

GAS-ACTUATED-THERMOMETERS



Gas filling Chemical version Rigid stem mount, with or without capillary line NS 100 and NG 160



For all applications , where it is on accurate temperature measurements arrives independently from a power source under rough conditions.

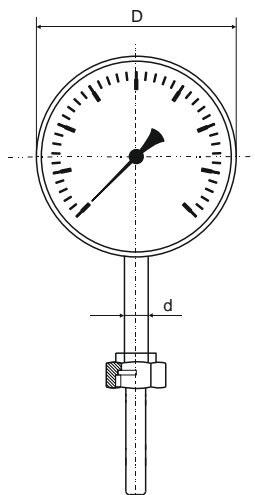
By the use of corrosion resistant materials particularly suitable for use in the chemical and petrochemical industry.

Type	31		32		33		34		Sonderausführungen	
Nominal size	100	160	100	160	100	160	100	160	- 63, 250 (unfilled), 96x96;144x144	
Symbol					with capillary line					- with link ca. 135° swiveling and 360° turnable ; - with silicone filling
Accuracy class	1									
Measuring range °C	-50/+50, -30/+50, -40/+40, -40/+60, -20/+60, -20/+80, -100/+100 0/80, 0/100, 0/120, 0/160, 0/200, 0/250, 0/300, 0/400, 0/500, 0/600 +50/300, +50/+400, +100/+500								other on request, Double scale mirror scale colored fields	
Applications	constant load: full scale, short time up to 1h: 1,2 of full scale									
Case/ring	Bayonet case CrNi-stell 1.4301								Crimped on ring	
Dial	Aluminium white, scale black printed								red mark , mark pointer	
Window	Instrument glass								acrylic or safety glass	
Movement	Brass / nickel silver									
Gas filling	Inert gas, physiologically harmless									
Connection	radial bottom	back centric		radial bottom	back centric		other on request			
Type of mounting			without; Fixing rear edge	Gauge holder, fixing rear edge		Attachement edge forwards or backwards		Bracket mounting in type 32 and 34 with filling		
Sensor types	Union nut; male thread, turnable; male thread, rigid; male thread, compression fitting; male thread, turnable, double male adapter									
Process connect.	depending on the sensor type , see page 3									
Capillary line					1m CrNi, Ø 2mm 1m (up to15 m)					
Protecting	IP 65 (EN60529/IEC 529)									
Static pressure	max. 25 bar on the stem (above 25 bar use protection tube)									
Temperatures	Ambient: Tmin -25°C, Tmax 60°C								other on request	
Type	with limit switches									
Adjustment	External adjustment for pointer +/-6%									

