OTHER LANGUAGES: DE, EN

DUNGS®
Combustion Controls

HEATING | PROCESS HEAT | GAS ENGINES

Gas and air filters
GF 10, GF 50 and GF 60

Technical datasheet

Edition 2025.01 · No. 290585_EN-Gb · Rev. -0

Table of contents

1 Description of functions and assortment

1.1 Functional description

The gas and air filter consists of a filter housing with a removable lid.
Inside there is a filter insert made of nonwoven fibre fleece with an integrated support mesh.

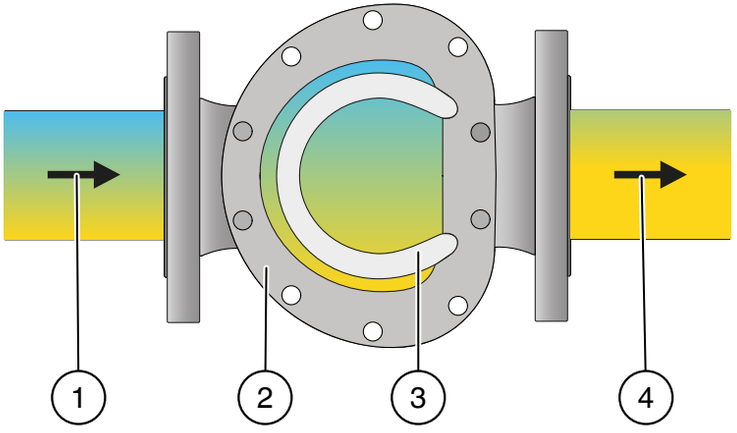


Fig. 1: Functional drawing gas and air filters

1 Upstream side
2 Gas and air filters
3 Filter insert
4 Downstream side

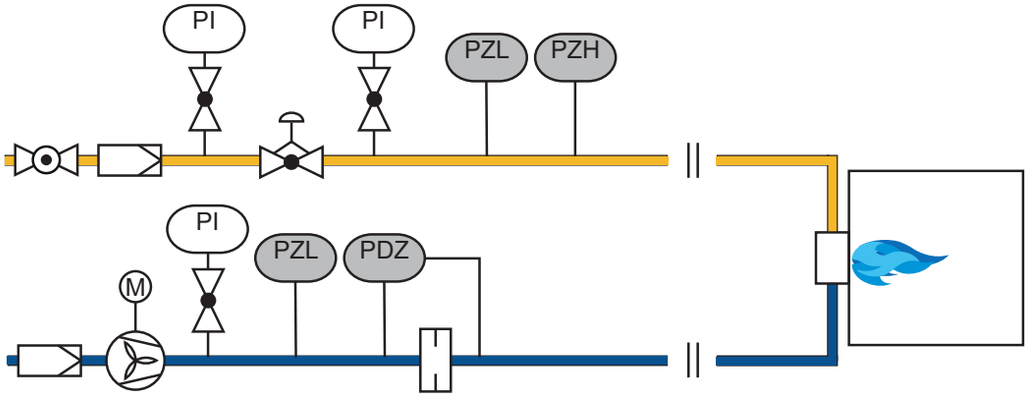
Dust, swarf and rust as well as other physical gas contaminants and impurities are retained by the nonwoven fibre fleece. If the dust-holding capacity is exceeded or the pressure difference is too great, there is a risk that the filter insert will not work any more.

The filter insert should be replaced according to the following criteria:

- at least once a year
- with a pressure difference greater than 5 kPa/0.73 PSI
- if the pressure difference has increased by 100% compared to as-new condition

1.2 Application example

Protection of downstream devices and fittings in burner applications



The gas and air filter is fitted directly after the ball valve. It protects the downstream devices and fittings from contamination.

