



### Main Features

- For corrosive gasses and liquids
- Class 1 according to EN 13190
- Wetted parts and case material stainless steel
- Option: case material 1.4404 (316L) for aggressive atmosphere

### Applications

- Food & Beverage
- Oil & Gas / Chemical
- Laboratory & Medical
- Energy

### Technical Data

Nominal size	63, 80, 100, 160, 250 mm	Window gasket	Elastomer
Temperature ranges	-200 ... 800 °C	Dial	Aluminium, white
Accuracy	Class 1 (according to EN 13190)	Pointer	Aluminium, black
Protection rating	IP 65 (EN 60529)	Accessories	Sliding connections an thermowells, see data-sheets: B51.01 (AGF/AGW) and T6.215 (Ø 8)
Immersion tube	Stainless steel 1.4541 (AISI 321)	Temperature limit	130 % F.S.
Case	Stainless steel 1.4301 (AISI 304)	ATEX	Ex II2GDc (with option 0078)
Bezel ring	Stainless steel 1.4301 (AISI 304)		
Window	Instrument glass		
Movement	Brass		

### Options

Index pointer under window, adjustable knob removable	Code 0053	Oil filling (silicon oil)	Code 0776
Polycarbonat window with max pointer with removable button	Code 0060	Screws secured with loctite	Code 0799
ATEX II2GDc (Only with window laminated safety glass)	Code 0078	Accuracy +/- 0.6 % F.S.	Code 0840
Stainless steel housing 1.4404 (316L) <sup>(1)</sup>	Code 0110	Customer specific immersion length <sup>(3)</sup>	Code 9003_xxxx
Movement stainless steel	Code 0651	Red mark	Code 9700
Process connections (see table on page 3)	Code 73xx	Green mark	Code 9701
Laminated safety glass	Code 0751	Stainless steel tag plate and wire	Code 9941
Acrylic window (PMMA or Plexiglass) <sup>(2)</sup>	Code 0752		

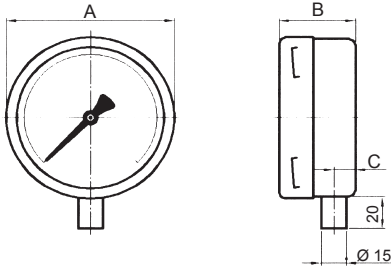
<sup>(1)</sup> Only NS 63, NS 100 and NS 160.

<sup>(2)</sup> The case must not be constantly heated over 75 °C.

<sup>(3)</sup> xxxx = L in mm.

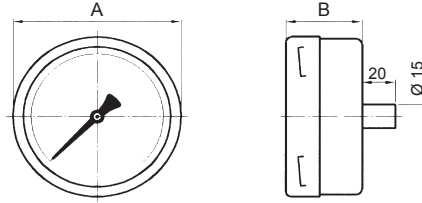
Dimensions in mm

Type D (Code 11)



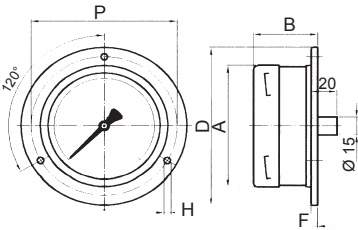
Dimensions	Diameter				
	63	80	100	160	250
A	63	83	101	161	252
B	38	37	45	45	55
C	13	13	13	13	13

Type F (Code 12)



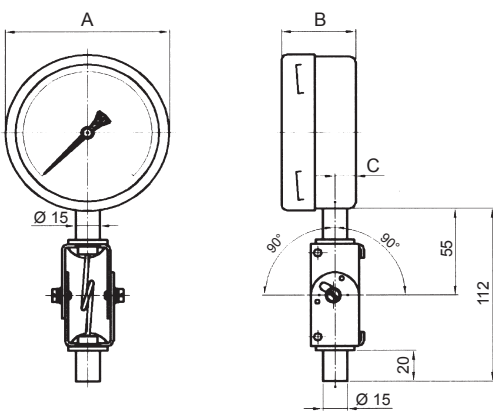
Dimensions	Diameter				
	63	80	100	160	250
A	65	83	101	161	252
B	38	37	45	45	55

Type E (Code 32)



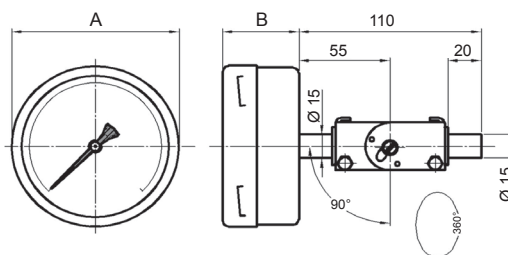
Dimensions	Diameter				
	63	80	100	160	250
A	65	83	101	161	252
B	41	40	51	51	57
D	86	110	132	196	285
F	5	5	5	5	2
H	3.5	4	5.5	6	6
P	75	95	116	178	270

