



OTHER
LANGUAGES:
DE, EN-GB



HEATING | PROCESS HEAT | GAS ENGINES



**Flexible hoses
FH 50 and FH 160**

Technical data sheet

Table of contents

1 Description of functions and assortment..... 3

1.1 Functional description..... 3

1.2 Application example..... 3

1.3 Product overview "Flexible hoses"..... 3

1.4 Type code..... 4

2 Product description..... 5

3 Guidelines, standards and approvals..... 6

4 Technical data..... 7

5 Installation dimensions..... 9

6 Installation position..... 11

7 Order numbers..... 12

8 Further information..... 15

8.1 Conversion of measurement units..... 15

9 Glossary/List of abbreviations..... 16

1 Description of functions and assortment

1.1 Functional description

The DUNGS FH flexible hoses with 1-fold braiding consist of a corrugated stainless steel tube that is reinforced by an outer wire braid. The corrugation enables a high degree of flexibility and the absorption of movements, while the braiding stabilises the hose against internal pressure and protects it against external mechanical influences. This combination allows safe use in piping systems subject to thermal expansion, vibrations and pressure loads.

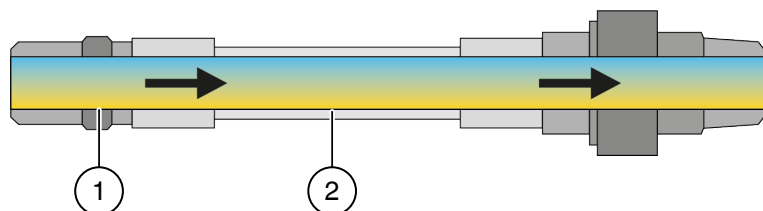
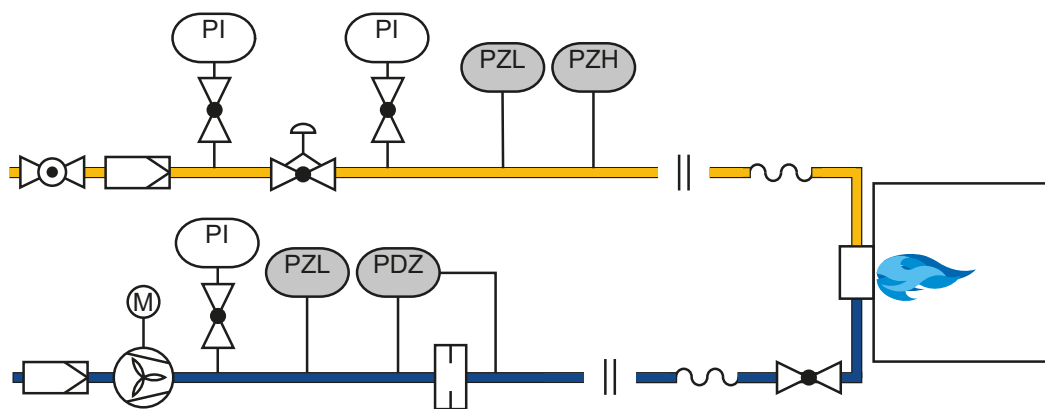


Fig. 1: Functional drawing flexible hose

- 1 Flexible hose
- 2 Bellows with 1-fold braiding

1.2 Application example

Protection against thermal expansion in burner applications



The flexible hoses compensate for pressure and thermal expansion in the gas and air supply line of the burner.

1.3 Product overview "Flexible hoses"

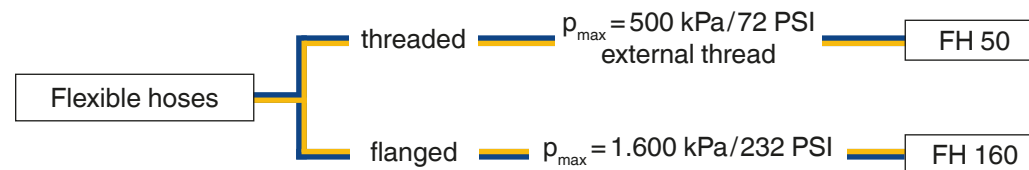


Fig. 2: Product overview flexible hoses

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

1.4 Type code

Product variant	
FH 50	DUNGS FH flexible hoses with threaded connection for compensating movements, vibrations and thermal expansion in gas and air pipes. The stainless steel flexible hoses can be used to compensate for installation inaccuracies or as a flexible pipe element. Suitable for gases of gas families 1, 2, 3, other neutral gaseous media and hydrogen.
FH 160	DUNGS FH flexible hoses with flange connection for compensating movements, vibrations and thermal expansions in gas and air pipes. The stainless steel flexible hoses can be used to compensate for installation inaccuracies or as a flexible pipe element. Suitable for gases of gas families 1, 2, 3, other neutral gaseous media and hydrogen.

