

# Standard Bourdon tube pressure gauges

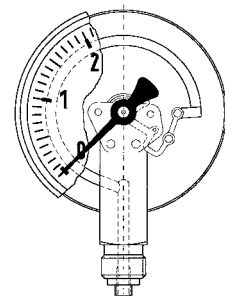
EN 837-1



- For pneumatic and heating system applications
- Design as per EN 837-1
- Accuracy class 1.6
- Corrosion-resistant, highly impact-resistant plastic housing
- Many customised versions available



Page 512



**Application** For gaseous and liquid media which are not highly viscous, do not crystallise and do not attack copper alloys.  
! For measuring gas or vapour, observe the table "Selection Criteria as per EN 837-2" (see appendix)!

## Technical specifications

### Type

D 1

### Nominal size

40 – 50 – 63 – 80 – 100

### Accuracy class (EN 837-1/6)

1.6

### Ranges (EN 837-1/5)

-1/0 to -1/+15 bar  
0/0.6 to 0/400 bar

### Application area

Static load:  $\frac{3}{4}$  x full scale value  
Dynamic load:  $\frac{2}{5}$  x full scale value  
Short-term: full scale value

### Operating temperature range

Medium:  $T_{max} = +60 \text{ }^{\circ}\text{C}$   
Ambient:  $T_{min} = -20 \text{ }^{\circ}\text{C}$   
 $T_{max} = +60 \text{ }^{\circ}\text{C}$

### Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of 20 °C:  
rising temperature approx.  $\pm 0.4 \text{ } \%/10 \text{ K}$   
falling temperature approx.  $\pm 0.4 \text{ } \%/10 \text{ K}$   
of full scale value

### Degree of protection

IP 32 (EN 60529)

## Standard version

### Connection

Brass, bottom or centre back  
NG 40 G $\frac{1}{8}$ B – SW 12  
NG 50-63 G $\frac{1}{4}$ B – SW 14  
NG 80-100 bottom G $\frac{1}{2}$ B – spanner size SW 22  
NG 80-100 centre back G $\frac{1}{4}$ B – spanner size SW 14  
(EN 837-1/7.3)

### Measuring element

Bourdon tube, copper alloy  
 $\leq 60$  bar "C" type tube  
 $> 60$  bar helical tube

### Movement

Brass

### Dial

Plastic, white  
Dial marking black

### Pointer

Plastic, black

### Housing

Black ABS, highly impact-resistant and corrosion-resistant

### Window

Clip-in plastic, NG 80-100 with adjustable red reference pointer

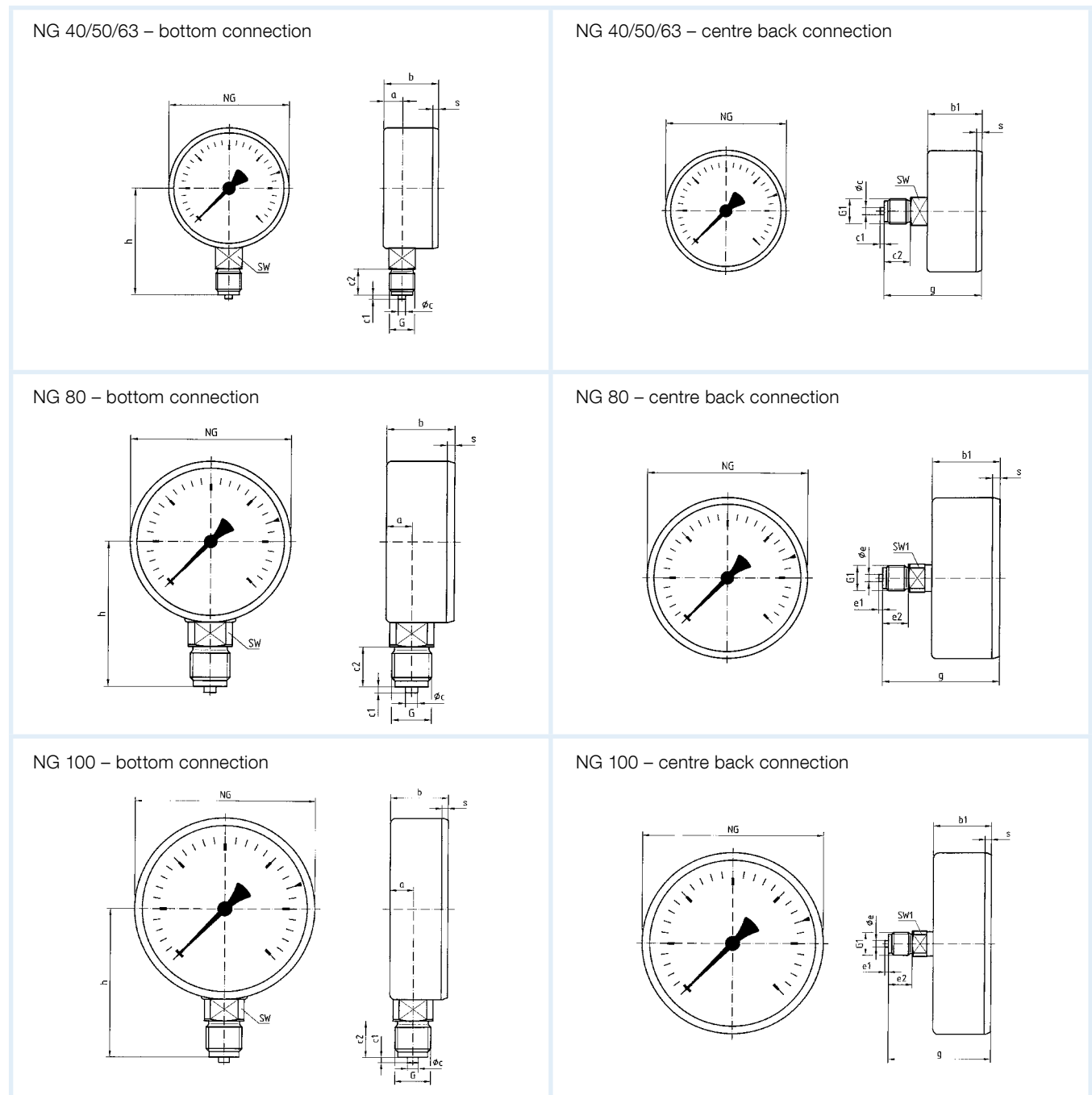
## Options

- Throttle screw
- Reference pointer
- Special scales
- Other process connections

# Standard Bourdon tube pressure gauges

Type D 1 – NG 40/50/63/80/100

Housing types and dimensions



## Dimensions (mm)

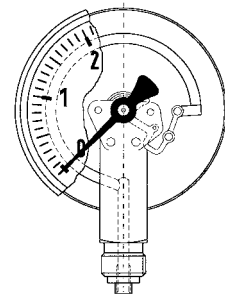
Nominal size (NG)	a	b	b <sub>1</sub>	$\phi c$	c <sub>1</sub>	c <sub>2</sub>	$\phi e$	e <sub>1</sub>	e <sub>2</sub>	g	G	G <sub>1</sub>	h	s	SW	Spanner size SW <sub>1</sub>
40	9.5	25	25	4	2	10	-	-	-	41.5	G $\frac{1}{8}$ B	G $\frac{1}{8}$ B	36	3	12	-
50	10.3	26.8	27.1	5	2	13	-	-	-	47.1	G $\frac{1}{4}$ B	G $\frac{1}{4}$ B	45	3.8	14	-
63	9.8	29.7	30.4	5	2	13	-	-	-	50.4	G $\frac{1}{4}$ B	G $\frac{1}{4}$ B	51.5	3.7	14	-
80	12.8	32.8	32.8	6	3	20	5	2	13	55.8	G $\frac{1}{2}$ B	G $\frac{1}{4}$ B	72	2.8	22	14
100	15.5	34.5	32	6	3	20	5	2	13	55	G $\frac{1}{2}$ B	G $\frac{1}{4}$ B	82	3.5	22	14

# Standard Bourdon tube pressure gauges

EN 837-1



- For pneumatic and heating system applications
- Robust steel or stainless steel housing
- Accuracy class 1.6
- Many customised versions available



**Application** For gaseous and liquid media which are not highly viscous, do not crystallise and do not attack copper alloys.  
! For measuring gas or vapour, observe the table "Selection Criteria as per EN 837-2" (see appendix)!

## Technical specifications

**Type**  
D 2/D 3

**Nominal size**  
40 – 50 – 63

**Accuracy class (EN 837-1/6)**  
1.6

**Ranges (EN 837-1/5)**  
-1/0 to -1/+15 bar  
0/0.6 to 0/400 bar

**Application area**  
Static load:  $\frac{3}{4}$  x full scale value  
Dynamic load:  $\frac{2}{3}$  x full scale value  
Short-term: full scale value

## Standard version

**Connection**  
Brass, bottom or centre back  
NG 40 G $\frac{1}{8}$ B – spanner size SW 12  
NG 50-63 G $\frac{1}{4}$ B – spanner size SW 14  
(EN 837-1/7.3)

**Measuring element**  
Bourdon tube, copper alloy  
 $\leq 60$  bar "C" type tube  
> 60 bar helical tube

**Movement**  
Brass

- Options**
- Panel mounting bezel
  - 3-hole fixing, panel mounting bezel
  - Throttle screw

## Operating temperature range

Medium:  $T_{max} = +60$  °C  
Ambient:  $T_{min} = -20$  °C  
 $T_{max} = +60$  °C

## Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of 20 °C:  
rising temperature approx.  $\pm 0.4$  %/10 K  
falling temperature approx.  $\pm 0.4$  %/10 K  
of full scale value

## Degree of protection

IP 32 (EN 60529)

## Dial

Plastic, white  
Dial marking black

## Pointer

Plastic, black

## Housing

D 2 – black sheet steel  
D 3 – stainless steel 304

## Window

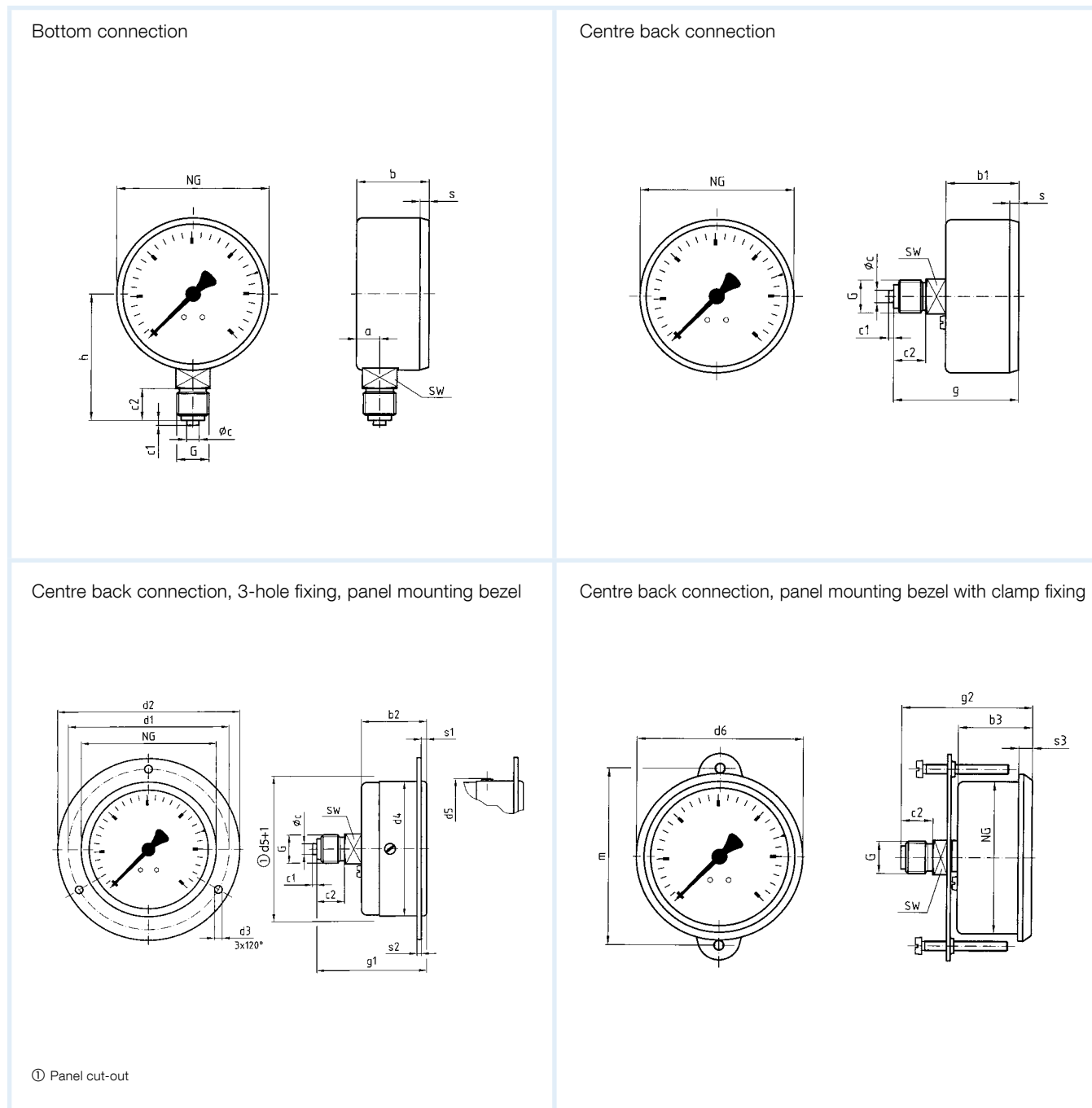
Clip-in plastic

- Reference pointer
- Special scales
- Other process connections

# Standard Bourdon tube pressure gauges

Type D 2/D 3 – NG 40/50/63

## Housing types and dimensions



### Dimensions (mm)

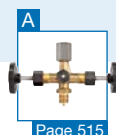
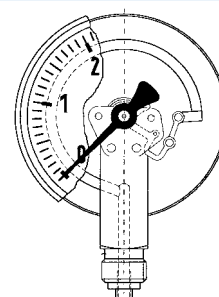
Nominal size (NG)	a	b	b1	b2	b3	$\phi_c$	c1	c2	d1	d2	d3	d4	d5	d6	g	g1	g2	G	h	m
40	8.5	23.5	25	26	28	4	2	10	51	61	3.6	41	45	44	41.5	42.5	46.6	G <sub>1/6</sub> B	36	50
50	10.5	26	26	27.5	30.3	5	2	13	60	71	3.6	50	54	54	47	49	51.3	G <sub>1/4</sub> B	45	58
63	9.5	29.4	29.4	30.3	30.3	5	2	13	75	85	3.6	63	66.5	67.8	50.4	51.3	53.3	G <sub>1/4</sub> B	51.5	72
Nominal size (NG)	s	s1	s2	s3	SW															
40	3	2.5	2	5.2	12															
50	3.8	2.5	2	5.4	14															
63	3.7	2.5	2	5.6	14															

# Standard Bourdon tube pressure gauges

EN 837-1



- For domestic and mechanical engineering applications
- Robust steel housing
- Window with adjustable reference pointer
- Many customised versions available



**Application** For gaseous and liquid media which are not highly viscous, do not crystallise and do not attack copper alloys.  
! For measuring gas or vapour, observe the table "Selection Criteria as per EN 837-2" (see appendix)!

## Technical specifications

**Type**  
D 2

**Nominal size**  
80 – 100

**Accuracy class (EN 837-1/6)**  
1.6

**Ranges (EN 837-1/5)**  
-1/0 to -1/+15 bar  
0/0.6 to 0/400 bar

**Application area**  
Static load:  $\frac{3}{4}$  x full scale value  
Dynamic load:  $\frac{2}{5}$  x full scale value  
Short-term: full scale value

## Operating temperature range

Medium:  $T_{max} = +60\text{ }^{\circ}\text{C}$   
Ambient:  $T_{min} = -20\text{ }^{\circ}\text{C}$   
 $T_{max} = +60\text{ }^{\circ}\text{C}$

## Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of 20 °C:  
rising temperature approx.  $\pm 0.4\%$ /10 K  
falling temperature approx.  $\pm 0.4\%$ /10 K  
of full scale value

## Degree of protection

IP 32 (EN 60529)

## Standard version

**Connection**  
Brass, bottom:  
NG 80 – 100 G $\frac{1}{2}$ B – spanner size SW 22  
Brass, centre back:  
NG 80 – 100 G $\frac{1}{4}$ B – spanner size SW 14  
(EN 837-1/7.3)

**Measuring element**  
Bourdon tube, copper alloy  
 $\leq 60$  bar "C" type tube  
> 60 bar helical tube

**Movement**  
Brass

## Dial

Plastic, white  
Dial marking black

## Pointer

Plastic, black

## Housing

Sheet steel, black

## Window

Clip-in plastic, with adjustable red reference pointer

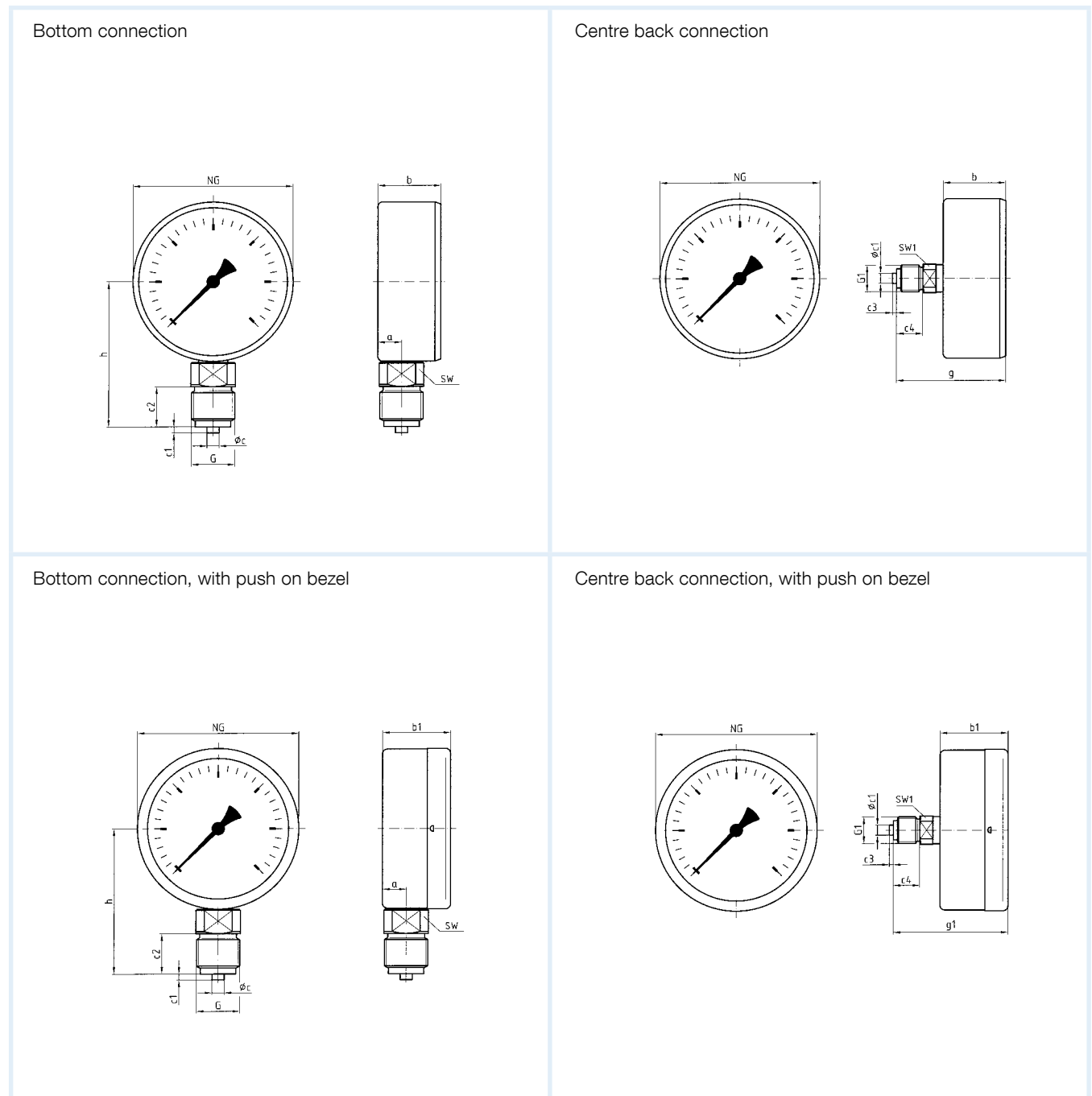
- Options**
- Stainless steel housing (NG 100)
  - Push on bezel
  - Instrument glass window

- Throttle screw
- Special scales
- Other process connections

# Standard Bourdon tube pressure gauges

Type D 2 – NG 80/100

Housing types and dimensions



## Dimensions (mm)

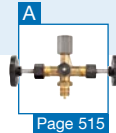
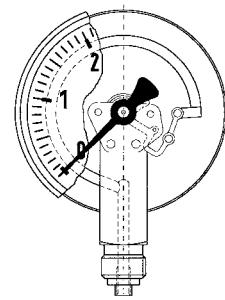
Nominal size (NG)	a	b	b1	Øc	c1	c2	Øc1	c3	c4	g	g1	G	G1	h	SW	Spanner size SW1
80	11.7	31	33.5	6	3	20	5	2	13	54	56.5	G½B	G¼B	72	22	14
100	11	29.5	34	6	3	20	5	2	13	52.5	57	G½B	G¼B	82	22	14

# Standard Bourdon tube pressure gauges

EN 837-1



- For domestic and mechanical engineering applications
- With reference pointer on dial
- Robust steel housing
- Many customised versions available



**Application** For gaseous and liquid media which are not highly viscous, do not crystallise and do not attack copper alloys.  
! For measuring gas or vapour, observe the table "Selection Criteria as per EN 837-2" (see appendix)!

## Technical specifications

**Type**  
D 2

**Nominal size**  
160

**Accuracy class (EN 837-1/6)**  
1.6

**Ranges (EN 837-1/5)**  
-1/0 to -1/+15 bar  
0/0.6 to 0/40 bar

**Application area**  
Static load:  $\frac{3}{4}$  x full scale value  
Dynamic load:  $\frac{2}{5}$  x full scale value  
Short-term: full scale value

## Operating temperature range

Medium:  $T_{max} = +60\text{ }^{\circ}\text{C}$   
Ambient:  $T_{min} = -20\text{ }^{\circ}\text{C}$   
 $T_{max} = +60\text{ }^{\circ}\text{C}$

## Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of  $20\text{ }^{\circ}\text{C}$ :  
rising temperature approx.  $\pm 0.4\text{ } \%/10\text{ K}$   
falling temperature approx.  $\pm 0.4\text{ } \%/10\text{ K}$   
of full scale value

## Degree of protection

IP 32 (EN 60529)

## Standard version

### Connection

Brass, bottom:  $G\frac{1}{2}B$  – spanner size SW 22

### Measuring element

Bourdon tube, copper alloy  
 $\leq 60$  bar "C" type tube  
 $> 60$  bar helical tube

### Movement

Brass

### Dial

Aluminium, white  
Dial marking black with adjustable reference pointer

### Pointer

Aluminium, black

### Housing

Sheet steel, black

### Push on bezel

Sheet steel, black

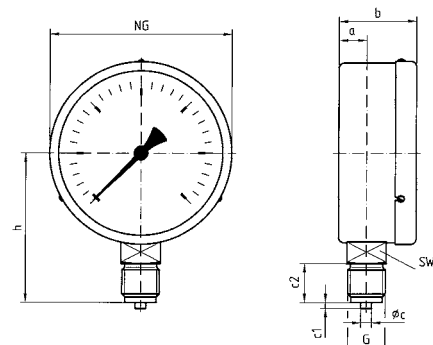
## Options

- Throttle screw
- Special scales
- Other process connections

## Window

Instrument glass

### Bottom connection











## Dimensions (mm)

Nominal size (NG)	a	b	$\varnothing c$	c1
160	15.5	50	6	3
Nominal size (NG)	c2	G	h	SW
160	20	$G\frac{1}{2}B$	116	22

# Standard Bourdon tube pressure gauges

EN 837-1

DG: M, PG: 2

Type	RF40, D101	RF40, D111	RF50, D101	RF50, D111	RF63, D101	RF63, D111	RF80, D101	RF100, D101	
Version									
Housing Ø	40	40	50	50	63	63	80	100	
Housing	ABS highly impact-resistant, clip-in plastic window								
Measuring element	Bourdon tube, copper alloy								
Accuracy class	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	
Connection	G $\frac{1}{8}$ B	G $\frac{1}{8}$ B	G $\frac{1}{4}$ B	G $\frac{1}{4}$ B	G $\frac{1}{4}$ B	G $\frac{1}{4}$ B	G $\frac{1}{2}$ B	G $\frac{1}{2}$ B	
PU*	100 pieces	100 pieces	100 pieces	100 pieces	100 pieces	100 pieces	50 pieces	50 pieces	
								With adjustable red reference pointer on window	
Range (bar)	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.	
-1/0	<b>85001101</b>	<b>85001111</b>	<b>85051101</b>	<b>85051111</b>	<b>85101101</b>	<b>85101111</b>	85151101	85201101	
-1/+0.6	---	---	---	---	85102101	85102111	85152101	85202101	
-1/+1.5	---	---	---	---	<b>85103101</b>	<b>85103111</b>	85153101	85203101	
-1/+3	---	---	---	---	<b>85104101</b>	85104111	85154101	85204101	
-1/+5	---	---	---	---	<b>85105101</b>	<b>85105111</b>	85155101	85205101	
-1/+9	---	---	---	---	85106101	85106111	85156101	85206101	
-1/+15	---	---	---	---	<b>85107101</b>	85107111	85157101	85207101	
0/0.6	85009101	85009111	85059101	85059111	<b>85109101</b>	<b>85109111</b>	85159101	85209101	
0/1	<b>85010101</b>	<b>85010111</b>	<b>85060101</b>	<b>85060111</b>	<b>85110101</b>	<b>85110111</b>	85160101	85210101	
0/1.6	<b>85011101</b>	<b>85011111</b>	<b>85061101</b>	<b>85061111</b>	<b>85111101</b>	<b>85111111</b>	85161101	85211101	
0/2.5	<b>85012101</b>	<b>85012111</b>	<b>85062101</b>	<b>85062111</b>	<b>85112101</b>	<b>85112111</b>	85162101	85212101	
0/4	<b>85013101</b>	<b>85013111</b>	<b>85063101</b>	<b>85063111</b>	<b>85113101</b>	<b>85113111</b>	85163101	85213101	
0/6	<b>85014101</b>	<b>85014111</b>	<b>85064101</b>	<b>85064111</b>	<b>85114101</b>	<b>85114111</b>	85164101	85214101	
0/10	<b>85015101</b>	<b>85015111</b>	<b>85065101</b>	<b>85065111</b>	<b>85115101</b>	<b>85115111</b>	85165101	85215101	
0/16	<b>85016101</b>	<b>85016111</b>	<b>85066101</b>	<b>85066111</b>	<b>85116101</b>	<b>85116111</b>	85166101	85216101	
0/25	<b>85017101</b>	<b>85017111</b>	<b>85067101</b>	<b>85067111</b>	<b>85117101</b>	<b>85117111</b>	85167101	85217101	
0/40	<b>85018101</b>	<b>85018111</b>	<b>85068101</b>	<b>85068111</b>	<b>85118101</b>	<b>85118111</b>	85168101	85218101	
0/60	85019101	85019111	<b>85069101</b>	<b>85069111</b>	<b>85119101</b>	<b>85119111</b>	85169101	85219101	
0/100	85020101	85020111	<b>85070101</b>	<b>85070111</b>	<b>85120101</b>	<b>85120111</b>	85170101	85220101	
0/160	85021101	85021111	<b>85071101</b>	<b>85071111</b>	85121101	<b>85121111</b>	85171101	85221101	
0/250	85022101	85022111	85072101	85072111	85122101	<b>85122111</b>	85172101	85222101	
0/400	---	---	85073101	85073111	85123101	<b>85123111</b>	85173101	85223101	

\* Minimum order quantity for non-stock items = 100 pieces.

Blue part no. = in-stock items











See page 401 for options.



# Standard Bourdon tube pressure gauges

EN 837-1

DG: M, PG: 2

Type	RF40, D201	RF40, D211	RF40, D231*	RF40, D251*	RF50, D201	RF50, D211	RF50, D231*	RF50, D251*
Version								
Housing Ø	40	40	40	40	50	50	50	50
Housing	Black sheet steel, plastic clip-in window							
Measuring element	Bourdon tube, copper alloy							
Accuracy class	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Connection	G $\frac{1}{8}$ B	G $\frac{1}{8}$ B	G $\frac{1}{8}$ B	G $\frac{1}{8}$ B	G $\frac{1}{4}$ B	G $\frac{1}{4}$ B	G $\frac{1}{4}$ B	G $\frac{1}{4}$ B
			3-hole fixing, panel mounting bezel, stainless steel	Panel mounting bezel stainless steel, polished, with clamp fixing			3-hole fixing, panel mounting bezel, stainless steel	Panel mounting bezel stainless steel, polished, with clamp fixing
<b>Range (bar)</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>
-1/0	<b>85001201</b>	<b>85001211</b>	85001231	85001251	85051201	85051211	85051231	<b>85051251</b>
-1/+0.6	---	---	---	---	---	---	---	---
-1/+1.5	---	---	---	---	---	---	---	---
-1/+3	---	---	---	---	---	---	---	---
-1/+5	---	---	---	---	---	---	---	---
-1/+9	---	---	---	---	---	---	---	---
-1/+15	---	---	---	---	---	---	---	---
0/1	85010201	<b>85010211</b>	85010231	85010251	85060201	85060211	85060231	<b>85060251</b>
0/1.6	85011201	85011211	85011231	85011251	85061201	85061211	85061231	85061251
0/2.5	85012201	85012211	85012231	85012251	85062201	85062211	<b>85062231</b>	<b>85062251</b>
0/4	<b>85013201</b>	<b>85013211</b>	85013231	<b>85013251</b>	<b>85063201</b>	<b>85063211</b>	<b>85063231</b>	<b>85063251</b>
0/6	<b>85014201</b>	<b>85014211</b>	<b>85014231</b>	<b>85014251</b>	<b>85064201</b>	<b>85064211</b>	<b>85064231</b>	<b>85064251</b>
0/10	<b>85015201</b>	<b>85015211</b>	<b>85015231</b>	<b>85015251</b>	<b>85065201</b>	<b>85065211</b>	<b>85065231</b>	<b>85065251</b>
0/16	<b>85016201</b>	<b>85016211</b>	<b>85016231</b>	<b>85016251</b>	<b>85066201</b>	<b>85066211</b>	<b>85066231</b>	<b>85066251</b>
0/25	<b>85017201</b>	<b>85017211</b>	85017231	85017251	85067201	85067211	85067231	85067251
0/40	85018201	85018211	85018231	85018251	85068201	85068211	85068231	85068251
0/60	85019201	85019211	85019231	85019251	85069201	85069211	85069231	85069251
0/100	85020201	85020211	85020231	85020251	85070201	85070211	85070231	85070251
0/160	85021201	85021211	85021231	85021251	85071201	85071211	85071231	85071251
0/250	85022201	85022211	85022231	85022251	85072201	85072211	85072231	85072251
0/400	---	---	---	---	85073201	85073211	85073231	85073251

\* Dual scale, bar outer, black – psi inner, red.  
Minimum order quantity for non-stock items = 100 pieces.

