

# Supports the IoT generation!

## Flow rate controller equipped with predictive maintenance functions

### Stainless steel body

#### [Applicable fluids/flow rates]

- AIR** **N<sub>2</sub>**  
0.015 to 50 L/min
- Ar**  
0.015 to 50 L/min
- O<sub>2</sub>** **13A** **CH<sub>4</sub>** **C<sub>3</sub>H<sub>8</sub>**  
0.015 to 10 L/min
- H<sub>2</sub>** **He**  
0.06 to 20 L/min

**Weight: Approx. 480 g**

Rectifying mechanism reduces pressure loss and improves reproducibility

Equipped with high-speed response micro-machined sensor chip

### Resin body

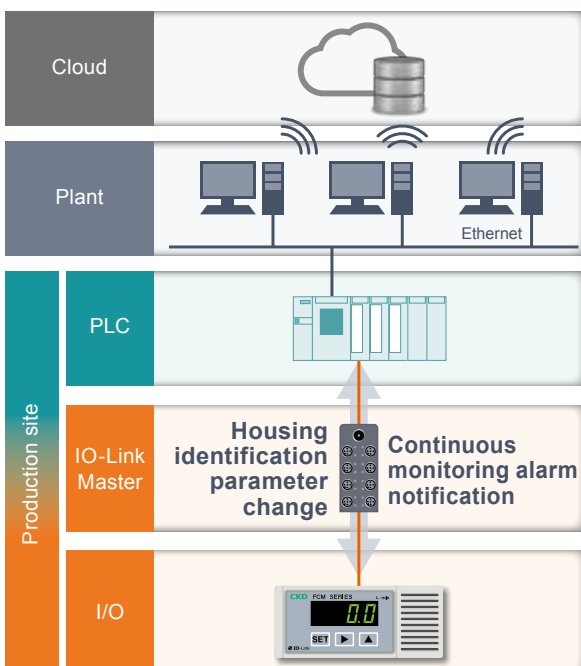
#### [Applicable fluids/flow rates]

- AIR** **N<sub>2</sub>**  
0.015 to 100 L/min

**Weight: Approx. 200 g**

## Introducing the IO-Link model **IO-Link**

IO-Link is a digital communication standard for sensors/actuators at factory sites. (IEC 61131-9)  
Unlike analog communication, it enables the transmission of parameters and event data.



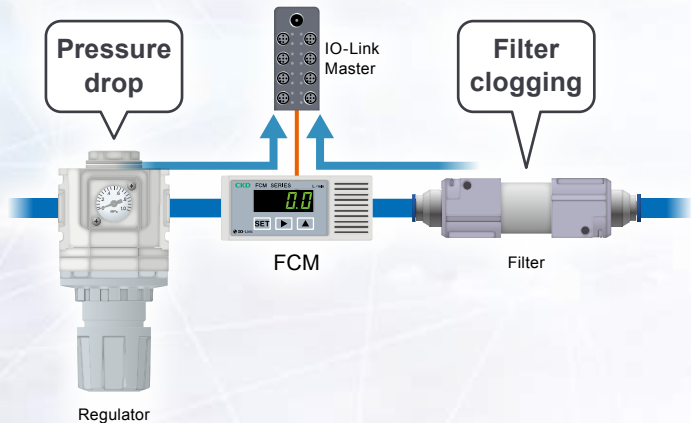
### Features of IO-Link

- Digital signal**  
Constant monitoring via digital data is possible.
- Parameter remote control**  
Parameters can be set and changed via the network, enabling remote equipment operation.
- Housing identification**  
Models, serial numbers, etc., can be confirmed on the network.
- Data storage**  
The settings can be copied from the master (scanner), making parameter reconfiguration after maintenance obsolete.
- Error notification**  
Device failure and disconnection can be confirmed.
- Connection to fieldbus**  
It can also be converted to Ethernet networks and connected, enabling devices to be IoT-ready.

# System error detection (predictive maintenance)

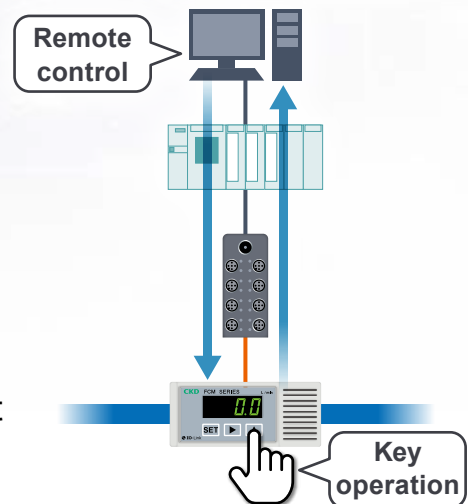
## [System abnormality warning functions]

In addition to self-detection functions for detecting the deterioration of sensors and proportional solenoid valves, abnormalities with peripheral systems can also be detected. Outputs an alarm signal via IO-Link.



