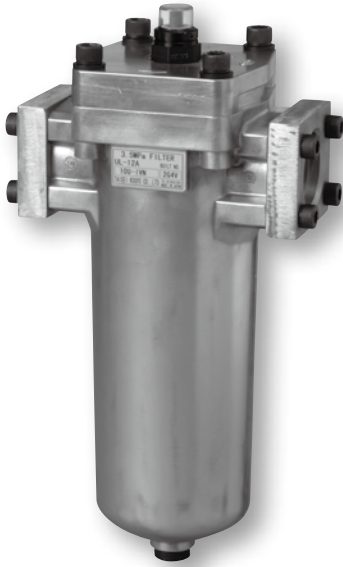
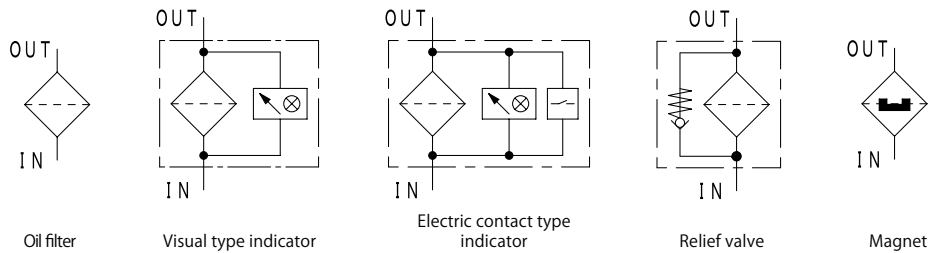


Best-selling Line Filter



Characteristics

- Light filter housing of aluminum alloy (FCD for large models)
- Exchange of In/Outlet is available by changing of cover direction
- Easy element replacement by only removing 4 bolts
- Clogging indicator, magnet, relief valve, and companion flange are selectable as an option
- Element of "U" series (UL, UM, UH) can be used in common



★ Refer to P.222 for hydraulic graphic symbol of other combination of optional equipment.

SPECIFICATION

Max working pressure	MPa	3.5
Repetition durability test		0~3.5MPa x10 ⁷ times
Working temperature	Standard	°C -10 ~ 90
	High temperature* ¹	°C -10 ~ 150
Indicator working pressure	MPa	0.3
Cracking pressure	MPa	0.35
Allowable differential pressure of filter element	MPa	0.7
Flow direction/Extract direction of filter element		OUT → IN / Upward

Inner diameter		03A	04A	06A	08A	10A	12A	16A	20B	24B
Standard flow rate ☆	ℓ /min	30	50	90	105	240	290	440	680	730
Main material	Body	ADC						FCD		
	Cover	ADC						FCD		
	Inlet	ADC								
Coating		Non-coating						Aqua blue		
Weight* ²	kg	2.5	3.0	5.5	21.5	37.0				

☆ Standard flow rate is estimated by the condition of density: 0.86, kinematic viscosity: 32mm²/s, filtration rating: 10U, pressure drop: lower than 0.05MPa.
(Since it is adjusted by characteristic of each product, value can be different in some cases.)

MODEL CODE

(Model code example)



Code	Fluid type
Blank	Mineral oil
F	Phosphate ester fluid
G	Water glycol fluid
C	Fatty ester fluid
W	High water base fluid
S	Fuel (Kerosene, Gas oil, Diesel oil)
B	Brake fluid

Code	Inner diameter
03A	Rc 3/8 (10A)
04A	Rc 1/2 (15A)
06A	Rc 3/4 (20A)
08A	Rc1 (25A)
10A	Rc1 1/4 (32A)
12A	Rc1 1/2 (40A)
16A	Rc2 (50A)
20B	Rc2 1/2 (65A)
24B	Rc3 (80A)

Code	Filtration rating	Code	Filtration rating
C-Fiber		Wire gauze	
3C	3 μm	5UW	5 μm
8C	8 μm	10UW	10 μm
25C	25 μm	20UW	20 μm
Paper		40UW	40 μm
10U	10 μm	50UW	50 μm
20U* ³	20 μm	200W	200Mesh
40U* ³	40 μm	150W	150Mesh
		100W	100Mesh
		60W	60Mesh
		Notch wire (Dimple wire)	
		50UK	50 μm
		200K	200Mesh
		150K	150Mesh
		100K	100Mesh
		60K	60Mesh

Refer to P.15-16 for detail information of filter element.

