

Gas-actuated Thermometers, Every Angle

Bayonet ring case stainless steel, turnable and adjustable

TGelCh
TGelChG

Standard Versions

This data sheet contains detailed information on our standard versions and available options. In overview 8000 you will find additional information on selection, metrological features, permissible ambient and storage temperatures as well as error limits, etc. Information on the metrologically optimal design of thermometers can be found in our technical information sheet T08-000-031.

Measuring Unit

With nitrogen filling (inert gas, physiologically safe)

Accuracy (DIN EN 13 190)

Class 1

Case

With bayonet ring, stainless steel 304 (1.4301)

Degree of Protection (DIN EN 60 529/IEC 529)

IP65

Case Filling

For model TGelChG: silicone oil

Nominal Case Sizes

63, 100, 160 mm (2½, 4, 6")

Case Configuration

Connection temperature

sensor (stem): pivot (every angle)
- adjustable approx. 135°
(90° downward, 45° upward)
- with straightened brackets turnable
by 360° with respect to the case
centre back position

Pivot joint:

Temperature Ranges (DIN EN 13 190)

Temperature differences (spans) from 80 K up to 600 K

Temperature Sensor (Stem)

Made of stainless steel 316Ti (1.4571)

Max. static operating pressure: 25 bar

Stem models optionally: A1, A3, A4, A4.1, A5 or A6

Stem Ø dF: 8, 10 or 12 mm (0.31, 0.39 or 0.47")

Stem length L: from Lmin or L1min up to 2.50 m (8.2')

Please regard the minimum stem length depending on active length (La) and stem model, see page 3

Window

Instrument glass

Movement

Brass/German silver

Dial

Aluminum white, scale black

Pointer

Aluminum black

Indication Adjustment (±6 %)

Externally via screw



Ordering Information, Standard Ranges, Options

See page 4

Special Versions and Further Options

- Other stem models, stem Ø, connection threads and materials upon request
- Other temperature ranges and/or special scales, e.g. dual scale °C/°F, coloured fields or ranges, dial inscriptions
- Stationary pointer or drag indicator with window made of polycarbonate upon request
- Case parts stainless steel 316L (1.4404) upon request
- Model TGelCh for ambient temperatures to -60 °C (-76 °F) upon request;
Model TGelChG for ambient temperatures to -40 °C (-40 °F)
For ambient temperatures below -20 °C (-4 °F) we recommend:
thermometer with crimped-on ring case models TGelCh or TGelChG
- GOST version for Russia, Kazakhstan

Accessories

Mechanical: thermowells, see data sheets 8.8110ff.
Electronic: limit switch contact assemblies,
see catalogue heading 9.1

www.armano-messtechnik.com

ARMANO

ARMANO Messtechnik GmbH

Location Beierfeld

Am Gewerbepark 9 • 08344 Grünhain-Beierfeld
Tel.: +49 3774 58 - 0 • Fax: +49 3774 58 - 545
mail@armano-beierfeld.com

Location Wesel

Manometerstraße 5 • 46487 Wesel-Ginderich
Tel.: +49 2803 9130 - 0 • Fax: +49 2803 1035
mail@armano-wesel.com

