

Thermowell system HIT for Hygienic Invasive Temperature measuring Type series HP1100



Application area

- Pharmaceutical industry
- Biotechnology
- Food industry

Features

- Hygienic invasive thermowell system
- Installation and disassembly of the temperature sensor without interruption of process
- Wetted parts stainless steel mat.- no. 1.4435 (316L)
- Surface roughness $\leq 0,4 \mu\text{m}$, electropolished
- Deltaferrite content $< 3\%$
- Material certificate per DIN EN 10204-3.1
- Pipe standards:
 - DIN 11866 series A / EN 10357 (DIN 11850)
 - DIN 11866 series B / ISO1127
 - DIN 11866 series C / ASME BPE
- Design: straight or angled pipe system
- Instrument connection M12 x 1
- Nominal pressure: up to PN 25
- Suitable temperature sensor MiniTherm GA 2730, data sheet T4-017

Options

- Deltaferrite content $< 1 \%$

Application

The HIT thermowell system guarantees hygienic invasive temperature measuring, especially for the requirements of the food/pharmaceutica/biotechnology industry. The thermowell is orbitally welded into a pipe system, thus enables a sterile temperature measuring without any gasket. For the temperature measuring we recommend the temperature sensor MiniTherm GA2730, data sheet T4-017.

Technical data

Constructional design

Design	Thermowell, orbitally welded into a pipe system <ul style="list-style-type: none"> ■ Straight ■ Angled (90 °)
Instrument connection	M12 x 1
Nominal width	See table
Nominal pressure	Up to PN 25 per DIN 11865
Weight	See table

Material wetted parts

Thermowell	Stainless steel mat.-no. 1.4435 (316L)
Pipe system	Stainless steel mat.-no. 1.4435 (316L)
Deltaferrite content	< 3 %, optional < 1 %

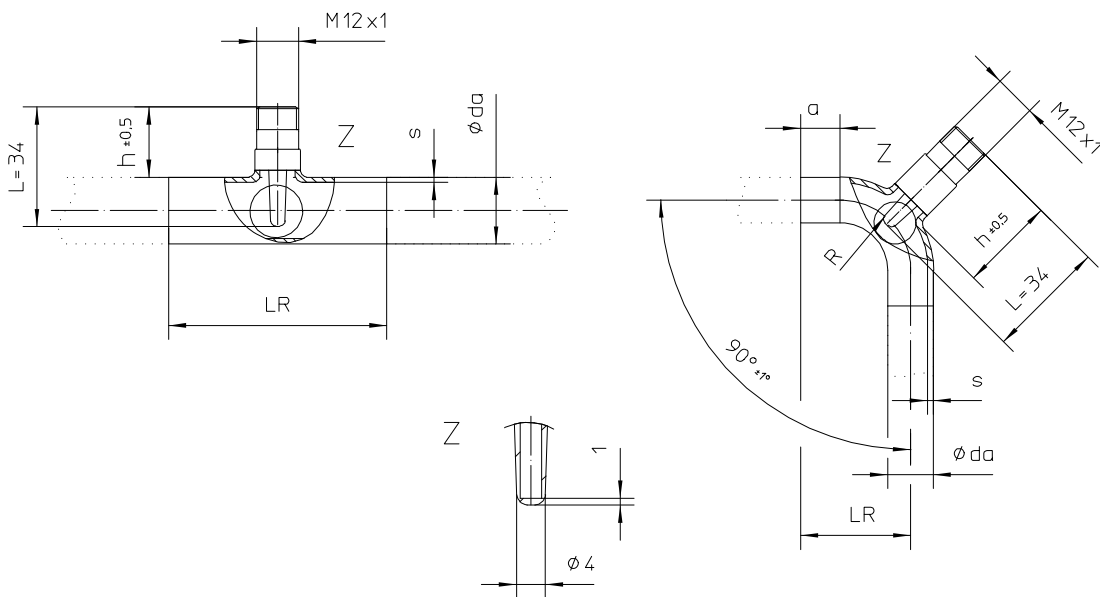
Surface wetted parts

Surface treatment	Electropolished
Roughness (inside)	≤ 0.4 μm (except welded seam)

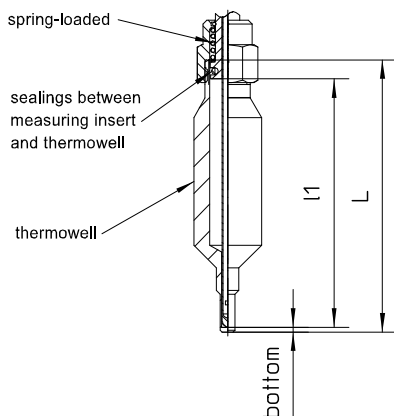
Temperature sensor

Temperature sensor	GA2730, data sheet T4-017
Screwing	Spring loaded union nut M12 x 1 with spring contact system for best heat transfer
Insertion length	Circular connector $l_1 = 29$ mm Field housing $l_1 = 33$ mm Design without neck tube
Response time:	without heat sink compound $t_{90} = 7$ s with heat sink compound $t_{90} = 6$ s

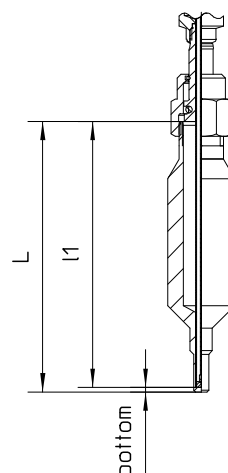
Dimensions



Design with circular connector



Design with field housing



Calculation of the insertion length of the measuring insert for:

