

Variable area flow meter

FC-SD

- Excellent in durability, pressure and heat resistance
- No restriction on flow direction, except for SD65 Series and some models in SD70 Series
- Switching capability is available on any base model



Model number selection

Base model	Connection type	Alarm	Flow direction	Fluid name	Units	Max. flow	Material	Connection size	Option	Specialized item(s)
FC-SD										

	FKM	Fluoroelastomer O-ring
	D	Drip-proof type * 1
	VP	High pressure type.: Max. 2MPa(G) * 1 * 5
	WP	High pressure type.: Max. 7.5MPa(G) * 1 * 5
	VT	Heat resistant type.: Max. 150°C * 1
	WT	Heat resistant type.: Max. 200°C * 1
	W	Fittings welded type: Max. 270°C * 1

	Rc	JIS 10KF
01	1/4	—
02	3/8	10A
03	1/2	15A
04	3/4	20A
05	1	25A
06	1 1/4	32A
07	1 1/2	40A
08	2	50A
09	2 1/2	65A
10	—	80A
11	—	100A

	BS	BSBM (Plated) Ni-3 * 1
	304	SS304

	Max.	Max. flow rate selected from the available flow range next page
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	B	L/min
	Z	Specialized unit * 2
	1	Water
	9	Specialized fluid * 2
	R	Left to right
	L	Right to left
	U	Bottom to top
	D	Top to bottom * 4
	0	No switch
	1	Form A contacts * 3
	2	Form B contacts * 3
	9	Specialized alarm * 2

	Blank	Threaded (Rc) connection
	F	Flanged connection

Base model	Available flow rate	Connection size
65 * 1	up to 5 L/min	Rc1/4 – Rc1/2
70 * 1	up to 50 L/min	Rc1/4 – Rc1, JIS10K 10 – 20A
85	up to 100 L/min	Rc3/4 – Rc1 1/4, JIS10K 20 – 32A
85L	up to 250 L/min	Rc1 1/2 – Rc2, JIS10K 40 – 50A
130	up to 700 L/min	Rc2 1/2, JIS10K 65 – 80A
130L	up to 1000 L/min	JIS10K 80 – 100A

*1: Refer to "Flow ranges, flow directions, connection sizes and materials" on the next page for details.
 *2: For specialized items, specify them at end of Model number in order
 *3: Form A contacts: Alarm is tripped when Float rises above the trip point.
 Form B contacts: Alarm is tripped when Float falls below the trip point.
 *4: Flow direction of D (Top to bottom) can be made provided that pipes and flow path are filled with fluid.
 *5: When high pressure type is selected, specify pressure value that you use at Specialized item(s)



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Flow ranges, flow directions, connection sizes and materials

Base model	Flow range (L/min)	Flow direction	Connection size / Material																		Remarks																										
			Threaded (Rc) connections									Flanged connections																																			
			Connection size	Std.	D *1	VP	WP	VT	VP+VT	WT	W	Connection size	Std.	D *1	VP	WP	VT	VP+VT	WT *2	W *3																											
65	0.1 – 1	Right to left or Left to right	1/4	SS 304	—	SS 304	—	SS304	—	—									No spring type Flow direction 																												
	3/8		—																																												
	1/2		—																																												
70	0.1 – 1	Bottom to top only	1/4	BSBM / SS304	—	—	SS304	—	—	10A	BSBM / SS304	—	SS304	—	—	—	—	—	No spring type																												
	0.2 – 2		3/8							—																																					
	0.4 – 5		1/2							—																																					
	1 – 10	All directions	1/2							SS304									—	—	SS304	—	—	15A	BSBM / SS304	—	SS304	—	—	—	—	—															
	1 – 15		3/4																					—																							
	2 – 20		1																					—																							
	2 – 30		1																					—																							
	4 – 50		1																					—																							
85	4 – 50	All directions	3/4	SS304	—	—	SS304	—	—		20A	BSBM / SS304	—	SS304	—	—	—	—						—																							
	5 – 70		1								—																																				
	10 – 100		1 1/4								—																																				
85L	10 – 150	All directions	1 1/2							SS304	—								—	SS304	—	—	40A		BSBM / SS304	—	SS304	—	—	—	—	—															
	20 – 200		2																				—																								
	50 – 250		2																				—																								
130	30 – 200	All directions	2 1/2																				SS304										—	—	SS304	—	—	65A	BSBM / SS304	—	SS304	—	—	—	—	—	
	40 – 300																																					2 1/2									
	60 – 500			—																																											
	100 – 700			—																																											
130L	200 – 1000	All directions	—					SS304	—			—	80A	BSBM / SS304	—	SS304	—	—						—																							
—					100A	—																																									

*1: VT, WT and W types are not available.

*2: Switching capability is available with threaded connections only.