Blue part no. = in-stock items











See page 401 for options.

# Standard Bourdon tube pressure gauges

EN 837-1

DG: M, PG: 2

Type	RF63, D201	RF63, D211	RF63, D231*	RF63, D251*	RF80, D201	RF100, D201	RF100, D211	RF160, D201	
Version									
Housing Ø	63	63	63	63	80	100	100	160	
Housing	Black sheet steel, plastic clip-in window							Push on bezel, instrument glass	
Measuring element	Bourdon tube, copper alloy								
Accuracy class	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	
Connection	G¼B	G¼B	G¼B	G¼B	G½B	G½B	G¼B	G½B	
			3-hole fixing, panel mounting bezel, stainless steel	Panel mounting bezel stainless steel, polished, with clamp fixing	With adjustable red reference pointer				
<b>Range (bar)</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	
-1/0	<b>85101201</b>	<b>85101211</b>	85101231	<b>85101251</b>	<b>85151201</b>	<b>85201201</b>	85201211	<b>85251201</b>	
-1/+0.6	85102201	85102211	85102231	85102251	85152201	<b>85202201</b>	85202211	85252201	
-1/+1.5	85103201	85103211	85103231	85103251	85153201	<b>85203201</b>	85203211	85253201	
-1/+3	85104201	85104211	85104231	85104251	85154201	<b>85204201</b>	85204211	85254201	
-1/+5	85105201	85105211	85105231	85105251	<b>85155201</b>	<b>85205201</b>	85205211	85255201	
-1/+9	85106201	85106211	85106231	85106251	85156201	<b>85206201</b>	85206211	85256201	
-1/+15	85107201	85107211	85107231	85107251	85157201	<b>85207201</b>	85207211	85257201	
0/0.6	85109201	85109211	85109231	85109251	<b>85159201</b>	<b>85209201</b>	85209211	<b>85259201</b>	
0/1	<b>85110201</b>	85110211	85110231	85110251	<b>85160201</b>	<b>85210201</b>	85210211	<b>85260201</b>	
0/1.6	<b>85111201</b>	85111211	85111231	85111251	<b>85161201</b>	<b>85211201</b>	85211211	<b>85261201</b>	
0/2.5	<b>85112201</b>	<b>85112211</b>	<b>85112231</b>	<b>85112251</b>	<b>85162201</b>	<b>85212201</b>	85212211	<b>85262201</b>	
0/4	<b>85113201</b>	<b>85113211</b>	<b>85113231</b>	<b>85113251</b>	<b>85163201</b>	<b>85213201</b>	<b>85213211</b>	<b>85263201</b>	
0/6	<b>85114201</b>	<b>85114211</b>	<b>85114231</b>	<b>85114251</b>	<b>85164201</b>	<b>85214201</b>	<b>85214211</b>	<b>85264201</b>	
0/10	<b>85115201</b>	<b>85115211</b>	<b>85115231</b>	<b>85115251</b>	<b>85165201</b>	<b>85215201</b>	<b>85215211</b>	<b>85265201</b>	
0/16	<b>85116201</b>	<b>85116211</b>	<b>85116231</b>	<b>85116251</b>	<b>85166201</b>	<b>85216201</b>	<b>85216211</b>	<b>85266201</b>	
0/25	<b>85117201</b>	<b>85117211</b>	85117231	<b>85117251</b>	<b>85167201</b>	<b>85217201</b>	85217211	<b>85267201</b>	
0/40	<b>85118201</b>	85118211	85118231	85118251	<b>85168201</b>	<b>85218201</b>	85218211	<b>85268201</b>	
0/60	85119201	85119211	85119231	85119251	<b>85169201</b>	<b>85219201</b>	85219211	---	
0/100	85120201	85120211	85120231	85120251	85170201	85220201	85220211	---	
0/160	85121201	85121211	85121231	85121251	85171201	85221201	85221211	---	
0/250	85122201	85122211	85122231	85122251	85172201	85222201	85222211	---	
0/400	85123201	85123211	85123231	85123251	85173201	85223201	85223211	---	

\* Dual scale, bar outer, black – psi inner, red.

Minimum order quantity for non-stock items = 100 pieces (RF 160, D 201 = 10 pieces).

Blue part no. = in-stock items



See page 401 for options.

# Options for standard Bourdon tube pressure gauges

DG: M

Housing diameter (mm)	PG	40	50	63	80	100	160
Description		Part no.	Part no.	Part no.	Part no.	Part no.	Part no.
Housing nickel-plated	3	38064	38065	38066	---	---	---
Push on bezel nickel-plated	3	38250	38251	38252	38253	38254	---
Housing stainless steel 304, vibratory-finished (extra charge, instead of steel housing)	3	38256	38257	38258	---	38300	---
Housing stainless steel 304, polished (extra charge, instead of steel housing)	3	38259	38260	38261	---	38314	---
Push on bezel stainless steel 304 DNV type approval, polished	3	38262	2.60 38263	38264	---	---	---
Connection socket nickel-plated	3	38082	38083	38084	38085	38086	38087
Connection socket with special thread	-	On request	On request	On request	On request	On request	On request
Throttle screw brass – hole 0.3 – 0.5 – 0.7 mm (please specify)	2	38095	38096	38097	38098	38099	38100
Red mark on dial	0	38182	38183	38184	38185	38186	38187
1 reference pointer, red, printed on window	1	38315	38316	38109	Standard	Standard	---
2 reference pointers, red, on dial, adjustable	1	---	---	---	---	38123	---
Printing block costs per scale and colour (scale design as per EN 837-1, others on request)	0	38151	38152	38153	38154	38155	38156
Printing costs per additional colour	0	38163	38164	38165	38166	38167	38168

\* Minimum order quantity for special versions (non-stock items) = 100 pieces per version and delivery.

Blue part no. = in-stock items

## Spare windows for standard Bourdon tube pressure gauges

DG: M, PG: 1

Housing diameter (mm)	40	50	63	80	100	160
Description	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.
Plastic window, clip-in, for plastic housing	38285	38271	38272	38273	38274	---
Plastic window, clip-in, for steel housing	38275	38276	38277	38317	38318	---
Instrument glass window	---	---	---	38278	38279	38280

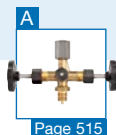
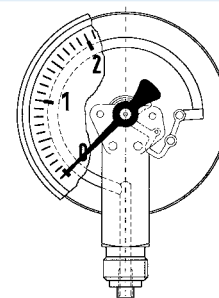
Blue part no. = in-stock items

# Bourdon tube pressure gauges for industrial applications

EN 837-1



- For machine and plant engineering
- Robust, stainless steel housing with bayonet bezel
- Can be equipped with electrical contact
- DNV type approval and GOSSTANDART-certified



**Application** For gaseous and liquid media which are not highly viscous, do not crystallise and do not attack copper alloys. For high accuracy and rough application conditions.  
! For measuring gas or vapour, observe the table "Selection Criteria as per EN 837-2" (see appendix)!

## Technical specifications

### Type

D 4

### Nominal size

100 – 160

### Accuracy class (EN 837-1/6)

1.0

### Ranges (EN 837-1/5)

-1/0 to -1/+15 bar  
0/0.6 to 0/1,000 bar

### Application area

Static load:

≤ 600 bar = full scale value  
> 600 bar = ¾ x full scale value

Dynamic load:

≤ 600 bar = 0.9 x full scale value  
> 600 bar = 2/3 x full scale value

Short-term:

≤ 600 bar = 1.3 x full scale value  
> 600 bar = full scale value

### Operating temperature range

Medium:  $T_{max} = +60\text{ °C}$   
Ambient:  $T_{min} = -20\text{ °C}$   
 $T_{max} = +60\text{ °C}$

### Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of 20 °C:  
rising temperature approx. ±0.4 %/10 K  
falling temperature approx. ±0.4 %/10 K of full scale value

### Degree of protection

IP 54 (EN 60529)

## Standard version

### Connection

Brass, bottom or bottom back  
G½B – spanner size SW 22 (EN 837-1/7.3)

### Measuring element

Bourdon tube, ≤ 60 bar "C" type tube, copper alloy  
> 60 bar helical tube, stainless steel 316 Ti/316 L

### Movement

Brass

### Dial

Aluminium, white; dial marking black

### Pointer

Aluminium, black

### Housing

Stainless steel 304 with blow-out

### Bayonet type bezel

Stainless steel 304

### Window

Instrument glass

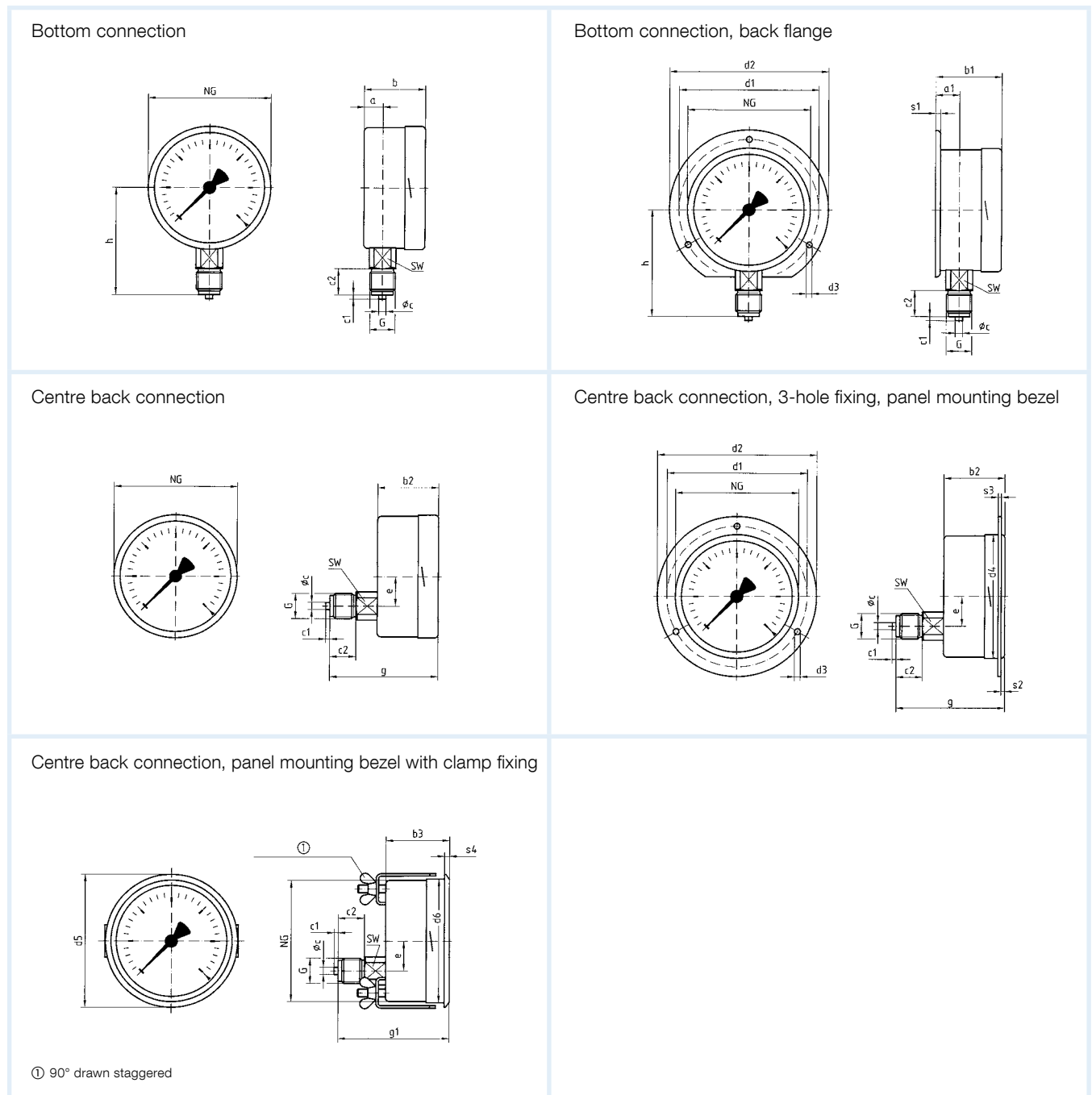
## Options

- Nominal size 250 (bottom connection)
- Back flange
- Panel mounting bezel
- 3-hole fixing, panel mounting bezel
- Laminated safety glass window
- Throttle screw
- Reference pointer
- Electrical contacts
- Special scales
- Other process connections

# Bourdon tube pressure gauges for industrial applications

## Type D 4 – NG 100/160

### Housing types and dimensions



### Dimensions (mm)

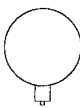



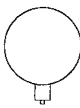



Nominal size (NG)	a	a1	b	b1	b2	b3	Øc	c1	c2	d1*	d2	d3*	d4	d5	d6	e	G	g	g1	h	s1
100	15.6	19.1	49	52.5	49	49	6	3	20	116	132	4.8	104	107	101	26.5	G½B	81	81	86	5.5
160	17.5	20.5	50	53	50	52	6	3	20	178	196	5.8	164	167	161	26.5	G½B	82	84	116	6
Nominal size (NG)	s2	s3	s4	SW																	
100	4	2	4	22																	
160	4	2	4.5	22																	

\* Dimensions for NG 100 according to DIN 16064.

# Bourdon tube pressure gauges for industrial applications

EN 837-1

DG: M, PG: 2

Type	RF100 I, D401	RF100 I, D411	RF100 I, D431	RF100 I, D451	RF160 I, D401	RF160 I, D411	RF160 I, D431	RF160 I, D451
Version								
Housing Ø	100	100	100	100	160	160	160	160
Housing	Stainless steel 304 with bayonet bezel, instrument glass window							
Measuring element	Bourdon tube, copper alloy (> 60 bar stainless steel 316 Ti/316 L)							
Accuracy class	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Connection	G½B	G½B	G½B	G½B	G½B	G½B	G½B	G½B
			3-hole fixing, panel mounting bezel 304 polished	Panel mounting bezel, 304, polished, with clamp fixing			3-hole fixing, panel mounting bezel 304 polished	Panel mounting bezel, 304, polished, with clamp fixing
Range (bar)	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.
-1/0	<b>85301401</b>	85301411	85301431	85301451	85351401	85351411	85351431	85351451
-1/+0.6	85302401	85302411	85302431	85302451	85352401	85352411	85352431	85352451
-1/+1.5	<b>85303401</b>	85303411	85303431	85303451	85353401	85353411	85353431	85353451
-1/+3	<b>85304401</b>	85304411	85304431	85304451	85354401	85354411	85354431	85354451
-1/+5	<b>85305401</b>	85305411	85305431	85305451	85355401	85355411	85355431	85355451
-1/+9	85306401	85306411	85306431	85306451	85356401	85356411	85356431	85356451
-1/+15	85307401	85307411	85307431	85307451	85357401	85357411	85357431	85357451
0/0.6	85309401	85309411	85309431	85309451	85359401	85359411	85359431	85359451
0/1	<b>85310401</b>	85310411	85310431	85310451	<b>85360401</b>	85360411	85360431	85360451
0/1.6	<b>85311401</b>	85311411	85311431	85311451	<b>85361401</b>	85361411	85361431	85361451
0/2.5	<b>85312401</b>	85312411	85312431	85312451	<b>85362401</b>	85362411	85362431	85362451
0/4	<b>85313401</b>	85313411	85313431	85313451	<b>85363401</b>	85363411	85363431	85363451
0/6	<b>85314401</b>	85314411	85314431	85314451	<b>85364401</b>	85364411	85364431	85364451
0/10	<b>85315401</b>	85315411	85315431	85315451	<b>85365401</b>	85365411	85365431	85365451
0/16	<b>85316401</b>	85316411	85316431	85316451	<b>85366401</b>	85366411	85366431	85366451
0/25	<b>85317401</b>	85317411	85317431	85317451	<b>85367401</b>	85367411	85367431	85367451
0/40	<b>85318401</b>	85318411	85318431	85318451	85368401	85368411	85368431	85368451
0/60	<b>85319401</b>	85319411	85319431	85319451	85369401	85369411	85369431	85369451
0/100	<b>85320401</b>	85320411	85320431	85320451	85370401	85370411	85370431	85370451
0/160	<b>85321401</b>	85321411	85321431	85321451	85371401	85371411	85371431	85371451
0/250	<b>85322401</b>	85322411	85322431	85322451	85372401	85372411	85372431	85372451
0/400	<b>85323401</b>	85323411	85323431	85323451	85373401	85373411	85373431	85373451
0/600	85324401	85324411	85324431	85324451	85374401	85374411	85374431	85374451
0/1,000	85325401	85325411	85325431	85325451	85375401	85375411	85375431	85375451

Minimum order quantity for non-stock items = 10 pieces.

Blue part no. = in-stock items

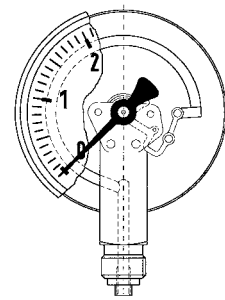


See page 441 for options.

# Glycerine filled Bourdon tube pressure gauges EN 837-1



- Can be used in case of heavy vibrations and high, dynamic pressure loads
- Longer service life due to less wear and corrosion protection of the measuring system
- No steaming up of the inside of the window in case of outdoor applications



**Application** For gaseous and liquid media which are not highly viscous, do not crystallise and do not attack copper alloys. For measurements in areas with high vibration levels and high, dynamic pressure loads. ! For measuring gas and vapour, these gauges must be used in accordance with the table "Selection Criteria as per EN 837-2" (see appendix)!

## Technical specifications

**Type**  
D 6

**Nominal size**  
40

**Accuracy class (EN 837-1/6)**  
1.6

**Ranges (EN 837-1/5)**  
0/1 bar to 0/400 bar  
-1/0 bar

**Application area**  
Static load:  $\frac{3}{4}$  x full scale value  
Dynamic load:  $\frac{2}{3}$  x full scale value  
Short-term: full scale value

## Operating temperature range

Medium:  $T_{max} = +60\text{ }^{\circ}\text{C}$   
Ambient:  $T_{min} = -20\text{ }^{\circ}\text{C}$   
 $T_{max} = +60\text{ }^{\circ}\text{C}$

## Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of  $+20\text{ }^{\circ}\text{C}$ :  
rising temperature approx.  $\pm 0.4\text{ } \%/10\text{ K}$   
falling temperature approx.  $\pm 0.4\text{ } \%/10\text{ K}$   
of full scale value

## Degree of protection

IP 65 (EN 60529)  
with housing vent ( $\leq 25\text{ bar}$ ) IP 54

## Standard version

**Connection**  
Brass, centre back  $G\frac{1}{8}B$  – spanner size SW 12 (EN 837-1/7.3)

**Measuring element**  
Bourdon tube, copper alloy  
 $\leq 60\text{ bar}$  "C" type tube  
 $> 60\text{ bar}$  helical tube

**Movement**  
Brass

**Dial**  
Plastic, white; dial marking black

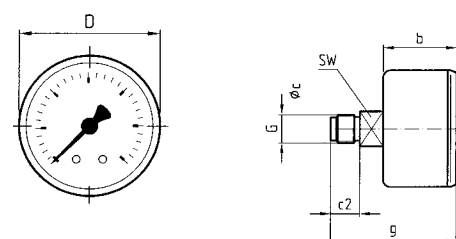
**Pointer**  
Plastic, black

**Housing**  
Plastic (ABS), black, with blow-out

**Window**  
Plastic, ultrasonically welded to housing

**Filling liquid**  
Glycerine (99.5 %)

Centre back connection – NG 40



## Dimensions (mm)

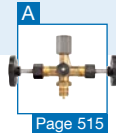
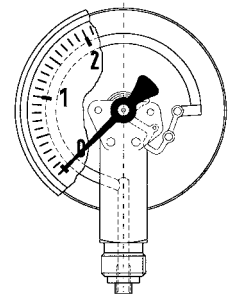
Nominal size (NG)	b	$\varnothing c$	c2	-
40	25	4	10	-
Nominal size (NG)	D	G	g	SW
40	40	$G\frac{1}{8}B$	43	12

- Options**
- Special scales
  - Throttle screw
  - Other process connections

# Glycerine filled Bourdon tube pressure gauges EN 837-1



- Can be used in case of heavy vibrations and high, dynamic pressure loads
- Longer service life due to less wear and corrosion protection of the measuring system
- No steaming up of the inside of the window in case of outdoor applications



**Application** For gaseous and liquid media which are not highly viscous, do not crystallise and do not attack copper alloys. For measurements in areas with high vibration levels and high, dynamic pressure loads. ! For measuring gas or vapour, observe the table "Selection Criteria as per EN 837-2" (see appendix)!

## Technical specifications

### Type

D 6

### Nominal size

50 – 63

### Accuracy class (EN 837-1/6)

1.6

### Ranges (EN 837-1/5)

-1/0 to -1/+15 bar

0/0.6 to 0/400 bar

### Application area

Static load:  $\frac{3}{4}$  x full scale value

Dynamic load:  $\frac{2}{5}$  x full scale value

Short-term: full scale value

### Operating temperature range

Medium:  $T_{max} = +60\text{ }^{\circ}\text{C}$

Ambient:  $T_{min} = -20\text{ }^{\circ}\text{C}$

$T_{max} = +60\text{ }^{\circ}\text{C}$

### Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of 20 °C:

rising temperature approx.  $\pm 0.4\%$ /10 K

falling temperature approx.  $\pm 0.4\%$ /10 K

of full scale value

### Degree of protection

IP 65 (EN 60529)

with housing vent ( $\leq 25$  bar) IP 54

## Standard version

### Connection

Brass, bottom or centre back

G $\frac{1}{4}$ B – spanner size SW 14 (EN 837-1/7.3)

### Measuring element

Bourdon tube, copper alloy

$\leq 60$  bar "C" type tube

$> 60$  bar helical tube

### Movement

Brass

### Dial

Aluminium, white

Dial marking black

### Pointer

Aluminium, black

### Housing

Polyamide, black

With blow-out

### Crimped bezel

Aluminium, black

### Window

Plastic

### Filling liquid

Glycerine (99.5 %)

## Options

- Back flange (NG 63)
- Throttle screw

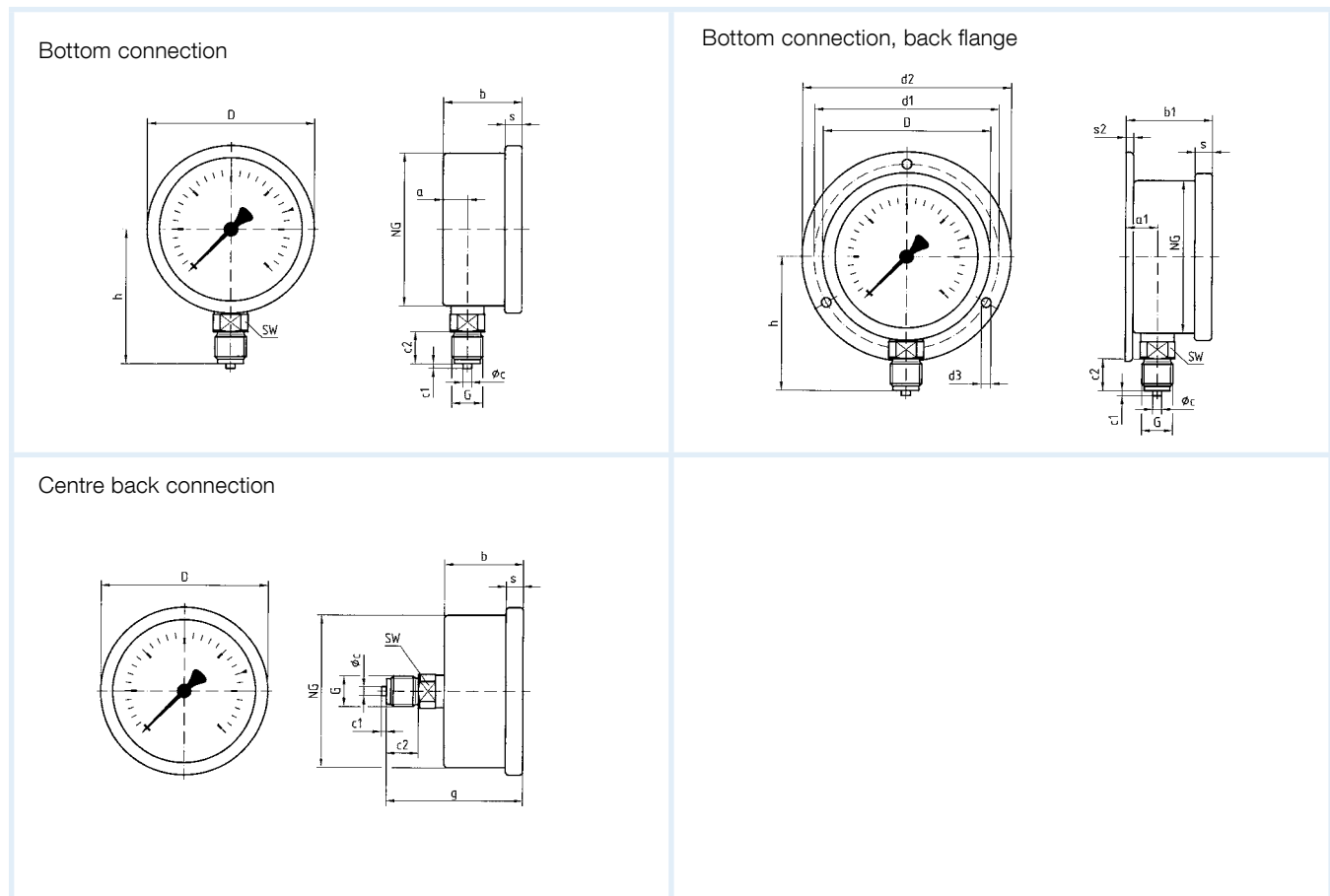
- Special scales
- Other process connections



# Glycerine filled Bourdon tube pressure gauges

Type D 6 – NG 50/63

## Housing types and dimensions




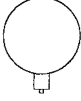

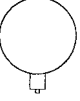

### Dimensions (mm)

Nominal size (NG)	a	a1	b	b1	Øc	c1	c2	d3*	D	G	g	h	s	SW
50	12	-	31.5	-	5	2	13	-	53	G $\frac{1}{4}$ B	54.5	47	5	14
63	10	13	32	35	5	2	13	3.6	68	G $\frac{1}{4}$ B	55	53	7	14

# Glycerine filled Bourdon tube pressure gauges

EN 837-1

DG: M, PG: 2

Type	RF40Gly, D611	RF50Gly, D601	RF50Gly, D611	RF63Gly, D601	RF63Gly, D611
Version					
Housing Ø	40	50	50	63	63
Housing	ABS black	Polyamide, black, with crimped bezel, black, plastic window			
Measuring element	Bourdon tube, copper alloy				
Accuracy class	1.6	1.6	1.6	1.6	1.6
Connection	G $\frac{1}{8}$ B	G $\frac{1}{4}$ B	G $\frac{1}{4}$ B	G $\frac{1}{4}$ B	G $\frac{1}{4}$ B
Range (bar)	Part no.	Part no.	Part no.	Part no.	Part no.
-1/0	85001611	<b>85051601</b>	85051611	85101601	85101611
-1/+0.6	---	85052601	85052611	85102601	85102611
-1/+1.5	---	85053601	85053611	85103601	85103611
-1/+3	---	85054601	85054611	85104601	85104611
-1/+5	---	85055601	85055611	85105601	85105611
-1/+9	---	85056601	85056611	85106601	85106611
-1/+15	---	85057601	85057611	85107601	85107611
0/0.6	---	85059601	85059611	85109601	85109611
0/1	85010611	85060601	85060611	85110601	85110611
0/1.6	85011611	85061601	85061611	85111601	85111611
0/2.5	85012611	85062601	85062611	85112601	85112611
0/4	85013611	85063601	85063611	85113601	85113611
0/6	<b>85014611</b>	85064601	85064611	85114601	85114611
0/10	<b>85015611</b>	85065601	85065611	85115601	85115611
0/16	<b>85016611</b>	85066601	85066611	85116601	85116611
0/25	85017611	<b>85067601</b>	85067611	85117601	85117611
0/40	85018611	85068601	85068611	85118601	85118611
0/60	85019611	85069601	85069611	85119601	85119611
0/100	85020611	85070601	85070611	85120601	85120611
0/160	85021611	85071601	85071611	85121601	85121611
0/250	85022611	85072601	85072611	85122601	85122611
0/400	85023611	85073601	85073611	85123601	85123611

\* Minimum order quantity for non-stock items = 25 pieces

Blues part no. = in-stock items



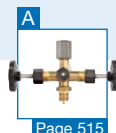
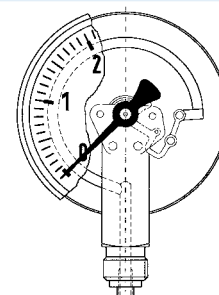
See page 441 for options.

# Glycerine filled Bourdon tube pressure gauges

EN 837-1



- Robust stainless steel housing
- Can be used in case of heavy vibrations and high, dynamic pressure loads
- Longer service life due to less wear and corrosion protection of the measuring system
- No steaming up of the inside of the window in case of outdoor applications



**Application** For gaseous and liquid media which are not highly viscous, do not crystallise and do not attack copper alloys. For measurements in areas with high vibration levels and high, dynamic pressure loads. ! For measuring gas or vapour, observe the table "Selection Criteria as per EN 837-2" (see appendix)!