1.3 Product overview

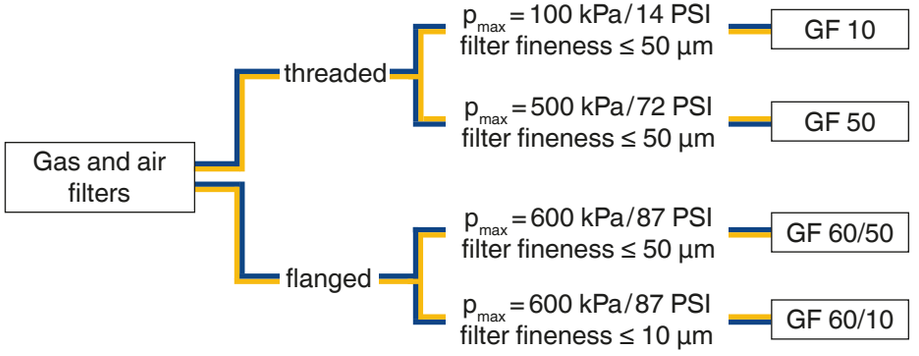


Fig. 2: Product overview gas and air filters

— Medium: Flammable gas
— Medium: Non-flammable gases/air

1.4 Type code

Product variant	
GF 10	DUNGS gas and air filters GF with threaded connection for installation in gas and air lines to protect downstream fittings. Filter insert made of nonwoven polypropylene fleece and a metal support mesh. Suitable for gases of gas families 1, 2, 3 and other neutral gaseous media and hydrogen.
GF 50	
GF 60	DUNGS gas and air filters GF with flanged connection for installation in gas and air lines to protect downstream fittings. Filter insert made of nonwoven polypropylene fleece and a metal support mesh. Suitable for gases of gas families 1, 2, 3 and other neutral gaseous media and hydrogen.

Features		
GF	Gas filter	
XX	Maximum operating pressure: 10 = 100 kPa/14 PSI 50 = 500 kPa/72 PSI 60 = 600 kPa/87 PSI	
YYY	Nominal diameter DN: 025 = DN 25 040 = DN 40 050 = DN 50 065 = DN 65 080 = DN 80	100 = DN 100 125 = DN 125 150 = DN 150 200 = DN 200
	Nominal diameter Rp: 05 = 1/2" 07 = 3/4" 10 = 1"	12 = 1 1/4" 15 = 1 1/2" 20 = 2"
/ZZ	/10 = Filter fineness 10 µm /50 = Filter fineness 50 µm	

Example: type code for gas filter with threaded connection	Example: type code for gas filter with flange connection
GF XXYYY = GF 5020 GF = gas filter 50 = maximum operating pressure: 500 kPa/72 PSI 20 = nominal diameter Rp: 2"	GF XXYYY/ZZ = GF 60025/10 GF = gas filter 60 = maximum operating pressure: 600 kPa/87 PSI 025 = nominal diameter DN 25 /10 = filter fineness 10 µm

2 Product description

DUNGS gas and air filters GF with threaded or flanged connection for installation in gas and air lines to protect downstream fittings. Filter insert made of nonwoven polypropylene fleece and a metal support mesh. Suitable for gases of gas families 1, 2, 3 and other neutral gaseous media and hydrogen.

GF 10 and GF 50

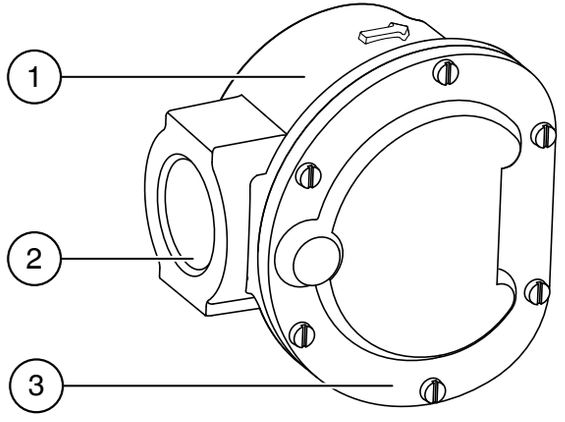


Fig. 3: Example gas and air filter with threaded connection (description valid for all gas and air filters with threaded connection)

1 Housing base
2 Threaded connection
3 Housing lid

GF 60

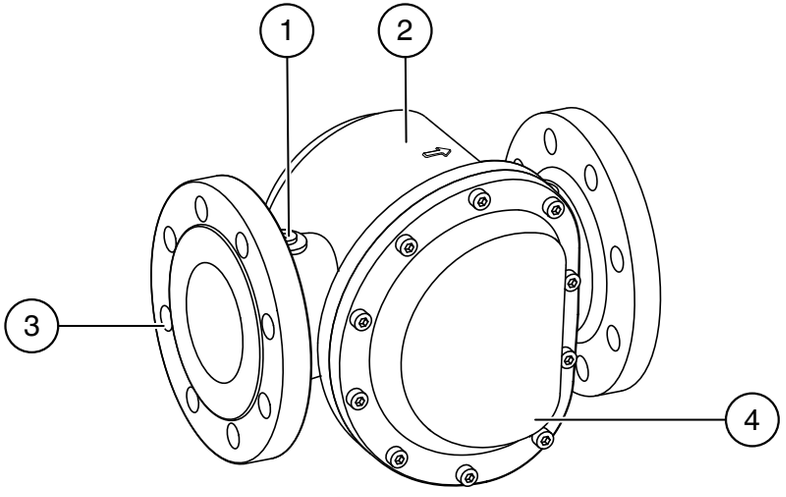


Fig. 4: Example gas and air filter with flange connection (description valid for all gas and air filters with flange connection)

