NEW Products

http://www.koganei.co.jp

iB Series

iB-Flow PAT. PEND.

Flow selector

- *Remote control of the needle opening that controls flow volume!*
- *Control is possible by using flow rate feedback!*
- *Switchable between multiple flow rates!*

Needle opening mode

Remote needle opening/close operation

With the iB-Flow flow selector, even the flow rate of needle valves that are difficult to adjust within devices can be easily adjusted by remote control (external input)!
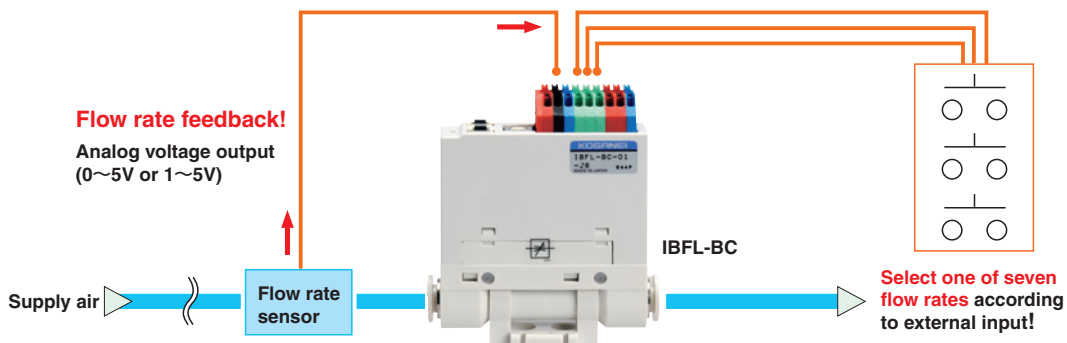

Open
Close
External input
IBFL-BC
Supply air
Large volume
Small volume
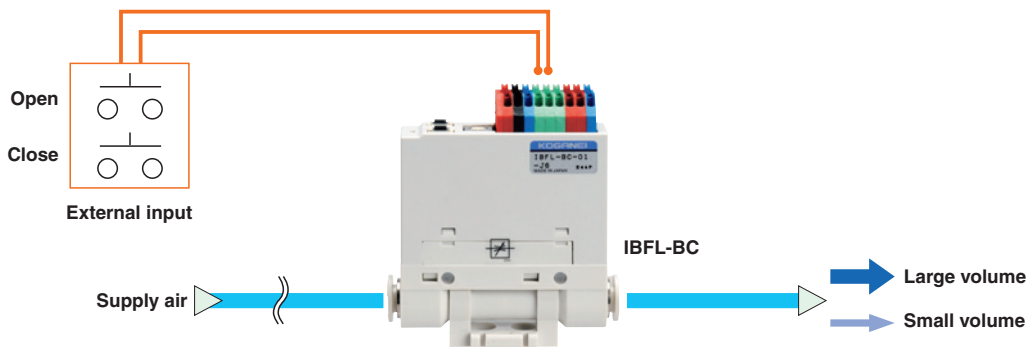
Flow rate control mode

Flow rate stabilization (control using flow rate feedback)

* For details about the flow rate control mode, refer to the next page.

The iB-Flow flow selector acquires the analog voltage output from the flow rate meter (flow rate sensor), and the needle opening is adjusted to a preset (up to seven) flow rate!

