

New A rated control flow rate range of 200 to 2000 L/min has been added.

Automatic flow rate adjustment is possible.

Series	Rated control flow rate range [L/min]					
	50	100	200	500	1000	2000
IN502-44	50 to 500					
IN502-45		100 to 1000				
New IN502-46			200 to 2000			



Control Accuracy

±5% F.S.

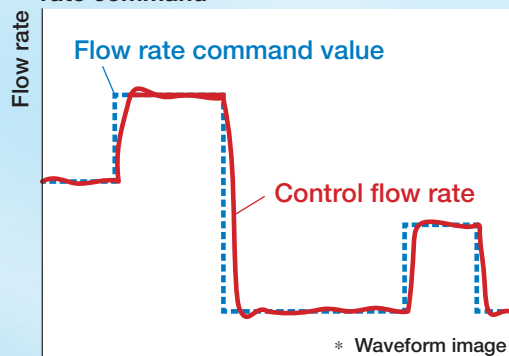
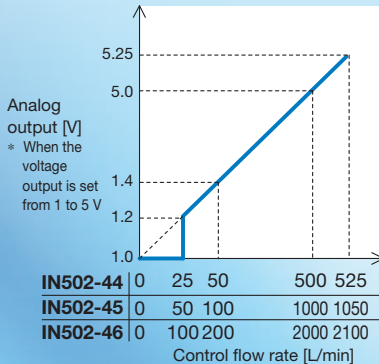
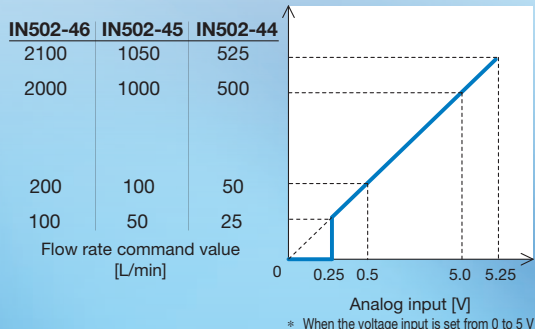
Responsiveness

0.5 s or less

Input signal - Flow rate command value

Control flow rate - Output signal

Flow rate control that follows the flow rate command

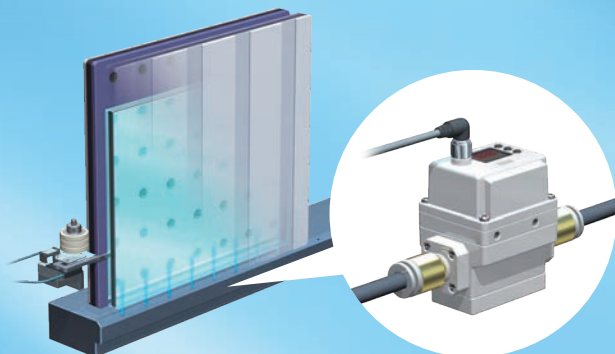


Time

Applications

For laminated glass gas filling control

For laminated metal machining unit shielding gas control

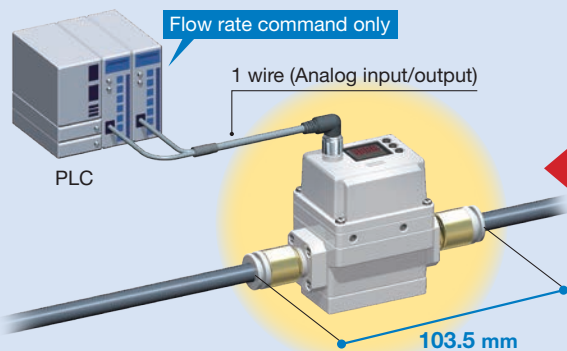


IN502-44/45/46 Series

Space saving/Reduced piping, wiring, and installation labor

Automatic control to set flow rate

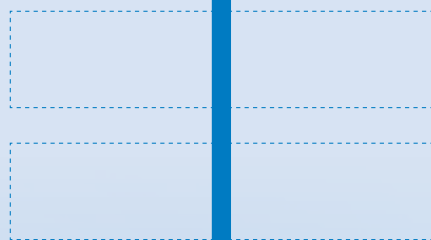
Air flow controller/IN502-44/45/46



Reduced installation labor

At equipment start up*1

*1 No program change is required when the connected load conditions change as it is not affected by load fluctuations.