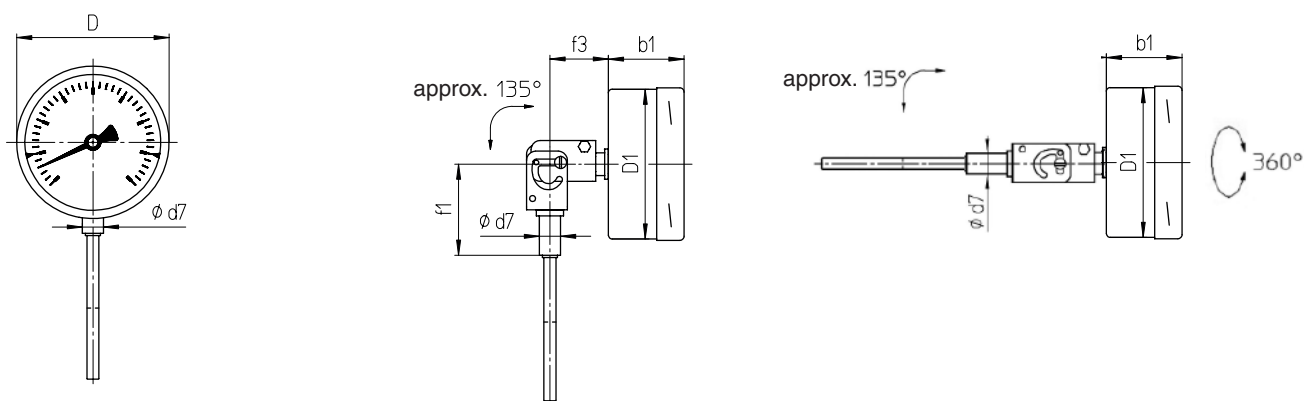
8211

08/20

Stem Position, Dimensional Data and Weights

Centre Back Stem Position, with Pivot (Every Angle)

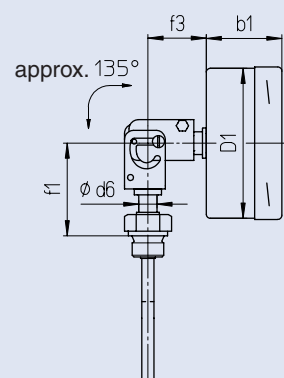
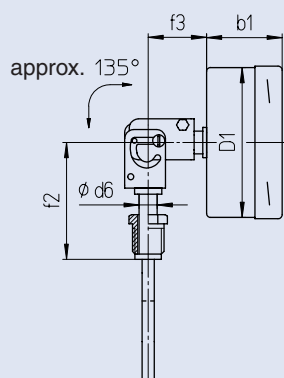
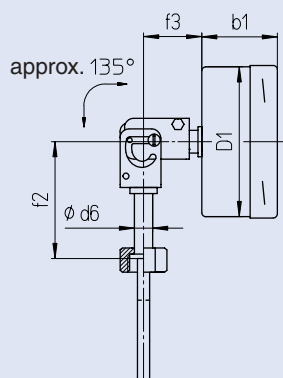
Stem model A1 (also A5)



Stem model A3 (also A6)

Stem model A4

Stem model A4.1

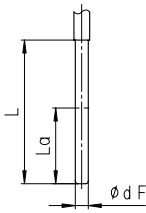


Dimensional Data (mm/inch) and Weights (kg/lb)

NCS	b1	D	D1	d6	d7	f1 ¹⁾	f2 ¹⁾	f3	approx. weight ²⁾	
									TGeICh	TGeIChG
63 2½"	39 1.54	64 2.52	62 2.44	12 0.47	14 0.55	60 2.36	78 3.07	37 1.46	0.36 0.79	0.44 0.97
100 4"	50 1.97	101 3.98	99 3.9	12 0.47	14 0.55	60 2.36	78 3.07	37 1.46	0.58 1.28	0.84 1.85
160 6"	50 1.97	161 6.34	159 6.26	12 0.47	14 0.55	60 2.36	78 3.07	37 1.46	0.92 2.03	1.64 3.62

¹⁾ Temperature ranges ≥ 400 °C (≥ 752 °F): extended dimension for small stem lengths, see T08-000-031
²⁾ The data are examples and relate to the version with stem A1, \varnothing 10 mm (0.39"), length 200 mm (7.87")

Stem Models

Stem Models								
Process connection:		Without screw fitting, plain stem						
Stem model:	A1							
Form acc. to DIN EN 13 190:	Form 1							
Stem material:	1.4571							
Stem Ø dF:	8, 10, 12 mm							
Order length:	L							
Suitable thermowell models: (data sheet)	SK1 (8.8140), SK2 (8.8141)							
								