*3: Welded flange is available with a custom order.

*Flow ranges shown above are valid with 20°C (293K) of water

*Alarm trip range is approx. 20% - 80% of F.S., but it varies by a scale and a tripping method, etc.

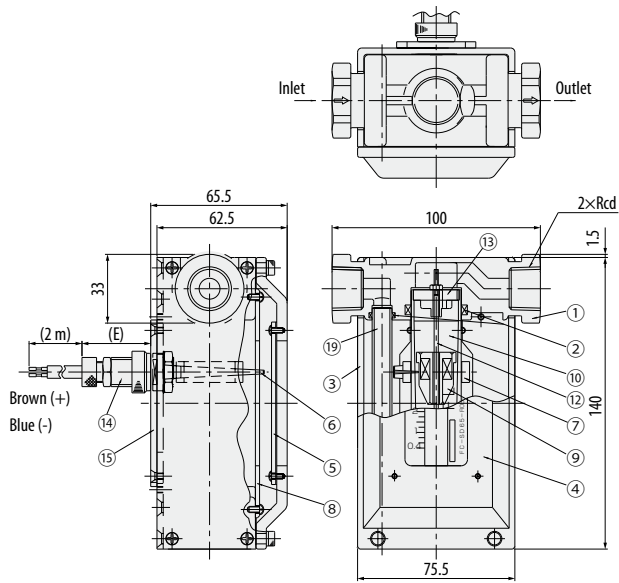
Specifications

Type	Standard	VP	WP	VT	WT	W
Flow accuracy	±5% of F.S.					
Pressure limit	1.0MPa(G)	2MPa(G)	7.5MPa(G)	0.75MPa(G)	0.75MPa(G)	0.75MPa(G) * 1
Fluid temperature limit	80°C	80°C	80°C	150°C	200°C	270°C
Operating temperatures	0 – 60°C (Non-condensing)					
Contact forms	Form A contacts: Alarm is tripped when Float rises above the trip point Form B contacts: Alarm is tripped when Float falls below the trip point					
Contact capacity	0 - 24 VDC Max. 0.2A					
Cable length	2 m (AWG 19)					
O-ring	NBR		NBR * 2		FKM	NEW PF

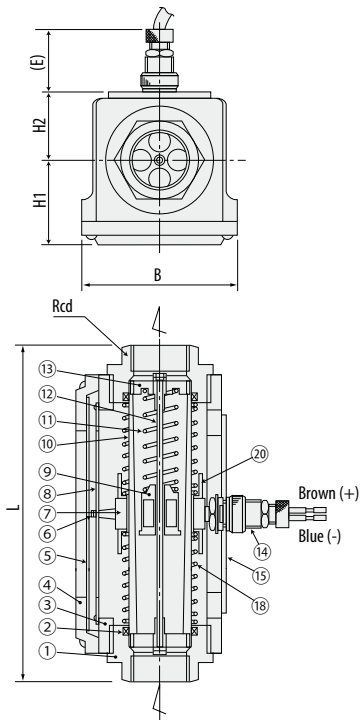
* 1: Up to 20MPa(G).

* 2: O-ring with back-up ring.