Circular connector:

$$l_1 = L - 6 \text{ mm}$$

Field housing:

$$l_1 = L + 2 \text{ mm}$$

$$l_5 = l_1 + 48 \text{ mm}$$

Pipe dimension design: straight pipe system						
Standard	nominal width	pipe dimension (da x s)	LR	a	h	weight
DIN 11866 model A / EN 10357 (DIN 11850)	DN 10	13 x 1.5	70 mm	-	26 mm	40 g
	DN 15	19 x 1.5	70 mm	-	26 mm	55 g
	DN 20	23 x 1.5	80 mm	-	26 mm	100 g
	DN 25	29 x 1.5	100 mm	-	20 mm	120 g
	DN 32	35 x 1.5	110 mm	-	20 mm	150 g
DIN 11866 model B / ISO 1127	DN 13.5	13.5 x 1.6	64 mm	-	26 mm	40 g
	DN 17.2	17.2 x 1.6	68 mm	-	26 mm	55 g
	DN 21.3	21.3 x 1.6	72 mm	-	26 mm	100 g
	DN 26.9	26.9 x 1.6	110 mm	-	20 mm	150 g
	DN 33.7	33.7 x 2	120 mm	-	20 mm	190 g
DIN 11866 model C / ASME BPE	1/2"	12.7 x 1.65	95.2 mm	-	26 mm	50 g
	3/4"	19.05 x 1.65	101.6 mm	-	26 mm	80 g
	1"	25.4 x 1.65	108 mm	-	20 mm	200 g
	1 1/2"	38.1 x 1.65	120.6 mm	-	20 mm	250 g

Pipe dimension design: angle pipe system							
Standard	nominal width	pipe dimension (da x s)	LR	a	h	R	weight
DIN 11866 model A / EN 10357 (DIN 11850)	DN 10	13 x 1.5	51 mm	25 mm	26 mm	26	55 g
	DN 15	19 x 1.5	60 mm	25 mm	26 mm	35	70 g
	DN 20	23 x 1.5	65 mm	25 mm	26 mm	40	90 g
	DN 25	29 x 1.5	90 mm	40 mm	20 mm	50	110 g
	DN 32	35 x 1.5	95 mm	40 mm	20 mm	55	140 g
DIN 11866 model B / ISO 1127	DN 13.5	13.5 x 1.6	45 mm	25 mm	26 mm	20	55 g
	DN 17.2	17.2 x 1.6	53 mm	25 mm	26 mm	28	100 g
	DN 21.3	21.3 x 1.6	55 mm	25 mm	26 mm	30	150 g
	DN 26.9	26.9 x 1.6	68.5 mm	40 mm	20 mm	28.5	200 g
	DN 33.7	33.7 x 2	78 mm	40 mm	20 mm	38	220 g
DIN 11866 model C / ASME BPE	1/2"	12.7 x 1.65	76.2 mm	47.6 mm	26 mm	28.6	55 g
	3/4"	19.05 x 1.65	76.2 mm	47.6 mm	26 mm	28.6	75 g
	1"	25.4 x 1.65	76.2 mm	38.1 mm	20 mm	38.1	130 g
	1 1/2"	38.1 x 1.65	95.3 mm	38.1 mm	20 mm	57.2	200 g

3D view of an angled pipe system



Order details

Thermowell system HIT for Hygienic Invasive Temperature measuring, Type series HP1100

Order code Thermowell system HIT, HP1100			
HP1100	Thermowell system HIT for Hygienic Invasive Temperature measurement		
		standard	nominal width
B10	pipe dimension design: straight	DIN 11866 model A / EN 10357 (DIN 11850)	DN 10 (13 x 1.5)
B11			DN 15 (19 x 1.5)
B12			DN 20 (23 x 1.5)
B13			DN 25 (29 x 1.5)
B14			DN 32 (35 x 1.5)
B31		DIN 11866 model B / ISO 1127	DN 13.5 (13.5 x 1.6)
B32			DN 17.2 (17.2 x 1.6)
B33			DN 21.3 (21.3 x 1.6)
B34			DN 26.9 (26.9 x 1.6)
B35			DN 33.7 (33.7 x 2)
B80		DIN 11866 model C / ASME BPE	1/2" (12.7 x 1.65)
B81			3/4" (19.05 x 1.65)
B82			1" (25.4 x 1.65)
B83			1 1/2" (38.1 x 1.65)
C10	pipe dimension design: angled	DIN 11866 model A / EN 10357 (DIN 11850)	DN 10 (13 x 1.5)
C11			DN 15 (19 x 1.5)
C12			DN 20 (23 x 1.5)
C13			DN 25 (29 x 1.5)
C14			DN 32 (35 x 1.5)
C31		DIN 11866 model B / ISO 1127	DN 13.5 (13.5 x 1.6)
C32			DN 17.2 (17.2 x 1.6)
C33			DN 21.3 (21.3 x 1.6)
C34			DN 26.9 (26.9 x 1.6)
C35			DN 33.7 (26.9 x 1.6)
C80		DIN 11866 model C / ASME BPE	1/2" (12.7 x 1.65)
C81			3/4" (19.05 x 1.65)
C82			1" (25.4 x 1.65)
C83			1 1/2" (38.1 x 1.65)
G12.9	material thermowell	stainless steel mat.-no. 1.4435 (316L) deltaferrite content < 3 %	
G12.7		stainless steel mat.-no. 1.4435 (316L) deltaferrite content < 1 %	
P1	roughness	Internal surface Ra ≤ 0.4 μm, electropolished, external surface furbished	

Order code (example): HP1100 – B80 – G12.9 - P1