



FLUEREX (Karman vortex flow rate sensor for water)

WFK2 Series

● Flow rate range: 0.4 to 5, 1.6 to 20, 4 to 50, 8 to 100, 20 to 250 L/min



Specifications

Descriptions			WFK2-005	WFK2-020	WFK2-050	WFK2-100	WFK2-250
Connection	Port size	Rc, G, NPT	3/8, 1/2, 3/4			1, 1 1/4, 1 1/2	
	Port material		Stainless steel: SUS304				
Working conditions	Applicable fluid		Pure water, industrial water				
	Max. working pressure	MPa	1.0				
	Proof pressure	MPa	1.5				
	Manual valve internal leakage	mL/min	0			No manual valve settings	
	Manual valve allowable back pressure	MPa	0.3			No manual valve settings	
	Ambient temperature	°C	0 to 50 (85% RH or less, no condensation)				
	Fluid temperature	°C	1 to 95				
Flow rate	Flow rate range	L/min	0.4 to 5	1.6 to 20	4 to 50	8 to 100	20 to 250
	Repeatability (*1)		Analog accuracy: ±2.5%F.S. Display accuracy: ±2.5%F.S. ±1 digit (min. display unit)				
	Temperature characteristics (*1)		±5%F.S. (base temperature 25°C, 10 to 50°C)				
	Low flow cut		5% of F.S.				
	Integrating flow range (*2)		99,999 L or 99,999 m³ (unit selectable), reset when the power is turned off.				
	Integrated pulse rate (*2)	L/pulse	0.1, 0.5, 1	0.1, 0.5, 1, 10	0.5, 1, 10, 50	1, 10, 50, 100	10, 50, 100
	Pressure loss	MPa	0.07 (at F.S.)	0.05 (at F.S.)	0.05 (at F.S.)	0.05 (at F.S.)	0.03 (at F.S.)
	Response time (*3)	sec	0.25, 0.5, 1, 5, 10 (Initial value 1)				
Temperature	Measurable temperature range	°C	0 to 100				
	Accuracy	°C	Less than 50: analog accuracy ±2, display accuracy ±2 ±1 digit (min. display unit 1)				
			50 to 100: analog accuracy ±3, display accuracy ±3 ±1 digit (min. display unit 1)				
Output	Display		Two-screen LCD display, instantaneous flow rate: 3 digits, water temperature: 2 digits, integrating flow: 5 digits, with screen rotation				
	Analog output (*4)		Standard: 0 to 5 VDC/1 to 5 VDC, option: 4 to 20 mA DC, 0 to 10 VDC/1 to 10 VDC				
	Switch output		NPN or PNP transistor open collector output (can be switched from settings)				
	Max. load current		50 mA				
	Max. applied voltage		30 VDC				
	Internal voltage drop		2.0 V or less				
Power supply voltage			Analog output standard: 12 to 24 VDC ±10%, analog output option: 24 VDC ±10%				
Current consumption (*5)			50 mA or less				
Mounting	Mounting orientation		Unrestricted in vertical/horizontal direction				
	Straight piping section		None			IN side: 10 D, OUT side: 5 D	
	Degree of protection		IP65 or equiv.				
	Weight	g	3/8 (Rc, G, NPT): approx. 320 1/2 (Rc, G, NPT): approx. 320 3/4 (Rc, G, NPT): approx. 400			1 (Rc, G, NPT): approx. 870 1 1/4 (Rc, G, NPT): approx. 1,010 1 1/2 (Rc, G, NPT): approx. 1,100	