## Technical specifications

### Type

D 7

### Nominal size

50 – 63

### Accuracy class (EN 837-1/6)

1.6

### Ranges (EN 837-1/5)

-1/0 to -1/+15 bar  
0/0.6 to 0/400 bar  
NG 63 to 0/600 bar

### Application area

Static load:  $\frac{3}{4}$  x full scale value  
Dynamic load:  $\frac{2}{5}$  x full scale value  
Short-term: full scale value

### Operating temperature range

Medium:  $T_{max} = +60\text{ }^{\circ}\text{C}$   
Ambient:  $T_{min} = -20\text{ }^{\circ}\text{C}$   
 $T_{max} = +60\text{ }^{\circ}\text{C}$

### Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of 20 °C:  
rising temperature approx.  $\pm 0.4\%$ /10 K  
falling temperature approx.  $\pm 0.4\%$ /10 K  
of full scale value

### Degree of protection

IP 65 (EN 60529)  
with housing vent ( $\leq 25$  bar): IP 54

## Standard version

### Connection

Brass, bottom or centre back  
G $\frac{1}{4}$ B – spanner size SW 14  
(EN 837-1/7.3)

### Measuring element

Bourdon tube, copper alloy  
 $\leq 60$  bar "C" type tube  
> 60 bar helical tube

### Movement

Brass

### Dial

Aluminium, white  
Dial marking black

### Pointer

Aluminium, black

### Housing

Stainless steel 304  
with blow-out

### Crimped bezel

Stainless steel 304

### Window

Plastic

### Filling liquid

Glycerine (99.5 %)

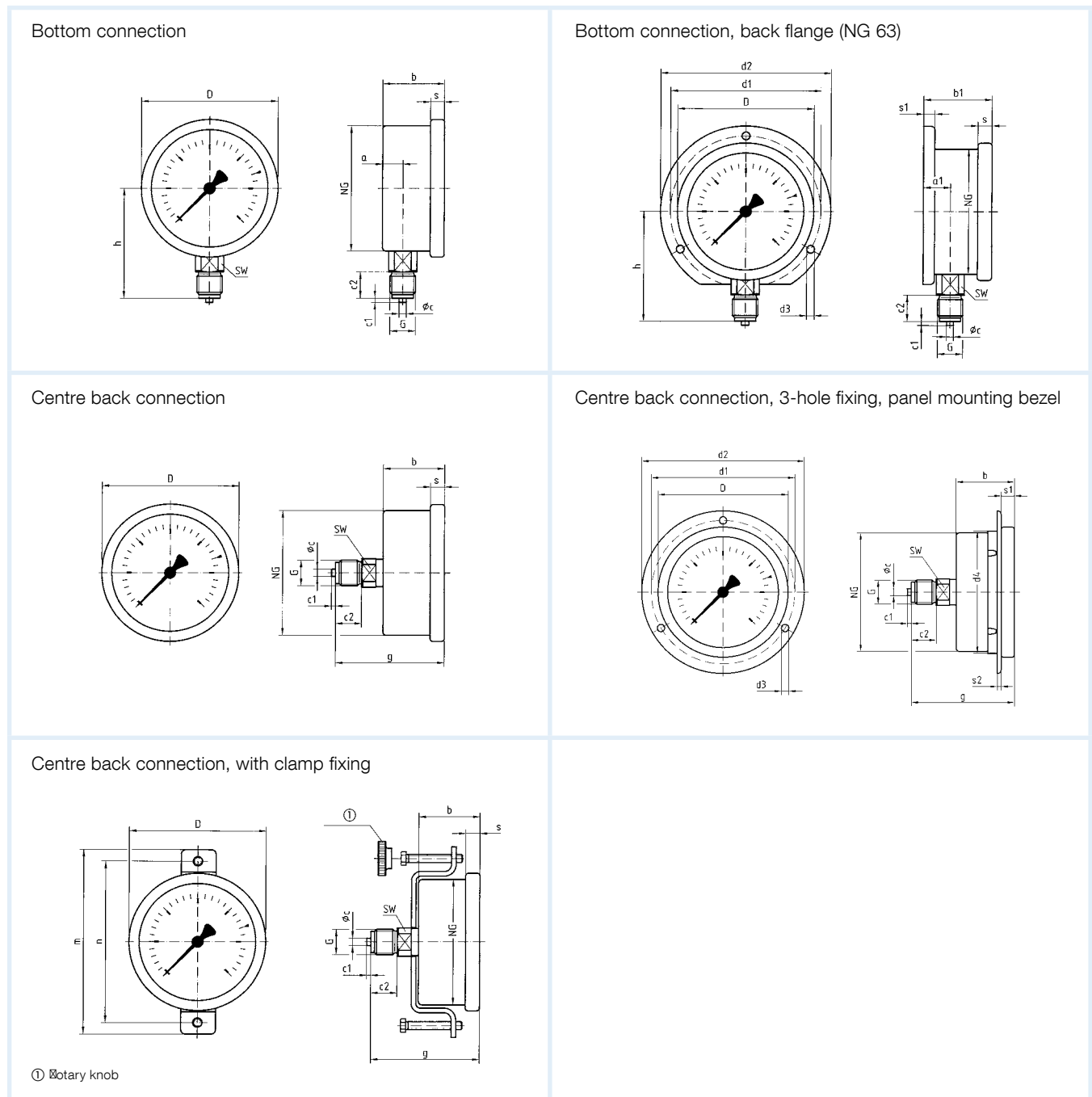
## Options

- Filling liquid silicone oil
- Back flange (NG 63)
- Clamp fixing
- 3-hole fixing, panel mounting bezel
- Crimped bezel polished
- Special scales
- Clip reference pointer, red, adjustable (NG 63)
- Throttle screw
- Other process connections

# Glycerine filled Bourdon tube pressure gauges

Type D 7 – NG 50/63

## Housing types and dimensions



### Dimensions (mm)

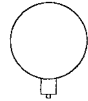
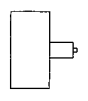
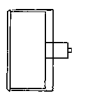
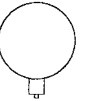
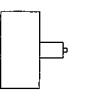
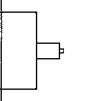
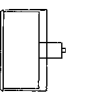
Nominal size (NG)	a	a1	b	b1	Øc	c1	c2	d1*	d2	d3*	d4	D	G	g	h	m	n	s	s1	s2	SW
50	11	-	28	-	5	2	13	-	-	-	-	53	G1/4B	51	45.5	82	73	4.5	-	-	14
63	9.5	13	30.5	34	5	2	13	75	85	3.6	64	68	G1/4B	53.3	53	94	82	7	5.5	2	14

\* Dimensions as per DIN 16063.

# Glycerine filled Bourdon tube pressure gauges

EN 837-1

DG: M, PG: 2

Type	RF50Gly, D701	RF50Gly, D711	RF50Gly, D751	RF63Gly, D701	RF63Gly, D711	RF63Gly, D731	RF63Gly, D751
Version							
Housing Ø	50	50	50	63	63	63	63
Housing	Stainless steel 304 with crimped bezel 304, plastic window						
Measuring element	Bourdon tube, copper alloy						
Accuracy class	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Connection	G¼B	G¼B	G¼B	G¼B	G¼B	G¼B	G¼B
			Clamp fixing	Dual scale, bar outer, black – psi inner, red*			
						3-hole fixing, panel mounting bezel 304	Clamp fixing
<b>Range (bar)</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>
-1/0	85051701	85051711	85051751	<b>85101701</b>	<b>85101711</b>	<b>85101731</b>	<b>85101751</b>
-1/+0.6	85052701	85052711	85052751	<b>85102701</b>	85102711	85102731	85102751
-1/+1.5	85053701	85053711	85053751	<b>85103701</b>	<b>85103711</b>	<b>85103731</b>	<b>85103751</b>
-1/+3	85054701	85054711	85054751	<b>85104701</b>	85104711	85104731	85104751
-1/+5	85055701	85055711	85055751	<b>85105701</b>	<b>85105711</b>	<b>85105731</b>	<b>85105751</b>
-1/+9	85056701	85056711	85056751	<b>85106701</b>	<b>85106711</b>	85106731	85106751
-1/+15	85057701	85057711	85057751	<b>85107701</b>	<b>85107711</b>	<b>85107731</b>	<b>85107751</b>
0/0.6	85059701	85059711	85059751	<b>85109701</b>	<b>85109711</b>	<b>85109731</b>	<b>85109751</b>
0/1	85060701	85060711	85060751	<b>85110701</b>	<b>85110711</b>	<b>85110731</b>	<b>85110751</b>
0/1.6	85061701	85061711	85061751	<b>85111701</b>	<b>85111711</b>	<b>85111731</b>	<b>85111751</b>
0/2.5	85062701	85062711	85062751	<b>85112701</b>	<b>85112711</b>	<b>85112731</b>	<b>85112751</b>
0/4	85063701	85063711	85063751	<b>85113701</b>	<b>85113711</b>	<b>85113731</b>	<b>85113751</b>
0/6	85064701	<b>85064711</b>	85064751	<b>85114701</b>	<b>85114711</b>	<b>85114731</b>	<b>85114751</b>
0/10	85065701	<b>85065711</b>	85065751	<b>85115701</b>	<b>85115711</b>	<b>85115731</b>	<b>85115751</b>
0/16	85066701	<b>85066711</b>	85066751	<b>85116701</b>	<b>85116711</b>	<b>85116731</b>	<b>85116751</b>
0/25	85067701	85067711	85067751	<b>85117701</b>	<b>85117711</b>	<b>85117731</b>	<b>85117751</b>
0/40	85068701	85068711	85068751	<b>85118701</b>	<b>85118711</b>	<b>85118731</b>	<b>85118751</b>
0/60	85069701	85069711	85069751	<b>85119701</b>	<b>85119711</b>	<b>85119731</b>	<b>85119751</b>
0/100	85070701	85070711	85070751	<b>85120701</b>	<b>85120711</b>	<b>85120731</b>	<b>85120751</b>
0/160	85071701	85071711	85071751	<b>85121701</b>	<b>85121711</b>	<b>85121731</b>	<b>85121751</b>
0/250	85072701	85072711	85072751	<b>85122701</b>	<b>85122711</b>	<b>85122731</b>	<b>85122751</b>
0/315				<b>86818701</b>	<b>86818711</b>	<b>86818731</b>	<b>86818751</b>
0/400	85073701	85073711	85073751	<b>85123701</b>	<b>85123711</b>	<b>85123731</b>	<b>85123751</b>
0/600	---	---	---	<b>85124701</b>	<b>85124711</b>	<b>85124731</b>	<b>85124751</b>

\* Append the code Z001 to the part number for single scales.  
Minimum order quantity for non-stock items = 25 pieces.

Blue part no. = in-stock items



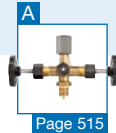
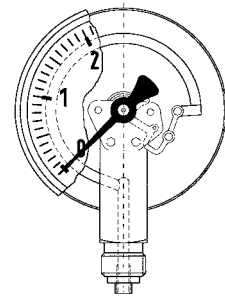
See page 441 for options.

# Glycerine filled Bourdon tube pressure gauges

EN 837-1



- Compact design
- Can be used in case of heavy vibrations and high, dynamic pressure loads
- Longer service life due to less wear and corrosion protection of the measuring system
- No steaming up of the inside of the window in case of outdoor applications



**Application** For gaseous and liquid media which are not highly viscous, do not crystallise and do not attack copper alloys. For measurements in areas with high vibration levels and high, dynamic pressure loads. ! For measuring gas or vapour, observe the table "Selection Criteria as per EN 837-2" (see appendix)!

## Technical specifications

### Type

D 7

### Nominal size

80 – 100

### Accuracy class (EN 837-1/6)

1.6

### Ranges (EN 837-1/5)

-1/0 to -1/+15 bar

0/1 to 0/400 bar

### Application area

Static load:  $\frac{3}{4}$  x full scale valueDynamic load:  $\frac{2}{5}$  x full scale value

Short-term: full scale value

### Operating temperature range

Medium:  $T_{max} = +60\text{ }^{\circ}\text{C}$ Ambient:  $T_{min} = -20\text{ }^{\circ}\text{C}$  $T_{max} = +60\text{ }^{\circ}\text{C}$ 

### Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of 20 °C:

rising temperature approx.  $\pm 0.4\%$ /10 Kfalling temperature approx.  $\pm 0.4\%$ /10 K

of full scale value

### Degree of protection

IP 65 (EN 60529)

with housing vent ( $\leq 25$  bar): IP 54

## Standard version

### Connection

Brass, bottom NG 80-100 G $\frac{1}{2}$ B – spanner size SW 22Brass, centre back NG 80 G $\frac{1}{4}$ B – spanner size SW 14NG 100 G $\frac{1}{2}$ B – spanner size SW 22 (EN 837-1/7.3)

### Measuring element

Bourdon tube, copper alloy

 $\leq 60$  bar "C" type tube $> 60$  bar helical tube

### Movement

Brass

### Dial

Aluminium, white

Dial marking black

### Pointer

Aluminium, black

### Housing

Stainless steel 304 with blow-out

### Crimped bezel

Stainless steel 304

### Window

Plastic

### Filling liquid

Glycerine (99.5 %)

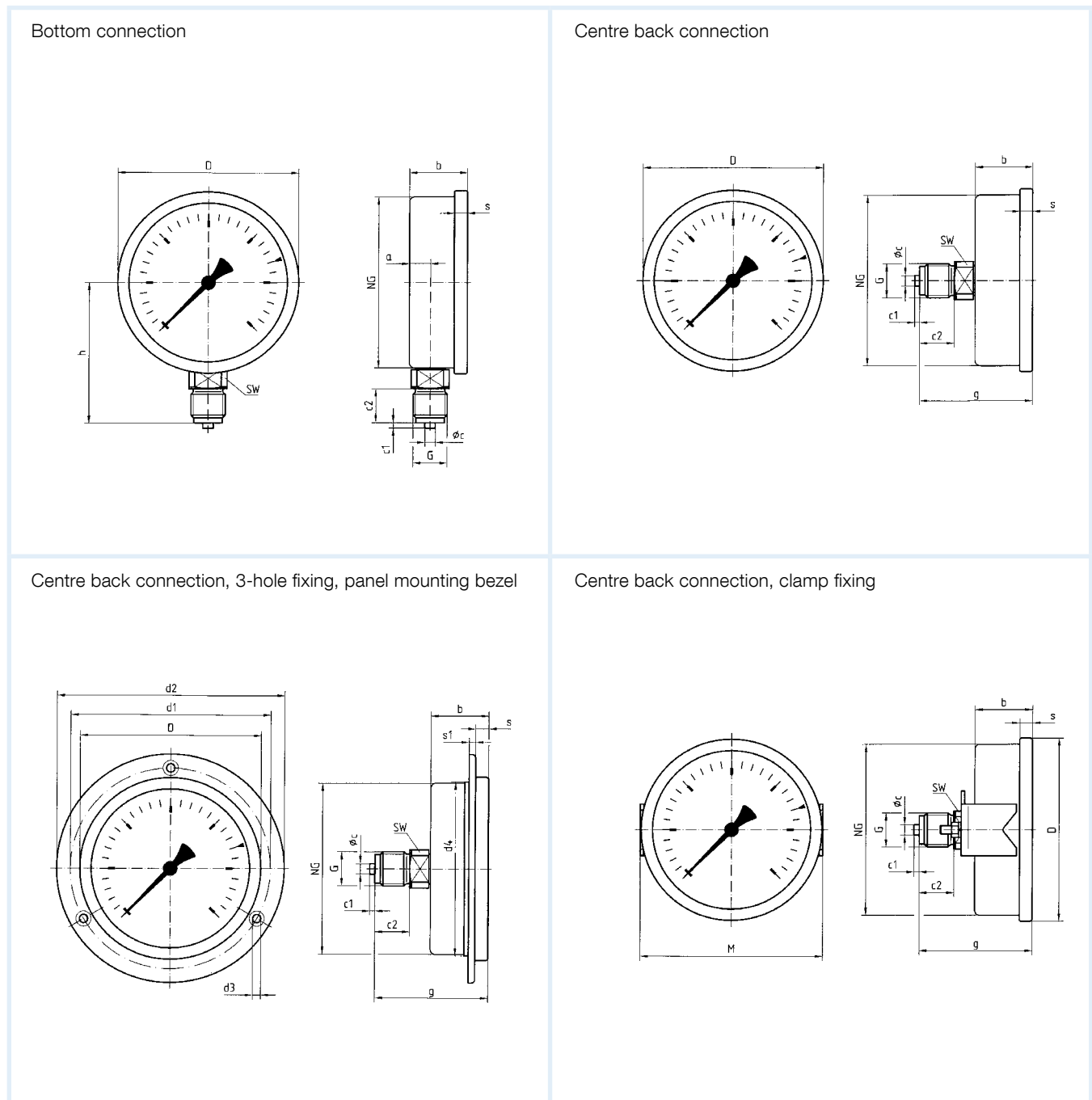
## Options

- Filling liquid silicone oil
- Clamp fixing
- 3-hole fixing, panel mounting bezel
- Back flange
- Crimped bezel polished
- Measuring system stainless steel (up to 1,000 bar)
- Special scales
- Throttle screw
- Other process connections

# Glycerine filled Bourdon tube pressure gauges

Type D 7 – NG 80/100

## Housing types and dimensions



### Dimensions (mm)

Nominal size (NG)	a	b	$\phi_c$	c1	c2	d1*	d2	d3*	d4	D	g	G	h	M	s	s1	SW
80 Ms ax	-	33.5	5	2	13	95	110	5.2	-	85	56.5	G $\frac{1}{4}$ B	-	82	7	2	14
80 VA ax	-	33.5	5	2	13	95	110	5.2	-	85	59	G $\frac{1}{4}$ B	-	82	7	2	14
80 Ms rad	12.2	33.5	6	3	20	-	-	-	-	85	-	G $\frac{1}{2}$ B	71	-	7	-	22
80 VA rad	12.2	33.5	6	3	20	-	-	-	-	85	-	G $\frac{1}{2}$ B	79.5	-	7	-	22
100 Ms	12.2	33.5	6	3	20	116	132	4.8	101	106	65.5	G $\frac{1}{2}$ B	81	106	7	3.8	22
100 VA	11.8	33.5	6	3	20	116	132	4.8	101	106	76.5	G $\frac{1}{2}$ B	90	106	7	3.8	22

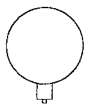


\* Dimensions as per DIN 16064.

# Glycerine filled Bourdon tube pressure gauges

EN 837-1

DG: M, PG: 2

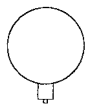


## Measuring system copper alloy

Type	RF80Gly, D701	RF80Gly, D711	RF80Gly, D751
Version			
Housing Ø	80	80	80
Housing	Stainless steel 304 with crimped bezel 304, plastic window		
Measuring element	Bourdon tube, copper alloy		
Accuracy class	1.6	1.6	1.6
Connection	G½B	G¼B	G¼B
			Clamp fixing
<b>Range (bar)</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>
-1/0	85151701	85151711	85151751
-1/+0.6	85152701	85152711	85152751
-1/+1.5	85153701	85153711	85153751
-1/+3	85154701	85154711	85154751
-1/+5	85155701	85155711	85155751
-1/+9	85156701	85156711	85156751
-1/+15	85157701	85157711	85157751
0/1	85160701	85160711	85160751
0/1.6	85161701	85161711	85161751
0/2.5	85162701	85162711	85162751
0/4	85163701	85163711	85163751
0/6	85164701	85164711	85164751
0/10	85165701	85165711	85165751
0/16	85166701	85166711	85166751
0/25	85167701	85167711	85167751
0/40	85168701	85168711	85168751
0/60	85169701	85169711	85169751
0/100	85170701	85170711	85170751
0/160	85171701	85171711	85171751
0/250	85172701	85172711	85172751
0/400	85173701	85173711	85173751
0/600	---	---	---
0/1,000	---	---	---
<b>Options</b>			
Class 1.0	---	---	---

Minimum order quantity = 10 pieces.

DG: M, PG: 3

## Measuring system stainless steel

Type	RF80EGly, D702	RF80EGly, D712	RF80EGly, D752
Version			
Housing Ø	80	80	80
Housing	Stainless steel 304 with crimped bezel 304, plastic window		
Measuring element	Bourdon tube, stainless steel 316 Ti/316 L		
Accuracy class	1.6	1.6	1.6
Connection	G½B	G¼B	G¼B
			Clamp fixing
<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>
85151702	85151712	85151752	85151752
85152702	85152712	85152752	85152752
85153702	85153712	85153752	85153752
85154702	85154712	85154752	85154752
85155702	85155712	85155752	85155752
85156702	85156712	85156752	85156752
85157702	85157712	85157752	85157752
85160702	85160712	85160752	85160752
85161702	85161712	85161752	85161752
85162702	85162712	85162752	85162752
85163702	85163712	85163752	85163752
85164702	85164712	85164752	85164752
85165702	85165712	85165752	85165752
85166702	85166712	85166752	85166752
85167702	85167712	85167752	85167752
85168702	85168712	85168752	85168752
85169702	85169712	85169752	85169752
85170702	85170712	85170752	85170752
85171702	85171712	85171752	85171752
85172702	85172712	85172752	85172752
85173702	85173712	85173752	85173752
85174702	85174712	85174752	85174752
85175702	85175712	85175752	85175752
On request	On request	On request	On request

Blue part no. = in-stock items



See page 441 for options.



# Glycerine filled Bourdon tube pressure gauges

EN 837-1

DG: M, PG: 2

## Measuring system copper alloy

Type	RF100Gly, D701	RF100Gly, D711	RF100Gly, D731	RF100Gly, D751
Version				
Housing Ø	100	100	100	100
Housing	Stainless steel 304 with crimped bezel 304, plastic window			
Measuring element	Bourdon tube, copper alloy			
Accuracy class	1.6	1.6	1.6	1.6
Connection	G½B	G½B	G½B	G½B
			3-hole fixing, panel mounting bezel, stainless steel	Clamp fixing
<b>Range (bar)</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>
-1/0	<b>85201701</b>	85201711	85201731	85201751
-1/+0.6	85202701	85202711	85202731	85202751
-1/+1.5	85203701	85203711	85203731	85203751
-1/+3	85204701	85204711	85204731	85204751
-1/+5	85205701	85205711	85205731	85205751
-1/+9	85206701	85206711	85206731	85206751
-1/+15	85207701	85207711	85207731	85207751
0/1	<b>85210701</b>	85210711	85210731	85210751
0/1.6	<b>85211701</b>	85211711	85211731	85211751
0/2.5	<b>85212701</b>	85212711	85212731	85212751
0/4	<b>85213701</b>	85213711	85213731	85213751
0/6	<b>85214701</b>	85214711	85214731	85214751
0/10	<b>85215701</b>	<b>85215711</b>	85215731	85215751
0/16	<b>85216701</b>	85216711	85216731	85216751
0/25	<b>85217701</b>	85217711	85217731	85217751
0/40	<b>85218701</b>	85218711	85218731	85218751
0/60	<b>85219701</b>	85219711	85219731	85219751
0/100	<b>85220701</b>	85220711	85220731	85220751
0/160	<b>85221701</b>	85221711	85221731	85221751
0/250	<b>85222701</b>	85222711	85222731	85222751
0/400	<b>85223701</b>	85223711	85223731	85223751
0/600	---	---	---	---
0/1,000	---	---	---	---
<b>Options</b>				
Class 1.0	---	---	---	---

Minimum order quantity for non-stock items = 10 pieces.

DG: M, PG: 3

## Measuring system stainless steel

Type	RF100EGly, D702	RF100EGly, D712	RF100EGly, D732	RF100EGly, D752
Version				
Housing Ø	100	100	100	100
Housing	Stainless steel 304 with crimped bezel 304, plastic window			
Measuring element	Bourdon tube, stainless steel 316 Ti/316 L			
Accuracy class	1.6	1.6	1.6	1.6
Connection	G½B	G½B	G½B	G½B
			3-hole fixing, panel mounting bezel, stainless steel	Clamp fixing
<b>Range (bar)</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>
-1/0	<b>85201702</b>	85201712	85201732	85201752
-1/+0.6	85202702	85202712	85202732	85202752
-1/+1.5	85203702	85203712	85203732	85203752
-1/+3	85204702	85204712	85204732	85204752
-1/+5	85205702	85205712	85205732	85205752
-1/+9	85206702	85206712	85206732	85206752
-1/+15	85207702	85207712	85207732	85207752
0/1	85210702	85210712	85210732	85210752
0/1.6	85211702	85211712	85211732	85211752
0/2.5	85212702	85212712	85212732	85212752
0/4	<b>85213702</b>	85213712	85213732	85213752
0/6	<b>85214702</b>	85214712	85214732	85214752
0/10	<b>85215702</b>	85215712	85215732	85215752
0/16	<b>85216702</b>	85216712	85216732	85216752
0/25	<b>85217702</b>	85217712	85217732	85217752
0/40	85218702	85218712	85218732	85218752
0/60	85219702	85219712	85219732	85219752
0/100	85220702	85220712	85220732	85220752
0/160	85221702	85221712	85221732	85221752
0/250	85222702	85222712	85222732	85222752
0/400	85223702	85223712	85223732	85223752
0/600	85224702	85224712	85224732	85224752
0/1,000	85225702	85225712	85225732	85225752
<b>Options</b>				
Class 1.0	On request	On request	On request	On request

Blue part no. = in-stock items



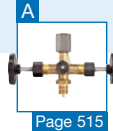
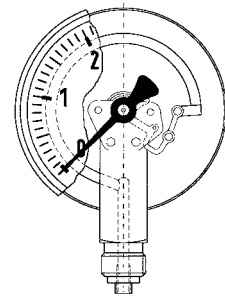
See page 441 for options.

# Glycerine filled Bourdon tube pressure gauges

EN 837-1



- Robust, stainless steel housing with bayonet bezel
- Can be used in case of heavy vibrations and high, dynamic pressure loads
- Longer service life due to less wear and corrosion protection of the measuring system
- No steaming up of the inside of the window in case of outdoor applications
- DNV-GL-certified



**Application** For gaseous and liquid media which are not highly viscous, do not crystallise and do not attack copper alloys. For measurements in areas with high vibration levels and high, dynamic pressure loads. ! For measuring gas or vapour, observe the table "Selection Criteria as per EN 837-2" (see appendix)!

## Technical specifications

### Type

D 8  
D 751

### Nominal size

100 – 160

### Accuracy class (EN 837-1/6)

1.0

### Ranges (EN 837-1/5)

-1/0 to -1/+15 bar  
0/0.6 to 0/1,000 bar

### Application area

Static load:  
 $\leq 600$  bar = full scale value  
 $> 600$  bar =  $\frac{3}{4}$  x full scale value  
 Dynamic load:  
 $\leq 600$  bar =  $0.9$  x full scale value  
 $> 600$  bar =  $\frac{2}{3}$  x full scale value

Short-term:

$\leq 600$  bar =  $1.3$  x full scale value  
 $> 600$  bar = full scale value

### Operating temperature range

Medium:  $T_{max} = +60$  °C  
 Ambient:  $T_{min} = -20$  °C  
 $T_{max} = +60$  °C

### Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of 20 °C:  
 rising temperature approx.  $\pm 0.4$  %/10 K  
 falling temperature approx.  $\pm 0.4$  %/10 K  
 of full scale value

### Degree of protection

IP 65 (EN 60529)  
 with housing vent ( $\leq 25$  bar): IP 54

## Standard version

### Connection

Brass, bottom or bottom back:  
 $G\frac{1}{2}B$  – spanner size SW 22 (EN 837-1/7.3)

### Measuring element

Bourdon tube,  
 $\leq 60$  bar "C" type tube, copper alloy  
 $> 60$  bar helical tube,  
 stainless steel 316 Ti/316 L

### Movement

Brass

### Dial

Aluminium, white  
 Dial marking black

### Pointer

Aluminium, black

### Housing

Stainless steel 304 with blow-out

### Bayonet type bezel

Stainless steel 304  
 (D 751 = crimped bezel)

### Window

Instrument glass  
 (D 751 = plastic)

### Filling liquid

Glycerine (99.5 %)

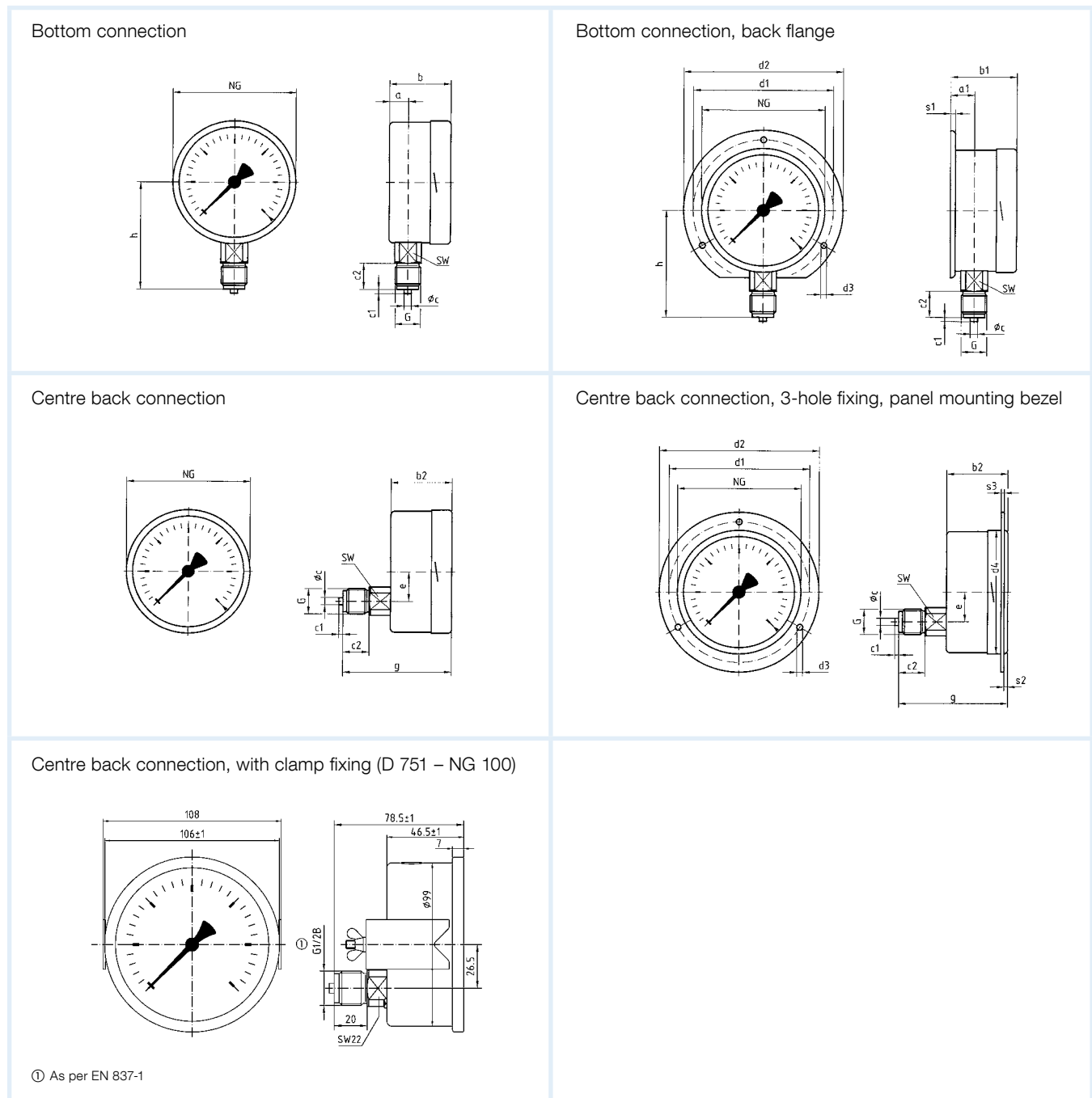
## Options

- Back flange
- 3-hole fixing, panel mounting bezel
- Special scales
- Other process connections

# Glycerine filled Bourdon tube pressure gauges

Type D 8 – NG 100/160; D 751 – NG 100

## Housing types and dimensions



### Dimensions (mm)

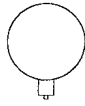
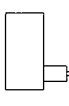
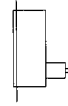
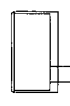
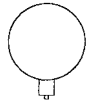

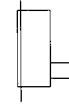
Nominal size (NG)	a	a1	b	b1	b2	Øc	c1	c2	d1*	d2	d3*	d4	e	G	g	h	s1
100	15.6	19.1	49	52.5	49	6	3	20	116	132	4.8	104	26.5	G½B	81	86	5.5
160	17.5	20	50	53	50	6	3	20	178	196	5.8	164	26.5	G½B	82	116	6
Nominal size (NG)	s2	s3	SW														
100	4	2	22														
160	4	2	22														

\* Dimensions as per DIN 16064.

