- → Bourdon tube pressure gauges
- → Differential pressure gauges
- → Diaphragm pressure gauges
- → Capsule element pressure gauges

MECHANICAL PRESSURE GAUGES

Mechanical Pressure Gauges

SIKA pressure gauges are quality measuring instruments for use in industrial applications. They are fitted with stainless steel cases as standard and comply with the EN 837-1 until EN 837-3 European standards.

SIKA offers various models based on three different measuring elements: bourdon tubes, diaphragms and capsule elements. All three types operate on the same principle: elastic deformation of the measuring element under the influence of pressure. This motion is coupled to a pointer mechanism. The appropriate type (bourdon tube, diaphragm or capsule element) for a particular application depends on the application area, necessary display range and installation location.

General information

The provisions of Part 2 of the EN 837 standard should generally be observed when selecting pressure gauges. We offer a variety of standard and special versions of pressure gauges, as well as matching accessories. On request, we can fit our gauges with electrical limit switches, which are described in a separate section limit switches. Please don't hesitate to contact us if you have any questions.

Bourdon tube pressure gauges

Bourdon tube pressure gauges are the most common type in many areas and are used to measure medium to high pressures. They cover measuring spans from 600 mbar to 4000 bar. The measuring element is a curved tube with a circular, spiral or coiled shape, commonly called a bourdon tube. This tube moves outward when the pressure inside the tube is higher than the external pressure, and inward when the internal pressure is lower. This motion is proportional to the pressure to be measured, and it is coupled to the pointer mechanism.

Capsule element pressure gauge

Capsule element pressure gauges are used to measure air and dry gases at low pressures. They cover measuring spans from 2.5 mbar to 600 mbar. The measuring element consists of two metal diaphragms soldered together to form a cylindrical bellows chamber. This capsule element expands when the pressure inside the element is higher than the external pressure, and it contracts when the internal pressure is lower. This motion is proportional to the pressure to be measured, and it is coupled to the pointer mechanism.

Diaphragm pressure gauges

Diaphragm pressure gauges are used to measure gases and liquids. They cover measuring spans from 10 mbar to 40 bar. The measuring element consists of one circular diaphragm clamped between a pair of flanges. The positive or negative pressure acting on these diaphragms causes deformation of the measuring element. The magnitude of the deformation is proportional to the pressure to be measured, and it is coupled to the pointer mechanism.

Bourdon tube pressure gauges, industrial version

Type MRE and MRE-g, nominal size 63 mm

SIKA quality industrial-grade pressure gauges with 63 mm stainless steel cases are suitable for measuring the pressure of gaseous or liquid media, but not for highly viscous or crystallizing media.

- Pressure gauges compliant with EN 837-1
- Stainless steel case with bayonet ring or crimped-on ring
- Brass or stainless steel threaded connection
- Connection at bottom or back, G¼ B
- EN 837-1 accuracy class 1.6,
  class 2.5 (for display ranges 0...600 bar and 0...1000 bar)
- DNV GL type approval certificate available

Case type

The stainless steel case is available in two versions: with a bayonet ring (type MRE) or with a crimped-on ring (type MRE-g). Case ventilation is provided by a pressure equalisation insert.

Display ranges

DIN display ranges from -1...0 bar to 0...1000 bar are available (max. 600 bar with brass connection or 1000 bar with stainless steel connection). Gauges with special ranges can be provided on request.

Degree of protection according to EN 60529

IP54 (IP65 for filled case with closed pressure equalisation insert). Types other than IP65 available on request.

Dial

Aluminium, white with black scale markings.
Pointer: Aluminium, black

Window

Instrument glass for types with brass connection thread, laminated safety glass for type MRE with stainless steel connection, polycarbonate for type MRE-g with stainless steel connection.

Pointer movement

Brass & German silver; stainless steel for gauges with stainless steel connection.

Connection threads and materials

Standard pressure gauges have a brass connection thread and bronze Bourdon tube. Version with connection thread and Bourdon tube made from stainless steel is optionally available.

Maximum pressure load	
Static load	75 % of full-scale value
Dynamic load	65 % of full-scale value
Overload	Full scale-value

Type MRE-g

Temperature range

- **Storage temperature**
  -40...70 °C (-20...70 °C with filled case)
- **Ambient operating temperature**
  -40...60 °C (-20...60 °C with filled case)
- **Media temperature**
  Gauges with brass connection 60 °C max.
  Gauges with stainless steel connection 200 °C max.
  (100 °C max. with filled case)

Ambient temperature sensivity

The pressure gauges are calibrated at a reference temperature of 20 °C. At other operating temperatures the maximum indication error is ±0.4 % of full scale value per 10 °C difference in accordance with EN 837-1.

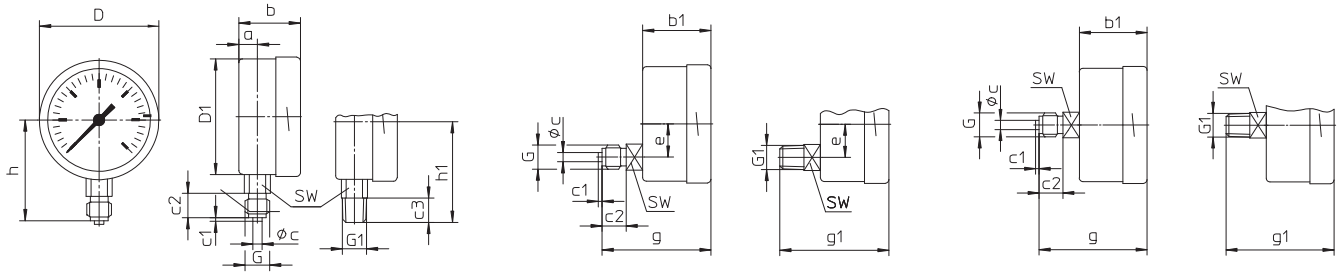
Options

- Safety version with baffle compliant with EN 873-1 S3 (only with bayonet ring case)
- Throttle screw in input channel
- Versions for higher media temperatures
- With glycerine filled case
- Adjustable pointer, aluminium (only unfilled)
- Aluminium adjustable pointer (only with unfilled case)
- Customer-specific special scales available with large order quantities

Types and dimensions - bayonet ring case

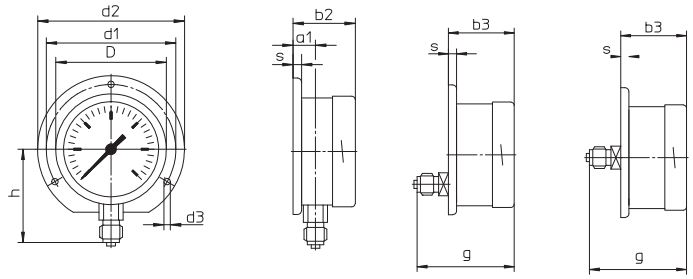
Without mounting flange

Bottom connection, lower back connection or central back connection



With rear flange

Bottom connection, lower back connection* or central back connection*

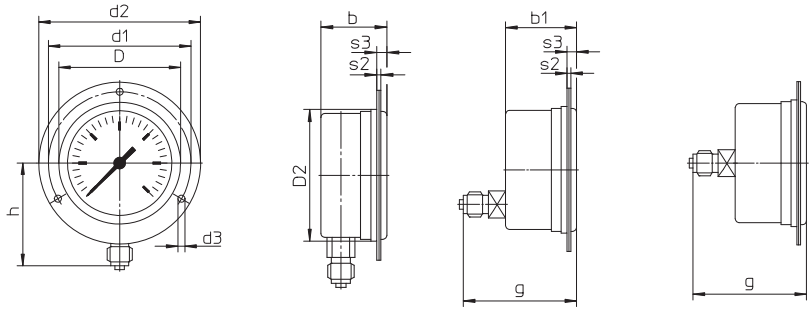


* Versions available on request, but not recommended by EN 837-1.

** Front flange with oval holes and separate trim ring, recommended panel cut out Ø 67 ± 0.3 mm

With front flange**

Bottom connection*, lower back connection or central back connection



Dimensions [mm]															
NS	**D**	**D1**	**D2**	**a**	**a1**	**b**	**b1**	**b2**	**b3**	**c**	**c1**	**c2**	**c3**	**d1**	**d2**
63	64	62	66	10	13	33	37	36	40	5	2	13	13	75	85

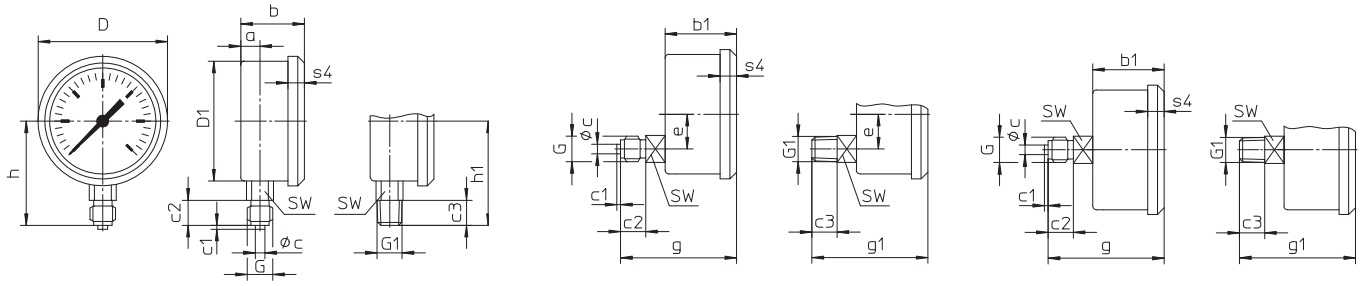
Dimensions [mm]													Weight [kg] (approx.)*	
NS	**d3**	**e**	**G**	**G1**	**g**	**g1**	**h**	**h1**	**s**	**s2**	**s3**	**SW**	**unfilled**	**filled**
63	3.6	18	G¼ B M12 x 1.5	¼ NPT	59	59	54	54	5	2	5.5	14	0.18	0.25

* Data applies to versions without mounting flange

Types and dimensions – crimped-on ring case

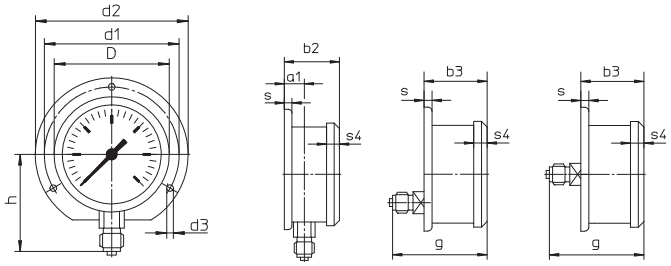
Without mounting flange

Bottom connection, lower back connection or central back connection



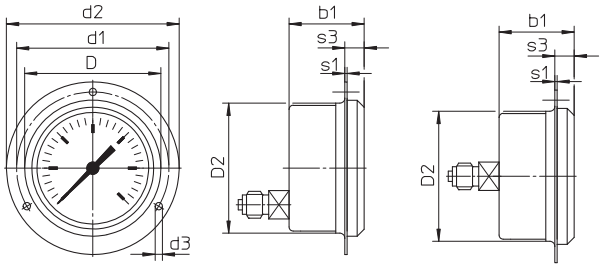
With rear flange

Bottom connection, lower back connection* or central back* connection



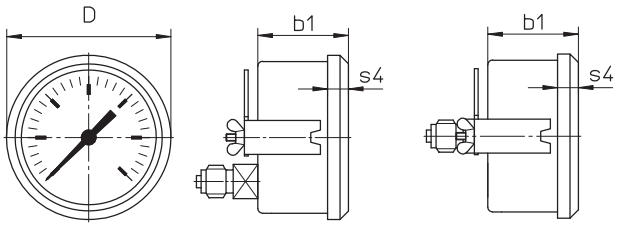
With front flange**

Lower back connection or central back connection



With u-clamp***

Lower back connection or central back connection



* Versions available on request, but not recommended by EN 837-1
** Recommended panel cut out Ø 67 ± 0.3 mm
*** Recommended panel cut out Ø 64 ± 0.3 mm

Dimensions [mm]

NS	D	D1	D2	a	a1	b	b1	b2	b3	c	c1	c2	c3	d1	d2
63	67	62	64	10	13	33	37	36	40	5	2	13	13	75	85

Dimensions [mm]														Weight [kg] (approx.)*	
NS	d3	e	G	G1	g	g1	h±1	h1±1	s	s1	s3	s4	SW	unfilled	filled
63	3.6	18	G¼ B M12 x 1.5	¼ NPT	60	60	54	54	5	1	9.5	8.5	14	0.18	0.25

* Data applies to versions without mounting flange

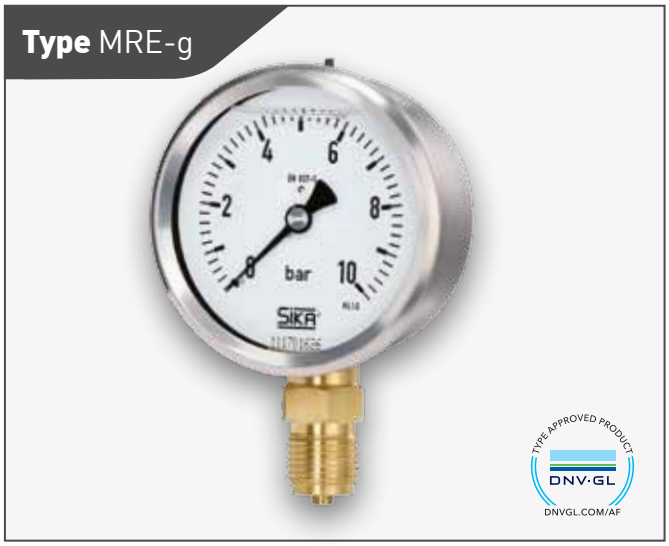
Order code

Order example	MRE	1	1	1	315	0	0	0
Bourdon tube pressure gauges, industrial version								
Bayonet ring case	MRE							
Crimped-on ring case	MREG							
Nominal size								
63 mm		1						
Connection thread								
G¼ B bottom			1					
G¼ B lower back connection			2					
G¼ B central back connection			5					
¼ NPT bottom			M					
¼ NPT lower back connection			N					
¼ NPT central back connection			S					
M12 x 1.5 bottom			3					
M12 x 1.5 lower back connection			4					
M12 x 1.5 central back connection			6					
Connection material								
Brass				1				
Stainless steel				3				
Display ranges								
-1...0 bar					315			
-1...0.6 bar					505			
-1...1.5 bar					515			
-1...3 bar					525			
-1...5 bar					535			
-1...9 bar					545			
-1...15 bar					555			
0...0.6 bar					015			
0...1 bar					025			
0...1.6 bar					035			
0...2.5 bar					045			
0...4 bar					055			
0...6 bar					065			
0...10 bar					075			
0...16 bar					085			
0...25 bar					095			
0...40 bar					105			
0...60 bar					115			
0...100 bar					125			
0...160 bar					135			
0...250 bar					145			
0...400 bar					155			
0...600 bar					165			
0...1000 bar	only with crimped-on ring case (connection material stainless steel)				175			
Mounting flange								
None						0		
Rear flange						1		
Front flange						2		
U-clamp	only with crimped-on ring case					3		
Option								
None							0	
Filled case								
Unfilled case								0
Filled case (glycerine)								G

Type MRE-g, nominal size 80 mm

SIKA quality industrial-grade pressure gauges with 80 mm stainless steel cases are suitable for measuring the pressure of gaseous or liquid media, but not for highly viscous or crystallizing media.

- Pressure gauges compliant with EN 837-1
- Stainless steel case with crimped-on ring
- Brass or stainless steel threaded connection
- Connection at bottom or central back, G½ B
- EN 837-1 accuracy class 1.0, class 1.6
  (for display range 0...600 or 0...1000 bar)
- DNV GL type approval certificate available



Case type

Available only with type MRE-g crimped-on ring case. Case ventilation is provided by a pressure equalisation insert.

Display ranges

DIN display ranges from -1...0 bar to 0...1000 bar available (max. 600 bar with brass connection block; max. 1000 bar with stainless steel connection block). Gauges with special ranges can be provided on request.

Degree of protection according to EN 60529

IP65 with closed pressure equalisation insert.

Dial

Aluminium, white with black scale markings.
Pointer: Aluminium, black

Window

Instrument glass; gauges with stainless steel connection have laminated safety glass.

Pointer movement

Brass & German silver; stainless steel for gauges with stainless steel connection.

Connection threads and materials

Standard pressure gauges have brass connection threads and bronze Bourdon tubes. A version with connection thread and

Maximum pressure load	
Static load	75 % of full scale value
Dynamic load	65 % of full scale value
Overload	Max. full scale value

Temperature range

- **Storage temperature**
  -40 to 70 °C (-20 to 70 °C with filled case)
- **Ambient operating temperature**
  -40 to 60 °C (-20 to 60 °C with filled case)
- **Media temperature**
  Gauges with brass connection 60 °C max.
  Gauges with stainless steel connection 200 °C max.
  (100 °C max. with filled case)

Ambient temperature sensitivity

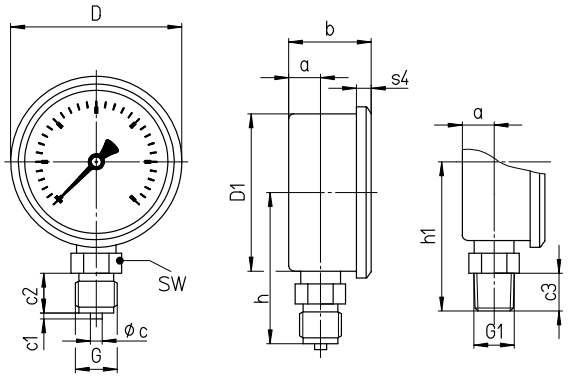
The pressure gauges are calibrated at a reference temperature of 20 °C. At other operating temperatures the maximum indication error is ±0.4 % of full scale value per 10 °C difference in accordance with EN 837-1.

