



Oil mist filter with differential pressure switch option M2000/3000/4000/6000-W-FP1 Series

FP1 Series

Lubricants

Food-grade (NSF H1) lubricants are used on flow paths and sliding portions.

With predictive maintenance suited for food manufacturing processes

Use visual inspection and 2 switches to know the timing of element replacement.

An indicator that you can confirm intuitively

Switch selection available

Q2



No switch (differential pressure indicator only)

Q3



Differential pressure indicator + SW2

Q4



Differential pressure indicator + SW1/SW2



Switch output 2 points



Replacement recommended



Replacement required

2 points
Switch output

360°
Highly visible indicator

IP67
Switch

FP
Food Process®

CKD Corporation

CC-1441A



Oil mist filter Standard White Series
Differential pressure switch option

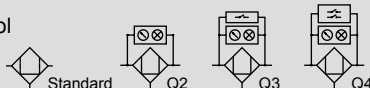
NSF H1

M2000/M3000 M4000/M6000-W-FP1 Q2/Q3/Q4 Series

Ideal for circuits susceptible to oil

● Port size: Rc1/4 to Rc1

JIS symbol



Specifications

Descriptions	M2000-W	M3000-W	M4000-W	M6000-W
Working fluid	Compressed air			
Working pressure MPa	0.1 to 1.0 *2			
Proof pressure MPa	1.5			
Drain capacity cm ³	25	45	80	80
Port size Rc	1/4, 3/8 (1/2 uses an adaptor)		3/8, 1/2 (3/4 uses an adaptor)	3/4, 1 (1 1/4 uses an adaptor)
Weight kg	0.25	0.28	0.52	0.95
Standard accessories	Bowl guard			

Mantle option name		Blank (M type)	S (S type)
Max. processing flow rate *1	M2000-□-W	250	310
l/min (ANR)	M3000-□-W	360	450
For a primary pressure of 0.7 MPa	M4000-□-W	825	1000
	M6000-□-W	1270	1400
Ambient/fluid temperatures °C	5 to 60		
Filtration µm	0.01 (nominal)		0.3
Secondary side oil concentration mg/m ³	0.01 or less (0.1 or less after oil saturation) *3, *4		0.5 or less *3
Mantle (element) change	1 year (6000 hours) or pressure drop 0.1 MPa		

*1: Use within the max. processing flow rate.

If the max. processing flow is exceeded temporarily, or if the filter is installed at a place with high levels of pulsation, the mantle could be damaged or oil or drainage, etc., could splatter to the secondary side and result in faults at the terminal.

*2: In the case of "F1" with auto-drain, the min. working pressure is 0.15 MPa.

*3: The secondary side oil concentration is the value when the primary side oil concentration is 30 mg/m³ and inlet air temperature is 21 °C.

*4: Install an oil mist filter (S type) as a pre-filter on the primary side to prevent early clogging.

Differential pressure switch/switch specifications

Differential pressure switch Option name	Differential pressure switch option Q3/Q4	
	Reed 2-wire method	
Load voltage	12/24 VDC	110 VAC
Load current *1	5 to 50 mA	7 to 20 mA
Internal voltage drop	3 V or less	
Display lamp	Red LED (Lit when ON)	
Lead wire length	3 m (oil resistant vinyl cabtyre cable 2-conductor 0.2 mm ²)	
Shock resistance	294 m/s ²	
Insulation resistance	20 MΩ and over with 500 VDC megger	
Withstand voltage	No failure after 1 minute of 1,000 VAC application	
Degree of protection	IEC Standard IP67, JIS C0920 (water-tight), oil resistance	
Contact protection circuit	None	

*1: Install the load resistance before use.

CE marking specifications

Compatible as standard.

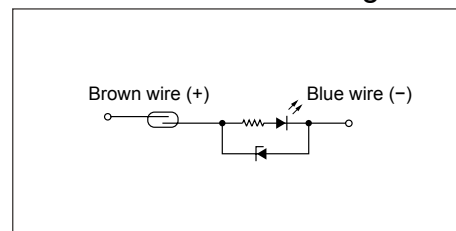
Option weight

* Add to the weight of the standard accessories.

Unit: kg

Code	Drain discharge	Differential pressure switch				Pipe adaptor set					Bracket
	F1	Q2	Q3	Q4	A8W	A10W	A15W	A20W	A25W	A32W	BW
M2000	0.02	0.04	0.09	0.13	0.16	0.16	0.16				0.15
M3000	0.02	0.04	0.09	0.13	0.16	0.16	0.16				0.17
M4000	0.02	0.05	0.10	0.14	0.16	0.16	0.16	0.16			0.21
M6000	0.02	0.05	0.10	0.14				0.53	0.53	0.53	0.34

Switch internal circuit diagram



M2000/M3000/M4000/M6000-W-FP1 Series

How to order

How to order

M4000 - **15** - **W** - **Q4** - **FP1** - **A20W** -

A Model No.

