

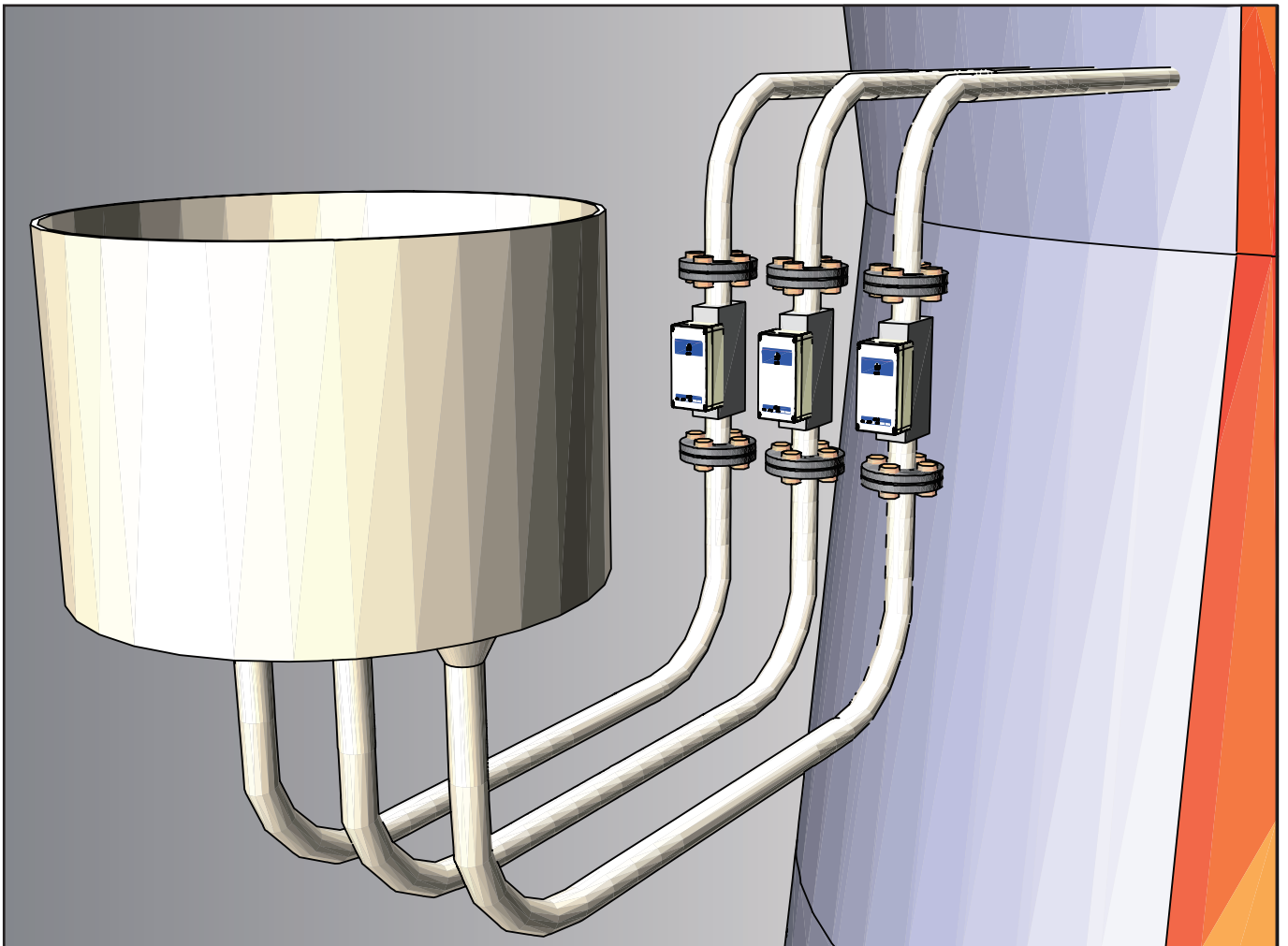


# MICROWAVE TYPE PCI FLOW METER

**MWS-MF-1** PAT.PEND.

# MICRO-FLOW

**The use of microwaves allows  
for stable measurement of the PCI flow!**

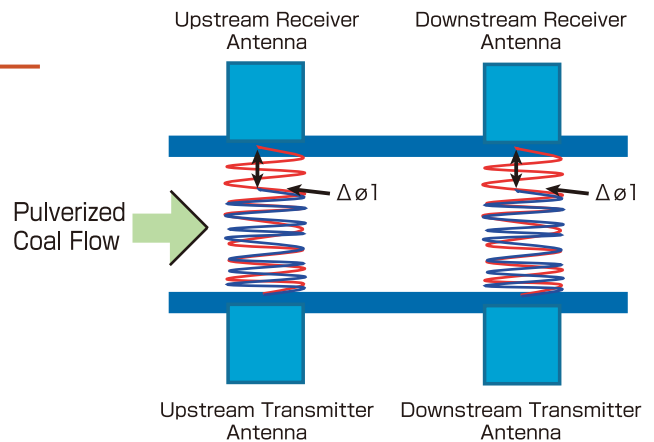


**WADECO CO.,LTD.**

## The use of microwaves allows for stable measurement of the PCI flow!

### General

The MWS-MF-1 (Microflow) is installed on the coal feeding pipe of the blast furnace tuyere and measures the density and speed of the fine coal in order to calculate and output the flow rate.



