

## Intelligent Industrial Process Online Raman Spectroscopy Instrument

### Our Product Introduction

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#### Basic Information

- Place of Origin: CHINA
- Brand Name: JINSP
- Certification: CE ISO9001
- Model Number: RS2000TAPAT-4
- Minimum Order Quantity: 1
- Price: Negotiable
- Packaging Details: Customized Packaging
- Delivery Time: 90-120 working days
- Payment Terms: TT
- Supply Ability: 20 PCS/90-120 days



#### Product Specification

- Laser Wavelength: 785nm
- Wavelength Accuracy: 0.2nm
- Wavelength Stability: 0.01nm
- Power Supply: 900 W (Max) 500 W (Typical Running)
- Number Of Detection Channels: Four-channel Switching Detection
- Explosion Protection Rating (Main Unit): Ex Db Eb Ib Pzc C T4 Gc / Ex Ib Pzc Tb C
- Detection Accuracy: 0.5%
- Operating Temperature: -20 ~ 50
- Highlight: **Online raman spectroscopy instrument,  
Intelligent Raman Spectroscopy Instrument,  
Intelligent online analyzer**



## Product Description

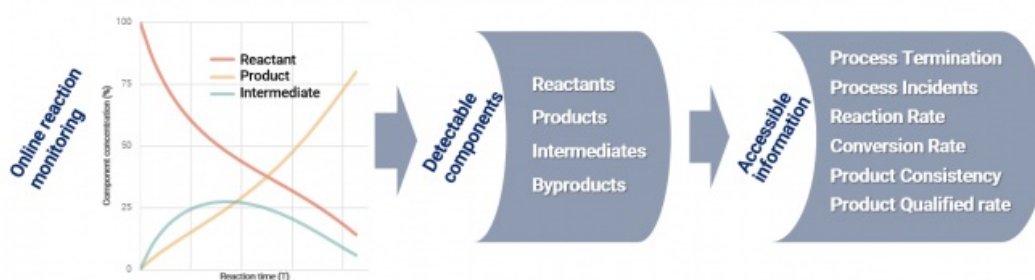
### High Cost Effective 785nm Laser Four Channel Industrial Process Online Raman Instrument

#### Product Description:

Industrial explosion-proof design can be used for online analysis of chemical product production processes, suitable for continuous flow reactors and batch reactors

JINSP® RS2000TAPAT-4 online Raman analyzers offer a cutting-edge solution for in situ, real-time, and continuous monitoring and analysis of chemical compositions within various production environments. These advanced analyzers are specifically designed to provide precise and reliable data on the fly, ensuring that operators have up-to-the-minute insights into their chemical processes.

The RS2000TAPAT-4 analyzers are particularly well-suited for monitoring hazardous chemical processes that involve critical reactions such as nitration, chlorination, fluorination, hydrogenation, and diazotization. These processes are often challenging due to the high risks involved, and the ability to monitor them in real-time can significantly enhance safety and operational efficiency.



#### Advantages:

- **In situ:** This innovative approach eliminates the need for sampling, thereby avoiding any potential contact with hazardous samples that could pose a risk to human health or the environment. By conducting measurements directly at the location of interest, it ensures a higher level of safety and accuracy in the data collected.
- **Real-time results:** The system is designed to deliver instantaneous results, providing data within mere seconds. This rapid response capability ensures that decisions can be made promptly, enhancing overall operational efficiency and minimizing downtime.
- **Continuous monitoring:** The technology enables uninterrupted monitoring throughout the entire process. This ensures that any changes or anomalies are detected immediately, allowing for real-time adjustments and interventions, thereby maintaining optimal conditions and preventing potential issues.
- **Intelligent:** The system is equipped with advanced analytical capabilities that automatically provide detailed results. By leveraging cutting-edge algorithms and machine learning techniques, it interprets complex data and presents it in an easily understandable format, reducing the need for manual analysis and human error.
- **Internet connectivity:** The device is connected to the internet, ensuring that the results are communicated to the central control system in a timely manner. This feature enables remote monitoring and management, allowing for quick dissemination of information and coordinated responses across different locations, ultimately improving the overall efficiency and effectiveness of the operation.



Can withstand extreme reaction conditions such as strong acid, strong alkali, strong corrosiveness, high temperature, and high pressure



Real-time response in seconds, no need to wait, providing analysis results promptly.



No sampling or sample processing required, in-situ monitoring without interference to the reaction system.



Continuous monitoring to quickly determine the reaction endpoint and alert for any anomalies.