1 Locking screw G 1/4"
2 Housing base
3 Flange connection
4 Housing lid

Product characteristics:

- High dust-holding capacity
- High separation efficiency
- Low pressure loss values
- Suitable for 100% hydrogen
- Installation option for measuring nozzle for filter monitoring for gas and air filters with flange connection (GF 60)

3 Guidelines, standards and authorisations

CE-certified
• (EU) 2016/426, Gas Appliances Regulation • 2014/68/EU, Pressure Equipment Directive • DIN 3386 (only GF 10 and GF 50)

4 Technical data

GF 10 and GF 50

Technical data	GF 10	GF 50
Connection type	Thread as per DIN EN 10226-1	
Nominal diameters	Rp 1/2" - Rp 2"	
Max. operating pressure	100 kPa/14 PSI	500 kPa/72 PSI
Max. pressure difference	≤ 1 kPa/0.15 PSI, recommended maximum pressure difference in as-new condition	
Medium	Gas families 1, 2 and 3, hydrogen H2 (dry) and other neutral gaseous media	
Max. medium temperature	-15 °C ... +80 °C/+5 °F ... +176 °F	
Max. ambient temperature during operation	-15 °C ... +80 °C/+5 °F ... +176 °F	
Filter fineness filter insert	≤ 50 µm	
Materials	Housing: cast AlSi alloy Nonwoven fibre fleece: polypropylene (ZPP) Supporting mesh: galvanised steel Seals: NBR	

GF 60

Technical data	GF 60/50	GF 60/10
Connection type	Flange as per DIN EN 1092 PN 16	
Nominal diameters	DN 25 - DN 200	DN 25 - DN 150
Max. operating pressure	600 kPa/87 PSI	
Max. pressure difference	≤ 1 kPa/0.15 PSI, recommended maximum pressure difference in as-new condition	
Medium	Gas families 1, 2 and 3, hydrogen H2 (dry) and other neutral gaseous media	
Max. medium temperature	-15 °C ... +80 °C/+5 °F ... +176 °F	
Max. ambient temperature during operation	-15 °C ... +80 °C/+5 °F ... +176 °F	
Filter fineness filter insert	≤ 50 µm	≤ 10 µm
Materials	Housing: aluminium Nonwoven fibre fleece: polypropylene (ZPP) Supporting mesh: galvanised steel Seals: NBR	
Measurement / pilot gas connection	G 1/4" as per DIN ISO 228 before and after filter insert, on both sides of the housing	

