

# Product Data Sheet

## Filter Housings FCA.. (16, 50 bar)

Version: 1.6.0

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Date: 17.09.2019

### Field of application

Type FCA filter housings are designed as compressed air and vacuum filter housings for small to medium volume flows and connection sizes in the pressure levels 16 bar and 50 bar for compressed air without aggressive substances.

### Features

Type FCA filter housings are made from high-quality, corrosion-resistant aluminium, manufactured in a casting process (gravity casting). For surface finishing purposes and for increasing resistance all filter housings have to go through a chrome(VI)-free passivation process and are finished by an impact-proof and abrasion-proof powder coating which is provided on the outer side of the housing.

When screwing the lower filter part (filter bowl) into the upper filter part (filter head) the torque applied to the thread of the filter housing is limited by means of a limit stop. This prevents the thread from being pressed or overstressed and the housings can easily be opened by hand even after a longer operating period.

Each type FCA filter housing is designed for one filter element to be inserted. The housings are provided with a compressed air inlet and outlet with a threaded connection (connection size depends on the model) as well as with a condensate outlet with a G 1/2 threaded connection (threads according to DIN 259). Models 30 - 190 also have 2 times G 1/8 threaded connections which, in conjunction with two M5 mounting holes, are used for differential pressure monitoring and compressed air purity monitoring. Model 20 - 130 filter housings are provided with two through holes in the filter head that are located outside the pressure chamber and used for filter combination mounting or for wall mounting (FAM and FAW mounting kits are available as an accessory).

The filter housings comply with the requirements of the Pressure Equipment Directive 2014/68/EU, and some (depending on the model and pressure level) have the CE marking of this European directive.



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### Basic data

Model	Nominal volume flow (VN) <sup>*1</sup>	Max. operating pressure <sup>*2</sup>	Min./Max. operating temperature
FCA20	30 m <sup>3</sup> /h	16/50 bar	-30°C - +120°C
FCA25	35 m <sup>3</sup> /h	16/50 bar	
FCA30	50 m <sup>3</sup> /h	16/50 bar	
FCA50	70 m <sup>3</sup> /h	16/50 bar	
FCA70	100 m <sup>3</sup> /h	16/50 bar	
FCA90	160 m <sup>3</sup> /h	16/50 bar	
FCA95	160 m <sup>3</sup> /h	16/50 bar	
FCA110	330 m <sup>3</sup> /h	16/50 bar	
FCA115	330 m <sup>3</sup> /h	16/50 bar	
FCA120	500 m <sup>3</sup> /h	16/50 bar	
FCA130	800 m <sup>3</sup> /h	16/50 bar	
FCA140	1,000 m <sup>3</sup> /h	16 bar	
FCA170	1,500 m <sup>3</sup> /h	16 bar	
FCA180	2,000 m <sup>3</sup> /h	16 bar	
FCA185	2,000 m <sup>3</sup> /h	16 bar	
FCA190	2,500 m <sup>3</sup> /h	16 bar	

\*1 - refers to 1 bar(a) and 20°C at 7 bar operating pressure

\*2 - 50 bar filter housing marked "50" in filter head

Available options for FCA	20	25	30	50	70	90	95	110	115	120	130	140	170	180	185	190
<b>16 bar:</b>																
Filter combinations	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Wall brackets	■	■	■	■	■	■	■	■	■	■	■					
Differential pressure gauges			■	■	■	■	■	■	■	■	■	■	■	■	■	■
Oil indicator			■	■	■	■	■	■	■	■	■	■	■	■	■	■
Electronic condensate drains	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
<b>50 bar:</b>																
Filter combinations	■	■	■	■	■	■	■	■	■	■	■					
Wall brackets <sup>*3</sup>	■	■	■	■	■	■	■	■	■	■	■					
Differential pressure gauges			■	■	■	■	■	■	■	■	■					
Electronic condensate drains	■	■	■	■	■	■	■	■	■	■	■					

\*3 – for single filter housings only

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### Volume flow conversion factors