Options

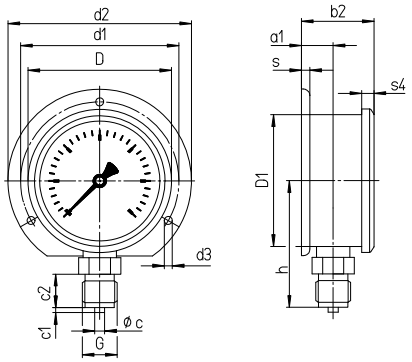
- Throttle screw in input channel
- Versions for higher media temperatures
- With glycerine filled case
- Customer-specific special scales available with large order quantities

Types and dimensions

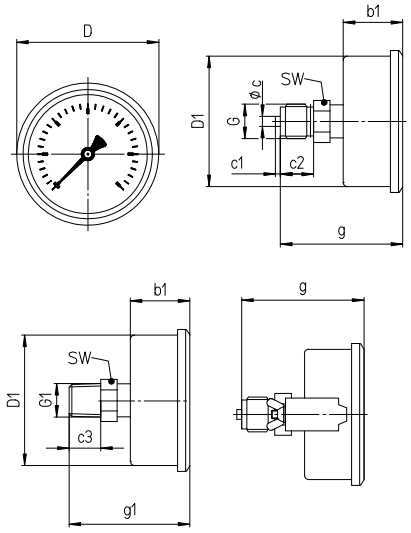
Bottom connection
Without mounting flange



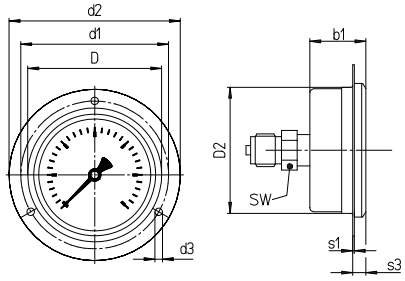
Bottom connection
With rear flange



Central back connection
Without mounting flange (available with u-clamp)*



Central back connection
With front flange**



* Recommended panel cut out Ø 81 ± 0.5 mm
** Recommended panel cut out Ø 84 ± 0.5 mm

Dimensions [mm]														
NS	**D**	**D1**	**D2**	**a**	**a1**	**b**	**b1**	**b2**	**c**	**c1**	**c2**	**c3**	**d1**	**d2**
80	86	79	81	16	19	41.5	36	44	6	3	20	19	95	110

Dimensions [mm]												Weight [kg] (approx.)*	
NS	**d3**	**G**	**G1**	**g**	**g1**	**h**	**h1**	**s**	**s1**	**s3**	**s4**	**SW**	**unfilled**	**filled**
80	4.8	G½ B M20 x 1.5	½ NPT	74	73	76	75	5	1	9	8	22	0.34	0.50

* Data applies to versions without mounting flange

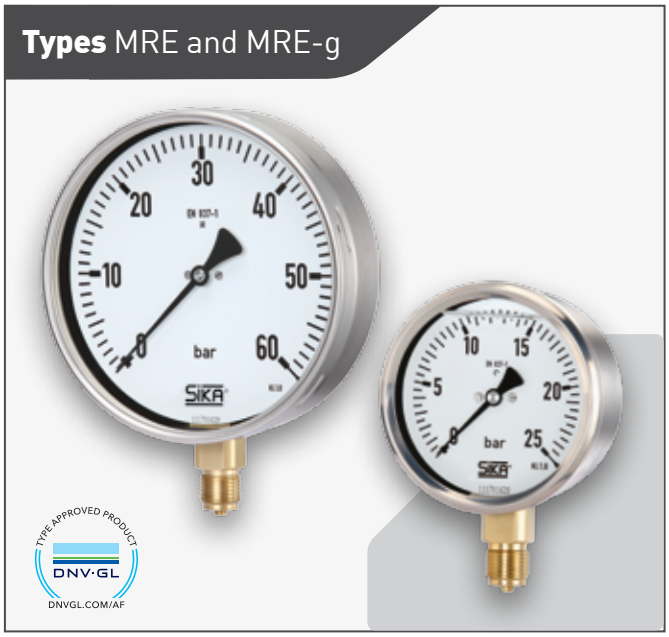
Order code

Order example	MREG	2	1	1	315	0	0	0
Bourdon tube pressure gauges, industrial version								
Crimped-on ring case	MREG							
Nominal size								
80 mm		2						
Connection thread								
G½ B bottom			1					
G½ B central back connection			2					
M20 x 1.5 bottom			3					
M20 x 1.5 central back connection			4					
½ NPT bottom			B					
½ NPT central back connection			C					
Connection material								
Brass				1				
Stainless steel				3				
Display ranges								
-1...0 bar					315			
-1...0.6 bar					505			
-1...1.5 bar					515			
-1...3 bar					525			
-1...5 bar					535			
-1...9 bar					545			
-1...15 bar					555			
0...0.6 bar					015			
0...1 bar					025			
0...1.6 bar					035			
0...2.5 bar					045			
0...4 bar					055			
0...6 bar					065			
0...10 bar					075			
0...16 bar					085			
0...25 bar					095			
0...40 bar					105			
0...60 bar					115			
0...100 bar					125			
0...160 bar					135			
0...250 bar					145			
0...400 bar					155			
0...600 bar					165			
0...1000 bar	only with stainless steel connection available				175			
Mounting flange								
None						0		
Rear flange						1		
Front flange						2		
U-clamp						3		
Option								
None							0	
Filled case								
Unfilled case								0
Filled case (glycerine)								G

Type MRE and MRE-g, nominal sizes 100, 160 and 250 mm

SIKA quality industrial-grade pressure gauges with 100, 160 or 250 mm stainless steel cases are suitable for measuring the pressure of gaseous or liquid media, but not for highly viscous or crystallizing media.

- Pressure gauges compliant with EN 837-1
- Stainless steel case with bayonet ring or crimped-on ring
- Brass or stainless steel threaded connection
- Connection at bottom or lower back G½ B
- EN 837-1 accuracy class 1.0
- DNV GL type approval certificate available (only for nominal size 100 mm)



Case type

The stainless steel case is available in two versions: with a bayonet ring (type MRE) or with a crimped-on ring (type MRE-g). Gauges with nominal size 250 mm are supplied with bayonet ring cases. Case ventilation is provided by a pressure equalisation insert.

Display ranges

DIN display ranges from -1...0 bar to 0...1600 bar are available (max. 1000 bar with brass connection or 1600 bar with stainless steel connection). Gauges with special ranges can be provided on request.

Degree of protection according to EN 60529

IP54 (for nominal size 100 and 160 mm IP65 for filled gauges with closed pressure equalisation insert). Types other than IP65 available on request.

Dial

Aluminium, white with black scale markings.
Pointer: Aluminium, black

Window

Instrument glass (laminated safety glass for gauges with stainless steel connection)

Pointer movement

Brass & German silver; stainless steel for gauges with stainless steel connection

Maximum pressure load	
Static load	100 % of full scale value
Dynamic load	90 % of full scale value
Overload	Max. 130 % of full scale value

Components in contact with media

Standard pressure gauges have a brass connection thread and bronze Bourdon tube. Version with connection thread and Bourdon tube made from stainless steel is optionally available.

Temperature range

- **Storage temperature**
  -40 to 70 °C (-20 to 70 °C with filled case)
- **Ambient operating temperature**
  -40 to 60 °C (-20 to 60 °C with filled case)
- **Media temperature**
  Gauges with brass connection 60 °C max.
  Gauges with stainless steel connection 200 °C max.
  (100 °C max. with filled case)

Ambient temperature sensitivity

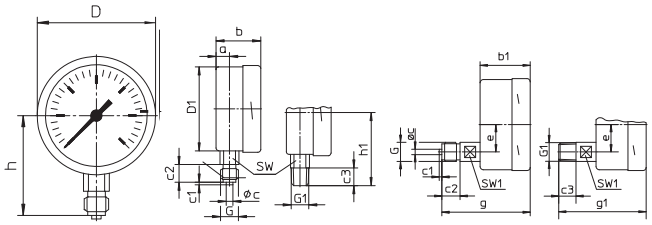
The pressure gauges are calibrated at a reference temperature of 20 °C. At other operating temperatures the maximum indication error is ±0.4 % of full scale value per 10 °C difference in accordance with EN 837-1.

Options

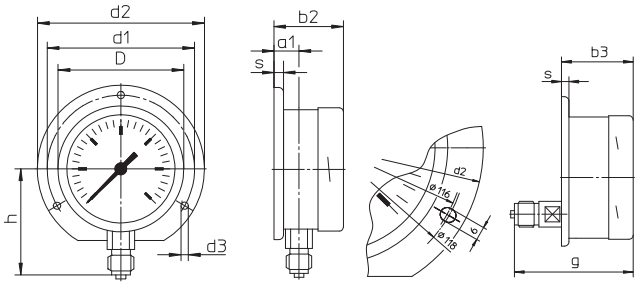
- Throttle screw in input channel
- Versions for elevated media temperature (only for nominal size 100 or 160 mm with unfilled case)
- With glycerine filled case (only for nominal size 100 or 160 mm)
- Aluminium adjustable pointer (only with unfilled case)
- Customer-specific special scales available with large order quantities

Types and dimensions – bayonet ring case

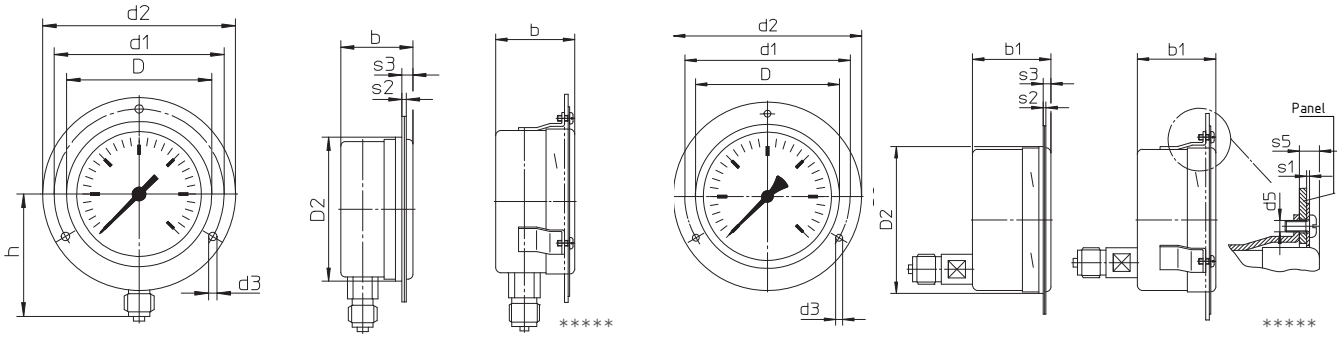
Without mounting flange
Bottom connection or lower back connection



With rear flange***
Bottom connection** or lower back connection*



With front flange
Bottom connection* or lower back connection****



* Version available on request, but not recommended by EN 837-1.
** Nominal size 100 rear flange optionally available with oval holes compliant with EN 837-1.
*** With three lugs for nominal size 250.
**** Recommended panel cut out Ø 104 ± 0.5 mm for NS 100; Ø 164 ± 0.5 mm for NS 160; Ø 254 ± 0.5 mm for NS 250.
***** Welded lugs and separate fixing flange at front.

Dimensions [mm]

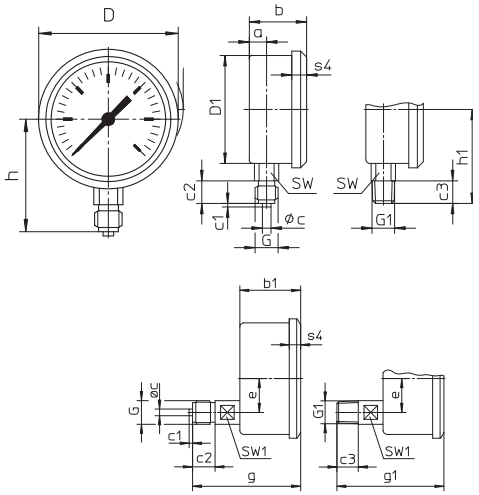
NS	D	D1	D2	a	a1	b	b1	b2	b3	c	c1	c2	c3	d1	d2
100	101	99	103	20	23.5	55	55	58.5	58.5	6	3	20	19	116	132
160	161	159	163	15	18	50	55	53	58	6	3	20	19	178	196
250	251	249		15.5	17.5	58	58	60	60	6	3	20	19	270	285

Dimensions [mm]																Weight [kg] (approx.)*	
NS	d3	d5	G	G1	e	g	g1	h±1	h1±1	s	s1	s2	s3	s5	SW	SW1	unfilled	filled
100	4.8	M4	G½ B M20 x 1.5	½ NPT	30	97	96	87	84	6	1	2	5.5	7	22	17	0.60	0.95
160	5.8	M5	G½ B M20 x 1.5	½ NPT	30	92.5	91.5	115	114	6	1.5	2.5	6	8	22	17	1.10	1.95
250	5.8		G½ B M20 x 1.5	½ NPT	52	97	96	165	164	6	-	2	8.5	-	22	17	2.10	

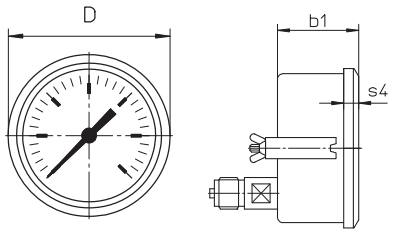
* Data applies to versions without mounting flange

Types and dimensions – crimped-on ring case

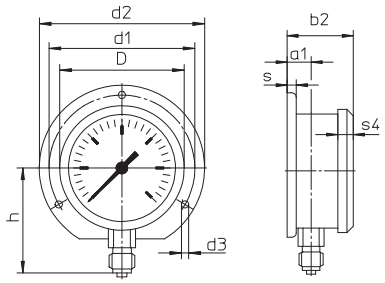
Without mounting flange
Bottom connection or lower back connection

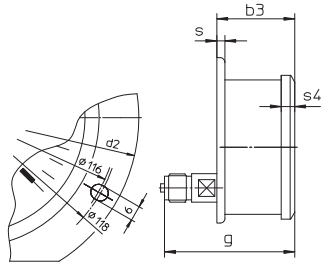


With u-clamp fixing****
Lower back connection*

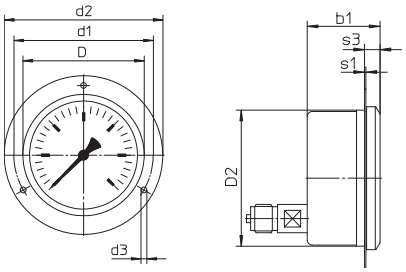


With rear flange
Bottom connection** or lower back connection*





With front flange
Lower back connection***



* Version available on request, but not recommended by EN 837-1.
** NS 100 rear flange optionally available with oval holes compliant with EN 837-1.
*** Recommended panel cut out Ø 102 ± 0.5 mm for NS 100; NS 160 on request.
**** Recommended panel cut out Ø 102 ± 0.5 mm for NS 100; Ø 162 ± 0.5 mm for NS 160.

Dimensions [mm]

NS	D	D1	D2	a	a1	b	b1	b2	b3	c	c1	c2	c3	d1	d2
100	106	99	101	20	23.5	54	54	57.5	57.5	6	3	20	19	116	132
160	167	159	161	15	18	50	55	53	58	6	3	20	19	178	196

Dimensions [mm]														Weight [kg] (approx.)*	
NS	d3	G	G1	e	g	g1	h±1	h1±1	s	s1	s3	s4	SW	SW1	unfilled	filled
100	4.8	G½ B M20 x 1.5	½ NPT	30	96	95	87	84	6	1	11.5	10	22	17	0.60	0.90
160	5.8	G½ B M20 x 1.5	½ NPT	30	97	96	115	114	6	-	-	11	22	17	1.10	1.70

* Data applies to versions without mounting flange

Order code

Order example		MRE	3	1	1	315	0	0	0
Bourdon tube pressure gauges, industrial version									
Bayonet ring case		MRE							
Crimped-on ring case		MREG							
Nominal size									
100 mm			3						
160 mm			4						
250 mm	available only as type MRE with bayonet ring case		5						
Connection thread									
G½ B bottom				1					
G½ B lower back connection				2					
M20 x 1.5 bottom				3					
M20 x 1.5 lower back connection				4					
½ NPT bottom				B					
½ NPT lower back connection				C					
Connection material									
Brass					1				
Stainless steel					3				
Display ranges									
-1...0 bar						315			
-1...0.6 bar						505			
-1...1.5 bar						515			
-1...3 bar						525			
-1...5 bar						535			
-1...9 bar						545			
-1...15 bar						555			
0...0.6 bar						015			
0...1 bar						025			
0...1.6 bar						035			
0...2.5 bar						045			
0...4 bar						055			
0...6 bar						065			
0...10 bar						075			
0...16 bar						085			
0...25 bar						095			
0...40 bar						105			
0...60 bar						115			
0...100 bar						125			
0...160 bar						135			
0...250 bar						145			
0...400 bar						155			
0...600 bar						165			
0...1000 bar						175			
0...1600 bar	only with stainless steel connection available					185			
Mounting flange									
None							0		
Rear flange							1		
Front flange							2		
U-clamp	only with crimped-on ring case (nominal size 100 or 160 mm)						3		
Option									
None								0	
Filled case									
Unfilled case									0
Filled case (glycerine)	only with nominal size 100 or 160 mm								G

Bourdon tube pressure gauges, safety version

Type MRE-S, nominal sizes 100 and 160 mm

SIKA quality industrial grade pressure gauges with 100 or 160 mm stainless steel cases are suitable for measuring the pressure of gaseous or liquid media, but not for highly viscous or crystallizing media. The gauges conform to safety class S3 requirements as specified in EN 873-1.

- Safety pressure gauges compliant with EN 837-1
- Stainless steel case with bayonet ring
- Brass or stainless steel connection
- Connection at bottom or lower back G½ B
- EN 837-1 accuracy Class 1.0

Case type

The stainless steel case has a bayonet ring and is designed to conform to safety requirements similar to EN 837-1 S3. The gauges have a sturdy baffle between the dial plate and the Bourdon tube and connection block. The entire back cover is designed to blow out.

Display ranges

Available with DIN display ranges from -1...0 bar to 0...1600 bar or 0...1000 bar (only with brass connection). Special ranges can be provided on request.

Degree of protection according to EN 60529

IP54 (IP65 with filled case)

Dial

Aluminium, white with black scale markings.
Pointer: Aluminium, black

Window

Laminated safety glass

Pointer movement

Brass & German silver; stainless steel for gauges with stainless steel connection.

Connection threads and materials

Standard pressure gauges have a brass connection block and bronze Bourdon tube. A version with the connection block and Bourdon tube made from stainless steel is optionally available.

Type MRE-S

Temperature range

- **Storage temperature**
  -40 to 70 °C (-20 to 70 °C with filled case)
- **Ambient operating temperature**
  -40 to 60 °C (-20 to 60 °C with filled case)
- **Media temperature**
  Gauges with brass connection 60 °C max.
  Gauges with stainless steel connection 200 °C max.
  (100 °C max. with filled case)

Ambient temperature sensitivity

The pressure gauges are calibrated at a reference temperature of 20 °C. At other operating temperatures the maximum indication error is ±0.4 % of full scale per 10 °C difference in accordance with EN 837-1.