Flow diagram

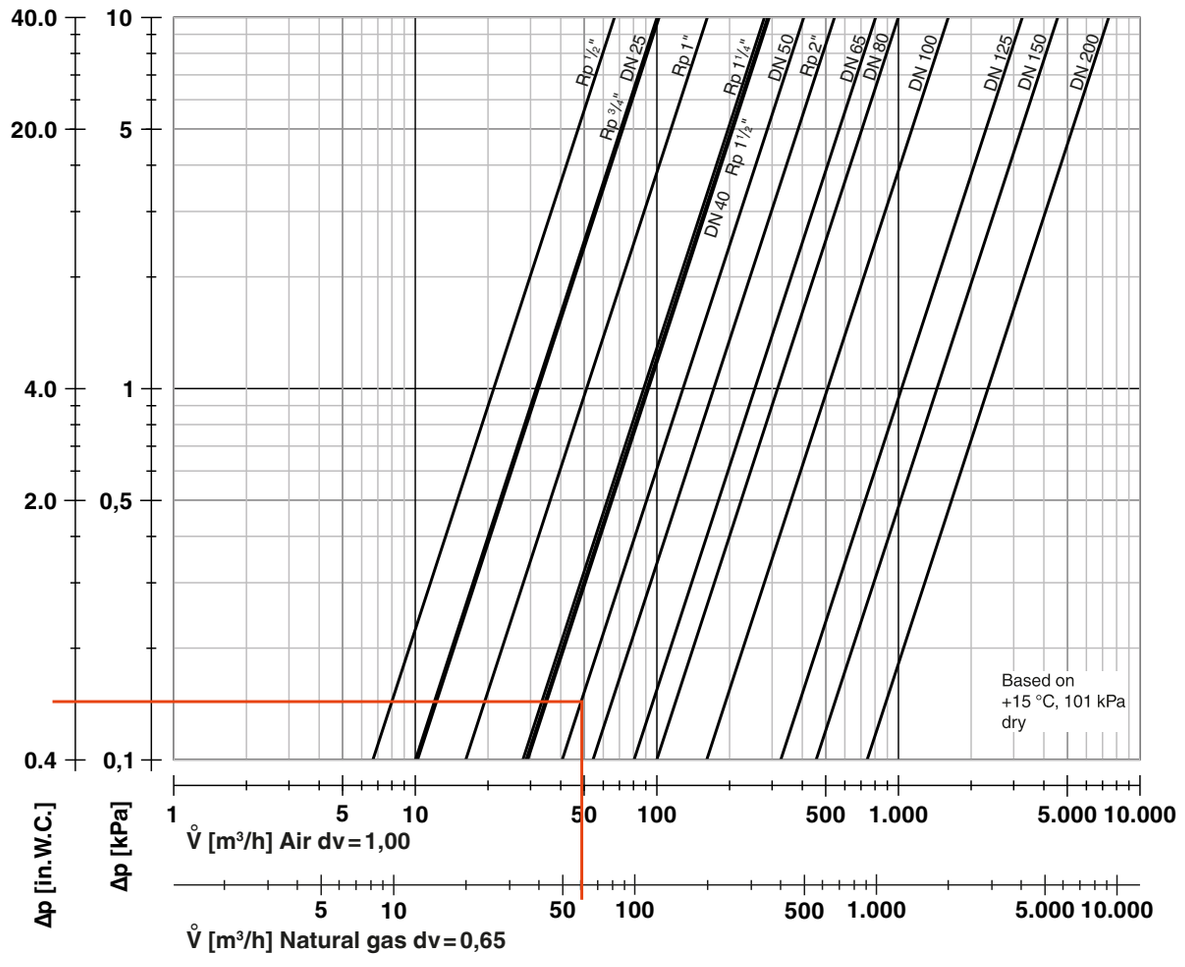


Fig. 5: Flow diagram air and gas filter

The pressure loss values refer to gas and air filters with a filter fineness of 50 µm. The pressure loss curve deviates for gas and air filters with a finer filtration of 10 µm.

Recommended pressure difference when new: max. 1 kPa/0.15 PSI

Maximum inlet flow velocity: 20 m/s

To read the pressure loss, the operating volume flow in m^3/h is used. To determine the pressure difference, the pressure loss read must be multiplied by the absolute pressure (overpressure + 100 kPa).

Example:
Type of gas: Natural gas
Operating volume flow: 60 m^3/h
inlet pressure (overpressure): $p_ü$ = 400 kPa
Selected gas filter: GF 60050/4 (nominal diameter DN 50)
Read pressure loss: dp = 0.15 kPa

Pressure difference Δp = *dp* x (($p_ü$ +100)/100)
= 0.15 kPa x ((400+100)/100) = 0.75 kPa

The GF 60050/4 can be used with a pressure difference of 0.75 kPa (< 1kPa).

When using other gases, the pressure loss can be converted by multiplying the pressure loss in air by the density ratio (dv).

Type of gas: Natural gas
Spec. weight [kg/m^3]: 0.81
dv: 0.65
f: 1.24

Type of gas: hydrogen
Spec. weight [kg/m^3]: 0.09
dv: 0.07
f: 13.78

Type of gas: liquid gas(LPG)
Spec. weight [kg/m^3]: 2.08
dv: 1.67
f: 0.77

Type of gas: air
Spec. weight [kg/m^3]: 1.24
dv: 1.00
f: 1.00

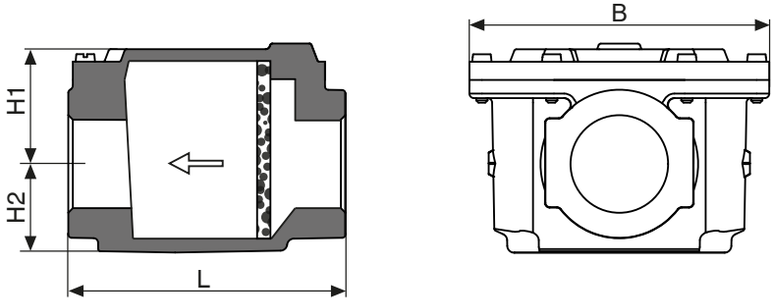
f = √ *Spec. weight air [kg/m³] / Spec. weight of gas used [kg/m³]*

5 Installation dimensions

Pay attention to space requirements for changing filter insert!

