

In ACEZ, we specialize in developing high-quality products designed to enhance safety, efficiency, and performance in the hazardous environments.

We are excited to present two of our flagship products: the **ATEX sensor** and **Vanstone Thermowell**.

ATEX Sensor:

Safety is of paramount importance in the oil and gas industry, which is why we offer the ATEX sensor—an essential component for hazardous environments. Our ATEX sensors are designed and certified to meet the stringent requirements of the ATEX directive and IECEx, ensuring their suitability for use in potentially explosive atmospheres. With their advanced technology and rigorous testing, these sensors provide accurate and real-time data, allowing operators to monitor the temperature in hazardous locations. By integrating our ATEX sensors into their systems, our customers can mitigate risks, maintain compliance with safety regulations, and protect their personnel, assets, and the environment.

Vanstone Thermowell:

The Vanstone Thermowell is a cutting-edge solution that plays a crucial role in temperature measurement and protection within oil and gas processes. It is specifically engineered to withstand extreme conditions, ensuring accurate and reliable temperature monitoring in even the most demanding applications. Our Vanstone Thermowells are manufactured using advanced materials and techniques to provide exceptional strength, corrosion resistance, and thermal conductivity. With their robust construction, they effectively shield temperature sensors from the aggressive fluids and high pressures encountered in oil and gas operations, prolonging sensor lifespan and reducing maintenance costs. By leveraging the Vanstone Thermowell's superior performance, our customers can optimize their processes, improve safety, and minimize downtime.



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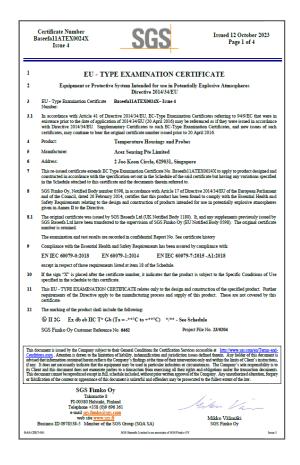
Ex-Proof Temperature Sensor Assembly (Type 2010 SLT, Type 2010 WT, & Type 2010 BT)

- IECEx/ATEX approved temperature sensor assembly suitable for use in hazardous environment such as Oil & Gas and Petrochemical industries.
- Wide range of thermowells with different materials and process connections to suit your requirements for different ranges of temperature
- Customised fabrication according to customer specifications



Area Classification for temperature housing and probes (T5)	(Ex II 2 G Ex db eb IIC T5 Gb Ta (-30°C to +80°C)
Area Classification for temperature housing and probes (T6)	(Ex) II 2 G Ex db eb IIC T6 Gb Ta (-30°C to +65°C)





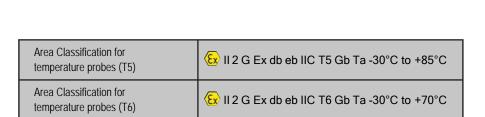


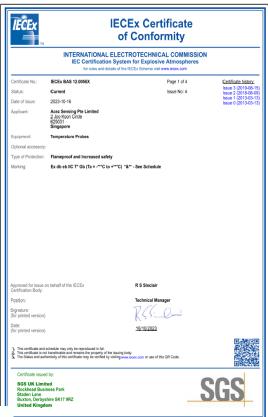
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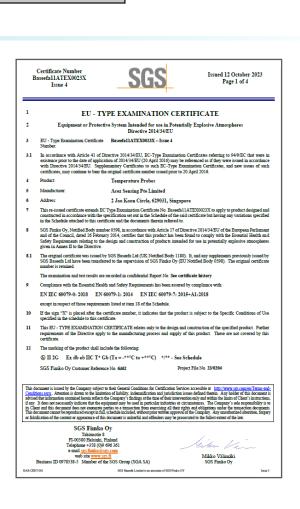


Ex-Proof Temperature Sensor Assembly (Type 2010 SLT, Type 2010 WT, & Type 2010 BT)

- IECEx/ATEX approved temperature sensor probes suitable for use in hazardous environment such as Oil & Gas and Petrochemical industries.
- Wide range of thermowells with different materials and process connections to suit your requirements for different ranges of temperature
- Integral Mount Temperature Transmitter with sensor.
- Customised fabrication according to customer specifications









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Ex designation

Temperature Class:

Gases are divided into temperature classes based on their different ignition temperatures. The electrical equipment in Group II is divided in parallel to this according to the maximum surface temperatures at which the Ex-atmosphere can be reached.