B Port size

C Option

D Pipe adaptor set (attachments)

E Bracket (attachments)

A Model No.

M2000
M3000
M4000
M6000

Code	Content	M2000	M3000	M4000	M6000
B Port size					
8	Rc1/4	●	●		
10	Rc3/8	●	●	●	
15	Rc1/2			●	
20	Rc3/4				●
25	Rc1				●
C Option					
Drainage *2, *3	Blank	Manual drain cock	●	●	●
	F1	Auto-drain with manual override (NC: No exhaust when not pressurized)	●	●	●
Bowl material	Blank	Polycarbonate bowl	●	●	●
	Z	Nylon bowl	●	●	●
Mantle (Element)	Blank	M type (nominal 0.01 μm; remaining oil 0.01 mg/m ³)	●	●	●
	S	S type (nominal 0.3 μm; remaining oil 0.5 mg/m ³)	●	●	●
Differential pressure indicator	Q2	With differential pressure indicator	●	●	●
Differential pressure switch	Q3	Differential pressure indicator + switch 1-point (SW2)	●	●	●
	Q4	Differential pressure indicator + switch 2-point (SW1/SW2)	●	●	●
Flow direction	Blank	Standard flow (left → right)	●	●	●
	X1	Reverse flow (right → left)	●	●	●
D Pipe adaptor set (attachments)					
Blank		Not attached	●	●	●
A8W		Rc1/4 pipe adaptor set	●	●	●
A10W		Rc3/8 pipe adaptor set	●	●	●
A15W		Rc1/2 pipe adaptor set	●	●	●
A20W		Rc3/4 pipe adaptor set			●
A25W		Rc1 pipe adapter set			●
A32W		Rc1 1/4 pipe adapter set			●
E Bracket (attachments)					
Blank		Not attached	●	●	●
BW		C bracket	●	●	●

⚠ Precautions for model No. selection

- *1: Select options for drainage, bowl material, and differential pressure switch. When selecting options for several items, list options in order from the top.
- *2: NO auto-drain cannot be selected.
- *3: Refer to "Pneumatic, Vacuum, and Auxiliary Components (No. CB-024SA)" for the auto-drain working conditions.
- *4: The pipe adaptor set and C type bracket cannot be used together.
- *5: The joiner set is attached with the pipe adaptor set.

*Specifications/dimensions

This catalog only contains instructions regarding "How to order".
For details, refer to "Oil mist filter differential pressure switch option added" (Catalog No. CC-1383A). For further details, contact CKD.



Safety precautions

FP Series: Warnings and Cautions

Be sure to read this section before use.

For general and product-specific precautions, refer to "Pneumatic, vacuum and auxiliary components (CB-024SA)" and "Oil mist filter differential pressure switch option added (Catalog No. CC-1383A)".

Design/selection

CAUTION

- "Food Sanitation Act compliant" refers to products with materials conforming to the Food Sanitation Act.
- Use after confirming the structure and material, valve structure, working fluids, and working atmospheres of each component carefully yourself.

- Internal parts may wear when the valve operates. If the product is affected, take necessary measures, such as installing a filter on the secondary side.
- If the fluid is water or water drops remain inside, rust may be generated and flow to the secondary side depending on the model. Take necessary measures in that case.

When using the product

CAUTION

- After installing, check for leaks from pipes and for wire connections, and check that the product is correctly installed.

- Do not use products as footing or place any heavy objects on top of the products.
- If the product has not been in use for over one month, perform a test run before starting actual operation.

Related products

Equipment for Food Manufacturing Processes FP Series

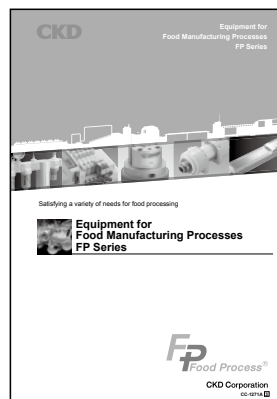
- An extensive lineup of everything from air filters to actuators allows for secure and safe use in food processing.
- FP1 Series uses food grade lubricant (NSF H1) to eliminate concerns of contamination from lubricants
- In addition to FP1, FP2 Series uses resin and rubber materials that are compliant with the Food Sanitation Act

Drain separator FX-FP1

- Lightweight compact drain separator
- Separation efficiency 99%
- Compatible compressor: 0.75 kW to 37 kW



Catalog No. CC-1271A



If the goods and/or their replicas, the technology and/or software found in this catalog are to be exported from Japan, Japanese laws require that the exporter makes sure that they will never be used for the development and/or manufacture of weapons for mass destruction.

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