

# Flanged Filter Series FL17ZL-FL140ZL

High efficiency, micro filter  
for larger compressed air systems



## Brief description

Parker Zander, high-performance FL-series filters, containing ZL grade filter elements are designed as depth-filters for the reliable removal of 1 µm liquid and solid particulate, whilst achieving a filtration performance of 99.925 % in compressed air or compressed nitrogen gas – independently validated acc. to ISO 12500-1.

The innovative filter housing and filter element design achieve optimum flow characteristics at minimum pressure drop resulting in considerable cost savings throughout the entire operating lifetime of the filter element. These filters are equipped as standard with the level-sensing, electronic condensate drains from the tried and tested ED3000 series, characterized by their zero air-loss function and reliable drainage of even the largest amount of oil/ water condensate.

Highly-efficient, borosilicate nano-fibre media with a voids volume of 96 % ensures high dirt-holding capacity at constantly low differential pressure. This efficiency is supported by deep-pleating technology enabling 4.5 times more filtration surface area to be incorporated into the element, when compared with conventional filter elements.

The filter-housing design has been designed for easy of maintenance: The deep-seated service-flange, supported by a pivoting hinge-joint, enables element replacement to be undertaken by a single individual. The dished-bottom provides ample space to drain away liquids efficiently.

The patented “lock-in place” filter elements, referred to as “Sure-Fit”, provide a secure and noticeable seal to avoid any possibility of contamination by-passing the element.



## Performance overview:

Ordner no.	Port size <sup>1</sup>	Nominal <sup>2</sup>
FL17ZLK3	DN80	2232
FL20ZLK3	DN100	4464
FL30ZLK3	DN150	6696
FL40ZLK3	DN150	8928
FL60ZLK3	DN200	13392
FL100ZLK3	DN250	22320
FL140ZLK3	DN300	31248

1: Port size as per EN 1092-1

2: Flow rates in m<sup>3</sup>/h related to 1 bar<sub>a</sub> und 20 °C, compressed to 7 bar<sub>e</sub>.

Where the minimum operating pressure deviates, the actual flow rate must be multiplied with the respective correction factor f (see the respective table) to determine the required nominal flow rate and the appropriately required filter model.

## Scope of supply

Ready-to-install filter, complete with filter element(s) and electronic condensate drain of ED3000 series. Optionally available with differential pressure gauge and/or manual drain.

# Product-Specification

## Flanged filter series FL - element grade ZL

### Area of application Filter

Flow medium	Compressed air and gaseous Nitrogen	
Max. operating pressure	16 bar <sub>e</sub>	
Operating temperature	1,5 up to 60 °C	with electronic condensate drain of ED3000 series
	1,5 up to 80 °C	with manual drain, with differential pressure gauge
	1,5 up to 100 °C	with manual drain, without differential pressure gauge

### Electrical data with electronic condensate drain of ED3000 series

Power supply	230 V, 50/60 Hz
ingress protection	IP 65

### Performance data Element

Filtration	Liquid and solid particulate		
Flow direction	from inside to outside		
Upstream filter required	Water separator (in case of wall flow)		
Particle removal size	1 µm		
Aerosole challenging conc.	40 mg/m <sup>3</sup>	Residual aerosole concentration	0.6 mg/m <sup>3</sup>
Filtration efficiency	99,925 %		
Differential pressure, dry	< 70 mbar <sub>e</sub>		
Diff. pressure, saturated	< 140 mbar <sub>e</sub>		

### Scope of supply standard filter

Order no.	Port size <sup>1</sup>	Nominal <sup>2</sup>	Quantity filter elements	Order no. filter element	Order no. Condensate Drain
FL17ZLK3	DN80	2232	1	CPS4060ZL	ED3007-G230
FL20ZLK3	DN100	4464	2	CPS4060ZL	ED3030-G230
FL30ZLK3	DN150	6696	3	CPS4060ZL	ED3030-G230
FL40ZLK3	DN150	8928	4	CPS4060ZL	ED3030-G230
FL60ZLK3	DN200	13392	6	CPS4060ZL	ED3030-G230
FL100ZLK3	DN250	22320	10	CPS4060ZL	ED3100-G230
FL140ZLK3	DN300	31248	14	CPS4060ZL	ED3100-G230

### Correction factor f according to actual minimum operating pressure in bar<sub>e</sub>

Min. operating pressure in bar <sub>e</sub>	1	1,5	2	2,5	3	3,5	4	4,5	5	5,5	6	6,5	7	7,5	8
correction factor f	2,65	2,16	1,87	1,67	1,53	1,41	1,32	1,25	1,18	1,13	1,08	1,04	1,00	0,97	0,94
Min. operating pressure in bar <sub>e</sub>	8,5	9	9,5	10	10,5	11	11,5	12	12,5	13	13,5	14	14,5	15	16
correction factor f	0,91	0,88	0,86	0,84	0,82	0,80	0,78	0,76	0,75	0,73	0,72	0,71	0,69	0,68	0,66

Example for a maximal flow rate of 3000 m<sup>3</sup>/h for a minimum operating pressure of 4,3 bar<sub>e</sub>:  
 3000 m<sup>3</sup>/h × 1.32 = 3960 m<sup>3</sup>/h – select size FL20 (see Table *Performance overview*).

