

## THERMO-Modul

TM

1

### Modular range of bimetallic thermometers for industry

#### Stainless

*The proved "formula" for  
temperature measurement*

- All-stainless steel
- 360° rotating dial
- 2 adjustment possibilities
- Head diameters: 100 (4"), 130 (5"), 160 (6") mm
- For heavy-duty service: chemical and petro-chemical engineering, offshore, food processing, conventional and nuclear power generation, etc.


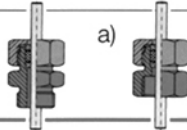



# Bimetallic thermometers for industry

Head and bezel in stainless steel AISI 304/1.4301

Mineral glass (thickness: 3 mm)

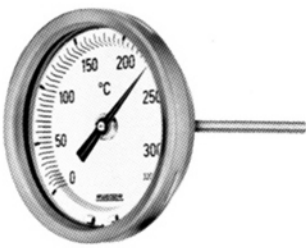
Waterproof bezel with bayonet lock (EPR seal - ethylene-propylene rubber)

- = Standard model, **without** price supplement
- = Standard model, **with** price supplement
- = Optionnal, **with** price supplement

With unthreaded shoulder <b>A</b> 15 mm dia. x 10		<b>Head</b> (nominal dia.)			
- all-stainless steel AISI 303/1.4305		100	130	160 mm	
+ swivelling and sliding threaded connection <b>AMX</b> a)					
+ swivelling and sliding cap connection <b>AMU</b> b)					
- all-stainless steel AISI 303/1.4305					
With fixed threaded connection <b>S</b>		Threads	G1/2		
- all-stainless steel AISI 303/1.4305		G3/4			
		M20X1,5			
		1/2"NPT			
		3/4"NPT			
- all-stainless steel AISI 316/1.4401 (other threads on request, at extra cost)		G1/2			
		1/2"NPT			
With swivelling threaded connection <b>T</b>			G1/2		
- all-stainless steel AISI 303/1.4305		M18X1,5			
		M20X1,5			
With swivelling cap connection <b>U</b>			G1/2		
- all-stainless steel AISI 303/1.4305		G3/4			
		M24X1,5			
		M27X2			
Other connection types see data sheet <b>TA 1</b>					

## Options

Unbreakable acrylic glass	
Hardened glass	
Safety glass	
External setting device mounted on glass (* = not for 160 mm dia.)	
Head and bezel in stainless steel AISI 316/1.4401 (* = not for 160 mm dia.)	
Bimetallic measuring system with silicone grease filling for shock absorption, working temperatures between - 30 and + 200°C	C2
Liquid filled	
With index-pointer (to record maximum or minimum temperature attained) mounted on glass (* = not for 160 mm dia.)	
RÜEGER inspection certificate	
Price list	Reference
With electrical and pneumatic contacts	See notice



Co-axial models (H) (back connected)	Vertical models (V) (bottom connected)	Tilting/rotating models (I)
TMH100A TMH130A TMH160A	TMV100A TMV130A TMV160A	TMI100A TMI130A TMI160A
●	●	●
TMH...A + AM.	TMV...A + AM.	TMI...A + AM.
□	□	□
TMH...S	TMV...S	TMI...S
●	●	●
○	○	○
○	○	○
●	●	●
○	○	○
○	○	○
○	○	○
TMH...T	TMV...T	TMI...T
○	○	○
○	○	○
○	○	○
TMH...U	TMV...U	TMI...U
○	○	○
○	○	○
○	○	○
○	○	○
□	□	□
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TM 1	TM 1	TM 1
TK 1	TK 1	TK1

Range °C		°Div.	Range °C		°Div.	Range °C		°Div.	Range °C		°Div.
- 70... + 50	1		0... + 60**	1/2		0... + 200**	2		0... + 400**	5	
- 30... + 70	1		0... + 100**	1		0... + 250**	2		0... + 500*/**	5 (10)	
- 30... + 170	2		0... + 120**	1		0... + 300**	5		0... + 600*/**	10	
- 30... + 270	5		0... + 160**	2		0... + 320	5				
°F			°F			°F			°F		
- 40... + 160*	2		0... + 250*	2		30... + 570*	10		100... + 1100*	20	
30... + 140*	1		50... + 400*	5		30... + 750*	20				

\*\* = DIN 16203 recommended ranges

**The average scale angle** is 270° (260-280°). **The scale length** on the dial is about 190 mm for 100 mm dia., 250 mm for 130 mm dia. and 300 mm for 160 mm dia..