#### «F1» - Pressure (in bar)

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0.125	0.25	0.38	0.50	0.63	0.75	0.88	1.00	1.13	1.25	1.38	1.50	1.63	1.75	1.88	2.00	2.13
17	18	19	20	25	30	35	40	45	50							
2.24	2.35	2.45	2.6	3.1	3.6	4.0	4.4	4.7	5.1							

#### «F2» - Temperature (in °C)

-30	-20	-10	0	10	20	30	40	50	60	70	80	90	100	110	120
1.21	1.16	1.11	1.07	1.04	1.00	0.97	0.94	0.91	0.88	0.85	0.83	0.81	0.79	0.77	0.75

#### Calculation of the converted volume flow

<b>Converted volume flow VK</b>	<b>Nominal required volume flow <math>VN_{min}</math></b>
$VK = VN \times F1 \times F2$	$VN_{min} = VK / F1 / F2$

$VK$  : Converted volume flow calculated for the operating conditions

$VN_{min}$ : Nominal required volume flow calculated for the operating conditions, based on the volume flow at operating conditions

### Maintenance rules

All models	In the course of filter element replacement or cleaning: checking for serious corrosion

### Materials

Component	
Filter housing	Aluminium (16 bar VDS no.: 233 ; 50 bar VDS no.: 239 heat treated)
Coatings	Inside and outside: Chrome(VI)-free thin-film passivation ; min. layer thickness 5µ Outside: 1-component power coating epoxide/polyester basis, layer thickness approx. 80 µ
Mounting parts, fittings	Brass, brass (nickel-plated), steel (galvanically zinc-plated)
Sealing materials	NBR, Teflon (FCA140-190)
Lubricants	Rivolta S.K.D. 4002 or similar

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### Connections, dimensions and weight

#### 16 bar

Model	Connection	Condensate Outlet	Height	Width	Depth	Weight
FCA20	G 1/4	G 1/2	136 mm	61 mm	60 mm	0.5 kg
FCA25	G 3/8	G 1/2	136 mm	61 mm	60 mm	0.5 kg
FCA30	G 3/8	G 1/2	183 mm	87 mm	80 mm	1.0 kg
FCA50	G 1/2	G 1/2	183 mm	87 mm	80 mm	1.0 kg
FCA70	G 1/2	G 1/2	253 mm	87 mm	80 mm	1.1 kg
FCA90	G 3/4	G 1/2	289 mm	130 mm	122 mm	3.9 kg
FCA95	G 1	G 1/2	289 mm	130 mm	122 mm	3.8 kg
FCA110	G 1	G 1/2	387 mm	130 mm	122 mm	4.3 kg
FCA115	G 1 1/2	G 1/2	387 mm	130 mm	122 mm	4.1 kg
FCA120	G 1 1/2	G 1/2	487 mm	130 mm	122 mm	4.7 kg
FCA130	G 1 1/2	G 1/2	689 mm	130 mm	122 mm	5.7 kg
FCA140	G 2	G 1/2	670 mm	164 mm	146 mm	7.8 kg
FCA170	G 2	G 1/2	923 mm	164 mm	146 mm	9.5 kg
FCA180	G 2 1/2	G 1/2	897 mm	250 mm	225 mm	22.9 kg
FCA185	G 3	G 1/2	897 mm	250 mm	225 mm	22.4 kg
FCA190	G 3	G 1/2	1049 mm	250 mm	225 mm	24.5 kg