19

Maximum permitted housing or component temperature of the operating devices

11	12	13	14	15	16
450°C	300°C	200°C	135°C	100°C	85°C

Explosion groups:

The equipment group, amongst other items, appears again in this Designation Section. Group 1 comprises operating devices for coal mining where coal dust and methane atmospheres prevail. Group II applies to the "aboveground" areas such as chemistry, petrochemistry, mills (dusts) etc. Due to the different minimum ignition energies of the various gases, there is a further division into the categories IIA to IIC for the ignition protection classes "personal safety", "pressure resistant casing" and "sand casing"

CENELEC marking	Type of Gas	ignition energy/μJ
1	methane	280
IIA	propane	→ 180
IIB	ethylene	60 180
(IIC	hydrogen	< 60

Type of protection:

In areas where the occurrence of an explosive mixture of flammable materials and air cannot be prevented by applying primary explosion protection, special measures for the prevention of ignition sources are to be taken. For example: separation (o, q, m), exclusion (p), special mech. construction (db, eb), limitation of energy (ia, ib) or other methods (s).

Explosion protection

Use in hazardous areas:

Equipment which are certified according to Directive 2014/34/EU regulations carries a special marking. The device group appears first, then the device category and finally the atmos-phere reference(G) as and (D) ust.

For category II, the following classification applies:

Category 1 very high degree of safety / Safety is provided by 2 protective measures – even in cases of rarely occurring machine errors or 2 independent machine errors.

Application in zones 0, 1, 2 or 20, 21, 22, atmosphere G/D / Category 2 high degree of safety sufficient safety in cases of frequent machine errors/ in cases of 1 error

Application in zones 1, 2 or 21, 22, atmosphere G/D / Category 3 normal degree of safety sufficient safety in cases of failure-free operation

Application in zone 2/22, atmosphere G/D* (*non-conductivedusts)

Mark identifying explosion prevention (required in accordance with Directive 2014/34/EU)



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ATEX (Atmosphere Explosive)

Directive 2014/34/EU

Harmonises legal provisions of member states for devices and protection systems for designated use in potentially explosive areas.

Designation examples: Use in gaseous atmospheres: Use in dusty atmospheres: Use for mining applications: II 2 G Ex db eb IIC T6 II 2 D T90°C IP64 I M2 EEx ia l IP Code Temperature classes: (Data only for devices used in areas rendered potentially explosive by dust) In the event of a malfunction, the maximum temperature of a sur-Figure 1 Contact and foreign body protection: face that may be exposed to gas (in normal use with "n" type of protection). (Should not be used for dust ex-designations.) 5 = Protection against dust deposits $T1 = 450^{\circ}C$ 6 = protection against dust penetration $T2 = 300^{\circ}C$ Figure 2 Water protection $T3 = 200^{\circ}C$ Protection against: T4 = 135°C 0 = (no protection) $T5 = 100^{\circ}C$ 1 = vertically falling drip water $T6 = 85^{\circ}C$ 2 = drip water on operating device inclined to5° 3 = spray water **Explosion group** 4 = spray water (Data only for devices used in areas rendered potentially explosive by gas) 5 = jet waterI = Methane (mining) 6 = strong jet water IIA = such as Propane 7 = temporary immersion IIB = such as Ethylene 8 = continuous immersion IIC = most dangerous group (e.g. hydrogen) de IIC Ex G T90° **IP64** Ex Types of protection: Max. surface temperature Device group o = oil immersion (Data for devices used in areas rendered = Mining = high-pressure encapsulation potentially explosive by dust - rarely also II = all other explosive areas = sand encapsulation used in gas ex marking.) = pressure-resistant encapsulation - Maximum temperature of a surface Category = increased safety 1 = can be used in Zones 0 or 20 during a machine error (normal oper-= intrinsic safety (permitted for Zone 0*) 2 = can be used in Zones 1 or 21 *depending on the device category ation in the case of category 3 devices) 3 = can be used in Zones 2 or 22 ib = intrinsic safety (sufficient for Zone 1 (+ 2)) that can be reached by the ex atmosphere. M1= Mining ma = cast encapsulation(for Zone 0*)Evaluation by the user: (In case of firedamp, continuation of operation is possible) mb = (sufficient for Zone 1 (+ 2))a.) Limit temperature 1=2/3 of min. igniti = special protection M2= Mining on temperature of dust present = normal operation In normal (Must be switched off in case of firedamp) b.) Limit temperature 2=min. glow tempeconditions (only for Zone 2) rature of dust present minus 75k Atmosphere nA = non-sparking $G = \dot{G}as$ (applies for layer thicknesses of up nC = enclosed break D = DustnR = vapour-proof housing to 5mm) (Mining – no details) nL = energy limited The smaller value for the limit temperature

