

FRODE PEDERSEN

Application

- Temperature measurement in pipe systems and tanks with gasses and fluid medias such as air, steam and water at high pressure and flow velocity
- Operating range is up to 600°C, max. 450 bar (water) and 60 m/sec. (steam)
- Fields of application
 - Chemical process engineering
 - Power plants, boilers
 - Heat and energy distribution (district heating)

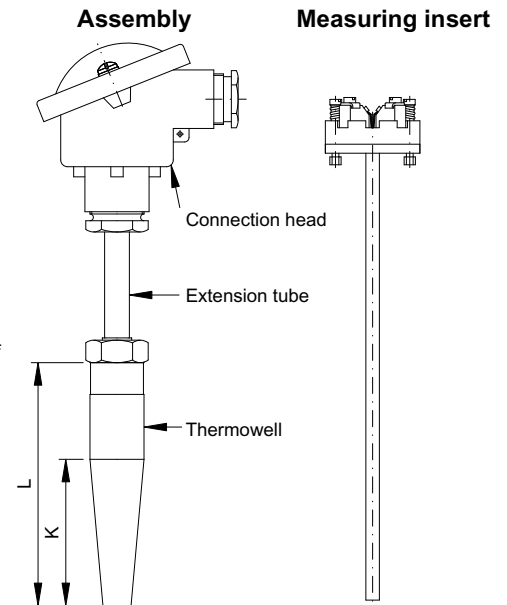
Technical features

- Pt100 resistance thermometer acc. to IEC 751
- Permissible mechanical and thermal stress acc. to DIN 43763
- 3-wire connection is standard
- Installed to the process by welding
- The measuring insert can be exchanged or calibrated without closing down the process
- Measuring insert in either ceramic powder filled tube M40, or mineral insulated MK40/60, vibrationproof
- Thermowell drilled from bar stock
- Optionally, can be supplied with head mounted transmitter

Ordering

The requested sensor is selected from the table below
The colour code means:

- Standard: Built of standard modules (short delivery time)
- Variant: Modified standard modules
- Special: Special versions and material. We are specialist in temperature measurement. Please contact us and we shall do our utmost to solve your specific measuring task



Ordering information

Specification number	1405-	Sensor						Transmitter			
							4mA:	°C	20mA:	°C	1)
Thermowell											
Type:											
D1 Length L=140 Conus K= 65		0									
D2 Length L=200 Conus K=125		1									
D4 Length L=200 Conus K= 65		2									
D5 Length L=260 Conus K=125		3									
Special:		s									
None. Insert for D1 (140)		a									
None. Insert for D2 (200)		b									
None. Insert for D4 (200)		c									
None. Insert for D5 (260)		d									
None. Insert for special		ss									
Material:											
None			0								
W.no. 1.5415 15Mo3			1								
W.no. 1.7335 13CrMo44			2								
W.no. 1.7380 10CrMo910			3								
W.no. 1.4571 XCrNiMoTi17122			4								
Special:			s								
Extension tube (mm)											
52			0	5	2						
102			1	0	2						
152			1	5	2						
202			2	0	2						
Special (Min. 52, max. 502)			x	x	x						
Connection head											
B: Degree of protection IP 65			0	0							
BHS: Degree of protection IP 65			1	1							
BHSH: Degree of protection IP 65, high cap for transmitter			2	2							
Special:			s	s							
Transmitter, 2-wire, 4-20mA output											
0											
1											
2											
3											
4											
5											
6											
7											
8											
Special:											
Note 1: Please specify measuring range in °C											
Connection. Wiring configuration											
0											
1											
2											
Tolerance acc. to IEC 751											
0											
1											
2											
3											
4											
5											
Special:											
Resistance value (ohm) acc. to IEC 751											
0											
1											
2											
Special:											
Measuring insert: Type and measuring range											
M40:											
MK60:											
MK40:											
Special:											

