Liquid-filled pressure gauge

RE 50205/01.07 1/10
Replaces: AB 31-38

Type ABZMM



Pressure gauge DN63/100
Connection at the bottom



Pressure gauge DN40/63/100
Connection at the rear

Size 40, 63 und 100
Max. indication 1000 bar *[14500 psi]*

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Features

- Pressure gauges are pressure measuring instruments for measuring and indicating pressures in hydraulic systems
- Housing made of stainless steel
- Version in accordance with standard EN 837-1
- Pressure indication in bar/MPa or bar/psi
- Two-colour scale
- Measuring port at the rear or bottom
- Mounting by means of fitting or clamp

Symbol



Spare parts

- When ordering spare parts for the pressure gauge, indicate the complete type designation.

Ordering code

ABZM	M	–		–	/		

Power unit accessories
Measuring instruments **= ABZM**

Pressure gauge
Pressure gauge with Bourdon tube **= M**

Size
DN40 **= 40**
DN63 **= 63**
DN100 **= 100**

Indicating range
See selection tables on pages 2 to 4
e.g. indicating range 160 bar **= 160**

Version
Dual scale with pressure range in bar and MPa **= BAR/MPA**
Dual scale with pressure range in bar and psi **= BAR/PSI**

Position of measuring port
At the rear **= R**
At the bottom **= U**

Type of mounting
V = With fitting
B = With clamp

Option
– = No option
330 = Red marking on scale, e.g. at 330 bar

Pressure gauge fill
G = With glycerine (standard)
T = With silicon fill as low-temperature version

Order example:

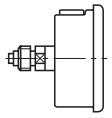
Pressure gauge with Ø63 mm housing and dual scale with indicating range from 0 to 25 bar, measuring port at the bottom, without mounting element:

ABZMM-63-25 BAR/MPA-U/V-G Material no. **R900219546**

Indicating range in bar	MPa	psi
10	1.0	145
16	1.6	230
25	2.5	362
40	4.0	580
60	6.0	870
100	10.0	1450
160	16.0	2320
250	25.0	3625
400	40.0	5800
600	60.0	8700
1000	100.0	14500

Selection table: Pressure gauge DN40, with dual scale, Δ = standard types

Connection centrally at the rear, indicating range in bar/MPa



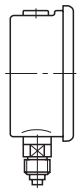
Indicating range in bar	Indicating range in bar		
	Type	Material number	1)
10	ABZMM40-10 BAR/MPA-R/V-G	R901123463	
16	ABZMM40-16 BAR/MPA-R/V-G	R901123227	
25	ABZMM40-25 BAR/MPA-R/V-G	R901123465	
40	ABZMM40-40 BAR/MPA-R/V-G	R901123468	
60	ABZMM40-60 BAR/MPA-R/V-G	R901101535	Δ
100	ABZMM40-100 BAR/MPA-R/V-G	R901101536	Δ
160	ABZMM40-160 BAR/MPA-R/V-G	R901101537	Δ
250	ABZMM40-250 BAR/MPA-R/V-G	R901096694	Δ
400	ABZMM40-400 BAR/MPA-R/V-G	R901101538	Δ

1) Standard types

For selection tables DN63 and 100, see pages 3 and 4.

Selection table: Pressure gauge DN63, with dual scale, Δ = standard types

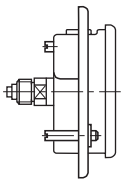
Connection at the bottom, indicating range in bar/MPa und bar/psi