# Product-Specification

Flanged filter series FL - element grade ZL

## Product key

Series	Size	Element grade	Options
FL	17 up to 140	ZL	D, H, K3

## Examples

FL	30	ZL	D, K3	Design with differential pressure gauge and electronic condensate drain
FL	100	ZL	H	Design with manual drain

## Approvals for pressure equipment

EU	Approval for fluid group 2 acc. to Pressure Equipment Directive 97/23/EC
GUS	TR (previous GOST-R)

## Materials Housing

Housing body	Steel acc. to AD2000 leaflets
Surface treatment	sandblasted RA2.5, 2-component acrylic enamel
Gaskets	aramid fibers with NBR binder
Fittings	nickel plated brass, brass, galvanized steel

## Materials Element

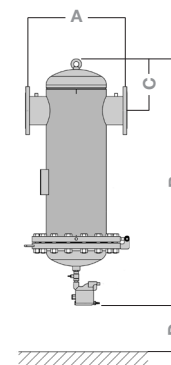
Filter fleece	Borosilicate nanofibre, surface coated
Support net	Polypropylene
Outer sleeve	Polyester fibre, surface coated
Support screens	Stainless steel
End caps	Glass fibre reinforced polyamide
Adhesive	Epoxy resin
Sealing materials	NBR

## Quality assurance and warranty

R&D, Manufacturing	DIN EN ISO 9001, DIN EN ISO 14001
Validation	ISO 12500-1, ISO 8573-1:2010 [2:-:3]
Element	12 months guaranteed filtration performance in line with filter element service life.
Housing	Corrosion warranty limited to the maximum housing lifetime of 10 years.

## Dimensions [mm] and weights [kg]

Filter model	A	B	C	D	Weight
FL17ZLK3	440	1265	230	650	72
FL20ZLK3	500	1365	260	650	99
FL30ZLK3	600	1470	310	650	150
FL40ZLK3	650	1545	350	650	190
FL60ZLK3	750	1625	390	650	243
FL100ZLK3	1000	1870	510	850	474
FL140ZLK3	1050	1975	540	920	584



# Product-Specification

## Flanged filter series FL - element grade ZL

### Wear parts

Order no.	Scope of supply
CPS4060ZL	Filter element (required quantity see Table <i>Scope of Supply</i> )
398H240245	Flat gasket DN200 PN16 for filter model FL17
398H240270	Flat gasket DN250 PN16 for filter model FL20
398H240292	Flat gasket DN350 PN16 for filter model FL30
398H240293	Flat gasket DN400 PN16 for filter model FL40
398H240295	Flat gasket DN450 PN16 for filter model FL60
398H240296	Flat gasket DN600 PN16 for filter model FL100
398H240297	Flat gasket DN700 PN16 for filter model FL140
SKED3000	Service kit for the yearly preventative maintenance of the electronic condensate drain

### Accessories

#### Differential pressure gauge mounted

Order no.	Function	Suitable for	Product key
ZD95FL	calibrated analogue differential pressure gauge incl. mounting set	FL17 up to FL140	D

#### Differential pressure gauge loose, incl. mounting set

Order no.	Function	Suitable for	Product key
ZDE95FL	calibrated analogue differential pressure gauge with Reed contact	FL17 up to FL140	-
ZDE125FL	electronic differential pressure gauge	FL17 up to FL140	-

#### Drain mounted

Order no.	Function	Suitable for	Product key
ED3007-G230	electronic condensate drain (standard)	FL17	K3
ED3030-G230	electronic condensate drain (standard)	FL20 up to FL60	K3
ED3100-G230	electronic condensate drain (standard)	FL100 up to FL140	K3
398H473471	manual drain kit G 1/2	FL17	H
398H473472	manual drain kit G 1	FL20 up to FL140	H

Other drains available as loose accessories.

#### Mounting kits for drains, loose

Order no.	Filter port	Drain port	Suitable for filter	Suitable for drain
MK-G15-G15	G1/2o	G1/2o	FL17	ED3007, ED2010
MK-G25-G15	G1o	G1/2o	FL20 up to FL140	ED3030, ED3100, ED2020, ED2060

#### Flat gaskets for filter combination, loose

Order no.	Function	Suitable for	Product key
398H240150	Flat gasket pipe flange DN80 PN16	FL17	-
398H240170	Flat gasket pipe flange DN100 PN16	FL20	-
398H240222	Flat gasket pipe flange DN150 PN16	FL30 up to FL40	-
398H240245	Flat gasket pipe flange DN200 PN16	FL60	-
398H240270	Flat gasket pipe flange DN250 PN16	FL100	-
398H240310	Flat gasket pipe flange DN300 PN16	FL140	-

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#### EMEA Product Information Centre

Free phone: 00 800 27 27 5374

(from AT, BE, CH, CZ, DE, DK, EE, ES, FI, FR, IE, IL, IS, IT, LU, MT, NL, NO, PL, PT, RU, SE, SK, UK, ZA)

#### US Product Information Centre

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