# Glycerine filled Bourdon tube pressure gauges

EN 837-1

DG: M, PG: 2

Type	RF100Gly, D801	RF100Gly, D811	RF100Gly, D831	RF100Gly, D751	RF160Gly, D801	RF160Gly, D811	RF160Gly, D831
Version							
Housing Ø	100	100	100	100	160	160	160
Housing	Stainless steel 304, window, see data sheet						
Measuring element	Bourdon tube, copper alloy (> 60 bar stainless steel 316 Ti/316 L)						
Accuracy class	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Connection	G½B	G½B	G½B	G½B	G½B	G½B	G½B
			3-hole fixing, panel mounting bezel, 304, polished	Crimped bezel 304 with clamp fixing			3-hole fixing, panel mounting bezel, 304, polished
Range (bar)	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.
-1/0	<b>85201801</b>	85201811	85201831	85301751	85251801	85251811	85251831
-1/+0.6	85202801	85202811	85202831	85302751	85252801	85252811	85252831
-1/+1.5	<b>85203801</b>	85203811	85203831	85303751	85253801	85253811	85253831
-1/+3	85204801	85204811	85204831	85304751	85254801	85254811	85254831
-1/+5	<b>85205801</b>	85205811	85205831	85305751	85255801	85255811	85255831
-1/+9	85206801	85206811	85206831	85306751	85256801	85256811	85256831
-1/+15	85207801	85207811	85207831	85307751	85257801	85257811	85257831
0/0.6	85209801	85209811	85209831	85309751	85259801	85259811	85259831
0/1	<b>85210801</b>	85210811	85210831	85310751	85260801	85260811	85260831
0/1.6	<b>85211801</b>	85211811	85211831	85311751	85261801	85261811	85261831
0/2.5	<b>85212801</b>	85212811	85212831	85312751	85262801	85262811	85262831
0/4	<b>85213801</b>	<b>85213811</b>	85213831	85313751	85263801	85263811	85263831
0/6	<b>85214801</b>	<b>85214811</b>	85214831	85314751	85264801	85264811	85264831
0/10	<b>85215801</b>	<b>85215811</b>	85215831	85315751	85265801	85265811	85265831
0/16	<b>85216801</b>	<b>85216811</b>	85216831	85316751	85266801	85266811	85266831
0/25	<b>85217801</b>	85217811	85217831	85317751	85267801	85267811	85267831
0/40	<b>85218801</b>	85218811	85218831	85318751	85268801	85268811	85268831
0/60	<b>85219801</b>	85219811	85219831	85319751	85269801	85269811	85269831
0/100	<b>85220801</b>	85220811	85220831	85320751	85270801	85270811	85270831
0/160	<b>85221801</b>	85221811	85221831	85321751	85271801	85271811	85271831
0/250	<b>85222801</b>	85222811	85222831	85322751	85272801	85272811	85272831
0/400	<b>85223801</b>	85223811	85223831	85323751	85273801	85273811	85273831
0/600	<b>85224801</b>	85224811	85224831	85324751	85274801	85274811	85274831
0/1,000	85225801	85225811	85225831	85325751	85275801	85275811	85275831

Minimum order quantity for non-stock items = 10 pieces.

Blue part no. = in-stock items



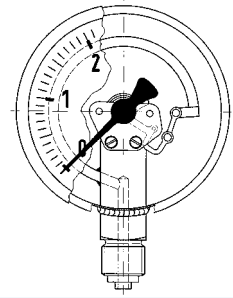
See page 441 for options.

# Stainless steel Bourdon tube pressure gauges

EN 837-1



- Extremely compact design
- Wetted parts and movement made of stainless steel
- Housing welded to pressure connection
- Optional for control cabinet mounting
- Tightness-tested with helium
- GOSSTANDART-certified



**Application** For corrosive gaseous and liquid media which are not highly viscous and do not crystallise.  
! For measuring gas or vapour, observe the table "Selection Criteria as per EN 837-2" (see appendix)!

## Technical specifications

### Type

D 3

### Nominal size

40

### Accuracy class (EN 837-1/6)

2.5

### Ranges (EN 837-1/5)

0/1.6 bar to 0/600 bar

### Application area

Static load:

 $\frac{3}{4}$  x full scale value

Dynamic load:

 $\frac{2}{3}$  x full scale value

Short-term: full scale value

### Operating temperature range

Medium:  $T_{max} = +100\text{ }^{\circ}\text{C}$ Ambient:  $T_{min} = -20\text{ }^{\circ}\text{C}$  $T_{max} = +60\text{ }^{\circ}\text{C}$ 

### Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of 20 °C:

rising temperature approx.  $\pm 0.4\text{ } \%/10\text{ K}$ falling temperature approx.  $\pm 0.4\text{ } \%/10\text{ K}$ 

of full scale value

### Degree of protection

IP 32 (EN 60529)

## Standard version

### Connection

Stainless steel 316 L

G $\frac{1}{8}$ B – spanner size SW 14 bottom or centre back

(EN 837-1/7.3)

### Measuring element

Bourdon tube, stainless steel 316 L

 $\leq 60\text{ }^{\circ}\text{C}$  type tube $> 60\text{ bar}$  helical tube

Tightness-tested with helium

### Movement

Stainless steel

### Dial

Aluminium, white

Dial marking black

### Pointer

Aluminium, black

### Housing

Stainless steel 304

### Window

Clip-in plastic

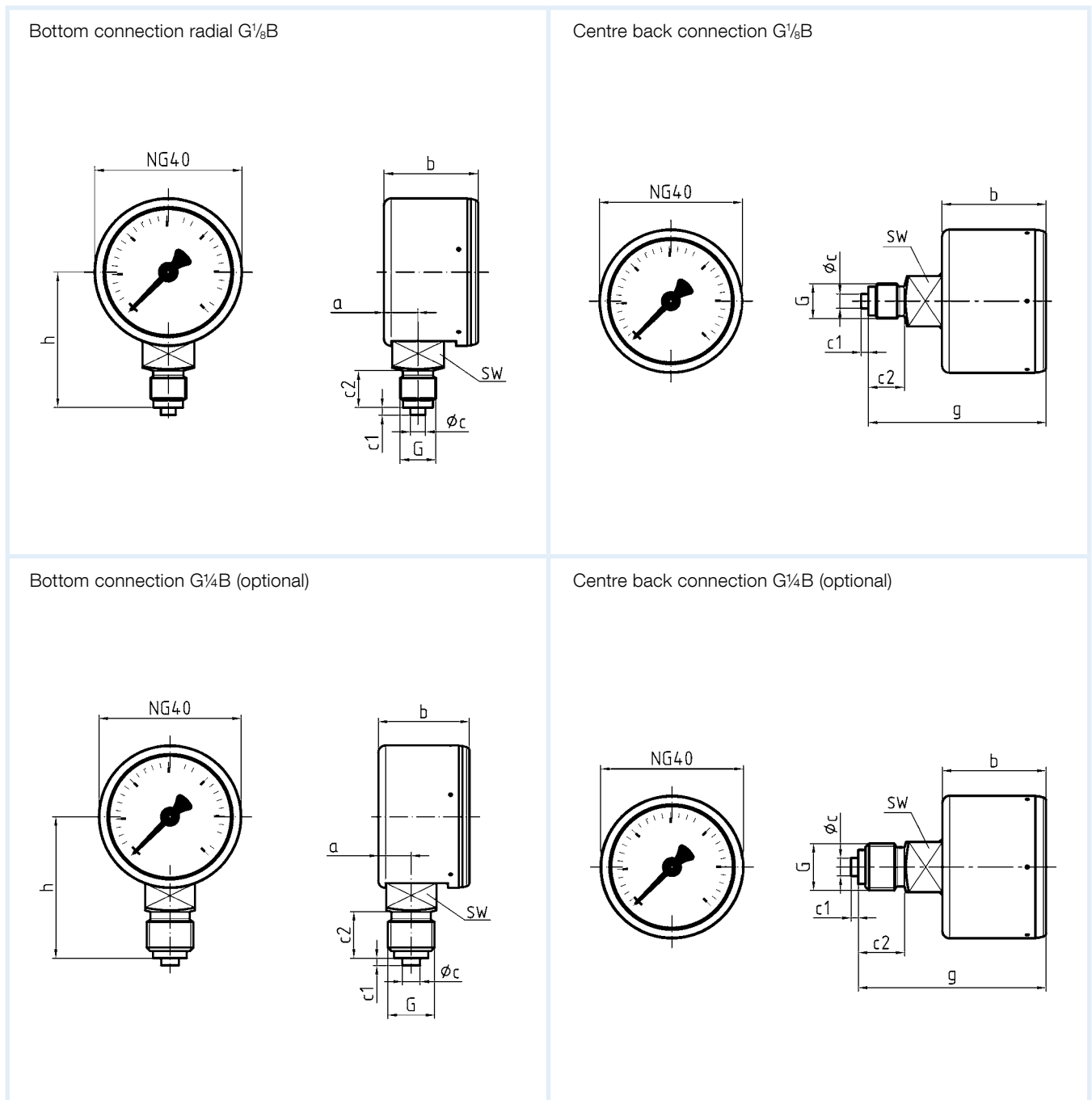
## Options

- Other process connections
- 3-hole fixing, panel mounting bezel
- Special scales
- Oil- and grease-free version

# Stainless steel Bourdon tube pressure gauges

Type D3 – NG 40

## Housing types and dimensions



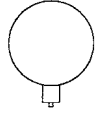

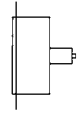
### Dimensions (mm)

Connection (G)	a	b	Øc	c1	c2	g	h	SW
G $\frac{1}{8}$ B bottom	9.2	25.5	4	2	10	-	36.5	14
G $\frac{1}{8}$ B centre back	-	29	4	2	10	49.5	-	14
G $\frac{1}{4}$ B bottom	9.2	25.5	5	2	13	-	39.5	14
G $\frac{1}{4}$ B centre back	-	29	5	2	13	52.5	-	14

# Stainless steel Bourdon tube pressure gauges

EN 837-1

DG: M, PG: 3

Type	RF40E, D302	RF40E, D312	RF40E, D332
Version			
Housing Ø	40	40	40
Housing	Stainless steel 304		
Measuring element	Bourdon tube, stainless steel 316 L		
Accuracy class	2.5	2.5	2.5
Connection	G $\frac{1}{8}$ B	G $\frac{1}{8}$ B	G $\frac{1}{8}$ B
			3-hole fixing, panel mounting bezel 304
Range (bar)	Part no.	Part no.	Part no.
-1/0	---	---	---
-1/+0.6	---	---	---
-1/+1.5	---	---	---
-1/+3	---	---	---
-1/+5	---	---	---
-1/+9	---	---	---
-1/+15	---	---	---
0/0.6	---	---	---
0/1	---	---	---
0/1.6	85011302	85011312	85011332
0/2.5	85012302	85012312	85012332
0/4	85013302	85013312	85013332
0/6	85014302	<b>85014312</b>	85014332
0/10	85015302	<b>85015312</b>	85015332
0/16	85016302	<b>85016312</b>	85016332
0/25	85017302	85017312	85017332
0/40	85018302	85018312	85018332
0/60	85019302	85019312	85019332
0/100	85020302	85020312	85020332
0/160	85021302	85021312	85021332
0/250	85022302	85022312	85022332
0/400	85023302	85023312	85023332
0/600	85024302	85024312	85024332

Minimum order quantity for non-stock items = 10 pieces.

Blue part no. = in-stock items



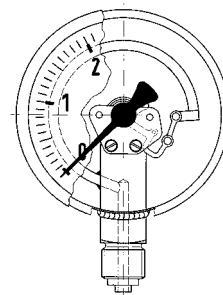
See page 441 for options.

# Bourdon tube pressure gauges for chemical applications

EN 837-1



- Extremely compact design
- For chemical and process engineering applications
- Wetted parts and movement made of stainless steel
- Housing welded to pressure connection
- Tightness-tested with helium
- DNV- and GOSSTANDART-certified



**Application** For corrosive gaseous and liquid media which are not highly viscous and do not crystallise.  
! For measuring gas or vapour, observe the table "Selection Criteria as per EN 837-2" (see appendix)!

## Technical specifications

### Type

D 9

### Nominal size

40

### Accuracy class (EN 837-1/6)

2.5

### Ranges (EN 837-1/5)

0/1.6 bar to 0/400 bar

### Application area

Static load:

 $\frac{3}{4}$  x full scale value

Dynamic load:

 $\frac{2}{3}$  x full scale value

Short-term: full scale value

### Operating temperature range

Medium:  $T_{max} = +100\text{ }^{\circ}\text{C}$ Ambient:  $T_{min} = -20\text{ }^{\circ}\text{C}$  $T_{max} = +60\text{ }^{\circ}\text{C}$ 

### Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of 20 °C:

rising temperature approx.  $\pm 0.4\%$ /10 Kfalling temperature approx.  $\pm 0.4\%$ /10 K

of full scale value

### Degree of protection

IP 65 (EN 60529)

with housing vent ( $\leq 25$  bar): IP 54

## Standard version

### Connection

Stainless steel 316 L

G $\frac{1}{8}$ B – spanner size SW 14 centre back (EN 837-1/7.3)

### Measuring element

Bourdon tube, stainless steel 316 L

 $\leq 60$  "C" type tube $> 60$  bar helical tube

tightness-tested with helium

### Movement

Stainless steel

### Dial

Aluminium, white

Dial marking black

### Pointer

Aluminium, black

### Housing

Stainless steel 304 with blow-out

### Crimped bezel

Stainless steel 304

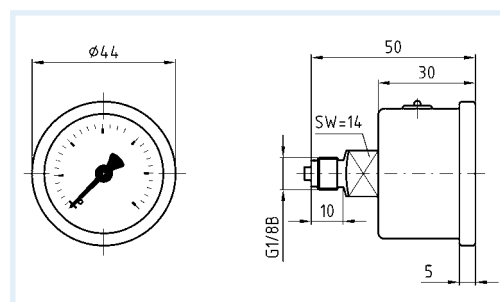
### Window

Plastic (PMMA)

## Options

- Glycerine filling
- Other process connections
- Special scales
- Oil- and grease-free version

## Dimensions (mm)







# Bourdon tube pressure gauges for chemical applications

EN 837-1

DG: M, PG: 3

Type	Version with glycerine filling	
	RF40Ch, D912	RF40ChGly, D712
Version		
Housing Ø	40	40
Housing	Stainless steel 304	
Measuring element	Bourdon tube, stainless steel 316 L	
Accuracy class	2.5	2.5
Connection	G $\frac{1}{8}$ B	G $\frac{1}{8}$ B
<b>Range (bar)</b>	<b>Part no.</b>	<b>Part no.</b>
-1/0	---	---
-1/+0.6	---	---
-1/+1.5	---	---
-1/+3	---	---
-1/+5	---	---
-1/+9	---	---
-1/+15	---	---
0/0.6	---	---
0/1	---	---
0/1.6	85011912	85011712
0/2.5	85012912	85012712
0/4	85013912	85013712
0/6	85014912	85014712
0/10	85015912	85015712
0/16	85016912	85016712
0/25	85017912	85017712
0/40	85018912	85018712
0/60	85019912	85019712
0/100	85020912	85020712
0/160	85021912	85021712
0/250	85022912	85022712
0/400	85023912	85023712
0/600	---	---

Minimum order quantity for non-stock items = 10 pieces. **Blue part no.** = in-stock items

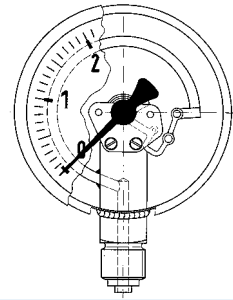
# Bourdon tube pressure gauges for chemical applications



EN 837-1



- For chemical and process engineering applications
- Measuring system fully welded to housing
- Extremely robust design
- Temperatures of the medium up to 150 °C or 200 °C
- Tightness-tested with helium
- GOSSTANDART-certified
- Ex version (optional)



Page 512

**Application** For corrosive gaseous and liquid media which are not highly viscous and do not crystallise; suitable for corrosive environments.  
! For measuring gas or vapour, observe the table "Selection Criteria as per EN 837-2" (see appendix)!

## Technical specifications

### Type

D 9

### Nominal size

50 – 63

### Accuracy class (EN 837-1/6)

1.6

### Ranges (EN 837-1/5)

NG 50:

-1/0 to -1/+15 bar

0/0.6 to 0/600 bar

NG 63:

-1/0 to -1/+15 bar

0/0.6 to 0/1,000 bar

### Application area

Static load:  $\frac{3}{4}$  x full scale valueDynamic load:  $\frac{2}{5}$  x full scale value

Short-term: full scale value

### Operating temperature range

Medium:  $T_{max} = +150$  °C (NG 50) $T_{max} = +200$  °C (NG 63)Ambient:  $T_{min} = -20$  °C $T_{max} = +60$  °C

### Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of 20 °C:

rising temperature approx.  $\pm 0.4$  %/10 Kfalling temperature approx.  $\pm 0.4$  %/10 K

of full scale value

### Degree of protection

IP 65 (EN 60529)

with housing vent ( $\leq 25$  bar): IP 54

## Standard version

### Connection

Stainless steel 316 L

NG 50 bottom or bottom back

NG 63 bottom or centre back

G $\frac{1}{4}$ B – spanner size SW 14 (EN 837-1/7.3)

### Measuring element

Bourdon tube, stainless steel 316 Ti/316 L

 $\leq 60$  bar "C" type tube $> 60$  bar helical tube

tightness-tested with helium

### Movement

Stainless steel

### Dial

Aluminium, white

Dial marking black

### Pointer

Aluminium, black

### Housing

Stainless steel 304 with blow-out

### Crimped bezel


Stainless steel 304

### Window

NG 50 plastic

NG 63 laminated safety glass

## Options

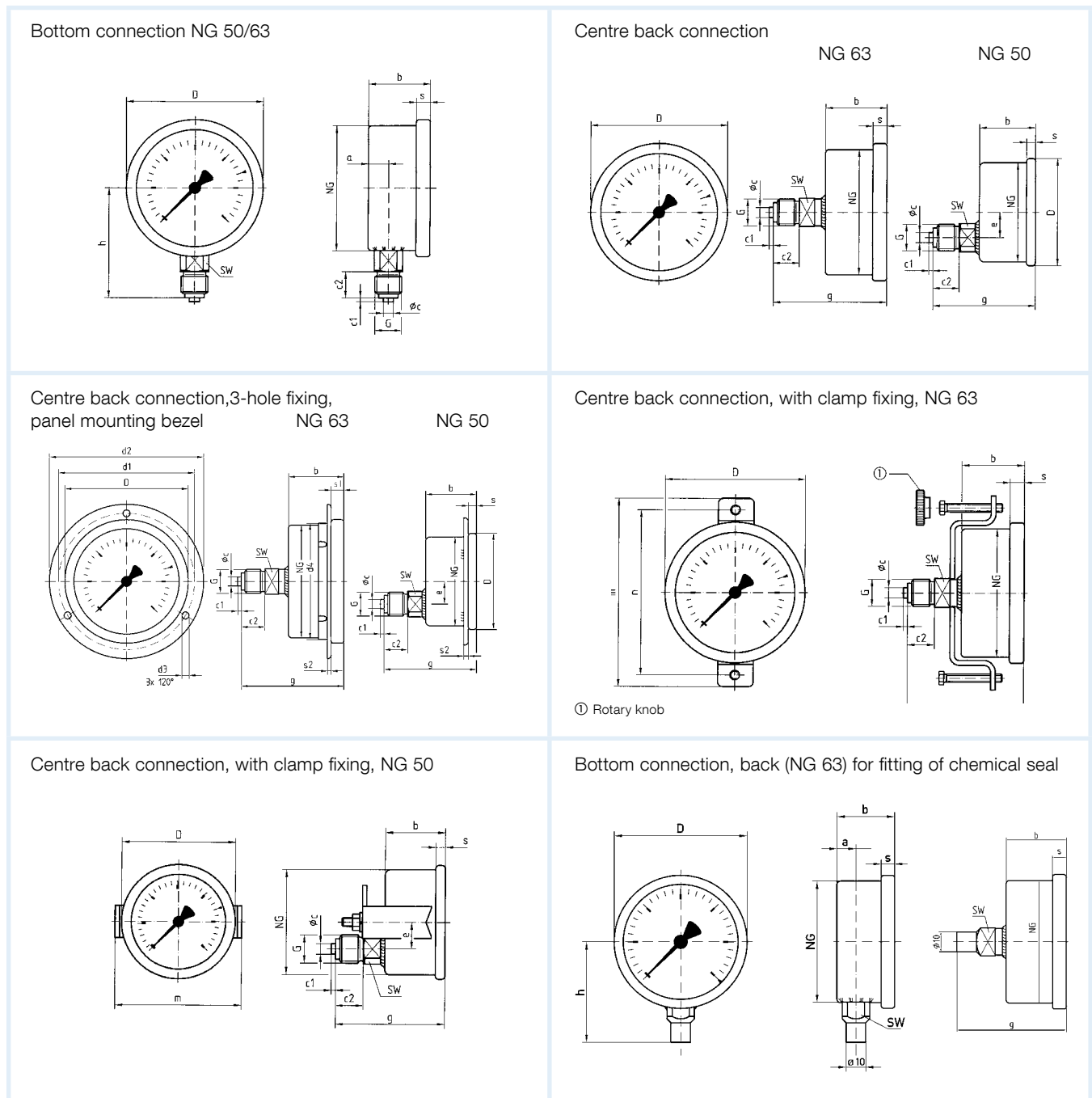
- Plastic window (NG 63)
- Back flange (NG 63)
- Clamp fixing
- Ex version 

- Crimped bezel polished
- Special scales
- Other process connections

# Bourdon tube pressure gauges for chemical applications

Type D 9 – NG 50/63

## Housing types and dimensions



### Dimensions (mm)

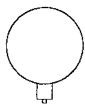
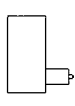
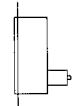
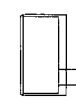

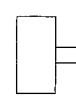
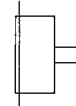
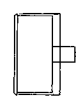
Nominal size (NG)	a	a1	b	Øc	c1	c2	d1*	d2*	d3*	d4	D	e	G	g	h	m	n	s	s1	s2	SW
50	10.5	-	28	5	2	13	60	70	3.6	-	53	12.5	G¼B	51	46	59	-	4.5	-	2.5	14
63	11.5	13	32	5	2	13	75	85	3.6	64	68	-	G¼B	56	53	94	82	7	5.5	2	14

\* Dimensions as per DIN 16063.

# Bourdon tube pressure gauges for chemical applications

EN 837-1

DG: M, PG: 3

Type	RF50Ch, D902	RF50Ch, D912	RF50Ch, D932	RF50Ch, D952	RF63Ch, D902	RF63Ch, D912	RF63Ch, D932	RF63Ch, D952
Version								
Housing Ø	50	50	50	50	63	63	63	63
Housing	Stainless steel 304 with crimped bezel 304							
Measuring element	Bourdon tube, stainless steel 316 Ti/316 L							
Accuracy class	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Connection	G¼B	G¼B	G¼B	G¼B	G¼B	G¼B	G¼B	G¼B
			3-hole fixing, panel mounting bezel, 304, bare metal surface	Clamp fixing			3-hole fixing, panel mounting bezel, 304, bare metal surface	Clamp fixing
<b>Range (bar)</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>
-1/0	85051902	85051912	85051932	85051952	<b>85101902</b>	85101912	85101932	85101952
-1/+0.6	85052902	85052912	85052932	85052952	85102902	85102912	85102932	85102952
-1/+1.5	85053902	85053912	85053932	85053952	85103902	85103912	85103932	85103952
-1/+3	85054902	85054912	85054932	85054952	85104902	85104912	85104932	85104952
-1/+5	85055902	85055912	85055932	85055952	85105902	85105912	85105932	85105952
-1/+9	85056902	85056912	85056932	85056952	85106902	85106912	85106932	85106952
-1/+15	85057902	85057912	85057932	85057952	85107902	85107912	85107932	85107952
0/0.6	85059902	85059912	85059932	85059952	85109902	85109912	85109932	85109952
0/1	85060902	85060912	85060932	85060952	<b>85110902</b>	85110912	85110932	85110952
0/1.6	85061902	85061912	85061932	85061952	<b>85111902</b>	85111912	85111932	85111952
0/2.5	85062902	85062912	85062932	85062952	<b>85112902</b>	85112912	85112932	85112952
0/4	85063902	85063912	85063932	85063952	<b>85113902</b>	85113912	85113932	85113952
0/6	85064902	85064912	85064932	85064952	<b>85114902</b>	<b>85114912</b>	<b>85114932</b>	<b>85114952</b>
0/10	85065902	85065912	85065932	85065952	<b>85115902</b>	<b>85115912</b>	<b>85115932</b>	<b>85115952</b>
0/16	85066902	85066912	85066932	85066952	<b>85116902</b>	<b>85116912</b>	<b>85116932</b>	<b>85116952</b>
0/25	85067902	85067912	85067932	85067952	<b>85117902</b>	<b>85117912</b>	<b>85117932</b>	<b>85117952</b>
0/40	85068902	85068912	85068932	85068952	<b>85118902</b>	85118912	85118932	85118952
0/60	85069902	85069912	85069932	85069952	85119902	85119912	85119932	85119952
0/100	85070902	85070912	85070932	85070952	85120902	85120912	85120932	85120952
0/160	85071902	85071912	85071932	85071952	85121902	85121912	85121932	85121952
0/250	85072902	85072912	85072932	85072952	85122902	85122912	85122932	85122952
0/400	85073902	85073912	85073932	85073952	85123902	85123912	85123932	85123952
0/600	85074902	85074912	85074932	85074952	85124902	85124912	85124932	85124952
0/1,000	---	---	---	---	85125902	85125912	85125932	85125952

Minimum order quantity for non-stock items = 10 pieces.

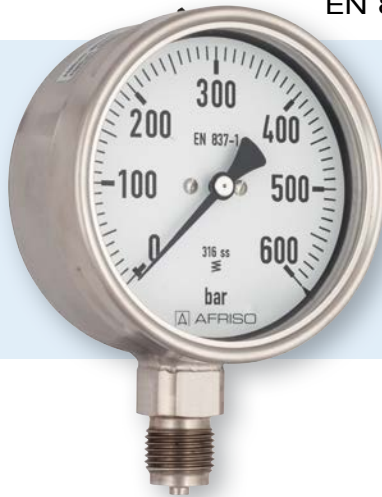
Blue part no. = in-stock items



See page 441 for options.

# Bourdon tube pressure gauges for chemical applications

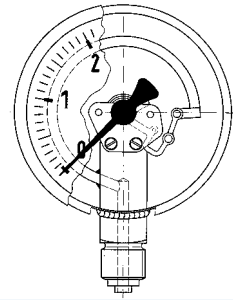
EN 837-1



- For chemical and process engineering applications
- Measuring system fully welded to housing
- Extremely robust design
- For temperatures of the medium of up to 200 °C
- Tightness-tested with helium
- DNV- and GOSSTANDART-certified
- Ex version (optional)



Page 512



**Application** For corrosive gaseous and liquid media which are not highly viscous and do not crystallise; suitable for corrosive environments.  
! For measuring gas or vapour, observe the table "Selection Criteria as per EN 837-2" (see appendix)!