Indicating range in bar	Indicating range in bar/MPa			Indicating range in bar/psi	
	Type	Material number	1)	Type	Material number
10	ABZMM63-10 BAR/MPA-U/V-G	R901108774	Δ	ABZMM63-10 BAR/PSI-U/V-G	R900067155
16	ABZMM63-16 BAR/MPA-U/V-G	R901108567	Δ	ABZMM63-16 BAR/PSI-U/V-G	R900067158
25	ABZMM63-25 BAR/MPA-U/V-G	R900219546	Δ	ABZMM63-25 BAR/PSI-U/V-G	R900027960
40	ABZMM63-40 BAR/MPA-U/V-G	R901108775	Δ	ABZMM63-40 BAR/PSI-U/V-G	R900027961
60	ABZMM63-60 BAR/MPA-U/V-G	R900222365	Δ	ABZMM63-60 BAR/PSI-U/V-G	R900027962
100	ABZMM63-100 BAR/MPA-U/V-G	R900051035	Δ	ABZMM63-100 BAR/PSI-U/V-G	R900027963
160	ABZMM63-160 BAR/MPA-U/V-G	R900077650	Δ	ABZMM63-160 BAR/PSI-U/V-G	R900027964
250	ABZMM63-250 BAR/MPA-U/V-G	R900771208	Δ	ABZMM63-250 BAR/PSI-U/V-G	R900027965
400	ABZMM63-400 BAR/MPA-U/V-G	R900053460	Δ	ABZMM63-400 BAR/PSI-U/V-G	R900027966
600	ABZMM63-600 BAR/MPA-U/V-G	R901037755		ABZMM63-600 BAR/PSI-U/V-G	R900067154
1000	ABZMM63-1000 BAR/MPA-U/V-G	R901150441		ABZMM63-1000 BAR/PSI-U/V-G	R900034024

1) Standard types

Connection centrally at the rear, with mounting clamp, indicating range in bar/MPa and bar/psi

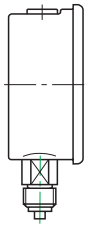


Indicating range in bar	Indicating range in bar/MPa			Indicating range in bar/psi	
	Type	Material number	1)	Type	Material number
10	ABZMM63-10 BAR/MPA-R/B-G	R900029132		ABZMM63-10 BAR/PSI-R/B-G	R900027254
16	ABZMM63-16 BAR/MPA-R/B-G	R900072025		ABZMM63-16 BAR/PSI-R/B-G	R900027255
25	ABZMM63-25 BAR/MPA-R/B-G	R900033955	Δ	ABZMM63-25 BAR/PSI-R/B-G	R900027256
40	ABZMM63-40 BAR/MPA-R/B-G	R900072026	Δ	ABZMM63-40 BAR/PSI-R/B-G	R900027257
60	ABZMM63-60 BAR/MPA-R/B-G	R900072024	Δ	ABZMM63-60 BAR/PSI-R/B-G	R900027258
100	ABZMM63-100 BAR/MPA-R/B-G	R900022458	Δ	ABZMM63-100 BAR/PSI-R/B-G	R900027259
160	ABZMM63-160 BAR/MPA-R/B-G	R900022457	Δ	ABZMM63-160 BAR/PSI-R/B-G	R900027260
250	ABZMM63-250 BAR/MPA-R/B-G	R900072028	Δ	ABZMM63-250 BAR/PSI-R/B-G	R900027261
400	ABZMM63-400 BAR/MPA-R/B-G	R900022459	Δ	ABZMM63-400 BAR/PSI-R/B-G	R900027262
600	ABZMM63-600 BAR/MPA-R/B-G	R900072027		ABZMM63-600 BAR/PSI-R/B-G	R900067183
1000	ABZMM63-1000 BAR/MPA-R/B-G	R900072029		ABZMM63-1000 BAR/PSI-R/B-G	R900072022

1) Standard types

Selection table: Pressure gauge DN100, with dual scale, Δ = standard types

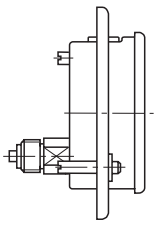
Connection at the bottom, indicating range in bar/MPa and bar/psi