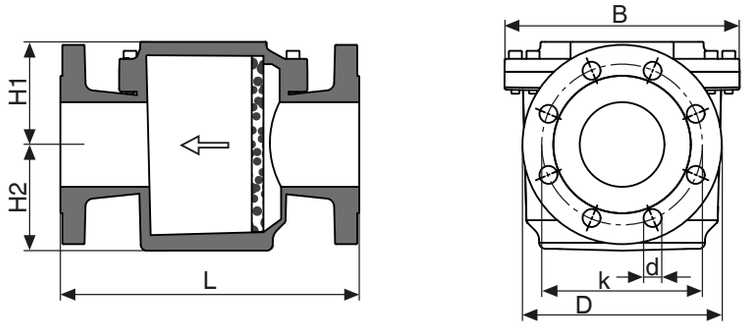
A minimum removal height of H1 + H2 is required to replace the filter insert.

Gas and air filter with threaded connection



Version		Nominal diameter	L	B	H1	H2
100 kPa/14 PSI	**500 kPa/72 PSI**					
GF 1005	GF 5005	Rp 1/2"	62 mm (2.44")	69 mm (2.71")	38 mm (1.50")	36 mm (1.41")
GF 1007	GF 5007	Rp 3/4"	62 mm (2.44")	69 mm (2.71")	38 mm (1.50")	36 mm (1.41")
GF 1010	GF 5010	Rp 1"	93 mm (3.66")	102 mm (4.02")	43 mm (1.70")	30 mm (1.18")
GF 1012	GF 5012	Rp 1 1/4"	122 mm (4.80")	136 mm (5.35")	53 mm (2.08")	39 mm (1.53")
GF 1015	GF 5015	Rp 1 1/2"	122 mm (4.80")	136 mm (5.35")	53 mm (2.08")	39 mm (1.53")
GF 1020	GF 5020	Rp 2"	148 mm (5.82")	159 mm (6.26")	65 mm (2.56")	47 mm (1.85")

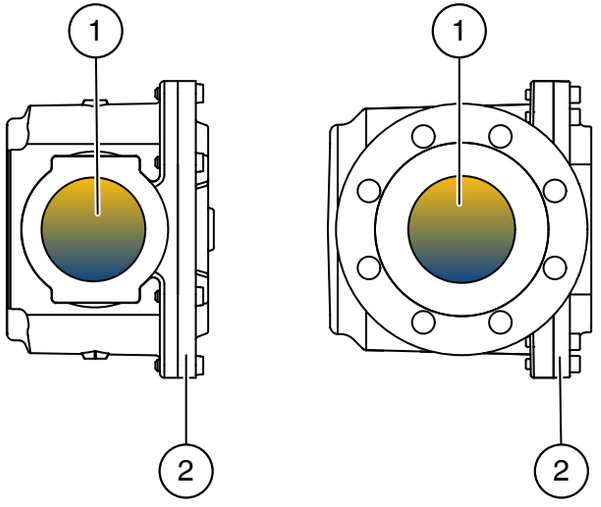
Gas and air filter with flange connection



