

THERMO – *Standard* ——— **TS 1**

Bimetallic industrial thermometers
«Standard range»

Economy

Big or small, you can count on them all

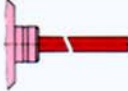
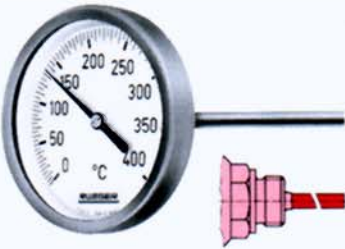
• Interesting prices

- Bimetallic measuring system, stem diameters 6, 8 and 9 mm
- Head diameters: 52 mm (2"), 65 mm (2½"), 80 mm (3"), 100 mm (4"), 150 mm (6")
- Accuracy: $\leq \pm 1\%$ up to + 400°C (+750°F)

Bimetallic industrial thermometers «Standard range»

- = standard model, **without** extra cost
- = option, **with** extra cost

Co-axial types (H) back-connected, rear connection, 90° back angle form

<p>With unthreaded shoulder A</p> <ul style="list-style-type: none"> - in galvanized brass (for 6 mm dia. stem only) - in stainless steel AISI 303/1.4305 (for 6, 8 and 9 mm dia. stem) 		<p>Head</p> <p>dia. 52 65 80 100 150 mm</p>
<p>With fixed threaded connection S</p> <ul style="list-style-type: none"> - in stainless steel AISI 303/1.4305 (for 6, 8 and 9 mm dia. stem) * = (for 6 and 8 mm dia. stem) 		<p>Threads G1/4</p> <p>G3/8</p> <p>G1/2</p> <p>G3/4</p> <p>1/4"NPT *</p> <p>1/2"NPT</p>

Vertical types (V) bottom-connected, lower connection, straight form

<p>With unthreaded shoulder A and head elbow in aluminium alloy (* in nickel-plated aluminium alloy)</p>		
<p>With fixed threaded connection S</p> <ul style="list-style-type: none"> - in stainless steel AISI 303/1.4305 (for 6, 8 and 9 mm dia. stem) * = (for 6 and 8 mm dia. stem) 		<p>Threads G1/4</p> <p>G3/8</p> <p>G1/2</p> <p>G3/4</p> <p>1/4"NPT *</p> <p>1/2"NPT</p>

Co-axial types with back mounting flange (F)

<p>With back mounting flange F in neutral coloured anodized aluminium and unthreaded shoulder A in galvanized brass, stem 6 mm dia. (see drawing on page 5)</p>		
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Options

Unbreakable acrylic glass	
With unthreaded shoulder A and head elbow in nickel-plated aluminium alloy	
Bimetallic measuring system damped by silicon grease «C2», for working temperatures from - 30 to + 200°C (- 20°F ... + 400°F)	
Index pointer (to record the maximum or minimum temperature achieved)	
RÜEGER inspection certificate	
Pricelists	Reference



Head in rolled stainless steel
AISI 304/1.4301



Head in galvanized steel, bezel in neutral coloured
anodized aluminium. Stainless steel models:
see sheet and pricelist TH 2.

TSH052A	TSH065A	TSH080A	TSH100A	TSH150A
●	●	●	●	-
○	○	○	○	●
TSH052S	TSH065S	TSH080S	TSH100S	TSH150S
●	●	-	-	-
○	○	-	-	-
○	○	●	●	●
-	-	○	○	○
○	○	-	-	-
○	○	○	○	○

TSV052A	TSV065A	TSV080A	TSV100A	TSV150A
●	●	●*	●	●*
TSV052S	TSV065S	TSV080S	TSV100S	TSV150S
●	●	-	-	-
○	○	-	-	-
○	○	●	●	●
-	-	○	○	○
○	○	-	-	-
○	○	○	○	○

--	TSH065F	TSH080F	TSH100F	--
-	●	●	●	-

○	○	○	○	○
○	○	○	○	○
○	○	○	○	○
-	-	○	○	-
○	○	○	○	○
TS 1	TS 1	TS 1	TS 1	TS 1

Standard temperature ranges

Range °C		Range °C		Range °C		Range °C	
°Div.		°Div.		°Div.		°Div.	
- 30... + 70	1	0... + 60	1/2	0... + 200	2	0... + 400	5
		0... + 120	1	0... + 250	2	0... + 500*	5 (10)
		0... + 160	2	0... + 320	5	0... + 600*	10

* = with extra cost.

Other **special ranges** (°C, °F, Kelvin, or double °C/°F scales) available on request, with extra cost.

The **average scale angle** is 270° (260-280°).

The **scale lengths** for different types are: 90 mm for TSH/TSV052, 120 mm for TSH/TSV065, 135 mm for TSH/TSV080, 170 mm for TSH/TSV100, 270 mm for TSH/TSV150.