Process connection:		Union nut		Male thread, turnable		Male thread, rigid		
Stem model:	A3		A4		A4.1			
Form acc. to DIN EN 13 190:	Form 5		Form 4		Form 6 (cylindrical thread) Form 7 (conical thread)			
Stem material:	1.4571		1.4571		1.4571			
Stem Ø dF:	8, 10, 12 mm		8, 10, 12 mm		8, 10, 12 mm			
Screw fitting material:	1.4571		1.4571		1.4571			
Order length:	L		L		L			
Suitable thermowell models: (data sheet)	SF4.1 (8.8111), SF4.1F (8.8113) SF8 (8.8130), SF9 (8.8131)		SF4 (8.8110), SF4F (8.8112) SF5 (8.8120), SF6, SF7 (8.8121)		SF4 (8.8110), SF4F (8.8112) SF5 (8.8120), SF6, SF7 (8.8121)			
Thread (dimensional data in mm/inch):	G	SW	i	G	SW	i	G	
	G½	27/1.06	10/0.39	G½B	22/0.87	20/0.79	G½B	
	G¾	32/1.26	12/0.47	G¾B	27/1.06	23/0.91	G¾B	
	M20x1.5	27/1.06	10/0.39	M18x1.5	22/0.87	14/0.55	½" NPT	
	M24x1.5	32/1.26	12/0.47	M20x1.5	22/0.87	20/0.79	¾" NPT	
	M27x2	32/1.26	12/0.47	Thermowell required!			M18x1.5	
							M20x1.5	
Process connection:		Male thread/compression fitting			Male thread, turnable/double male adapter			
Stem model:	A5 (A1 with compression fitting)			A6 (A3 with double male adapter)				
Form acc. to DIN EN 13 190:	Form 2 (cylindrical thread) Form 3 (conical thread)			—				
Stem material:	1.4571			1.4571				
Stem Ø dF:	8, 10, 12 mm			8, 10, 12 mm				
Screw fitting material:	1.4571			1.4571				
Order length:	L			L1				
Suitable thermowell models: (data sheet)	SF4 (8.8110), SF4F (8.8112) SF5 (8.8120), SF6, SF7 (8.8121)			SF4 (8.8110), SF4F (8.8112) SF5 (8.8120), SF6, SF7 (8.8121)				
Thread (dimensional data in mm/inch):	G	SW1	SW2	i	Lk	G1	G2	
	G½B	27/1.06	22/0.87	14/0.55	42/1.65	G½B	G½B	
	G¾B	32/1.26	22/0.87	16/0.63	42/1.65	G¾B	G¾B	
	½" NPT	27/1.06	22/0.87	19/0.75	42/1.65	½" NPT	G½B	
	¾" NPT	27/1.06	22/0.87	19/0.75	42/1.65	¾" NPT	G½B	
	M20x1.5	27/1.06	22/0.87	14/0.55	42/1.65	M20x1.5	M20x1.5	
						M24x1.5	M20x1.5	
						M27x2	M20x1.5	
Process connection:		Minimum Stem Length, Active Length and Maximum Feasible Stem Length (mm/inch)						
Stem model:	Length:	Thread:	up to max. 500 °C (932 °F)			500 °C (932 °F) and above		
			Stem Ø dF:			Stem Ø dF:		
			12 (0.47")	10 (0.39")	8 (0.31")	12 (0.47")	10 (0.39")	8 (0.31")
all models	La	all standard threads	35	45	75	75	105	165
			1.38	1.77	2.95	2.95	4.13	6.5
A1/A3/A4	Lmin	all standard threads	55	65	95	95	125	185
			2.17	2.56	3.74	3.74	4.92	7.28
A4.1	Lmin	G½B, M18x1.5, M20x1.5	49	59	89	89	119	179
			1.93	2.32	3.5	3.5	4.69	7.05
		G¾B	51	61	91	91	121	181
			2	2.4	3.58	3.58	4.76	7.13
		½" NPT, ¾" NPT	54	64	94	94	124	184
			2.13	2.52	3.7	3.7	4.88	7.24
A5	Lmin	all standard threads	90	100	130	130	160	220
			3.54	3.94	5.12	5.12	6.3	8.66
A6	L1min	G½B, M20x1.5	49	59	89	89	119	179
			1.93	2.32	3.5	3.5	4.69	7.05
		G¾B, M24x1.5, M27x2	51	61	91	91	121	181
			2	2.4	3.58	3.58	4.76	7.13
		½" NPT, ¾" NPT	54	64	94	94	124	184
			2.13	2.52	3.7	3.7	4.88	7.24
others			upon request			upon request		
<p>The minimum length Lmin/L1min is the smallest feasible stem length. Important: Please note the technical information sheet T08-000-031 on the metrologically optimal stem length.</p> <p>The active length La is the temperature-sensitive part of the stem.</p> <p>The maximum feasible stem length is 2.50 m (8.2'). With a capillary line, greater lengths are possible, e.g. with special stems A3.2, A4.2 and A4.3 (data sheet 8299.1).</p>								

