Gas-Actuated Thermometers, every angle

Bayonet ring case stainless steel, turnable and adjustable

TGelCh
TGelChG

Standard Versions

Information on general and metrological features (e.g temperature resistance) and temperature ranges / error limits / smallest subdivision can be found in model overview 8000.

Measuring Unit
With nitrogen filling
(inert gas, physiological harmless)

Accuracy (EN 13 190)
Class 1

Case
With bayonet ring, 1.4301 (304 stainless steel)

Case Protection Type (EN 60 529 / IEC 529)
IP 65

Case Filling
For model TGelCh**G**: silicone oil

Nominal Case Sizes
63, 100, 160 (mm) (2½", 4", 6")

Case Configuration

Connection Temperature sensor (stem):	pivot / every angle
Stem position:	centre back position, compared to the case adjustable by 135°, turnable by 360°
Mountign device :	without

Temperature Ranges (EN 13 190)
Temperature differences from 80 K to 600 K

Temperature Sensor (Stem)
1.4571 (316 stainless steel),
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
Stem length L:	Lmin resp. L1min up to max. 2.50 m

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

Window
Instrument glass

Movement
Brass/German silver

Dial
Aluminum, black figures, white background

Pointer
Aluminum, black

Zero Adjustment (± 6%)
Externally by a screw

Ordering Information, Standard Temperature Ranges, Options

See page 4

Special Versions and further Options among others

- Other stem models, stem-Ø, connection thread and materials upon request
- Other temperature ranges and/or special scales, e.g. double scale °C/°F, coloured fields or areas, dial inscriptions, etc.
- Min.- or max.- drag indicator upon request
- Case parts 1.4404 (316 stainless steel) upon request
- Model TGelCh for ambient temperatures up to -60 °C upon request; Model TGelChG for ambient temperatures up to -40 °C. For ambient temperatures below -20°C we recommend: thermometers with crimped-on ring case models TGelChg resp. TGelChgG
- GOST-version for Russia, Ukraine, Kazakhstan

Accessories

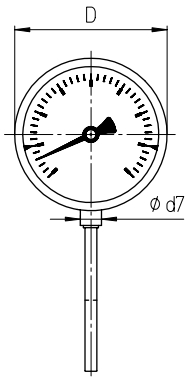
mechanical: thermowells, see data sheet 8.8110 ff
electronical: limit switch contact assemblies, see catalogue heading 9.1

Sales and Export South, West, North
ARMATURENBAU GmbH
Manometerstraße 5 • D-46487 Wesel - Ginderich
Tel.: +49 (0)28 03 / 91 30–0 • Fax: +49 (0)28 03 / 10 35
armaturenbau.com • mail@armaturenbau.com

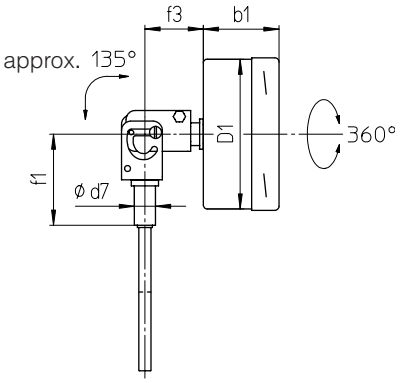
Subsidiary Company, Sales and Export East
MANOTHERM Beierfeld GmbH
Am Gewerbepark 9 • D-08344 Grünhain-Beierfeld
Tel.: +49 (0) 37 74 / 58–0 • Fax: +49 (0)37 74 / 58–545
manotherm.com • mail@manotherm.com