Features	
FH	Flexible hose
XXX	Maximum operating pressure: 50 = 500 kPa/72 PSI 160 = 1,600 kPa/232 PSI
YYY	Nominal size DN: 050 = DN 50 080 = DN 80 065 = DN 65 100 = DN 100
	Nominal size R: 05 = 1/2" 12 = 1 1/4" 07 = 3/4" 15 = 1 1/2" 10 = 1" 20 = 2"
-LZZZ	Length: -L500 = 500 mm/19.68" -L800 = 800 mm/31.5" -L1000 = 1,000 mm/39.37" Other lengths available on request

Exsample: Type code for flexible hoses with threaded connection	Example: Type code for flexible hose with flange connection
FH XXYY-LZZZ = FH 5020-L500 FH = Flexible hose 50 = Maximum operating pressure: 500 kPa/72 PSI 20 = Nominal size R: 2" -L500 = Length: 500 mm/19.68"	FH XXXYYY-LZZZ = FH 160025-L800 FH = Flexible hose 160 = Maximum operating pressure: 1,600 kPa/232 PSI 025 = Nominal size DN: 25 -L800 = Length: 800 mm/31.5"

2 Product description

DUNGS FH flexible hoses with threaded or flanged connection for compensating movements, vibrations and thermal expansions in gas and air pipes. The stainless steel flexible hoses can be used to compensate for installation inaccuracies or as a flexible pipe element. Suitable for gases of gas families 1, 2, 3, other neutral gaseous media and hydrogen.

FH 50

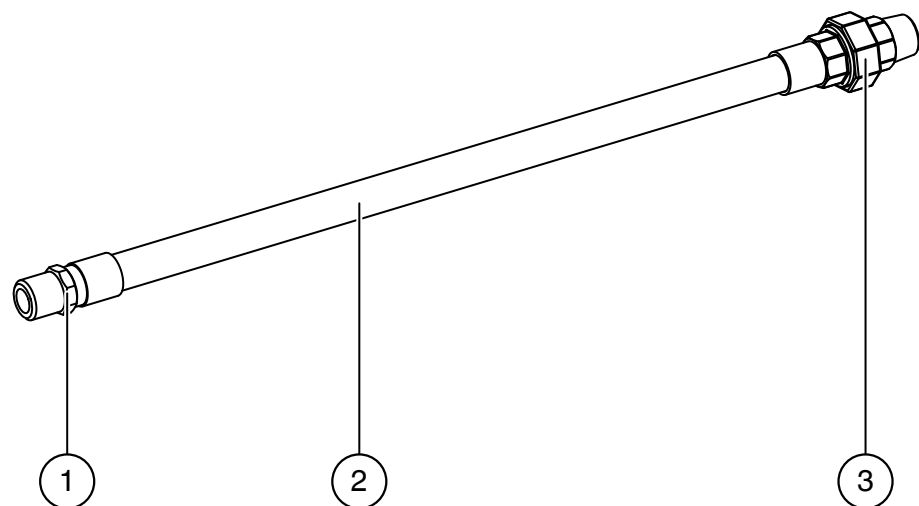


Fig. 3: FH 50 with external thread

- 1 Mounted screw connection with external thread (conical sealing)
- 2 Bellows with 1-fold braiding
- 3 Three-part screw connection with external thread (conical sealing)