## Technical specifications

### Type

D 4

### Nominal size

100 – 160

### Accuracy class (EN 837-1/6)

1.0

### Ranges (EN 837-1/5)

-1/0 to -1/+15 bar

NG 100 0/0.6 to 0/1,000 bar

NG 160 0/0.6 to 0/1,600 bar

### Application area

Static load:

≤ 600 bar = full scale value

&gt; 600 bar = ¾ x full scale value

Dynamic load:

≤ 600 bar = 0.9 x full scale value

&gt; 600 bar = ⅔ x full scale value

Short-term:

≤ 600 bar = 1.3 x full scale value

&gt; 600 bar = full scale value

### Operating temperature range

Medium:  $T_{max} = +200\text{ °C}$ Ambient:  $T_{min} = -20\text{ °C}$  $T_{max} = +60\text{ °C}$ 

### Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of 20 °C:

rising temperature approx. ±0.4 %/10 K

falling temperature approx. ±0.4 %/10 K

of full scale value

### Degree of protection

IP 65 (EN 60529)

with housing vent (≤ 25 bar): IP 54

## Standard version

### Connection

Stainless steel 316 L,

bottom or bottom back

G½B – spanner size SW 22 (EN 837-1/7.3)

### Measuring element

Bourdon tube, stainless steel 316 Ti/316 L

≤ 60 bar "C" type tube

&gt; 60 bar helical tube

tightness-tested with helium

### Movement

Stainless steel

### Dial

Aluminium, white

Dial marking black

### Pointer

Aluminium, black

### Housing

Stainless steel 304 with blow-out


### Bayonet type bezel

Stainless steel 304

### Window

Laminated safety glass

## Options

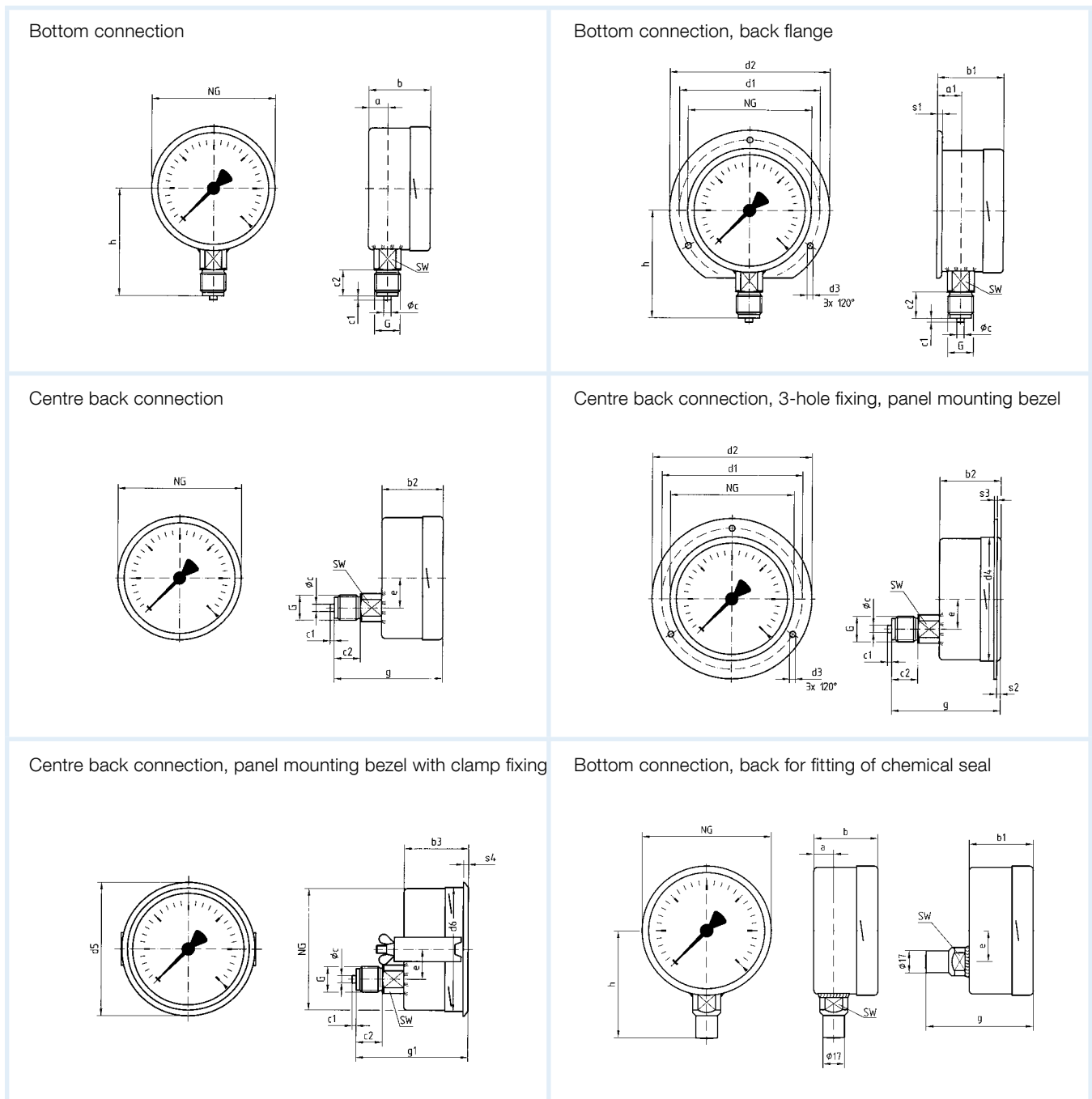
- Back flange
- Panel mounting bezel
- 3-hole fixing, panel mounting bezel
- Ex version 

- Special scales
- Electrical contacts
- Other process connections

# Bourdon tube pressure gauges for chemical applications

Type D 4 - NG 100/160

## Housing types and dimensions (mm)



### Dimensions (mm)

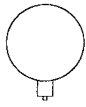
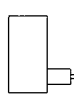
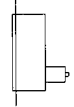
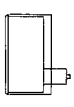
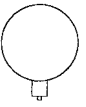
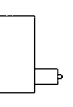
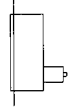
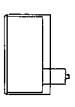
Nominal size (NG)	a	a1	b	b1	b2	b3	$\phi_c$	c1	c2	d1*	d2*	d3*	d4	d5	d6	e	G	g	g1	h	s1
100	15.6	19.1	49	52.5	49	49	6	3	20	116	132	4.8	104	107	101	34.5	G $\frac{1}{2}$ B	83	83	86	5.5
160	17.5	20.5	50	53	50	52	6	3	20	178	196	5.8	164	167	161	34.5	G $\frac{1}{2}$ B	84	86	116	6
Nominal size (NG)	s2	s3	s4	SW																	
100	4	2	4	22																	
160	4	2	4.5	22																	

\* Dimensions as per DIN 16064.

# Bourdon tube pressure gauges for chemical applications

EN 837-1

DG: M, PG: 3

Type	RF100Ch, D402	RF100Ch, D412	RF100Ch, D432	RF100Ch, D452	RF160Ch, D402	RF160Ch, D412	RF160Ch, D432	RF160Ch, D452
Version								
Housing Ø	100	100	100	100	160	160	160	160
Housing	Stainless steel 304 with bayonet bezel, laminated safety glass window							
Measuring element	Bourdon tube, stainless steel 316 Ti/316 L							
Accuracy class	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Connection	G½B	G½B	G½B	G½B	G½B	G½B	G½B	G½B
			3-hole fixing, panel mounting bezel 304 polished	Panel mounting bezel, 304, polished, with clamp fixing			3-hole fixing, panel mounting bezel 304 polished	Panel mounting bezel, 304, polished, with clamp fixing
Range (bar)	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.
-1/0	<b>85201402</b>	85201412	85201432	85201452	85251402	85251412	85251432	85251452
-1/+0.6	85202402	85202412	85202432	85202452	85252402	85252412	85252432	85252452
-1/+1.5	85203402	85203412	85203432	85203452	85253402	85253412	85253432	85253452
-1/+3	85204402	85204412	85204432	85204452	85254402	85254412	85254432	85254452
-1/+5	85205402	85205412	85205432	85205452	85255402	85255412	85255432	85255452
-1/+9	85206402	85206412	85206432	85206452	85256402	85256412	85256432	85256452
-1/+15	85207402	85207412	85207432	85207452	85257402	85257412	85257432	85257452
0/0.6	<b>85209402</b>	85209412	85209432	85209452	85259402	85259412	85259432	85259452
0/1	<b>85210402</b>	85210412	85210432	85210452	85260402	85260412	85260432	85260452
0/1.6	<b>85211402</b>	85211412	85211432	85211452	85261402	85261412	85261432	85261452
0/2.5	<b>85212402</b>	85212412	85212432	85212452	85262402	85262412	85262432	85262452
0/4	<b>85213402</b>	<b>85213412</b>	85213432	85213452	85263402	85263412	85263432	85263452
0/6	<b>85214402</b>	<b>85214412</b>	85214432	85214452	<b>85264402</b>	85264412	85264432	85264452
0/10	<b>85215402</b>	<b>85215412</b>	85215432	85215452	<b>85265402</b>	85265412	85265432	85265452
0/16	<b>85216402</b>	85216412	85216432	85216452	<b>85266402</b>	85266412	85266432	85266452
0/25	<b>85217402</b>	85217412	85217432	85217452	<b>85267402</b>	85267412	85267432	85267452
0/40	<b>85218402</b>	85218412	85218432	85218452	85268402	85268412	85268432	85268452
0/60	<b>85219402</b>	85219412	85219432	85219452	85269402	85269412	85269432	85269452
0/100	<b>85220402</b>	85220412	85220432	85220452	85270402	85270412	85270432	85270452
0/160	<b>85221402</b>	85221412	85221432	85221452	85271402	85271412	85271432	85271452
0/250	<b>85222402</b>	85222412	85222432	85222452	85272402	85272412	85272432	85272452
0/400	<b>85223402</b>	85223412	85223432	85223452	85273402	85273412	85273432	85273452
0/600	85224402	85224412	85224432	85224452	85274402	85274412	85274432	85274452
0/1,000	85225402	85225412	85225432	85225452	85275402	85275412	85275432	85275452
0/1,600	---	---	---	---	85276402	85276412	85276432	85276452

Minimum order quantity for non-stock items = 10 pieces.

Blue part no. = in-stock items

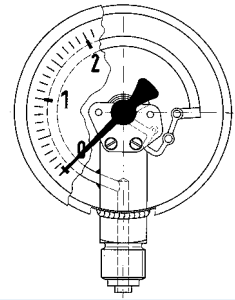


See page 441 for options.

# Bourdon tube pressure gauges for chemical applications with glycerine filling EN 837-1



- For chemical and process engineering applications
- Measuring system fully welded to housing
- Extremely robust design
- Can be used in case of heavy vibrations and high, dynamic pressure loads
- Tightness-tested with helium
- DNV- and GOSSTANDART-certified



**Application** For corrosive gaseous and liquid media which are not highly viscous and do not crystallise; suitable for corrosive environments. For measurements in areas with high vibration levels and high, dynamic pressure loads.

! For measuring gas or vapour, observe the table "Selection Criteria as per EN 837-2" (see appendix)!

## Technical specifications

### Type

D 7

### Nominal size

50 – 63

### Accuracy class (EN 837-1/6)

1.6

### Ranges (EN 837-1/5)

NG 50:

-1/0 to -1/+15 bar

0/0.6 to 0/600 bar

NG 63:

-1/0 to -1/+15 bar

0/0.6 to 0/1,000 bar

### Application area

Static load:  $\frac{3}{4}$  x full scale value

Dynamic load:  $\frac{2}{3}$  x full scale value

Short-term: full scale value

### Operating temperature range

Medium:  $T_{max} = +100\text{ }^{\circ}\text{C}$

Ambient:  $T_{min} = -20\text{ }^{\circ}\text{C}$

$T_{max} = +60\text{ }^{\circ}\text{C}$

### Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of 20 °C:

rising temperature approx.  $\pm 0.4\text{ } \%/10\text{ K}$

falling temperature approx.  $\pm 0.4\text{ } \%/10\text{ K}$

of full scale value

### Degree of protection

IP 65 (EN 60529)

with housing vent (< 25 bar): IP 54

## Standard version

### Connection

Stainless steel 316 L

NG 50 bottom or bottom back

NG 63 bottom or centre back

G $\frac{1}{4}$ B – spanner size SW 14

(EN 837-1/7.3)

### Measuring element

Bourdon tube, stainless steel 316 Ti/316 L

$\leq 60$  bar "C" type tube

$> 60$  bar helical tube

tightness-tested with helium

### Movement

Stainless steel

### Dial

Aluminium, white

Dial marking black

### Pointer

Aluminium, black

### Housing

Stainless steel 304 with blow-out

### Crimped bezel

Stainless steel 304

### Window

NG 50 plastic


NG 63 laminated safety glass

### Filling liquid

Glycerine (99.5 %)

## Options

- Filling liquid silicone oil
- Plastic window (NG 63)
- Back flange (NG 63)
- Clamp fixing

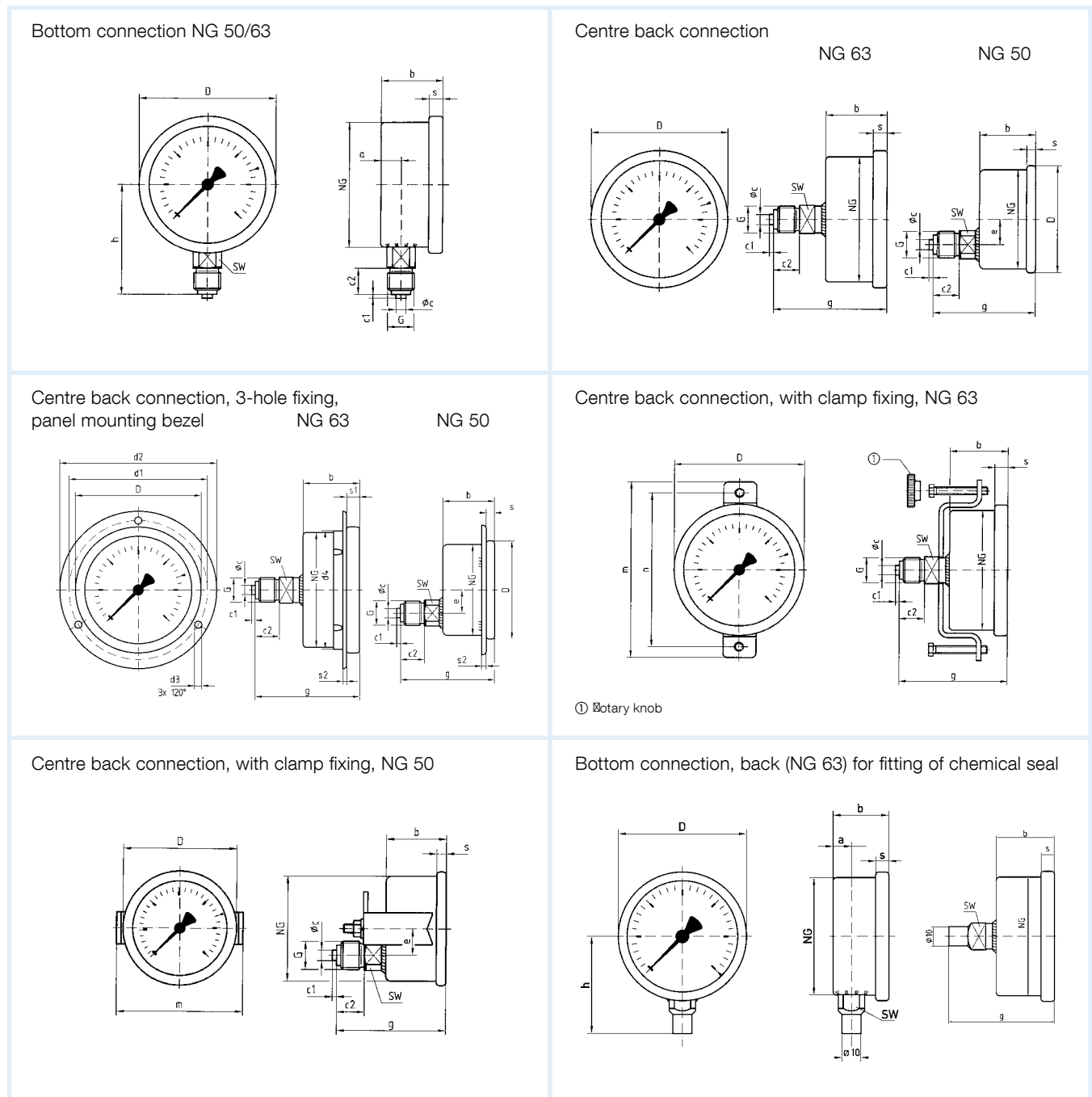
- Ex version 
- Crimped bezel polished
- Special scales
- Other process connections



# Bourdon tube pressure gauges for chemical applications with glycerine filling

Type D 7 - NG 50/63

## Housing types and dimensions



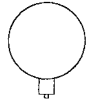
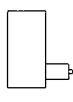
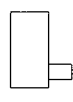


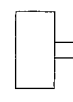
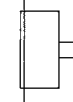
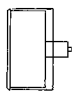
### Dimensions (mm)

Nominal size (NG)	a	a1	b	Øc	c1	c2	d1*	d2*	d3*	d4	D	e	G	g	h	m	n	s	s1	s2	SW
50	10.5	-	28	5	2	13	60	70	3.6	-	53	12.5	G1/4B	51	46	59	-	4.5	-	2.5	14
63	11.5	13	32	5	2	13	75	85	3.6	64	68	-	G1/4B	56	53	94	82	7	5.5	2	14

\* Dimensions as per DIN 16063.

# Bourdon tube pressure gauges for chemical applications with glycerine filling EN 837-1

DG: M, PG: 3

Type	RF50ChGly, D702	RF50ChGly, D712	RF50ChGly, D732	RF50ChGly, D752	RF63ChGly, D702	RF63ChGly, D712	RF63ChGly, D732	RF63ChGly, D752
Version								
Housing Ø	50	50	50	50	63	63	63	63
Housing	Stainless steel 304 with crimped bezel 304							
Measuring element	Bourdon tube, stainless steel 316 Ti/316 L							
Accuracy class	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Connection	G¼B	G¼B	G¼B	G¼B	G¼B	G¼B	G¼B	G¼B
			3-hole fixing, panel mounting bezel, 304, bare metal surface	Clamp fixing			3-hole fixing, panel mounting bezel, 304, bare metal surface	Clamp fixing
Range (bar)	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.
-1/0	85051702	85051712	85051732	85051752	<b>85101702</b>	85101712	85101732	85101752
-1/+0.6	85052702	85052712	85052732	85052752	85102702	85102712	85102732	85102752
-1/+1.5	85053702	85053712	85053732	85053752	85103702	85103712	85103732	85103752
-1/+3	85054702	85054712	85054732	85054752	85104702	85104712	85104732	85104752
-1/+5	85055702	85055712	85055732	85055752	85105702	85105712	85105732	85105752
-1/+9	85056702	85056712	85056732	85056752	85106702	85106712	85106732	85106752
-1/+15	85057702	85057712	85057732	85057752	85107702	85107712	85107732	85107752
0/0.6	85059702	85059712	85059732	85059752	85109702	85109712	85109732	85109752
0/1	85060702	85060712	85060732	85060752	85110702	85110712	85110732	85110752
0/1.6	85061702	85061712	85061732	85061752	85111702	85111712	85111732	85111752
0/2.5	85062702	85062712	85062732	85062752	<b>85112702</b>	85112712	85112732	85112752
0/4	85063702	85063712	85063732	85063752	<b>85113702</b>	<b>85113712</b>	<b>85113732</b>	<b>85113752</b>
0/6	85064702	85064712	85064732	85064752	<b>85114702</b>	<b>85114712</b>	<b>85114732</b>	<b>85114752</b>
0/10	85065702	85065712	85065732	85065752	<b>85115702</b>	<b>85115712</b>	<b>85115732</b>	<b>85115752</b>
0/16	85066702	85066712	85066732	85066752	<b>85116702</b>	<b>85116712</b>	<b>85116732</b>	<b>85116752</b>
0/25	85067702	85067712	85067732	85067752	<b>85117702</b>	85117712	85117732	85117752
0/40	85068702	85068712	85068732	85068752	<b>85118702</b>	85118712	85118732	85118752
0/60	85069702	85069712	85069732	85069752	<b>85119702</b>	85119712	85119732	85119752
0/100	85070702	85070712	85070732	85070752	<b>85120702</b>	85120712	85120732	85120752
0/160	85071702	85071712	85071732	85071752	<b>85121702</b>	85121712	85121732	85121752
0/250	85072702	85072712	85072732	85072752	<b>85122702</b>	85122712	85122732	85122752
0/400	85073702	85073712	85073732	85073752	<b>85123702</b>	85123712	85123732	85123752
0/600	85074702	85074712	85074732	85074752	<b>85124702</b>	85124712	85124732	85124752
0/1,000	---	---	---	---	<b>85125702</b>	85125712	85125732	85125752

Minimum order quantity for non-stock items = 10 pieces.

Blue part no. = in-stock items



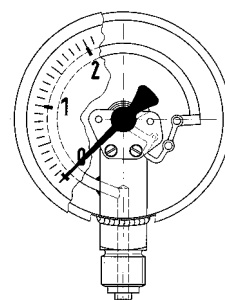
See page 441 for options.

# Bourdon tube pressure gauges for chemical applications with glycerine filling

EN 837-1



- For chemical and process engineering applications
- Measuring system fully welded to housing
- Extremely robust design
- Tightness-tested with helium
- DNV- and GOSSTANDART-certified
- Ex version (optional)



**Application** For corrosive gaseous and liquid media which are not highly viscous and do not crystallise; suitable for corrosive environments. For measurements in areas with high vibration levels and high, dynamic pressure loads.

! For measuring gas or vapour, observe the table "Selection Criteria as per EN 837-2" (see appendix)!

## Technical specifications

### Type

D 8

### Nominal size

100 – 160

### Accuracy class (EN 837-1/6)

1.0

### Ranges (EN 837-1/5)

-1/0 to -1/+15 bar  
 NG 100 0/0.6 to 0/1,000 bar  
 NG 160 0/0.6 to 0/1,600 bar

### Application area

Static load:  
 $\leq 600 \text{ bar} = \text{full scale value}$   
 $> 600 \text{ bar} = \frac{3}{4} \times \text{full scale value}$   
 Dynamic load:  
 $\leq 600 \text{ bar} = 0.9 \times \text{full scale value}$   
 $> 600 \text{ bar} = \frac{2}{3} \times \text{full scale value}$

## Standard version

### Connection

Stainless steel 316 L,  
 bottom or bottom back  
 G $\frac{1}{2}$ B – spanner size SW 22 (EN 837-1/7.3)

### Measuring element

Bourdon tube, stainless steel 316 Ti/316 L  
 $\leq 60 \text{ bar}$  "C" type tube  
 $> 60 \text{ bar}$  helical tube  
 tightness-tested with helium

### Movement

Stainless steel

### Dial

Aluminium, white  
 Dial marking black

## Options

- Filling liquid silicone oil
- Brass movement
- Back flange
- 3-hole fixing, panel mounting bezel

### Short-term:

$\leq 600 \text{ bar} = 1.3 \times \text{full scale value}$   
 $> 600 \text{ bar} = \text{full scale value}$

### Operating temperature range

Medium:  $T_{\text{max}} = +100 \text{ }^\circ\text{C}$   
 Ambient:  $T_{\text{min}} = -20 \text{ }^\circ\text{C}$   
 $T_{\text{max}} = +60 \text{ }^\circ\text{C}$

### Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of 20 °C:

rising temperature approx.  $\pm 0.4 \text{ } \%/10 \text{ K}$   
 falling temperature approx.  $\pm 0.4 \text{ } \%/10 \text{ K}$   
 of full scale value

### Degree of protection

IP 65 (EN 60529)  
 with housing vent ( $< 25 \text{ bar}$ ): IP 54

### Pointer

Aluminium, black

### Housing

Stainless steel 304  
 with blow-out

### Bayonet type bezel

Stainless steel 304

### Window

Laminated safety glass

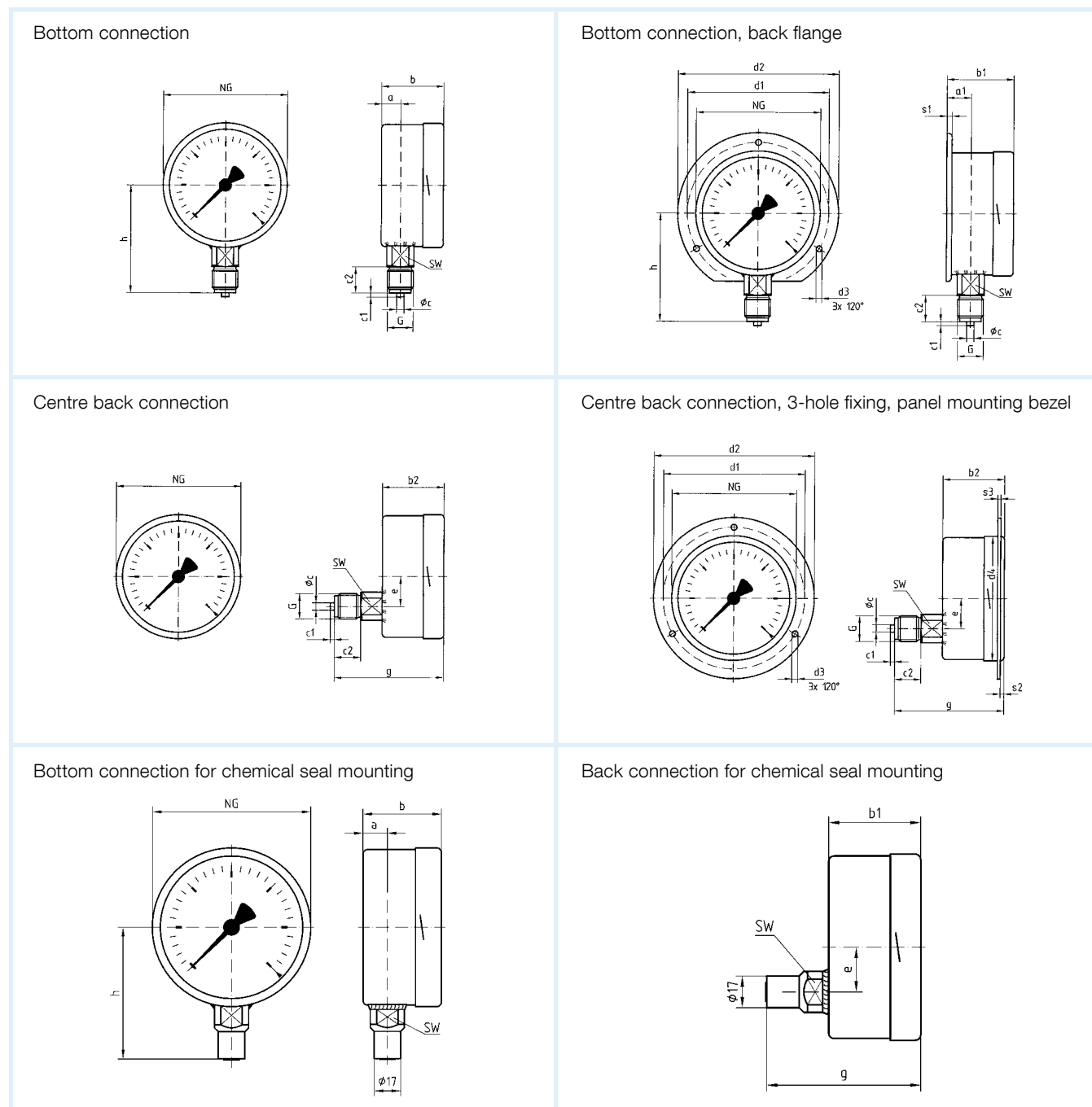
### Filling liquid

Glycerine (99.5 %)

- Ex version
- Electrical contacts
- Special scales
- Other process connections

# Bourdon tube pressure gauges for chemical applications with glycerine filling type D 8 – NG 100/160

## Housing types and dimensions (mm)



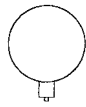
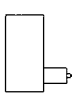
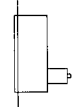
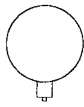
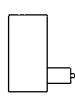
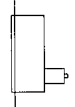
### Dimensions (mm)

Nominal size (NG)	a	a1	b	b1	b2	Øc	c1	c2	d1*	d2*	d3*	d4	e	G	g	h	s1
100	15.6	19.1	49	52.5	49	6	3	20	116	132	4.8	104	34.5	G½B	83	86	5.5
160	17.5	20.5	50	53	50	6	3	20	178	196	5.8	164	34.5	G½B	84	116	6
Nominal size (NG)	s2	s3	SW														
100	4	2	22														
160	4	2	22														

\* Dimensions for NG 100 according to DIN 16064.

# Bourdon tube pressure gauges for chemical applications with glycerine filling EN 837-1

DG: M, PG: 3

Type	RF100ChGly, D802	RF100ChGly, D812	RF100ChGly, D832	RF160ChGly, D802	RF160ChGly, D812	RF160ChGly, D832
Version						
Housing Ø	100	100	100	160	160	160
Housing	Stainless steel 304 with bayonet bezel, laminated safety glass window					
Measuring element	Bourdon tube, stainless steel 316 Ti/316 L					
Accuracy class	1.0	1.0	1.0	1.0	1.0	1.0
Connection	G½B	G½B	G½B	G½B	G½B	G½B
			3-hole fixing, panel mounting bezel, 304, polished			3-hole fixing, panel mounting bezel, 304, polished
Range (bar)	Part no.	Part no.	Part no.	Part no.	Part no.	Part no.
-1/0	<b>85201802</b>	85201812	85201832	85251802	85251812	85251832
-1/+0.6	85202802	85202812	85202832	85252802	85252812	85252832
-1/+1.5	85203802	85203812	85203832	85253802	85253812	85253832
-1/+3	85204802	85204812	85204832	85254802	85254812	85254832
-1/+5	85205802	85205812	85205832	85255802	85255812	85255832
-1/+9	85206802	85206812	85206832	85256802	85256812	85256832
-1/+15	85207802	85207812	85207832	85257802	85257812	85257832
0/0.6	85209802	85209812	85209832	85259802	85259812	85259832
0/1	<b>85210802</b>	85210812	85210832	85260802	85260812	85260832
0/1.6	<b>85211802</b>	85211812	85211832	85261802	85261812	85261832
0/2.5	<b>85212802</b>	85212812	85212832	85262802	85262812	85262832
0/4	<b>85213802</b>	85213812	85213832	85263802	85263812	85263832
0/6	<b>85214802</b>	85214812	85214832	85264802	85264812	85264832
0/10	<b>85215802</b>	85215812	85215832	85265802	85265812	85265832
0/16	<b>85216802</b>	85216812	85216832	85266802	85266812	85266832
0/25	<b>85217802</b>	85217812	85217832	85267802	85267812	85267832
0/40	<b>85218802</b>	85218812	85218832	85268802	85268812	85268832
0/60	<b>85219802</b>	85219812	85219832	85269802	85269812	85269832
0/100	<b>85220802</b>	85220812	85220832	85270802	85270812	85270832
0/160	<b>85221802</b>	85221812	85221832	85271802	85271812	85271832
0/250	<b>85222802</b>	85222812	85222832	85272802	85272812	85272832
0/400	<b>85223802</b>	85223812	85223832	85273802	85273812	85273832
0/600	<b>85224802</b>	85224812	85224832	85274802	85274812	85274832
0/1,000	85225802	85225812	85225832	85275802	85275812	85275832
0/1,600	---	---	---	85276802	85276812	85276832

Minimum order quantity for non-stock items = 10 pieces.

Blue part no. = in-stock items



See page 441 for options.

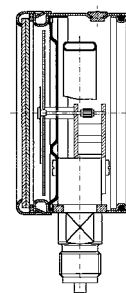
# Bourdon tube safety pressure gauges EN 837-1



- Safety pressure gauge S3 as per EN 837-1/9.7.2
- Measuring system fully welded to housing
- Tightness-tested with helium
- GOSSTANDART-certified
- Ex version (optional)



Page 512



**Application** For corrosive gaseous and liquid media which are not highly viscous and do not crystallise; suitable for corrosive environments. This gauge is designed for applications as per EN 837-1/9.7.2.

