

B.S.F. Filtertechniek B.V.

BSF is specialized in the management of oil contamination for hydraulic and lube oil systems for every conceivable application in mobile systems, industry, maritime and defence.

We operate in Belgium and South West Netherlands. BSF is an independent corporation that works closely with its supplier Koppen & Lethem Aandrijftechniek B.V.

BSF's knowledge and experience ensures that we operate at the cutting edge of advanced filtration. You can rely on BSF to advise and supply your organisation professionally and efficiently.

We are experts in preventing and solving contamination related problems in one-off, serial or even OEM projects.

BSF offers you a complete range of products to manage the "oil contamination" of your hydraulic and lube oil systems.

BSF's extensive range of products includes:

- RMF by-pass filter units
- RMF off-line filter units
- RMF water absorbing off-line filter units
- RMF heated off-line filter units
- RMF air conditioners
- RMF filter elements for hydraulic fluids
- RMF filter elements for gear oils
- RMF filter elements for water glycol fluids
- RMF by-pass lube oil filters



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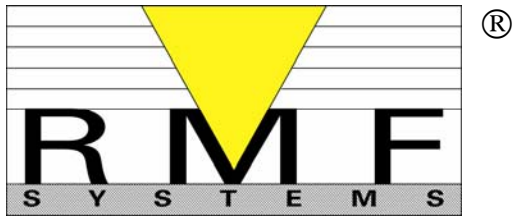
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ORDERING CODE RMF FILTERS

Filter type: BPU filters (by-pass)

Table 1	Table 2	Table 3	Table 4	Table 5	Table 6	Table 7	Table 8
BPU							

Table 1 Basic configuration

BPU	By-pass unit	Mobile applications
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Table 2 Housing configuration

Code			Number of elements
05A	Single housing / short version (200 mm)	Suitable for 500 l reservoir	1 pcs element – (200 mm)
1A	Single housing / single length	Suitable for 750 l reservoir	1 pcs element – (300 mm)
2A	Twin housing / single length	Suitable for 1500 l reservoir	2 pcs element – (300 mm)
1B	Single housing / double length	Suitable for 1500 l reservoir	2 pcs element – (300 mm)

Table 3 Length element

20	L = 200 mm	Short version
30	L = 300 mm	Standard

Table 4 Filter material

H	Standard	Cellulose 0,5µ with silicon bottom seal
N	Special	Cellulose 0,5µ NO BOTTOM SEAL
0	Special	No element mounted

Table 5 Sealing material

B	Standard	Buna-N
V	Optional	Viton

Table 6 Indicator

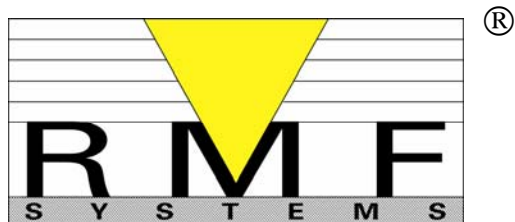
0	Standard	Pressure gauge 1 – 16 bar
1		Additional electr. indicator

Table 7 Options

0	No options
1	Without flow control valve
2	Needle valve for flow control
3	With orifice – NO flow control valve

Table 8 Bracket Options

0	No bracket (standard)
1	With standard foot / bulk head mounting bracket
2	With "bulk head mounting only" bracket (only single length/single housing)
3	With standard 'OLU' wall mounting bracket (Single length = 1 bracket / double length = 2 bracket)



ORDERING CODE RMF FILTERS

Filter type: OLU filters (off-line)



Table 1	Table 2	Table 3	Table 4	Table 5	Table 6	Table 7	Table 8	Table 9
OLU								

Table 1 Basic configuration

OLU	Off line unit	Industrial applications
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Table 2 Housing configuration

Code			Single length	Number of elements
1A	Single housing	(single length)	Suitable for 1350 l reservoir	1 pcs element – (300 mm)
2A	Twin housing	(single length)	Suitable for 2700 l reservoir	2 pcs element – (300 mm)
4A	Quadruple housing	(single length)	Suitable for 5400 l reservoir	4 pcs element – (300 mm)
			Double length	
1B	Single housing	(double length)	Suitable for 2700 l reservoir	2 pcs element – (300 mm)
2B	Twin housing	(double length)	Suitable for 5400 l reservoir	4 pcs element – (300 mm)
4B	Quadruple housing	(double length)	Suitable for 10800 l reservoir	8 pcs element – (300 mm)