#### 50 bar

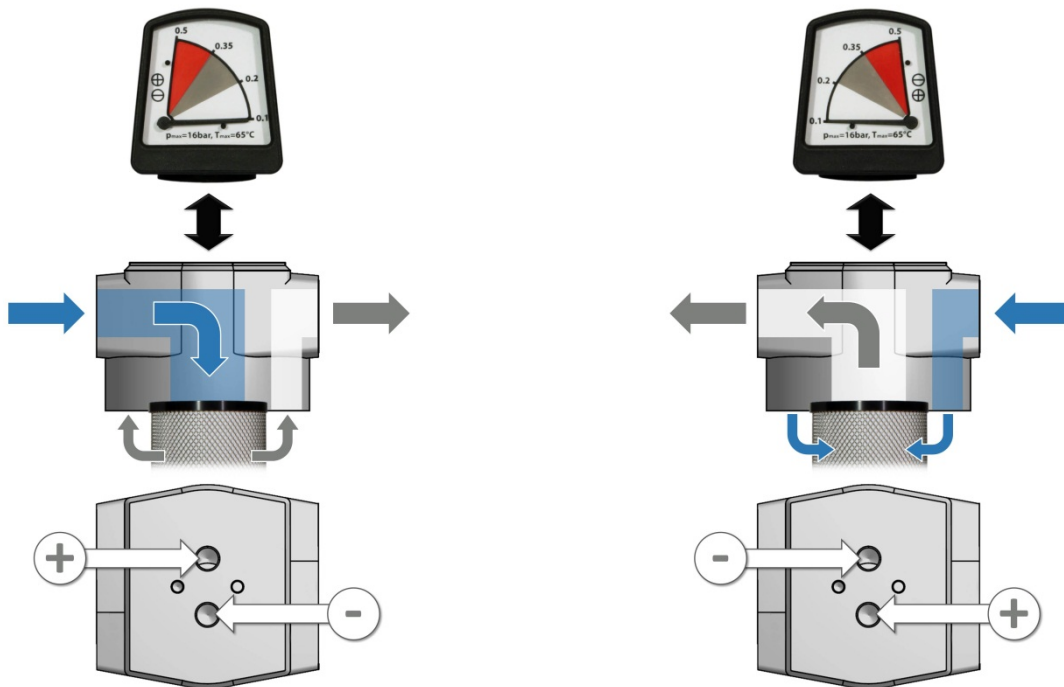
Model	Connection	Condensate Outlet	Height	Width	Depth	Weight
FCA20	G 1/4	G 1/2	136 mm	61 mm	60 mm	0.5 kg
FCA25	G 3/8	G 1/2	136 mm	61 mm	60 mm	0.5 kg
FCA30	G 3/8	G 1/2	183 mm	87 mm	80 mm	1.0 kg
FCA50	G 1/2	G 1/2	183 mm	87 mm	80 mm	1.0 kg
FCA70	G 1/2	G 1/2	253 mm	87 mm	80 mm	1.1 kg
FCA90	G 3/4	G 1/2	289 mm	130 mm	122 mm	3.9 kg
FCA95	G 1	G 1/2	289 mm	130 mm	122 mm	3.8 kg
FCA110	G 1	G 1/2	387 mm	130 mm	122 mm	4.3 kg
FCA115	G 1 1/2	G 1/2	387 mm	130 mm	122 mm	4.1 kg
FCA120	G 1 1/2	G 1/2	487 mm	130 mm	122 mm	4.7 kg
FCA130	G 1 1/2	G 1/2	689 mm	130 mm	122 mm	5.7 kg

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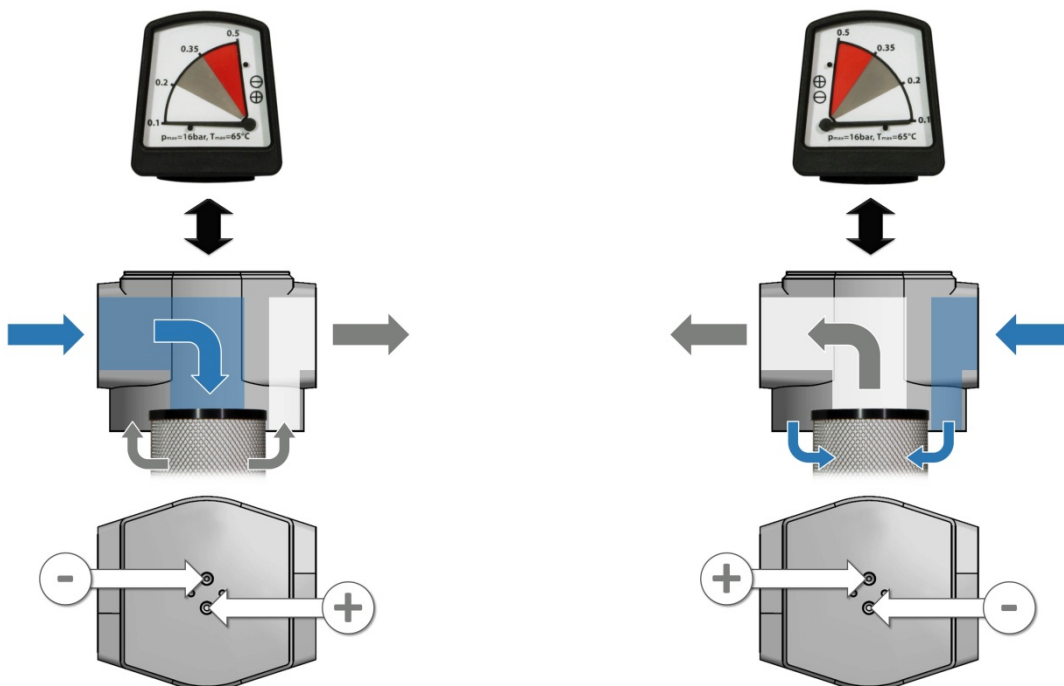
## Filter Housings FCA.. (16, 50 bar)