On request, **DIN** and **Cl. 1** or **Cl. 2** indications can be printed on the dial.

Stems

Standard length L = ... mm (intermediate lengths on request)						d	Materials available (for all dials and lengths)
60	120	150	200	201... 500	501... 2000	mm dia.	
●	●	●	●	○	-	6	Stainless steel <b>AISI 304L/1.4306</b>
○	○	○	○	○	○	8	
○	○	○	○	○	○	9	
○	○	○	○	○	-	6	Stainless steel <b>AISI 316L/1.4404</b>
○	○	○	○	○	○	8	
○	○	○	○	○	○	9	

**Important!**

The immersion depth should be at least equivalent to the sensitive length **ls**.

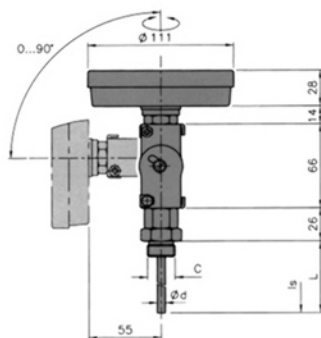
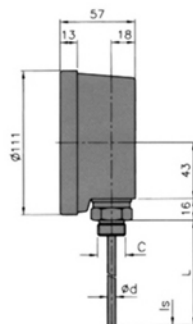
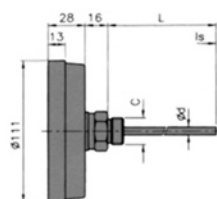
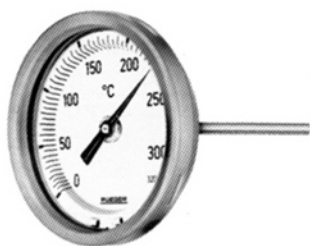
On request, we can supply thermometers with a swivelling and sliding threaded connection AMX, or a swivelling and sliding cap connection AMU (see data sheet **TA 1**) with a **strengthenig tube** between the head and the connection (DIN-standard), particularly with 6 mm dia. stems.

Characteristics	Units	Value	Characteristics	Units	Value
Range lower limit	°C	≥ - 70	Calibration error for range ≤ 400°C		
upper limit	°C	≤ + 600	DIN 16203	°C	Cl. 1
Full scale			on request	%MR	1
(FS) ΔT min.	K	60	for range > 400°C		
max.	K	600	DIN 16203	°C	Cl. 2
Overload			on request	%MR	1
for range ≤ 400°C	%FS	20	Head Environment		
for range > 400°C:	%FS	10	Permissible T <sub>amb</sub> *)	min.	- 50°C
- max. instantaneous temp.	°C	600		max.	+ 100°C
- max. continuous temp.	°C	520	Influence of the temperature of the head on measuring accuracy:		
Repeatability	%MR	≤ ± 0,2	0 to 50°C ≤ nominal accuracy;		
Hysteresis	%MR	≤ ± 0,5	outside this range, 0.2% error per 10°C		
Reference T <sub>amb</sub> = 23°C ± 2°C,			Safety class	IP 65	
acc. to DIN 16203			Humidity	0...100% h.r.	

FS = full scale

MR = measuring range = 100% FS or acc. to DIN 16203

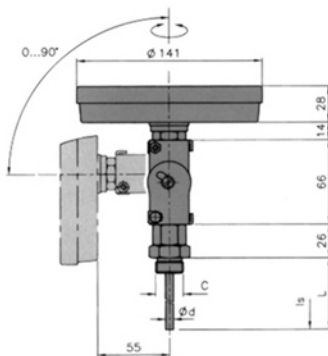
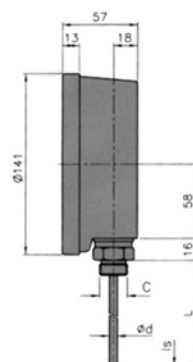
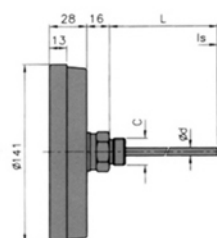
These thermometers may be in vibration-proof execution according to the service conditions expected (e.g. liquid filled). Please specify when ordering.