Table 3 Length element

30	L = 300 mm	Standard
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Table 4 Filter material

H	Standard	Cellulose 0,5 μ with green silicon bottom
B	Special	Cellulose 2 μ with white silicon bottom
G1	Special	Glass fibre 1 μ β 200 Buna seals
G3	Special	Glass fibre 3 μ β 200 Buna seals
N	Special	Cellulose 0,5 μ NO BOTTOM SEAL
SN	Special	Cellulose 0,5 μ no bottom seal / st innercore
W1	Special	Water glycol element β 1 = 200
W3	Special	Water glycol element β 3 = 200

Table 5 Sealing material

B	Standard	Buna-N
V	Optional	Viton

Table 6 E-motor options

0	STANDARD / 230/400 VAC 50Hz / 1360 r/min; 255/460 VAC 60 Hz / 1630 r/min
A	230 vac-50 Hz / single phase 1360 r/min
B	24 Vdc
C	110 Vac-50Hz / single phase
D	110 Vac-60Hz / single phase
E	230/400 Vac-50Hz / IP65
F	230 vac-60Hz / single phase
H	660 vac-50Hz / 3 phase
J	230/400 Vac-50Hz / IP65 / Tropical / seaw paint Primrose
K	0,18KW - 480 Vac/ 3PH /60Hz – UL/CSA KEUR
L	230/400 Vac-50Hz / IP65 / Tropical / seaw paint
M	230/400 Vac Ex-II-3G-Eex-nA-II-T3 expl. Proof / M63
Z	230/400 Vac Ex-II-2G-EexD-IIB-T4 expl. Proof./ M71

Table 7 Pump options

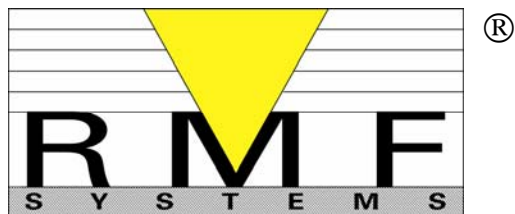
Code	50 Hz motor	Std in
00	10C1,6X053G / 1,6 cc/rev.	OLU 1A
10	10C3,15X053G / 3,15 cc/rev.	OLU 2A/1B
20	10C6,1X053G / 6,1 cc/rev.	OLU 4A/2B
30	20C8,2X016G / 8,2 cc/rev.	
40	20C11X016G / 11,3 cc/rev.	
50	MLPD/G 108C / 0,8 cc/rev.	SPECIAL
60	10C1X053G / 1,0 cc/rev	
Code	60 Hz motor	
01	10C1,25X053G / 1,25 cc/rev.	OLU 1A
11	10C2,5X053G / 2,5 cc/rev.	OLU 2A/1B
21	10C5X053G / 5,0 cc/rev.	OLU 4A/2B
31	20C6,3X016G / 6,3 cc/rev.	
41	20C10X016G / 10 cc/rev.	

Table 9 Options

0	No options
1	Motor/pump right side mount
2	Motor/pump left side mount
3	Motor/pump horizontal front
4	Incl. on/off + motor protection relais
5	Incl motor protection / start stop / by-pass ext
S	Stainless steel components

Table 8 Indicator

0	Standard	Pressure gauge 1 – 10 bar
1		Additional electr. indicator
2		Additional Δ p indicator



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ORDERING CODE RMF FILTERS

Filter type: OLUW filters
off-line filter with H₂O sorb

Table 1	Table 2	Table 3	Table 4	Table 5	Table 6	Table 7	Table 8	Table 9	Table 10
OLUW									

Table 1 Basic configuration

OLUW	Off line unit incl. water adsorbtion	Industrial applications
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Table 2 Housing configuration

Code		Single length	Number of elements	Number water elements
1A	Single housing (single length)	Suitable for 1350 l reservoir	1 pcs element – (300 mm)	1 pcs.
2A	Double housing (single length)	Suitable for 2700 l.reservoir	2 pcs element – (300 mm)	1 pcs.
1B	Single housing (double length)	Suitable for 2700 l reservoir	2 pcs element – (300 mm)	1 pcs.
2B	Double housing (double length)	Suitable for 5400 l.reservoir	4 pcs element – (300 mm)	1 pcs.

Table 3 Length element

30	L = 300 mm	Standard
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Table 4 Filter material

H	Standard	Cellulose 0,5 μ with green silicon bottom
B	Special	Cellulose 2 μ with white silicon bottom
G1	Special	Glass fibre 1 μ β 200 Buna seals
G3	Special	Glass fibre 3 μ β 200 Buna seals
N	Special	Cellulose 0,5 μ NO BOTTOM SEAL

Table 5 Sealing material

B	Standard	Buna-N
V	Optional	Viton

Table 6 E-motor options

0	STANDARD / 230/400 VAC 50Hz / 1360 r/min; 255/460 VAC 60 Hz / 1630 r/min
A	230 Vac-50 Hz / single phase 1360 r/min
B	24 Vdc / 2000 r/min
C	110 Vac-50Hz / single phase
D	110 Vac-60Hz / single phase