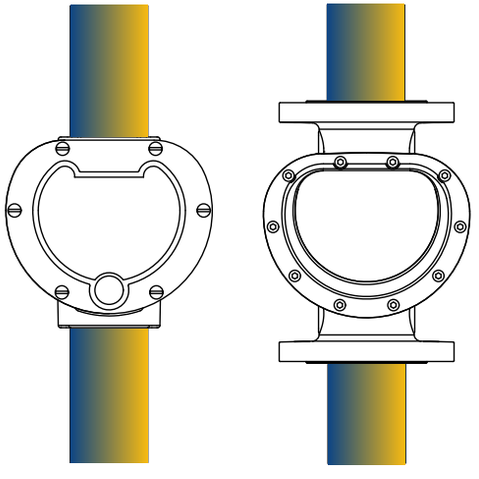
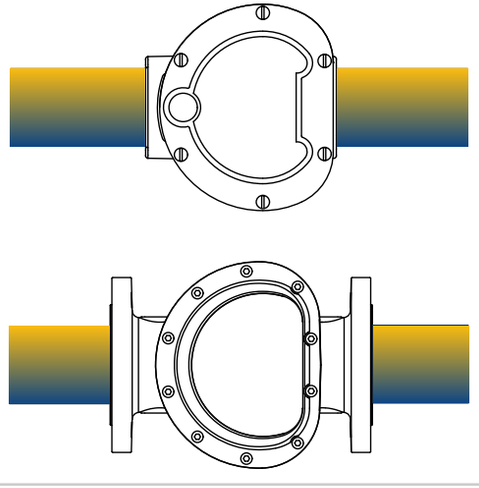
Version	Nominal diameter	L	B	H1	H2	D	k	d
GF 60025	DN 25	145 mm (5.70")	97 mm (3.81")	37 mm (1.45")	40 mm (1.57")	115 mm (4.52")	85 mm (3.34")	4 x 14 mm (0.15 x 0.55")
GF 60040	DN 40	195 mm (7.67")	132 mm (5.19")	49 mm (1.92")	47 mm (1.85")	150 mm (5.90")	110 mm (4.33")	4 x 18 mm (0.15 x 0.70")
GF 60050	DN 50	220 mm (8.66")	170 mm (6.69")	76 mm (2.99")	60 mm (2.36")	165 mm (6.49")	125 mm (4.92")	4 x 18 mm (0.15 x 0.70")
GF 60065	DN 65	252 mm (9.92")	194 mm (7.63")	95 mm (3.74")	93 mm (3.66")	185 mm (7.28")	145 mm (5.70")	4 x 18 mm (0.15 x 0.70")
GF 60080	DN 80	300 mm (11.81")	236 mm (9.29")	103 mm (4.05")	107 mm (4.21")	200 mm (7.87")	160 mm (6.29")	8 x 18 mm (0.31 x 0.70")
GF 60100	DN 100	352 mm (13.85")	282 mm (11.10")	119 mm (4.68")	111 mm (4.37")	220 mm (8.66")	180 mm (7.08")	8 x 18 mm (0.31 x 0.70")
GF 60125	DN 125	360 mm (14.17")	281 mm (11.06")	182 mm (7.16")	183 mm (7.20")	250 mm (9.84")	210 mm (8.26")	8 x 18 mm (0.31 x 0.70")
GF 60150	DN 150	385 mm (15.15")	281 mm (11.06")	257 mm (10.11")	259 mm (10.19")	285 mm (11.22")	240 mm (9.44")	8 x 22 mm (0.31 x 0.86")
GF 60200	DN 200	455 mm (17.91")	388 mm (15.27")	236 mm (9.29")	239 mm (9.40")	340 mm (13.38")	295 mm (9.44")	12 x 22 mm (0.47 x 0.86")

6 Mounting position

The product can be installed vertically or horizontally in gas and air lines.
Recommendation: vertical installation position of housing lid. To make the gas and air filter easier to clean, the housing cover should be mounted to the side.
Carefully clean the inside and outside of the gas and air filters with an explosion-proof vacuum cleaner, cloth or brush. Cleaning must be carried out dry.



1 Gas and air line
2 Housing lid on side

Vertical installation position	Horizontal installation position
	

7 Order numbers

GF 10

DUNGS gas and air filters GF with threaded connection for installation in gas and air lines to protect downstream fittings. Filter insert made of nonwoven polypropylene fleece and a metal support mesh. Suitable for gases of gas families 1, 2, 3 and other neutral gaseous media and hydrogen.

Version: threaded connection, max. operating pressure P_{max}: 100 kPa/14 PSI, filter fineness filter insert ≤ 50 µm

Version	Order number	Nominal diameter	Max. flow rate[1]	Volume	Weight
GF 1005	297617	Rp 1/2"	12 m³/h 423 ft³/h	0.1 l 0.003 ft³	0.3 kg 0.66 lbs
GF 1007	297473	Rp 3/4"	22 m³/h 776 ft³/h	0.1 l 0.003 ft³	0.3 kg 0.66 lbs
GF 1010	297526	Rp 1"	35 m³/h 1,236 ft³/h	0.2 l 0.007 ft³	0.5 kg 1.10 lbs
GF 1012	297655	Rp 1 1/4"	57 m³/h 2,012 ft³/h	0.5 l 0.017 ft³	0.9 kg 1.98 lbs
GF 1015	296690	Rp 1 1/2"	90 m³/h 3,178 ft³/h	0.5 l 0.017 ft³	0.9 kg 1.98 lbs
GF 1020	228192	Rp 2"	140 m³/h 4,944 ft³/h	1.1 l 0.038 ft³	1.3 kg 2.86 lbs

[1] Valid for the respective flow rate in operating cubic metres with a maximum flow velocity of 20 m/s.

GF 50

DUNGS gas and air filters GF with threaded connection for installation in gas and air lines to protect downstream fittings. Filter insert made of nonwoven polypropylene fleece and a metal support mesh. Suitable for gases of gas families 1, 2, 3 and other neutral gaseous media and hydrogen.