nZ = high-pressure encapsulation

tD = protected by housing (dust) pD = high-pressure encapsulation (dust)

iaD = Instrinsic safety dust (use for Zone 20*)

ibD= Instrinsic safety dust (sufficient for Zone 21 (and 22))

op = optical radiation (is, pr, sh)

mD= cast encapsulation (dust)

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must be above the indicated max. surface

temperature of the device.

Procedure for determining the

housing's leak tightness (A or B)

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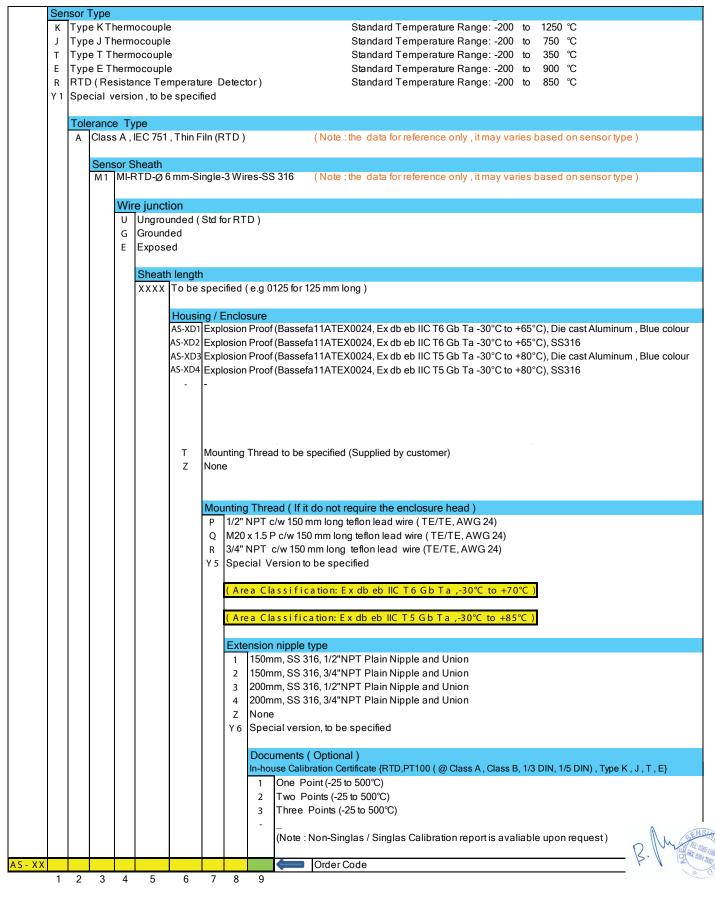
Zone