Flow rate feedback!
Analog voltage output
(0〜5V or 1〜5V)
Supply air
Flow rate sensor
IBFL-BC
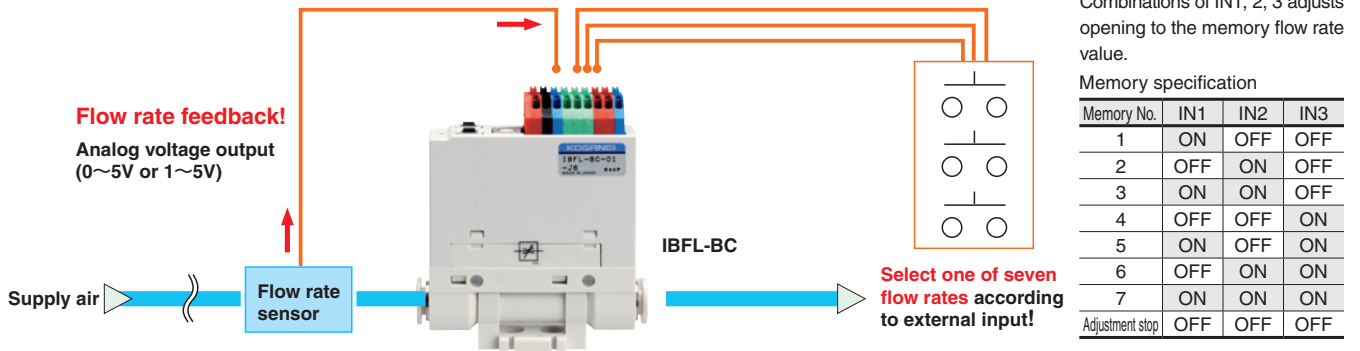Select one of seven flow rates according to external input!

Simple flow feedback control!

Example application: Energy savings by cooling, dust, and flow rate control.

Flow rate control mode details

In the flow rate control mode, flow rates you want to preset must be saved to the flow selector memory as analog voltage values (0〜5V or 1〜5V) of a flow rate meter (flow rate sensor).
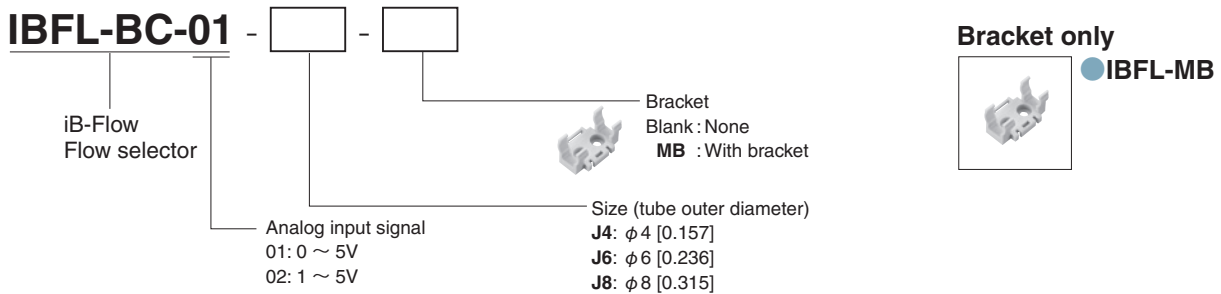
① After connecting the analog voltage output from the flow rate meter (flow rate sensor), use needle open mode to adjust to the flow rate you want to set.
② Switch to flow rate setting mode and save the flow rate (analog voltage value) you want to set to memory. Repeat steps ① and ② to save up to seven (No. 1 through No. 7) flow rates (analog voltage values).
③ Use external input to specify the desired saved memory number.
④ Switching to flow rate control mode causes the needle opening to be adjusted to the analog input of the voltage values that have been saved to memory.

Combinations of IN1, 2, 3 adjusts opening to the memory flow rate value.

Memory specification

Memory No.	IN1	IN2	IN3
1	ON	OFF	OFF
2	OFF	ON	OFF
3	ON	ON	OFF
4	OFF	OFF	ON
5	ON	OFF	ON
6	OFF	ON	ON
7	ON	ON	ON
Adjustment stop	OFF	OFF	OFF

Flow rate feedback!

Analog voltage output (0〜5V or 1〜5V)

IBFL-BC

Select one of seven flow rates according to external input!

Supply air

Flow rate sensor

● **Feedback control is performed so the flow volume is stabilized when flow rate changes due to source pressure fluctuation, etc.**

* Depending on usage conditions and the extent of the opening to be changed, adjustment to the set value can take anywhere from a few seconds to tens of seconds.