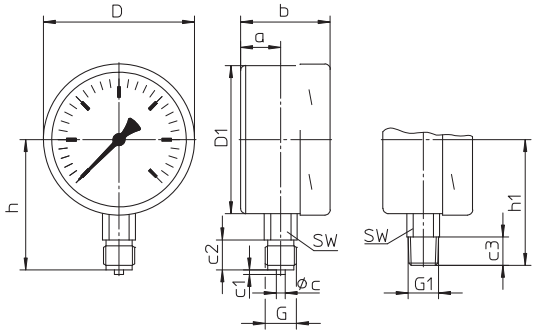
Options

- Throttle screw in inlet channel
- With glycerine filled case
- Aluminium adjustable pointer (only with unfilled case)
- Customer-specific special scales are available with large order quantities

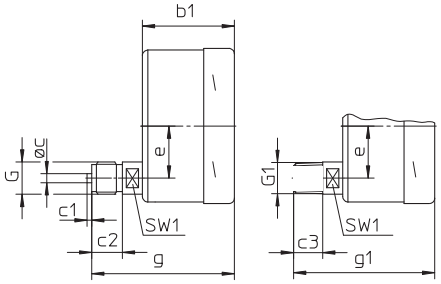
Maximum pressure load	
Static load	100 % of full scale value
Dynamic load	90 % of full scale value
Overload	Max. 130 % of full scale value

Types and dimensions

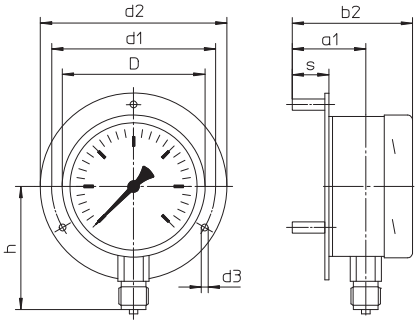
Bottom connection
Without mounting flange



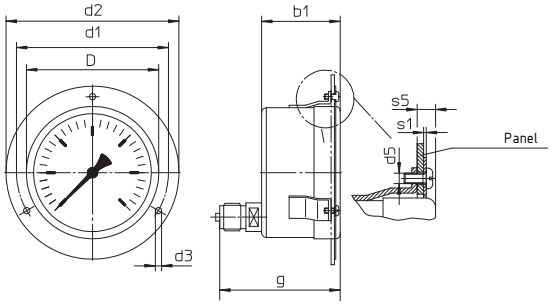
Lower back connection
Without mounting flange



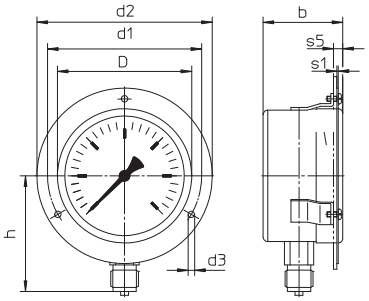
Bottom connection
With mounting flange at rear*



Lower back connection
With flange at front ***



Bottom connection
With mounting flange at front **



* This version is supplied with three separate spacers. They must always be fitted when the gauge is installed in order to ensure proper operation of the blowout back wall.

** Available on request, but not recommended by EN 837-1. Recommended panel opening diameter 104 ± 0.5 mm for nominal size 100 mm or 164 ± 0.5 mm for nominal size 160 mm.

*** Recommended panel opening diameter 104 ± 0.5 mm for nominal size 100 mm.

Dimensions [mm]

NS	a	a1	b	b1	b2	c	c1	c2	c3	D	D1	d1	d2	d3	d5
100	27	52	60	60	85	6	3	20	19	101	99	116	132	4.8	M4
160	40	70	78	78	108	6	3	20	19	161	159	178	196	5.8	M5

Dimensions [mm]													Weight [kg] (approx.)*	
NS	e	G	G1	g	g1	h ±1	h1 ±1	s	s1	s5	SW	SW1	unfilled	filled
100	34	G½ B	½ NPT	93	92	87	84	26	1	7	22	17	0.65	1.00
160		M20 x 1.5				115	114	31.5	1.5	9	22		1.50	2.95

* Data applies to versions without mounting flange.

Order code

Order example	MRES	3	1	1	315	0	0	0
Bourdon tube pressure gauges, safety version								
Bayonet ring case	MRES							
Nominal size								
100 mm		3						
160 mm		4						
Connection thread								
G½ B bottom			1					
G½ B lower back			2					
M20 x 1.5 bottom			3					
M20 x 1.5 lower back			4					
½ NPT bottom			B					
½ NPT lower back			C					
Connection material								
Brass				1				
Stainless steel				3				
Display ranges								
-1...0 bar					315			
-1...0.6 bar					505			
-1...1.5 bar					515			
-1...3 bar					525			
-1...5 bar					535			
-1...9 bar					545			
-1...15 bar					555			
0...0.6 bar					015			
0...1 bar					025			
0...1.6 bar					035			
0...2.5 bar					045			
0...4 bar					055			
0...6 bar					065			
0...10 bar					075			
0...16 bar					085			
0...25 bar					095			
0...40 bar					105			
0...60 bar					115			
0...100 bar					125			
0...160 bar					135			
0...250 bar					145			
0...400 bar					155			
0...600 bar					165			
0...1000 bar					175			
0...1600 bar	only with stainless steel connection available				185			
Mounting flange								
None						0		
Rear flange						1		
Front flange						2		
Option								
None							0	
Filled case								
Unfilled case								0
Filled case (glycerine)								G

Bourdon tube pressure gauges, high-pressure version

Type MRE-S-HD, nominal sizes 100 and 160 mm

SIKA quality high-pressure gauges with 100 or 160 mm stainless steel cases are suitable for measuring pressures up to 4000 bar in hydraulic systems.

- Safety pressure gauges compliant with EN 837-1 S3
- Stainless steel case with bayonet ring
- High-pressure process connection with M16 x 1.5 female thread and sealing cone for ¼" tube
- Connection at bottom
- EN 837-1 accuracy class 1.0

Type MRE-S-HD

Case type

The stainless steel case has a bayonet ring and is designed to conform to safety requirements similar to EN 837-1 S3. The gauges have a sturdy baffle between the dial plate and the Bourdon tube and connection block. The entire back cover is designed to blow out.

Display ranges

DIN display ranges 0...2500 bar and 0...4000 bar available.

Degree of protection according toEN 60529

IP54 (IP65 with filled case)

Dial

Aluminium, white with black scale markings.
Pointer: Aluminium, black

Window

Laminated safety glass

Pointer movement

Stainless steel

Components in contact with media

The connection thread is made from stainless steel, and the spiral Bourdon tube is made from either stainless steel or nickel-iron alloy, depending on the display range.

Maximum pressure load	
Static load	100 % of full scale value
Dynamic load	65 % of full scale value
Overload	Max. full scale value

Temperature range

- **Storage temperature**
  -40 to 70 °C (-20 to 70 °C with filled case)
- **Ambient operating temperature**
  -40 to 60 °C (-20 to 60 °C with filled case)
- **Media temperature**
  200 °C max. (100 °C max. with filled case)

Ambient temperature sensitivity

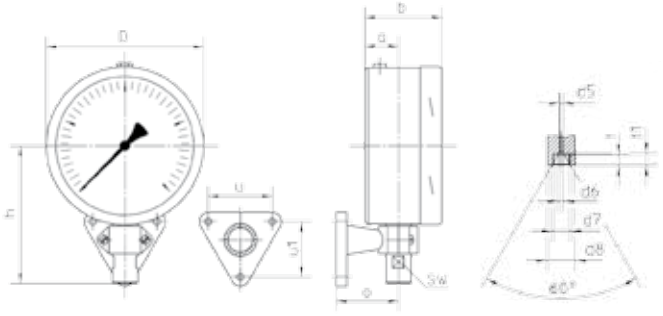
The pressure gauges are calibrated at a reference temperature of 20 °C. At other operating temperatures the maximum indication error is ±0.4 % of full scale value per 10 °C difference in accordance with EN 837-1.

Options

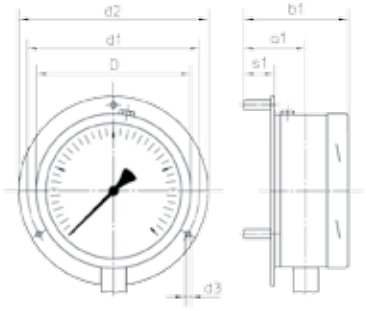
- Other high-pressure threads
- Display range 0...3000 bar; others available on request
- With glycerine filled case
- Aluminium adjustable pointer (only with unfilled case)
- Customer-specific special scales available with large order quantities

Types and dimensions

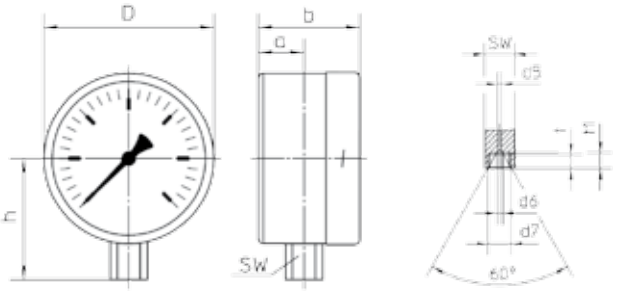
Bottom connection
Without mounting flange*, NS 160 with wall bracket



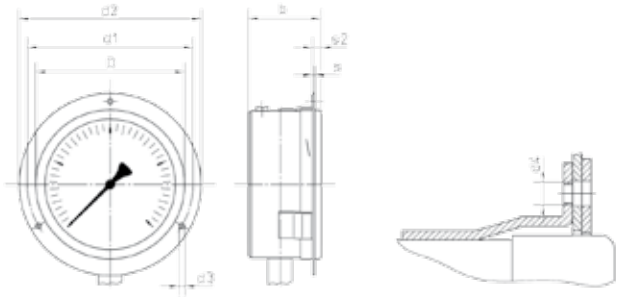
Bottom connection
With rear flange**



Bottom connection
Without mounting flange, NS 100



Bottom connection
With front flange***



* An aluminium wall bracket with black finish and 60 mm protrusion is included in the price for this version (scale range 0...4000 bar).

** This version comes with three separate standoffs. They must always be fitted when the gauge is installed in order to ensure proper functioning of the blow out back wall spacers.

*** Version with three fixing lugs welded to the case and a separate trim ring with three holes.

Dimensions [mm]													
NS	**D**	**d1**	**d2**	**d3**	**d4**	**d5**	**d6**	**d7**	**d8**	**a**	**a1**	**b**	**b1**
100	101	116	132	4.8	M4	2.5	4.3	M16 x 1.5 HD	-	27	52	60	90
160	161	178	196	5.8	M5	2.5	4.3	M16 x 1.5 HD	26	34	64	78	108

Dimensions [mm]											Weight [kg] (approx.)*	
NS	**h ±1**	**o**	**s**	**s1**	**s2**	**t**	**t1**	**u**	**u1**	**SW**	**unfilled**	**filled**
100	71	-	1	26	7	9.5	11	-	-	22	0.65	1.00
160	139	63	1.5	32	8	9.5	11	65	56	22	2.00	3.10

* Data applies to versions without mounting flange

Order code

Order example	MRESHD	3	H	3	195	0	0	0
Bourdon tube safety pressure gauges, high-pressure version								
Bayonet ring case	MRESHD							
Nominal size								
100 mm		3						
160 mm		4						
Connection thread								
High-pressure bottom connection (M16x1.5 female thread and sealing cone for ¼" tube)			H					
Connection material								
Stainless steel				3				
Display ranges								
0...2500 bar					195			
0...4000 bar					205			
Mounting flange								
None						0		
Rear flange						1		
Front flange						2		
Option								
None							0	
Filled case								
Unfilled case								0
Filled case (glycerine)								G

Bourdon tube pressure gauges, precision version

Type MFE, nominal sizes 100, 160 and 250 mm

SIKA quality precision pressure gauges with 100, 160 or 250 mm stainless steel cases are suitable for the precise measurement of the pressure of gaseous or liquid media, but not for highly viscous or crystallizing media. These gauges are used in precision equipment, in laboratories and for checking plant pressure gauges.

- Precision pressure gauges compliant with EN 837-1
- Stainless steel case with bayonet ring
- Brass or stainless steel connection
- Connection at bottom or lower back G½ B
- EN 837-1 accuracy class 0.6

Case type

The stainless steel case has a bayonet ring. Gauges with 100 and 160 mm nominal size are optionally available with filled case (glycerine).

Display ranges

DIN scale ranges from -1...0 bar to 0...600 bar or 0...1,600 bar (with stainless steel connection) are available. Filled case versions are available with scale ranges of 1...1.5 bar. Special ranges can be provided on request. See order code for detailed information.

Degree of protection according to EN 60529

IP54 (IP65 with filled case)

Dial

Aluminium, white; black scale markings
Pointer: knive edge pointer for precise reading

Window

Instrument glass; laminated safety glass for gauges with stainless steel connection

Pointer movement

Brass & German silver, low-friction.

Connection threads and materials

The connection block is made from brass; the Bourdon tube is made from bronze or another copper alloy. Bourdon tubes of gauges with stainless steel connection are made from stainless steel; Bourdon tubes for scale ranges ≥1000 bar are made from nickel-steel alloys.

Maximum pressure load	
Static load	Full scale value
Dynamic load	90 % of full scale value
Overload	Max. 130 % of full scale value

Type MFE

Temperature range

- **Storage temperature**
  -40 to 70 °C (-20 to 70 °C with filled case)
- **Ambient operating temperature**
  -40 to 60 °C (-20 to 60 °C with filled case)
- **Media temperature**
  Gauges with brass connection 60 °C max.
  Gauges with stainless steel connection 200 °C max.
  (100 °C max. with filled case)

Ambient temperature sensitivity

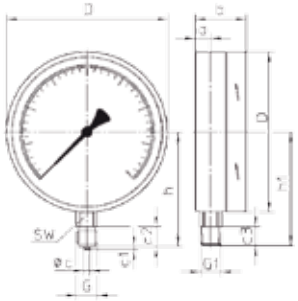
The pressure gauges are calibrated at a reference temperature of 20 °C. At other operating temperatures the maximum indication error is ±0.4 % of full scale per 10 °C difference in accordance with EN 837-1.

Options

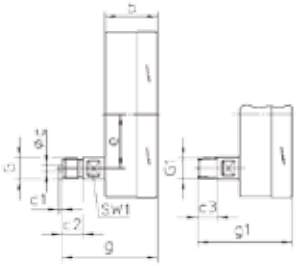
- Adjustment screw for zero point correction (with unfilled case versions, only for NS 160 and 250 mm)
- Throttle screw in inlet channel
- With glycerine filled case

Types and dimensions

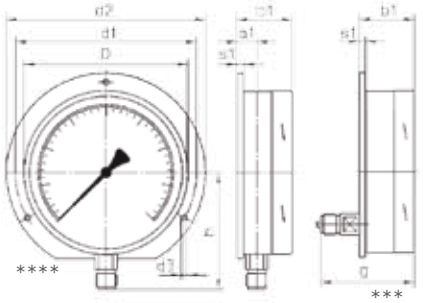
Without mounting flange
Bottom connection



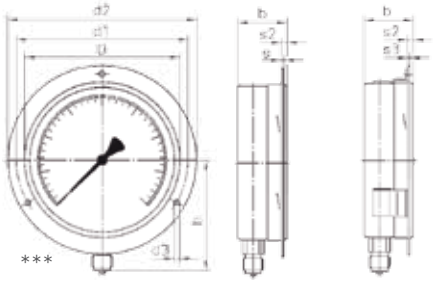
Without mounting flange
Lower back connection



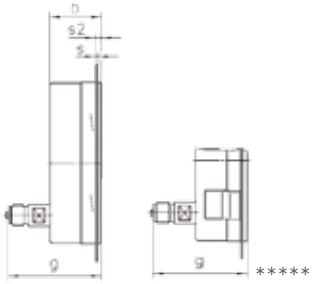
With rear mounting flange*
Bottom or lower back connection***



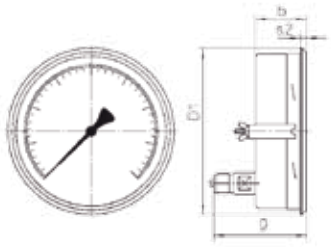
With front mounting flange
Connection at bottom**



With front mounting flange
Lower back connection**



With u-clamp
Connection at lower back



* Nominal size 250, with lugs
** Unfilled version, with fixed front ring, with oval holes and separate trim ring for nominal size 160
Filled version, with lugs welded onto case and separate front ring
*** Available on request, but not recommended by EN 837-1.
**** NS 100 optionally available with oval holes compliant with EN 837-1.
***** Recommended panel opening: Ø 104 ± 0.5 mm for NS 100; Ø 164 ± 0.5 mm for NS 160; Ø 254 ± 0.5 mm for NS 250

Dimensions [mm]

NS	a	a1	b	b1	c	c1	c2	c3	D	D1	d1	d2	d3	e	g	g1
100	20	23.5	55	58.5	6	3	20	19	101	99	116	132	4.8	30	97	96
160	15.5	19	51	54	6	3	20	19	161	167	178	196	5.8	52	92.5	91.5
250	15.5	17.5	58	60	6	3	20	19	251	-	270	285	5.8	52	97	96

Dimensions [mm]											Weight [kg] (approx.)*	
NS	G	G1	h ±1	h1 ±1	s	s1	s2	s3	SW	SW1	unfilled	filled
100	G½ B	½ NPT	87	84	2	6	5.5	-	22	17	0.60	0.95
160	M20 x 1.5		115	114	2.5	6	6	1.5	22	17	1.10	1.95
250			165	164	2	2	7	2	22	17	2.10	-

* Data applies to versions without mounting flange

Order code

Order example		MFE	3	1	1	315	0	0	0
Bourdon tube pressure gauges, precision version									
Bayonet ring case		MFE							
Nominal size									
100 mm			3						
160 mm			4						
250 mm			5						
Connection thread									
G½ B bottom				1					
G½ B lower back				2					
M20 x 1.5 bottom				3					
M20 x 1.5 lower back				4					
G¼ B Bottom				7					
½ NPT bottom				B					
½ NPT lower back				C					
Connection material									
Brass					1				
Stainless steel					3				
Display ranges									
-1...0 bar						315			
-1...0.6 bar						505			
-1...1.5 bar						515			
-1...3 bar						525			
-1...5 bar						535			
-1...9 bar						545			
-1...15 bar						555			
0...0.6 bar						015			
0...1 bar						025			
0...1.6 bar						035			
0...2.5 bar						045			
0...4 bar						055			
0...6 bar						065			
0...10 bar						075			
0...16 bar						085			
0...25 bar						095			
0...40 bar						105			
0...60 bar						115			
0...100 bar						125			
0...160 bar						135			
0...250 bar						145			
0...400 bar						155			
0...600 bar						165			
0...1000 bar	only with stainless steel connection (not available for NS 100)					175			
0...1600 bar	only with stainless steel connection (not available for NS 100)					185			
Mounting flange									
None							0		
Rear flange							1		
Front flange							2		
U-clamp	only with 100 and 160 mm nominal size (unfilled)						3		
Option									
None								0	
Filled case									
Unfilled case									0
Filled case (glycerine)	only with 100 and 160 mm nominal size								G

Bourdon tube pressure gauges, marine version

MRE-M, nominal size 63 and 100 mm

SIKA manometers with 63 or 100 mm stainless steel cases in marine design are high-quality manometers that we produce in common versions and in large quantities. We keep these versions in stock specifically for shipbuilding and the shipping trade. By concentrating on optimised quantities of common types we achieve attractive sales prices.