Ex-Proof (IECEx / ATEX) Temperature Sensor Assembly

Type 2010 SLT: Hexagonal Spring Loaded Type

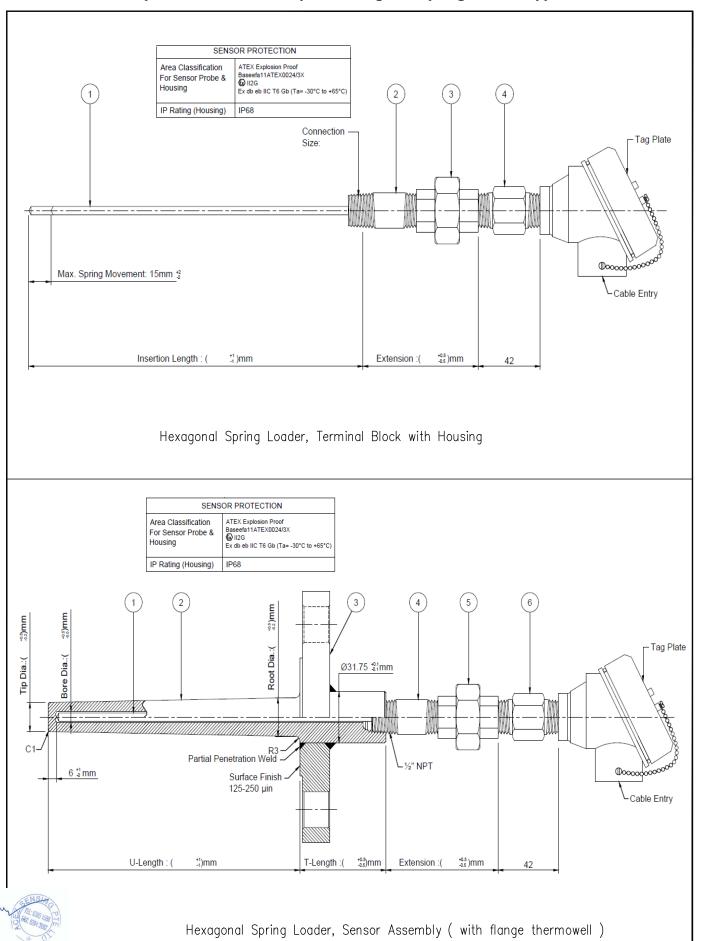
Type 2010 WT: Welded / Fixed Type



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TYPE 2010 SLT: Ex-proof Sensor Assembly c/w Hexagonal Spring Loaded Type

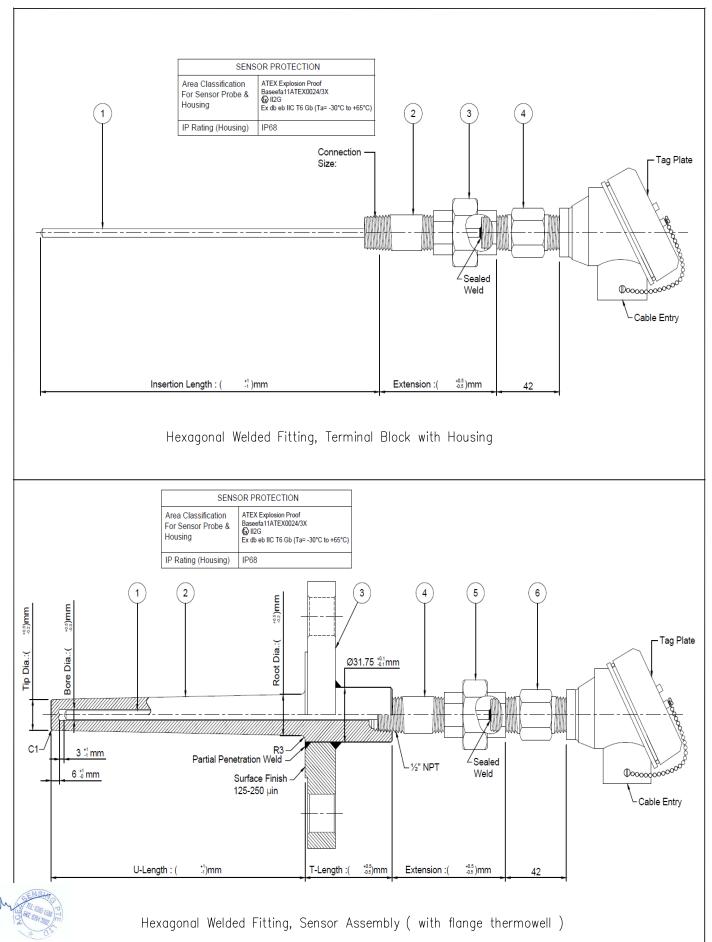


AS-SLT-2010: Ex-proof Sensor Assembly c/w Hexagonal Spring Loaded Type

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TYPE 2010 WT: Ex-proof Sensor Assembly c/w Welded Type