Code	Option
① Indicator	
Blank	Closing plug
I	Visual type
E	Electric contact type
D	Electric contact type (Micro capacity)
② Relief valve	
K	Non
V	Relief valve
③ Companion flange	
Blank	Non
N	Companion flange
④ Magnet	
Blank	Non
M	Magnet

Code	Flow direction of fluid
Blank	Left → Right
L	Right → Left

* 1 Sealing parts: FKM, only for wire gauze element, indicator and relief valve are not available (Max oil temperature is visual type: 130°C, electric contact type: 90°C)

* 2 Weight without companion flange * 3 Not available for water-glycol based oil and high water based fluid

FLOW RATE GRAPH

Condition

Fluid type : ISO VG32
Oil temperature : 40°C

(Density: 0.86,
Kinematic
viscosity: 32mm²/s)

How to calculate of pressure drop

Estimate pressure drop of filter assembly by following equation:

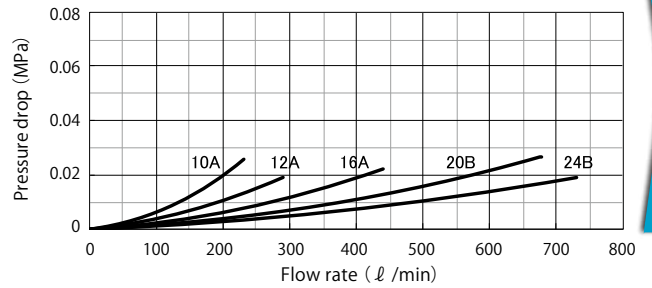
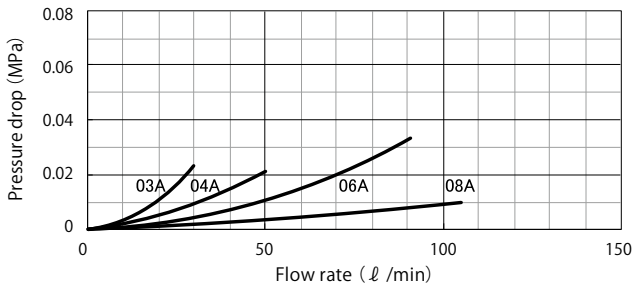
$$\text{Pressure drop of filter assembly} = \text{① Pressure drop of filter housing} + \text{② Pressure drop of filter element}$$

Estimate pressure drop of filter assembly by following equation if required condition is different:

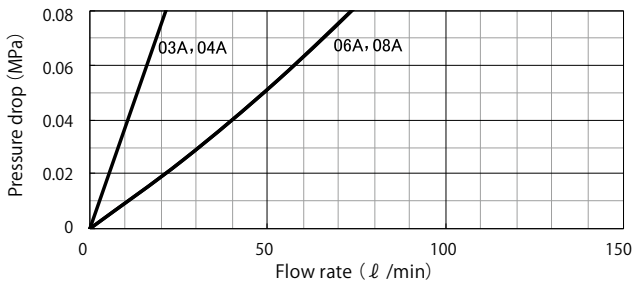
$$\begin{aligned} \text{Pressure drop of filter housing} &= \frac{\text{Fluid density}}{0.86} \times \text{Pressure drop of filter housing at density of 0.86} \\ \text{Pressure drop of filter element} &= \frac{\text{Fluid density}}{0.86} \times \frac{\text{Kinematic viscosity}}{32} \times \text{Pressure drop of filter element at density of 0.86, kinematic viscosity of 32} \end{aligned}$$

★ Pressure drop of filter housing is proportional to fluid density, and pressure drop of filter element is proportional to fluid density and kinematic viscosity.