### Special Features

#### 1. High accuracy, high reliability

- There is a very good linearity between the phase delay and density. Due to this, low density to high density will be measured with high accuracy.
- The speed is calculated by the intercorrelated time difference in density between the upstream side and downstream side.
- The sensor's inner pipe is made of microwave penetrable ceramic to prevent abrasion and there is no protrusion in it.

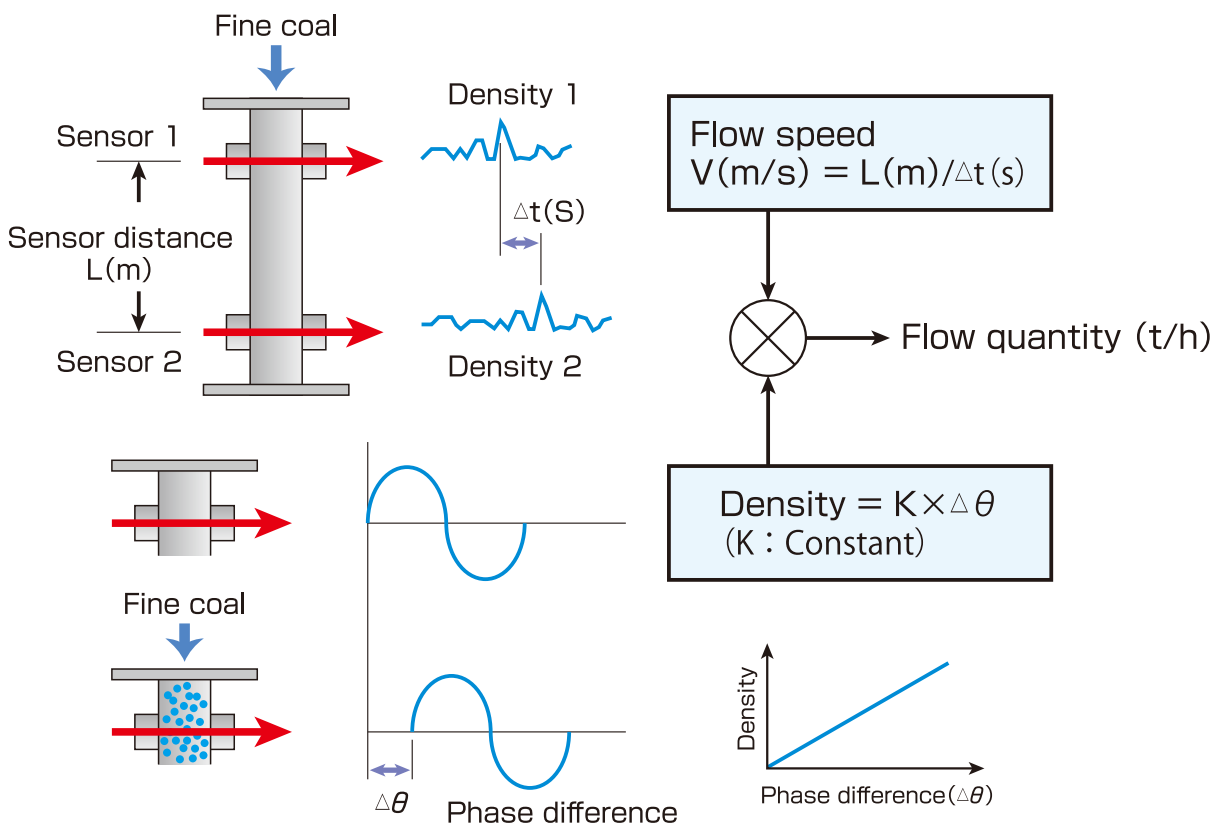
#### 2. Continuous measurement can be easily performed.