FH 160

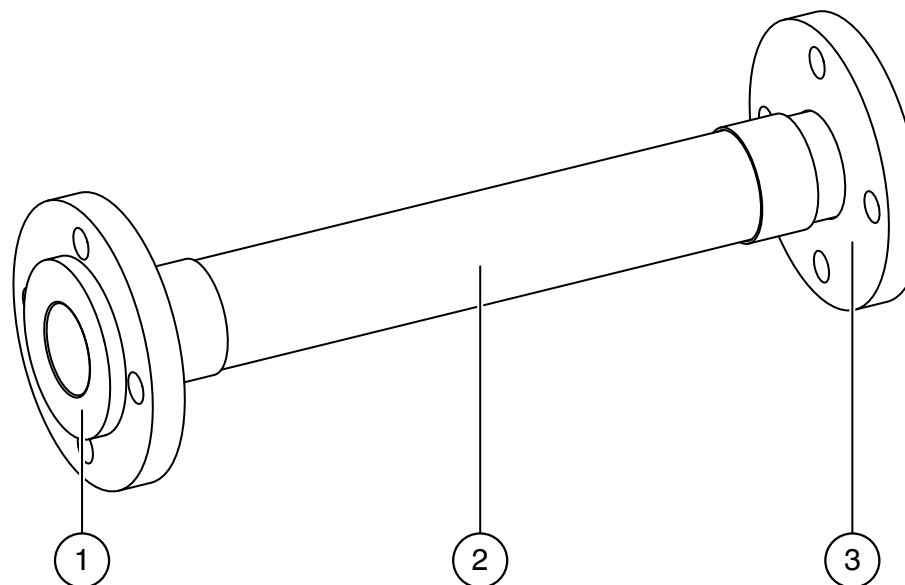


Fig. 4: FH 160 with flange connection

- 1 Welded-on welding neck flange
- 2 Bellows with 1-fold braiding
- 3 Loose flange

Product features:

- Compensation of thermal expansion
- Absorption of movements
- Damping of vibrations
- Suitable for 100 % hydrogen

3 Guidelines, standards and approvals

CE-certified

- 2014/68/EU, Pressure Equipment Directive

4 Technical data

FH 50

Technical data	FH 50
Connection type	External thread according to DIN EN 10226-1
Nominal sizes	R 1/2" - R 2"
Max. Operating pressure	500 kPa/72 PSI
Medium	Gas family 1, 2, 3, hydrogen H ₂ (dry) and other neutral gaseous media
Max. Medium temperature	-20 °C ... +300 °C/-4 °F ... +572 °F
Max. Ambient temperature during operation	-20 °C ... +300 °C/-4 °F ... +572 °F
Version	Flexible hose with one braid
Materials	Bellows: 1.4541 Braiding: 1.4301 Fitting: Stainless steel
Length	Available in standard lengths of 500, 800 and 1,000 mm. Other lengths on request. Minimum length 200 mm, all lengths possible in 100 mm intervals.
Pressure loss	The pressure loss is approximately twice as high as with a smooth-surface pipe of the same length

FH 160

Technical data	FH 160
Connection type	Flange according to DIN EN 1092-1 PN 16
No. of holes in the flange	DN 50: 4 DN 65 - DN 100: 8
Nominal sizes	DN 50 - DN 100
Max. Operating pressure	1,600 kPa/232 PSI
Medium	Gas family 1, 2, 3, hydrogen H ₂ (dry) and other neutral gaseous media
Max. Medium temperature	-20 °C ... +300°C/-4 °F ... +572 °F
Max. Ambient temperature during operation	-20 °C ... +300°C/-4 °F ... +572 °F
Version	Flexible hose with one braid
Materials	Bellows: 1.4541 Braiding: 1.4301 Flange: 1.4301 Blunt end: 1.4404
Length	Available in standard lengths of 500, 800 and 1,000 mm. Other lengths on request. Minimum length 400 mm, all lengths possible in 100 mm intervals.
Pressure loss	The pressure loss is approximately twice as high as with a smooth-surfaced pipe of the same length

Temperature reduction factors

The pressure ratings (PN) of the flexible hoses are classified and approved at a defined maximum temperature of 20 °C/35.6 °F. Nevertheless, the construction of the flexible hoses is designed for higher temperatures. This means that the maximum operating pressure of the flexible hoses is reduced at higher operating temperatures based on the temperature reduction factor. The same applies to the bending radii - the bending radius at 20 °C/35.6 °F can be found in the order numbers for each version. The temperature reduction factor refers to the weakest material exposed to the operating temperature:

Temperature	Reduction factor operating pressure	Reduction factor bending radius
25 °C/77 °F	1	1
50 °C/122 °F	0.96	1.04
75 °C/167 °F	0.89	1.11
100 °C/212 °F	0.82	1.2
125 °C/257 °F	0.79	1.24
150 °C/302 °F	0.75	1.3
175 °C/347 °F	0.72	1.35
200 °C/392 °F	0.69	1.4
225 °C/437 °F	0.67	1.43
250 °C/482 °F	0.65	1.46
275 °C/527 °F	0.64	1.47
300 °C/572 °F	0.62	1.51
325 °C/617 °F	0.61	1.52
350 °C/662 °F	0.6	1.54

When selecting the flexible hose, the temperature reduction factor must be taken into account as follows, taking into account the operating pressure:

$$\frac{\text{Operating pressure at higher temperature}}{\text{Reduction factor operating pressure}} = \text{Max. Operating pressure (PN)}$$

Example:

A system is operated with an operating pressure of 900 kPa. The maximum operating temperature is 300 °C/572 °F.

At 300 °C/572 °F, a reduction factor of 0.62 applies to the operating pressure.

This results in the following equation:

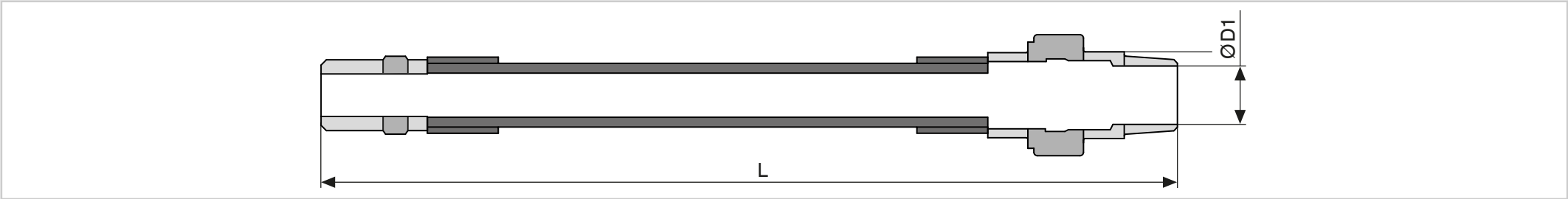
$$\frac{900 \text{ kPa}}{0.62} = 1.452 \text{ kPa}$$

A flanged flexible hose (max. operating pressure = 1,600 kPa) can be used,

as 1,452 kPa (calculated max. operating pressure) ≤ 1,600 kPa (max. operating pressure for FH 160).