Types and Dimensions

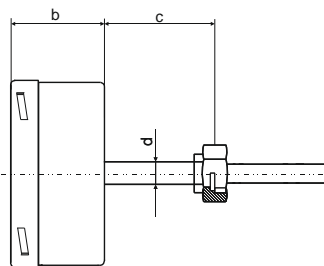
Typ 31

Stem connection
Female nut or male nut



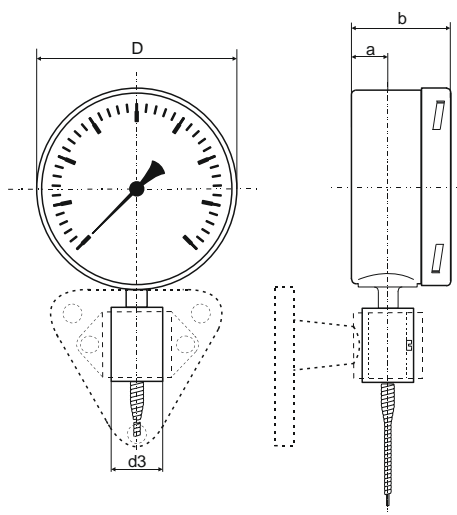
Typ 32

Stem connection
Female nut or male nut



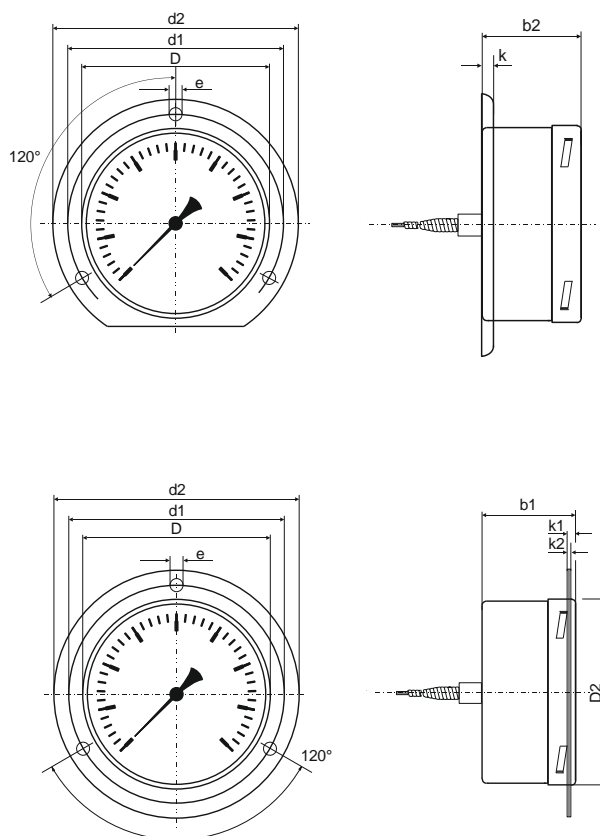
Typ 33

Installation
with gauge holder



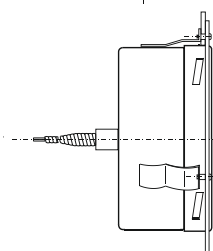
Typ 34

Attachement edge backwards or forwards



Typ 34

Bracket mounting for filled
gauges



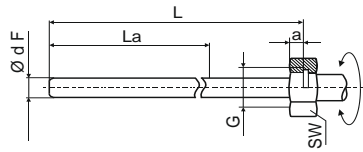
Type	Dimensions in mm											Weight (kg)	
	NS	D	a	b	c	d	d1	d2	k1	k2	d3	unfilled	filled
31	100	101		55		12	-	-	-	-		0,46	0,72
31	160	161		50		12	-	-	-	-		0,78	1,50
32	100	101		55	111	12	-	-	-	-		0,46	0,72
32	160	161		50	161	12	-	-	-	-		0,78	1,50
33	100	101	15		-	-	-	-	-	-	36	0,60	0,85
33	160	161	15		-	-	-	-	-	-	36	0,92	1,60
34	100	101			-	-	116	132	6	2		0,60	0,85
34	160	161			-	-	178	196	6	2		0,92	1,60

Stem models



Stem models **Designation** **Form according to DIN 13 190** **Dimensions in mm**

G3 Union nut Form 5

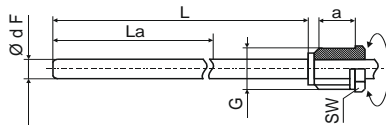


G	SW	a
G½	27	10
G¾	32	12
M20x1,5	27	10
M24x1,5	32	12
M27x2	32	12

suitable protection tubes

- Form 4.1
- Form 4.1F
- Form 8
- Form 9

G4 Male thread, turnable Form 4

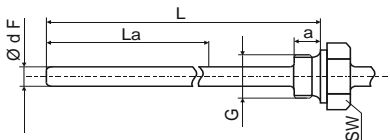


G	SW	a
G½B	22	20
G¾B	27	23
M18x1,5	22	14
M20x1,5	22	20

- Form 4
- Form 4F
- Form 5
- Form 6 and 7

Schutzrohr erforderlich!

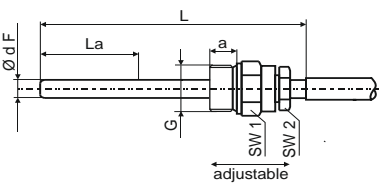
G4.1 Male thread, rigid Form 6
Form 7



G	SW	a
G½B	27	14
G¾B	32	16
½"NPT	27	19
¾"NPT	27	19
M18x1,5	24	14
M20x1,5	27	14

- Form 4
- Form 4F
- Form 5
- Form 6 and 7

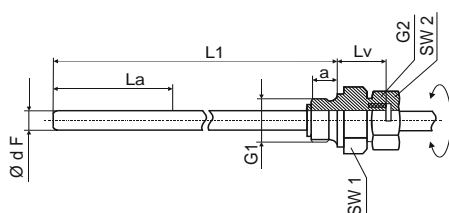
G5 Male thread Form 2
Compression fitting Form 3