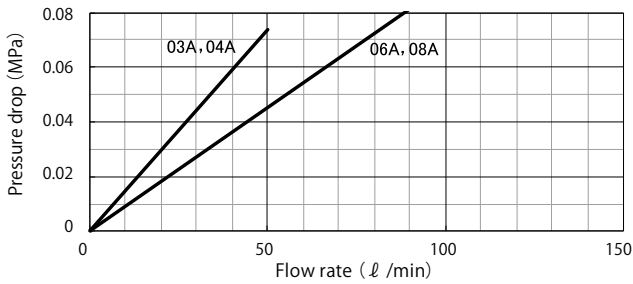
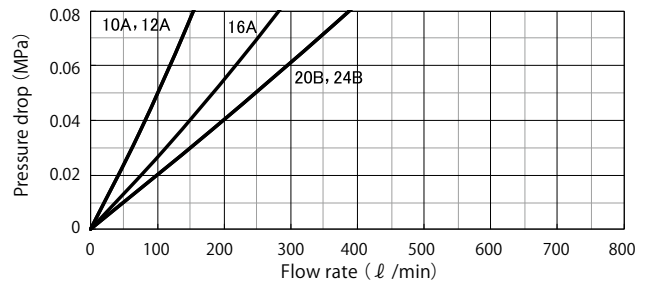
① Pressure drop of filter housing



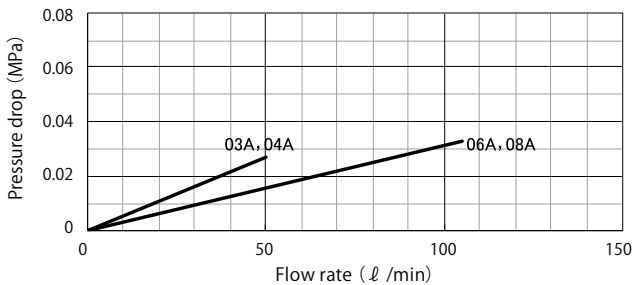
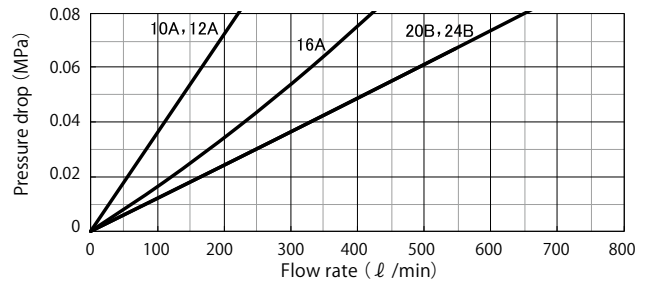
② Pressure drop of filter element



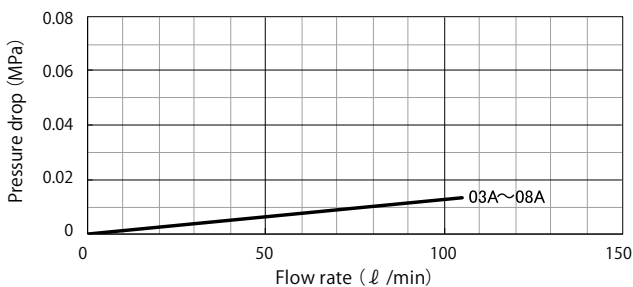
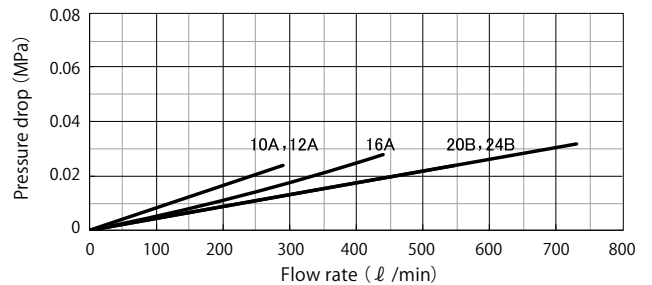
3C
3µm