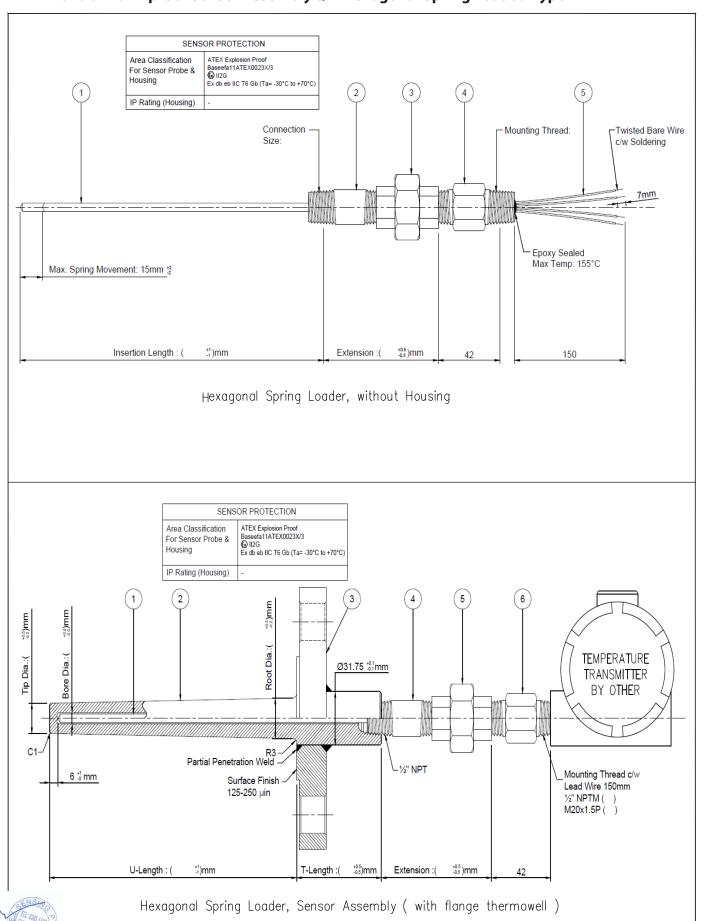


TYPE 2010 WT : Ex-proof Sensor Assembly c/w Welded Type

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TYPE 2010 SLT: Ex-proof Sensor Assembly c/w Hexagonal Spring Loaded Type

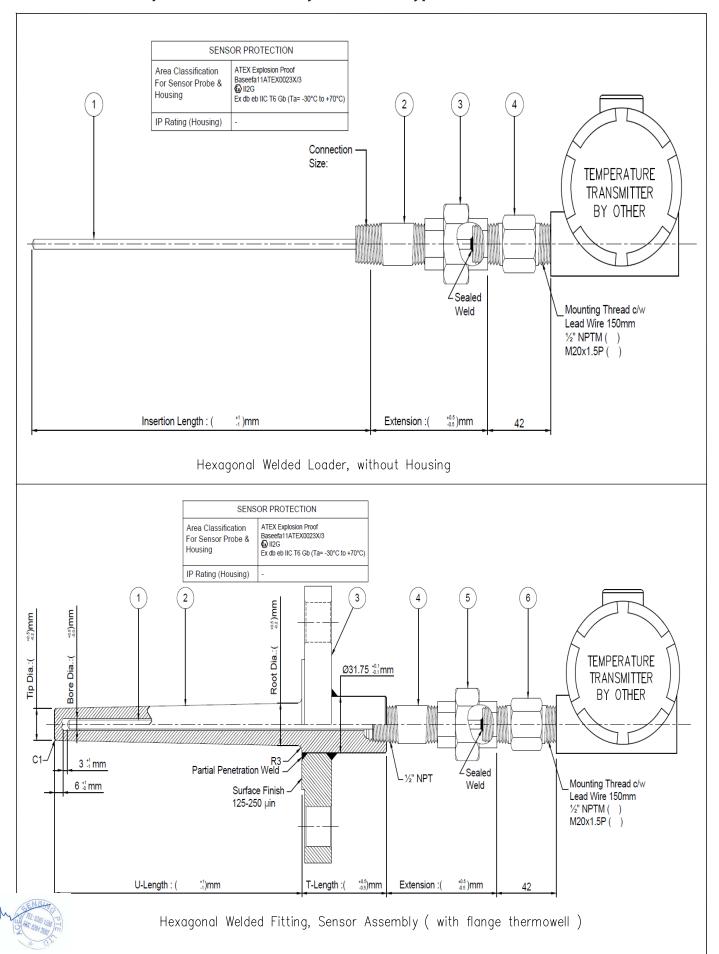


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TYPE 2010 WT: Ex-proof Sensor Assembly c/w Welded Type