Order codes

IBFL-BC-01 - ☐ - ☐

iB-Flow Flow selector

Analog input signal
01: 0 〜 5V
02: 1 〜 5V

Size (tube outer diameter)
J4: φ4 [0.157]
J6: φ6 [0.236]
J8: φ8 [0.315]

Bracket
Blank : None
MB : With bracket

Bracket only

● **IBFL-MB**

Specifications

● **Flow selector**

Item	Model	IBFL-BC-01-J4	IBFL-BC-01-J6	IBFL-BC-01-J8
Tube outer diameter	mm [in]	φ4 [0.157]	φ6 [0.236]	φ8 [0.315]
Media		Air		
Operating pressure range	MPa [psi]	0 〜 0.7 [0 〜 102]		
Proof pressure	MPa [psi]	1.05 [152]		
Flow rate (at 0.5 MPa [73 psi], 100% open)	ℓ /min(ANR) [ft³/min (SCFM)]	75 [2.649]		
Supported flow rate sensor		Analog voltage output 0 〜 5 V, or 1 〜 5 V (one-direction type)		
Operating temperature range	℃ [℉]	0 〜 40 [32 〜 104]		
Power supply used		24 VDC±10%		
Consumption current		Standby: 30 mA; needle open/close: 70 mA (not including supply power to flow rate sensor)		
Mass	g [oz]	45 [1.587]	45 [1.587]	48 [1.693]
Vibration resistance	m/s² [G]	49.0 [5]		
Shock resistance	m/s² [G]	98.1 [10]		
Insulation resistance		100 MΩ or greater at 500 VDC megger		
Dielectric strength		500 VAC, 1 minute		

Symbol
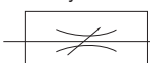
* These are throttle valve, not speed controller, specifications.

# Flow rate characteristics
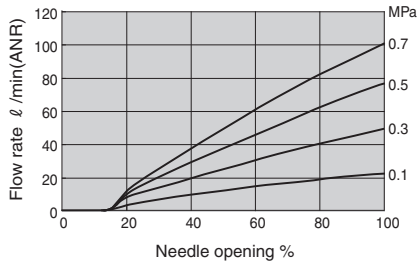
Note 1: Flow rate characteristics are in accordance with Koganei measurement conditions. Note that in addition to the individual differences of this product, piping conditions and other usage conditions can affect flow rate characteristics.
2: Same flow rate characteristics for all sizes.
3: Flow rate may not become 0 ℓ/min when the needle opening is 0%. To make the flow rate 0, use a separate stop valve.

Nomenclature and functions
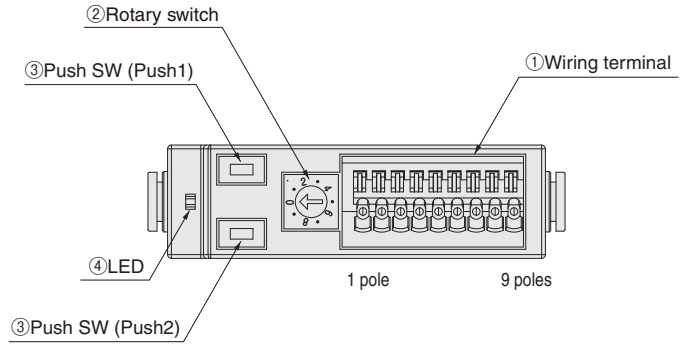
Name	Description	
① Wiring terminal	Power supply, external input, flow rate sensor connection	
② Rotary switch	Mode selection	
	0: Needle opening mode	
	1 to 7: Flow rate setting mode	
	8: Flow rate control mode	
③Push SW	In needle opening mode	
	Push1: Needle open while switch is on.	
	Push2: Needle closed while switch is on.	
	In flow rate setting mode	
	Push1: When the switch is turned ON, the current flow rate value is stored in rotary switch number memory.	
	Push2: Not used	
④LED	Lit: When needle opens/closes	
	Flashing 3 times: IBFL-BC-01 Power up	
	Flashing 4 times: IBFL-BC-02 Power up	
	Flashing 2 times: Flow rate setting execution	