The dial **diameters**, the printing of the **figures**, and the **divisions**, conform to **DIN standard**.

Stems

Standard lengths L = ... mm (other lengths available on request)					d	Materials available
60	100	150	200 ... 500	500 ... 2000	mm dia.	
●	●	●	○	-	6	Stainless steel AISI 304L/1.4306
○	○	○	○	○	8	
○	○	○	○	○	9	
○	○	○	○	-	6	Stainless steel AISI 316L/1.4404
○	○	○	○	○	8	
○	○	○	○	○	9	

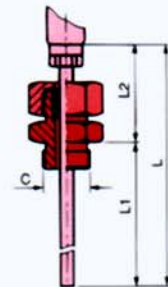
Important!

Vertical thermometers	Fittings and connections supplied as accessories		
	Min. length L2*		
Types	+ DAE	+ AMX	+ AMU
TSV052A	15 mm	37 mm	30 mm
TSV065A	15 mm	37 mm	30 mm
TSV080A	25 mm	37 mm	30 mm
TSV100A	32 mm	44 mm	37 mm
TSV150A	57 mm	69 mm	62 mm

The **fixing systems** described on sheet **TA 1** and supplied as accessories (e.g. the connection «AMX») require that **in all cases the length L1**, and also the lengths L2 and L (see drg. p. 5), **be specified** for vertical (bottom-connected) thermometers with unthreaded shoulder **TSV...A+...** The length L1 is in fact the useful length for temperature measurement.

If the instrument is ordered with **pocket (thermowell) type DAE**, please refer to technical leaflet **TP 1**.

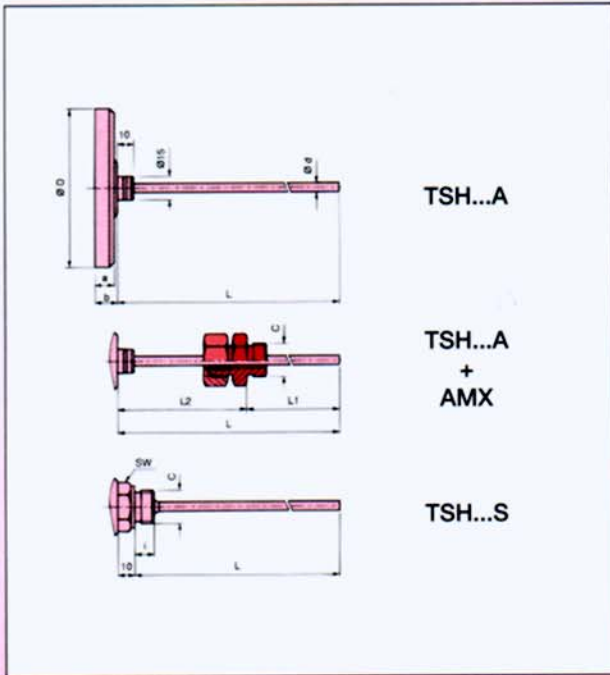
For **vertical thermometers TSV...A+...**, according to the head diameter and to the fixing system, the **length L2** corresponds in each case to a minimum length which allows the connection to be screwed up without the spanner fouling the head. See table opposite for dimensions to this effect.



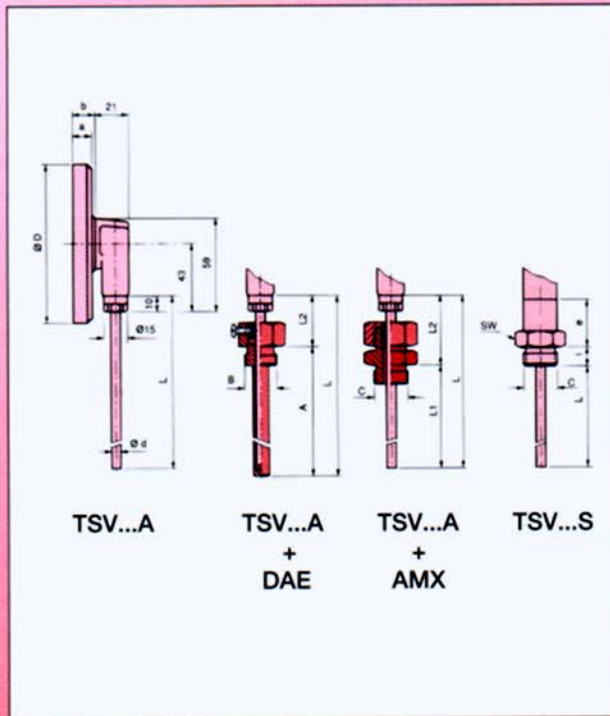
* = When length L2 exceeds 100 mm, we recommend 8 or 9 mm diameter stems (wall thickness 1.4 or 1.9 mm respectively) to eliminate any risk of accidental bending.