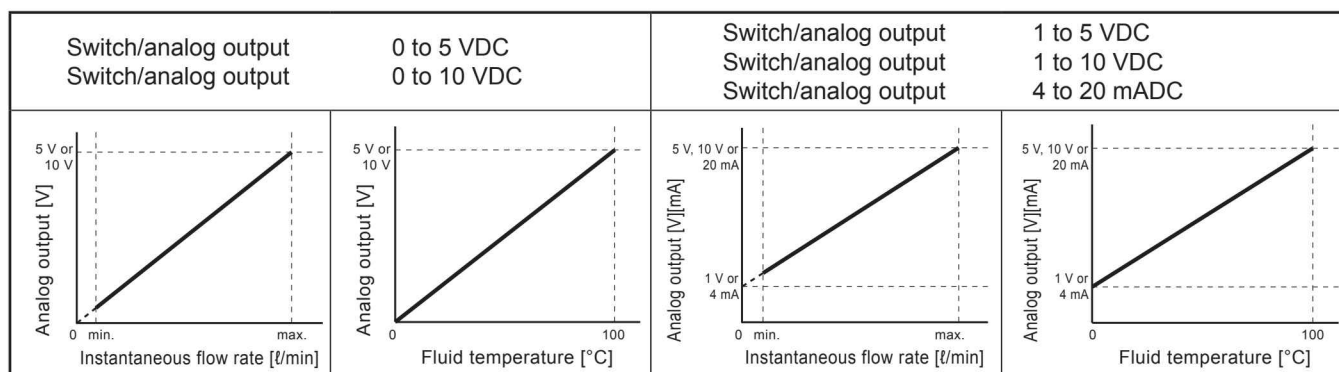
*1: Accuracy is the average value over 10 sec (for conditions not containing air bubbles). F.S. stands for full scale flow rate.

*2: The integrating flow is a calculated (reference) value. It is reset when the power is turned OFF. Errors may occur between the integrating flow display and integrated pulse output.

*3: The time to attain 70% of the original output after the normal flow rate (used) drops instantly to 0.

*4: Check the allowable load on the wiring method page.

*5: Current for when 24 VDC is connected, and no load is applied. The current consumption will vary depending on how the load is connected.



Note: Output value without adjustment of original range analog output or span.

How to order

WFK2-005 AA A A N-A C

A Flow rate range

B Port size

C IO-Link analog output

D Display unit

E Manual valve

F Option (attached cable)

G Bracket (attached bracket)

Precautions for model No. selection

- *1: The unit display "B" is for overseas use and cannot be used in Japan.
- *2: Option A (with manual valve) has a flow rate range of 005, 020, or 050 only.
- *3: When selecting Option A (with manual valve) and attached bracket (C), two sets of brackets are attached.

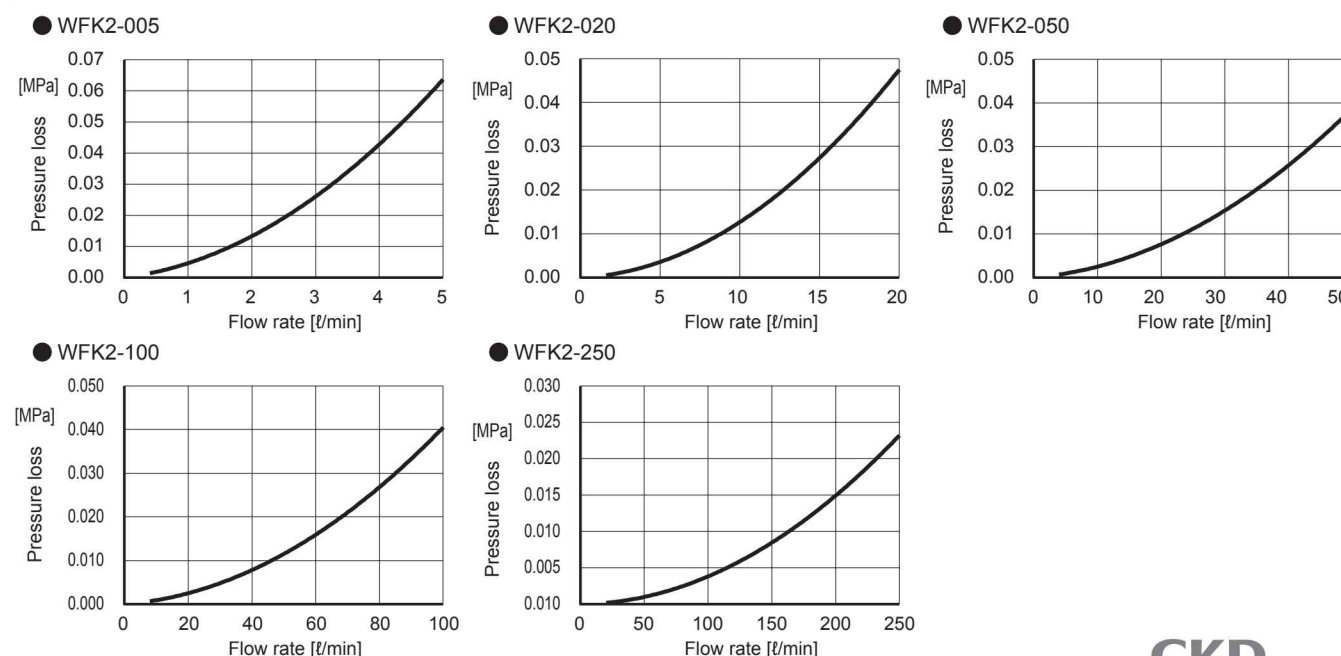
[Example of model No.]