Table 7 Pump options

Code	50 Hz motor	Code	60 Hz motor	Standard on
00	10C1,6X053G / 1,6 cc/rev.	01	10C1,25X053G / 1,25 cc/rev.	OLUW 1A
10	10C3,15X053G / 3,15 cc/rev.	11	10C2,5X053G / 2,5 cc/rev.	OLUW 2A/ 1B
20	10C6,1X053G / 6,1 cc/rev	21	10C5,0X053G / 5,0 cc/rev	OLUW 2B
60	10C1,0X053G / 1,0 cc/rev			

Table 8 Indicator

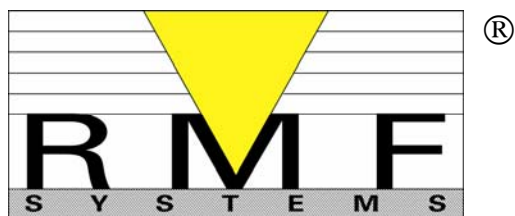
0	Standard	Pressure gauge 1 – 16 bar
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Table 9 Options

0	No options
1	Motor right side

Table 10 H₂O sorb element

A	H ₂ O sorb element	L = 279 mm	Capacity – 540 ml	Std. mounting
B	H ₂ O sorb element	L = 279 mm	Capacity – 540 ml	Alt. mounting



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ORDERING CODE RMF FILTERS

Filter type: OLUH filters (off-line HEATED)



Table 1	Table 2	Table 3	Table 4	Table 5	Table 6	Table 7	Table 8	Table 9	Table 10
OLUH									

Table 1 Basic configuration

OLUH	Off line heated unit	Industrial applications
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Table 2 Configuration FILTER housing

Code	Configuration FILTER housing		Single length	Number of elements
1A	Single housing	(single length)	Suitable for 1350 l reservoir	1 pcs element – (300 mm)
2A	Twin housing	(single length)	Suitable for 2700 l reservoir	2 pcs element – (300 mm)
1B	Single housing	(double length)	Suitable for 2700 l reservoir	2 pcs element – (300 mm)

Table 3 Length FILTER element

30	L = 300 mm	Standard
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Table 5 Sealing material FILTER

B	Standard	Buna-N
V	Optional	Viton

Table 4 Filter material

H	Standard	Cellulose 0,5 μ with green silicon bottom
G1	Special	Glass fibre 1 μ β 200 Buna seals
G3	Special	Glass fibre 3 μ β 200 Buna seals

Table 6 E-motor options

0	STANDARD / 230/400 VAC 50Hz / 1360 r/min; 255/460 VAC 60 Hz / 1630 r/min
A	230 vac-50 Hz / single phase 1360 r/min
C	110 Vac-50Hz / single phase
D	110 Vac-60Hz / single phase
E	230/400 Vac-50Hz / IP65
F	230 vac-60Hz / single phase
H	660 vac-50Hz / 3 phase

Table 7 Pump options

Code	50 Hz motor	Std in
00	10C1,6X053G / 1,6 cc/rev.	OLU 1A
10	10C3,15X053G / 3,15 cc/rev.	OLU 2A/1B
60	10C1X053G / 1,0 cc/rev	
Code	60 Hz motor	
01	10C1,25X053G / 1,25 cc/rev.	OLU 1A
11	10C2,5X053G / 2,5 cc/rev.	OLU 2A/1B

Table 8 Indicator

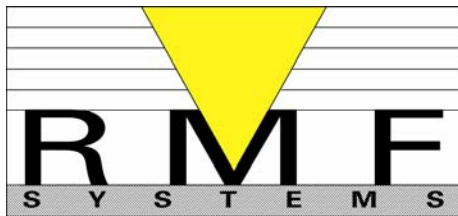
0	Standard	Pressure gauge 1 – 16 bar
1		Additional electr. indicator

Table 9 Options

0	No options
2	Motor/pump/heater / left side mount
4	Incl. on/off + motor protection relais

Table 10 Options HEATER element

0	Std 2000 Watt / 300 mm – 2,5" BSP Power supply equal to E-motor
1	Special 4000 Watt / 600 mm – 2,5" BSP Power supply equal to E-motor



ORDERING CODE RMF AIR CONDITIONERS



Air conditioner type: ACL (light) and KL (heavy duty)