## IO-Link Enhances Conventional Features

- Various settings are possible with key operations and configuration is possible remotely.
  - Input method switching
  - Preset memory value input
  - Flow rate control / forced OFF state switching
- 4 preset memory items (conventional type)
  - ➔ Increased to 8 items.
- 4 switch output types can be configured and output simultaneously.
- Directly output accumulated flow value.



## Compatible with various fluids

Compatible with various gases. It can be used in various applications.

Lineup of even lower differential pressure models.

Suitable for controlling burner flame or other flammable gases with low supply pressure.

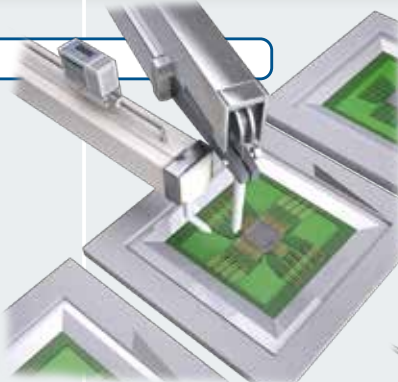
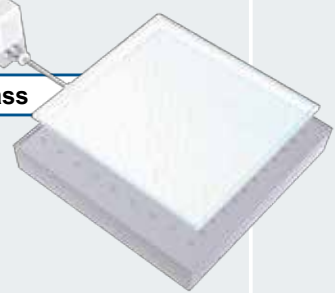
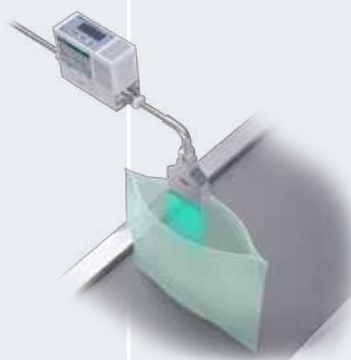
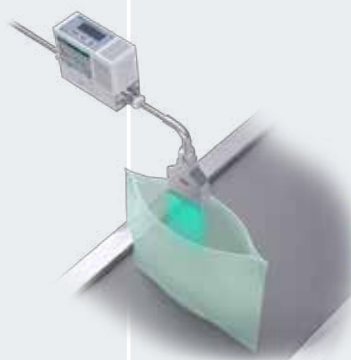
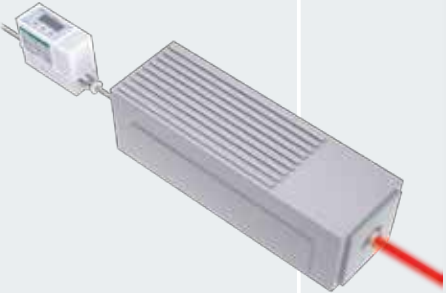
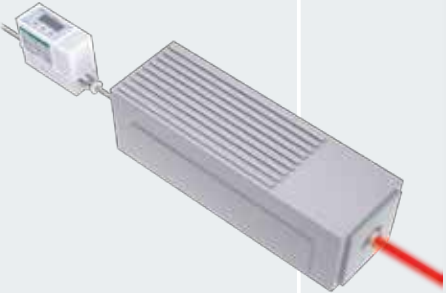
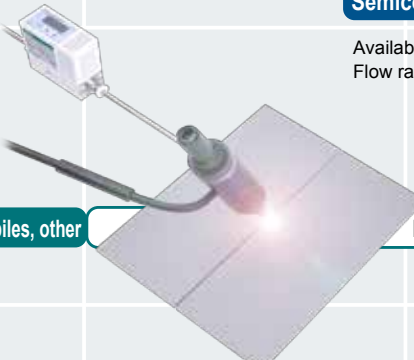
### Applicable fluids



# Applications

## Used in various fields

RAPIFLOW is available for a wide variety of applications in industries such as machinery, automobiles, precision components, and cutting-edge fields such as semiconductors and biotechnology, medical care, foodstuffs, and more.