### Connection differential pressure indication

#### FCA30 – FCA130 (16 bar)



#### FCA140 – FCA190 (16 bar)



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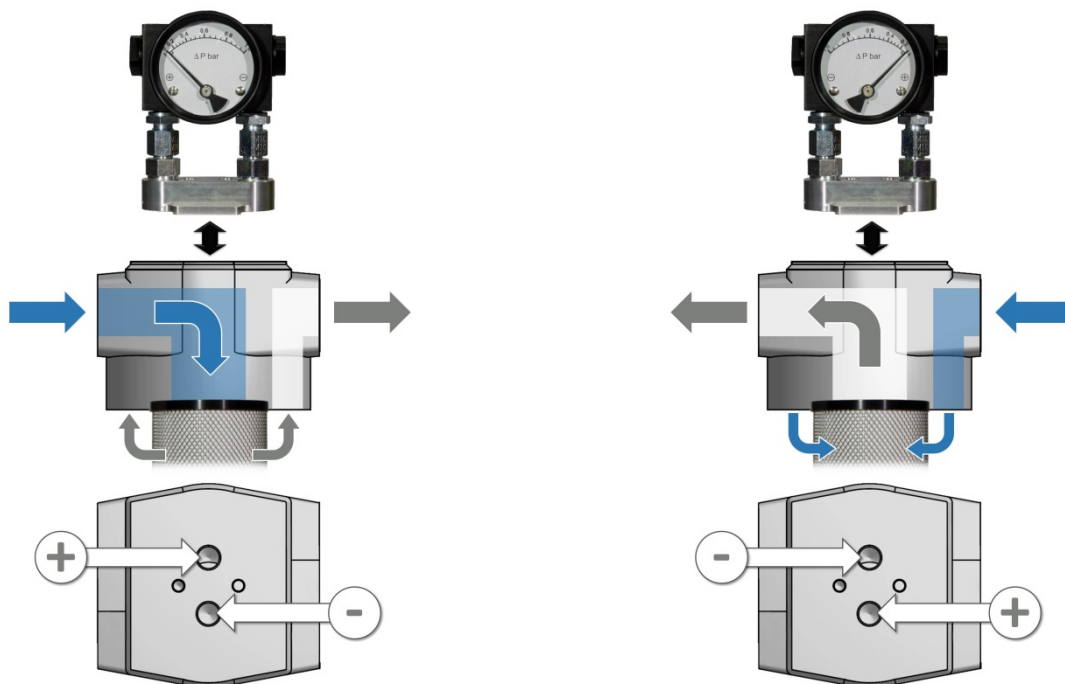
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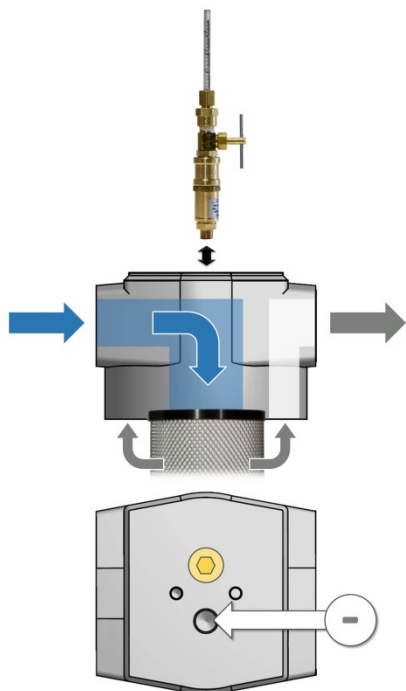
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### FCA30 – FCA130 (50 bar)