Version: threaded connection, max. operating pressure P_{max}: 500 kPa/72 PSI, filter fineness filter insert ≤ 50 µm

Version	Order number	Nominal diameter	Max. flow rate[1]	Volume	Weight
GF 5005	297658	Rp 1/2"	12 m³/h 423 ft³/h	0.1 l 0.003 ft³	0.3 kg 0.66 lbs
GF 5007	297659	Rp 3/4"	22 m³/h 776 ft³/h	0.1 l 0.003 ft³	0.3 kg 0.66 lbs
GF 5010	292555	Rp 1"	35 m³/h 1,236 ft³/h	0.2 l 0.007 ft³	0.5 kg 1.10 lbs
GF 5012	297660	Rp 1 1/4"	57 m³/h 2,012 ft³/h	0.5 l 0.017 ft³	0.9 kg 1.98 lbs
GF 5015	297661	Rp 1 1/2"	90 m³/h 3,178 ft³/h	0.5 l 0.017 ft³	0.9 kg 1.98 lbs
GF 5020	297662	Rp 2"	140 m³/h 4,944 ft³/h	1.1 l 0.038 ft³	1.3 kg 2.86 lbs

[1] Valid for the respective flow rate in operating cubic metres with a maximum flow velocity of 20 m/s.

GF 60/50

DUNGS gas and air filters GF with flanged connection for installation in gas and air lines to protect downstream fittings. Filter insert made of nonwoven polypropylene fleece and a metal support mesh. Suitable for gases of gas families 1, 2, 3 and other neutral gaseous media and hydrogen.

Version: flange connection, max. operating pressure P_{max}: 600 kPa/87 PSI, 4 x locking screw G 1/4" before and after filter insert on both sides of the housing, filter fineness filter insert ≤ 50 µm

Version	Order number	Nominal diameter	Max. flow rate[1]	Volume	Weight
GF 60025/50	279861	DN 25	35 m³/h 1,236 ft³/h	0.3 l 0.010 ft³	1.6 kg 3.52 lbs
GF 60040/50	279853	DN 40	90 m³/h 3,178 ft³/h	0.7 l 0.024 ft³	2.9 kg 6.39 lbs
GF 60050/50	279854	DN 50	140 m³/h 4,944 ft³/h	1.5 l 0.052 ft³	4.3 kg 9.47 lbs
GF 60065/50	279855	DN 65	235 m³/h 8,298 ft³/h	2.7 l 0.095 ft³	6.2 kg 13.66 lbs
GF 60080/50	279856	DN 80	350 m³/h 12,360 ft³/h	4.5 l 0.158 ft³	8.4 kg 18.51 lbs
GF 60100/50	279857	DN 100	550 m³/h 19,423 ft³/h	7.7 l 0.271 ft³	12.6 kg 27.77 lbs
GF 60125/50	279858	DN 125	870 m³/h 30,723 ft³/h	12.9 l 0.455 ft³	20.3 kg 44.75 lbs
GF 60150/50	279859	DN 150	1 260 m³/h 44,496 ft³/h	19.9 l 0.702 ft³	26.4 kg 58.20 lbs
GF 60200/50	279860	DN 200	2 250 m³/h 79,458 ft³/h	30.6 l 1.080 ft³	40.1 kg 88.40 lbs

[1] Valid for the respective flow rate in operating cubic metres with a maximum flow velocity of 20 m/s.

GF 60/10

DUNGS gas and air filters GF with flanged connection for installation in gas and air lines to protect downstream fittings. Filter insert made of nonwoven polypropylene fleece and a metal support mesh. Suitable for gases of gas families 1, 2, 3 and other neutral gaseous media and hydrogen.

Version: flange connection, max. operating pressure P_{max}: 600 kPa / 87 PSI, 4 x locking screw G 1/4" before and after filter insert on both sides of the housing, filter fineness filter insert ≤ 10 µm