TMH100S

TMV100S

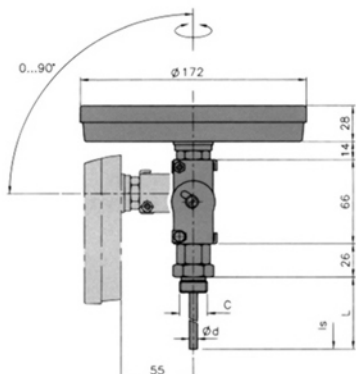
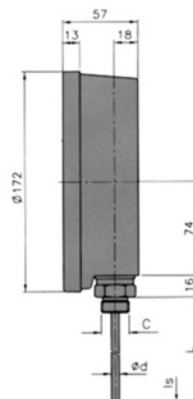
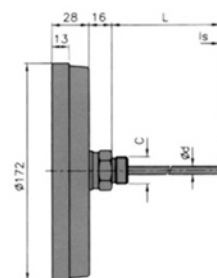
**TMI100S**



TMH130S

TMV130S

TMI130S



TMH160S

TMV160S

TMI160S

### Other connection types

..... **A** = With unthreaded shoulder

..... **T** = With swivelling threaded connection

..... **U** = With swivelling cap connection

see data sheet **TA 1**

# Bimetallic thermometers for industry

## «Stainless»

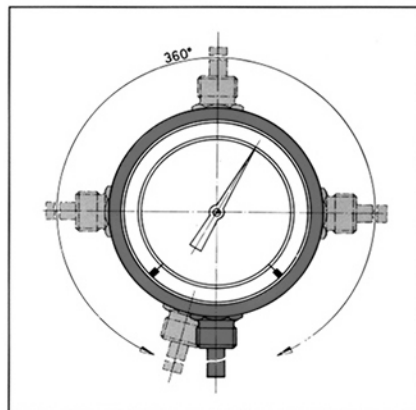
exclusively in stainless steel

The proved «formula» of temperature measurement

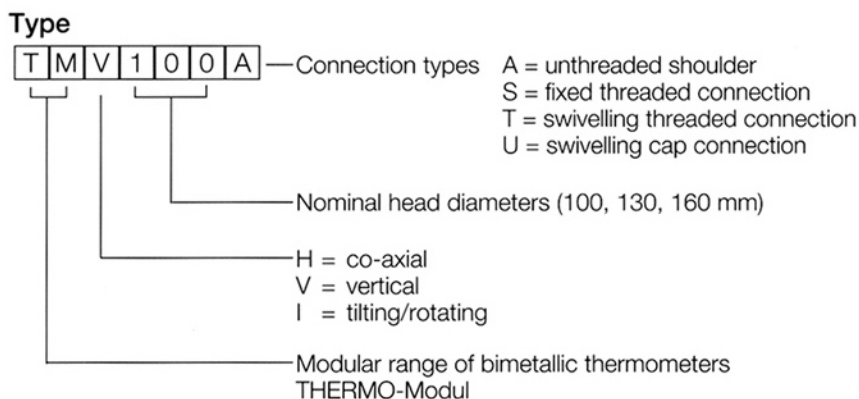
### Outstanding features...

For a number of:

- Fully rotating dial. Because the dial can be rotated 360°, vertical and tilting thermometers remain easy to read, whatever the angle of the stem when mounted.
- 2 adjustment possibilities
  - a) - by rotating the dial (co-axial thermometers)
    - by resetting the pointer (vertical and tilting types) after removing the glass (setting tool n° code 025 2110 01)
  - b) by means of an external device mounted on the glass (optional, with price supplement)
- Waterproof bezel with bayonet lock
- For the vertical models, special transmission spring eliminating hysteresis
- Antiparallax dial



### Ordering code structure



### Additional information

- Connection thread and material
- Special connection type (see data sheet **TA 1**)
- Diameter, length and material of stem
- Temperature range

# RÜEGER

Specialist for sensors and measuring instruments  
Temperature - Pressure - Flowrate

**RÜEGER S.A.**

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