Type A (Code 41)



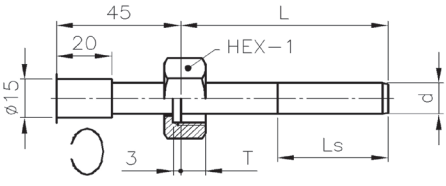
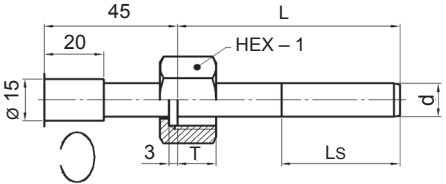
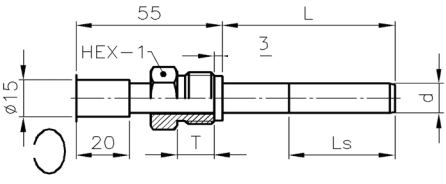
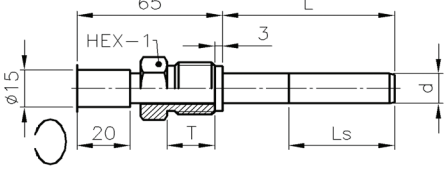
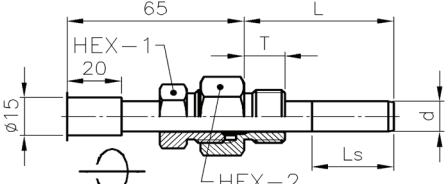
Dimensions	Diameter				
	63	80	100	160	250
A	65	83	101	161	252
B	38	37	45	45	55
C	13	13	13	13	13

Type F (Code 42)



Dimensions	Diameter				
	63	80	100	160	250
A	65	83	101	161	252
B	38	37	45	45	55

**Process connections**

Models	Code	Connection	HEX-1	HEX-2	T	Immersion tube (mm)
 <p>Coupling nut (standard)</p>	731A	G $\frac{1}{4}$	22	-	7	$\varnothing$ 6 to 8
	731B	G $\frac{3}{8}$	27	-	9	$\varnothing$ 6 to 11
	731C	G $\frac{1}{2}$	27	-	9	$\varnothing$ 6 to 15
	731D	G $\frac{3}{4}$	32	-	9	$\varnothing$ 6 to 20
	731E	G1	41	-	13	$\varnothing$ 6 to 20
	731P	M18 x 1.5	27	-	8	$\varnothing$ 6 to 12
	731Q	M20 x 1.5	27	-	9	$\varnothing$ 6 to 14
731R	M24 x 1.5	32	-	9	$\varnothing$ 6 to 18	
 <p>Coupling nut (long model)</p>	732C	G $\frac{1}{2}$	27	-	14	$\varnothing$ 6 to 15
	732D	G $\frac{3}{4}$	32	-	16	$\varnothing$ 6 to 20
	732E	G1	41	-	18	$\varnothing$ 6 to 20
 <p>Rotating nipple (standard)</p>	733A	G $\frac{1}{4}$	17	-	12	$\varnothing$ 6 to 8
	733B	G $\frac{3}{8}$	22	-	12	$\varnothing$ 6 to 11
	733C	G $\frac{1}{2}$	22	-	14	$\varnothing$ 6 to 15
	733D	G $\frac{3}{4}$	30	-	16	$\varnothing$ 6 to 20
	733E	G1	36	-	18	$\varnothing$ 6 to 20
	733P	M18 x 1.5	22	-	12	$\varnothing$ 6 to 12
	733Q	M20 x 1.5	22	-	14	$\varnothing$ 6 to 14
733R	M24 x 1.5	27	-	14	$\varnothing$ 6 to 18	
 <p>Rotating nipple (long model)</p>	734C	G $\frac{1}{2}$	22	-	20	$\varnothing$ 6 to 15
	734D	G $\frac{3}{4}$	30	-	20	$\varnothing$ 6 to 20
	734E	G1	36	-	25	$\varnothing$ 6 to 20
 <p>Sliding connection</p>	738A	G $\frac{1}{4}$	22	27	12	$\varnothing$ 6 to 8
	738B	G $\frac{3}{8}$	22	27	12	$\varnothing$ 6 to 11
	738C	G $\frac{1}{2}$	22	27	14	$\varnothing$ 6 to 15
	738D	G $\frac{3}{4}$	22	32	16	$\varnothing$ 6 to 20
	738E	G1	22	36	18	$\varnothing$ 6 to 20
	738H	$\frac{1}{4}$ NPT	22	27	14	$\varnothing$ 6 to 8
	738J	$\frac{1}{2}$ NPT	22	27	20	$\varnothing$ 6 to 15
	738K	$\frac{3}{4}$ NPT	22	27	20	$\varnothing$ 6 to 20
	738L	1" NPT	22	36	25	$\varnothing$ 6 to 20
	738P	M18 x 1.5	22	27	12	$\varnothing$ 6 to 12
	738Q	M20 x 1.5	22	27	14	$\varnothing$ 6 to 14
	738R	M24 x 1.5	22	27	14	$\varnothing$ 6 to 18

