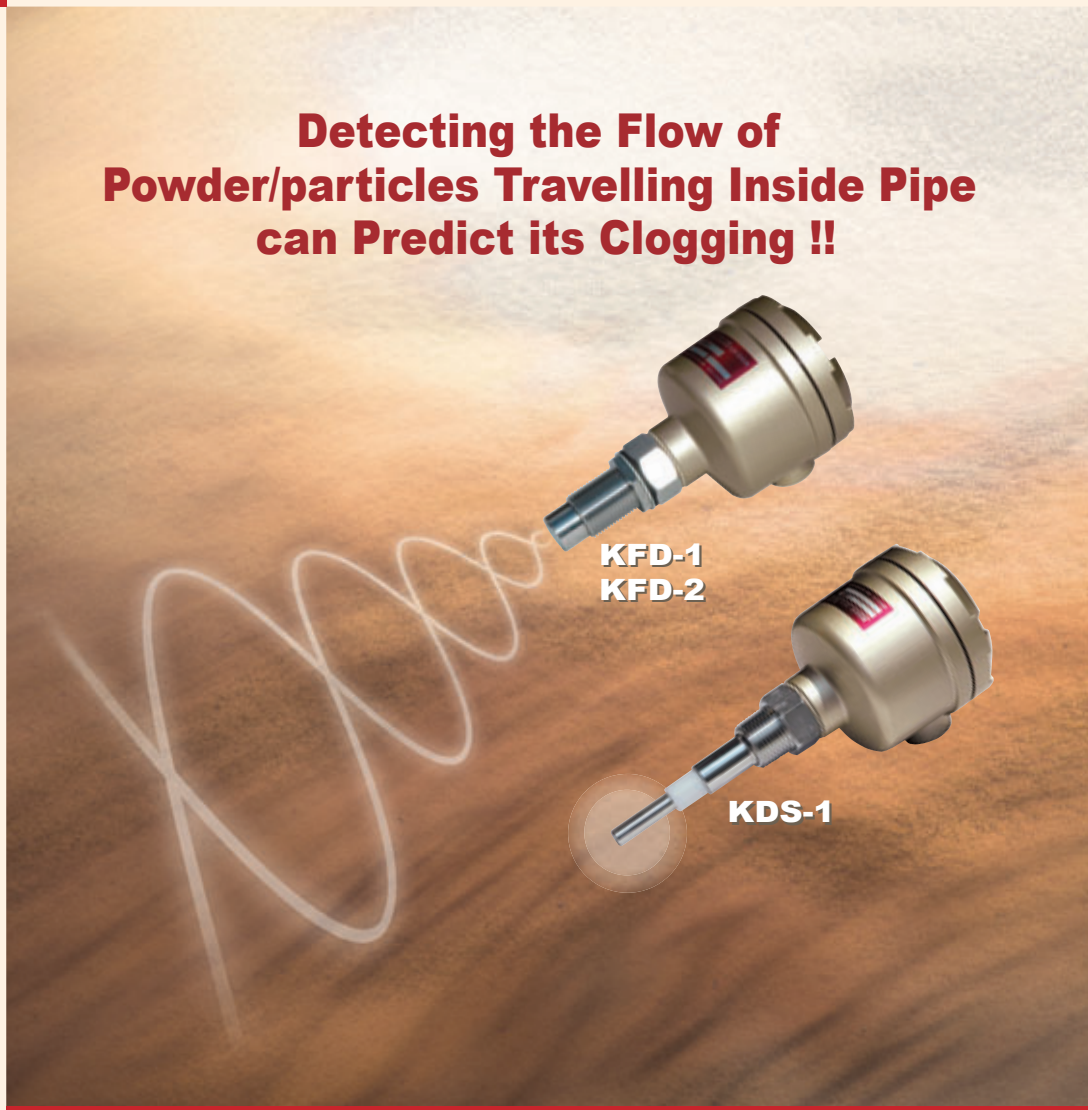


# KFD-1/KFD-2 & KDS-1 FLOW SENSOR

**Detecting the Flow of  
Powder/particles Travelling Inside Pipe  
can Predict its Clogging !!**



**Through Adopting the Super Sensitive Detector Circuit, Now We come up with  
the Flow Detection of Insulative & Hypobaric Powder / particles which  
have so Far Been Undetectable in Conventional other Systems !!**