Ordering Information

Basic Model:		Gas-actuated Thermometer Pivot (Every Angle) at the Stem	TGeICh		
Case filling:	without		without code letters		
	silicone oil		G		
Nominal case size:	case Ø 63, 100, 160 mm (2½, 4, 6")		63, 100, 160		
Stem position/ case configuration:	centre back position, with pivot (every angle)		without code letters		
Temperature ranges:	scale °C:	ΔT (K):	scale °F:	ΔT (°F):	
	0 – 80 °C	80	0 – 150 °F	150	
	0 – 100 °C	100	0 – 200 °F	200	e.g. 0–100 °C
	0 – 120 °C	120	0 – 250 °F	250	
	0 – 160 °C	160	0 – 300 °F	300	
	0 – 200 °C	200	–50 / +130 °F	180	
	0 – 250 °C	250	–40 / +160 °F	200	
	0 – 300 °C	300	–30 / +120 °F	150	
	0 – 400 °C	400	20 – 240 °F	220	
	0 – 500 °C	500	40 – 400 °F	360	
	0 – 600 °C	600	50 – 300 °F	250	
	–100 / +100 °C	200	50 – 500 °F	450	
	–50 / +50 °C	100	100 – 800 °F	700	
	–40 / +40 °C	80	100 – 1000 °F	900	
	–40 / +60 °C	100	150 – 700 °F	550	
	–30 / +50 °C	80			e.g. –30/+50 °C
	–20 / +60 °C	80			
	–20 / +80 °C	100			
	50 – 300 °C	250			
	50 – 400 °C	350			
	100 – 500 °C	400			
Stem:	without screw fitting, plain stem		A1		
	union nut		A3		
	male thread, turnable		A4		
	male thread, rigid		A4.1		
	male thread/compression fitting		A5		
	male thread, turnable/double male adapter		A6		
Stem Ø dF:	8, 10 or 12 mm (0.31, 0.39 or 0.47")		dF 8, 10, 12		
Stem length:	L or L1 in mm	e.g.	L = 100 mm		
Process connection:	see page 3	e.g.	G½B		
Options:	red mark	on the dial			
	plastic clip	red or green, external at the bayonet ring for NCS 100 and 160			
	stationary red	on the dial			
	pointer	adjustable with removable ring			
	window	laminated safety glass			
		acrylic glass (PMMA)			
		polycarbonate (PC)			
	movement	stainless steel			
	case	ventilation no. 22 for outdoor installation			
	case	polished			
	bayonet ring	polished			
	instrument tag	stainless steel plate 12 x 55 mm (0.47 x 2.17") with wire mounting or sticker upon the case			

Example:

TGeICh 100, 0–100 °C, A3, dF 8, L = 100 mm, M 27x2

Special Versions: Please describe your requirements in cleartext!