Table 1	Table 2	Table 3

Table 1 Basic configuration

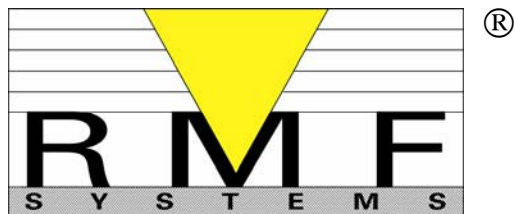
	<i>Type of body</i>	<i>Connection to tank</i>	<i>Air filter</i>
KL	Heavy duty version	Male threading on zinc plated steel pipe	3 μ absolute in steel housing
ACL	Light version (only 93 and 96)	Female threading in plastic housing	3 μ absolute in steel housing

Table 2 Housing

	<i>Conf.</i>	<i>Diameter</i>	<i>Height</i>	<i>Connection</i>	<i>Weight total</i>	<i>Max. air flow</i>
93	ACL	Ø 96 mm	150 mm	¾" BSP (Female)	0,9 kg	700 l/min
	KL	Ø 96 mm	160 mm	¾" BSP (Male)	1,2 kg	700 l/min
96	ACL	Ø 96 mm	210 mm	¾" BSP (Female)	1,1 kg	700 l/min
	KL	Ø 96 mm	220 mm	¾" BSP (Male)	1,5 kg	700 l/min
121	KL	Ø 128 mm	256 mm	1¼" BSP (Male)	2,7 kg	1500 l/min
122	KL	Ø 128 mm	366 mm	1¼" BSP (Male)	4,0 kg	1500 l/min

Table 3 Adsorption material

	Type	Desiccant volume	Water adsorption capacity
R	93	300 cc	86 gramm
	96	600 cc	172 gramm
	121	1000 cc	288 gramm
	122	2000 cc	576 gramm
	ZR – gel (std)		



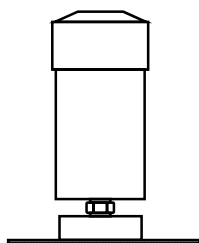
ORDERING CODE
RMF AIR CONDITIONERS
Spare parts & accessories



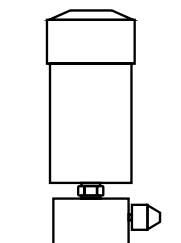
The items mentioned below should be ordered separate from the basic airconditioner

Accessories

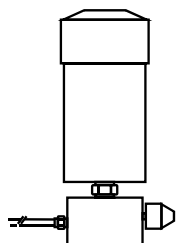
Description	ACL or KL 93	ACL or KL 96	KL 121	KL 122
Filter minder (indicator)	ORM113			
Filter minder (indicator + electr. contact)	ORM 997			
Mounting plate	KL 92		KL 1202	
Mounting plate + filter minder port	KL 95		KL 1205	
Mounting pl + f. minder port + return port	KL 91		KL 1201	
Mounting pl + f. minder port + 2 alt. ports	KL91SR		NA	
Additional coupling $\frac{3}{4}$ "/ $\frac{3}{4}$ "BSP	HHE 142		NA	



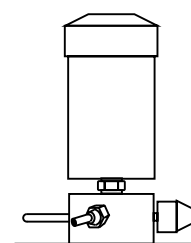
KL 92 / 1202



KL 95 / 1205



KL 91 / 1201



KL 91 SR

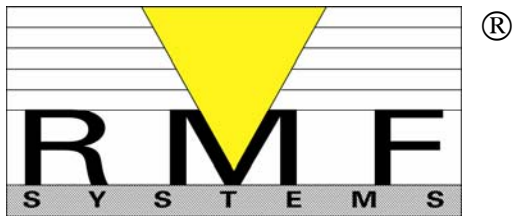
Spare parts

Description	ACL or KL 93	ACL or KL 96	KL 121	KL 122
Air filter only	KL 90 (incl. seal)		KL 120 (excl. Seal)	
Seal for airfilter	N.A.		ORM 062	
ZR – gel refill	ORM 621	ORM 620	ORM 622	ORM 623
Spare kit including:				
Airfilter / Seal	ORM 655	ORM 656	ORM 657	ORM 658
ZR-gel refill / Foamfilter				



ORM 997





ORDERING CODE RMF FILTERS

Filter type: BPL filters (By-pass - lube oil)

Table 1	Table 2	Table 3	Table 4	Table 5	Table 6	Table 7	Table 8
BPL							

Table 1 Basic configuration

BPL	By-pass lube oil unit	Engine / Transmission

Table 2 Housing configuration

Code		Number of elements
1A	Single housing / single length	1 pcs element

Table 3 Length element

26	Standard	L = 282 mm

Table 4 Filter material

X	Standard	Cellulose 0,5µ NO BOTTOM SEAL

Table 5 Sealing material

B	Standard	Buna-N

Table 6 Housing material

0	Standard	Aluminium

Table 7 Options

0	No options

Table 8 Bracket Options

0	No mounting bracket
1	Standard mounting bracket (bulkhead)