Indicating range in bar	Indicating range in bar/MPa			Indicating range in bar/psi	
	Type	Material number	1)	Type	Material number
10	ABZMM100-10 BAR/MPA-U/V-G	R901108776		ABZMM100-10 BAR/PSI-U/V-G	R901150437
16	ABZMM100-16 BAR/MPA-U/V-G	R900762148		ABZMM100-16 BAR/PSI-U/V-G	R901150438
25	ABZMM100-25 BAR/MPA-U/V-G	R900061844		ABZMM100-25 BAR/PSI-U/V-G	R900027967
40	ABZMM100-40 BAR/MPA-U/V-G	R901108779		ABZMM100-40 BAR/PSI-U/V-G	R900027968
60	ABZMM100-60 BAR/MPA-U/V-G	R901108780	Δ	ABZMM100-60 BAR/PSI-U/V-G	R900027969
100	ABZMM100-100 BAR/MPA-U/V-G	R901042293	Δ	ABZMM100-100 BAR/PSI-U/V-G	R900027970
160	ABZMM100-160 BAR/MPA-U/V-G	R900762149	Δ	ABZMM100-160 BAR/PSI-U/V-G	R900027971
250	ABZMM100-250 BAR/MPA-U/V-G	R900063028	Δ	ABZMM100-250 BAR/PSI-U/V-G	R900027972
400	ABZMM100-400 BAR/MPA-U/V-G	R900063029	Δ	ABZMM100-400 BAR/PSI-U/V-G	R900027973
600	ABZMM100-600 BAR/MPA-U/V-G	R900066341	Δ	ABZMM100-600 BAR/PSI-U/V-G	R900027974
1000	ABZMM100-1000 BAR/MPA-U/V-G	R901108781		ABZMM100-1000 BAR/PSI-U/V-G	R901150439

1) Standard types

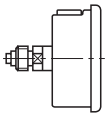
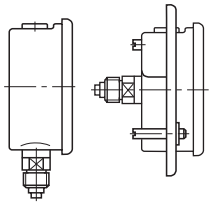
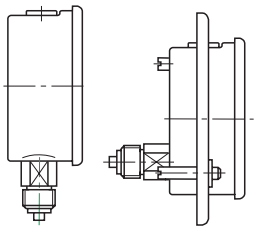
Connection eccentrically at the rear, with mounting clamp, indicating range in bar/MPa und bar/psi



Indicating range in bar	Indicating range in bar/MPa			Indicating range in bar/psi	
	Type	Material number	1)	Type	Material number
10	ABZMM100-10 BAR/MPA-R/B-G	R900072004		ABZMM100-10 BAR/PSI-R/B-G	R900027263
16	ABZMM100-16 BAR/MPA-R/B-G	R900072006		ABZMM100-16 BAR/PSI-R/B-G	R900027264
25	ABZMM100-25 BAR/MPA-R/B-G	R900061658		ABZMM100-25 BAR/PSI-R/B-G	R900027265
40	ABZMM100-40 BAR/MPA-R/B-G	R900072008		ABZMM100-40 BAR/PSI-R/B-G	R900027266
60	ABZMM100-60 BAR/MPA-R/B-G	R900072011	Δ	ABZMM100-60 BAR/PSI-R/B-G	R900027267
100	ABZMM100-100 BAR/MPA-R/B-G	R900072007	Δ	ABZMM100-100 BAR/PSI-R/B-G	R900027268
160	ABZMM100-160 BAR/MPA-R/B-G	R900072012	Δ	ABZMM100-160 BAR/PSI-R/B-G	R900027269
250	ABZMM100-250 BAR/MPA-R/B-G	R900066324	Δ	ABZMM100-250 BAR/PSI-R/B-G	R900027270
400	ABZMM100-400 BAR/MPA-R/B-G	R900066323	Δ	ABZMM100-400 BAR/PSI-R/B-G	R900027271
600	ABZMM100-600 BAR/MPA-R/B-G	R900066325		ABZMM100-600 BAR/PSI-R/B-G	R900027272
1000	ABZMM100-1000 BAR/MPA-R/B-G	R900072014		ABZMM100-1000 BAR/PSI-R/B-G	R900027207

1) Standard types

Technical data (for applications outside these parameters, please consult us!)