## Technical specifications

### Type

D 4

### Nominal size

63

### Accuracy class (EN 837-1/6)

1.6 (&gt; 0/600 bar 2.5)

### Ranges (EN 837-1/5)

-1/0 to -1/+15 bar  
0/0.6 to 0/1,000 bar

### Application area

Static load:  $\frac{3}{4}$  x full scale value  
Dynamic load:  $\frac{2}{3}$  x full scale value  
Short-term: full scale value

### Operating temperature range

Medium:  $T_{max} = +100\text{ }^{\circ}\text{C}$ Ambient:  $T_{min} = -20\text{ }^{\circ}\text{C}$  $T_{max} = +60\text{ }^{\circ}\text{C}$ 

### Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of 20 °C:

rising temperature approx.  $\pm 0.4\text{ } \%/10\text{ K}$   
falling temperature approx.  $\pm 0.4\text{ } \%/10\text{ K}$   
of full scale value

### Degree of protection

IP 54 (EN 60529)

## Standard version

### Connection

Stainless steel 316 L,  
bottom or bottom back  
G $\frac{1}{4}$ B – spanner size SW 14 (EN 837-1/7.3)

### Measuring element

Bourdon tube, stainless steel 316 Ti/316 L  
 $\leq 60$  bar "C" type tube  
 $> 60$  bar helical tube  
tightness-tested with helium

### Movement

Stainless steel

### Dial

Aluminium, white  
Dial marking black

## Options

- Glycerine filling (bottom version type D8)
- 3-hole fixing, panel mounting bezel
- Ex version 
- Special scales
- Other process connections

### Pointer

Aluminium, black

### Housing

Stainless steel 304 with solid  
baffle wall and blow-out (S3)

### Bayonet type bezel

Stainless steel 304

### Window

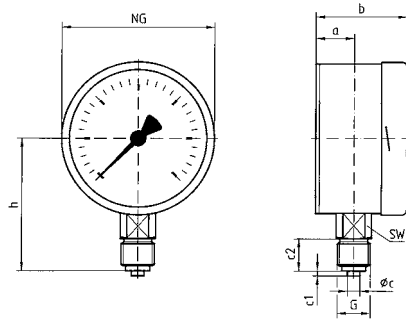
Laminated safety glass

# Bourdon tube safety pressure gauges

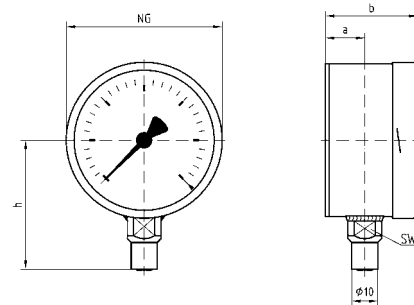
Type D 4/D 8 – NG 63

## Housing types and dimensions

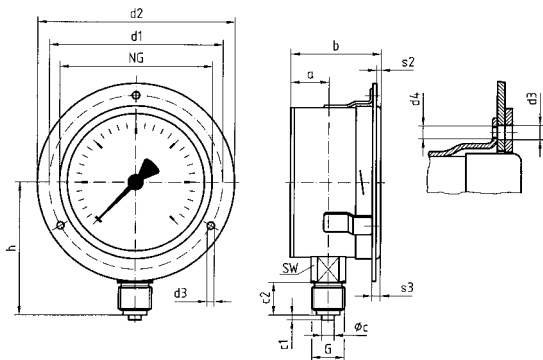
Bottom connection



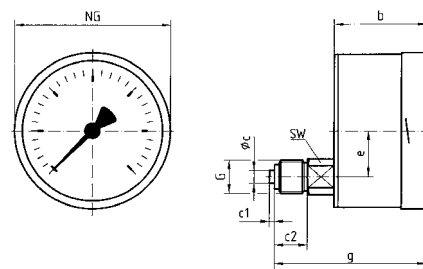
Bottom connection for chemical seal mounting



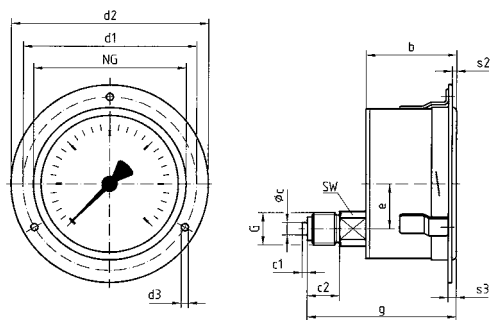
Bottom connection, 3-hole fixing, panel mounting bezel



Centre back connection



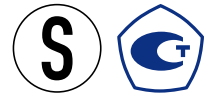
Centre back connection, 3-hole fixing, panel mounting bezel



### Dimensions (mm)

Nominal size (NG)	a	a1	b	b1	$\phi C$	c1	c2	d1	d2	d3	d4	e	g	G	h	s1	s2	s3	SW
63	18	38	41	61	5	2	13	75	85	3.6	M3	18	60	G1/4B	53	21	3	5	14

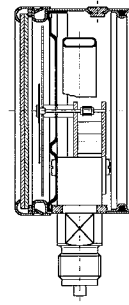
# Bourdon tube safety pressure gauges EN 837-1



- Safety housing S3 as per EN 837-1/9.7.2
- Measuring system fully welded to housing
- Tightness-tested with helium
- GOSSTANDART-certified
- Ex version (optional)



Page 512



**Application** For corrosive gaseous and liquid media which are not highly viscous and do not crystallise; suitable for aggressive environments. This gauge is designed for applications as per EN 837-1/9.7.2.

## Technical specifications

### Type

D 4

### Nominal size

100 – 160

### Accuracy class (EN 837-1/6)

1.0

### Ranges (EN 837-1/5)

-1/0 to -1/+15 bar  
0/0.6 to 0/1,000 bar

### Application area

Static load:

≤ 600 bar = full scale value  
> 600 bar = ¾ x full scale value

Dynamic load:

≤ 600 bar = 0.9 x full scale value  
> 600 bar = 2/3 x full scale value

Short-term:

≤ 600 bar = 1.3 x full scale value  
> 600 bar = full scale value

### Operating temperature range

Medium:  $T_{max} = +100\text{ °C}$   
Ambient:  $T_{min} = -20\text{ °C}$   
 $T_{max} = +60\text{ °C}$

### Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of 20 °C:

rising temperature approx. ±0.4 %/10 K  
falling temperature approx. ±0.4 %/10 K  
of full scale value

### Degree of protection

IP 54 (EN 60529)

## Standard version

### Connection

Stainless steel 316 L, bottom  
G½B – spanner size SW 22  
(EN 837-1/7.3)

### Measuring element

Bourdon tube, stainless steel 316 Ti/316 L  
≤ 60 bar "C" type tube  
> 60 bar helical tube  
tightness-tested with helium

### Movement

Stainless steel

### Dial

Aluminium, white  
Dial marking black

### Pointer

Aluminium, black

### Housing

Stainless steel 304 with solid  
baffle wall and blow-out (S3)

### Bayonet type bezel

Stainless steel 304

### Window

Laminated safety glass

## Options

- Glycerine filling (bottom version type D8)
- 3-hole fixing, panel mounting bezel
- Ex version
- Special scales
- Other process connections

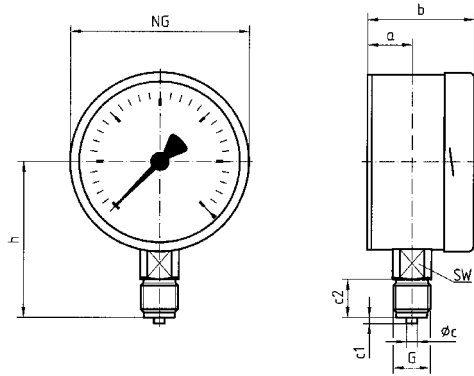


# Bourdon tube safety pressure gauges

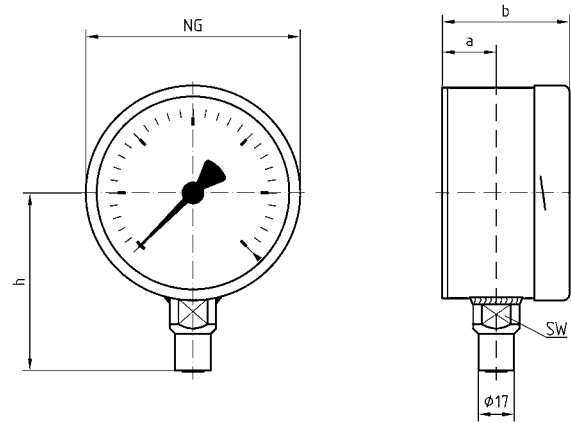
Type D 4/D 8 – NG 100/160

## Housing types and dimensions

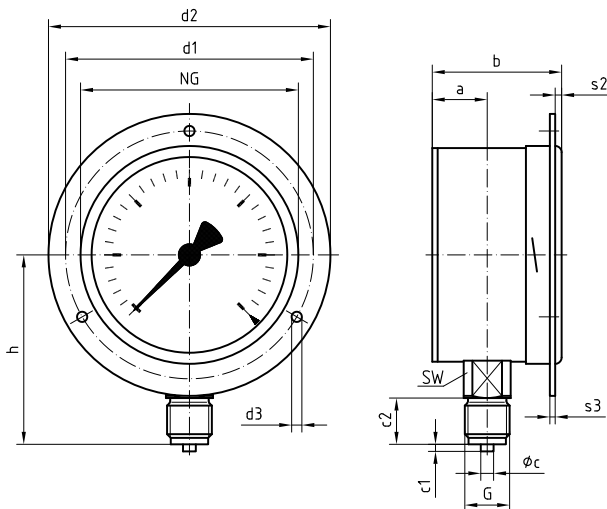
Bottom connection



Bottom connection for chemical seal mounting



Bottom connection, 3-hole fixing, panel mounting bezel



### Dimensions (mm)

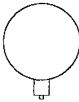
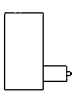
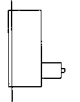


Nominal size (NG)	a	b	Øc	c1	c2	d1*	d2*	d3*	G	h	s2	s3	SW				
100	25	57	6	3	20	116	132	4.8	G½B	86	4	2	22				
160	26	65	6	3	20	178	196	5.8	G½B	116	4	2	22				

\* Dimensions as per DIN 16064.

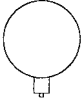
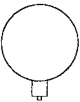
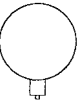
# Bourdon tube safety pressure gauges

EN 837-1

DG: M, PG: 3

Type	RF63Si, D402	RF63Si, D412	RF63Si, D432	RF100Si, D402	RF160Si, D402
Version					
Housing Ø	63	63	63	100	160
Housing (S3)	Stainless steel 304 with bayonet bezel, laminated safety glass window, blow out baffle wall				
Measuring element	Bourdon tube, stainless steel 316 Ti/316 L				
Accuracy class	1.6*	1.6*	1.6*	1.0	1.0
Connection	G¼B	G¼B	G¼B	G½B	G½B
	-	-	3-hole fixing, panel mounting bezel 304 polished	-	-
<b>Range (bar)</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>
-1/0	85401402	85401412	85401432	85451402	85501402
-1/+0.6	85402402	85402412	85402432	85452402	85502402
-1/+1.5	85403402	85403412	85403432	85453402	85503402
-1/+3	85404402	85404412	85404432	85454402	85504402
-1/+5	85405402	85405412	85405432	85455402	85505402
-1/+9	85406402	85406412	85406432	85456402	85506402
-1/+15	85407402	85407412	85407432	85457402	85507402
0/0.6	85409402	85409412	85409432	85459402	85509402
0/1	85410402	85410412	85410432	85460402	85510402
0/1.6	85411402	85411412	85411432	85461402	85511402
0/2.5	85412402	85412412	85412432	85462402	85512402
0/4	85413402	85413412	85413432	85463402	85513402
0/6	85414402	85414412	85414432	85464402	85514402
0/10	85415402	85415412	85415432	85465402	85515402
0/16	85416402	85416412	85416432	85466402	85516402
0/25	85417402	85417412	85417432	85467402	85517402
0/40	85418402	85418412	85418432	85468402	85518402
0/60	85419402	85419412	85419432	85469402	85519402
0/100	85420402	85420412	85420432	85470402	85520402
0/160	85421402	85421412	85421432	85471402	85521402
0/250	85422402	85422412	85422432	85472402	85522402
0/400	85423402	85423412	85423432	85473402	85523402
0/600	85424402	85424412	85424432	85474402	85524402
0/1,000	85425402	85425412	85425432	85475402	85525402

## Version with glycerine filling

RF63SiGly, D802	RF100SiGly, D802	RF160SiGly, D802
		
63	100	160
Stainless steel 304 with bayonet bezel, laminated safety glass window, blow out baffle wall		
Bourdon tube, stainless steel 316 Ti/316 L		
1.6*	1.0	1.0
G¼B	G½B	G½B
-	-	-
<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>
85401802	85451802	85501802
85402802	85452802	85502802
85403802	85453802	85503802
85404802	85454802	85504802
85405802	85455802	85505802
85406802	85456802	85506802
85407802	85457802	85507802
85409802	85459802	85509802
85410802	85460802	85510802
85411802	85461802	85511802
85412802	85462802	85512802
85413802	85463802	85513802
85414802	85464802	85514802
85415802	85465802	85515802
85416802	85466802	85516802
85417802	85467802	85517802
85418802	85468802	85518802
85419802	85469802	85519802
85420802	85470802	85520802
85421802	85471802	85521802
85422802	85472802	85522802
85423802	85473802	85523802
85424802	85474802	85524802
85425802	85475802	85525802

Minimum order quantity for non-stock items = 10 pieces.  
\* > 0/600 bar class 2.5.

Blue part no. = in-stock items



See page 441 for options / see page 479 for options for electrical contact.

# Options for Bourdon tube pressure gauges

(industrial, glycerine, chemical, safety versions)

DG: M

Housing diameter	PG	50	63	100	160
Description		Part no.	Part no.	Part no.	Part no.
Housing stainless steel 304 polished	3	38281	38282	38283	38284
Bayonet bezel stainless steel 304 polished	3	---	38286	38287	38288
Crimped bezel stainless steel 304 polished	3	38289	38290	38291	---
Housing 316 Ti	3	---	On request	On request	---
Laminated safety glass window	-	38071	38072	38074	38075
Connection socket nickel-plated	3	38083	38084	38086	38087
Connection socket with special thread	-	On request	On request	On request	On request
Throttle screw brass – hole 0.3 – 0.5 – 0.7 mm (please specify)	2	38096	38097	38099	38100
Throttle screw stainless steel 316 Ti – hole 0.3 – 0.5 – 0.7 mm (please specify)	3	38102	38103	38105	38106
Red mark on dial	0	38183	38184	38186	38187
1 reference pointer red, external knob adjustment for unfilled gauges (plastic window)	1	---	38188	38190	38191
Clip reference pointer, red, adjustable for housing types D7/D9	1	---	38193	---	---
1 reference pointer red, external knob adjustment for filled gauges (plastic window)	1	---	38301	38302	38303
Max. pointer for unfilled gauges * (only for gauges with bayonet bezel, plastic window)	1	---	---	38129	38130
Max. pointer for filled gauges* (only for gauges with bayonet bezel, plastic window)	1	---	---	38306	38307
Knife edge pointer	3	---	38133	38135	38136
Micro-adjustable pointer for zero correction	3	---	38335	38308	38309
Damped movement, brass	3	On request	On request	38293	38294
Measuring system hard-soldered, suitable for temperature of medium $T_{max}$ of +180°C (gauges with filling $T_{max}$ of medium +100°C)	3	---	38295	38296	38297
Housing can be sealed, serial number on dial (only for housing with bayonet bezel). Conformity assessment by Board of Weights and Measures not possible	3	---	On request	On request	On request
Range -1/0 bar to 0/600 bar (only for classes 0.6 and 1.0). Conformity assessment by Board of Weights and Measures as per module F1 with certification of con- formity and declaration of conformity by AFRISO	-	---	---	On request	On request
Special mounting position	0	38146	38147	38149	38150
Wetted parts cleaned for oxygen <sup>1)</sup> – label "Oxygen", symbol "Free from oil and grease" (gauges without filling only)	0	38138	38139	38141	38142
Printing block creation per scale and colour (scale design as per EN 837-1, others on request)	0	38152	38153	38155	38156
Additional colour	0	38164	38165	38167	38168
Stainless steel plate for TAG number, needled lettering incl. seal wire and aluminium seal	3	37625	37625	37625	37625

1) Observe table "Selection criteria according to EN 837-2" (see appendix).

\* Accuracy no longer classes 1 and 1.6, but possible from measuring range 6 bar.

Blue part no. = in-stock items

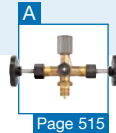
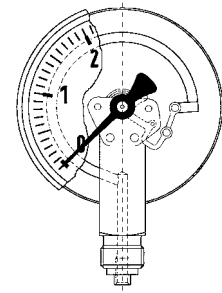


See the overview "Accessories for panel mounting and wall mounting" on page 511.

# Bourdon tube pressure gauges with screw bezel housing EN 837-1



- For machine and plant engineering
- Available with or without glycerine filling
- Extremely robust plastic housing (PA 6.6 GB30)
- Laminated safety glass window
- Higher accuracy class optional



**Application** For gaseous and liquid media which are not highly viscous, do not crystallise and do not attack copper alloys. For high measuring accuracy.  
! For measuring gas or vapour, observe the table "Selection Criteria as per EN 837-2" (see appendix)!

## Technical specifications

### Type

D 1

### Nominal size

100

### Accuracy class (EN 837-1/6)

1.0

### Ranges (EN 837-1/5)

-1/0 to -1/+15 bar  
0/0.6 to 0/1,000 bar

### Application area

Static load:

≤ 600 bar = full scale value  
> 600 bar = ¾ x full scale value

Dynamic load:

≤ 600 bar = 0.9 x full scale value  
> 600 bar = 2/3 x full scale value

Short-term:

≤ 600 bar = 1.3 x full scale value  
> 600 bar = full scale value

### Operating temperature range

Medium:  $T_{max} = +60\text{ °C}$

Ambient:  $T_{min} = -20\text{ °C}$

$T_{max} = +60\text{ °C}$

### Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of 20 °C:

rising temperature approx. ±0.4 %/10 K  
falling temperature approx. ±0.4 %/10 K  
of full scale value

### Degree of protection

IP 65 (EN 60529)

With housing vent (≤ 25 bar): IP 54

## Standard version Measuring element

Bourdon tube,  
≤ 60 bar "C" type tube, copper alloy  
> 60 bar helical tube,  
stainless steel 316 Ti/316 L

### Movement

Brass

### Dial

Aluminium, white  
Dial marking black

### Pointer

Aluminium, black

### Housing

Plastic (PA 6.6 GB30)  
with screw type bezel (PA 6.6 GB30)  
with blow-out

### Window

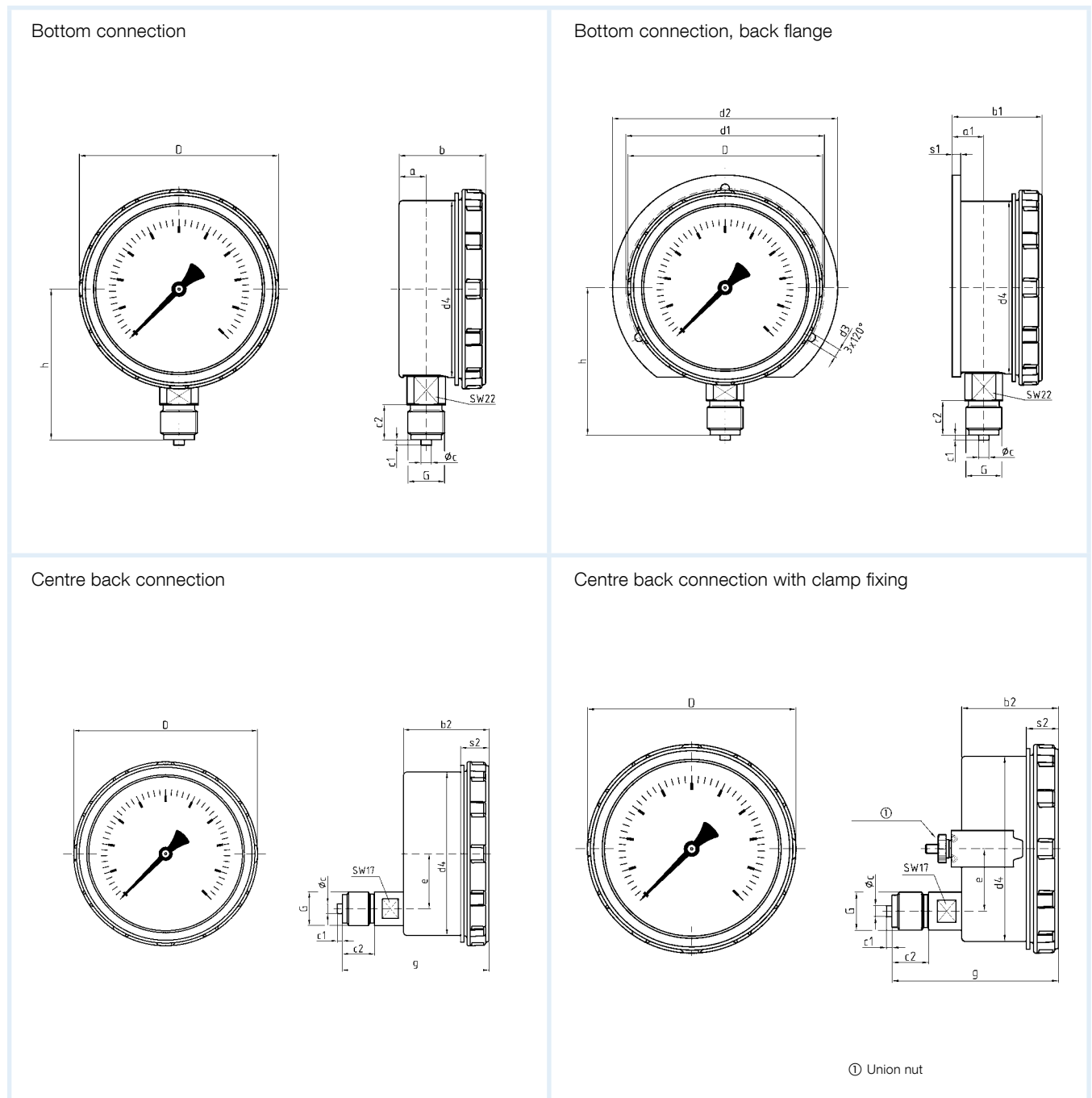
Laminated safety glass

## Options

- Glycerine filling (type D 6)
- Higher accuracy class
- Throttle screw
- Special scales
- Other process connections
- Micro-adjustable pointer

# Bourdon tube pressure gauges with screw bezel housing type D1/D6 – NG 100

## Housing types and dimensions

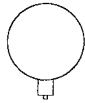
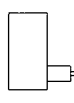
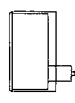
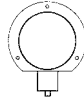


### Dimensions (mm)

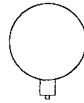
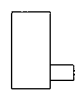
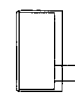
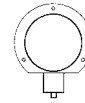
Connection (G)	a	a1	b	b1	b2	Øc	c1	c2	d1	d2	d3	d4	D	e	g	h	s1	s2
G $\frac{1}{2}$ B	15.5	18.5	50	52.5	52.5	6	3	20	116	131.5	5	101	114	34	91	86	5	17.5

# Bourdon tube pressure gauges with screw bezel housing type D1/D6 – NG 100

DG: M, PG: 2

Type	RF100ISR, D101	RF100ISR, D111	RF100ISR, D141	RF100ISR, D171
Version				
Housing Ø	100	100	100	100
Housing	Plastic (PA 6.6 GB30) with screw type bezel, window: laminated safety glass			
Measuring element	Bourdon tube, copper alloy (> 60 bar stainless steel 316 Ti/316 L)			
Accuracy class	1.0	1.0	1.0	1.0
Connection	G½B	G½B	G½B	G½
			With clamp fixing	With back flange
<b>Range (bar)</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>
-1/0	85301101	85301111	85301141	85301171
-1/+0.6	85302101	85302111	85302141	85302171
-1/+1.5	85303101	85303111	85303141	85303171
-1/+3	85304101	85304111	85304141	85304171
-1/+5	85305101	85305111	85305141	85305171
-1/+9	85306101	85306111	85306141	85306171
-1/+15	85307101	85307111	85307141	85307171
0/0.6	85309101	85309111	85309141	85309171
0/1	85310101	85310111	85310141	85310171
0/1.6	85311101	85311111	85311141	85311171
0/2.5	85312101	85312111	85312141	85312171
0/4	85313101	85313111	85313141	85313171
0/6	85314101	85314111	85314141	85314171
0/10	85315101	85315111	85315141	85315171
0/16	85316101	85316111	85316141	85316171
0/25	85317101	85317111	85317141	85317171
0/40	85318101	85318111	85318141	85318171
0/60	85319101	85319111	85319141	85319171
0/100	85320101	85320111	85320141	85320171
0/160	85321101	85321111	85321141	85321171
0/250	85322101	85322111	85322141	85322171
0/400	85323101	85323111	85323141	85323171
0/600	85324101	85324111	85324141	85324171
0/1,000	85325101	85325111	85325141	85325171

## Version with glycerine filling

RF100 GlySR, D601	RF100 GlySR, D611	RF100 GlySR, D641	RF100 GlySR, D671
			
100	100	100	100
Plastic (PA 6.6 GB30) with screw type bezel, window: laminated safety glass			
Bourdon tube, copper alloy (> 60 bar stainless steel 316 Ti/316 L)			
1.0	1.0	1.0	1.0
G½B	G½B	G½B	G½B
		With clamp fixing	With back flange
<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>
85201601	85201611	85201641	85201671
85202601	85202611	85202641	85202671
85203601	85203611	85203641	85203671
85204601	85204611	85204641	85204671
85205601	85205611	85205641	85205671
85206601	85206611	85206641	85206671
85207601	85207611	85207641	85207671
85209601	85209611	85209641	85209671
85210601	85210611	85210641	85210671
85611601	85611611	85611641	85611671
85212601	85212611	85212641	85212671
85213601	85213611	85213641	85213671
85214601	85214611	85214641	85214671
85215601	85215611	85215641	85215671
85216601	85216611	85216641	85216671
85217601	85217611	85217641	85217671
85218601	85218611	85218641	85218671
85219601	85219611	85219641	85219671
85220601	85220611	85220641	85220671
85221601	85221611	85221641	85221671
85222601	85222611	85222641	85222671
85223601	85223611	85223641	85223671
85224601	85224611	85224641	85224671
85225601	85225611	85225641	85225671

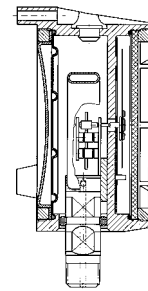
Minimum order quantity for non-stock items = 10 pieces.

Blue part no. = in-stock items

# Bourdon tube pressure gauges type "Process Gauge"



- Extremely robust pressure gauge for offshore and onshore applications
- Glass-fibre reinforced safety housing with solid baffle wall and blow-out
- Integrated pressure compensation diaphragm
- Tightness-tested with helium
- GOSSTANDART-certified



**Application** For corrosive gaseous and liquid media which are not highly viscous and do not crystallise. Specially suitable for the oil and chemical industries.

## Technical specifications

### Type

D 1

### Nominal size

4½"

### Accuracy class

Grade 2A as per ASME B 40.100 (corresponds to class 0.5)

### Ranges (EN 837-1/5)

-1/0 to -1/+15 bar  
0/0.6 to 0/600 bar

### Application area

Static load: full scale value  
Dynamic load: 0.9 x full scale value  
Short-term: 1.3 x full scale value

### Operating temperature range

Medium:  $T_{max} = +100\text{ °C}$   
Ambient:  $T_{min} = -40\text{ °C}$   
 $T_{max} = +65\text{ °C}$   
with glycerine filling -20/+65 °C

### Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of 20 °C:  
rising temperature approx. ±0.4 %/10 K  
falling temperature approx. ±0.4 %/10 K  
of full scale value

### Degree of protection

IP 67 (EN 60529)

## Standard version

### Connection

Stainless steel 316 L  
bottom or bottom back  
½-14 NPT – spanner size SW 22

### Measuring element

Bourdon tube, stainless steel 316 Ti/316 L  
≤ 60 bar "C" type tube  
> 60 bar helical tube  
tightness-tested with helium

### Movement

Stainless steel

### Dial

Aluminium, white  
Dial marking black

### Pointer

Micro-adjustable pointer, brass, black  
Gear brass, nickel-plated

### Housing

PP-GF20, black,  
with solid baffle wall  
and blow-out  
Integrated back flange

### Screw type bezel

PP-GF20, black, internal

### Window

Plastic (PMMA)

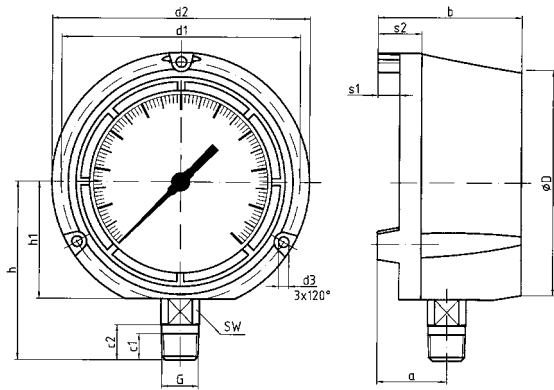
## Options

- Glycerine filling (type D6)
- Silicone oil filling (type D 6)
- Special scales
- Measuring system copper alloy (type 1x1)
- Laminated safety glass window
- Reference pointer
- Maximum pointer
- Electrical contacts
- Other process connections

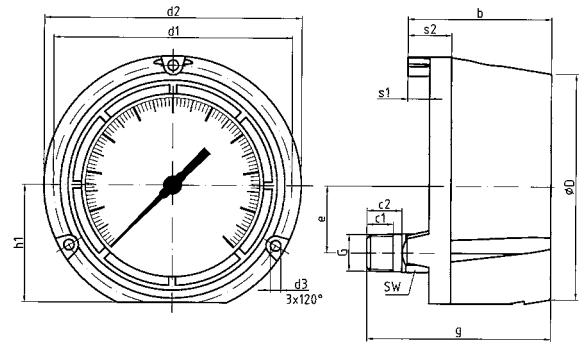
# Bourdon tube pressure gauges type "Process Gauge" Type D 1/D 6 - NG 4 1/2"

## Housing types and dimensions

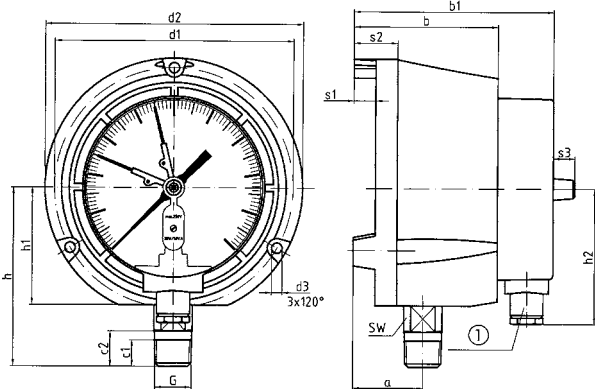
Bottom connection



Centre back connection

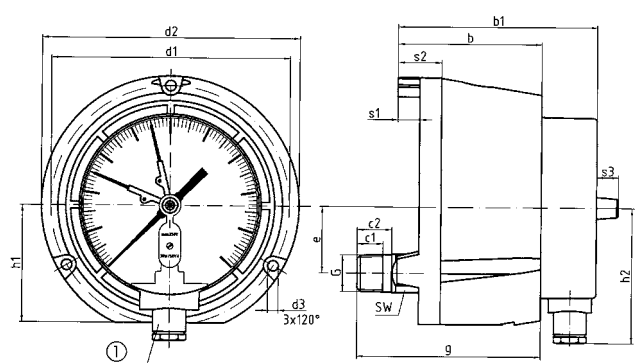


Bottom connection, with electrical contact



① Cable gland

Centre back connection, with electrical contact



① Cable gland

### Dimensions (mm)

Nominal size (NG)	a	b	b1	c1	c2	d1	d2	d3	ØD	e	G	g	h	h1	h2	s1	s2	s3	SW
4 1/2" (D 1/D 6)	40	82.5	114.5	15	20	137	148	6	129	38	1/2-14 NPT	105.5	102	67	78	12.5	25	12.5	22



# Bourdon tube pressure gauges type "Process Gauge"

DG: M

Type	RF130PG, D101	RF130PG, D111	RF130PG, D102	RF130PG, D112
Version				
Housing Ø	4½"	4½"	4½"	4½"
Housing	PP-GF 20, black, with internal screw type bezel			
Measuring element	Copper alloy, (> 60 bar 316 Ti/316 L)		Stainless steel 316 Ti/316 L	
Accuracy class	Grade 2A as per ASME B 40.100 (corresponds to class 0.5)			
Connection	½-14 NPT	½-14 NPT	½-14 NPT	½-14 NPT
PG	2	2	3	3
<b>Range (bar)*</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>
-1/0	87901101	87901111	87901102	87901112
-1/+0.6	87902101	87902111	87902102	87902112
-1/+1.5	87903101	87903111	87903102	87903112
-1/+3	87904101	87904111	87904102	87904112
-1/+5	87905101	87905111	87905102	87905112
-1/+9	87906101	87906111	87906102	87906112
-1/+15	87907101	87907111	87907102	87907112
0/0.6	87909101	87909111	87909102	87909112
0/1	87910101	87910111	87910102	87910112
0/1.6	87911101	87911111	87911102	87911112
0/2.5	87912101	87912111	87912102	87912112
0/4	87913101	87913111	87913102	87913112
0/6	87914101	87914111	87914102	87914112
0/10	87915101	87915111	87915102	87915112
0/16	87916101	87916111	87916102	87916112
0/25	87917101	87917111	87917102	87917112
0/40	87918101	87918111	87918102	87918112
0/60	87919101	87919111	87919102	87919112
0/100	87920101	87920111	87920102	87920112
0/160	87921101	87921111	87921102	87921112
0/250	87922101	87922111	87922102	87922112
0/400	87923101	87923111	87923102	87923112
0/600	87924101	87924111	87924102	87924112

## Version with glycerine filling

RF130PG Gly, D601	RF130PG Gly, D611	RF130PG Gly, D602	RF130PG Gly, D612
4½"	4½"	4½"	4½"
PP-GF 20, black, with internal screw type bezel			
Copper alloy (> 60 bar 316 Ti/316 L)		Stainless steel 316 Ti/316 L	
Grade 2A as per ASME B 40.100 (corresponds to class 0.5)			
½-14 NPT	½-14 NPT	½-14 NPT	½-14 NPT
2	2	3	3
<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>
87901601	87901611	87901602	87901612
87902601	87902611	87902602	87902612
87903601	87903611	87903602	87903612
87904601	87904611	87904602	87904612
87905601	87905611	87905602	87905612
87906601	87906611	87906602	87906612
87907601	87907611	87907602	87907612
87909601	87909611	87909602	87909612
87910601	87910611	87910602	87910612
87911601	87911611	87911602	87911612
87912601	87912611	87912602	87912612
87913601	87913611	87913602	87913612
87914601	87914611	87914602	87914612
87915601	87915611	87915602	87915612
87916601	87916611	87916602	87916612
87917601	87917611	87917602	87917612
87918601	87918611	87918602	87918612
87919601	87919611	87919602	87919612
87920601	87920611	87920602	87920612
87921601	87921611	87921602	87921612
87922601	87922611	87922602	87922612
87923601	87923611	87923602	87923612
87924601	87924611	87924602	87924612

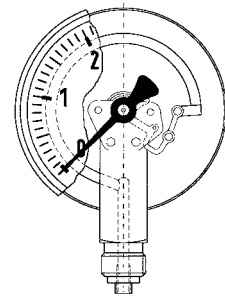
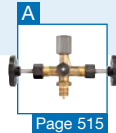
Minimum order quantity for non-stock items = 10 pieces.  
\* Pressure unit psi available at no extra charge.

