

# Thermo-WELL

Manufacturing range

# RUEGER



Rüeger TW for HVAC



Built-up TW (EN/DIN)



Bar stock TW (ANSI/ASME)

configure your products on  
[www.instrugate.com](http://www.instrugate.com)

## A wide range of reliable Thermo-WELL executions

### Pockets

RUEGER pockets, or thermowells, protect bimetallic, gas pressure thermometers, RTD's and thermocouples or probes associated with other measuring instruments (indicators, regulators, recorders) against steady or intermittent pressures, and/or corrosive environments.

Use of pockets also allows the replacement of these instruments and sensors without interrupting the process. Pockets can be built into systems as "temporary measuring points" thus reducing the number of instruments installed. These pockets can be supplied in several materials, with different surface coatings, in a very wide range of types, in accordance with all existing national and international standards, or to customers' drawings.

### Related Instruments

All kind of mechanical and electrical thermometers and temperature sensors or probes.

### Material

- Brass
- Carbon steel (A105)
- Stainless steels AISI 304, 316, 316L, 316Ti & 321
- Refractory steels AISI 446 & 310
- High temperature material Inconel, Hastelloy, etc.

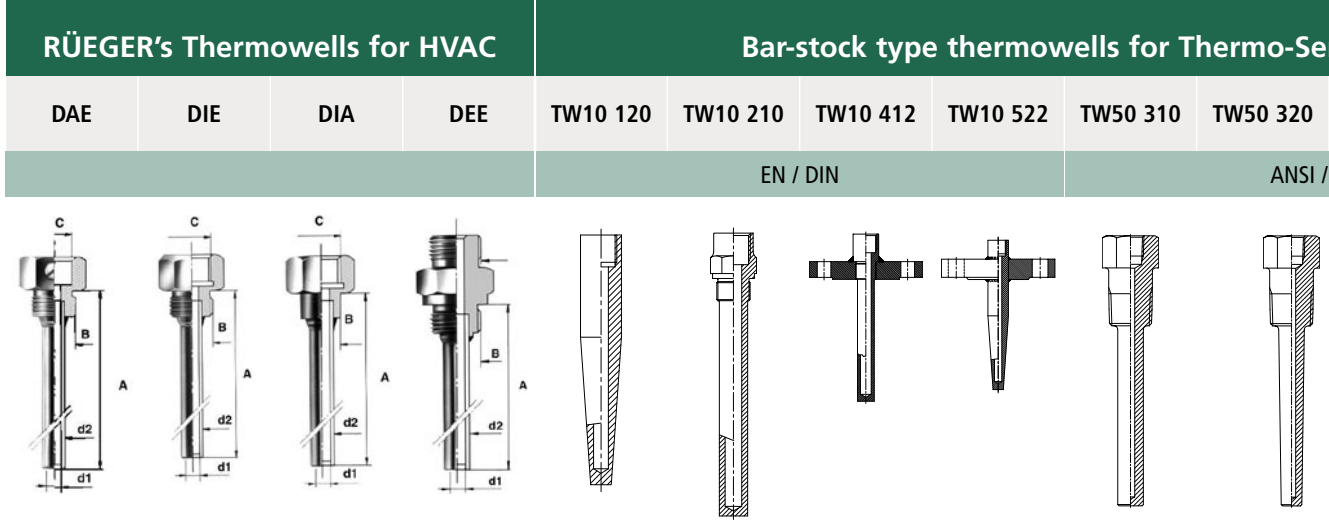
### Executions

- ANSI/ASME standard bar stock thermowells (max. length 2000 mm)
- EN/DIN bar stock and built-up thermowells
- EN/DIN weld-in pockets
- Hammered or stepped fast response time pockets
- Shell-type pockets

### Industries and plant

- Chemical and petro-chemical
- Machining (diesel engines)
- Food and beverage processing
- Electroplating and plastic injection
- HVAC
- Mechanical engineering and power generation





Form						4	6	6F	4F	ISA 121	ISA 115/117/ 125/127
Instrument connection type	Without thread	*									
	Threaded		*	*	*	*	*	*	*	*	*
	Flange										
Process connection	Without thread			*		*					
	Threaded	*	*		*		*			*	*
	Flange							*	*		
Type of extention						Tube				Nipple or	
Maximum length (mm)		2000	2000	2000	2000	1500	1500	1500	1500	1500	1500
Minimum diameter (mm)		8	8	10	10	18/9	17	17	18/9	17	18/9
Maximum diameter (mm)		13	17	13	13	32/17	50	50	32/17		32/17
Bore minimum (mm)		5	5	6.5	6.5	3.5	7	7	3.5	7	3.5
Bore maximum (mm)		14	14	10	10	14 <sup>*3</sup>	9 <sup>*2</sup>	9 <sup>*2</sup>	9 <sup>*2</sup>	9 <sup>*2</sup>	9 <sup>*2</sup>
Material		AISI 316 Brass	AISI 316 Brass	AISI 316 Brass	AISI 316 Brass	AISI 304, AISI 316/ AISI 316L, other on request					
Options	Full penetration welding						*		*		
	NACE					*	*	*	*	*	*
	Internal/external hydraulic pressure test					*	*	*	*	*	*
	Dye penetrant test					*	*				
	Radiographic examination							*	*		
	Karman stress calculation					*	*	*	*	*	*
	Material certificate	*	*	*	*	*	*	*	*	*	*
	S10 (for Rüeger's sensor)					*	*	*	*		
S50 (for Rüeger's sensor)									*	*	