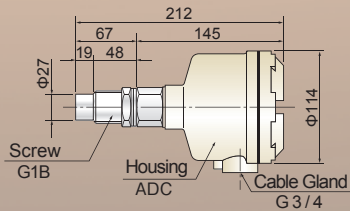
# KFD-1

## MICROWAVE TYPE FLOW SENSOR

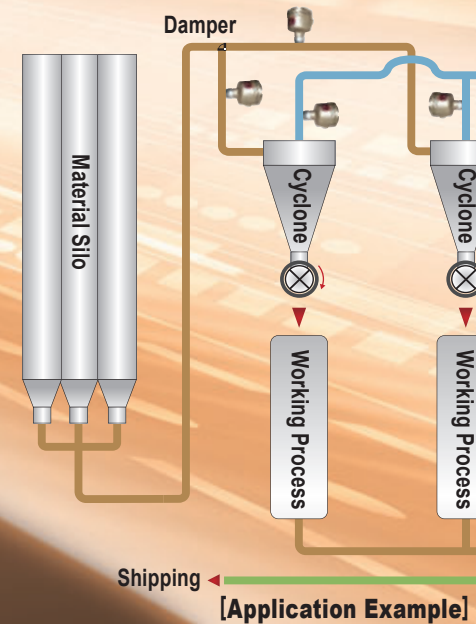
### Non-contact flow sensing technology!

24GHz makes this sensor highly sensitive and reliable. Even a grain detected!

#### Outline Drawing



#### Catching up



#### Features

- Super-sensitive**  
Our unique circuit technology has been upgraded not to overlook even a grain.
- Non-invasive**  
Our 24GHz technology has made it possible to sense through an intermediate barrier such as glass or synthetic resin.
- Fouling**  
It may not be affected by smudges on the sensing surface or scale adhesion due to our 24GHz technology.
- Versatility**  
It can detect flow in both small and large quantity if its sensitivity is adjusted.

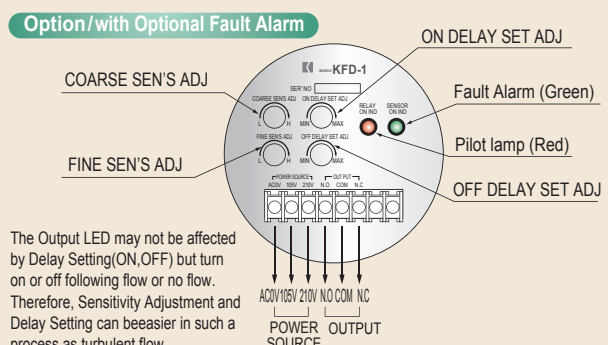
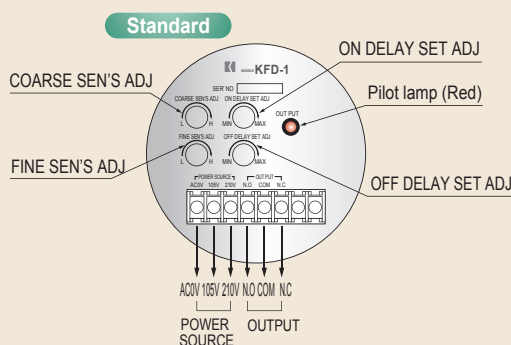
#### Principle of Operation

Which emits the microwaves of 24GHz from the tip of its sensor. Reflected from the surface of powders and solids traveling in a pipeline, the microwaves get modulated in their frequency on the Doppler effect principle. The sensor, detecting the frequency difference between transmitted and reflected microwaves, transforms it and amplifies to output contact signals. It can reliably detect a little flow or motion of the powder or the grain in chutes or pneumatic conveying lines, which has so far been considered to be very difficult.