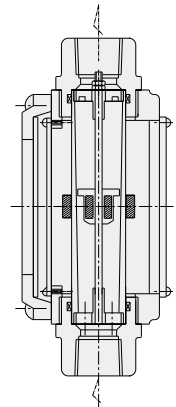
**FC-SD65
with switching capability**



**FC-SD
with switching capability**

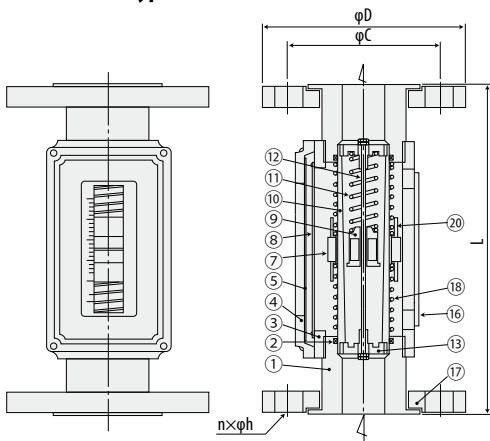


**FC-SD70
No spring type**



* Always install vertically

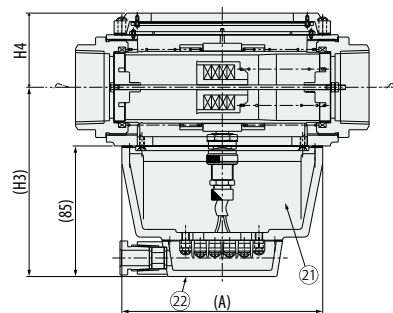
**FC-SD
Flanged connection type**



* Flange type: Loose

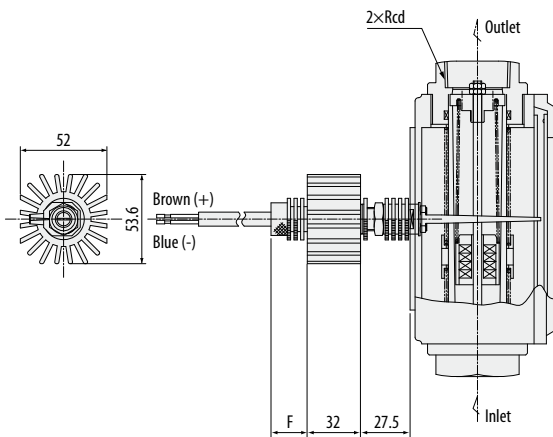
Reference drawings for non-standard types

Drip-proof type

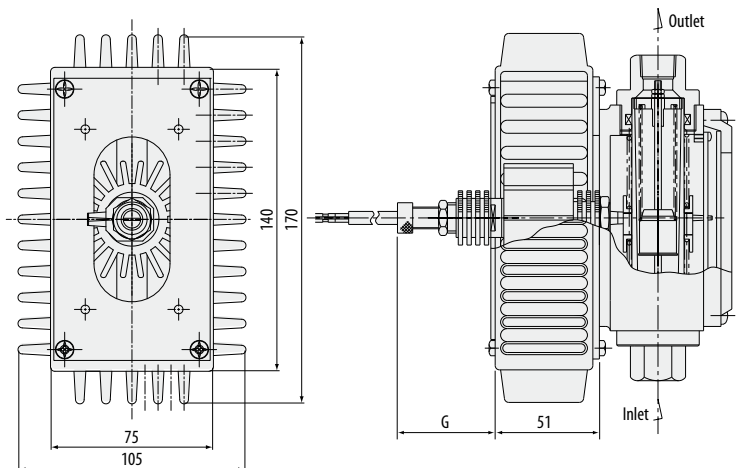


*Gasket for drip-proof type is used on window frame, drip-proof case, terminal block case, and front plate.

High-temperature type "VT"



High-temperature type "WT"



* Lower the ambient temperature of sensor head down to approx. 60°C using a fan, etc.

Dimensions

Base model	Threaded (Rc) connections			Flanged connections							A	B	H1	H2	H3	H4	E	F	G
	L		d	L			Connection size	φC	φD	n×φh									
	Standard type	W		Standard type	VP	W													
65	Refer to outline drawing	—	1/4 3/8 1/2	—							Refer to outline drawing						35	29.5	41
70	150	150	1/4 3/8 1/2 3/4 1	180	180	190	10A 15A 20A	65 70 75	90 95 100	4×15 4×15 4×15	90	70	34	30 (29)	112	35	35	29.5	41
85	190	190	3/4 1 1 1/4	230	230	250	20A 25A 32A	75 90 100	100 125 135	4×15 4×19 4×19	130	85	47	41 (40)	123	48	45	39.5	54
85L	190	260	1 1/2	230	230	250	40A	105	140	4×19	130	85	47	41 (40)	123	48	50	44.5	59
	210		2				50A	120	155	4×19									
130	230	300	2 1/2	230	300	300	65A 80A	140 150	175 185	4×19 8×19	130	130	74	78 (77)	160	75	35	29.5	44
130L	—			230	300	300	80A 100A	150 175	185 210	8×19 8×19	130	130	74	78 (77)	160	75	35	29.5	44

Dimensions in parenthesis () are applied for products with no switching capability.

Materials

No.	Part name	Standard / VP / WP * 1	VT	WT	W
1	Fitting	BSBM / SS304		SS304	
2	O-ring * 1	NBR	FKM	NEW PF	—
3	Case	Al alloy			
4	Front frame	Al alloy			
5	Front plate	PC	Heat-resistant glass		
6	Pointer	Phosphor bronze			
7	Indicator	Ferrite			
8	Scale plate	Bakelite		Al	
9	Float	SS304 (Magnet sealed)			
10	Tapered tube	BSBM / SS304	SS304		
11	Spring	SS304			
12	Guide rod	SS316			
13	Stopper	BSBM / SCS14	SCS14		
14	Reed switch	BSBM, etc. (AWG 19)			
15	Switch plate	Al alloy			
16	Back plate	PMMA	PTFE	Al	
17	Flange	SS304			
18	Support spring	SS316			
19	Pipe	SS304			
20	Support ring	PE	PTFE	Al	
21	Drip-proof case	Al alloy		—	
22	Terminal block cover	Al alloy		—	

* 1: For WP type, O-rings are installed with back-up rings (PTFE)