#### Technical Parameters:

Technical Parameter	Value
Product	Online Raman Analyzer
Measurement Type	Raman Spectrometer
Laser wavelength	785nm
Sample Type	Liquid
Number of detection channels	Four-channel switching detection
Chamber dimension	600 mm(width)× 400 mm(depth)× 900 mm(height)
Device dimension	900 mm(width)× 400 mm(depth)× 1300 mm(height)
Explosion Protection Rating (Main Unit)	Ex db eb ib pzc C T4 Gc / Ex ib pzc tb C T130°C Dc
Operating temperature	-20 ~ +50
Thermostat	The three-level temperature control system design can operate stably for a long time in an environment of -20 ~ 50 , and is suitable for online monitoring environments in different factories
Connectivity	RS485 and RJ45 network ports provide Mod Bus protocol, can be adapted to many types of industrial control systems, and can feedback results to the control system.
Probe	One standard 5 m non-immersed fiber optic probe (PR100)

% Relative humidity	0~90%RH
Power supply	900 W (Max) 500 W (Typical running)
Pre-heating time	60 min

## Applications:

### Li-ion battery industry

Research on the synthesis process of bis(fluoro sulfonyl)amide

### Biopharmaceutical industry

Quality Control in Biofermentation Engineering

### Fine chemical industry

Research on the process of producing furfuryl alcohol by hydrogenation reaction of furfural

### For example: Monitoring of Extreme Conditions in Chemical Reactions/Biological Processes

Under extreme conditions such as strong acids or bases, high temperatures and pressures, strong corrosiveness, and highly toxic reactions, conventional analytical methods face challenges in sampling, and analytical instruments may be unable to withstand the reactivity of samples. In such scenarios, online monitoring optical probes, designed specifically for compatibility with extreme reaction environments, stand as the unique solution.

**Typical Users:** Production personnel involved in extreme conditions chemical reactions from new materials enterprises, chemical companies, and research institutions.



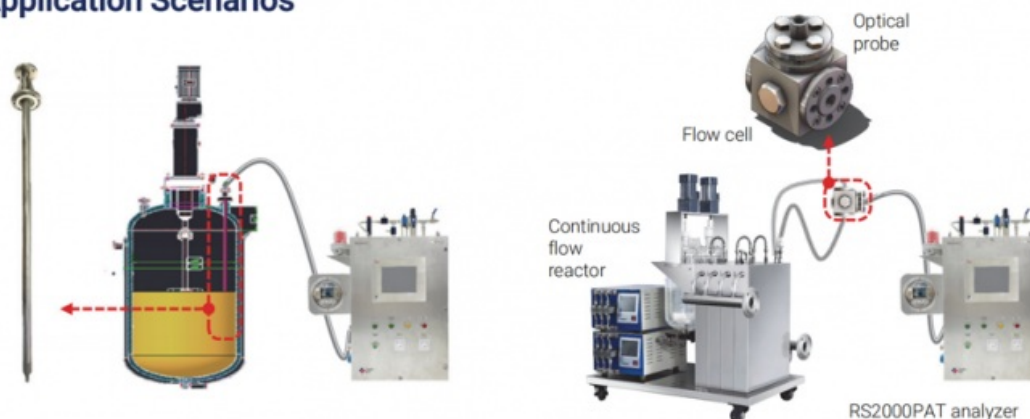
## Usage models:

The RS2000TAPAT-4 can be used in two ways in large-scale production.

The first way is to use an industrial immersion long probe to go deep below the liquid surface of the reaction system to monitor the reaction components, which is more suitable for kettle-type batch reactors;

The second way is to use the flow cell to bypass the connected probe for online monitoring, which is more suitable for continuous flow reactors and other types of reaction vessels.

## Application Scenarios



## FAQ:

### Q1: This is the first time I use it, is it easy to operate?

A1: We will send you a manual and guide video in English, it can teach you how to operate the spectrometer. Also, our technicians will offer professional technical operation meetings.

### Q2: Can you offer an operation training?

A2: Your technicians can come to our factory for training. Jinsp engineers can go to your place for local support ( installation, training, debugging, maintenance ).

**Q3: How to receive the best price in the shortest time?**

A3: When you send us an inquiry, please kindly offer details with wavelength, detector, effective pixels, focal length, and so on. We will send you a quotation with details soon to your email.

**Q4: If the spectrometer has a problem in my place, what could I do?**

A4: The spectrometer has a one-year warranty. If it breaks down, our technician will figure out what the problem maybe, according to the client's feedback. We can repair for free within one year warranty.

**Q5: What about quality assurance?**

A5: We have a quality inspection team. All goods will go through quality inspection before shipment. We can send you pictures for inspection.



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