WFK2-005AAAAN-AC

- A Flow rate range: 0.4 to 5 L/min
- B Port size: Rc3/8
- C IO-Link analog output:
Switch/analog output
0 to 5 VDC/1 to 5 VDC
- D Display unit : L/min L m³ °C
- E Manual valve : sensor only
- F Option : standard cable attached
- G Option : attached bracket

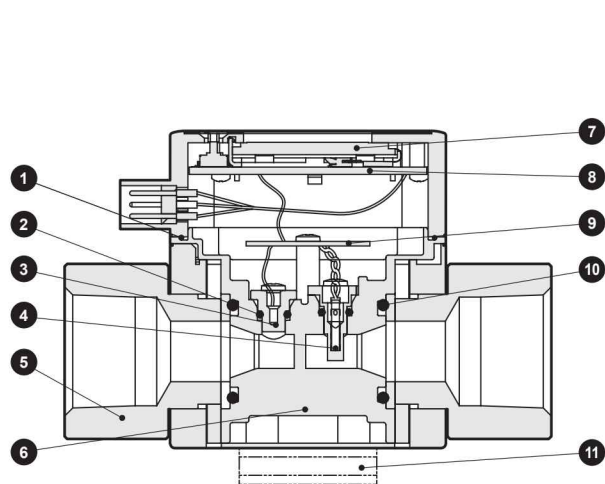
Code	Content
A Flow rate range	
005	0.4 to 5 L/min
020	1.6 to 20 L/min
050	4.0 to 50 L/min
100	8.0 to 100 L/min
250	20 to 250 L/min
B Port size	
AA	Rc3/8
BA	Rc1/2
CA	Rc3/4
DA	Rc1
EA	Rc1 1/4
FA	Rc1 1/2
AB	G3/8
BB	G1/2
CB	G3/4
DB	G1
EB	G1 1/4
FB	G1 1/2
AC	NPT3/8
BC	NPT1/2
CC	NPT3/4
DC	NPT1
EC	NPT1 1/4
FC	NPT1 1/2
C IO-Link analog output	
* "D", "E", and "F" have the analog output specifications from before IO-Link is used.	
A	Switch/analog output 0 to 5 VDC/1 to 5 VDC
B	Switch/analog output 4 to 20 mA DC
C	Switch/analog output 0 to 10 VDC/1 to 10 VDC
D	IO-Link compatible 0 to 5 VDC/1 to 5 VDC
E	IO-Link compatible 4 to 20 mA DC
F	IO-Link compatible 0 to 10 VDC/1 to 10 VDC
D Display unit	
A	L/min L m ³ °C
B	L/min us gal/min L m ³ us gal °C °F *1
E Manual valve	
N	Sensor only
A	With manual valve (cock type) *2, *3
F Option (attached cable)	
Blank	None
A	Standard cable (M12/4-conductor/ 3 m) attached
B	Double ended connector cable (M12/4-conductor/ 3 m) attached
G Option (attached bracket)	
Blank	None
C	Attached bracket *3