These devices are only available as described in the data sheet. We implement options and special wishes based on our industrial versions (types MRE and MRE-G).

- Pressure gauges compliant with EN 837-1
- Stainless steel case with crimped-on ring
- Brass or stainless steel threaded connection
- Connection at bottom or centre rear, G½ B
- EN 837-1 accuracy class 1.0, class 1.6
  (for display range 0...600 or 0...1000 bar)

Type MRE-M

Ambient temperature sensitivity

The pressure gauges are calibrated at a reference temperature of 20 °C. At other operating temperatures the maximum indication error is ±0.4 % of full scale value per 10 °C difference in accordance with EN 837-1.

Case type

Available only with type MRE-g crimped-on ring case. Case ventilation is provided by a pressure equalisation insert.

Display ranges

DIN display ranges from -1...0 bar to 0...600 bar available.

Degree of protection according to EN 60529

IP65

Dial

Aluminium, white with black scale markings.

Window

Plastic, clear

Pointer movement

Brass & German silver; stainless steel for gauges with stainless steel connection.

Connection threads and materials

The connection block and the Bourdon tube is made from copper alloy. Instruments with NS 100 mm and bourdon tubes for scale ranges ≥100 bar are made from stainless steel.

Temperature range

- **Storage temperature**
  -20 to 60 °C
- **Ambient operating temperature**
  -20 to 60 °C
- **Media temperature**
  Gauges with brass connection 60 °C max.

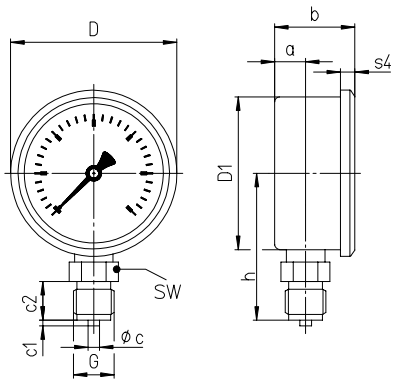
Options

- Mounting flange at front or rear
- U-clamp fixing
- Other options ca be realized based on our industrial version (Typen MRE und MRE-g)

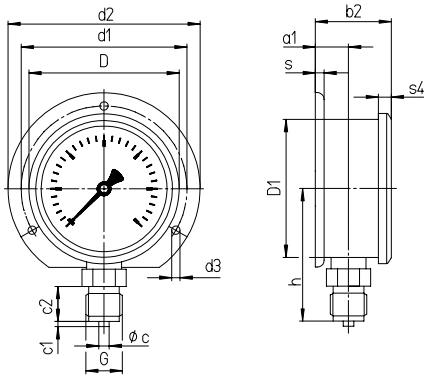
Maximum pressure load	63 mm	100 mm
Static load	75 % of full scale value	100 % of full scale value
Dynamic load	65 % of full scale value	90 % of full scale value
Overload	Full scale value	130 % of full scale value

Types and dimensions

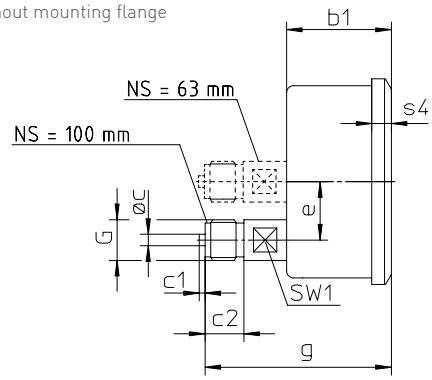
Bottom connection
Without mounting flange



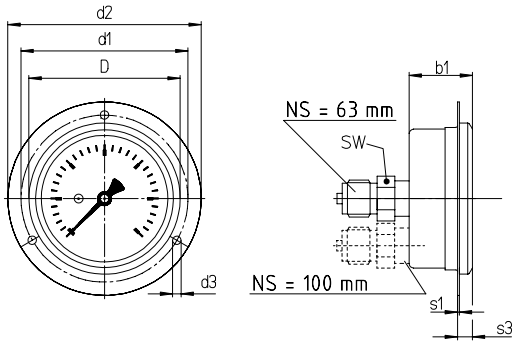
Bottom connection
With rear flange



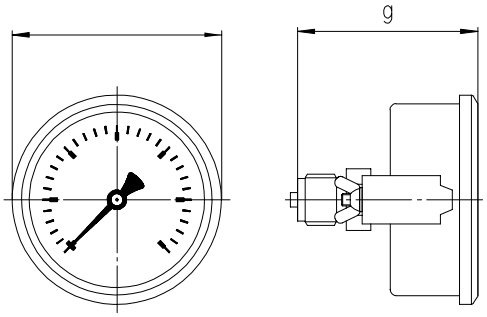
Central back connection
Without mounting flange



Central back connection
With front flange



Central back connection
Available with u-clamp



Dimensions [mm]

NS	D	D1	a	a1	b	b1	b2	c	c1	c2	d1	d2	d3	e	G	g	h	s	s1	s3	SW
63	68	62	13	14	32	32	33	5	2	13	75	85	3.6	-	G¼	58	54	1	1	4.5	14
100	107	99	15.5	14	48	48	49	6	3	20	115	132	5.1	30	G½	81.5	87	1	1	6	22

Order code

Order example	MREM	3	1	1	315	0	0	G
Bourdon tube pressure gauges, industrial version								
Crimped-on ring case	MREM							
Nominal size								
63 mm		1						
100 mm		3						
Connection thread								
G¼ B bottom (63 mm)			1					
G½ B bottom (100 mm)			1					
G¼ central back connection (63 mm)			5					
G½ B central back connection (100 mm)			2					
Connection material								
Brass				1				
Stainless steel (only for 0...1000 bar and 0...1600 bar)				3				
Display ranges								
-1...0 bar					315			
-1...0.6 bar					505			
-1...1.5 bar					515			
-1...3 bar					525			
-1...5 bar					535			
-1...9 bar					545			
-1...15 bar					555			
0...0.6 bar					015			
0...1 bar					025			
0...1.6 bar					035			
0...2.5 bar					045			
0...4 bar					055			
0...6 bar					065			
0...10 bar					075			
0...16 bar					085			
0...25 bar					095			
0...40 bar					105			
0...60 bar					115			
0...100 bar					125			
0...160 bar					135			
0...250 bar					145			
0...400 bar					155			
0...600 bar					165			
0...1000 bar					175			
Mounting flange								
None						0		
Rear flange						1		
Front flange						2		
U-clamp						3		
Option								
None							0	
Filled case								
Filled case (glycerine)								G

Bourdon tube pressure gauges, chiller version

Type MREG-K, nominal sizes 63, 80 and 100 mm

We manufacture pressure gauges specifically designed for use in refrigeration and chiller systems and specifically adapted to this application. They have scales showing both the pressure and the pressure-dependent evaporation temperature of the corresponding refrigerant. Some of these pressure gauges also have additional safety features according to the hazard classification of the refrigerant.

- Stainless steel crimped ring case
- Bottom or rear connection
- Brass connection (stainless steel for R717)
- EN 837-1 accuracy class 1 (class 1.6 with 63 mm case)
- Standard display ranges -1 to 15 bar, -1 to 24 bar, -1 to 30 bar
- Standard refrigerants R134a, R404a, R407c, R507, R717

Designed and built for safety

Refrigerants are classified into three groups according to VBG 20 Sect. 3:

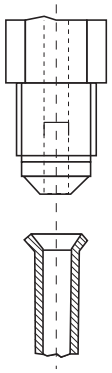
- Group 1:
  Non-flammable refrigerants with no harmful impact on health
- Group 2:
  Toxic or corrosive refrigerants and refrigerants with a lower explosion limit of at least 3.5 % by volume when mixed with air
- Group 3:
  As group 2, but with an explosion limit below 3.5% by volume

SIKA refrigeration pressure gauges comply with EN 837-1 safety level S2 for refrigerants in groups 1 and 2 and EN 837-1 safety level S3 for refrigerants in group 3.

Type MREG-K

Option

Thread 7/16"-20 UNF with tapered seal according to DIN 3866 for solderless connection to 6 mm tubing (¼" flare)



The provisions of the EN 837-2 standard should be observed when using pressure gauges.

Scales and types

Scales

Our gauges are available with standard display ranges of -1...15 bar, -1...24 bar and -1...30 bar. The scale plates are printed with combined pressure and temperature scales. The pressure scales are in bar, kPa / MPa or psi; the temperature scales are in °C or °F and match the evaporation pressure curve of the corresponding refrigerant. In accordance with DIN 16112, the temperature scales are implemented as „dot scales" and are usually printed in colour. Gauges with scales for more than one refrigerant can be supplied on request. SIKA offers a wide variety of ready-made special scales for individual measuring ranges and refrigerants. Please contact us to discuss your needs.

Examples of DIN 16112 compliant scales for R22 and R407c

Connection threads and materials

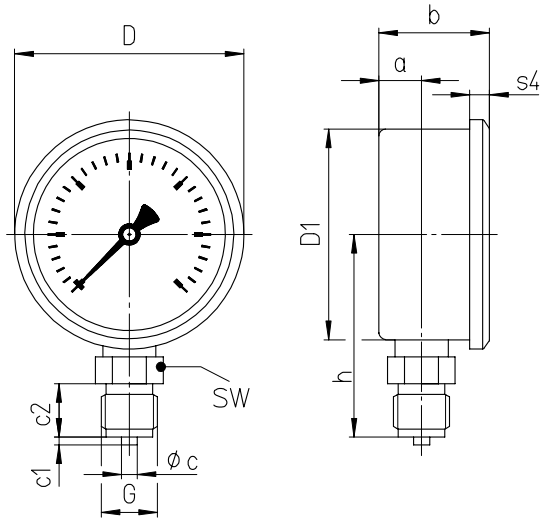
All pressure gauges have standard G¼ B or G½ B thread (also available with NPT thread). As an option, we can supply pressure gauges with ¼" flare connection according to the diagram. The components in contact with the medium being measured are made from brass or bronze. Non-ferrous metals are not allowed in gauges for use with ammonia refrigerant (R717, NH_3), so stainless steel alloys are used for this purpose.

Case

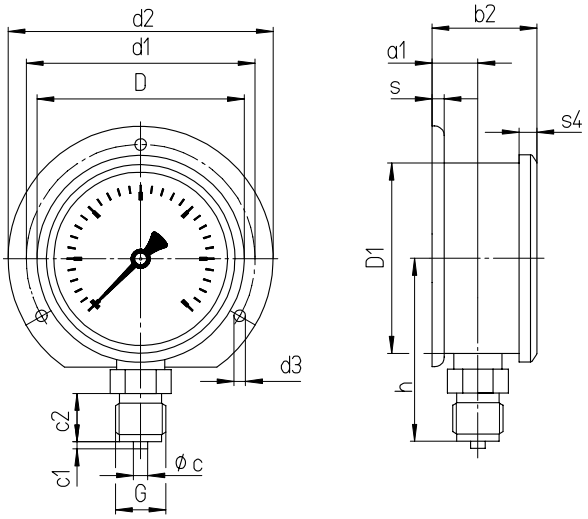
Cases of refrigeration pressure gauges can be painted in colour on request to enable the gauges to be visually associated with the corresponding cooling circuits and allow the system to be laid out for easier comprehension. For example, red may be used for the high-pressure side and blue for the low-pressure side.

Types and dimensions

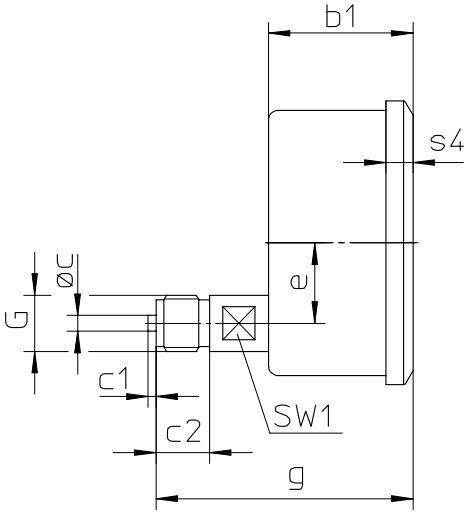
Bottom connection



Bottom connection with rear flange

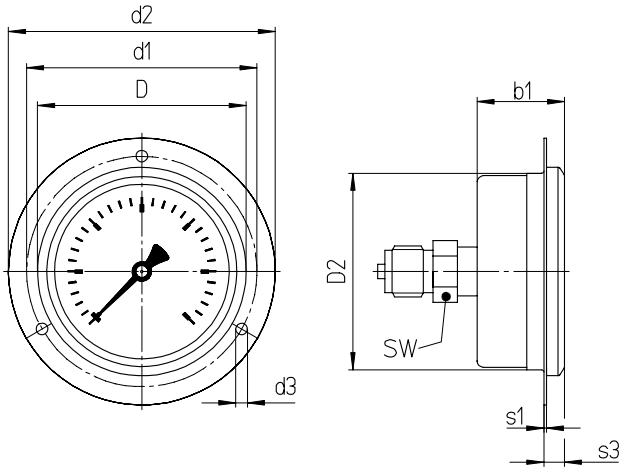


Lower back connection*



* Nominal size 80 mm has connection at centre back

Center back connection with front flange



Dimensions [mm]

NS	D	D1	a	a1	b	b1	b2	c	c1	c2	d1	d2	d3	e	G	g	h	s	s1	s3	SW
63	67	62	10	13	33	37	36	5	2	13	75	85	3.6	18	G¼ B	60	54	5	1	9.5	14
80	86	79	16	19	41.5	36	44	6	3	20	95	110	4.8		G½ B	74	76	5	1	9	22
100	106	99	20	23.5	54	54	57.5	6	3	20	116	132	4.8	30	G½ B	96	87	6	1	11.5	22

Order code

Order example			MREGK	1	1	1	K13	0	0	0
Chiller pressure gauges										
Crimped on ring case (standard with liquid-filled case)			MREGK							
Nominal size										
63 mm				1						
80 mm (not available for all refrigerants)				2						
100 mm				3						
Connection thread										
Ø 63 mm case	G¼ B bottom				1					
	G¼ B lower back connection				2					
	G¼ B central back connection				5					
	¼ NPT bottom				M					
	¼ NPT lower back connection				N					
	¼ NPT central back connection				S					
Ø 80 mm case	G½ B bottom				1					
	G½ B central back connection				2					
Ø 100 mm case	G½ B bottom				1					
	G½ B lower back connection				2					
	¼ flare bottom	only with brass connection			F					
	¼ flare lower back	only with brass connection			U					
Connection material										
Brass						1				
Stainless steel						3				
Refrigerant and display range										
R134a		-1...15 bar					K13			
		-1...24 bar					K14			
R404a		-1...15 bar					K16			
		-1...24 bar					K17			
R407c		-1...15 bar					K39			
		-1...24 bar					K41			
R507		-1...15 bar					K42			
		-1...24 bar					K43			
R717 (NH3)		-1...15 bar					K01			
		-1...24 bar					K02			
		-1...30 bar					K03			
Multiple scales*										
R12 / R22 / R134a		-1...15 bar					K24			
		-1...24 bar					K25			
		-1...30 bar					K27			
R22 / R134a / R404a		-1...15 bar					K37			
		-1...24 bar					K44			
		-1...30 bar					K36			
Mounting flange										
None								0		
Rear flange								1		
Front flange								2		
Option										
None									0	
Filled case										
Unfilled case										0
Filled case (glycerine)										G

* Some refrigerant and display range options are not available with all case sizes. Please enquire regarding the required gauge types.

Bourdon tube pressure gauges, US process version

Type MRP, nominal size 4½“

Version according to US standard, specifically designed for process applications in the chemical industry and in oil and gas applications. Suitable for pressure measurement with gaseous and liquid media, including aggressive media, that are not highly viscous.

- Thermoplastic case with integrated rear flange
- connection at bottom ½ NPT
- Stainless steel threaded connection and bourdon tube
- Accuracy compliant with Grade 2A according to ASME B40.1 (±0.5 %)
- Safety version

Type MRP

Case type

Pressure gauges with safety features similar to EN 837-1 S3, with solid front and pressure relief back. The case and integrated rear mounting flange are made from black thermoplastic PBTP. This material is flame retardant (fire class UL 94 V0) and impact resistant.

Display range / Scales compliant with ASME B40.1 or EN 873-1

These process pressure gauges are available in many commonly used ranges from 0...0.6 bar to 0...1000 bar, as well as the corresponding psi ranges from 0...10 psi to 0...15 000 psi. Scale plate white aluminium with black scale markings.

Degree of protection according toEN 60529

IP65

Dial

Aluminium, white with black scale markings.
Pointer: Aluminium, adjustable, black

Window

Laminated safety glass

Pointer movement

CrNi-Steel

Connection threads and materials

Connection and bourdon tube made from stainless steel.

