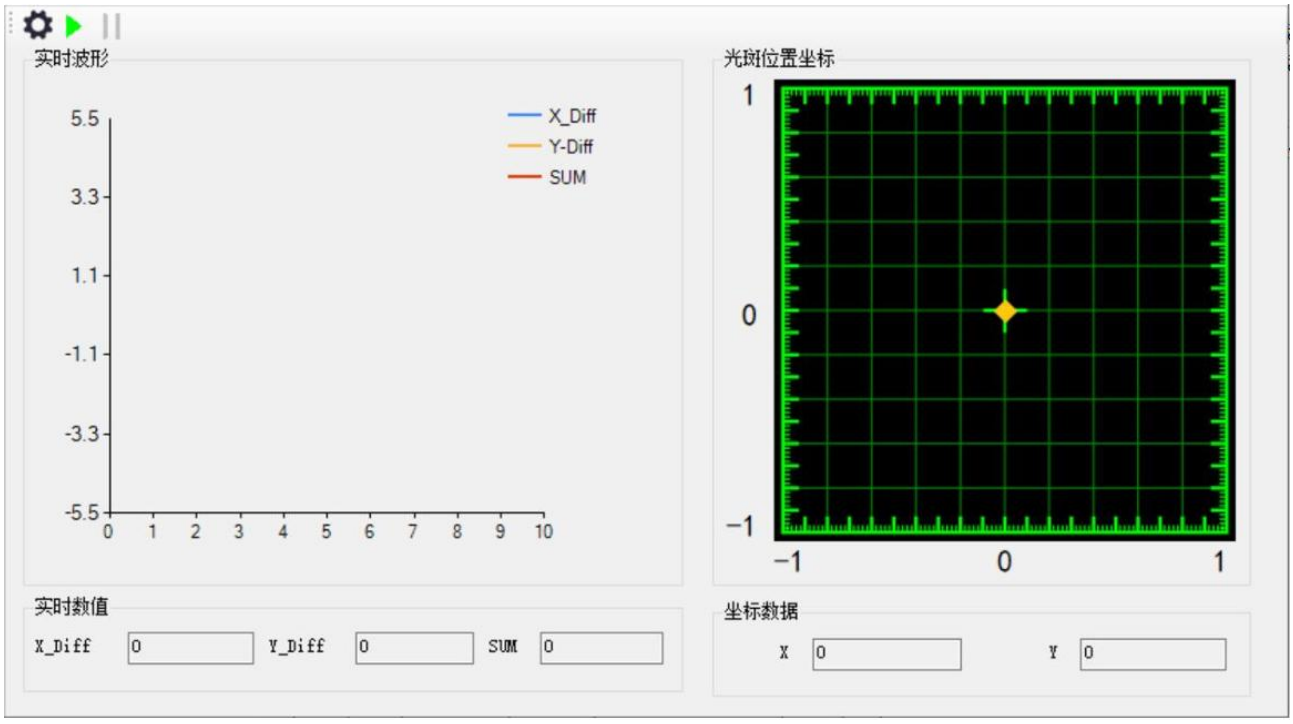


Optional accessories

Signal processing and acquisition module

Indicator	Parameter
Number of channels	four
Maximum input signal bandwidth	10KHz
sampling rate	Maximum 4K SPS
Data update frequency	Typical 10Hz, maximum 4KHz
Input voltage range	±5V
ADC bits	16bit
ADC conversion nonlinearity	±0.2 LSB
Data transmission interface	Default USB 2.0, optional RS232
power supply voltage	+5V, mini USB interface
power consumption	<1W
Operating temperature	-10℃~+50℃
Storage temperature	-20℃~+80℃
Mechanical dimensions	90mm*70mm*16mm

Upper computer software



Mechanical dimensions（mm）