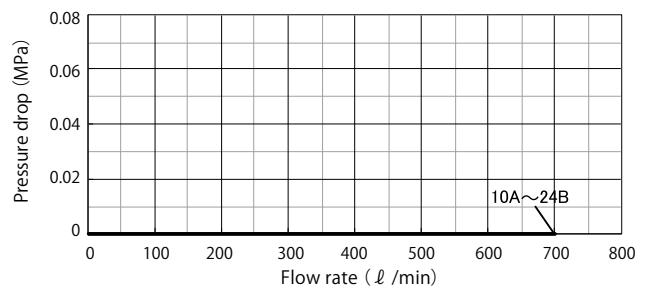
8C
8µm



10U
10µm

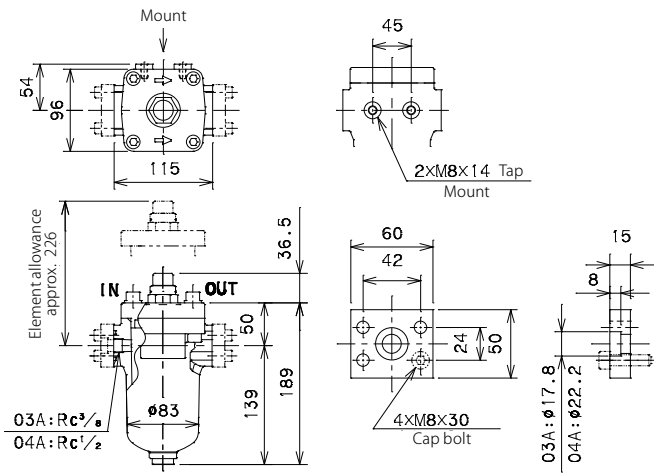


150W
150Mesh*1



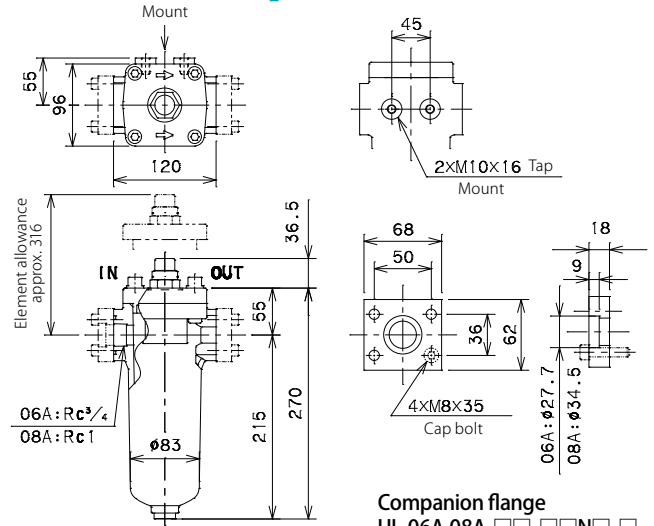
* 1 Pressure drop of wire gauze element is described with one line since the value is low and there is no difference at each filter size.