Maximum pressure load	
Static load	Full scale value
Dynamic load	90 % of full scale value
Overload	Max. 130 % of full scale value

Temperature range

- **Storage temperature**
  -40 to 70 °C (-20 to 70 °C with filled case)
- **Ambient operating temperature**
  -40 to 60 °C (-20 to 60 °C with filled case)
- **Media temperature**
  100 °C max. (70 °C max. with filled case)

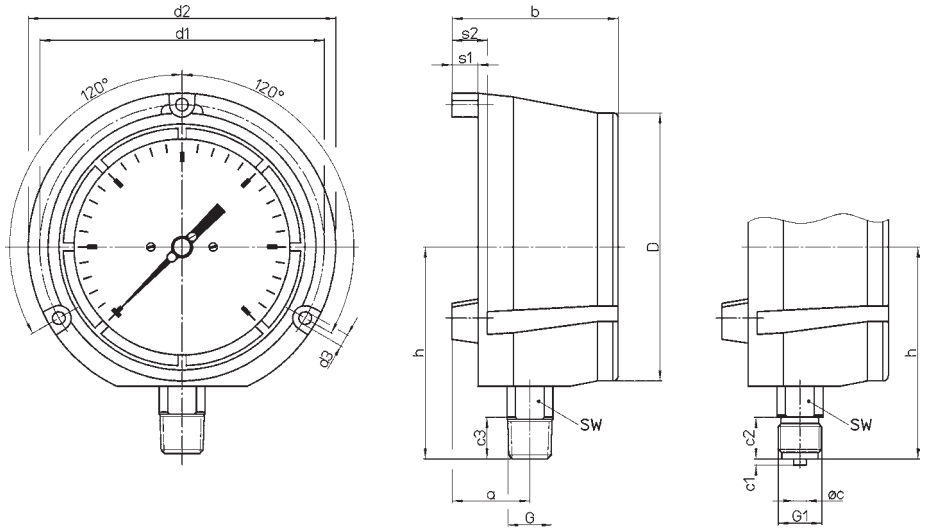
Ambient temperature sensitivity

The pressure gauges are calibrated at a reference temperature of 20 °C/68 °F. According to the ASME standards the maximum permissible deviation per 28 °C/50 °F may be up to ±1 %.

Options

- With glycerine filled case

Types and dimensions



Dimensions [mm]																	Weight [kg] (approx.)	
NS	**a**	**b**	**c**	**c1**	**c2**	**c3**	**D**	**d1**	**d2**	**d3**	**G**	**G1**	**h**	**s1**	**s2**	**SW**	**unfilled**	**filled**
4½"	38	80	6	3	20	19	129	137	148	6.1	½ NPT	G½ B	102	12.5	17	22	0.85	1.25

Order code

Order example	MRP	3	M	3	015	1	0	0	-	P
Bourdon tube pressure gauges,process version according to US standard										
Plastic case	MRP									
Nominal size										
4½"		3								
Connection thread										
¼ NPT bottom			M							
½ NPT bottom			B							
G½ B bottom			1							
Connection material										
Stainless steel				3						
Display ranges*										
0...0,6 bar					015					
0...1 bar					025					
0...1,6 bar					035					
0...2,5 bar					045					
0...4 bar					055					
0...6 bar					065					
0...10 bar					075					
0...16 bar					085					
0...25 bar					095					
0...40 bar					105					
0...60 bar					115					
0...100 bar					125					
0...160 bar					135					
0...250 bar					145					
0...400 bar					155					
0...600 bar					165					
0...1000 bar					175					
Mounting flange										
Integrated rear flange						1				
Option										
None							0			
Filled case										
Unfilled case								0		
Filled case (glycerine)								G		
Scale										
Scale range in bar										
Scale range in psi										P
Scale range with dual scale bar & psi										1

* Other ranges (vacuum or pressure, as well as psi) available on request.

Bourdon tube pressure gauges, special version

For separators for flow measurement, type MRE-g, nominal size 63 mm

SIKA manometers for separators with 63 mm stainless-steel housing are especially suitable for flow measurement dependent on the pressure on the separators. Depending on the separator, various display ranges are available.

- Pressure gauges compliant with EN 837-1
- Stainless steel case with crimped-on ring
- Stainless steel connection
- Connection at bottom G¼ B
- EN 837-1 accuracy class 1.6
- DNV GL type approval certificate available

Case type

The stainless steel case is available with a crimped-on ring. Case ventilation is provided by a pressure equalisation insert.

Display ranges

Multiple scales in bar, l/h and USg/h

Display ranges		
0...1 bar	150...400 l/h	40...100 USg/h
0...1 bar	300...800 l/h	80...200 USg/h
0...1 bar	400...1200 l/h	60...320 USg/h
0...1 bar	500...2500 l/h	180...660 USg/h
0...1 bar	500...4000 l/h	100...1100 USg/h
0...1 bar	1000...6000 l/h	300...1500 USg/h
0...1 bar	2000...12 000 l/h	500...3200 USg/h
0...2.5 bar	2000...16 000 l/h	1000...4300 USg/h

Degree of protection according to EN 60529

IP65 for filled case with closed pressure equalisation insert

Dial

Aluminium, white with black scale markings.

Pointer: Aluminium, black.

Window

Instrument glass

Pointer movement

CrNi-Steel

Type MRE-g

Connection threads and materials

The pressure gauges have a stainless steel thread.

Maximum pressure load	
Static load	75 % of full-scale value
Dynamic load	65 % of full-scale value
Overload	Max. 2-times of full-scale value

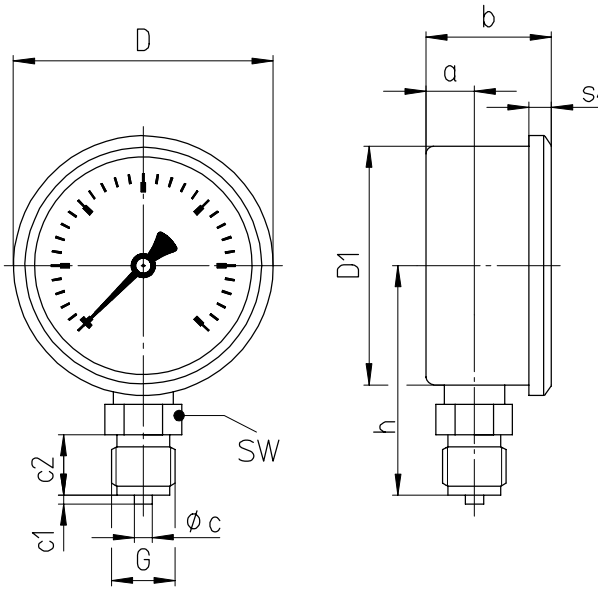
Temperature range

- **Storage temperature**
  -20...70 °C
- **Ambient operating temperature**
  -20...60 °C
- **Media temperature**
  Up to 160 °C

Ambient temperature sensivity

The pressure gauges are calibrated at a reference temperature of 20 °C. At other operating temperatures the maximum indication error is ±0.4 % of full scale value per 10 °C difference in accordance with EN 837-1.

Types and dimensions



Dimensions [mm]

NS	D	D1	a	a1	b	b1	b2	c	c1	c2	d1	d2	d3	e	G	g	h	s	s1	s3	SW
63	67	62	10	13	33	37	36	5	2	13	75	85	3.6	18	G¼ B	60	54	5	1	9.5	14

Order code

Order example		MREG	1	1	1	02513	G	DA
Bourdon tube pressure gauges for separators								
Crimped on ring case		MREG						
Nominal size								
63 mm			1					
Connection thread								
G¼ B bottom				1				
Connection material								
Brass					1			
Display range								
Pressure	**Flow rate**							
0...1 bar	2000...12 000 l/h, 500...3200 USg/h					02513		
0...1 bar	1000...6000 l/h, 3000...1500 USg/h					02523		
0...1 bar	150...400 l/h, 40...100 USg/h					02533		
0...1 bar	300...800 l/h, 80...200 USg/h					02543		
0...1 bar	400...1200 l/h, 60...320 USg/h					02553		
0...1 bar	500...4000 l/h, 100...1100 USg/h					02544		
0...2.5 bar	2000...16 000 l/h, 1000...4300 USg/h					04503		
Filled case								
Filled case (glycerine)							G	
Additional product information								
Flow indicators								DA

Differential pressure gauges with 2 bourdon tubes

Type MDE, nominal sizes 100 and 160 mm

SIKA differential pressure gauges with two bourdon tubes are instruments for measuring two different pressures and indication of the differential pressure. They are provided with turnable scale disc bar / mWS for direct indication of the positive or negative differential pressure (each 50 % of the full scale value). They are used in heating systems (supply and return lines) and filter systems.

Differential pressure gauges should be selected with a full-scale value that is at least as large as the maximum pressure occurring in the system. The pressure gauges can be operated at pressures up to the maximum scale pressure, but they cannot withstand overpressure. To ensure good readability of the differential pressure, the differential pressure should not be less than about 20 % of the full scale value.

- Pressure gauges compliant with EN 837-1
- Stainless steel case with bayonet ring
- Brass or stainless steel connection
- Connection at bottom parallel one behind the other, 2x G½ B
- EN 837-1 accuracy, class 1.6
- Dial with dual scale bar / mWS for the reading of the pressures in each system

Case type

The stainless steel case is available with a bayonet ring.

Construction

The instruments are provided with two independently working measuring systems, each system with its own pressure connection. The connections are marked with + and - (+ for the higher pressure, - for the lower pressure). A special duplex movement with the pointer arbors seated co-axial into each other transfers the pressure proportional motions of both Bourdon tubes to the pointers.

Display range

DIN display ranges available from 0...0.6 bar up to 0...600 bar.

Degree of protection according to EN 60529

IP54 (IP65 for filled case).

Maximum pressure load	
Static load	100 % of full scale value
Dynamic load	90 % of full scale value
Overload	Max. of full scale value

Type MDE

Dial

Aluminium, white; with black scale markings.
Pointer: 1. knife-edge pointer, aluminium, black.
2. pointer, aluminium, red, fixed on turnable scale.

Window

Instrument glass, laminated safety glass for gauges with stainless steel connection.

Pointer movement

Brass / german silver, stainless steel for gauges with stainless steel connection.

Connection threads and materials

Standard pressure gauges have a brass connection thread and bronze Bourdon tube. Version with connection thread and Bourdon tube made from stainless steel is optionally available.

Temperature range

- **Storage temperature**
  -40 to 70 °C (-20 to 70 °C with filled case)
- **Ambient operating temperature**
  -40 to 60 °C (-20 to 60 °C with filled case)
- **Media temperature**
  Gauges with brass connection: 60 °C max.
  Gauges with stainless steel connection: 100 °C max.

Ambient temperature sensitivity

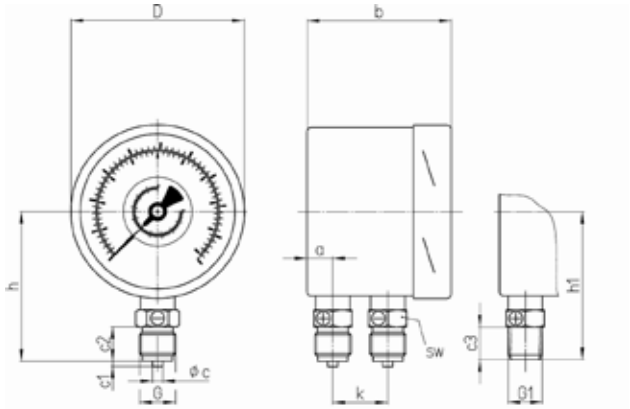
The pressure gauges are calibrated at a reference temperature of 20 °C. At other operating temperatures the maximum indication error is ±0.4 % of full scale value per 10 °C difference in accordance with EN 837-1.

Options

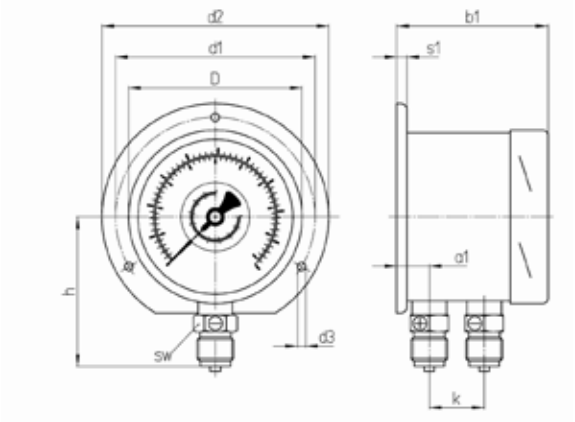
- With glycerine filled case
- Customer-specific special scales available with large order quantities

Types and dimensions

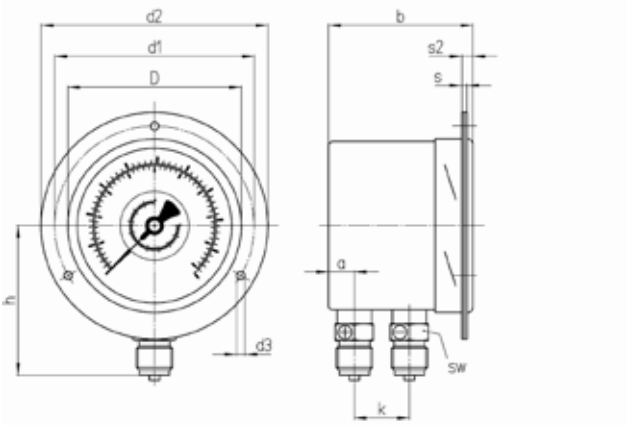
Without mounting flange
Parallel one behind the other



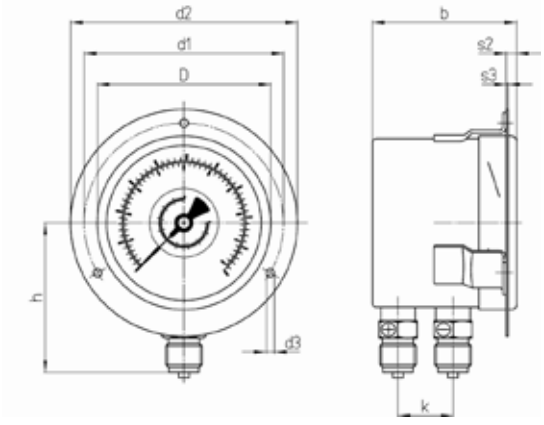
With rear flange
Parallel one behind the other



With front flange, unfilled*
Parallel one behind the other



With front flange, filled**
Parallel one behind the other



* Unfilled version with fixed front mounting flange with oval holes and separate trim ring.
** Filled version with lugs welded to the case and separate trim ring.

Dimensions [mm]

NS	D	d1	d2	d3	a	a1	b	b1	c	c1	c2	c3
100	100	116	132	4.8	15	19	85	89	6	3	20	19
160	160	178	196	5.8	33	37	104	106.5	6	3	20	19

Dimensions [mm]											Weight [kg] (approx)***	
NS	G	G1	h±1	h1±1	k	SW	s	s1	s2	s3	unfilled	filled
100	G½ B	½ NPT	87	86	32	22	2	6	6	1	0.90	1.50
160	G½ B	½ NPT	117	116	32	22	2	6	6	1	1.50	3.50

*** Data applies to versions without mounting flange

Order code

Order example	MDE	3	1	3	015	1	0	0
Differential pressure gauges with 2 bourdon tubes								
Bayonet ring case	MDE							
Nominal size								
100 mm		3						
160 mm		4						
Connection thread								
G½ B bottom			1					
NPT bottom			B					
M20 x 1.5			3					
Connection material								
Brass				1				
Stainless steel				3				
Display range								
0...0.6 bar					015			
0...1 bar					025			
0...1.6 bar					035			
0...2.5 bar					045			
0...4 bar					055			
0...6 bar					065			
0...10 bar					075			
0...16 bar					085			
0...25 bar					095			
0...40 bar					105			
0...60 bar					115			
0...100 bar					125			
0...160 bar					135			
0...250 bar					145			
0...400 bar					155			
0...600 bar					165			
Mounting flange								
None						0		
Rear flange						1		
Front flange						2		
Option								
None							0	
Filled case								
Unfilled case								0
Filled case (glycerine)								G

Type MDS, nominal sizes 100 and 160 mm

SIKA differential pressure gauges with two bourdon tubes are economical instruments for measuring two different pressures and indication of the differential pressure. They are provided with turnable scale disc bar / mWS for direct indication of the positive or negative differential pressure (each 50 % of the full scale value). They are used in heating systems (supply and return lines) and filter systems.

Differential pressure gauges should be selected with a full-scale value that is at least as large as the maximum pressure occurring in the system. The pressure gauges can be operated at pressures up to the maximum scale pressure, but they cannot withstand overpressure. To ensure good readability of the differential pressure, the differential pressure should not be less than about 20 % of the full scale value.

- Pressure gauges compliant with EN 837-1
- Polyamide case with black steel ring
- Brass or stainless steel connection
- Connection at bottom parallel one behind the other, 2x G½ B
- EN 837-1 accuracy, class 1.6
- Dial with dual scale bar / mWS for the reading of the pressures in each system

Type MDS

Case type

Polyamide case with black steel ring.

Construction

The instruments are provided with two independently working measuring systems, each system with its own pressure connection. The connections are marked with + and - (+ for the higher pressure, - for the lower pressure). A special duplex movement with the pointer arbors seated co-axial into each other transfers the pressure proportional motions of both Bourdon tubes to the pointers.

Display range

DIN display ranges available from 0...0.6 bar up to 0...600 bar.

Degree of protection according to EN 60529

IP43

Dial

Aluminium, white; with black scale markings.

Pointer: 1. knife-edge pointer, aluminium, black.

2. pointer, aluminium, red, fixed on turnable scale.

Maximum pressure load	
Static load	100 % of full scale value
Dynamic load	90 % of full scale value
Overload	Max. of full scale value

Window

Instrument glass

Pointer movement

Brass / German silver

Connection threads and materials

Standard pressure gauges have a brass connection thread and bronze Bourdon tube.

Temperature range

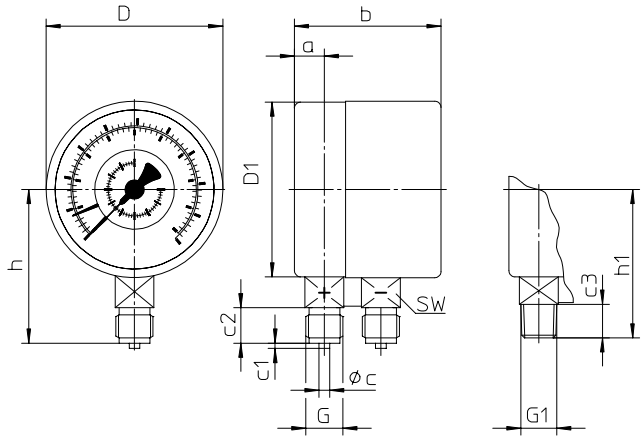
- **Storage temperature**
  -40 to 70 °C
- **Ambient operating temperature**
  -40 to 60 °C
- **Media temperature**
  Gauges with brass connection: 60 °C max. soft soldered
  Gauges with stainless steel connection: 100 °C max.

