

Square case, front narrow rim black

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

Square case, front narrow rim black, bracket for switch panel mounting

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

IP43

Nominal Case Sizes

96 x 96, 144 x 144 mm (3.78 x 3.78, 5.67 x 5.67")

Case Configuration

Connection temperature

sensor (stem):

capillary line

Capillary line position:

lower back position (r)

Mounting device:

u-clamp for panel mounting

Capillary Line

1 m stainless steel Ø 2 mm

with buckle protection spiral at both ends

capillary line length L_{FL} selectable from 1 m to 15 m

Temperature Ranges (DIN EN 13 190)

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

Temperature Sensor (Stem)

Made of stainless steel 1.4571 (316Ti)

Max. static operating pressure: 25 bar

Stem models:

A1, A3, A4, A5 or A6

Stem Ø dF:

8, 10 or 12 mm

Stem length L or L1:

from Lmin or L1min up to 2.50 m

Please regard the minimum stem length depending on active length (L_a) 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 Ø and materials upon request
- Capillary line $F_{FL} > 15$ m 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
- GOST version for Russia, Ukraine, Kazakhstan, Belarus

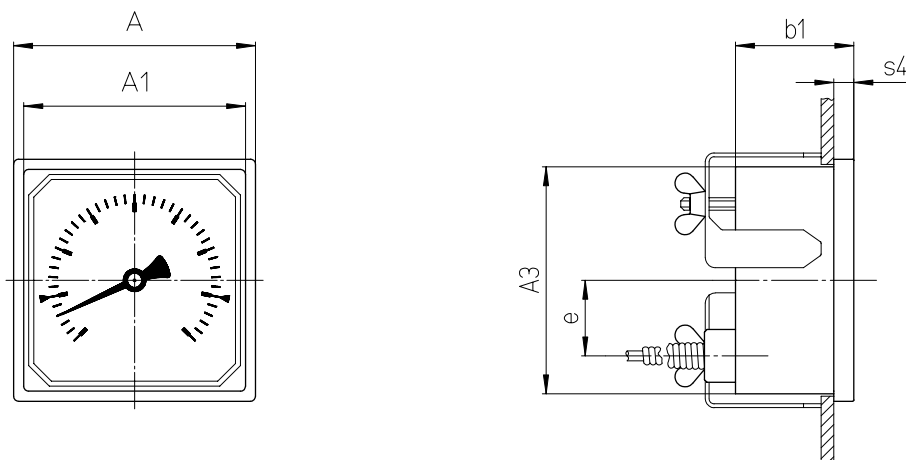
Accessories

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

Capillary Line Position, Dimensional Data and Weights

Lower Back Capillary Line Position

without additional code letter

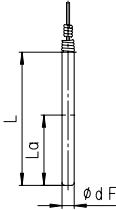
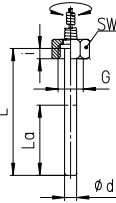
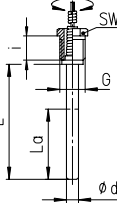
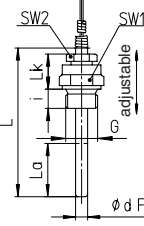
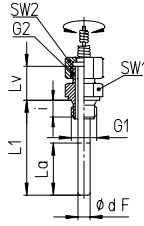


Dimensional Data (mm) and Weights (kg)

NCS	A	A1	A3	b1	e	s4	approx. weight ¹⁾ TFQS
96	96	88	90	48	33	8	0.64
144	144	134	136	48	52	8	1.15

¹⁾ The data are examples and relate to the version with stem A1, Ø 10 mm, length 200 mm and 1 m capillary line.

Stem Models

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Process connection:	Without screw fitting, plain stem																																																																															
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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																																																																														
Stem model:	A3	A4																																																																														
Form acc. to DIN EN 13 190:	Form 5	Form 4																																																																														
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	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)																																																																														
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Process connection:	Male thread/compression fitting	Male thread, turnable/double male adapter																																																																														
Stem model:	A5	A6																																																																														
	(A1 with compression fitting)	(A3 with double male adapter)																																																																														
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Minimum Stem Length, Active Length and Maximum Feasible Capillary Line Length incl. Stem (mm)

Stem model:	Length:	Thread:	Capillary line incl. stem up to 5 m up to max. 500 °C						Capillary line incl. stem > 5 m to 15 m up to max. 500 °C					
			Stem Ø dF:			Stem Ø dF:			Stem Ø dF:			Stem Ø dF:		
			12	10	8	12	10	8	12	10	8	12	10	8
all models	La	all standard threads	35	45	75	75	105	165	53	80	115	150	200	320
A1 / A3 / A4	Lmin	all standard threads	55	65	95	95	125	185	73	100	135	170	220	340
A5	Lmin	all standard threads	90	100	130	130	160	220	108	135	170	205	255	375
A6	L1min	G 1/2 B, M20x1.5	49	59	89	89	119	179	69	96	131	166	216	336
		G 3/4 B, M24x1.5, M27x2	51	61	91	91	121	181	72	99	134	169	219	339
		1/2" NPT, 3/4" NPT	54	64	94	94	124	184	67	94	129	164	214	334
others			upon request			upon request			upon request			upon request		

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.

The active length La is the temperature-sensitive part of the stem.

The maximum feasible stem length is 2.50 m. With a capillary line, greater lengths are possible, e.g. with special stems A2, A7 and A7.1 (data sheet 8299.2).

Ordering Information

Basic Model: Square Thermometer for Switch Panels		TFQS
Case filling:	without	without code letters
Nominal case size:	case 96, 144 mm (3.78 x 3.78, 5.67 x 5.67")	96, 144
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/compression fitting	A5
	male thread, turnable/double male adapter	A6
Stem \varnothing dF:	8, 10 or 12 mm	dF 8, 10, 12
Stem length:	L or L1 in mm	e.g. L = 100 mm
Capillary line length:	$L_{FL} \geq 1$ to 15 m	$L_{FL} = 5$ m
Process connection:	see page 3	e.g. G ½ B
Options:	red mark on the dial	
	window acrylic glass (PMMA)	
	movement stainless steel	
	wide front rim, TFQB	
	protection hose for capillary line spiral protection hose made of stainless steel	
	spiral protection hose made of stainless steel with PE cover	
	shrinking hose polyolefin, max. 10 m	
	instrument tag stainless steel plate 12 x 55 mm (0.47 x 2.17") with wire mounting or sticker upon the case	

Example:

TFQS 96, 0–100 °C, A3, dF 12, L = 100 mm, $L_{FL} = 5$ m G ½

Special Versions: Please describe your requirements in cleartext!