Wiring and connections

	Wiring terminal pin no.	Terminal name	Wiring terminal color	I/O	Description
Flow rate sensor	1	AVcc	Red	O	Flow rate sensor supply power supply 24 VDC (300 mA max.)
	2	AIN	Black	I	Flow rate sensor analog input 0 to 5 V
	3	A0V	Blue	—	Flow rate sensor power supply 0 V
Setting/working External input	4	IN1	Green	I	External input terminal 1
	5	IN2	Green	I	External input terminal 2
	6	IN3	Green	I	External input terminal 3
	7	DVcc	Red	I	24 VDC power supply for external input
Power	8	+V	Red	I	IBFL-BC power supply 24 VDC
	9	0V	Blue	—	IBFL-BC power supply 0 V

Note: Wiring terminal pins 1 and 8 are connected internally.
Wiring terminal pins 3 and 9 are connected internally.
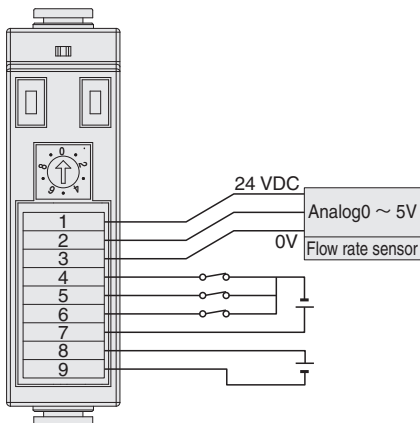
Example connection

Supported flow rate sensors are unidirectional sensing types. If the analog voltage output type of the flow rate sensor is 0-5V, select IBFL-BC-01. If the analog voltage output type is 1-5V, select IBFL-BC-02.
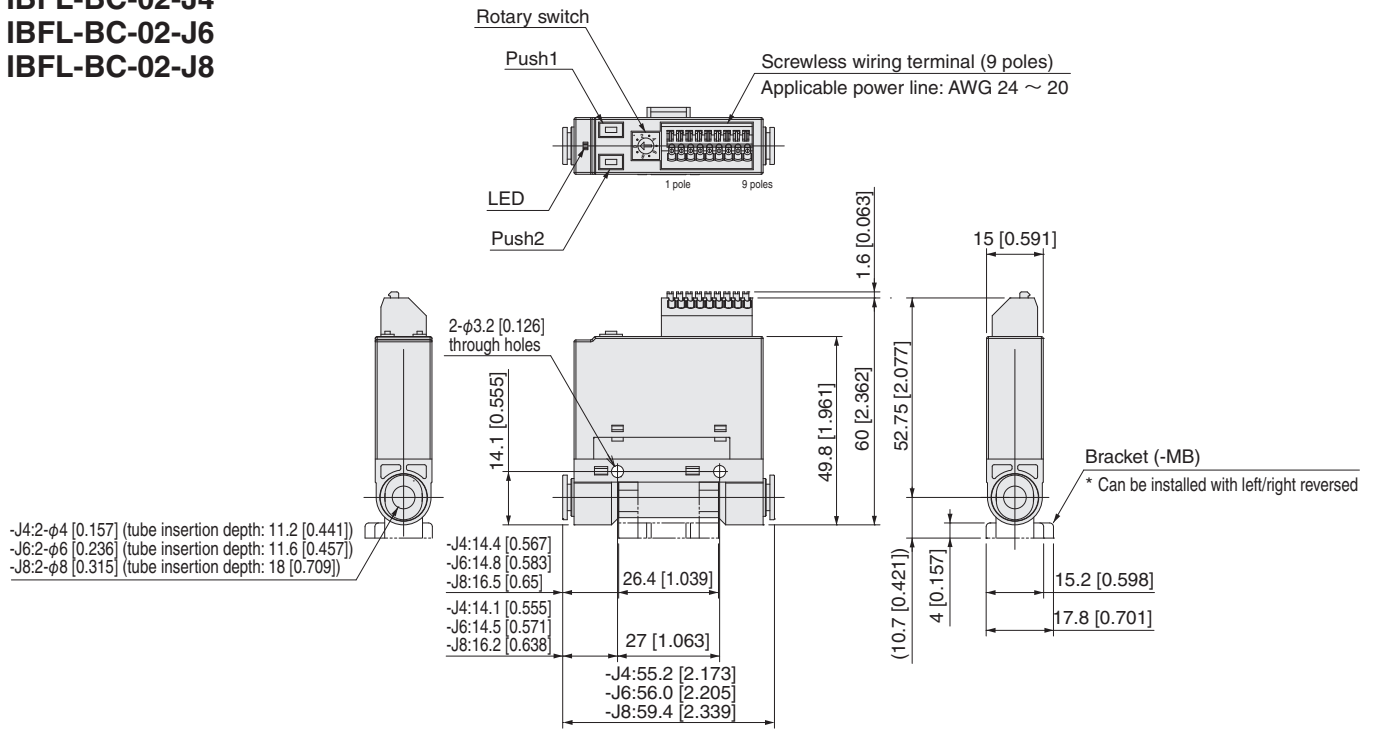
Bidirectional sensing type flow rate sensors cannot be used.