Ambient temperature sensitivity

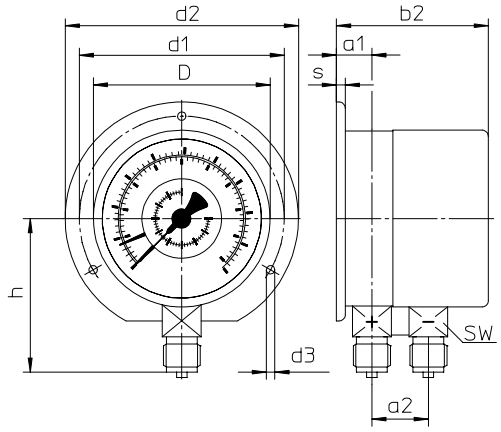
The pressure gauges are calibrated at a reference temperature of 20 °C. At other operating temperatures the maximum indication error is ±0.4 % of full scale value per 10 °C difference in accordance with EN 837-1.

Types and dimensions

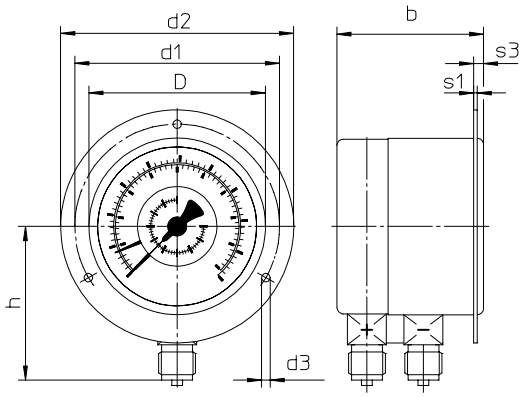
Without mounting flange
Bottom connections parallel one behind the other



With rear flange
Bottom connections parallel one behind the other



With front flange*
Bottom connections parallel one behind the other



* Recommended panel cut out NS 100: Ø104 ± 0.5 mm, NS 160: Ø164 ± 0.5 mm

Dimensions [mm]												
NS	**D**	**D1**	**d1**	**d2**	**d3**	**a**	**a1**	**a2**	**c**	**c1**	**c2**	**c3**
100	100	99	116	132	4.8	17	20	32	6	3	20	19
160	160	159	178	196	5.8	19	21	32	6	3	20	19

Dimensions [mm]											Weight [kg] (approx.)***
NS	**b**	**b2**	**G**	**G1**	**h**$^{\pm 1}$	**h1**$^{\pm 1}$	**SW**	**s**	**s1**	**s3**	**unfilled**
100	83	86	G½ B M20 x 1.5	½ NPT	87	84	22	5	2	5.5	0.75
160	85	87	G½ B M20 x 1.5	½ NPT	115	114	22	5	2	5.5	1.10

*** Data applies to versions without mounting flange

Order code

Order example	MDS	3	1	1	015	1	0	0
Differential pressure gauges with 2 bourdon tubes								
Polyamide 6B with black steel ring	MDS							
Nominal size								
100 mm		3						
160 mm		4						
Connection thread								
G½ B bottom			1					
M20 x 1.5			3					
NPT bottom			B					
Connection material								
Brass				1				
Stainless steel				3				
Display range								
0...0.6 bar					015			
0...1 bar					025			
0...1.6 bar					035			
0...2.5 bar					045			
0...4 bar					055			
0...6 bar					065			
0...10 bar					075			
0...16 bar					085			
0...25 bar					095			
0...40 bar					105			
0...60 bar					115			
0...100 bar					125			
0...160 bar					135			
0...250 bar					145			
0...400 bar					155			
0...600 bar					165			
Mounting flange								
None						0		
Rear flange						1		
Front flange						2		
Option								
None							0	
Filled case								
Unfilled case								0

Diaphragm pressure gauges

Type MPE, nominal sizes 100 and 160 mm

Pressure gauges with horizontal diaphragm allow to find suitable versions for even difficult kinds of media, such as aggressive, contaminated or viscous media. The stainless steel bayonet ring case is designed for applications where a rust resistant, sealed case of high chemical resistance is required (dirty damp, or corrosive atmosphere)..

- Pressure gauges compliant with EN 837-3
- Stainless steel case with bayonet ring
- Stainless steel connection, G½ B
- Connection at bottom, enlarged channel opening in case of PTFE lining, optional open flange
- EN 837-1 accuracy, class 1.6 (with protecting foil class 2.5)

Type MPE

Case type

The stainless steel case has a bayonet ring and is designed to conform to safety requirements similar to EN 837-1.

Display ranges (EN 837-3)

Display ranges from 0..10 mbar up to 0...40 bar, with PTFE-foil starting at 0...40 mbar; filled starting at 0...40 mbar available.

Degree of protection according to EN 60529

IP54 (unfilled), IP65 (filled)

Dial

Aluminium, white with black scale markings.
Pointer: Aluminium, black.

Window

Laminated safety glass

Pointer movement

CrNi-Steel

Measuring flange

Flange made of stainless steel.
Display ranges ≤250 mbar = Ø 160 mm
Display ranges ≥400 mbar = Ø 100 mm

Connection threads and materials

Pressure gauges with stainless steel connection are available with a stainless steel diaphragm (40 to 250 mbar) or a Duratherm diaphragm (0.4 to 40 bar). In addition, they can optionally be produced with PTFE lining.

Maximum pressure load	
Static load	100 % of full scale value
Dynamic load	90 % of full scale value
Overload	Up to 5-times, max. 40bar

Temperature range

- **Storage temperature**
  -40 to 70 °C (-20 to 70 °C with filled case)
- **Ambient operating temperature**
  -20 to 60 °C
- **Media temperature**
  100 °C max. (70 °C max. with filled case)

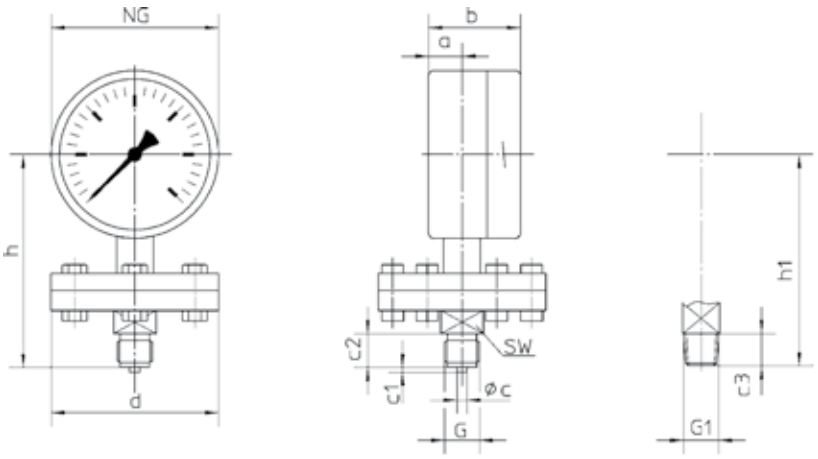
Ambient temperature sensitivity

The pressure gauges are calibrated at a reference temperature of 20 °C. At other operating temperatures indication errors can be considerable.

Options

- Inlet port orifice up to Ø 10 mm
- Hygienic connection, e.g. according to DIN 11851, DN 25 to DN 50
- Adjustable pointer, aluminum, black
- Diaphragm with protection foil: PTFE (>40 mbar, vacuum tight), sealing PTFE; Fine-silver (>160 mbar, vacuum tight), sealing FPM; Tantalum (>160 mbar, vacuum tight upon request), sealing PFTE, others upon request
- Up to 10-times overload protection, but max. 40 bar (600 psi) for measuring flange Ø 100 mm (3.94") max. 2.5 bar (40 psi) for measuring flange Ø 160 mm (6.3")
- Other filling fluid, silicone oil for temp. down to -40 °C (flange sealing PTFE)
- Version for temperatures >100 °C

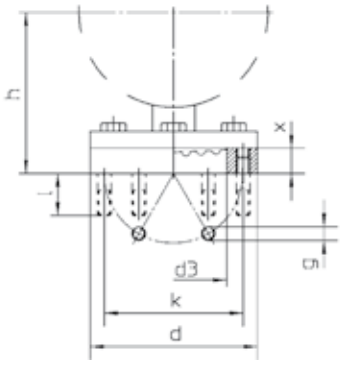
Types and dimensions



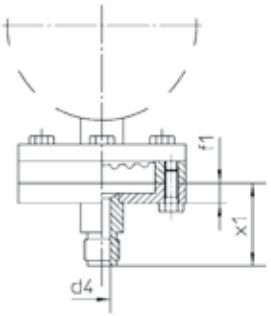
Dimensions [mm]													Weight [kg] (approx)*	
NS	Measuring flange Ø d	a	b	c	c1	c2	c3	G	G1	h ± 2	h1 ± 2	SW	unfilled	filled
100	100	20	55	6	3	20	19	G½	½ NPT	127	126	22	1.85	2.25
	160												3.45	3.65
160	100	20	55	6	3	20	19	G½	½ NPT	157	156	22	2.20	3.20
	160												3.80	4.80

Open flange 2707 a

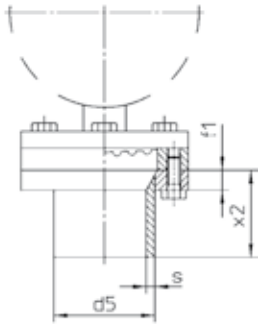
(with double-end studs if requested)



Optionally available:
Connection flange with thread connection G½ B (½" BSP) or ½" NPT, with enlarged inlet orifice.



Optionally available:
Connection flange with welding connection for measuring flange Ø 100 mm (3.94").



Dimensions [mm]														Weight [kg] (approx)*			
Measuring flange Ø d	d3	d4	d5**	f1	g	h ± 2		k	l	x	x1	x2	s	unfilled		filled	
						NS 100	NS 160							NS 100	NS 160	NS 100	NS 160
100	63.5	10	60.3	12	6 x M8	96	126	83	25	15	46	50	5	1.65	2.00	2.05	3.00
160	123				8 x M8			140						2.80	3.15	3.20	4.15

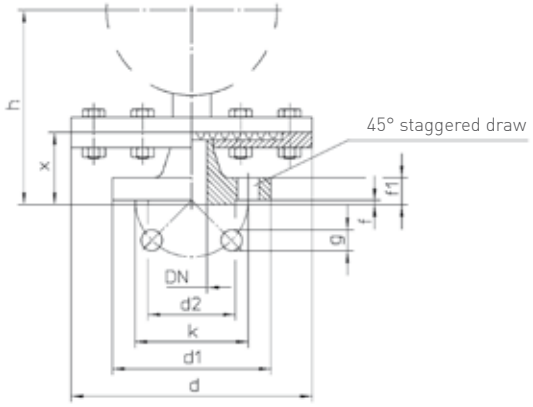
* For different display ranges and material the weights differ considerably

** Other pipe diameters on request

Types and dimensions

Open flanges according to DIN EN 1092-1, DN 15, 20, 25 and 50, PN10 to PN40,

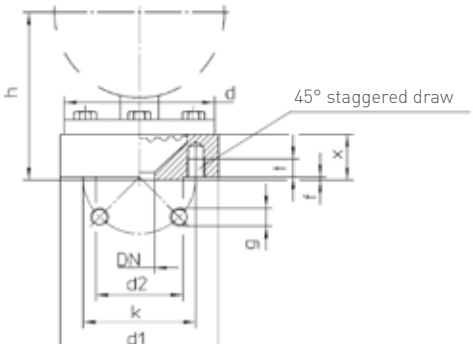
Measuring flange Ø d= 160 mm



Dimensions [mm]											Weight [kg] (approx.)*			
Measuring flange Ø d	DN	d1	d2	f	f1	g	h ± 2		k	x	unfilled		filled	
							NS 100	NS 160			NS 100	NS 160	NS 100	NS 160
160	15	95	45	2	16	4 x 14	127	157	65	46	4.15	4.50	4.55	5.50
	20	105	58		18		129	159	75	48	4.45	4.80	4.85	5.80
	25	115	68						85		4.60	4.95	5.00	5.95
	50	165	102		20	4 x 18	137	167	125	56	6.05	6.40	6.45	7.40

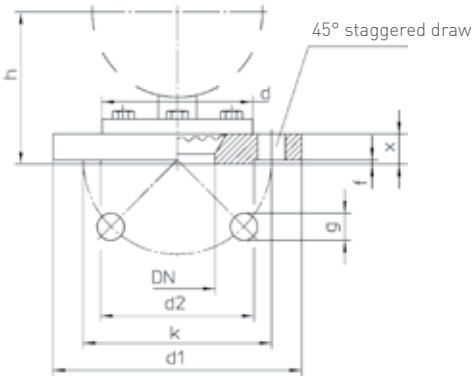
DN 15, 20 and 25

Measuring flange Ø d= 100 mm



DN 50

Measuring flange Ø d= 100 mm



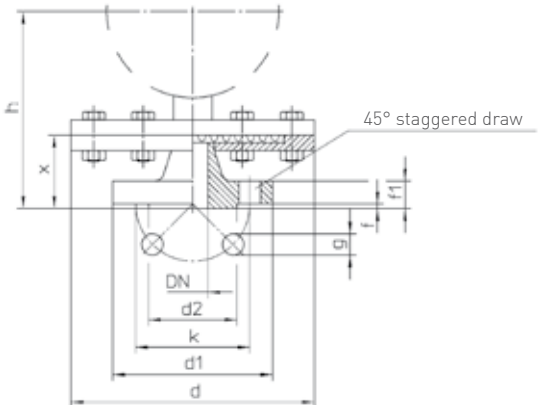
Dimensions [mm]										Weight [kg] (approx)*			
Measuring flange Ø d	DN	d1	d2	f	g	h ± 2		k	t	x	unfilled		filled	
						NS 100	NS 160				NS 100	NS 160	NS 100	NS 160
100	15	99	45	2	4 x M12**	106	157	65	12	30	2.30	2.65	2.70	3.65
	20	105	58					75			2.40	2.75	2.80	3.75
	25	115	68			103	133	85		22	2.50	2.85	2.90	3.85
	50	165	102		4 x Ø18	101	131	125		20	3.60	3.95	4.00	4.95

* For different display ranges and material the weights differ considerably

** With double-end studs M12 x 35 on request

Open flange according to ASME, ½“, 1“ and 2“, PN 150, 300 or 600 lb / sq.in. , ASME B 16,5 RF

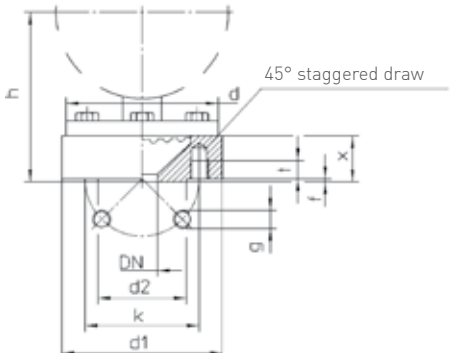
Measuring flange Ø d= 160 mm



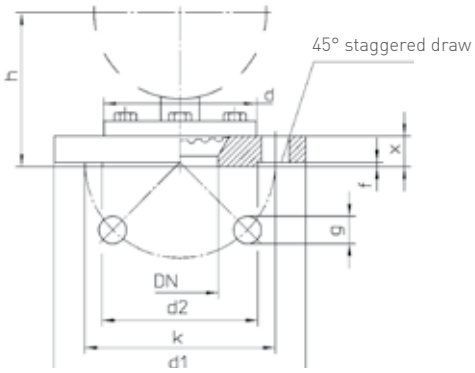
Dimensions [mm]											Weight [kg] (approx.)*			
Measuring flange Ø d	DN	d1	d2	f	f1	g	h ± 2		k	x	unfilled		filled	
							NS 100	NS 160			NS 100	NS 160	NS 100	NS 160
160	½“	88.9	34.9	1.6	11.1	16	137	167	60.3	56	3.85	4.20	4.25	5.20
	1“	108	50.8		14.3		145	175	79.4	64	4.45	4.80	4.85	5.80
	2“	152	92.1		19	19	153	183	121	72	6.10	6.45	6.50	7.45

DN ½“ and 1“, PN 150, 300 or 600 lb / sq.in.

Measuring flange Ø d= 100 r



DN 2“



Dimensions [mm]																	Weight [kg] (approx.)*			
Measuring flange Ø d	DN	d1		d2	f		g	h ± 2****		k		t	x				unfilled		filled	
		150 300 600			150 300	600	4 x UNF 2B	at 300 lb / sq.in.		150	300 600		150	300	600		NS		NS	
		lb / sq.in.			lb / sq.in.			NS		lb / sq.in.			lb / sq.in.				100	160	100	160
								100	160											
100	½“	99		34.9	1.6	6.4	½ - 20	111	141	60.3	66.7	15	30		35		2.55	2.90	2.95	3.90
	1“	108	124	50.8			⅝ - 18**/***			79.4	88.9						3.50	3.85	3.90	4.85
	2“	152	165	92.1				103	133	121	127		19.1	22.2	32		3.90	4.25	4.30	5.25

* For different display ranges and material the weights differ considerably

** 150 lb./sq.in: ½ - 20 UNF - 2B (1“)

*** 300 and 600 lb./sq.in: 8x Ø 19 (0.75“) (2“)

**** 150 and 600 lb./sq.in: differences as of dimension “x“

Order code

Order example		MPE	3	1	3	356	0	0	0
Diaphragm pressure gauges unfilled									
Bayonet ring case made of stainless steel		MPE							
Nominal size									
100 mm			3						
160 mm			4						
Connection thread									
G½ B bottom				1					
M20 x 1.5 bottom				3					
½ NPT bottom				B					
Connection material									
Stainless steel					3				
Display range									
-10...0 mbar	Ø 160 mm measuring flange					356			
-16...0 mbar	Ø 160 mm measuring flange					366			
-25...0 mbar	Ø 160 mm measuring flange					376			
-40...0 mbar	Ø 160 mm measuring flange					386			
-60...0 mbar	Ø 160 mm measuring flange					396			
-100...0 mbar	Ø 160 mm measuring flange					406			
-160...0 mbar	Ø 160 mm measuring flange					416			
-250...0 mbar	Ø 160 mm measuring flange					426			
-1...1.5 bar	Ø 100 mm measuring flange					515			
-1...3 bar	Ø 100 mm measuring flange					525			
-1...0.6 bar	Ø 100 mm measuring flange					505			
-1...5 bar	Ø 100 mm measuring flange					535			
-1...9 bar	Ø 100 mm measuring flange					545			
-1...15 bar	Ø 100 mm measuring flange					555			
0...0.6 bar	Ø 100 mm measuring flange					015			
0...1 bar	Ø 100 mm measuring flange					025			
0...1.6 bar	Ø 100 mm measuring flange					035			
0...2.5 bar	Ø 100 mm measuring flange					045			
0...4 bar	Ø 100 mm measuring flange					055			
0...6 bar	Ø 100 mm measuring flange					065			
0...10 bar	Ø 100 mm measuring flange					075			
0...16 bar	Ø 100 mm measuring flange					085			
0...25 bar	Ø 100 mm measuring flange					095			
0...40 bar	Ø 100 mm measuring flange					105			
0...60 mbar	Ø 160 mm measuring flange					116			
0...100 mbar	Ø 160 mm measuring flange					126			
0...160 mbar	Ø 160 mm measuring flange					136			
0...250 mbar	Ø 160 mm measuring flange					146			
0...400 mbar	Ø 100 mm measuring flange					156			
Mounting flange									
None							0		
Option									
None								0	
Filled case									
Unfilled case									0

Order example		MPE	3	1	3	386	0	0	G
Diaphragm pressure gauges filled									
Bayonet ring case made of stainless steel		MPE							
Nominal size									
100 mm			3						
160 mm			4						
Connection thread									
G½ B bottom				1					
M20 x 1.5 bottom				3					
½ NPT bottom				B					
Connection material									
Stainless steel					3				
Display range									
-160...0 mbar	Ø 160 mm measuring flange					416			
-250...0 mbar	Ø 160 mm measuring flange					426			
-1...1.5 bar	Ø 100 mm measuring flange					515			
-1...3 bar	Ø 100 mm measuring flange					525			
-1...0.6 bar	Ø 100 mm measuring flange					505			
-1...5 bar	Ø 100 mm measuring flange					535			
-1...9 bar	Ø 100 mm measuring flange					545			
-1...15 bar	Ø 100 mm measuring flange					555			
0...0.6 bar	Ø 100 mm measuring flange					015			
0...1 bar	Ø 100 mm measuring flange					025			
0...1.6 bar	Ø 100 mm measuring flange					035			
0...2.5 bar	Ø 100 mm measuring flange					045			
0...4 bar	Ø 100 mm measuring flange					055			
0...6 bar	Ø 100 mm measuring flange					065			
0...10 bar	Ø 100 mm measuring flange					075			
0...16 bar	Ø 100 mm measuring flange					085			
0...25 bar	Ø 100 mm measuring flange					095			
0...40 bar	Ø 100 mm measuring flange					105			
0...160 mbar	Ø 160 mm measuring flange					136			
0...250 mbar	Ø 160 mm measuring flange					146			
0...400 mbar	Ø 100 mm measuring flange					156			
Mounting flange									
None							0		
Option									
None								0	
Filled case									
Filled case (glycerine)									G

Diaphragm pressure gauges, safety version

Type MPE-S, nominal sizes 100 and 160 mm

Pressure gauges with horizontal diaphragm allow to find suitable versions for even difficult kinds of media, such as aggressive, contaminated or viscous media. The stainless steel bayonet ring case is designed for applications where a rust resistant, sealed case of high chemical resistance is required (dirty damp, or corrosive atmosphere). The gauges conform to safety class S3 requirements as specified in EN 873-1.