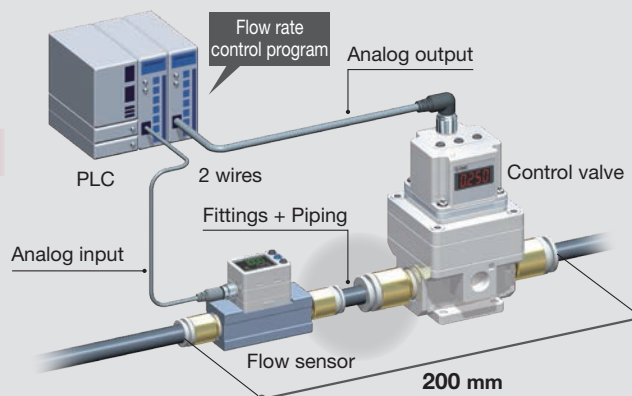
Creation of a flow rate command program

Equipment operation

Reduced installation labor

Flow rate control program required

Flow sensor/PF2MC7 Series + Electro-pneumatic regulator/ITV3000 Series



At equipment start up
When there are connected
load condition changes

Confirmation of the relationship between
the control valve (pressure, valve opening,
etc.) and the flow rate

Creation of a control program

Creation/correction of a flow rate control
program for control valve analog output
based on the flow sensor analog input

Equipment operation

Reduced effects of load fluctuations

Changes in connected load conditions

- Control target changes
- Pipe length and pipe bore size changes
- Changes in components, etc.

The outlet pressure*1 and fluid temperature*1 can be measured simultaneously.

*1 When using IO-Link communication

*1 Reference value

Measurement and output have been made possible by adopting flow rate conversion (differential pressure type) using a pressure sensor and flow rate temperature correction using a temperature sensor.

Pressure sensor

Rated pressure range

0 to 1 MPa

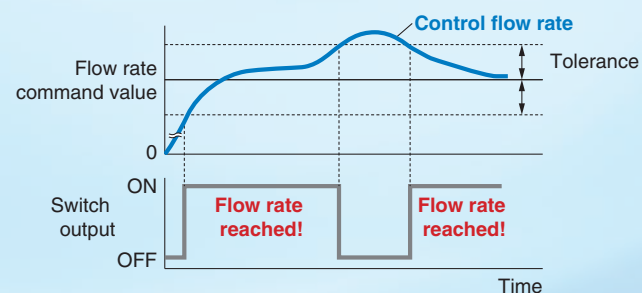
Temperature sensor

Rated temperature range

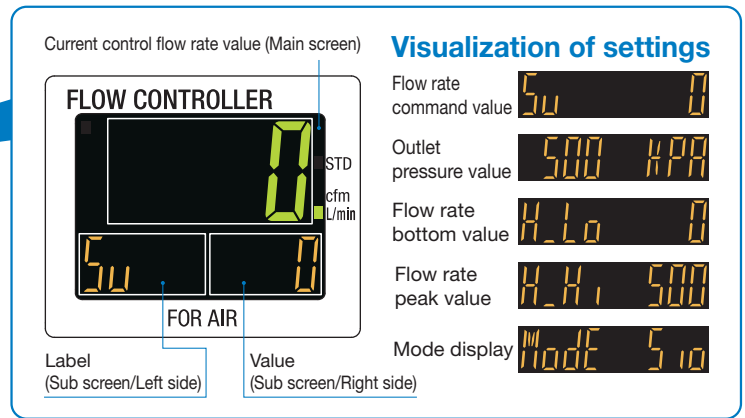
0 to 50°C

Notifies when the control flow rate command value has been reached

Switch output is performed when the control flow rate falls within the specified allowance with respect to the flow rate command value in the switch output "tolerance mode." (The factory-set tolerance is $\pm 2\%$ F.S.)



3-screen display



Various types of grease can be selected. Various control diagnostics

Grease compatible with low dew points

Compatible with low dew point air

White vaseline

Compatible with paint and other coatings

Grease for food

Compatible with NSF H1 grade food grade greases

Control flow rate unreachable

The control flow rate does not reach the flow rate command value.

Load error

The load pressure exceeds the specification range due to the connected load.

Control error

Abnormalities in the product (operation, sensor, etc.)

Example 1

Is the supply pressure abnormal?

Is pressure being supplied?

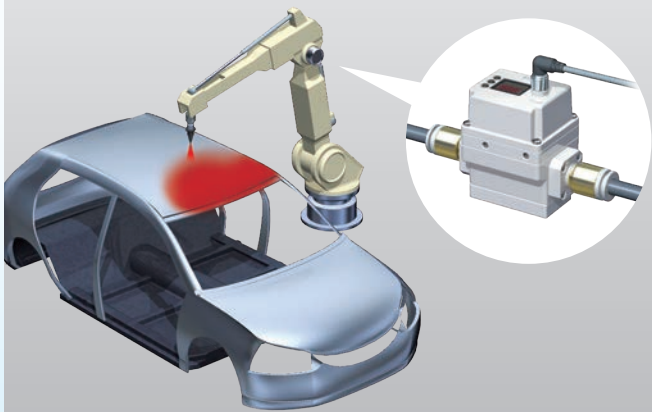
Example 2

Is the connected load abnormal?