Pressure loss

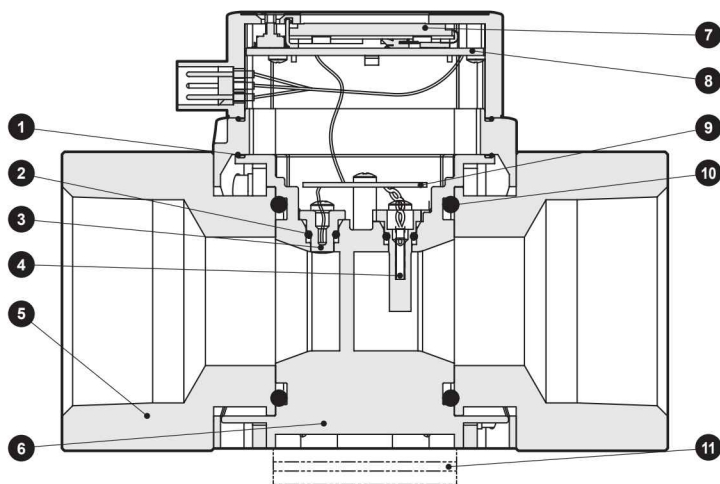


Internal structure and list

● WFK2-005, 020, 050



● WFK2-100, 250

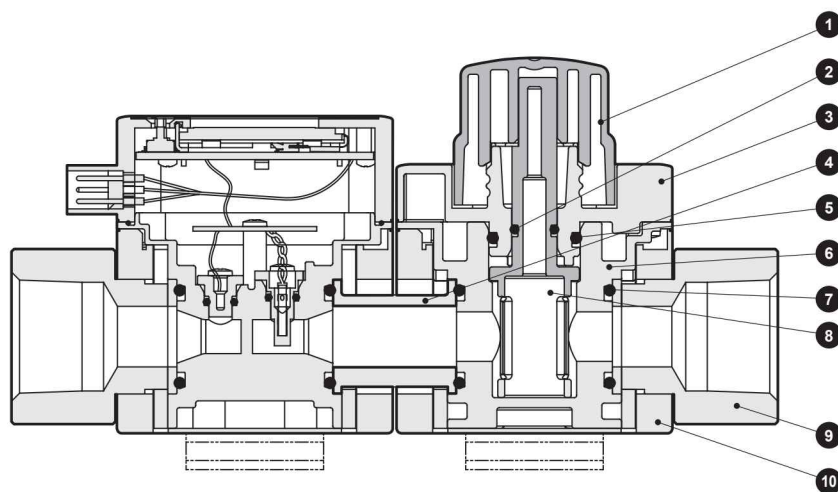


Cannot be disassembled

No.	Part name	Material	Quantity	No.	Part name	Material	Quantity
1	Packing	FKM Fluoro rubber	1 or 2	7	Liquid crystal		1
2	O-ring	FKM Fluoro rubber	2	8	CPU Base		1
3	Temperature sensor	SUS316L Thermistor	1	9	Sensor board		1
4	Karman's vortex street detection sensor	PPS Resin Piezoelectric element	1	10	O-ring	FKM Fluoro rubber	2
5	Attachment	SUS304	2	11	Bracket (option)	SUS304 or SPCC	(1)
6	Sensor body	PPS Resin GF40%	1				

* The wetted parts are ②, ③, ④, ⑤, ⑥ and ⑩.

● WFK2-005, 020, 050****A



Cannot be disassembled

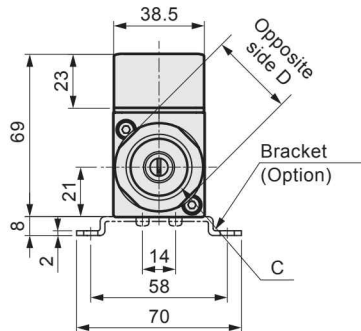
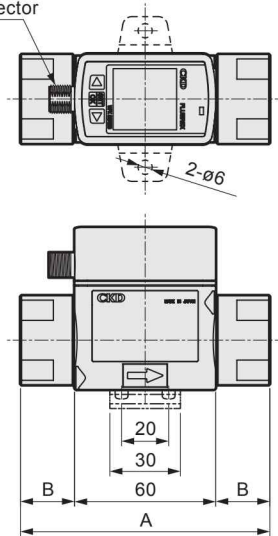
No.	Part name	Material	Quantity	No.	Part name	Material	Quantity
1	Handle	POM Resin	1	7	O-ring	FKM Fluoro rubber	2
2	O-ring	FKM Fluoro rubber	1	8	Cock	PPS Resin GF40% FKM Fluoro rubber	1
3	Stuffing	PPS Resin GF40%	1	9	Attachment	SUS304	2
4	Spacer	SUS304	1	10	External case	PBT Resin GF30%	1
5	O-ring	FKM Fluoro rubber	1				
6	Cock body	PPS Resin GF40%	1				

* The wetted parts are ②, ③, ④, ⑤, ⑥, ⑦, ⑧ and ⑨.