- Pressure gauges compliant with EN 837-3 S3
- Stainless steel case with bayonet ring
- Stainless steel connection, G½ B
- Connections at bottom, with enlarged channel opening in case of PTFE lining, optional open flange
- EN 837-3 accuracy, class 1.6 (class 2.5 with protection foil, filled and vacuum ranges))

Case type

The stainless steel case has a bayonet ring and is designed to conform to safety requirements similar to EN 837-1 S3. The gauges have a sturdy baffle between the dial plate and the Bourdon tube and connection block. The entire back cover is designed to blow out.

Display ranges (EN 837-3)

Display range from 0..10 mbar up to 0...40 bar, with PTFE-foil starting at 0...40 mbar; filled starting at 0...160 mbar up to 40 bar available.

Degree of protection according to EN 60529

IP54 (unfilled), IP65 (filled)

Dial

Aluminium, white with black scale markings.
Pointer: Aluminium, black.

Window

Laminated safety glass

Pointer movement

CrNi-Steel

Measuring flange

Flange made of stainless steel.
Display range ⩽ 250 mbar = Ø 160 mm
Display range ⩾ 400 mbar = Ø 100 mm

Connection threads and materials

Pressure gauges with stainless steel connection are available with a stainless steel diaphragm (10 to 250 mbar) or a Duratherm diaphragm (0.4 to 40 bar). In addition, they can optionally be produced with PTFE lining.

Maximum pressure load	
Static load	100 % of full scale value
Dynamic load	90 % of full scale value
Overload	Up to 5-times, max. 40 bar and max. 2.5 bar for flange Ø 160 mm

Temperature range

- **Storage temperature**
  -40 to 70 °C (-20 to 70 °C with filled case)
- **Ambient operating temperature**
  -20 to 60 °C
- **Media temperature**
  100 °C max. (70 °C max. with filled case)

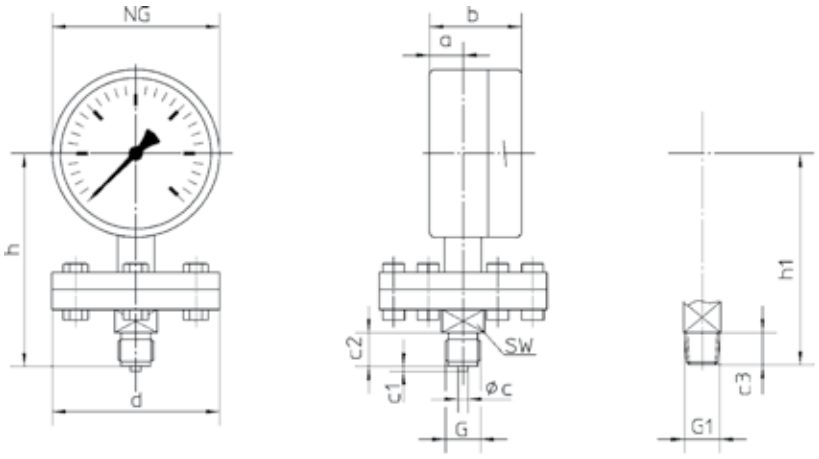
Ambient temperature sensitivity

The pressure gauges are calibrated at a reference temperature of 20 °C. At other operating temperatures indication errors can be considerable.

Options

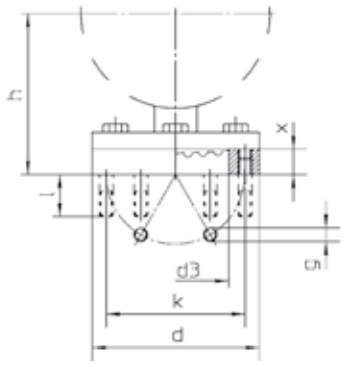
- Inlet port orifice up to Ø 10 mm
- Hygienic connection, e.g. according to DIN 11851, DN 25 to DN 50
- Window acryl glass or polycarbonate (only for display ranges ⩾ 0...100 mbar)
- Adjustable pointer, aluminium, black
- Diaphragm with protection foil: PTFE (> 40 mbar, vacuum tight), sealing PTFE; Fine-silver (> 160 mbar, vacuum tight), sealing FPM; Tantalum (> 160 mbar, vacuum tight upon request), sealing PFTE, others upon request
- Up to 10-times overload protection, but max. 40 bar (600 psi) for measuring flange Ø 100 mm (3.94") max. 2.5 bar (40 psi) for measuring flange Ø 160 mm (6.3")
- Other filling fluid, silicone oil for temp. down to -40 °C (flange sealing PTFE)
- Version for temperatures >100 °C

Types and dimensions

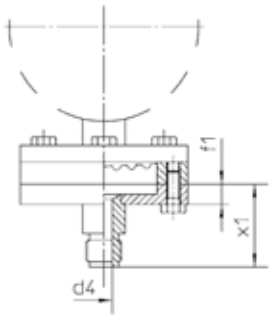


Dimensions [mm]													Weight [kg] (approx.)*	
NS	Measuring flange Ø d	a	b	c	c1	c2	c3	G	G1	h ± 2	h1 ± 2	SW	unfilled	filled
100	100	20	55	6	3	20	19	G1½	½ NPT	127	126	22	1.85	2.25
	160												3.45	3.65
160	100	20	55	6	3	20	19	G1½	½ NPT	157	156	22	2.20	3.20
	160												3.80	4.80

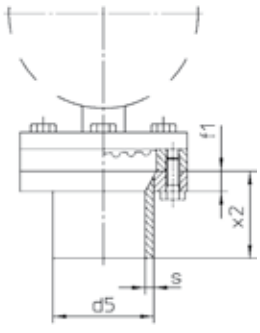
Open flange 2707 a
(with double-end studs if requested)



Optionally available:
Connection flange with thread connection G½ B (½" BSP) or ½" NPT, with enlarged inlet orifice.



Optionally available:
Connection flange with welding connection for measuring flange Ø 100 mm (3.94").

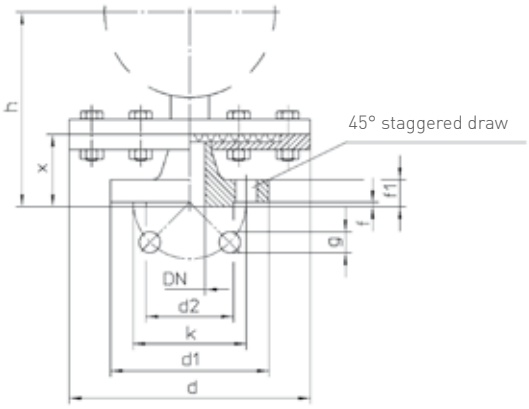


Dimensions [mm]													Weight [mm] (approx.)*			
Measuring flange Ø d	d3	d4	d5**	f1	g	h ± 2		k	l	x	x1	x2	s	unfilled		filled	
						NS 100	NS 160							NS 100	NS 160	NS 100	NS 160
100	63.5	10	60.3	12	6 x M8	96	126	83	25	15	46	50	5	1.65	2.00	2.05	3.00
160	123				8 x M8			140						2.80	3.15	3.20	4.15

* For different display ranges and material the weights differ considerably
** Other pipe diameters on request

Open flange according to DIN EN 1092-1, DN 15, 20, 25 and 50, PN10 to PN40

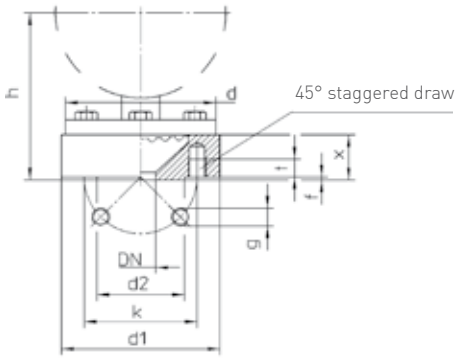
Measuring flange Ø d= 160 mm



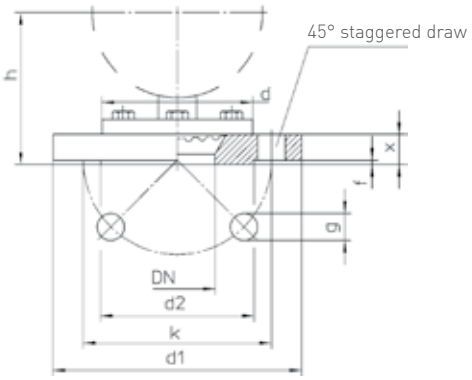
Dimensions [mm]											Weight [kg] (approx.)*			
Measuring flange Ø d	DN	d1	d2	f	f1	g	h ± 2		k	x	unfilled		filled	
							NS 100	NS 160			NS 100	NS 160	NS 100	NS 160
160	15	95	45	2	16	4 x 14	127	157	65	46	4.15	4.50	4.55	5.50
	20	105	58		18		129	159	75	48	4.45	4.80	4.85	5.80
	25	115	68						85		4.60	4.95	5.00	5.95
	50	165	102		20	4 x 18	137	167	125	56	6.05	6.40	6.45	7.40

DN 15, 20 and 25

Measuring flange Ø d= 100 mm



DN 50



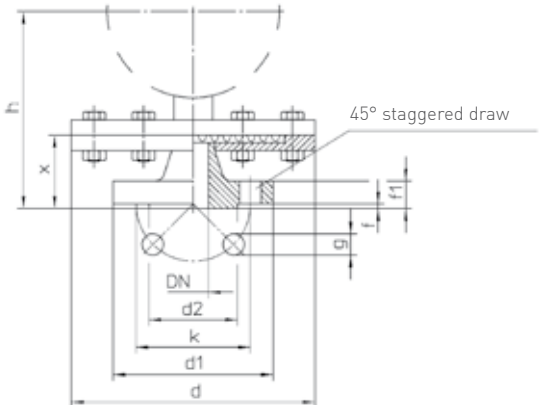
Dimensions [mm]										Weight [kg] (approx.)*			
Measuring flange Ø d	DN	d1	d2	f	g	h ± 2		k	t	x	unfilled		filled	
						NS 100	NS 160				NS 100	NS 160	NS 100	NS 160
100	15	99	45	2	4 x M12**	106	157	65	12	30	2.30	2.65	2.70	3.65
	20	105	58					75			2.40	2.75	2.80	3.75
	25	115	68			103	133	85		22	2.50	2.85	2.90	3.85
	50	165	102		4 x Ø18	101	131	125		20	3.60	3.95	4.00	4.95

* For different display ranges and material the weights differ considerably

** With double-end studs M12 x 35 on request

Open flange according to ASME, ½“, 1“ and 2“, PN 150, 300 or 600 lb/sq.in. , ASME B 16,5 RF

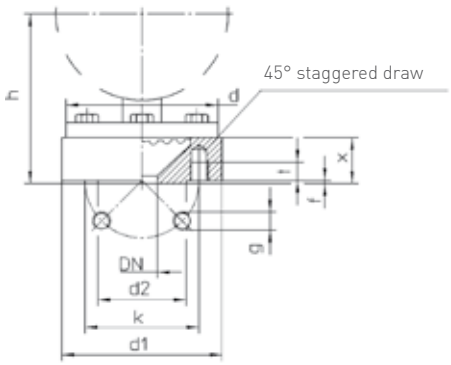
Measuring flange Ø d= 160 mm



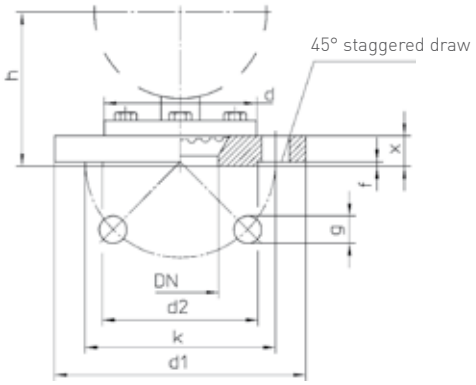
Dimensions [mm]											Weight [kg] (approx.)*			
Measuring flange Ø d	DN	d1	d2	f	f1	g	h ± 2		k	x	unfilled		filled	
							NS 100	NS 160			NS 100	NS 160	NS 100	NS 160
160	½“	88.9	34.9	1.6	11.1	16	137	167	60.3	56	3.85	4.20	4.25	5.20
	1“	108	50.8		14.3		145	175	79.4	64	4.45	4.80	4.85	5.80
	2“	152	92.1		19	19	153	183	121	72	6.10	6.45	6.50	7.45

DN ½“ and 1“, PN 150, 300 or 600 lb/sq.in.

Measuring flange Ø d= 100 mm



DN 2“



Dimensions [mm]																Weight [kg] for 300 lb/sq.in. (approx.)*			
Measuring flange Ø d	DN	d1		d2	f		g	h ± 2*** at 300 lb/sq.in.		k		t	x			unfilled		filled	
		150 300 600			150 300	600	4 x UNF 2B	NS		150	300 600		150	300	600	NS		NS	
		lb/sq.in.			lb/sq.in.			100	160	lb/sq.in.			lb/sq.in.			100	160	100	160
100	½“	99		34.9	1.6	6.4	½ - 20	111	141	60.3	66.7	15	30		35	2.70	3.30	3.05	4.30
	1“	108	124	50.8			⅝ - 18**/***			79.4	88.9					3.40	4.00	3.75	4.90
	2“	152	165	92.1				103	133	121	127		19.1	22.2	32	3.90	4.50	4.15	5.30

* For different display ranges and material the weights differ considerably

** 150 lb./sq.in: ½ - 20 UNF - 2B (1“)

*** 300 and 600 lb./sq.in: 8x Ø 19 (0.75“) (2“)

**** 150 and 600 lb./sq.in: differences as of dimension “x“

Order code

Order example		MPES	3	1	3	356	0	0	0
Diaphragm pressure gauges unfilled									
Bayonet ring case made of stainless steel		MPES							
Nominal size									
100 mm			3						
160 mm			4						
Connection thread									
G½ B bottom				1					
M20 x 1.5 bottom				3					
½ NPT bottom				B					
Connection material									
Stainless steel					3				
Display range									
-10...0 mbar	Ø 160 mm measuring flange					356			
-16...0 mbar	Ø 160 mm measuring flange					366			
-25...0 mbar	Ø 160 mm measuring flange					376			
-40...0 mbar	Ø 160 mm measuring flange					386			
-60...0 mbar	Ø 160 mm measuring flange					396			
-100...0 mbar	Ø 160 mm measuring flange					406			
-160...0 mbar	Ø 160 mm measuring flange					416			
-250...0 mbar	Ø 160 mm measuring flange					426			
-1...1.5 bar	Ø 100 mm measuring flange					515			
-1...3 bar	Ø 100 mm measuring flange					525			
-1...0.6 bar	Ø 100 mm measuring flange					505			
-1...5 bar	Ø 100 mm measuring flange					535			
-1...9 bar	Ø 100 mm measuring flange					545			
-1...15 bar	Ø 100 mm measuring flange					555			
0...0.6 bar	Ø 100 mm measuring flange					015			
0...1 bar	Ø 100 mm measuring flange					025			
0...1.6 bar	Ø 100 mm measuring flange					035			
0...2.5 bar	Ø 100 mm measuring flange					045			
0...4 bar	Ø 100 mm measuring flange					055			
0...6 bar	Ø 100 mm measuring flange					065			
0...10 bar	Ø 100 mm measuring flange					075			
0...16 bar	Ø 100 mm measuring flange					085			
0...25 bar	Ø 100 mm measuring flange					095			
0...40 bar	Ø 100 mm measuring flange					105			
0...60 mbar	Ø 160 mm measuring flange					116			
0...100 mbar	Ø 160 mm measuring flange					126			
0...160 mbar	Ø 160 mm measuring flange					136			
0...250 mbar	Ø 160 mm measuring flange					146			
0...400 mbar	Ø 100 mm measuring flange					156			
Mounting flange									
None							0		
Option									
None								0	
Filled case									
Unfilled case									0

Order example		MPES	3	1	3	416	0	0	G
Diaphragm pressure gauges filled									
Bayonet ring case made of stainless steel		MPES							
Nominal size									
100 mm			3						
160 mm			4						
Connection thread									
G½ B bottom				1					
M20 x 1.5 bottom				3					
½ NPT bottom				B					
Connection material									
Stainless steel					3				
Display range									
-160...0 mbar	Ø 160 mm measuring flange					416			
-250...0 mbar	Ø 160 mm measuring flange					426			
-1...1.5 bar	Ø 100 mm measuring flange					515			
-1...3 bar	Ø 100 mm measuring flange					525			
-1...0.6 bar	Ø 100 mm measuring flange					505			
-1...5 bar	Ø 100 mm measuring flange					535			
-1...9 bar	Ø 100 mm measuring flange					545			
-1...15 bar	Ø 100 mm measuring flange					555			
0...0.6 bar	Ø 100 mm measuring flange					015			
0...1 bar	Ø 100 mm measuring flange					025			
0...1.6 bar	Ø 100 mm measuring flange					035			
0...2.5 bar	Ø 100 mm measuring flange					045			
0...4 bar	Ø 100 mm measuring flange					055			
0...6 bar	Ø 100 mm measuring flange					065			
0...10 bar	Ø 100 mm measuring flange					075			
0...16 bar	Ø 100 mm measuring flange					085			
0...25 bar	Ø 100 mm measuring flange					095			
0...40 bar	Ø 100 mm measuring flange					105			
0...160 mbar	Ø 160 mm measuring flange					136			
0...250 mbar	Ø 160 mm measuring flange					146			
0...400 mbar	Ø 100 mm measuring flange					156			
Mounting flange									
None							0		
Option									
None								0	
Filled case									
Filled case (glycerine)									G

Capsule element pressure gauges

Type MKE, nominal sizes 63, 100 and 160 mm

SIKA capsule element pressure gauges with 63, 100 and 160 mm stainless steel cases are suitable for measuring the pressure of dry, gaseous media at low pressure up to 600 mbar.