UL-03A,04A-□□-□□□□-□ I: Visual type indicator



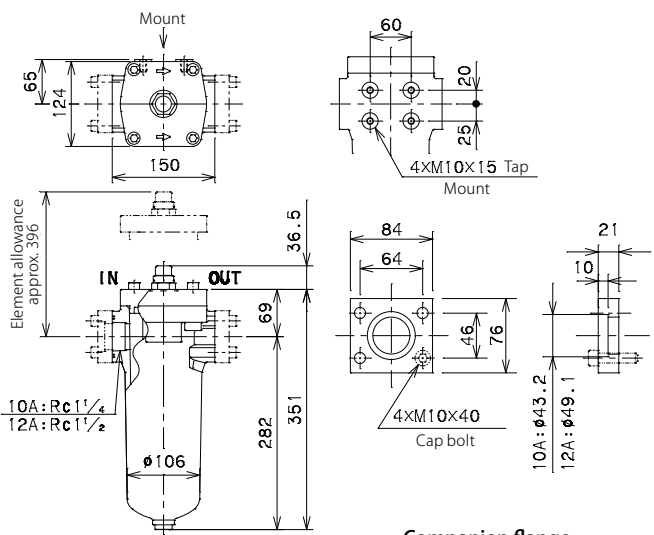
Companion flange
UL-03A,04A-□□-□□□□N□-□

UL-06A,08A-□□-□□□□-□



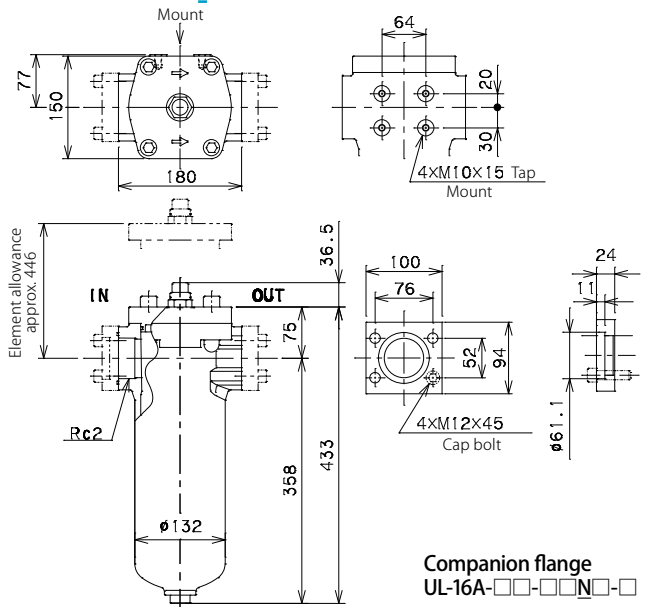
Companion flange
UL-06A,08A-□□-□□□□N□-□

UL-10A,12A-□□-□□□□-□



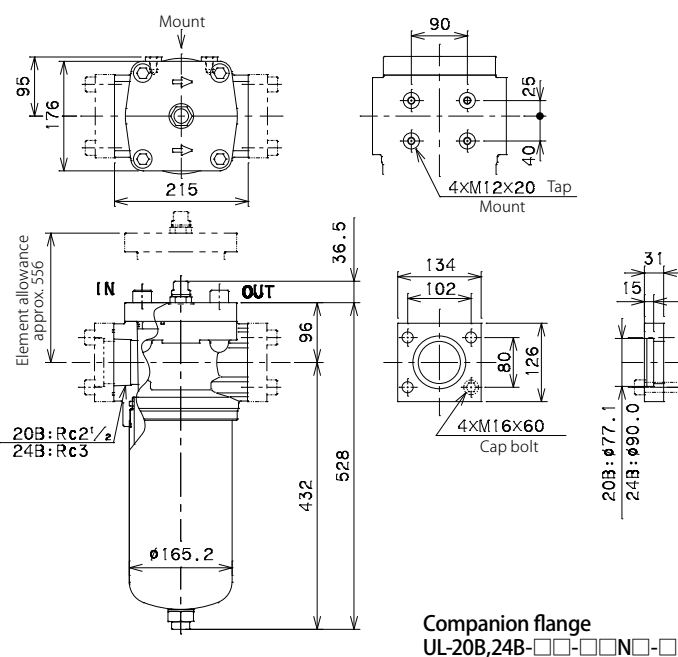
Companion flange
UL-10A,12A-□□-□□□□N□-□

UL-16A-□□-□□□□-□



Companion flange
UL-16A-□□-□□□□N□-□

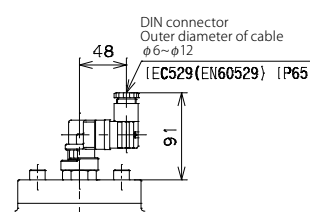
UL-20B,24B-□□-□□□□-□



Companion flange
UL-20B,24B-□□-□□□□N□-□

Differential pressure type indicator part

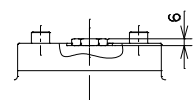
* Common at all size



*Element allowance should be +60mm.