Size	**DN40**	**DN63**	**DN100**
Form			
Accuracy class to DIN EN 837	2.5	1.6	1.0
Max. indication	See selection table on page 2	See selection table on page 3	See selection table on page 4
Application range: – Constant loading – Fluctuating loading	 3/4 x scale value 2/3 x scale value	 3/4 x scale value 2/3 x scale value	 1.0 x scale value 0.9 x scale value
Overpressure protection	1.0 x scale value (briefly)	1.0 x scale value (briefly)	1.3 x scale value (briefly)
Permissible temperature range: – Ambient °C *[°F]* – Measured material (medium) °C *[°F]*	[1)] –20 to +60 *[–4 to +140]* –20 to +60 *[–4 to +140]*	[1)] –20 to +60 *[–4 to +140]* –20 to +60 *[–4 to +140]*	[1)] –20 to +60 *[–4 to +140]* –20 to +60 *[–4 to +140]*
Pressure gauge material: – Housing – Flat front ring – Sight-glass – Scale – Pointer to DIN EN 837 – Mechanism – Measuring element	 Stainless steel 1.4301 bright Stainless steel 1.4301 bright Plexiglass Al white, lettering black Al black CuZn (Ms) Cu alloy up to 40 bar Bourdon tube, from 60 bar on helical spring	 Stainless steel 1.4301 bright Stainless steel 1.4301 bright Plexiglass Al white, lettering black Al black CuZn (Ms) Cu alloy up to 40 bar Bourdon tube, from 60 bar on helical spring	 Stainless steel 1.4301 bright Stainless steel 1.4301 bright Plexiglass Al white, lettering black Al black CuZn (Ms) Cu alloy up to 60 bar Bourdon tube, from 100 bar on 1.4571 helical spring
Connection to DIN EN 837-1 Material	G1/4B CuZn (Ms)	G1/4B CuZn (Ms)	G1/2B CuZn (Ms)
Filled with	Glycerine (filling level = 90 %)	Glycerine (filling level = 90 %)	Glycerine (filling level = 90 %)
Mounting clamp	–	Steel, galvanized	Steel, galvanized
Indication accuracy of scale value %	2.5	1.6	1.0
Weight kg *[lbs]*	0.11 *[0.24]*	0.2 *[0.44]*	0.8 *[1.76]*

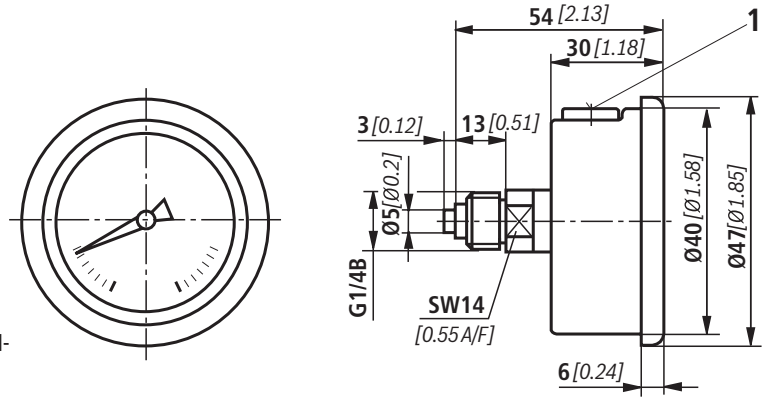
[1)] **Attention!** For temperatures from –40 to +60 °C *[–40 to +140 °F]* silicon-filled pressure gauges must be used.

Resistance (all sizes)

– Hydraulic fluids				Resistant
• Mineral oils	Mineral oils	HLP	to DIN 51524	
• Flame-retardant hydraulic fluids	Watery solutions	HFC	to VDMA 24317	
	Phosphate esters	HFD-R		
	Organic esters	HFD-U		
• Fast bio-degradable hydraulic fluids	Triglycerides (rape seed oil)	HETG	to VDMA 24568	
	Synthetic esters	HEES		
	Polyglycols	HEPG		
• Water	Water			
– Gases	Nitrogen (other gases on request)			