G	SW1	SW2	a	Lk
G½B	27	22	14	42
G¾B	32	22	16	42
½"NPT	27	22	19	42
¾"NPT	27	22	19	42
M20x1,5	27	22	14	42

- Form 4
- Form 4F
- Form 5
- Form 6 and 7

G6 Male thread, turnable Form 4
Double male adapter



G1	G2	SW1	SW2	a	Lv
G½B	G½B	27	27	14	28
G¾B	G½B	32	27	16	28
½"NPT	G½B	27	27	19	28
¾"NPT	G½B	27	27	19	28
M20x1,5	M20x1,5	27	27	14	28
M24x1,5	M20x1,5	32	27	14	28
M27x2	M20x1,5	32	27	16	28

- Form 4
- Form 4F
- Form 5
- Form 6 and 7

La - active length
L / L1 - Order length
Ø d F 8,10,12 mm

Details on Data
protecting tubes

Minimum Stem Length, Active Length and Maximum realisable Stem Length

Typ 31 und 32

			up to max. 500°C Stem-Ø dF			500°C and above Stem-Ø dF		
Stem model	Length	Thread	12	10	8	12	10	8
all models	La	all standard threads	35	45	75	75	105	165
G1 G3 G4	Lmin	all standard threads	55	65	95	95	125	185
		G½B, M18x1,5, M20x1,5	49	59	89	89	119	179
G4.1	Lmin	G¾B,	51	61	91	91	121	181
		½"NPT, ¾"NPT	54	64	94	94	124	184
G5	Lmin	alle Standardgewinde	90	100	130	130	160	220
		G½B, M20x1,5	49	59	89	89	119	179
G6	L1min	G¾B, M24 x 1,5, M27x2	51	61	91	91	121	181
		½"NPT, ¾"NPT	54	64	94	94	124	184

Minimum Stem Length, Active Length and Maximum realisable capillary Line Length incl. Stem Typ 33 und 34 - Cappillary line including stem up to 5 m

			up to max. 500°C Stem-Ø dF			500°C and above Stem-Ø dF		
Stem model	Length	Thread	12	10	8	12	10	8
alle Typen	La	all standard threads	35	45	75	75	105	165
G1 G3 G4	Lmin	all standard threads	55	65	95	95	125	185
G5	Lmin	all standard threads	90	100	130	130	160	220
		G½B, M20x1,5	49	59	89	89	119	179
G6	L1min	G¾B, M24 x 1,5, M27x2	51	61	91	91	121	181
		½"NPT, ¾"NPT	54	64	94	94	124	184

Minimum Stem Length, Active Length and Maximum realisable capillary Line Length incl. Stem Typ 33 und 34 - Cappillary line including stem > 5 m up to 15 m

			up to max. 500°C Stem-Ø dF			500°C and above Stem-Ø dF		
Stem model	Length	Thread	12	10	8	12	10	8
alle Typen	La	all standard threads	53	80	115	150	200	320
G1 G3 G4	Lmin	all standard threads	73	100	135	170	220	340
G5	Lmin	all standard threads	67	94	129	164	214	334
		G½B, M20x1,5	69	96	131	166	216	336
G6	L1min	G¾B, M24 x 1,5, M27x2	72	99	134	169	219	339
		½"NPT, ¾"NPT	108	135	170	205	255	375

other on request

The minimum length Lmin/L1min of the stem ist the smallest possible stem length depending on the active length La (temperature-sensitive part) and the stem model.

The active length La of the stem (temperature-sensitive part) has to immerse completely into the medium, in order to obtain a measuring result that corresponds to the accuracy class.

The maximum realisable stem length is 2,50 m. Greater length can be obtained with a capillary line, e.g. with special stems.

Indication ranges, measuring ranges, smallest subdivision and error limits class 1 acc. to DIN EN 13 190

Indication ranges °C	Measuring ranges °C	smallest subdivision	error limits class 1 +/-°C
0 - 80	10 - 70	1	1
0 - 100	10 - 90	1	1
0 - 120	10 - 110	2	2
0 - 160	20 - 140	2	2
0 - 200	20 - 180	2	2
0 - 250	30 - 220	5	2,5
0 - 300	30 - 270	5	5
0 - 400	50 - 350	10	5
0 - 500	50 - 450	10	5
0 - 600	100 - 500	10	10
- 100 - 100	- 80 - 80	2	2
- 50 - 50	- 40 - 40	1	1
- 40 - 40	- 30 - 30	1	1
- 40 - 60	- 30 - 50	1	1
- 30 - 50	- 20 - 40	1	1
- 20 - 60	- 10 - 50	1	1
- 20 - 80	- 10 - 70	1	1
50 - 300	80 - 270	5	2,5
50 - 400	100 - 350	5	5
100 - 400	150 - 450	10	5