Blue part no. = in-stock items

# Precision Bourdon tube pressure gauges



- High measuring accuracy (accuracy class 0.6)
- Housing can be sealed
- Serial number on dial
- Suitable as measuring equipment as per QA requirements
- DNV- and GOSSTANDART-certified



**Application** For gaseous and liquid media which are not corrosive and not highly viscous and which do not crystallise. For high measuring accuracy. ! For measuring gas or vapour, observe the table "Selection Criteria as per EN 837-2" (see appendix)!

## Technical specifications

### Type

D 4

### Nominal size

160

### Accuracy class (EN 837-1/6)

0.6

### Ranges (EN 837-1/5)

-1/0 bar to -1/+15 bar  
0/0.6 to 0/400 bar

### Calibration medium

≤ 40 bar: air  
> 40 bar: water

### Application area

Static load: full scale value  
Dynamic load: 0.9 x full scale value

### Operating temperature range

Medium:  $T_{max} = +60\text{ °C}$   
Ambient:  $T_{min} = -20\text{ °C}$   
 $T_{max} = +60\text{ °C}$

### Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of 20 °C:  
rising temperature approx. ±0.4 %/10 K  
falling temperature approx. ±0.4 %/10 K  
of full scale value

### Degree of protection

IP 54 (EN 60529)

## Standard version

### Connection

Brass, bottom or bottom back  
G $\frac{1}{2}$ B – spanner size SW 22 (EN 837-1/7.3)

### Measuring element

Bourdon tube  
≤ 60 bar "C" type tube, copper alloy  
> 60 bar helical tube,  
stainless steel 316 Ti/316 L

### Movement

Brass/nickel silver

### Dial

Aluminium, white  
Dial marking black

### Pointer

Knife edge pointer aluminium, black

### Housing

Stainless steel 304

### Bayonet type bezel

Stainless steel 304

### Window

Plastic (PMMA)

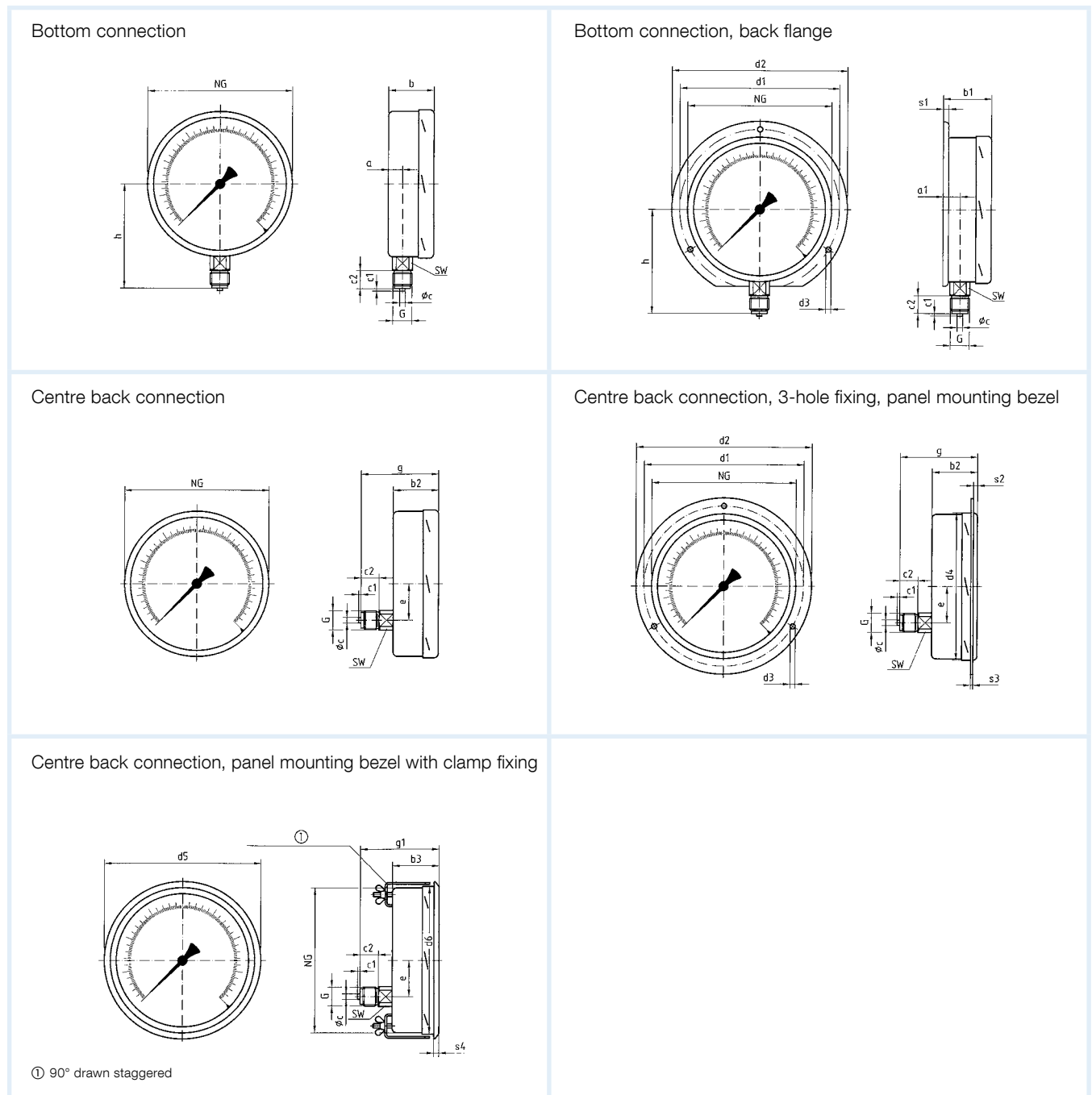
## Options

- Factory test certificates
- Glycerine filling (type D 8) > 2.5 bar
- Wetted parts stainless steel (type D 4x2)
- Laminated safety glass window
- Back flange
- 3-hole fixing, panel mounting bezel
- Throttle screw
- Special scales
- Other process connections

# Precision Bourdon tube pressure gauges

Type D 4 – NG 160

## Housing types and dimensions



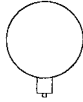
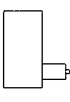
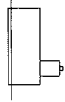
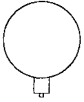
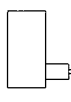
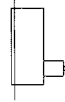
### Dimensions (mm)

Nominal size (NG)	a	a1	b	b1	b2	b3	Øc	c1	c2	d1*	d2	d3*	d4	d5	d6	e	G	g	g1	h	s1
160	17.5	20.5	50	53	50	52	6	3	20	178	196	5.8	164	167	161	44.5	G1½B	82	84	116	6
Nominal size (NG)	s2	s3	s4	SW																	
160	4	2	4.5	22																	

\* Dimensions as per DIN 16070.

# Precision Bourdon tube pressure gauges

DG: M

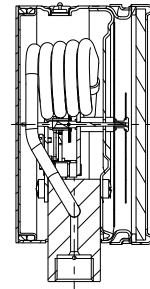
Type	RF160F, D401	RF160F, D411	RF160F, D431	RF160ChF, D402	RF160ChF, D412	RF160ChF, D432
Version						
Housing Ø	160	160	160	160	160	160
Housing	Stainless steel 304 with bayonet bezel					
Measuring element	Bourdon tube, copper alloy, (60 bar 316 Ti/316 L)			Bourdon tube, stainless steel 316 Ti/316 L		
Accuracy class	0.6	0.6	0.6	0.6	0.6	0.6
Connection	G½B	G½B	G½B	G½B	G½B	G½B
			3-hole fixing, panel mounting bezel, stainless steel			3-hole fixing, panel mounting bezel, stainless steel
PG	2	2	2	3	3	3
<b>Range (bar)</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>
-1/0	85701401	85701411	85701431	85701402	85701412	85701432
-1/+0.6	85702401	85702411	85702431	85702402	85702412	85702432
-1/+1.5	85703401	85703411	85703431	85703402	85703412	85703432
-1/+3	85704401	85704411	85704431	85704402	85704412	85704432
-1/+5	85705401	85705411	85705431	85705402	85705412	85705432
-1/+9	85706401	85706411	85706431	85706402	85706412	85706432
-1/+15	85707401	85707411	85707431	85707402	85707412	85707432
0/0.6	85709401	85709411	85709431	85709402	85709412	85709432
0/1	85710401	85710411	85710431	85710402	85710412	85710432
0/1.6	85711401	85711411	85711431	85711402	85711412	85711432
0/2.5	85712401	85712411	85712431	85712402	85712412	85712432
0/4	<b>85713401</b>	85713411	85713431	85713402	85713412	85713432
0/6	<b>85714401</b>	85714411	85714431	85714402	85714412	85714432
0/10	<b>85715401</b>	85715411	85715431	85715402	85715412	85715432
0/16	<b>85716401</b>	85716411	85716431	85716402	85716412	85716432
0/25	<b>85717401</b>	85717411	85717431	85717402	85717412	85717432
0/40	85718401	85718411	85718431	85718402	85718412	85718432
0/60	85719401	85719411	85719431	85719402	85719412	85719432
0/100	85720401	85720411	85720431	85720402	85720412	85720432
0/160	85721401	85721411	85721431	85721402	85721412	85721432
0/250	85722401	85722411	85722431	85722402	85722412	85722432
0/400	85723401	85723411	85723431	85723402	85723412	85723432
Glycerine filling (≥ 2.5 bar) on request						

Blue part no. = in-stock items

# Bourdon tube pressure gauges for high pressure



- For pressure ranges up to 4,000 bar
- Housing with solid baffle wall and blow-out



**Application** For measurement of extremely high pressures in gaseous and liquid corrosive media which are not highly viscous and do not crystallise; also suitable for corrosive atmospheres.

## Technical specifications

### Type

D 4

### Nominal size

100 – 160

### Accuracy class (EN 837-1/6)

1.0

### Ranges

0/2,500 bar  
0/4,000 bar

### Application area

Static load: full scale value  
Dynamic load: 65 % of full scale value

### Operating temperature range

Medium:  $T_{max} = +100\text{ °C}$   
Ambient:  $T_{min} = -20\text{ °C}$   
 $T_{max} = +60\text{ °C}$

### Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of 20 °C:  
rising temperature approx.  $\pm 0.4\text{ %}/10\text{ K}$   
falling temperature approx.  $\pm 0.4\text{ %}/10\text{ K}$   
of full scale value

### Degree of protection

IP 54 (EN 60529)

## Standard version

### Connection

Stainless steel 316 L, bottom  
HP connection for 1/4" pipe  
Female thread M16 x 1.5 or  
9/16–18 UNF (option)  
Each with sealing cone 60°

### Measuring element

Bourdon tube, NiFe alloy  
Helical tube

### Movement

Stainless steel

### Dial

Aluminium, white  
Dial marking black

### Pointer

Aluminium, black

### Housing

Stainless steel 304 with solid baffle  
wall and blow-out

### Bayonet type bezel

Stainless steel 304

### Window

Laminated safety glass

### Fastening

Wall mounting by means of instrument bracket,  
protrusion 60 mm (not included in scope of deliv-  
ery) or panel mounting by means of 3-hole fixing,  
panel mounting bezel (option). Direct mounting to  
rigid measuring line possible

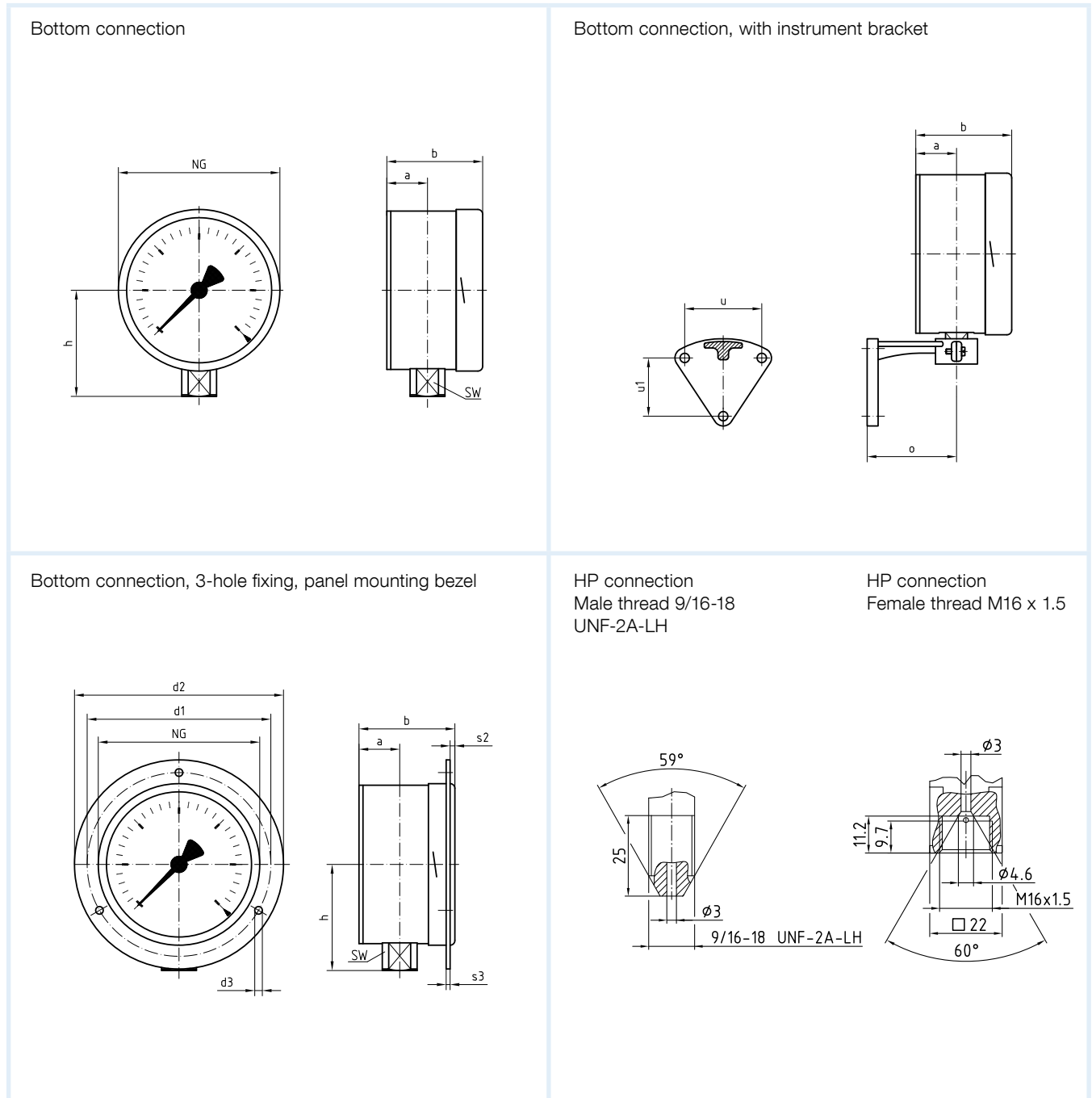
## Options

- Glycerine filling (type D802)
- 3-hole fixing, panel mounting bezel
- Other process connections

# Bourdon tube pressure gauges for high pressure

Type D 4 – NG 100 – 160

## Housing types and dimensions



11

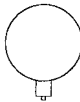
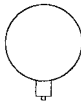
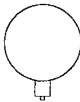
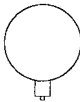
### Dimensions (mm)

Nominal size (NG)	a	b	d1*	d2	d3*	d4	G	h	o	s2	s3	u	u1	SW					
100	25	57	116	132	4.8	M 4	M16 x 1.5	97	-	4	2	-	-	22					
160	26	65	178	196	5.8	M 5		127	63	4	2	65	56	22					

\* Dimensions as per DIN 16064.

# Bourdon tube pressure gauges for high pressure

DG: M

Type	Glycerine filling		Glycerine filling	
	RF100HD, D402	RF100HDGly, D802	RF160HD, D402	RF160HDGly, D802
Version				
Housing Ø	100	100	160	160
Housing	Stainless steel 304			
Measuring element	NiFe alloy			
Accuracy class	1.0	1.0	1.0	1.0
Connection	HP connection 1/4" with female thread M16 x 1.5 with sealing cone 60°			
PG	3	3	3	3
<b>Range (bar)</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>
-1/0	---	---	---	---
-1/+0.6	---	---	---	---
-1/+1.5	---	---	---	---
-1/+3	---	---	---	---
-1/+5	---	---	---	---
-1/+9	---	---	---	---
-1/+15	---	---	---	---
0/0.6	---	---	---	---
0/1	---	---	---	---
0/1.6	---	---	---	---
0/2.5	---	---	---	---
0/4	---	---	---	---
0/6	---	---	---	---
0/10	---	---	---	---
0/16	---	---	---	---
0/25	---	---	---	---
0/40	---	---	---	---
0/60	---	---	---	---
0/100	---	---	---	---
0/160	---	---	---	---
0/250	---	---	---	---
0/400	---	---	---	---
0/2,500	85247402	85247802	85277402	85277802
0/4,000	85248402	85248802	85278402	85278802

Blue part no. = in-stock items

# Bourdon tube pressure gauges for refrigeration engineering with glycerine filling



- Can be used in case of heavy vibrations and high, dynamic pressure loads
- Longer service life due to less wear and corrosion protection of the measuring system
- Various refrigerants measurable with multiple scales
- DNV- and GOSSTANDART-certified



**Application** For simultaneous measurement of vapour pressures and temperatures in refrigeration engineering. ! For measuring gas or vapour, observe the table "Selection Criteria as per EN 837-2" (see appendix)!

## Technical specifications

**Type**  
D 7/D 8

### Nominal size

63 – 80 – 100 (D 7)  
100 (D 8)

### Accuracy class (EN 837-1/6)

NG 63: 1.6  
NG 80/NG 100: 1.0

### Ranges

-1/+9 bar      -1/+12.5 bar  
-1/+15 bar    -1/+24 bar  
-1/+30 bar  
each with temperature scale

### Temperature scales

For refrigerants:  
R 134a      R 290  
R 407A      R 404A  
R 744      R 717 (NH<sub>3</sub>)  
R 507

## Application area

Static load:  $\frac{1}{4}$  x full scale value  
Dynamic load:  $\frac{2}{3}$  x full scale value  
Short-term: full scale value

## Operating temperature range

Medium: According to refrigerant  
Ambient:  $T_{min} = -20\text{ °C}$   
 $T_{max} = +60\text{ °C}$

## Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of 20 °C:  
rising temperature approx.  $\pm 0.4\%$ /10 K  
falling temperature approx.  $\pm 0.4\%$ /10 K  
of full scale value

## Degree of protection

IP 65 (EN 60529)  
with housing vent ( $\leq 25$  bar): IP 54

## Standard version

### Connection

Brass, bottom or centre back  
NG 63 – 100 D 7 centre back  
NG 100 D 8 bottom back  
7/16-20 UNF SAE J514 / ISO 8434-2 (37°), G $\frac{1}{4}$ B,  
G $\frac{1}{2}$ B (for R 717 stainless steel 316 Ti/316 L)

### Measuring element

Bourdon tube, copper alloy  
"C" type tube (for R 717 stainless steel 316 Ti/316 L)

### Movement

Brass

### Dial

Aluminium, white  
Pressure dial marking black  
Temperature dial marking coloured  
(see appendix for examples)

### Pointer

Aluminium, black

### Housing

Stainless steel 304 with blow-out

### Bezel

D 7 – NG 63 – 80 – 100:  
crimped bezel stainless steel 304  
D 8 – NG 100:  
bayonet bezel stainless steel 304

### Window

Plastic

### Filling liquid

Glycerine (99.5 %)

## Options

- Temperature scales for other refrigerants
- Back flange
- Clamp fixing
- 3-hole fixing, panel mounting bezel (NG 63/100)
- Throttle screw
- Special scales
- Other process connections
- 7/16 – 20 UNF SAE J513 (45°)

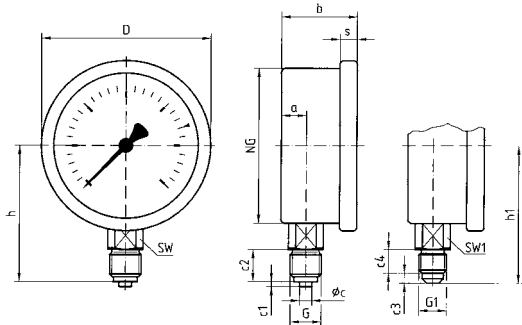


# Bourdon tube pressure gauges for refrigeration engineering

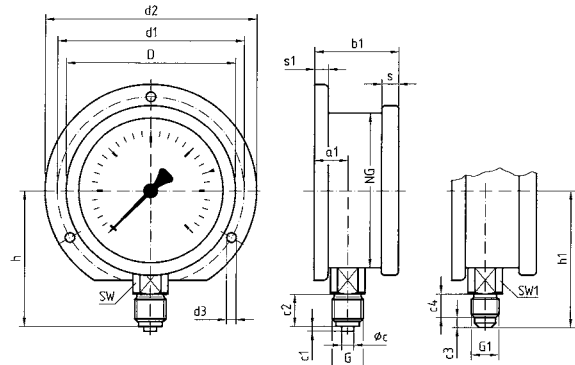
Type D 7/D 8 – NG 63/80/100

## Housing types and dimensions

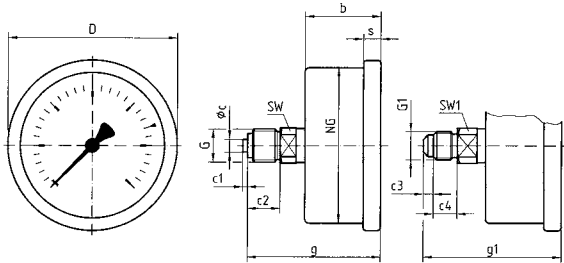
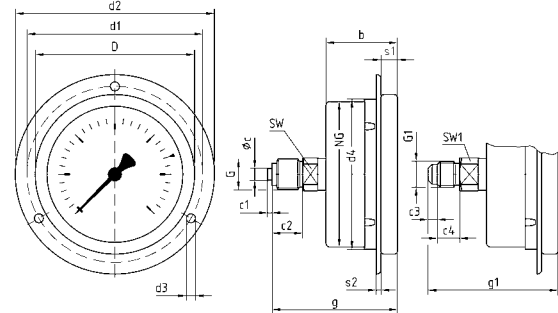
Type D 7 – bottom connection



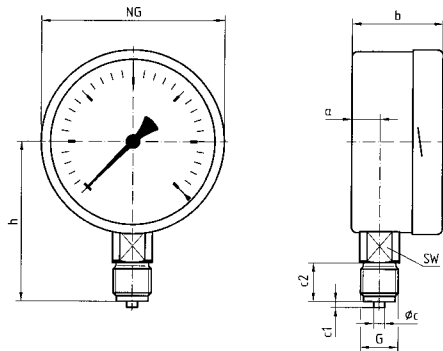
Type D 7 – bottom connection, back flange



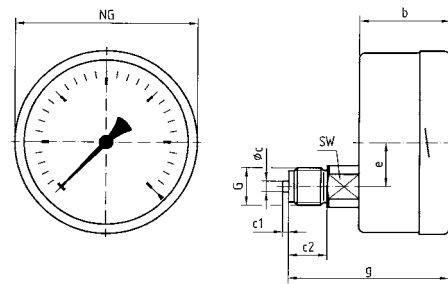
Type D 7 – centre back connection

Type D 7 – centre back connection,  
3-hole fixing, panel mounting bezel (NG 63/100)

Type D 8 – bottom connection



Type D 8 – centre back connection



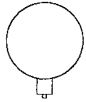
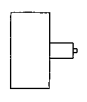
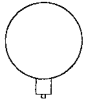
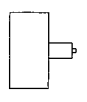
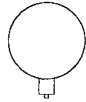
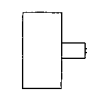
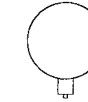
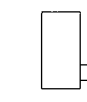
### Dimensions (mm)

Nominal size (NG)	a	a1	b	b1	Øc	c1	c2	c3	c4	d1*	d2*	d3*	d4	D	e	g	g1	G	G1	h	h1
63 (D 7)	11.5	13	32	35.5	5	2	13	4	9.5	75	85	3.6	64	68	-	53.5	55.5	G¼B	7/16-20 UNF	53	55
80 (D 7)	12.2	15.2	33.5	36.5	6	3	20	4	9.5	95	110	5	-	85	-	65.5	58.5	G½B	7/16-20 UNF	71	62.5
100 (D 7)	12.2	15.7	33.5	37	6	3	20	4	9.5	116	132	4.8	101	106	-	65.5	58.5	G½B	7/16-20 UNF	81	72.5
100 (D 8)	15.6	19.1	49	52.5	6	3	20	-	-	-	-	-	-	26.5	81	-	-	G½B	-	86	-
Nominal size (NG)	s	s1	s2	SW	Spanner size SW1																
63 (D 7)	7	5.5	2	14	14																
80 (D 7)	7	5.5	-	22	14																
100 (D 7)	7	5.5	3.8	22	14																
100 (D 8)	-	5.5	2	22	-																

\* Dimensions as per DIN 16063 (NG 63) and 16064 (NG 80/100).

# Bourdon tube pressure gauges for refrigeration engineering with glycerine filling

DG: M

Type	RF63KTGly, D701	RF63KTGly, D711	RF80KTGly, D701	RF80KTGly, D711	RF100KTGly, D701	RF100KTGly, D711	RF100KTGly, D802	RF100KTGly, D812	
Version									
Housing Ø	63	63	80	80	100	100	100	100	
Housing	Stainless steel 304 with crimped bezel						Stainless steel 304 with bayonet bezel		
Measuring element	Bourdon tube, copper alloy						Bourdon tube, stainless steel 316 Ti/316 L		
Scale	According to selection table						Temperature scale R 717		
Accuracy class	1.6	1.6	1.0	1.0	1.0	1.0	1.0	1.0	
Connection	7/16-20 UNF	7/16-20 UNF	7/16-20 UNF	7/16-20 UNF	7/16-20 UNF	7/16-20 UNF	G½B	G½B	
PG	2	2	2	2	2	2	3	3	
<b>Range (bar)</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	
-1/+9	85130701	85130711	85180701	85180711	85230701	85230711	–	–	
-1/+12.5	85131701	85131711	85181701	85181711	85231701	85231711	85231802	85231812	
-1/+15	85132701	85132711	85182701	85182711	85232701	85232711	85232802	85232812	
-1/+24	85133701	85133711	85183701	85183711	85233701	85233711	85233802	85233812	
-1/+30	85134701	85134711	85184701	85184711	85234701	85234711	–	–	
<b>Options</b>	<b>PG</b>								
Wetted parts 316 Ti/316 L*	<b>3</b>	On request						–	

\* Wetted parts stainless steel connection NG 63/80 = G¼B – NG 100 = G½B.

Blue part no. = in-stock items

i

See pages 441 and 479 for additional options.

11

## Selection table – temperature scales for refrigerants (see chapter 9 for examples)

Please specify the code of the required temperature scale along with the part number of the basic gauge. Temperature scales for other refrigerants on request.