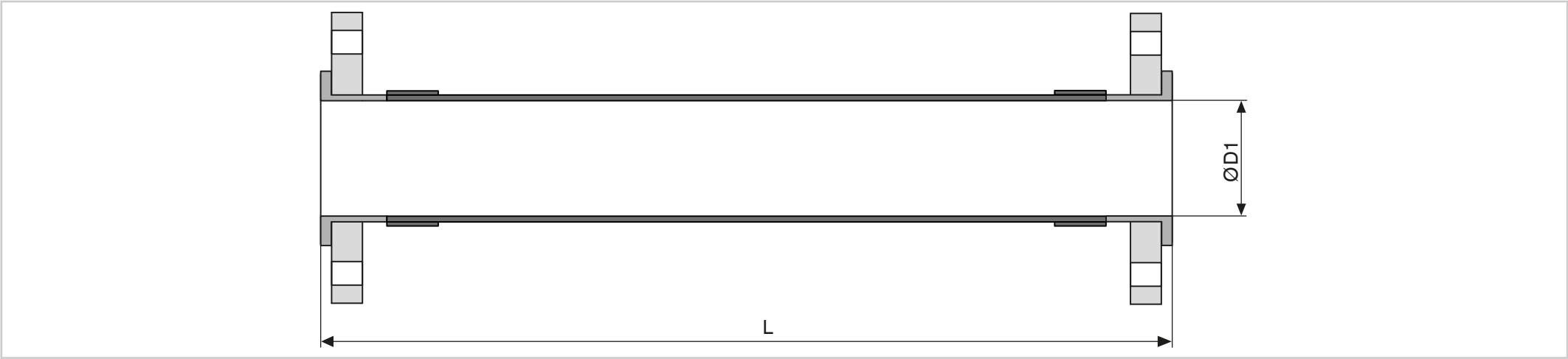
5 Installation dimensions

Flexible hoses with external thread connection



Version	Nominal size	Length L			D1
		-L500	-L800	-L1000	
FH 5005	R 1/2"	500 mm (19.69")	800 mm (31.50")	1,000 mm (39.37")	12.2 mm (0.48")
FH 5007	R 3/4"	500 mm (19.69")	800 mm (31.50")	1,000 mm (39.37")	20.2 mm (0.80")
FH 5010	R 1"	500 mm (19.69")	800 mm (31.50")	1,000 mm (39.37")	25.5 mm (1.00")
FH 5012	R 1 1/4"	500 mm (19.69")	800 mm (31.50")	1,000 mm (39.37")	34.2 mm (1.35")
FH 5015	R 1 1/2"	500 mm (19.69")	800 mm (31.50")	1,000 mm (39.37")	40.1 mm (1.58")
FH 5020	R 2"	500 mm (19.69")	800 mm (31.50")	1,000 mm (39.37")	50.4 mm (1.98")
Other lengths on request. Minimum length 200 mm, all lengths possible in 100 mm intervals.					

Flexible hoses with flange connection



Version	Nominal size	Length L			D1
		-L500	-L800	-L1000	
FH 160050	DN 50	500 mm (19.69")	800 mm (31.50")	1,000 mm (39.37")	50.4 mm (1.98")
FH 160065	DN 65	500 mm (19.69")	800 mm (31.50")	1,000 mm (39.37")	65.4 mm (2.57")
FH 160080	DN 80	500 mm (19.69")	800 mm (31.50")	1,000 mm (39.37")	80.2 mm (3.16")
FH 160100	DN 100	500 mm (19.69")	800 mm (31.50")	1,000 mm (39.37")	100.2 mm (3.94")
Other lengths on request. Minimum length 400 mm, all lengths possible in 100 mm intervals.					

6 Installation position

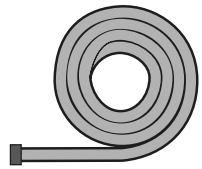
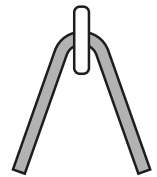
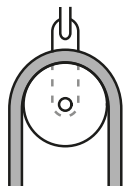
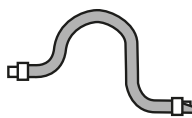
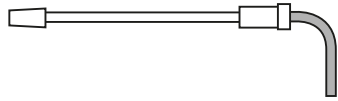
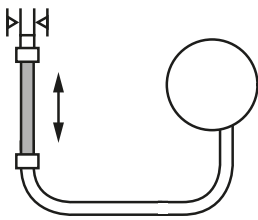
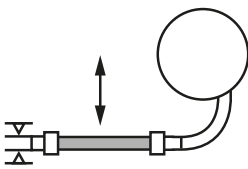
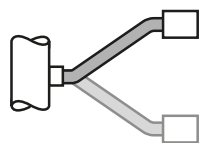
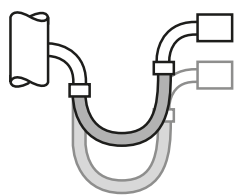
The product can be installed in any direction in gas and air pipes. No flow direction is defined.

 CAUTION

The flexible hoses must not be hindered in their natural position and movement during installation.

Obstruction of movement or torsional stress can lead to damage to the flexible hose, leaks or premature failure.

Ensure that no torsion acts on the hose during installation and operation.

Installation note	Incorrect	Correct	Installation note	Incorrect	Correct
Unroll the hose instead of pulling it off			Support deflections with supports and hose saddle		
Use the correct installation length			Install rigid deflection to avoid overbending		
Do not absorb vibrations axially! Install the hose perpendicular to the direction of movement			Absorb large movements with U-shaped installation		

7 Order numbers

FH 50

DUNGS FH flexible hoses with threaded connection for compensating movements, vibrations and thermal expansion in gas and air pipes. The stainless steel flexible hoses can be used to compensate for installation inaccuracies or as a flexible pipe element. Suitable for gases of gas families 1, 2, 3, other neutral gaseous media and hydrogen.