- Pressure gauges compliant with EN 837-3
- Stainless steel case with bayonet ring
- Brass or stainless steel connection
- Connection at bottom or central back G¼ B or G½ B
- EN 837-3 accuracy, class 1.6

Case type

The stainless steel case has a bayonet ring

Display ranges

DIN Display ranges NG 63 mm: from 0...25 mbar up to 0...600 mbar (unfilled), from 0...100 mbar up to 0...600 mbar (filled)
DIN Display ranges NG 100 + 160 mm: from 0...2,5 mbar up to 0...600 mbar (unfilled), from 0...100 mbar up to 0...600 mbar (filled)

Degree of protection according to EN 60529

IP44 (unfilled NS 63 mm with bottom connection)
IP54 (filled and unfilled)

Dial

Aluminium, white; with black scale markings
Pointer: Aluminium, black.

Window

Unfilled: Instrument glass for brass connection, laminated safety glass for stainless steel connection.
Specifics for front flange
NS 63 mm: Polycarbonat for punched for zero point adjustment
NS 100 / 160 mm: Display ranges ⩽ 16 mbar: Instrument glass for punched for zero point adjustment.
Display ranges ⩾ 25 mbar: Acrylic glass for punched for zero point adjustment.
Filled: Polycarbonate for NS 63 mm, acrylic glass for NS 100 / 160 mm, punched for zero point adjustment

Pointer movement

Brass & German silver; stainless steel for gauges with stainless steel connection.

Maximum pressure load	
Static load	100 % of full scale value
Dynamic load	90 % of full scale value
Overload	Max. 130 % of full scale value

Type MKE

Zero pointadjustment

At front side

Connection threads and materials

Standard pressure gauges have a brass connection thread and CuBe alloy capsule. Version with connection thread and capsule made from stainless steel is optionally available.

Temperature range

- **Storage temperature**
  -40 to 70 °C (-20 to 70 °C with filled case)
- **Ambient operating temperature**
  -40 to 60 °C (-20 to 60 °C with filled case)
- **Media temperature**
  100 °C max. (70 °C max. with filled case)

Ambient temperature sensitivity

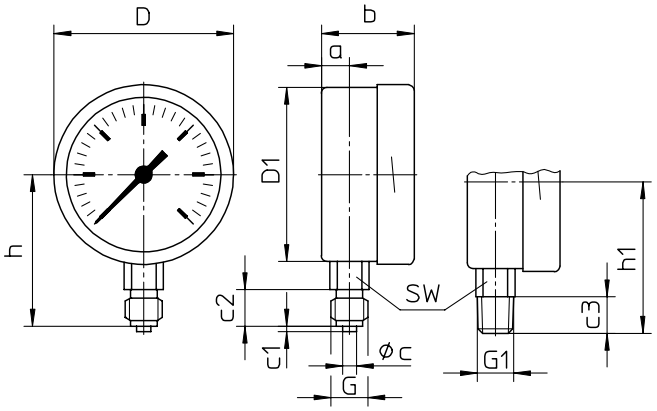
The pressure gauges are calibrated at a reference temperature of 20 °C. At other operating temperatures the maximum indication error is ±0.6 % of full scale value per 10 °C difference in accordance with EN 837-3.

Options

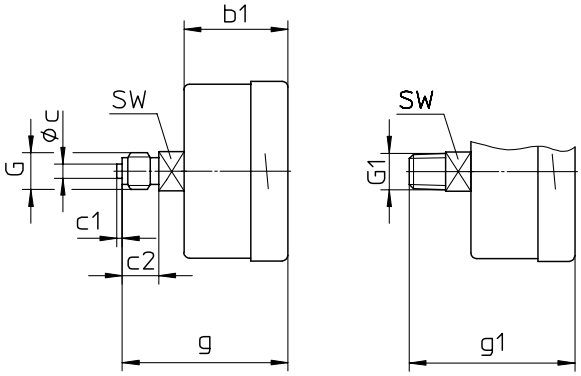
- Throttle screw in inlet channel
- With glycerine filled case

Types and dimensions

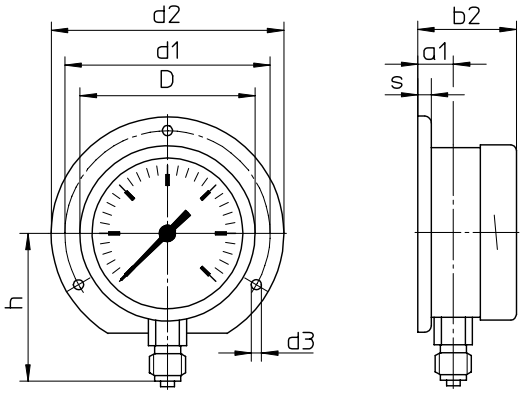
Without mounting flange, NS 63
Bottom connection



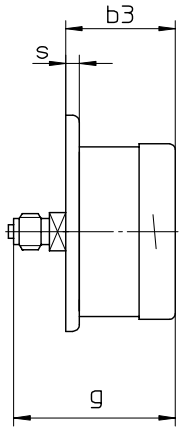
Without mounting flange, NS 63
Central back connection



With rear flange, NS 63
Bottom connection

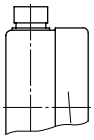


With rear flange, NS 63
Central back connection*



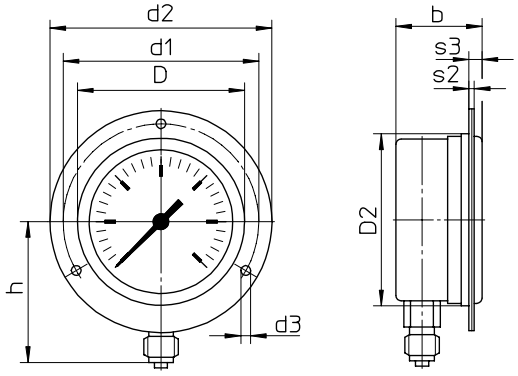
Case Ventilation

NS 63 / 100 mm (filled) with case ventilation closeable.
NS 160 mm (filled) with Blow-out device. Ventilation required for internal pressure compensation.

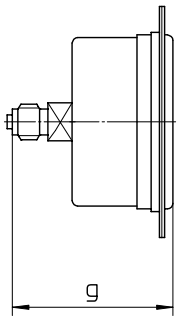


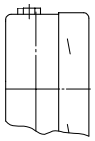
NS 63 mm / 100 mm
Case ventilation closeable

With front flange, NS 63
Bottom connection*, **



With front flange, NS 63
Central back connection**





NS 160 mm
Blow-out device

* Available upon request, but according to EN 837-3 not recommended
** Front flange with slotted holes, separate cover ring, recommended panel cut out; Ø 67 ± 0,3 mm

MKE NS 63

Dimensions [mm]													
NS	**a**	**a1**	**b**	**b1**	**b2**	**b3**	**c**	**c1**	**c2**	**c3**	**D**	**D1**	**D2**
63, unfilled	10	13	38	37	41	40	5	2	13	13	64	62	66
63, filled	10	13	47	37	50	40	5	2	13	13	64	62	66
10-times overload													
63, unfilled	10	13	47	47	50	50	5	2	13	13	64	62	66
63, filled	10	13	47	47	50	50	5	2	13	13	64	62	66

Dimensions [mm]													Weight [kg] (approx.)*
NS	**d1**	**d2**	**d3**	**G**	**G1**	**g**	**g1**	**h±1**	**h1±1**	**s**	**s1**	**s3**	**SW**	
63, unfilled	75	85	3.6	G¼ B M12 x 1.5	¼ NPT	60	60	54	54	5	2	5.5	14	0.21
63, filled	75	85	3.6	G¼ B M12 x 1.5	¼ NPT	60	60	54	54	5	2	5.5	14	0.26
10-times overload														
63, unfilled	75	85	3.6	G¼ B M12 x 1.5	¼ NPT	70	70	54	54	5	2	5.5	14	0.21
63, filled	75	85	3.6	G¼ B M12 x 1.5	¼ NPT	70	70	54	54	5	2	5.5	14	0.26

MKE NS 100 / 160

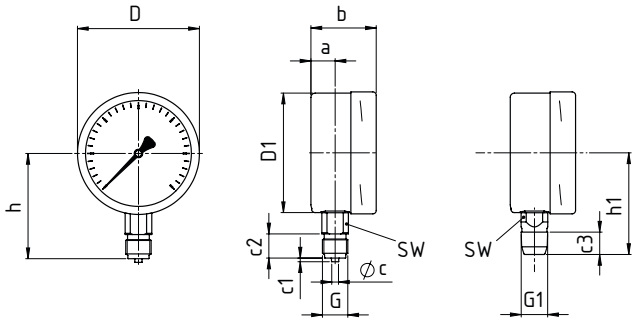
Dimensions [mm]															
NS	**D**	**D1**	**D2**	**a**	**a1**	**b**	**b1**	**b2**	**b3**	**c**	**c1**	**c2**	**c3**	**d1**	**d2**
100 ≤16 mbar	101	99	103	15.5	19	55	55	59	59	6	3	20	19	116	132
100 ≥25 mbar	101	99	103	20	23	55	55	59	59	6	3	20	19	116	132
160 ≤16 mbar	161	159	163	15	18	55	55	58	58	6	3	20	19	178	196
160 ≥25 mbar	161	159	163	15	18	51	51	54	54	6	3	20	19	178	196

Dimensions [mm]													Weight [kg] (approx.)*	
NS	**d3**	**G**	**G1**	**g**	**g1**	**h±1**	**h1±1**	**s**	**s1**	**s2**	**s3**	**s5**	**SW**	**unfilled**	**filled**
100 ≤16 mbar	4.8	G½ B M20 x 1.5	½ NPT	85	84	87	84	6	1	2	5.5	7	22	0.60	0.95
100 ≥25 mbar	4.8	G½ B M20 x 1.5	½ NPT	85	84	87	84	6	1	2	5.5	7	22	0.60	0.95
160 ≤16 mbar	5.8	G½ B M20 x 1.5	½ NPT	85	84	115	114	6	1.5	2.5	6	8	22	1.00	1.80
160 ≥25 mbar	5.8	G½ B M20 x 1.5	½ NPT	81	80	115	114	6	1.5	2.5	6	8	22	0.95	1.80

* This information is provided as an example and relates to the version without flange.

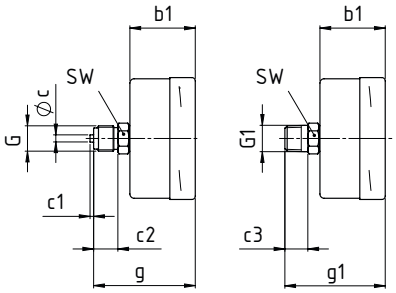
Without mounting flange, NS 100 / 160

Bottom connection



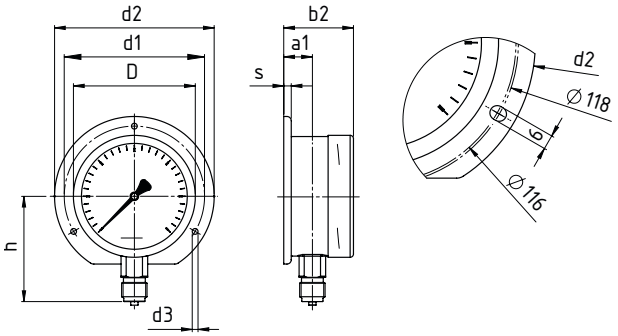
Without mounting flange, NS 100 / 160

Central back connection



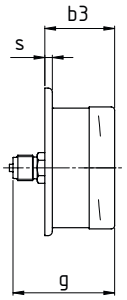
With rear flange NS 100 / 160

Bottom connection*



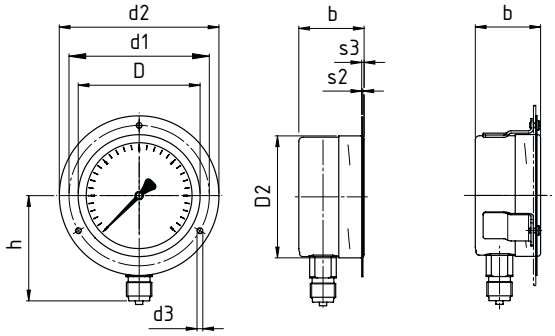
With rear flange NS 100 / 160

Central back connection**



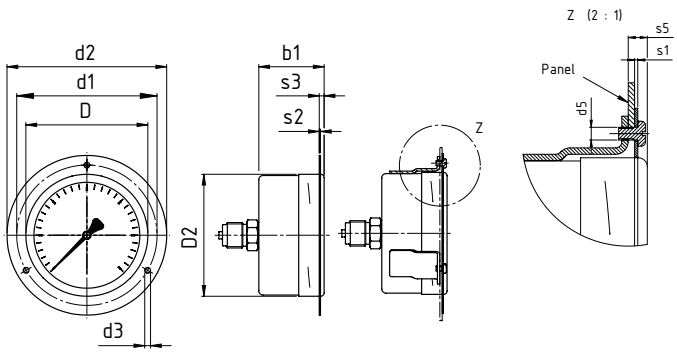
With front flange NS 100 / 160

Bottom connection**, ***



With front flange NS 100 / 160

Central back connection***, ****



* NS 100 rear mounting flange for surface mounting, optionally available with slotted holes according to EN 837-3

** Available upon request, but according to EN 837-3 not recommended

*** Filled: welded brackets and removable front flange

**** Recommended panel cut out bei NS 100 Ø 104 ± 0,5 mm, NS160 Ø164 ± 0,5mm

Order code

Order example		MKE	3	1	3	344	0	0	0
Capsule element pressure gauges (unfilled)									
Bayonet ring case		MKE							
Nominal size									
63 mm			1						
100 mm			3						
160 mm			4						
Connection thread									
NS 63 mm case	G¼ B bottom			1					
	G¼ B central back connection			5					
	M12 x 1.5 bottom			3					
	M12 x 1.5 central back connection			6					
	¼ NPT bottom			M					
	¼ NPT central back connection			S					
NS 100 mm / NS 160 mm case	G½ B bottom			1					
	G½ B central back connection			2					
	M20 x 1.5 bottom			3					
	M20 x 1.5 central back connection			4					
	½ NPT bottom			B					
	½ NPT central back connection			C					
Connection material									
Brass					1				
Stainless steel					3				
Display ranges									
-2.5...0 mbar*	only NS 100 and 160 mm					344			
-4...0 mbar	only NS 100 and 160 mm					345			
-6...0 mbar	only NS 100 and 160 mm					346			
-10...0 mbar	only NS 100 and 160 mm					356			
-16...0 mbar	only NS 100 and 160 mm					366			
-25...0 mbar						376			
-40...0 mbar						386			
-60...0 mbar						396			
-100...0 mbar						406			
-160...0 mbar						416			
-250...0 mbar						426			
-400...0 mbar						436			
-600...0 mbar						446			
0...2.5 mbar	only NS 100 and 160 mm					046			
0...4 mbar	only NS 100 and 160 mm					056			
0...6 mbar	only NS 100 and 160 mm					066			
0...10 mbar	only NS 100 and 160 mm					076			
0...16 mbar	only NS 100 and 160 mm					086			
0...25 mbar						096			
0...40 mbar						106			
0...60 mbar						116			
0...100 mbar						126			
0...160 mbar						136			
0...250 mbar						146			
0...400 mbar						156			
0...600 mbar						166			
Mounting flange									
None							0		
Rear flange							1		
Front flange							2		
Option									
None								0	
Filled case									
Unfilled case									0

* NS 100 = 180 angular degrees.

Order example		MKE	3	1	3	406	0	0	G
Capsule element pressure gauges (filled)									
Bayonet ring case		MKE							
Nominal size									
63 mm			1						
100 mm			3						
160 mm			4						
Connection thread									
NS 63 mm	G¼ B bottom			1					
	G¼ B central back connection			5					
	M12 x 1.5 bottom			3					
	M12 x 1.5 central back connection			6					
	¼ NPT bottom			M					
	¼ NPT central back connection			S					
NS 100 mm / NS 160 mm	G½ B bottom			1					
	G½ B central back connection			2					
	M20 x 1.5 bottom			3					
	M20 x 1.5 central back connection			4					
	½ NPT bottom			B					
	½ NPT central back connection			C					
Connection material									
Brass					1				
Stainless steel					3				
Display ranges									
-100...0 mbar						406			
-160...0 mbar						416			
-250...0 mbar						426			
-400...0 mbar						436			
-600...0 mbar						446			
0...100 mbar						126			
0...160 mbar						136			
0...250 mbar						146			
0...400 mbar						156			
0...600 mbar						166			
Mounting flange									
None							0		
Rear flange							1		
Front flange							2		
Option									
None								0	
Filled case									
Filled case (glycerine)									G