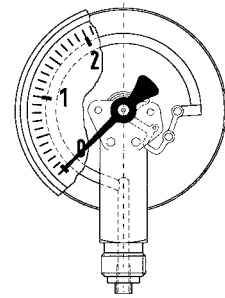
Temperature scale for refrigerant	Code
R 134a	A
R 404a/R 134a	B
R 502	C
R 404A	E
R 717 (NH <sub>3</sub> ) – stainless steel with wetted parts only	F
R 407A	G
R 410A	H

Minimum order quantity = 10 pieces.

# Bourdon tube pressure gauges for welding applications ISO 5171



- Design as per ISO 5171
- Rear blow-out
- Measuring system cleaned, oil-free and grease-free
- Many customised versions available



**Application** For welding and cutting machines and systems as well as similar processes.

## Technical specifications

**Type**  
D 3

**Nominal size**  
50 – 63

**Version**  
ISO 5171

**Accuracy class**  
2.5

**Ranges**  
-1/0 to -1/+15 bar  
0/1 to 0/400 bar

**Application area**  
Static load:  $\frac{3}{4}$  x full scale value  
Dynamic load:  $\frac{2}{5}$  x full scale value  
Short-term: full scale value

## Operating temperature range

Medium:  $T_{max} = +60\text{ }^{\circ}\text{C}$   
Ambient:  $T_{min} = -20\text{ }^{\circ}\text{C}$   
 $T_{max} = +60\text{ }^{\circ}\text{C}$

## Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of 20 °C:

rising temperature approx.  $\pm 0.4\text{ } \%/10\text{ K}$   
falling temperature approx.  $\pm 0.4\text{ } \%/10\text{ K}$   
of full scale value

## Degree of protection

IP 32 (EN 60529)

## Standard version

### Connection

Brass, bottom or centre back, with throttling in the pressure inlet  
G $\frac{1}{4}$ B – spanner size SW 14 (EN 837-1/7.3)

### Measuring element

Bourdon tube, copper alloy  $\leq 40\text{ bar}$  "C" type tube  $> 40\text{ bar}$  helical tube (copper portion in case of acetylene  $< 70\text{ } \%$ )

### Degree of cleanliness

Wetted parts oil-free and grease-free

### Movement

Brass

### Dial

Aluminium, white  
Dial marking black

### Designation

Label "Oxygen" and symbol "Free from oil and grease" for oxygen  
Label "Acetylene" for acetylene

### Pointer

Aluminium, black

### Housing

D 3 – stainless steel 304 with rear blow-out

### Window

Plastic, snap-in

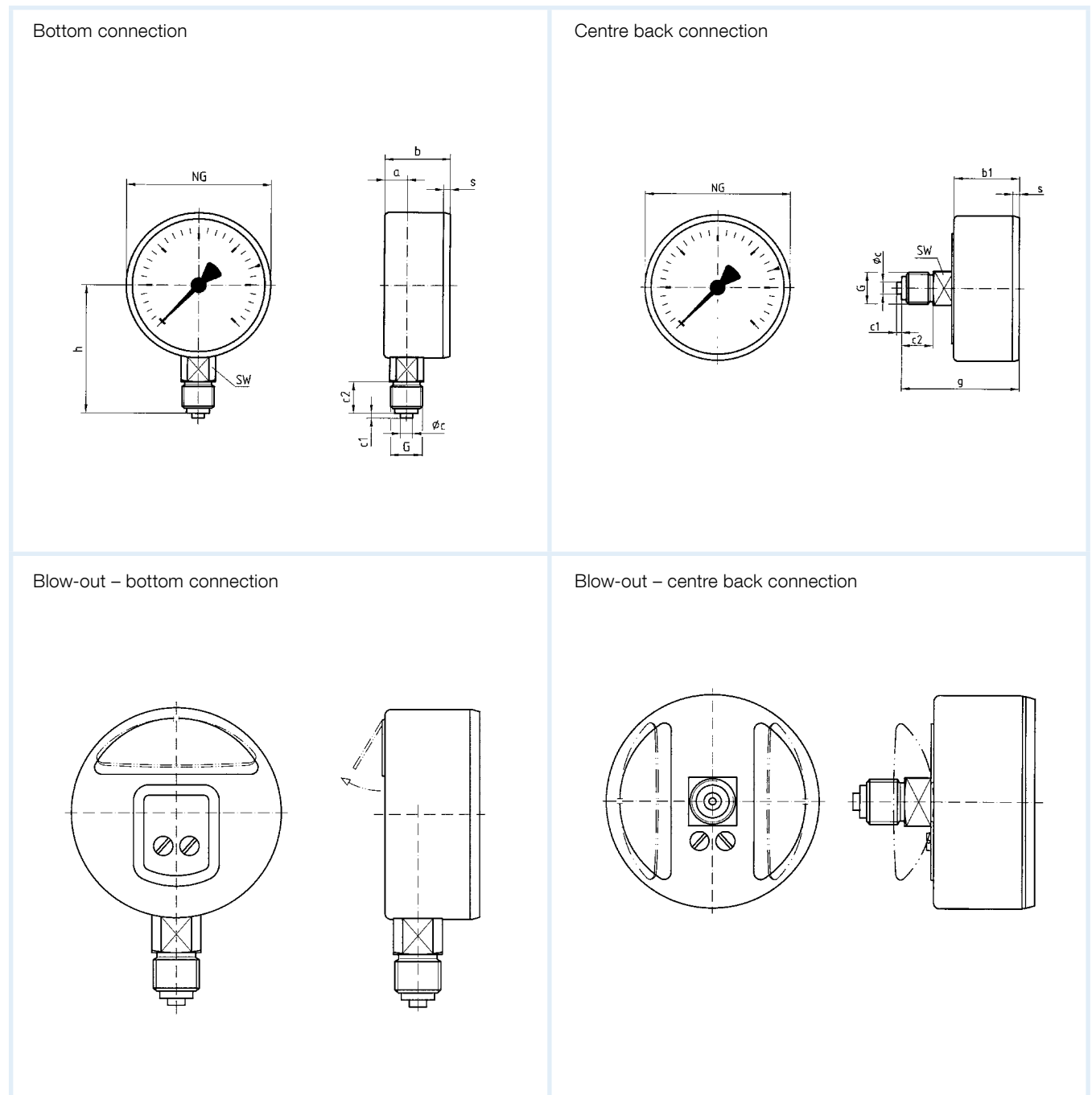
## Options

- Litre scales for argon/CO $_2$
- Special scales
- Other connection threads

# Bourdon tube pressure gauges for welding applications

Type D 3 – NG 50/63

## Housing types and dimensions



### Dimensions (mm)

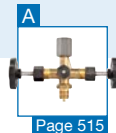
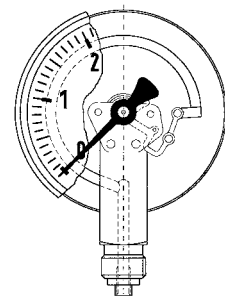
Nominal size (NG)	a	b	b1	$\phi_c$	c1	c2	G	g	h	s	SW
50	10.5	29	26	5	2	13	G $\frac{1}{4}$ B	47	46	3.8	14
63	11	29.5	29.5	5	2	13	G $\frac{1}{4}$ B	50.5	53	3.7	14

# Bourdon tube pressure gauges for gas applications

EN 837-1-S2



- Version safety pressure gauge S2 as per EN 837-1
- Dual scale for measurement of different media (option)
- Rear blow-out
- Many customised versions available



**Application** For gaseous and liquid media which are not highly viscous and do not crystallise. Specially designed for gas technology devices, fittings and installations.  
! For measuring gas or vapour, observe the table "Selection Criteria as per EN 837-2" (see appendix)!

## Technical specifications

**Type**  
D 3

**Nominal size**  
40 – 50 – 63

**Version**  
EN 837-1 S2

**Accuracy class (EN 837-1/6)**  
1.6

**Ranges (EN 837-1/5)**  
-1/0 to -1/+15 bar  
0/1 to 0/400 bar

**Application area**  
Static load:  $\frac{3}{4}$  x full scale value  
Dynamic load:  $\frac{2}{3}$  x full scale value  
Short-term: full scale value

## Operating temperature range

Medium:  $T_{max} = +60\text{ }^{\circ}\text{C}$   
Ambient:  $T_{min} = -20\text{ }^{\circ}\text{C}$   
 $T_{max} = +60\text{ }^{\circ}\text{C}$

## Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of 20 °C:  
rising temperature approx.  $\pm 0.4\text{ } \%/10\text{ K}$   
falling temperature approx.  $\pm 0.4\text{ } \%/10\text{ K}$   
of full scale value

## Degree of protection

IP 32 (EN 60529)

## Standard version

**Connection**  
Brass bottom or centre back  
G $\frac{1}{4}$ B – SW14 (EN 837-1/7.3)  
NG 40: G $\frac{1}{8}$  B – SW12 (EN 837-1/7.3)

**Measuring element**  
Bourdon tube, copper alloy  $\leq 40\text{ bar}$  "C" type  
tube  $> 40\text{ bar}$  helical tube

**Movement**  
Brass

**Dial**  
Aluminium, white  
Dial marking black

## Pointer

Aluminium, black

## Housing

Stainless steel 304 with rear blow-out

## Window

Plastic, snap-in

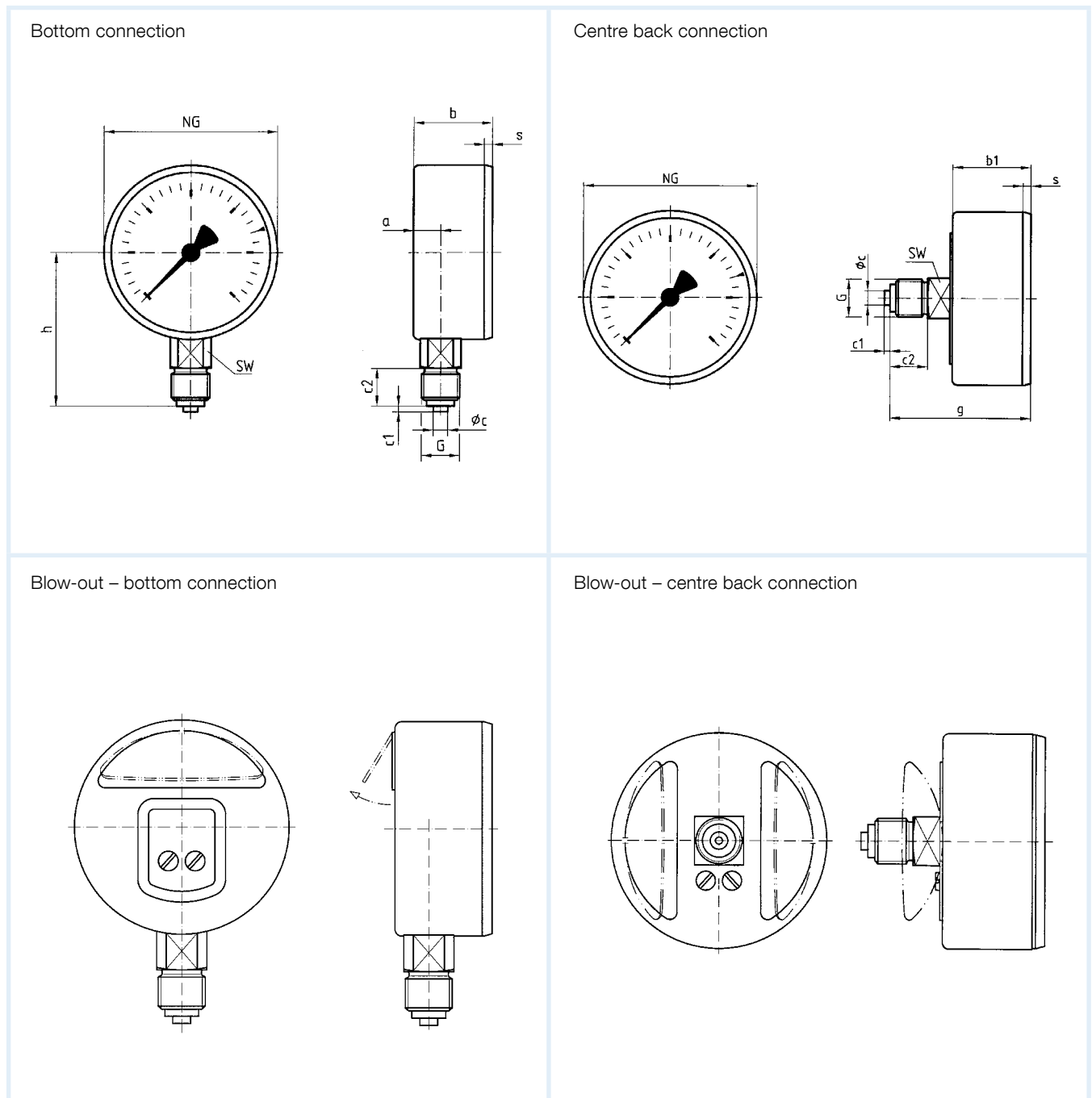
- Options**
- Wetted parts stainless steel
  - Wetted parts oil-free and grease-free
  - Helium leak test

- Special scales
- Other connection threads
- Throttle screw

# Bourdon tube pressure gauges for gas applications

Type D 3 – NG 40/50/63

## Housing types and dimensions




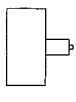

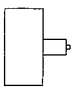




### Dimensions (mm)

Nominal size (NG)	a	b	b1	$\phi_c$	c1	c2	G	g	h	s	SW
40	8.2	23.5	25	4	2	10	G $\frac{1}{8}$ B	41.5	36	3	12
50	10.5	29	26	5	2	13	G $\frac{1}{4}$ B	47	46	3.8	14
63	11	29.5	29.5	5	2	13	G $\frac{1}{4}$ B	50.5	53	3.7	14

# Bourdon tube pressure gauges for welding/gas applications

DG: M

Type	Version for welding applications ISO 5171							
	RF63ST, D301	RF40GT, D301 <sup>5)</sup>	RF50GT, D301	RF50GT, D311	RF63GT, D301	RF63GT, D311	RF50GT, D302 <sup>4)</sup>	RF63GT, D302 <sup>4)</sup>
Version								
Housing Ø	63	40	50	50	63	63	50	63
Housing	Stainless steel 304 with blow-out							
Measuring element	CU alloy, oil-free and grease-free	Copper alloy					Stainless steel 316 Ti/316 L	
Accuracy class	2.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Connection	G $\frac{1}{4}$ B	G $\frac{1}{8}$ B	G $\frac{1}{4}$ B	G $\frac{1}{4}$ B	G $\frac{1}{4}$ B	G $\frac{1}{4}$ B	G $\frac{1}{4}$ B	G $\frac{1}{4}$ B
PG	2	2	2	2	2	2	3	3
<b>Range (bar)</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>
-1/0	---	---	85051301GT	85051311GT	85101301GT	85101311GT	85051302GT	85101302GT
-1/+0.6	---	---	85052301GT	85052311GT	85102301GT	85102311GT	85052302GT	85102302GT
-1/+1.5	---	---	85053301GT	85053311GT	85103301GT	85103311GT	85053302GT	85103302GT
-1/+3	---	---	85054301GT	85054311GT	85104301GT	85104311GT	85054302GT	85104302GT
-1/+5	---	---	85055301GT	85055311GT	85105301GT	85105311GT	85055302GT	85105302GT
-1/+9	---	---	85056301GT	85056311GT	85106301GT	85106311GT	85056302GT	85106302GT
-1/+15	---	---	85057301GT	85057311GT	85107301GT	85107311GT	85057302GT	85107302GT
0/0.6	---	---	85059301GT	85059311GT	85109301GT	85109311GT	85059302GT	85109302GT
0/1	88300301 <sup>1)</sup>	---	85060301GT	85060311GT	85110301GT	85110311GT	85060302GT	85110302GT
0/1.6	88301301 <sup>1)</sup>	---	85061301GT	85061311GT	85111301GT	85111311GT	85061302GT	85111302GT
0/2.5	88302301 <sup>1)</sup>	---	85062301GT	85062311GT	85112301GT	85112311GT	85062302GT	85112302GT
0/4	88303301	85013301GT	85063301GT	85063311GT	85113301GT	85113311GT	85063302GT	85113302GT
0/6	88304301 <sup>2)</sup>	85014301GT	85064301GT	85064311GT	85114301GT	85114311GT	85064302GT	85114302GT
0/10	88305301	85015301GT	85065301GT	85065311GT	85115301GT	85115311GT	85065302GT	85115302GT
0/10	88306301 <sup>3)</sup>	---	---	---	---	---	---	---
0/16	88307301 <sup>2)</sup>	85016301GT	85066301GT	85066311GT	85116301GT	85116311GT	85066302GT	85116302GT
0/25	88308301	85017301GT	85067301GT	85067311GT	85117301GT	85117311GT	85067302GT	85117302GT
0/40	88309301 <sup>1)</sup>	85018301GT	85068301GT	85068311GT	85118301GT	85118311GT	85068302GT	85118302GT
0/40	88310301 <sup>2)</sup>	---	---	---	---	---	---	---
0/60	---	85019301GT	85069301GT	85069311GT	85119301GT	85119311GT	85069302GT	85119302GT
0/100	---	85020301GT	85070301GT	85070311GT	85120301GT	85120311GT	85070302GT	85120302GT
0/160	---	85021301GT	85071301GT	85071311GT	85121301GT	85121311GT	85071302GT	85121302GT
0/250	88314301	85022301GT	85072301GT	85072311GT	85122301GT	85122311GT	85072302GT	85122302GT
0/315	88315301 <sup>2)</sup>	85023301GT	85079301GT	85079311GT	85129301GT	85129311GT	85079302GT	85129302GT
0/315	88316301	---	---	---	---	---	---	---
0/400	88317301	85024301GT	85073301GT	85073311GT	85123301GT	85123311GT	85073302GT	85123302GT

1) With label "acetylene". 2) With label "oxygen". 3) Scale 0/30 l/min "Argon" red, 0/28 l/min "CO<sub>2</sub>" black.

Blue part no. = in-stock items

4) Centre back connection on request (type D312). 5) Centre back connection on request (type D311).

Minimum order quantities: Type D301/D311 = 25 pieces, type D302/D312 = 10 pieces.

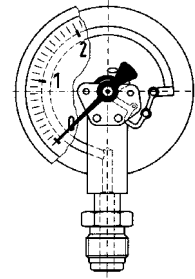


See page 441 for options.

# Bourdon tube pressure gauges for ultra-pure gas applications



- Wetted parts specially cleaned, flushed and electropolished
- Tightness-tested with helium
- Rear blow-out
- Versatile connection technology
- GOSSTANDART-certified



**Application** Designed for highly demanding applications in terms of surface quality and purity of the wetted parts, particularly for measuring ultra-pure gases.

## Technical specifications

### Type

D 3

### Nominal size

63

### Accuracy class (EN 837-1/6)

1.6

### Ranges (EN 837-1/5)

-1/0 to -1/+15 bar  
0/0.6 to 0/400 bar

### Calibration medium

Nitrogen or dried air

### Application area

Static load:  $\frac{3}{4}$  x full scale value  
Dynamic load:  $\frac{2}{3}$  x full scale value  
Short-term: full scale value

### Operating temperature range

Medium:  $T_{max} = +150 \text{ }^\circ\text{C}$   
Ambient:  $T_{min} = -20 \text{ }^\circ\text{C}$   
 $T_{max} = +60 \text{ }^\circ\text{C}$

### Temperature performance

Indication error when the temperature of the measuring system deviates from the normal temperature of  $20 \text{ }^\circ\text{C}$ :  
rising temperature approx.  $\pm 0.4 \text{ } \%/10 \text{ K}$   
falling temperature approx.  $\pm 0.4 \text{ } \%/10 \text{ K}$   
of full scale value

### Degree of protection

IP 32 (EN 60529)

## Standard version

### Connection

Bottom, either:  $\frac{1}{4}$ –18 NPT  
9/16–18 UNF, with pressure screw  
9/16–18 UNF, with union nut

### Measuring element

Bourdon tube  
 $\leq 60 \text{ bar}$  "C" type tube  
 $> 60 \text{ bar}$  helical tube  
tightness-tested with helium,  
leak rate  $\leq 10^{-9} \text{ mbar x l/s}$

### Wetted parts

Connection stainless steel 316 Ti/316 L  
Measuring element stainless steel 316 Ti/316 L  
Cleaned, flushed with nitrogen,  
electropolished, surface roughness  
 $\leq \text{Ra } 0.6 \text{ } \mu\text{m}$

### Movement

Stainless steel

### Dial

Aluminium, white  
Dial marking black  
Label "Ultra-pure gas"

### Pointer

Aluminium, black

### Housing

Stainless steel 304 with rear blow-out

### Push on bezel

Stainless steel 304, bare metal surface

### Window

Plastic

## Options

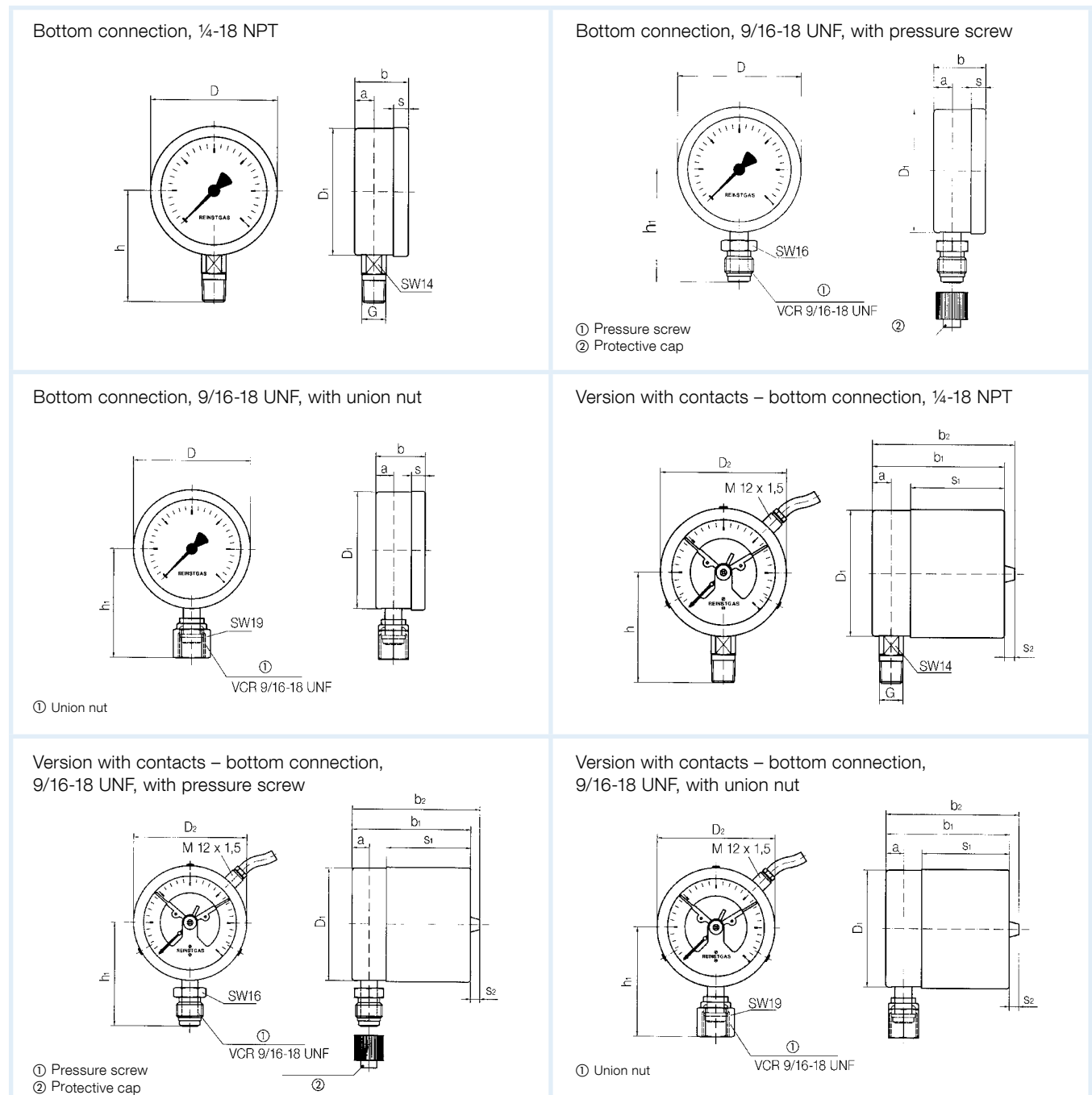
- Surface roughness Ra 0.4  $\mu\text{m}$
- Housing polished
- Push on bezel polished
- Electrical contacts
- Special scales
- NG 50
- Other process connections



# Bourdon tube pressure gauges for ultra-pure gas applications

Type D 3 – NG 63

Housing types and dimensions

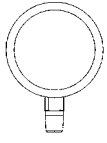
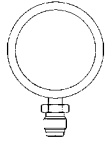
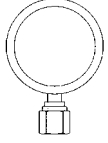
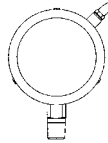
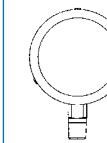
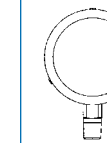
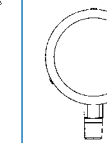


## Dimensions (mm)

Nominal size (NG)	a	b	b1	b2	D	D1	D2	G	h	h1	S	S1	S2
63	9	28	66	74	63	62	64	1/4-18 NPT	54	57	8	48	8

# Bourdon tube pressure gauges for ultra-pure gas applications

DG: M, PG: 3

Type	Version with electrical contacts						
	RF63RG, D302	RF63RG, D302	RF63RG, D302	RF63RG, MK1, D302	RF63RG, MK2, D302	RF63RG, IK1, D302	RF63RG, IK2, D302
Version							
Housing Ø	63	63	63	63	63	63	63
Contact type				Single magnetic spring contact	Dual magnetic spring contact	Single inductive contact	Dual inductive contact
Housing	Stainless steel 304 with push on bezel, plastic window						
Measuring element	Bourdon tube, stainless steel 316 Ti/316 L						
Accuracy class	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Connection	¼-18 NPT	9/16-18 UNF with pressure screw	9/16-18 UNF with union nut	¼-18 NPT	¼-18 NPT	¼-18 NPT	¼-18 NPT
Range (bar)	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>	<b>Part no.</b>
-1/0	87001302	87051302	87101302	---	---	---	---
-1/+0.6	87002302	87052302	87102302	87352302	87202302	87252302	87302302
-1/+1.5	87003302	87053302	87103302	87353302	87203302	87253302	87303302
-1/+3	87004302	87054302	87104302	87354302	87204302	87254302	87304302
-1/+5	87005302	87055302	87105302	87355302	87205302	87255302	87305302
-1/+9	87006302	87056302	87106302	87356302	87206302	87256302	87306302
-1/+15	87007302	87057302	87107302	87357302	87207302	87257302	87307302
0/0.6	87009302	87059302	87109302	---	---	---	---
0/1	87010302	87060302	87110302	---	---	---	---
0/1.6	87011302	87061302	87111302	87361302	87211302	87261302	87311302
0/2.5	87012302	87062302	87112302	87362302	87212302	87262302	87312302
0/4	87013302	87063302	87113302	87363302	87213302	87263302	87313302
0/6	87014302	87064302	87114302	87364302	87214302	87264302	87314302
0/10	87015302	87065302	87115302	87365302	87215302	87265302	87315302
0/16	87016302	87066302	87116302	87366302	87216302	87266302	87316302
0/25	87017302	87067302	87117302	87367302	87217302	87267302	87317302
0/40	87018302	87068302	87118302	87368302	87218302	87268302	87318302
0/60	87019302	87069302	87119302	87369302	87219302	87269302	87319302
0/100	87020302	87070302	87120302	87370302	87220302	87270302	87320302
0/160	87021302	87071302	87121302	87371302	87221302	87271302	87321302
0/250	87022302	87072302	87122302	87372302	87222302	87272302	87322302
0/400	87023302	87073302	87123302	87373302	87223302	87273302	87323302
	Options 9/16-18 UNF pressure screw or union nut on request						

Blue part no. = in-stock items

# Diensten van EURO-INDEX

EURO-INDEX is fabrikant, importeur en distributeur van diverse A-merken op het gebied van test- en meetinstrumenten. Daarnaast leveren wij een groot aantal diensten om het gebruik van deze instrumenten in uw bedrijfsvoering te optimaliseren. Dit omvat uiteraard onderhoud, reparatie en kalibratie van de instrumenten, maar ook kennisdeling via de EURO-INDEX Academy en verhuur van instrumenten.

## Geautoriseerd Service Centrum

EURO-INDEX b.v. is van alle vertegenwoordigde merken een Geautoriseerd Service Centrum. Dit betekent dat uw instrumenten worden behandeld door technici die zijn opgeleid door de fabrikant en beschikken over de juiste gereedschappen en software. Er worden uitsluitend originele onderdelen toegepast en de garantie van uw instrument, evenals de certificering (ATEX, EN50379, etc.) blijven intact.

## Kalibratielaboratorium

Ons moderne service- en kalibratielaboratorium beschikt over een RvA accreditatie naar NEN-EN-ISO/IEC 17025. Deze accreditatie geldt voor grootheden, zoals gespecificeerd in de scope bij accreditatienummer K105.



Kijk voor een overzicht van al onze diensten op [euro-index.nl/diensten](http://euro-index.nl/diensten)



## Mobiele Service

Naast de vaste kalibratielaboratoria in Capelle aan den IJssel en Zaventem beschikken wij ook over een laboratorium op wielen met de naam "Mobiele Service". Dit biedt vertrouwde service en kwaliteit, bij u voor de deur!

## KWS®

KWS® is een uniek servicesysteem voor uw meetinstrumenten met periodiek onderhoud en kalibratie tegen vaste, lage kosten. Via een gratis webportal ([mijnkws.nl](http://mijnkws.nl)) heeft u altijd en overal beschikking over uw kalibratiecertificaten.

## Verhuur van meetinstrumenten

- Uitgebreid assortiment
- Nauwkeurigheid aantoonbaar door actueel kalibratiecertificaat
- Deskundig advies
- Complete levering inclusief accessoires

## EURO-INDEX Academy

- Trainingen (individueel en klassikaal)
- Cursussen en workshops
- Demonstratie- en instructievideo's
- Whitepapers



Servicebalie



Onderhoud, reparatie en kalibratie



Cursussen en workshops



Mobiele Service

Wijzigingen voorbehouden EURO-INDEX® NL 21004



NEderland Rivium 2e straat 12  
2909 LG Capelle a/d IJssel  
T: 010 - 2 888 000  
F: 010 - 2 888 010  
[verkoop@euro-index.nl](mailto:verkoop@euro-index.nl)  
[www.euro-index.nl](http://www.euro-index.nl)



BELGIË Leuvensesteenweg 607  
1930 Zaventem  
T: +32 - (0)2 - 757 92 44  
F: +32 - (0)2 - 757 92 64  
[info@euro-index.be](mailto:info@euro-index.be)  
[www.euro-index.be](http://www.euro-index.be)