Version: external/external thread, max. operating pressure Pmax: 500 kPa/72 PSI, length: 500 mm

Version	Order number	Nominal size	Length [mm]	Dynamic bending radius [mm]	Static bending radius [mm]
FH 5005-L500	307079	R 1/2"	500	140	20
FH 5007-L500	307080	R 3/4"	500	230	30
FH 5010-L500	307081	R 1"	500	260	40
FH 5012-L500	307082	R 1 1/4"	500	290	50
FH 5015-L500	307083	R 1 1/2"	500	320	60
FH 5020-L500	307084	R 2"	500	360	70

Version: external/external thread, max. operating pressure Pmax: 500 kPa/72 PSI, length: 800 mm

Version	Order number	Nominal size	Length [mm]	Dynamic bending radius [mm]	Static bending radius [mm]
FH 5005-L800	307085	R 1/2"	800	140	20
FH 5007-L800	307086	R 3/4"	800	230	30
FH 5010-L800	307087	R 1"	800	260	40
FH 5012-L800	307088	R 1 1/4"	800	290	50
FH 5015-L800	307089	R 1 1/2"	800	320	60
FH 5020-L800	307090	R 2"	800	360	70

Version: external/external thread, max. operating pressure Pmax: 500 kPa/72 PSI, length: 1,000 mm

Version	Order number	Nominal size	Length [mm]	Dynamic bending radius [mm]	Static bending radius [mm]
FH 5005-L1000	307091	R 1/2"	1,000	140	20
FH 5007-L1000	307092	R 3/4"	1,000	230	30
FH 5010-L1000	307093	R 1"	1,000	260	40
FH 5012-L1000	307094	R 1 1/4"	1,000	290	50
FH 5015-L1000	307095	R 1 1/2"	1,000	320	60
FH 5020-L1000	307096	R 2"	1,000	360	70

FH 160

DUNGS FH flexible hoses with flange connection for compensating movements, vibrations and thermal expansions in gas and air pipes. The stainless steel flexible hoses can be used to compensate for installation inaccuracies or as a flexible pipe element. Suitable for gases of gas families 1, 2, 3, other neutral gaseous media and hydrogen.

Version: flange, max. operating pressure Pmax: 1,600 kPa/232 PSI, length: 500 mm

Version	Order number	Nominal size	Length [mm]	Dynamic bending radius [mm]	Static bending radius [mm]
FH 160050-L500	307097	DN 50	500	360	70
FH 160065-L500	307098	DN 65	500	420	80
FH 160080-L500	307099	DN 80	500	480	100
FH 160100-L500	307100	DN 100	500	580	120

Version: Flange, max. operating pressure Pmax: 1,600 kPa/232 PSI, length: 800 mm

Version	Order number	Nominal size	Length [mm]	Dynamic bending radius [mm]	Static bending radius [mm]
FH 160050-L800	307101	DN 50	800	360	70
FH 160065-L800	307102	DN 65	800	420	80
FH 160080-L800	307103	DN 80	800	480	100
FH 160100-L800	307104	DN 100	800	580	120

Version: Flange, max. operating pressure Pmax: 1,600 kPa/232 PSI, length: 1,000 mm

Version	Order number	Nominal size	Length [mm]	Dynamic bending radius [mm]	Static bending radius [mm]
FH 160050-L1000	307105	DN 50	1,000	360	70
FH 160065-L1000	307106	DN 65	1,000	420	80
FH 160080-L1000	307107	DN 80	1,000	480	100
FH 160100-L1000	307108	DN 100	1,000	580	120

8 Further information

Further information

➔ www.dungs.com

Technical changes reserved.

8.1 Conversion of measurement units

Base unit		Target unit
1 bar 1 mbar	= =	1000 mbar 0.001 bar
1 mbar 1 Pa	= =	100 Pa 0.01 mbar
1 mbar 1 in.W.C.	= =	0.40 in.W.C. 2.49 mbar
1 Pa 1 in.W.C.	= =	0.0040 in.W.C. 249 Pa
1 PSI 1 in.W.C.	= =	27.7 in.W.C. 0.036 PSI
1 PSI 1 bar	= =	0.069 bar 14.5 PSI
1 mm 1"	= =	0.04" 25.4 mm
1 lb-in 1 Nm	= =	0.11 Nm 8.85 lb-in
1 m ³ /h 1 ft ³ /h	= =	35.31 ft ³ /h 0.028 m ³ /h
1 l 1 ft ³	= =	0.035 ft ³ 28.31 l
1 kg 1 lbs	= =	2.20 lbs 0.45 kg

9 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
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)

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

© 2025



www.dungs.com