Dimensional Data and Weights

Centre Back Stem Position, with pivot / every angle

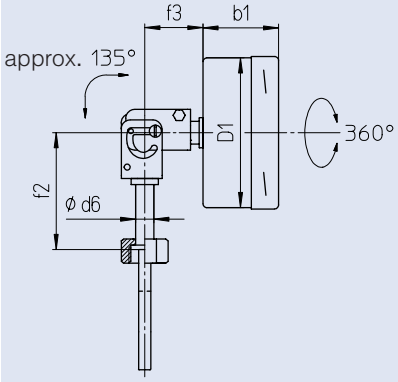


A1
also A5

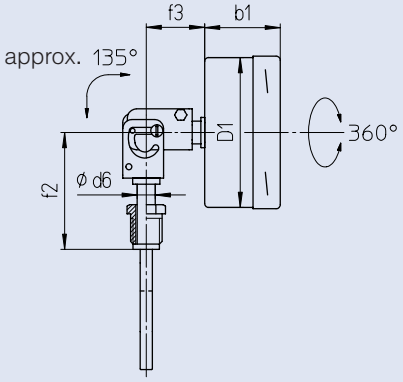


A1
also A5

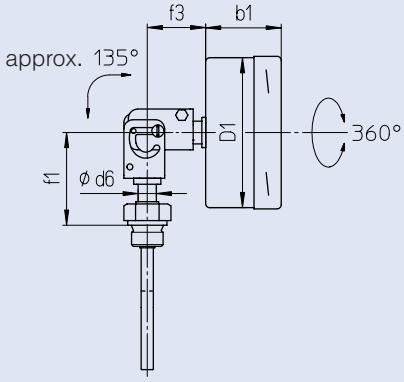
Further Stem Models



A 3
also A6



A 4



A 4.1

Dimensional Data (mm / inches) and Weights (kg / lb) *

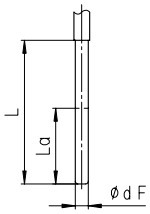
NCS	b1	D	D1	d6	d7	f1	f2	f3	approx. weight *	
									TGelCh	TGelChG
63 **2½"**	39 **1.54**	64 **2.52**	62 **2.44**	12 **.47**	14 **.55**	63 **2.48**	80 **3.15**	40 **1.57**	0.36 **0.79**	0.44 **0.97**
100 **4"**	50 **1.97**	101 **3.98**	99 **3.9**	12 **.47**	14 **.55**	63 **2.48**	80 **3.15**	40 **1.57**	0.58 **1.28**	0.84 **1.85**
160 **6"**	50 **1.97**	161 **6.34**	159 **6.26**	12 **.47**	14 **.55**	63 **2.48**	80 **3.15**	40 **1.57**	0.92 **2.03**	1.64 **3.62**

* The information is an example and relates on version with stem A1, Ø 10 mm (0.4"), Länge 200 mm (8").

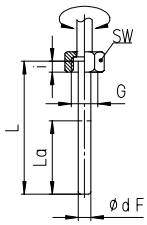
Stem Models

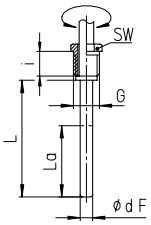
Stem Models

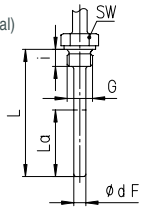
Process connection:	without screw fitting, plain stem
Stem model:	**A1**
Form according to DIN 13 190:	Form 1
Stem material:	1.4571
Stem-Ø dF:	8, 10, 12
Order length:	L
Data sheet (suitable thermowell models):	8.8140 (SK1), 8.8141 (SK2)



Process connection:	Union nut	Male thread, turnable	Male thread, rigid
Stem model:	**A3**	**A4**	**A4.1**
Form according to DIN 13 190:	Form 5	Form 4	Form 6 (thread cylindrical) Form 7 (thread conical)
Stem material:	1.4571	1.4571	1.4571
Stem-Ø dF:	8, 10, 12	8, 10, 12	8, 10, 12
Screw fitting material:	1.4571	1.4571	1.4571
Order length:	L	L	L
Data sheet (suitable thermowell models):	8.8111 (SF4.1), 8.8113 (SF4.1F) 8.8130 (SF8), 8.8131 (SF9)	8.8110 (SF4), 8.8112 (SF4F) 8.8120 (SF5), 8.8121(SF6+SF7)	8.8110 (SF4), 8.8112 (SF4F) 8.8120 (SF5), 8.8121(SF6+SF7)







Thread (dimensions in mm):

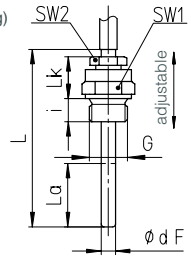
G	SW	i
G ½	27	10
G ¾	32	12
M 20 x 1.5	27	10
M 24 x 1.5	32	12
M 27 x 2	32	12

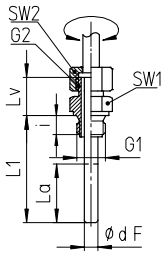
G	SW	i
G ½ B	27	20
G ¾ B	32	23
M 18 x 1.5	22	14
M 20 x 1.5	27	20

Thermowell required!