	Flow rate (L/min) 0.1	1	10	100
Applicable fluids	<p><b>Semiconductor Wire bonding</b></p> <p>Ideal for tension control of wire bonding that requires high precision.</p> 			
	<p><b>Liquid crystal Floating transport system of glass</b></p> <p>Ideal for float (non-contact) transportation of large FPD glass.</p> 			
Dry air	<p><b>Liquid crystal Flow rate management of ionizer purge gas</b></p> <p>Available with a broad flow rate range. Flow rate control of air is possible.</p> 			
	<p><b>Foodstuffs Filling and packaging</b></p> <p>Ideal for inert gas filling of food packaging, etc.</p> 			
N <sub>2</sub>				<p>Control of N<sub>2</sub> gas in laser oscillator and semiconductor manufacturing equipment</p> 
				<p><b>Semiconductor Purge gas flow rate control</b></p> <p>Available with a broad flow rate range. Flow rate control of purge gas can be done.</p> 
Ar			<p><b>Automobiles, other Flow rate control of argon gas for welding</b></p> <p>Available with a broad flow rate range. Flow rate control of argon gas for welding is possible.</p> 	
O <sub>2</sub> Flammable gas				
H <sub>2</sub>				

# RAPIFLOW<sup>®</sup> FCM Series Variation

## Applicable fluids/flow rate control range

Model No.	Applicable fluids	Flow rate control range (L/min)					Body material	Port size
		0.01	0.1	1	10	100		
<b>FCM-9500 AI</b>	<div style="border: 1px solid black; padding: 2px; display: inline-block;">AIR</div> Air <div style="border: 1px solid black; padding: 2px; display: inline-block;">N<sub>2</sub></div> Nitrogen					0.015 to 0.5	Resin	<div style="border: 1px solid black; padding: 2px; display: inline-block;">Resin</div> ø6 push-in ø8 push-in
<b>FCM-0001 AI</b>						0.03 to 1		
<b>FCM-0002 AI</b>						0.06 to 2	SUS	<div style="border: 1px solid black; padding: 2px; display: inline-block;">SUS</div> Rc1/4 9/16-18 UNF
<b>FCM-0005 AI</b>						0.15 to 5		
<b>FCM-0010 AI</b>						0.3 to 10		
<b>FCM-0020 AI</b>						0.6 to 20		
<b>FCM-0050 AI</b>						1.5 to 50		
<b>FCM-0100 AI</b> (Resin type only)						3 to 100		
<b>FCM-9500 AR</b>	<div style="border: 1px solid black; padding: 2px; display: inline-block;">Ar</div> Argon					0.015 to 0.5	SUS	Rc1/4 9/16-18 UNF
<b>FCM-0001 AR</b>						0.03 to 1		
<b>FCM-0002 AR</b>						0.06 to 2		
<b>FCM-0005 AR</b>						0.15 to 5		
<b>FCM-0010 AR</b>						0.3 to 10		
<b>FCM-0020 AR</b>						0.6 to 20		
<b>FCM-0050 AR</b>						1.5 to 50		
<b>FCM-9500 O<sub>2</sub>/LN/C1/C3</b>	<div style="border: 1px solid black; padding: 2px; display: inline-block;">O<sub>2</sub></div> Oxygen <div style="border: 1px solid black; padding: 2px; display: inline-block;">13A</div> City gas <div style="border: 1px solid black; padding: 2px; display: inline-block;">CH<sub>4</sub></div> Methane <div style="border: 1px solid black; padding: 2px; display: inline-block;">C<sub>3</sub>H<sub>8</sub></div> Propane					0.015 to 0.5	SUS	Rc1/4 9/16-18 UNF
<b>FCM-0001 O<sub>2</sub>/LN/C1/C3</b>						0.03 to 1		
<b>FCM-0002 O<sub>2</sub>/LN/C1/C3</b>						0.06 to 2		
<b>FCM-0005 O<sub>2</sub>/LN/C1/C3</b>						0.15 to 5		
<b>FCM-0010 O<sub>2</sub>/LN/C1/C3</b>						0.3 to 10		
<b>FCM-0002 H<sub>2</sub>/HE</b>	<div style="border: 1px solid black; padding: 2px; display: inline-block;">H<sub>2</sub></div> Hydrogen <div style="border: 1px solid black; padding: 2px; display: inline-block;">He</div> Helium					0.06 to 2	SUS	Rc1/4 9/16-18 UNF 1/4" double barbed fitting 1/4" JXR male fitting
<b>FCM-0005 H<sub>2</sub>/HE</b>						0.15 to 5		
<b>FCM-0010 H<sub>2</sub>/HE</b>						0.3 to 10		
<b>FCM-0020 H<sub>2</sub>/HE</b>						0.6 to 20		

## Communication specifications

Descriptions	Details
Communication protocol	IO-Link
Communication protocol version	V1.1
Transmission bit rate	COM3 (230.4 kbps)
Port type	A
Process data length (input)	10 byte

Descriptions	Details
Process data length (output)	4 byte
Min. cycle time	2 ms
Data storage	1k byte
SIO mode support	No