It makes no difference whether the analog voltage characteristics for the flow rate are linear or non-linear, but use a flow rate sensor with characteristics that raise analog output when flow rate increases.
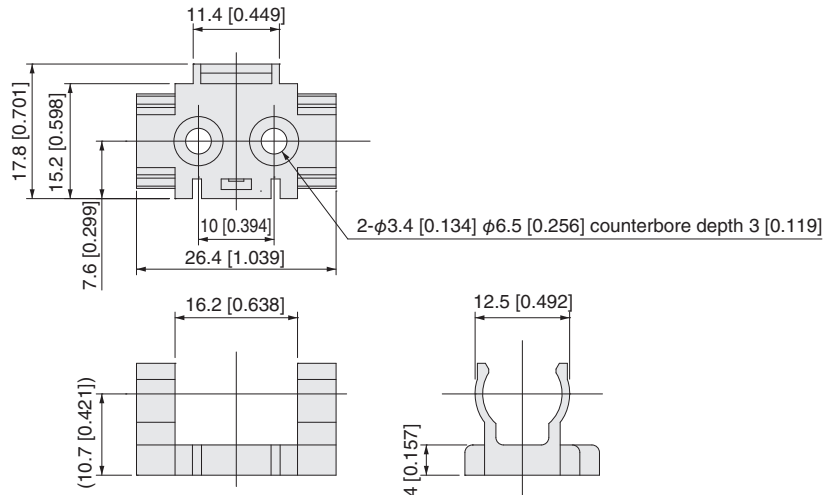
Compatible cables are AGW20 to 24.

Dimensions mm [in]

Flow selector unit
IBFL-BC-01-J4
IBFL-BC-01-J6
IBFL-BC-01-J8
IBFL-BC-02-J4
IBFL-BC-02-J6
IBFL-BC-02-J8

Rotary switch

Push1

Screwless wiring terminal (9 poles)
Applicable power line: AWG 24 ~ 20

LED

Push2

1 pole   9 poles

2-φ3.2 [0.126]
through holes

1.6 [0.063]

15 [0.591]

14.1 [0.555]

49.8 [1.961]

60 [2.362]

52.75 [2.077]

Bracket (-MB)
* Can be installed with left/right reversed

-J4:2-φ4 [0.157] (tube insertion depth: 11.2 [0.441])
-J6:2-φ6 [0.236] (tube insertion depth: 11.6 [0.457])
-J8:2-φ8 [0.315] (tube insertion depth: 18 [0.709])

-J4:14.4 [0.567]
-J6:14.8 [0.583]
-J8:16.5 [0.65]

26.4 [1.039]

(10.7 [0.421])

4 [0.157]

15.2 [0.598]

17.8 [0.701]

-J4:14.1 [0.555]
-J6:14.5 [0.571]
-J8:16.2 [0.638]

27 [1.063]

-J4:55.2 [2.173]
-J6:56.0 [2.205]
-J8:59.4 [2.339]

Bracket
IBFL-MB

11.4 [0.449]

17.8 [0.701]

15.2 [0.598]

7.6 [0.299]

10 [0.394]

2-φ3.4 [0.134] φ6.5 [0.256] counterbore depth 3 [0.119]

26.4 [1.039]

16.2 [0.638]

12.5 [0.492]

(10.7 [0.421])

4 [0.157]

* Before use, be sure to read the "Safety Precautions" and "General Precautions" in the iB-Flow catalog.