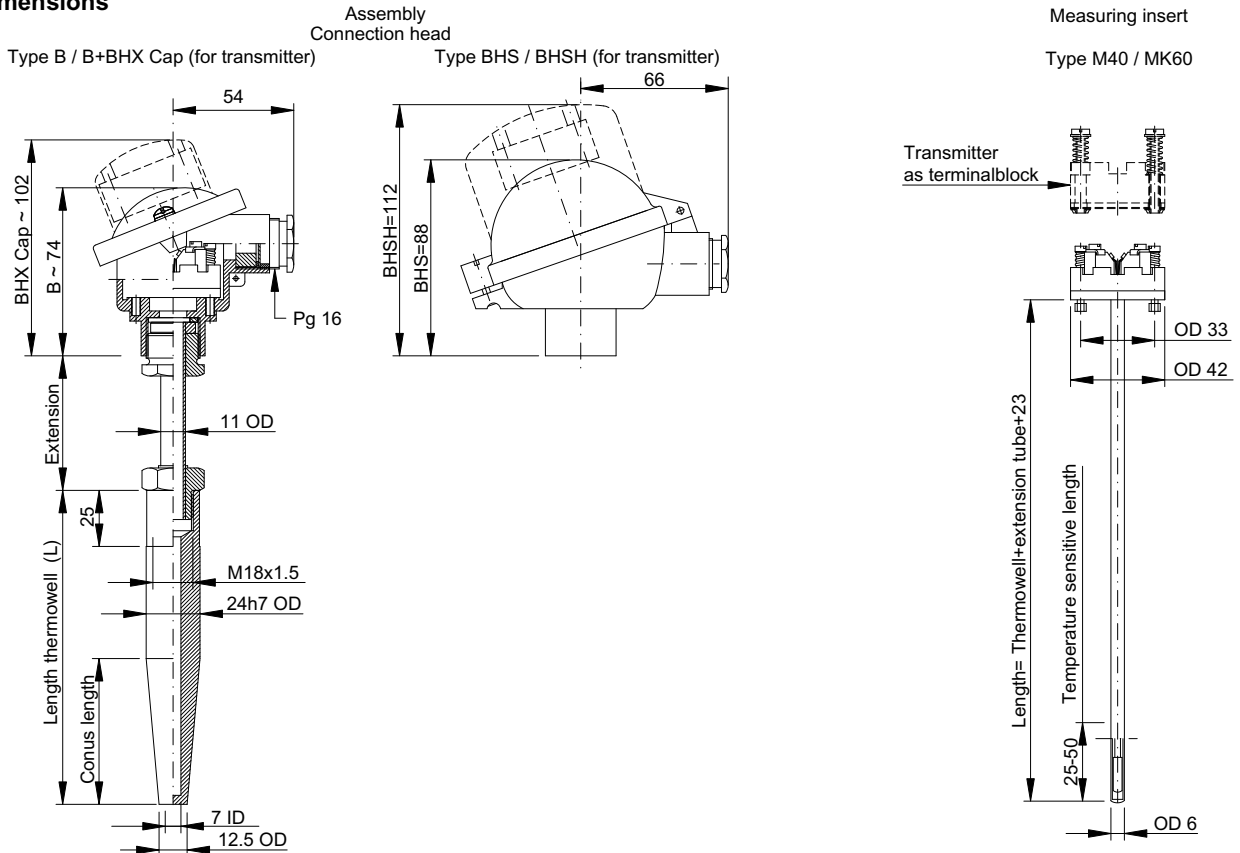
Accessories

Measuring insert See data sheet 9108-02
Transmitter: See data sheet 9168

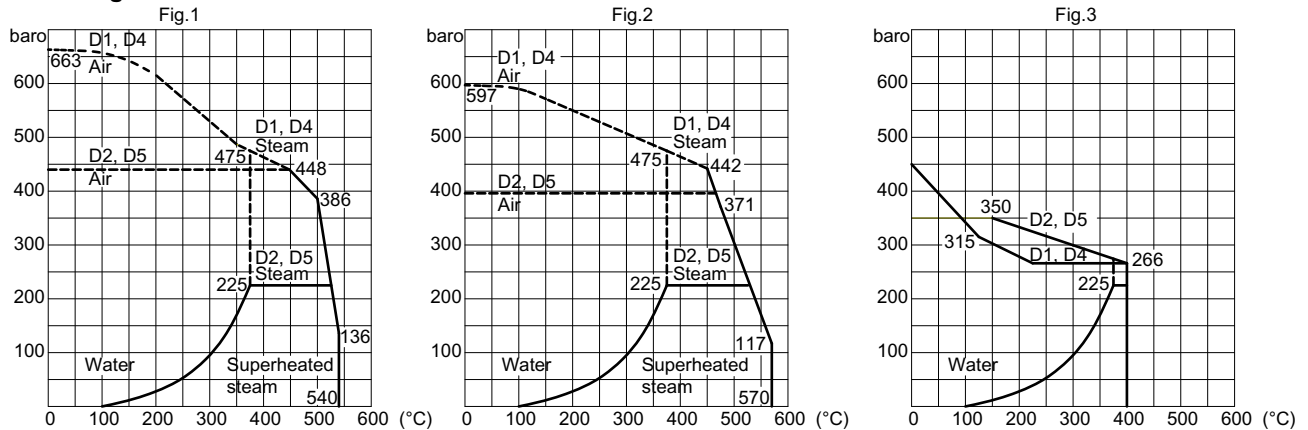
Customer information

Name:
Tel.:

Dimensions



Stress diagram for thermowell acc. to DIN 43763



Permissible stress diagram		Fig. 1	Fig. 2	Fig. 3	
Material		1.7335	1.7380	1.4571	
Type DIN 43767		D1/2/4/5	D1/2/4/5	D1, D4	D2, D5
Maximum flow velocity (m/s)	Air	60	60	60	60
	Superheated steam	60	60	60	30
	Water	5	5	5	5

Response time

Thermowell	Response time in seconds (guidelines)					
	In water @ 0.4m/sec.		In air @ 1m/sec		In steam @ 40m/sec.	
	t _{0.5}	t _{0.9}	t _{0.5}	t _{0.9}	t _{0.5}	t _{0.9}
D1, D4	18	55	400	1200	55	148
D2 D5	12	47	315	1070	40	110

Note:

The 0.5/0.9 time is the time that it takes the sensor to reach 50%/90% of the final value of a temperature change of a medium.

If media and velocity are different from the ones stated, the time can change significantly.

Connection diagram