- The density and the speed of the fine coal flowing in the pipe can be continuously measured because the sensor is installed in the pipeline.

#### 3. Convenient functions are built in

- The system can be set up, the status of operation can be monitored and parameters can be set with a standard laptop.
- The monitoring of the density, speed and quantity of flow are available and can be output by 4-20mA analog output.
- The flow calibration curve can be set and the zero reference point can be adjusted remotely.

### Principle

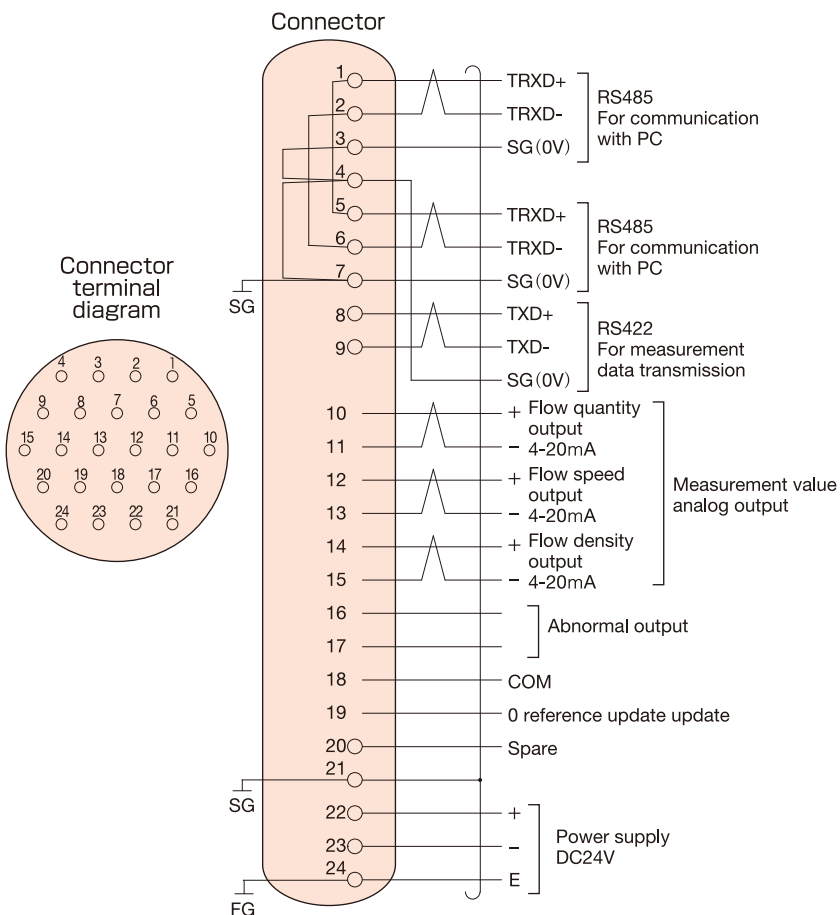


## Specifications

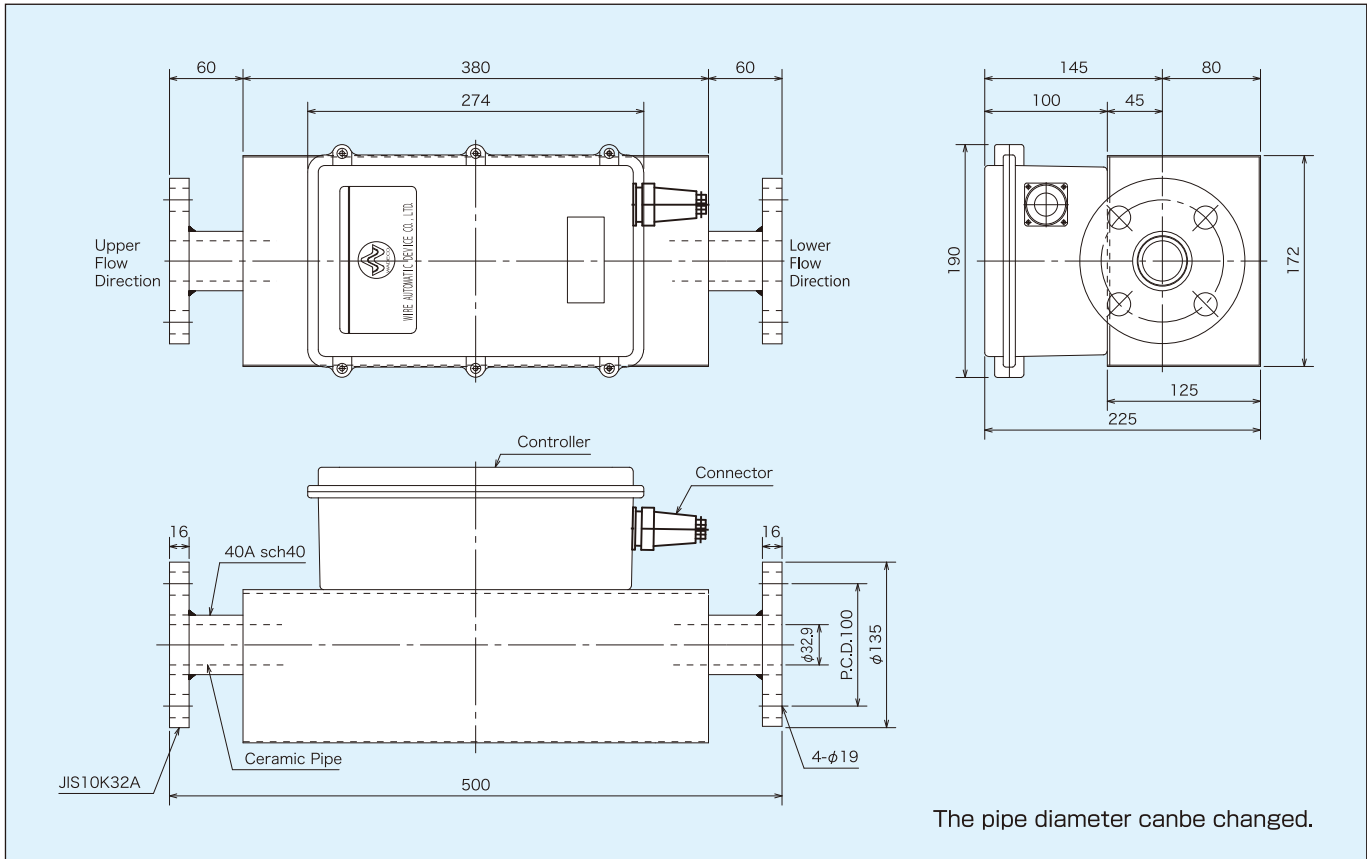
|                    |                          |  |
|--------------------|--------------------------|--|
| Type               | MWS-MF-1                 |  |
| Power Supply       | DC24V±5%                 |  |
| Measurement Method | Microwave                |  |
| Frequency          | 24GHz                    |  |
| Measurement        | Density                  | 0~100kg/m <sup>3</sup>   |
|                    | Speed                    | 0~20m/s  |
|                    | Flow                     | 0~3t/h   |
| External Interface | RS-485 Output            | For communication with PC  |
|                    | RS-422 Output            | For measurement data transmission  |
|                    | Analog Output            | Density, speed, flow 4-20mA/FS   |
|                    | Abnormal Output          | 1a Semi-conductor relay contact<br>DC30V, 0.1A<br>Normal state : Closed<br>Abnormal state : Open |
|                    | 0 reference update input | Dry contact input  |
| Power Consumption  | Approx.10W               |  |