\* Iconel 600; \*1>6000 mm tube has to be welded together; \*2 bigger diameter possible when s-type fin & stepped bore applied; \*3 for gas-pressure thermometers or sensor, when stepped bore or s-type fin is used



**General information**

**1. Ordering a thermowell** ([www.instrugate.com](http://www.instrugate.com) will configure your thermowell automatically)

For the execution of a thermowell the following information are necessary:

- Process connection such as size of thread or flange or w/o (weld-in)
- Instrument connection
- Type of execution (bar stock, built-up or Rüeger std.)
- Material (see also material selection-guide)
- Total length
- Insertion length
- Stem diameter (for conical well root and tip diameter)
- Bore diameter
- Tip thickness

If a Karman Stress Calculation (KSC) according to ASME/ANSI PTC19.3 is required the following additional information are requested:

- Max. operating temperature
- Max. operating pressure
- Density or MW of medium (when mixed flow of each medium)
- Mass flow
- Line size

The ASME/ANSI PTC19.3 limits the frequency ratio (wake frequency /natural frequency) at 0.8. If with the given insertion length this ratio is higher than 0.8 an anti-vibration collar reducing the free vibrating length of the well may be installed. In this case the nozzle diameter and the nozzle length are required.

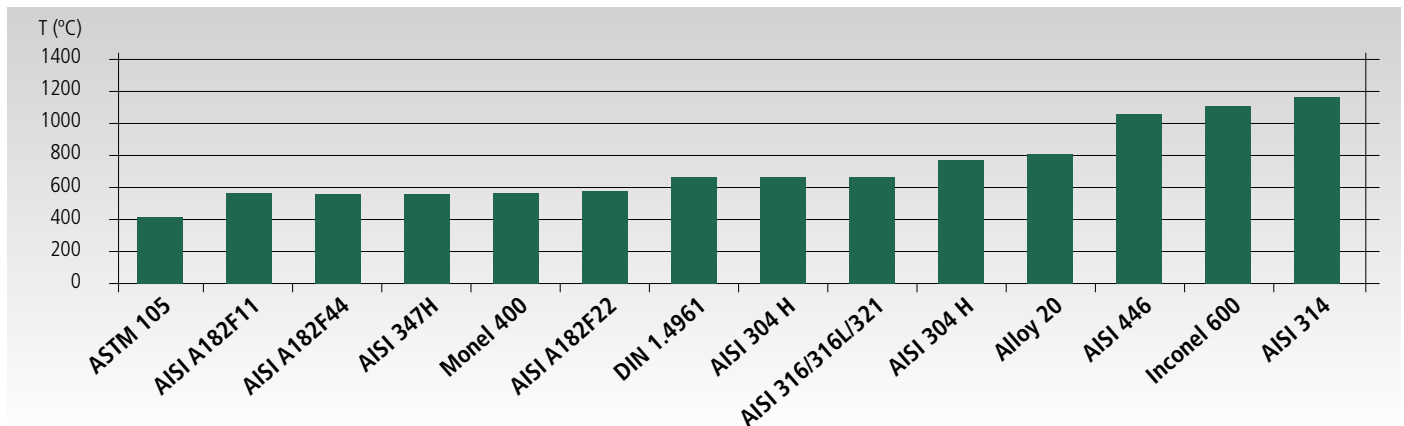
The following certificates and inspections may be executed (optional with mark-up):

- Hydraulic static pressure test (if not specifically indicated only the internal pressure test will be executed)
- Dye penetrant check
- Radiographic examination
- Material certificate 3.1 B acc. EN 10204
- NACE MR0175 certificate

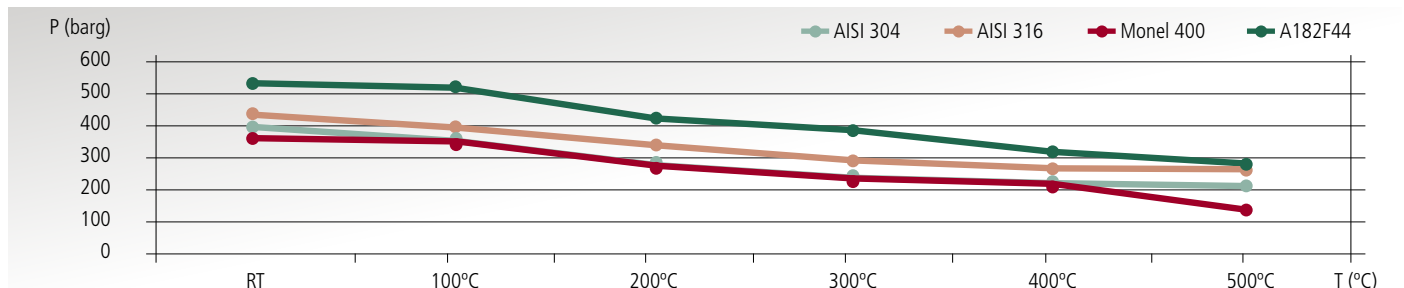
**2. Material selection guide**

The following information have only informative character. In each particular case they have to be checked taking into account the operating conditions of the thermowell.

**2.1 Maximum permissible operating temperatures**



**2.2 Maximum operating pressure in barg**



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