Version	Order number	Nominal diameter	Max. flow rate[1]	Volume	Weight
GF 60025/10	294773	DN 25	35 m³/h 1,236 ft³/h	0.3 l 0.010 ft³	1.6 kg 3.52 lbs
GF 60040/10	294774	DN 40	90 m³/h 3,178 ft³/h	0.7 l 0.024 ft³	2.9 kg 6.39 lbs
GF 60050/10	294775	DN 50	140 m³/h 4,944 ft³/h	1.5 l 0.052 ft³	4.3 kg 9.47 lbs
GF 60065/10	294776	DN 65	235 m³/h 8,298 ft³/h	2.7 l 0.095 ft³	6.2 kg 13.66 lbs
GF 60080/10	294777	DN 80	350 m³/h 12,360 ft³/h	4.5 l 0.158 ft³	8.4 kg 18.51 lbs
GF 60100/10	294778	DN 100	550 m³/h 19,423 ft³/h	7.7 l 0.271 ft³	12.6 kg 27.77 lbs
GF 60125/10	294779	DN 125	870 m³/h 30,723 ft³/h	12.9 l 0.455 ft³	20.3 kg 44.75 lbs
GF 60150/10	294780	DN 150	1 260 m³/h 44,496 ft³/h	19.9 l 0.702 ft³	26.4 kg 58.20 lbs

[1] Valid for the respective flow rate in operating cubic metres with a maximum flow velocity of 20 m/s.

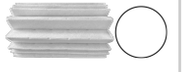
8 Accessories and spare parts

Gas and air filter with threaded connection GF 10 and GF 50

	Article	PU*	Order number
	Replacement filter insert GF Rp 1/2", Rp 3/4": • 5x filter insert • 5x O-ring	1	298174
	Replacement filter insert GF Rp 1": • 5x filter insert • 5x O-ring	1	298175
	Replacement filter insert GF Rp 1 1/4", Rp 1 1/2": • 5x filter insert • 5x O-ring	1	298176
	Replacement filter insert GF Rp 2": • 5x filter insert • 5x O-ring	1	298177

*PU = packaging unit

Gas and air filter with flange connection GF 60

	Article	PU*	Order number	
			GF 60.../50	GF 60.../10
	Replacement filter insert GF 60025: • 1x filter insert • 1x O-ring	1	304914	304870
	Replacement filter insert GF 60040: • 1x filter insert • 1x O-ring	1	304915	304871
	Replacement filter insert GF 60050: • 1x filter insert • 1x O-ring	1	304917	304873
	Replacement filter insert GF 60065: • 1x filter insert • 1x O-ring	1	304918	304874
	Replacement filter insert GF 60080: • 1x filter insert • 1x O-ring	1	304919	304875
	Replacement filter insert GF 60100: • 1x filter insert • 1x O-ring	1	304920	304876
	Replacement filter insert GF 60125: • 1x filter insert • 1x O-ring	1	304921	304877
	Replacement filter insert GF 60150: • 1x filter insert • 1x O-ring	1	304922	304878
	Replacement filter insert GF 60200: • 1x filter insert • 1x O-ring	1	304923	-

*PU = packaging unit

9 Further information

Further information
➦ *www.dungs.com*

Technical changes reserved.

9.1 Conversion of measurement units

Base unit		Target unit
1 bar	=	1 000 mbar
1 mbar	=	0.001 bar
1 mbar	=	100 Pa
1 Pa	=	0.01 mbar
1 mbar	=	0.40 in.W.C.
1 in.W.C.	=	2.49 mbar
1 Pa	=	0.0040 in.W.C.
1 in.W.C.	=	249 Pa
1 PSI	=	27.7 in.W.C.
1 in.W.C.	=	0.036 PSI
1 PSI	=	0.069 bar
1 bar	=	14.5 PSI
1 mm	=	0.04"
1"	=	25.4 mm
1 lb-in	=	0.11 Nm
1 Nm	=	8.85 lb-in
1 m^3/h	=	35.31 ft^3/h
1 ft^3/h	=	0,028 m^3/h
1 l	=	0.035 ft^3
1 ft^3	=	28,31 l
1 kg	=	2.20 lbs
1 lbs	=	0,45 kg

10 Glossary/List of abbreviations

Gases of the gas families 1, 2, 3	Gas family 1: Hydrogen-rich gases, e.g. town and district gas Gas family 2: Methane-rich gases, e.g. natural gas Gas family 3: Liquid gases, e.g. propane and butane
GF	Gas filter
LPG	*Liquefied petroleum gas* Fuel gases of the 3rd gas family (propane, propene, butane, butene) and their mixtures
PDZ	Pressure switch (safety-relevant) for measuring differential pressure.
PI	Pressure Indicator
PZH	Pressure switch for upper limit (safety-relevant)
PZL	Pressure switch for lower limit (safety-relevant)

DUNGS®
Combustion Controls

Karl Dungs GmbH & Co. KG
Karl-Dungs-Platz 1
73660 Urbach
Germany

Telephone: +49 7181-804-0
Fax: +49 7181-804-166
Email: info@dungs.com

www.dungs.com

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