|                          |                   |                             |
|--------------------------|-------------------|-----------------------------|
| Noise Tolerance          | ±1.5kV            |                             |
| Ambient Temperature      | -10°C~45°C        |                             |
| Material Temperature     | 80°C(Max )        |                             |
| Fine coal specifications | Particle Size     | 200mesh pass 70~80%         |
|                          | Flow Quantity     | 20~80t/h (0.5~2.0t/h/ pipe) |
|                          | Fine coal density | 0.5~0.6t/m <sup>3</sup>     |
|                          | Solid/gas ratio   | 9~10kg/kg                   |
| Enclosure Rating         | IP65 Equivalent   |                             |
| Internal Pipe Pressure   | 1.18MPa           |                             |
| Flange                   | JIS10K32A         |                             |
| Construction             | Internal          | Ceramic pipe                |
|                          | External          | SUS304 Pipe                 |
| Weight                   | Approx. 13kg      |                             |

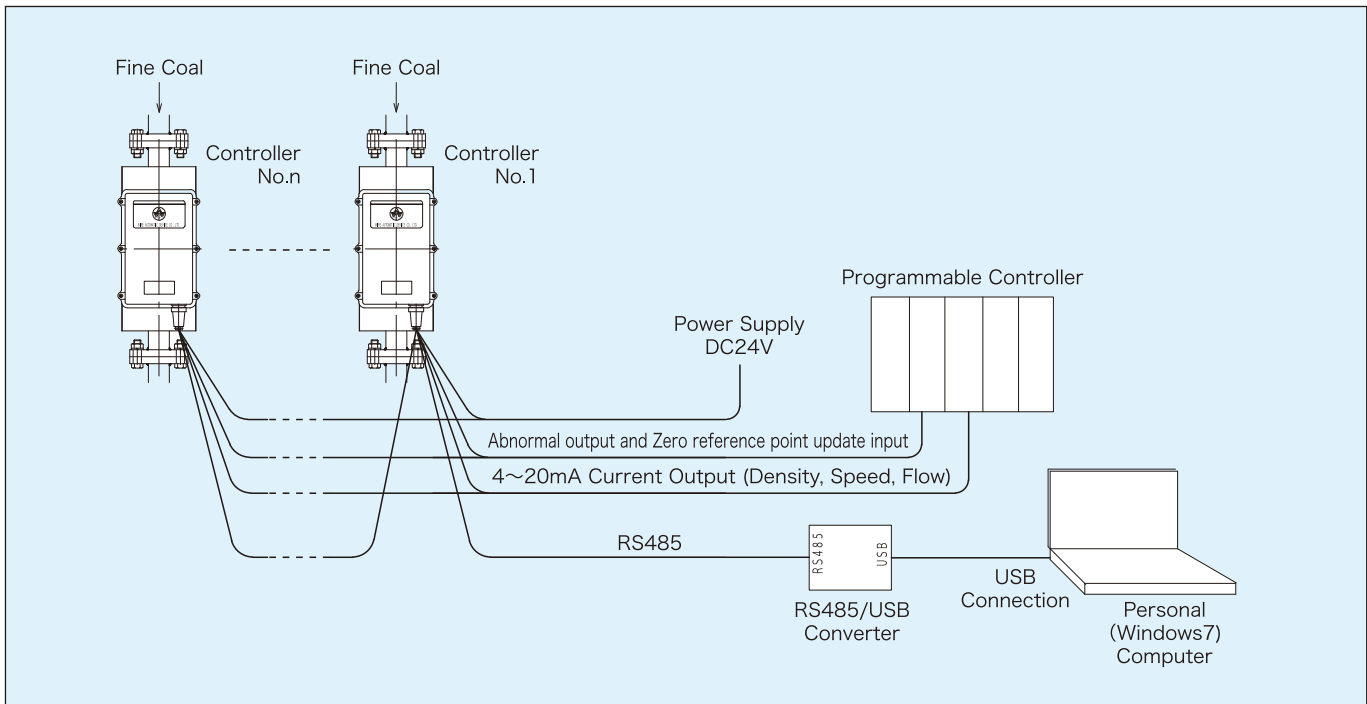
## Connector



## ■ Dimensions



## ■ System Example



These specifications may be changed without notice.



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