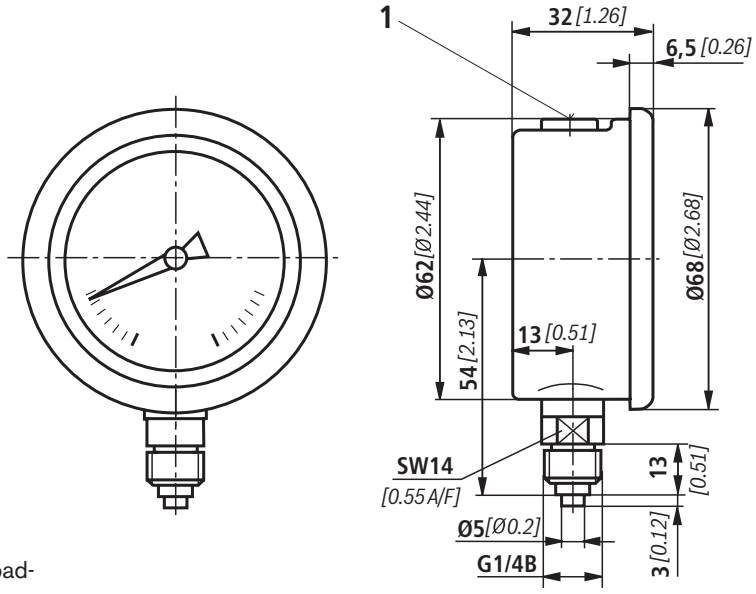
Unit dimensions (nominal dimensions in mm *[inch]*)

Pressure gauge DN40, with dual scale – connection centrally at the rear



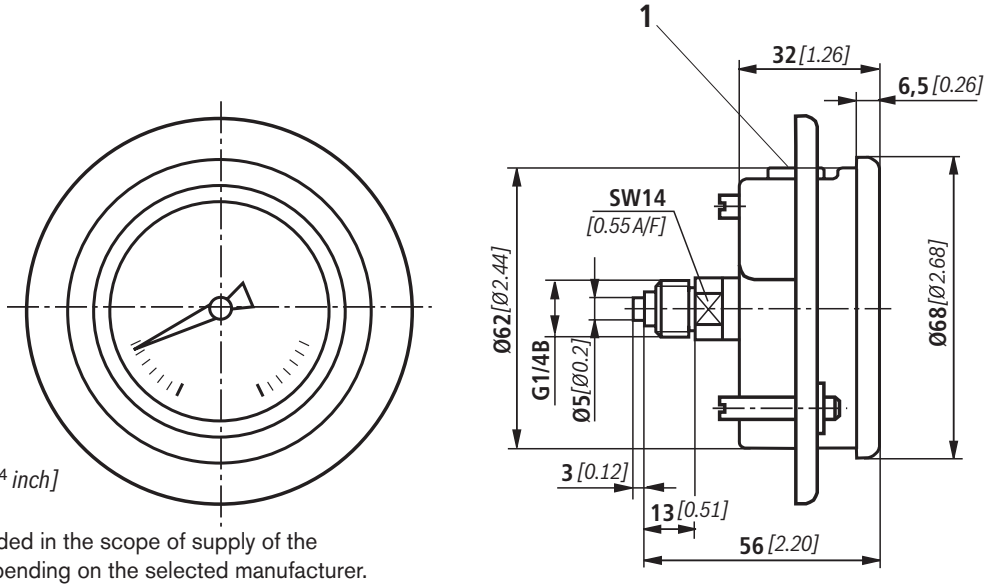
1 Bleed or pressure unloading opening

Pressure gauge DN63, with dual scale – connection at the bottom



1 Bleed or pressure unloading opening

Pressure gauge DN63, with dual scale – connection centrally at the rear, with mounting clamp