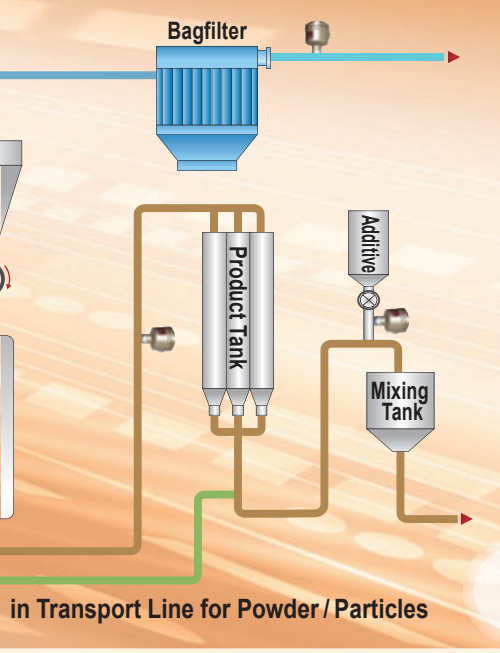
#### Standard Specifications

- Power Source : 105/210VAC ±10% 50/60Hz
- Power Consumption : 5VA
- Output Contact : SPDT 250VAC 5A
- Allowable Temperature : -10 – +55°C
- Allowable Pressure : 490kPa
- Detection Distance : Max.1.5m (depend on object)
- Type of Wave : NON
- Frequency : 24.2GHz
- Radiation Power : 5.5mW
- ON Delay : Max.10 seconds (variable)
- OFF Delay : Max.10 seconds (variable)
- Enclosure Rating : IP67
- Color : Gold
- Weight : about 1.5kg

#### Connection



**the flow of an object  
to be measured !!**



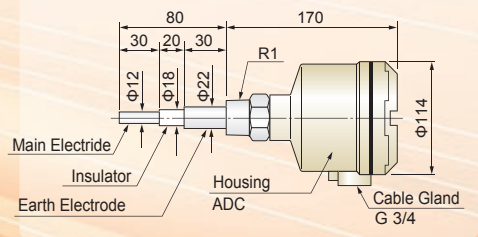
# KDS-1

## PARTICLE FLOW SWITCH

**Pinpoint-contact detection!**  
Monitoring the density of minute particles exhausted in a widely dynamic range and detecting flow/no flow.



### Outline Drawing



### Features

- Having no actuator, it can maintain the higher performance with the minimum maintenance.
- You can measure only by fixing an electrode to a duct of dust collector outlet or a pipe.
- It can easily be handled/adjusted.
- In order to prevent it from being operated improperly for the instantaneous rise of dust density due to the bag cleaning cycle, you can make a delay-time alarm setting.
- It can not be affected by the change of flow rate.
- It is sensitive to make it possible to measure the lower density.

### Principle of Operation

KDS Model Dust Flow Switch is a new type sensor which, utilizing the electrical property of material, provides contact outputs as well as for contamination prevention.

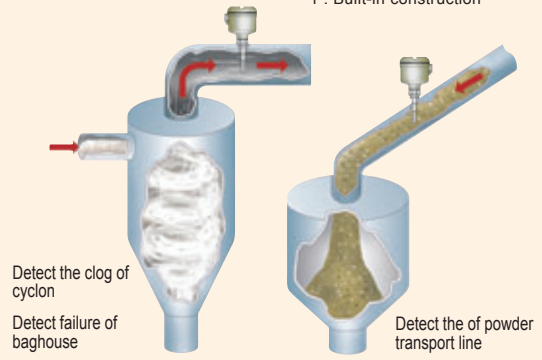
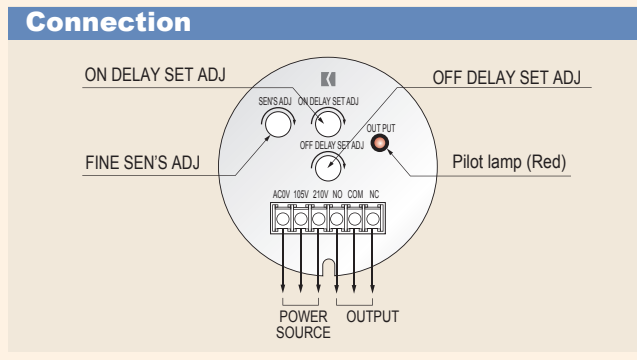
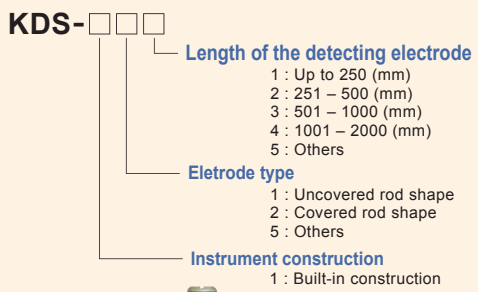
When the density reaches the preset values, it outputs the contact externally. It is widely applied to detect leakage or flow because it can be accommodated to the dynamic range from low to high density.