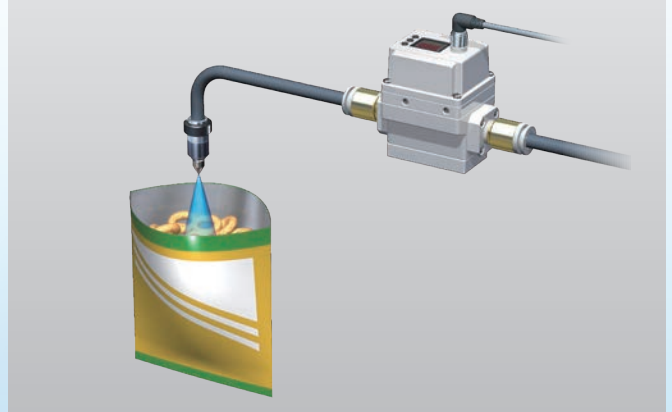
Is it in an unloaded state?

Applications

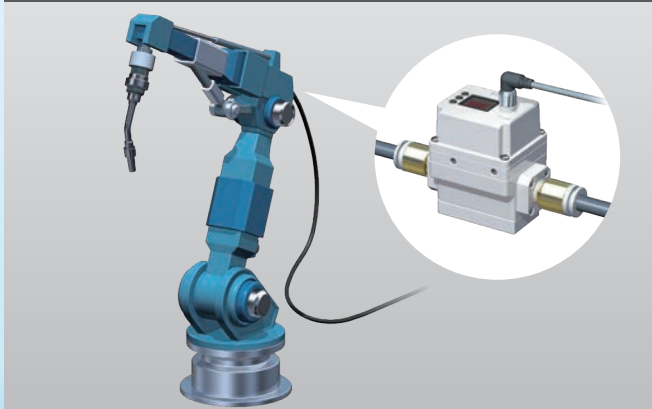
For painting (Control of shaping air/bell rotation control air)



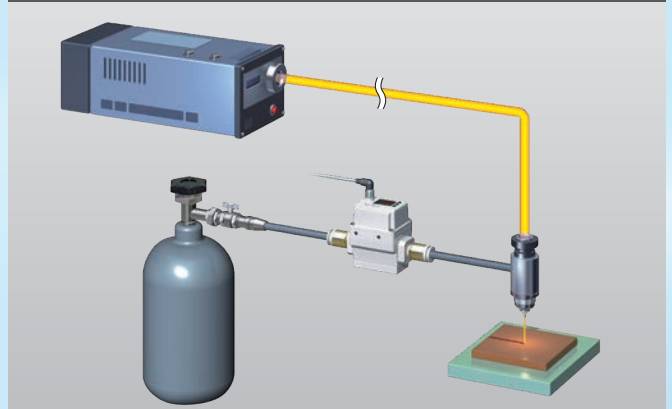
For food packaging (Control of charge gases)



For arc welding (Control of purge air)
















For laser welding (Control of assist gases)



Related Products

Flow Controller Flow Rate Variations

Series	Applicable fluid	Control accuracy	Repeatability	Enclosure	IO-Link compatible	Port size	Rated flow range [L/min]											
							0.1	1	10	25	50	100	200	300	500	1000	2000	
PFCA7 	Dry air N ₂ Ar CO ₂	±3% F.S.	±1% F.S.	IP40		ø4, ø6, ø8, ø1/4" (Rc, NPT, G) 1/8, 1/4												
																		
																		
																		
IN502-44/45/46 	Dry air N ₂	±5% F.S.	±2% F.S. * Includes a control dead band (±1% F.S.)	IP65		Rc1/2												
																		
																		
PFCQ 	Dry air N ₂	±3% F.S.*1	±1% F.S.	IP40	—	Rc1/2												

*1 Operating differential pressure: 0.3 MPa, Temperature: 25°C

Flow Sensors

PF2M7 Series Digital Air Flow Sensor

- Applicable Fluid: Dry Air, N₂, AR, CO₂
- Accuracy: ±3% F.S.
- Repeatability: ±1% F.S.
- Rated Flow Range [L/min]: 0.01 - 1, 0.02-2, 0.05-5, 0.1-10, 0.3-25, 0.5-50, 1-100, 2-200
- IO-Link Compatible, IP40 Rating



PF2MC Series Digital Air Flow Sensor

- Applicable Fluid: Dry Air, N₂, AR, CO₂
- Accuracy: ±3% F.S.
- Repeatability: ±1% F.S.
- Rated Flow Range [L/min]: 5-500, 10-1000, 20-2000
- IP65 Rating