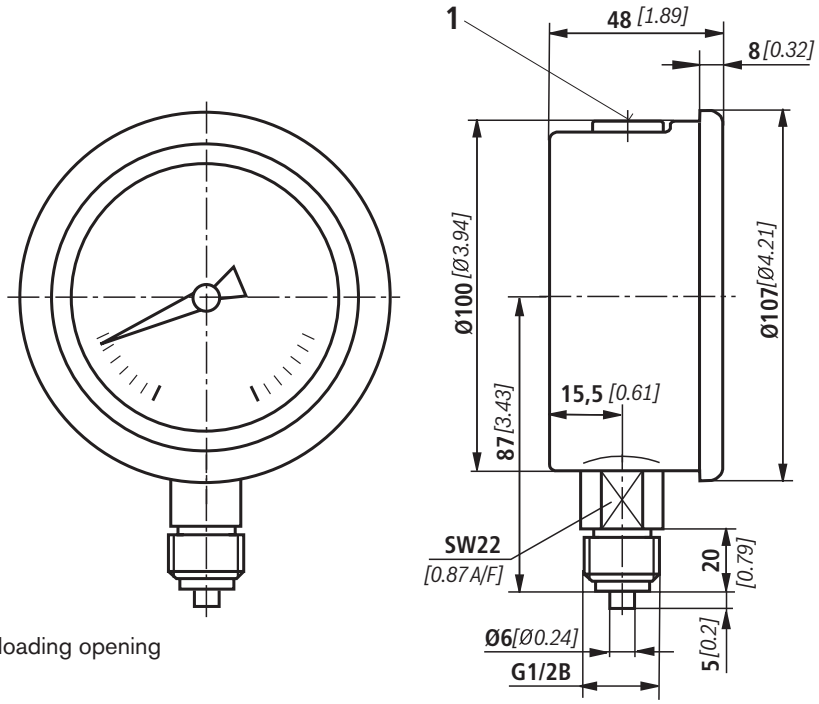
1 Bleed or pressure unloading opening

☞ **Cutout**
Ø63^{+1}mm *[Ø2.48$^{+0.04}$ inch]*

The mounting clamp is included in the scope of supply of the pressure gauge. Version depending on the selected manufacturer.

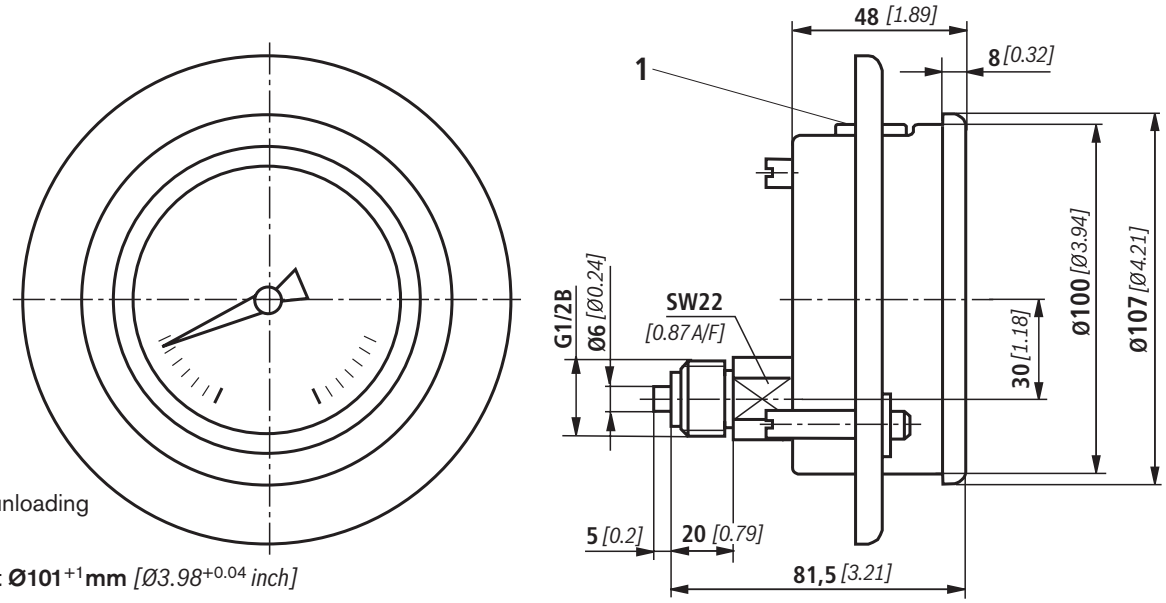
Unit dimensions (nominal dimensions in mm *[inch]*)

Pressure gauge DN100, with dual scale – connection at the bottom



1 Bleed or pressure unloading opening

Pressure gauge DN100, with dual scale – connection eccentrically at the rear, with mounting clamp