By detecting any leakage from a bag filter or a cyclone separator, it can contribute to the environment conservation or to the prevention of materials/products from running off. By detecting flow/no flow in the air transport path, it can also work on quality management of a mixture and so on as well as contamination prevention.

### Standard Specifications

- Power Source** : 105/210VAC ±10% 50/60Hz
- Output Contact** : SPDT 250VAC 5A
- Allowable Temperature** : Amplifier -20 ~ +55°C  
Electrode -20 ~ +80°C (High Temp option)
- Indicator** : LED in Red
- ON Delay** : Max.10 seconds (variable)
- OFF Delay** : Max.10 seconds (variable)
- Sensor Length** : up to 1000mm
- Sensor Material** : 304SS ( 316SS as option )
- Process Connection** : Screw (R1), Flange (over JIS5K25A)

### Type Designation





# KFD-2

## MICROWAVE TYPE FLOW METER

### Non-contact Continuous output (4–20mA DC)

This can retrieve such a minute change in concentration that KFD-1 has not been able to do.



#### Standard Specifications

Power Source : 105/210VAC ±10% 50/60Hz

Output Signal : 4 – 20mA DC

Resistance Load : Below 300Ω

Allowable Temperature : -10°C – +55°C  
(High Temp option, Max. 120°C)

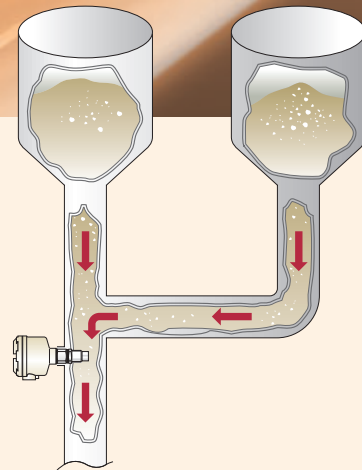
Allowable Pressure : 490kPa

Color : Gold

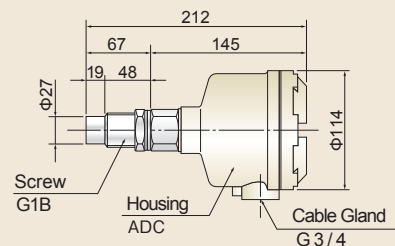
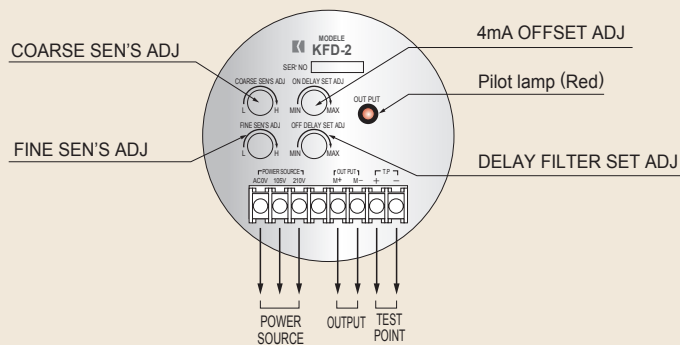
#### Application

##### Detecting Charging line Jams.

When either one of charging lines is clogged, it continuously detects the decrease of concentration of either product supplied.



#### Connection/Outline Drawing



#### Line of business

- Rotary Paddle Type Level Switch
- Vibration Type Level Switch
- Swing Type Level Switch
- Acoustic Level Switch
- Capacitance Type Level Switch
- Capacitive Proximity Sensor
- Capacitance Type Level Indicator
- Diaphragm Type Level Switch
- Tilt Switch
- Leak Type Level Switch
- Microwave Type Switch
- Sounding Bob Type Level Indicator
- Flow Switch
- Conductance Type Level Switch
- Float Switch
- Float Type Level Indicator
- Ultrasonic Type Level Indicator
- Equipments For Conveyor Lines
- Dust Monitor System
- Zirconia Oxygen Analyzer
- Laser Type Level Indicator
- RADAR Type Level Indicator
- On-line Sensors for Accurate Liquid Analysis
- Ultrasonic Flow meter

\*Please be sure to read USER'S GUIDE, Installation & Operation Instructions before using the instrument.

\*The specifications herein may be subject to change without advance notice.

Nuclear Power Generation to Rice Milling  
All-round Manufacturer of Level Controllers for Powder, Granules and Liquid

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Agent