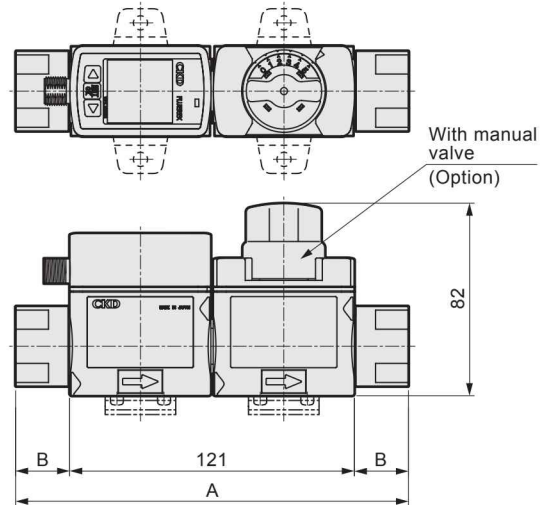
Dimensions

● WFK2-005, 020, 050

M12 Connector

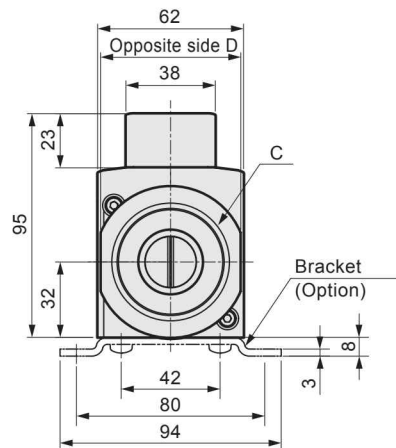
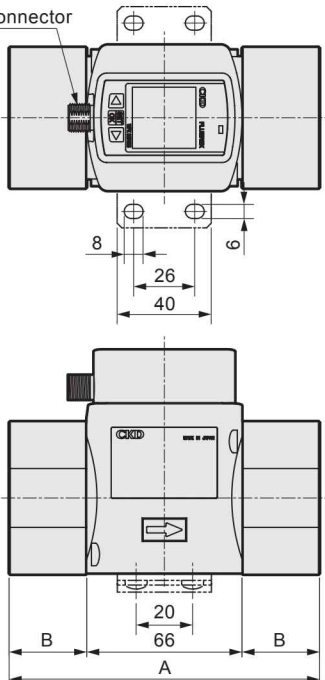


• With manual valve (cock type)



● WFK2-100, 250

M12 Connector



Model No.	A	B	C	Opposite side D
WFK2-[*1]A[*3]**N	90	15	Rc3/8	24
WFK2-[*1]B[*3]**N	90	15	Rc1/2	27
WFK2-[*1]C[*3]**N	106	23	Rc3/4	32
WFK2-[*2]D[*3]**N	106	20	Rc1	46
WFK2-[*2]E[*3]**N	125	29.5	Rc1 1/4	50
WFK2-[*2]F[*3]**N	132	33	Rc1 1/2	55
WFK2-[*1]A[*3]**A	151	15	Rc3/8	24
WFK2-[*1]B[*3]**A	151	15	Rc1/2	27
WFK2-[*1]C[*3]**A	167	23	Rc3/4	32

[*1]: Select from 005, 020, and 050

[*2]: Select from 100 and 250

[*3]: Select from A, G, and N (dimension lines of the G screw and NPT screw are the same)

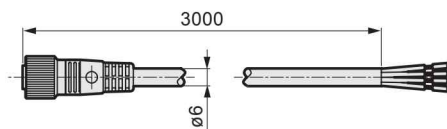
Optional dimensions

● Cable option

Common for WFK2

- Standard cable

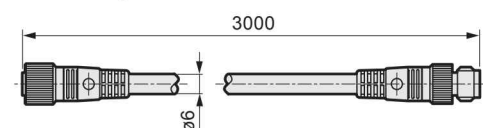
Discrete option model No.: **WF-FL-280741**



Finished outer diameter 6 mm, core wire 0.5 mm², insulator outer diameter 1.9 mm

- Double ended connector cable

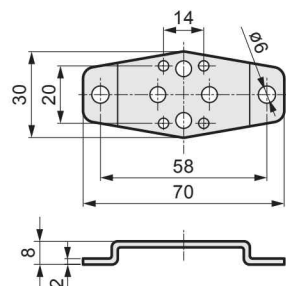
Discrete option model No.: **WF-FL-662453**



● Bracket option

WFK2-005, 020, 050

Discrete option model No.: **WF-FL-315544**



WFK2-100, 250

Discrete option model No.: **WF-FL-636342**