1 Bleed or pressure unloading opening

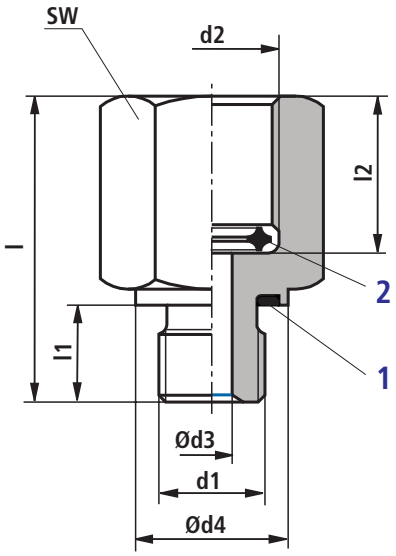
☞ **Cutout Ø101**$^{+1}$**mm** *[Ø3.98*$^{+0.04}$ *inch]*

The mounting clamp is included in the scope of supply of the pressure gauge. Version depending on the selected manufacturer.

Adapter for direct installation of the pressure gauge

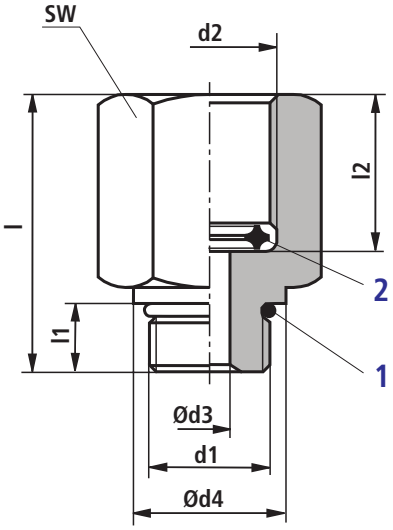
Unit dimensions (nominal dimensions in mm *[inch]*)

Version **"A"**



Reducing piece for mounting cavity to ISO 1179

Version **"B"**



Reducing piece for mounting cavity to ISO 11926-1

Version	PN	Dimensions							
		d1	d2	Ød3	Ød4	l	l1	l2	SW *[A/F]*
A	630	G1/4 A	G1/4	4 *[0.16]*	19 *[0.75]*	34 *[1.34]*	12 *[0.47]*	14.5 *[0.57]*	22 *[0.87]*
	400	G1/4 A	G1/2	4 *[0.16]*	19 *[0.75]*	35 *[1.38]*	12 *[0.47]*	16.0 *[0.63]*	27 *[1.06]*
B	630	7/16-20 UNF	G1/4	4 *[0.16]*	16 *[0.63]*	31 *[1.22]*	9 *[0.35]*	14.5 *[0.57]*	22 *[0.87]*
	400	7/16-20 UNF	G1/2	4 *[0.16]*	16 *[0.63]*	32 *[1.26]*	9 *[0.35]*	16.0 *[0.63]*	27 *[1.06]*

Version	Designation	Material no.
A	REDUZIERSTUECK G1/4-G1/4 /FKM	R901156422
	REDUZIERSTUECK G1/4-G1/2 /FKM	R901156423
B	REDUZIERSTUECK 7/16-20UNF-G1/4 /FKM	R901156316
	REDUZIERSTUECK 7/16-20UNF-G1/2 /FKM	R901156317

Order example

Reducing piece made of steel, galvanised and yellow-chromated as surface protection G1/4 A, female thread = G1/2 with seal ring item 1, material FKM and seal ring item 2, material Cu

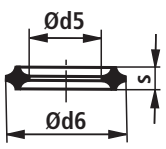
REDUZIERSTUECK G1/4-G1/2 /FKM, Material no. **R901156423**

Spare part: Seal ring item 1

Version	Material	Designation	Material no.
A	FKM	PROFILDICHTUNG M14X1,5+G1/4 FKM	R900012502
B	FKM	O-Ring 8,92x1,83-FKM80+-5SH	R900024577