Technical specification

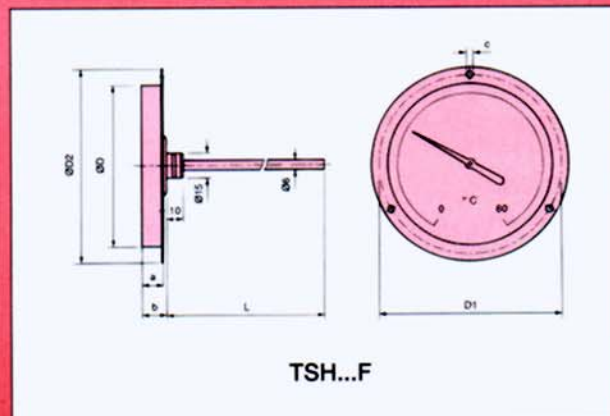
Characteristic	Unit	Value	Characteristic	Unit	Value
Lower range limit	°C	≥ - 30	Accuracy	% FS	≤ ± 1
Upper range limit	°C	≤ + 400			
Full scale (FS) ΔT	K	60...600	Repeatability	% FS	≤ ± 0,2
			Hysteresis	% FS	≤ ± 0,5
Overload	% FS	20	Position error	% FS	≤ ± 0,5
			for range ≤ 400°C	Sealing	IP
for range > 400°C:	types TSH/TSV052-065	IP	54		
peak overload	°C			600	types TSH/TSV080-150
continuous overload	°C	520			



TSH	052A	065A	080A	100A	150A	
TSH	052S	065S	080S	100S	150S	
D dia.	52	65	77	100	150	
a	9	10	12	12	12	
b	12	13	14	14	14	
d dia.	See «Stems» on page 4					
L						
L1						
L2	See table page 4					
C	G1/4	G3/8	G1/2	G3/4	1/4"NPT	1/2"NPT
i	10	12	12	12	17	22
SW	17	22	27	32	17	27
AMX	Swivelling and sliding connection sealed, type «AMX». See page 4 and sheet TA 1.					



TSV	052A	065A	080A	100A	150A	
TSV	052S	065S	080S	100S	150S	
D dia.	52	65	77	100	150	
a	9	10	12	12	12	
b	12	13	14	14	14	
e	15	15	15	29	54	
d dia.	See «Stems» on page 4					
L						
L1						
L2	See table page 4					
C	G1/4	G3/8	G1/2	G3/4	1/4"NPT	1/2"NPT
i	10	10	12	12	17	22
SW	17	22	27	32	17	27
AMX	Swivelling and sliding connection sealed, type «AMX». See page 4 and sheet TA 1.					



TSH	--	065F	080F	100F	--
D dia.		66	77	100	
D1 dia.		74	84	111	
D2 dia.		80	89	120	
a		11	12	13	
b		14	15	15	
c dia.		3.2	3.2	4.3	
L	See table page 4				

Bimetallic industrial thermometers

«Standard range»

Interesting characteristics...

The thermometers in the «Standard range» are designed for simplicity, and consequently also for economy. But the measuring system used - made completely in the RÜEGER Crissier works - and the care exercised at all stages of assembly and inspection, are the same as for the more expensive instruments.

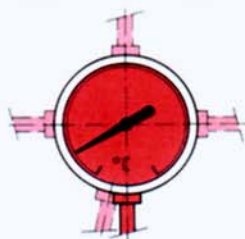
Their characteristics make these instruments suitable chiefly for indoor use, in mild environments where only moderate vibration and shock loading are encountered.

The 52 mm and 65 mm dia. instruments, when incorporating an unthreaded shoulder or threaded connection in stainless steel, can be considered as "all-stainless" thermometers, suitable for outdoor use.

For varied applications

These thermometers will accomplish reliably all temperature monitoring tasks under normal conditions. Their application field is practically universal, for example:

- Production and working of metals, wood, glass, plastics.
- Air conditioning, drying, heating, water treatment, electroplating, power generation and transmission.
- Machines, packaging, food, chemicals, refrigeration, printing.
- Gas and oil burners, coffee machines, frying tanks ovens, smoke curing chambers.
- Aerospace industry.



For vertical (bottom-connected) models, the position of the stem with relation to the dial may be chosen as required (please specify when ordering):

Standard position: 6 o'clock.

Specify 3, 9, 12 o'clock for example, or any other position.

Ordering code structure

Type

T S H 0 6 5 F

— Connection types

A = unthreaded shoulder
S = fixed threaded connection
F = back mounting flange
(65, 80 and 100 mm dia.)

Nominal head diameters (52, 65, 80, 100, 150 mm)

H = co-axial
V = vertical

Bimetallic industrial thermometers «Economy» range,
THERMO-Standard

Additional information

- Temperature range
- Stem diameter, material
- Length of stem
- Options

RÜEGER

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