Note: minimum immersion length: see table on page 4

**Temperature ranges**

Code	Range °C
69T	-200 ... 50
77T	-120 ... 40
76T	-100 ... 50
74T	-80 ... 40
68T	-70 ... 50
50T	-60 ... 40
65T	-40 ... 40
55T	-30 ... 170
51T	-30 ... 70
61T	-30 ... 30
84T	-20 ... 100
54T	-20 ... 60
52T	-20 ... 40
11T	0 ... 60
27T	0 ... 80
12T	0 ... 100
20T	0 ... 120
13T	0 ... 160
22T	0 ... 200
14T	0 ... 250
23T	0 ... 300
15T	0 ... 400
25T	0 ... 500
16T	0 ... 600
82T	0 ... 800
30T	100 ... 500

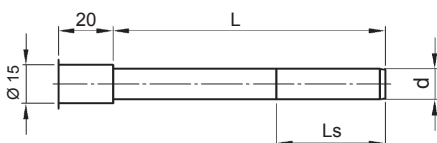
Code	Range °F
68U	-100 ... 120
09U	-50 ... 120
08U	-40 ... 160
02U	0 ... 200
03U	0 ... 250
04U	0 ... 300
05U	0 ... 400
06U	0 ... 500
20U	30 ... 250
13U	30 ... 320
22U	30 ... 400
23U	30 ... 580
15U	30 ... 750
28U	100 ... 800
29U	200 ... 1000

Code	Range (double scale) °C / °F			
51V	-30 ... 70	/	-40 ... 160	
68V	-70 ... 50	/	-100 ... 100	
55V	-30 ... 170	/	0 ... 350	
11V	0 ... 60	/	30 ... 140	
20V	0 ... 120	/	30 ... 250	
13V	0 ... 160	/	30 ... 320	
14V	0 ... 250	/	30 ... 500	
15V	0 ... 400	/	30 ... 750	
16V	0 ... 600	/	100 ... 1100	

**Minimum immersion length Ls (mm)**

Immersion tube (mm)	Ø 6	Ø 8	Ø 9	Ø 10	Ø 11	Ø 12	Ø 14	Ø 16
Temperature Span ≥ 80 °C	70	35	30	25	20	18	15	13
Temperature Span ≥ 60 °C	120	60	45	35	30	25	20	17

Standard version with plain immersion tube (without process connection)



**Ordering details TSS**

TSS | | | - 2 | xx | . | 6 | | . | xxx | /

**Model**

Gas filled thermometer with rigid stem

TSS

**Nominal size**

63 mm	0 6 3
80 mm	0 8 0
100 mm	1 0 0
160 mm	1 6 0
250 mm	2 5 0

**Case**

Stainless steel 1.4301 (AISI 304) 2

**Type of mounting**

Direct mounting, immersion tube bottom	11
Direct mounting, immersion tube center back	12
Rear flange for wall mounting, immersion tube center back	32
Every angle version, immersion tube bottom	41
Every angle version, immersion tube center back	42

**Immersion tube diameter**

6 mm	4
8 mm	1
9 mm	A
10 mm	B
11 mm	2
12 mm	C
14 mm	7
16 mm	D

**Immersion tube / material**

Stainless steel 1.4541 (AISI 321) 6

**Immersion tube / installed length L**

100 mm	2
160 mm	4
250 mm	6
400 mm	7
600 mm	8
1000 mm	9
Customer specific length (use option 9003_ xxxx, xxxx = L in mm)	0

**Unit of measurement / Temperature ranges**

°C	xxT
°F	xxU
°C / °F (double scale)	xxV

Options to be added behind the / (see example below)

**Ordering example with options**

TSS | 100 | - 2 | 11 | . | 1 | 6 | 0 | . | 20T | / | 738C | - | 9003 | - | 0210