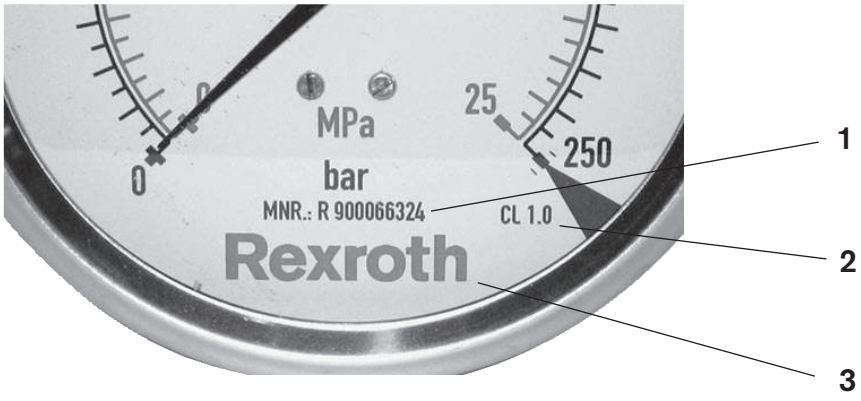
Spare part: Seal ring item 2

For thread d2	Mate-rial	Dimensions			Designation	Material no.
		Ød5	Ød6	s	DICHTRING....	
G1/4	Cu	5.9 *[0.23]*	9.3 *[0.37]*	3.2 *[0.13]*	5,4/9,3X3,2-CU NR:9090800	R900004667
G1/2	Cu	8.0 *[0.32]*	14.8 *[0.58]*	4.2 *[0.17]*	8,0/14,8X4,2-CU NR:9090819	R900218724



Seal ring for metal sealing. After sealing has been achieved, the pressure gauge can still be turned by 360°, so that any desired position can be set.

Marking on the dial



1 Material no. (see selection tables on pages 2 to 4)

2 Accuracy class to DIN EN 837

3 "REXROTH" logo

On dual scales, the lettering of the outer scale division (bar) is black, that of the inner scale division red.

Note: Single or dual scales for other pressure ranges (psi, kPa, MPa) on request.

Installation notes

– When connecting the measuring line to the pressure gauge, secure the connecting piece of the pressure gauge (SW14; SW22 *[0.55A/F; 0.87A/F]*) by means of a lock wrench.

– **Bleed or pressure unloading opening**
The pressure gauges are provided with a bleed feature at the top of the housing. Turn the bleed feature manually from the "closed" position to the "open" position before commissioning the pressure gauge in order to prevent measurement errors.

Safety note according to Pressure Equipment Directive 97/23/EC

Pressure gauges are classified as pressure-holding equipment according to Article 1, Paragraph 2.1 .4 of the Pressure Equipment Directive. The volume of the pressurised housings is < 0.1 litre.

According to Annex 2, Diagram 4 (fluids) and Diagram 2 (nitrogen) the pressure gauges according to the present data sheet RE 50205 are subject to the Pressure Equipment Directive up to PS = 1000 bar. According to Article 3, Paragraph 3 they are manufactured according to "good engineering practice" and are not CE-marked.

Use in potentially explosive atmospheres according to Directive 94/9/EC (ATEX)

The pressure gauges are provided with stainless steel housings which cannot generate igniting sparks according to DIN EN 13463-5. The maximum surface temperature depends not on the pressure gauges, but mainly on the relevant fluid temperature and must therefore be assessed within the risk analysis of the power unit/block.

Because the pressure gauge according to the present data sheet RE 50205 do not include any potential sources of ignition, they do **not** fall under the ATEX Directive and are **not** CE-marked.

Normative cross-reference

DIN EN 837-1	Pressure gauges - part 1: Bourdon tube pressure gauges; dimensions, metrology, requirements and testing
DIN EN 837-2	Pressure gauges - part 2: Selection and installation recommendations for pressure gauges
DIN 51524	Pressure fluids; hydraulic oils
VDMA 24317	Fluid power - flame-retardant hydraulic fluids – technical minimum requirements
VDMA 24568	Fluid power; fast bio-degradable hydraulic fluids; technical minimum requirements;

Notes

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