E,D: Electric contact type indicator

UL-□□-□□-□□-□□-□□



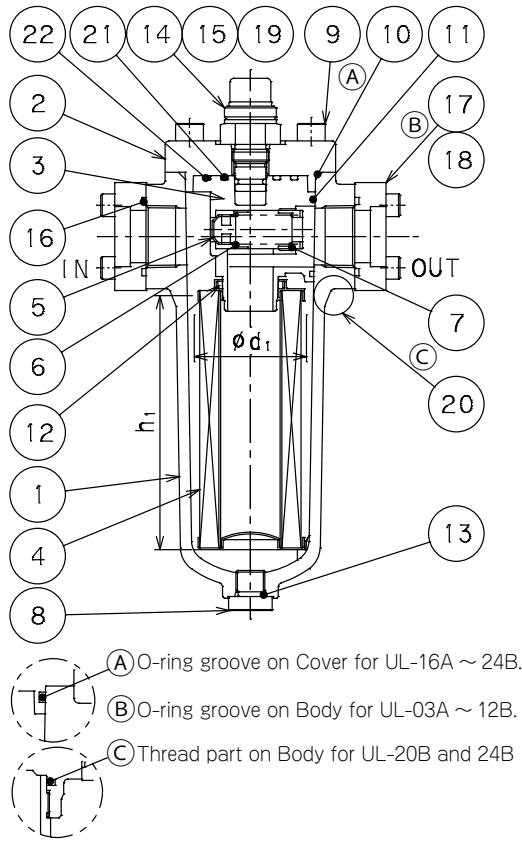
Closing plug

UL-□□-□□-□□□□-□□□□

Model code	Working pressure (MPa)		Electric signal
	Visual observation signal	Caution	
IA-3	0.2	0.3	/
EA-3	0.2	0.3	
EA-3D	0.2	0.3	0.3

<Micro switch specification>

Model code	Rated capacity	Contact diagram : 1C
EA-3	Resistance load	
	Inductive load	
EA-3D	Micro capacity	



No.	Item	Qty
1	Body	1
2	Cover	1
3	Inlet	1
4	Element	1
5	Relief valve	1
6	Spring	1
7	Spring holder	1
8	Drain plug	1
9	Cap bolt	4
10	O-ring	1
11	O-ring	1
12	O-ring	1
13	O-ring	1
14	O-ring	1
15	O-ring	1
16	O-ring	2
17	Companion flange	2
18	Cap bolt	8
19	Indicator	1
20	O-ring	1
21	O-ring	1
22	O-ring	1

ELEMENT SIZE

Element Model code	Size(mm)		Weight*1 (kg)
	ϕd_1	h_1	
P-UL-03A,04A	62.2	85.3	0.15
P-UL-06A,08A		155.3	0.22
P-UL-10A,12A	82.2	204.5	0.46
P-UL-16A	102.2	254.5	0.81
P-UL-20B,24B	124.0	304.5	1.43

* Common to UL,UM,UH

SEALING PARTS LIST

No.	10	11	12	13	14	15	16	20	21	22	Item code of sealing parts set *3			
	Standard *2	JIS B2401 1A			JIS B2401 1B	JIS B2401 1A				Material	SP No.: 10 ~ 13	SA No.: 10 ~ 15, 20 ~ 22	SA-N No.: 10 ~ 16, 20 ~ 22	
UL-03A,04A	G75	G30	P32	P14	P18	P14	G30	G40	G40	G40	NBR	SSF000070	SSF000060	SSF000065
UL-06A,08A		G40					G45				G45	G70	G25	G45
UL-10A,12A	G100	G55	G60	P18	G100	G155		G30	G55	G55				
UL-16A	G110	G65					G80				P18	G100	G155	G30
UL-20B,24B	G135	G95	G80	P18	G100	G155		G30	G55	G55				
											NBR	SSF000073	SSF000063	SSF000068
											FKM	SSF000440	SSF000430	SSF000435
											NBR	SSF000074	SSF000064	SSF000069
											FKM	SSF000441	SSF000431	SSF000436

MODEL CODE OF SPARE PARTS

Replacement element (Model code example)

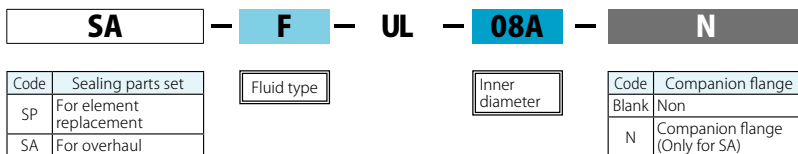


★ Model code of replacement element exists two types: “Individual code” and “Common code”, however it represents same product.

“Individual code”: Used in drawings and nameplate as shown in <Model code example>.

“Common code”: Used in vouchers and tag Refer to [Spare Element List] on P.152 for “Common code”.

Sealing parts set (Model code example)



★ Refer to the [MODEL CODE] table on the previous page for code selection.

* 1 Weight of “Paper” element. Refer to the pages of UM and UH model for element weight with other material. element. * 2 Standard for NBR. For other material, conform to the standard. * 3 Sealing parts are available as “Sealing parts set” only. We do not provide single part individually.