G	SW	i
G ½ B	27	14
G ¾ B	32	16
½" NPT	27	19
¾" NPT	27	19
M 18 x 1.5	24	14
M 20 x 1.5	27	14

Process Connection:	Male thread / compression fitting	Male thread, turnable / double male adapter
Stem model:	**A5** (= basic stem A1 with compression fitting)	**A6** (= basic stem A3 with double male adapter)
Form according to DIN 13 190:	Form 2 (thread cylindrical) Form 3 (thread conical)	—
Stem material:	1.4571	1.4571
Stem-Ø dF:	8, 10, 12	8, 10, 12
Screw fitting material:	1.4571	1.4571
Order length:	L	L1
Data sheet (suitable thermowell models):	8.8110 (SF4), 8.8112 (SF4F) 8.8120 (SF5), 8.8121(SF6+SF7)	8.8110 (SF4), 8.8112 (SF4F) 8.8120 (SF5), 8.8121(SF6+SF7)





Thread (dimensions in mm):

G	SW1	SW2	i	Lk
G ½ B	27	22	14	42
G ¾ B	32	22	16	42
½" NPT	27	22	19	42
¾" NPT	27	22	19	42
M 20 x 1.5	27	22	14	42

G1	G2	SW1	SW2	i	Lv
G ½ B	G ½ B	27	27	14	28
G ¾ B	G ½ B	32	27	16	28
½" NPT	G ½ B	27	27	19	28
¾" NPT	G ½ B	27	27	19	28
M 20 x 1.5	M 20 x 1.5	27	27	14	28
M 24 x 1.5	M 20 x 1.5	32	27	14	28
M 27 x 2	M 20 x 1.5	32	27	16	28

Minimum Stem Length, Active Length and maximum realisable Stem Length

			up to max. 500 °C			500 °C and above		
			Stem-Ø dF:			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
A1 A3 A4	Lmin	all standard threads	55	65	95	95	125	185
A4.1	Lmin	G ½ B, M 18x1.5, M 20x1.5	49	59	89	89	119	179
		G ¾ B	51	61	91	91	121	181
		½" NPT, ¾" NPT	54	64	94	94	124	184
A5	Lmin	all standard threads	90	100	130	130	160	220
A6	L1min	G ½ B, M 20x1.5	49	59	89	89	119	179
		G ¾ B, M24x1.5, M27x2	51	61	91	91	121	181
		½" NPT, ¾" NPT	54	64	94	94	124	184
others			upon request			upon request		

The minimum length Lmin / L1min of the stem is the smallest possible stem length against the active length La (vessel) and the stem model.

The active length La of the stem (vessel) has to immerse completely into the medium, to grant a measuring result, which corresponds to the accuracy class.

The **maximum realisable stem lenght** is 2.50 m. Larger lengths are realisable with a capillary line, e. g. with special stems A3.2, A4.2 and A4.3 (data sheet 8299.1).

Ordering Information with Indication- and Temperature Ranges, Options

Basic Model:	Gas-actuated thermometers with pivot / every angle			TGelCh
Case filling:	without			without code letters
	silicone oil			**G**
Nominal case size:	case-Ø 63, 100 ,160 (mm) (2½", 4", 6")			**63, 100, 160**
Case configuration:	centre back connection, with pivot / every angle			without code letters
Temperature ranges:	scale:	ΔT (K):		
	0 — 80 °C	80		
	0 — 100 °C	100	e.g.	**0-100 °C**
	0 — 120 °C	120		
	0 — 160 °C	160		
	0 — 200 °C	200		
	0 — 250 °C	250		
	0 — 300 °C	300		
	0 — 400 °C	400		
	0 — 500 °C	500		
	0 — 600 °C	600		
	–100 / + 100 °C	200		
	–50 / + 50 °C	100		
	–40 / + 40 °C	80		
	–40 / + 60 °C	100		
	–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			**dF 8, 10, 12**
Stem length:	L resp. L1 in mm		e.g.	**L = 100 mm**
Process connection:	see page 3		e.g.	**G ½ B**
Options:	red mark	on the dial		
	plastic clip	red or green external at the bayonet ring for NCS 100 and 160		
	stationary red pointer	on the dial		
		adjustable when 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			
	measuring point marking	stainless steel-plate 12 mm x 55 mm (0.47" x 2.17"), wire mounting or		*(order at the moment still as cleartext)*
		sticker on case coverage		
Example:				**TGelCh 100, 0-100 °C, A3, dF 8, L = 100 mm, M 27 x 2**

Special Versions: Please describe your requirements clearly

Technical changes, replacement of materials and errors excepted.

ARMATURENBAU GmbH, Tel.: +49 (0) 2803/9130-0, E-Mail: mail@armaturenbau.com MANOTHERM Beierfeld GmbH, Tel: +49 (0) 3774/58-0, E-Mail: mail@manotherm.com, 02/11 DE