TYPE 2010 WT: Ex-proof Sensor Assembly c/w Welded Type



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Shell Standard Thermowell

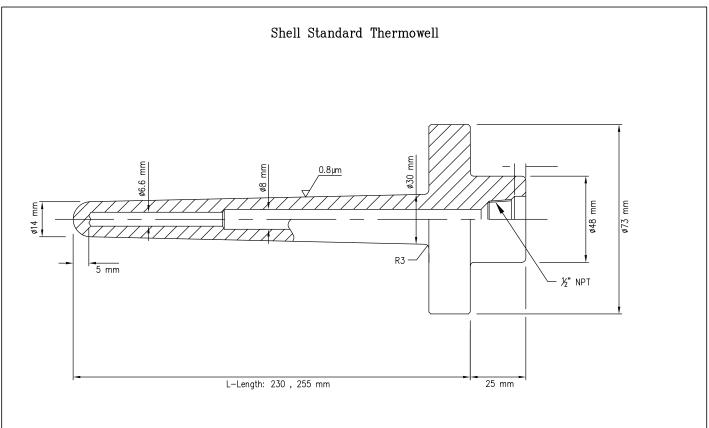
Thermowe	ll Stan	dard							
	Shell Standard S 38-113								
			data for reference only , it may varies upon request)						
S38-114-0	Shell Standard S 38-114 (Note: the data for reference only, it may varies upon request)								
	(Note: the data for reference only, it may varies upon request)								
	Conn	ectio	n fla	nge siz	ze				
	4LF1 DN40 (1-1/2"), 150 #LJF (RF)								
	4LF2 DN40 (1-1/2"), 300 # LJF (RF)								
	4LF3 DN40 (1-1/2"), 600 #LJF (RF)								
	4LF4 DN40 (1-1/2"), 900 #/1500# LJF (RF) 4LF5 DN40 (1-1/2"), 2500 # LJF (RF) (Note: the data for reference only, it may varies upon request)								
			ngth (mm) 230 mm 255 mm						
			305						
		L4	355 mm						
		L5	405 mm						
		L6	455	mm					
		-	/ NI -	to the	doto	for	foro	NO 001-	ly , it may varies upon request)
			(140	ne . me	udld	ю те	erenc	e only	iy ,itiliay valies upolitiequest)
				ermowe		ateria	al		
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				D M		lex F! el 40			
				-	IVIOII	C1 40	J		
					Ster	m dir	nensi	ons "	"Ø R ,ØT"
									Tip: Ø14 mm , Step Bore: Ø8mm ~ Ø6.5mm (For S38-113-0) Tip: Ø16 mm , Step Bore: Ø8mm ~ Ø6.5mm (For S38-114-0)
					-	-	1.2 00	,,,,,	11p. 210 mm, Olep 2016. 20mm 20.0mm (101 330-114-0)
									ensions
									iameter:Ø 73 mm , Thickness : 15 mm (For S38-113-0)
						D 5	Outsi	de Dia	iameter:Ø 92 mm, Thickness: 20 mm (For S38-114-0)
							Bore	_	meter "ØB"
							B 1	Step	Bore from 8 mm to 6.5 mm
							-	-	
								Instr	trument Connection
								-	-
									Documents (Optional) (Standard Specifications)
									1 Material Certificate EN 10204-3.1B
									2 Hydrostatics Test Report ASME B 16.5
									3 Dye Penetration Report ASTM E 165
									4 Wake Frequency Calculation ASME PTC 19.3 (2010)
							1		5 Certificate Of Conformance - Certificate Of Compliance -
							1		7 Certificate Of Origin -
									8 Warranty Certificate Only for manufacturing defect
									9 None -
							1		
							1		
									(Note: Please refer to "Page 39" for more details for test report and certificate
					L				, and the second of the second
S38-XXX-X									Order Code
	1	2	3	4	5	6	7	8	9

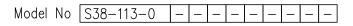
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Shell Standard Thermowell (S38-113-0 & S38-114-0)

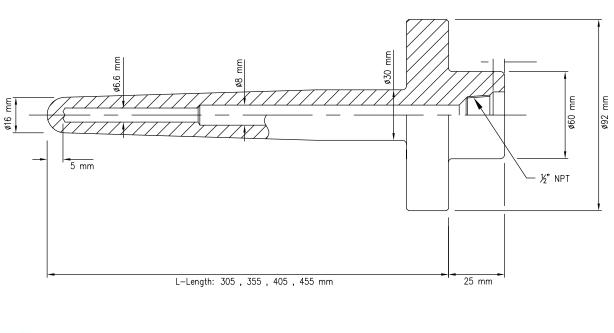
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Shell Standard Thermowell





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