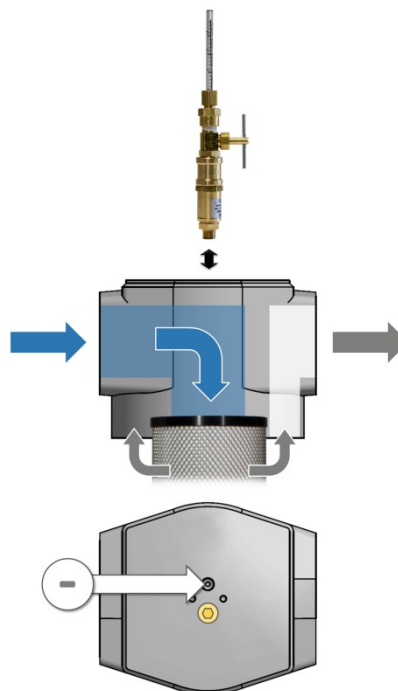


### Connection indicator

#### FCA30 – FCA130 (16 bar)



#### FCA140 – FCA190 (16 bar)



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### Classification according to Pressure Equipment Directive 2014/68/EU for group 2 fluids

Model	Volume	Category		Commissioning inspection* <sup>6</sup>		Routine inspection* <sup>6</sup>	
		16 bar	50 bar	16 bar	50 bar	16 bar	50 bar
FCA20	0.17 litres	---	---	---	---	---	---
FCA25	0.17 litres	---	---	---	---	---	---
FCA30	0.43 litres	---	---	---	---	---	---
FCA50	0.43 litres	---	---	---	---	---	---
FCA70	0.65 litres	---	---	---	---	---	---
FCA90	1.46 litres	---	I	---	AP* <sup>7</sup>	---	---
FCA95	1.46 litres	---	I	---	AP* <sup>7</sup>	---	---
FCA110	2.19 litres	---	I	---	AP* <sup>7</sup>	---	---
FCA115	2.19 litres	---	I	---	AP* <sup>7</sup>	---	---
FCA120	2.91 litres	---	I	---	AP* <sup>7</sup>	---	---
FCA130	4.36 litres	I	II (>45)	AP* <sup>7</sup>	NB* <sup>7</sup>	---	---
FCA140	5.87 litres	I	---	AP* <sup>7</sup>	---	---	---
FCA170	8.42 litres	I	---	AP* <sup>7</sup>	---	---	---
FCA180	19.12 litres	II (>10)	---	NB* <sup>7</sup>	---	---	---
FCA185	19.12 litres	II (>10)	---	NB* <sup>7</sup>	---	---	---
FCA190	23.02 litres	II (>8.5)	---	NB* <sup>7</sup>	---	---	---

\*<sup>6</sup> - In Germany defined by the Ordinance on Industrial Safety and Health of September 27th, 2002 (BGBl. I p. 3777) §14 and §15

\*<sup>7</sup> - Authorised person (AP) or Notified Body (NB)

### Other directives

Model	
All models	---

### Examples



Filter with integrated, automatic condensate drain CDF130



Filter with integrated, automatic condensate drain CDF130 and differential pressure gauge FAD01-FCA

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## Filter Housings FCA.. (16, 50 bar)

### Examples



Filter with manual drain CDM14N



Filter with manual drain CDM14N  
and differential pressure gauge FAD01-FCA



Filter with manual drain CDM14N  
and oil indicator FAI010I-B06



Filter with electronic condensate drain CDE4L



Filter with electronic condensate drain CDE16LC  
and differential pressure gauge FAD01-FCA



2-stage filter combination with wall brackets