

# **BAR STOCK, NPT CONNECTION, NO LAG**

# How to build a part number:

To order an Applied Sensor Technologies thermowell, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

PROCESS CONNECTION	STYLE	BORE	WELL LENGTH	WELL MATERIAL	OPTIONS

### **PROCESS CONNECTION (P)**

1 - 1/2" NPT

2 - 3/4" NPT

**3** – 1" NPT

5 - 1-1/2" NPT

#### **STYLE**

**S** – Stepped stem (0.260" bore only; for straight stem, see Options)

H - Tapered stem

#### **BORE**

**260** – 0.260" bore

385 - 0.385" bore

#### WELL LENGTH (in inches)\*

L# - Specify length of thermowell (e.g., L4=4")

Standard lengths:

**L4** - L=4"; U=2.5"

**L6** – L=6"; U=4.5"

**L9** - L=9"; U=7.5"

**L12** - L=12"; U=10.5"

**L15** - L=15"; U=13.5"

**L18** - L=18"; U=16.5"

**L24** - L=24"; U=22.5"

Specify other (L = U + 1.5")

### **WELL MATERIAL**

--- 304 stainless steel 316 L − 316 L stainless steel 400 − Monel 400® CS − Carbon steel

INC – Inconel 600®F11 – F11 carbon steel (forged)321 – 321 stainless steelF22 – F22 carbon steel (forged)ALUM – AluminumF91 – F91 carbon steel (forged)

**HAST** – Hastelloy C<sup>®</sup> **A20** – Alloy 20 **TTNM** – Titanium **BRASS** – Brass

### **OPTIONS**

TW01 - Stainless steel cap and chain assembly

TWO2 - Brass cap and chain assembly

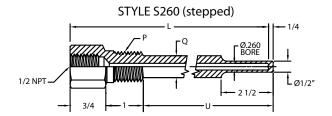
TAG2 - Stamped tag #

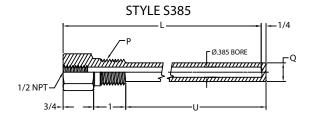
STRT - Straight stem

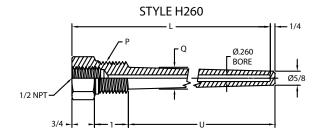
MTR1 - Material Test Report

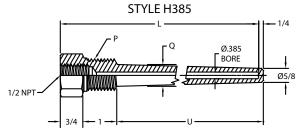
# Root Diameter (Q)

Process Connection =	1/2" NPT	3/4" NPT	1" NPT	1-1/2" NPT
S260 and S385	.63"	.75"	.88"	.88"
H260 and H385	.63"	.88"	1.06"	1.63"









<u>Wake Frequency Calculations</u> are available on all thermowell designs. Contact AST.

(\*) Thermowells with an overall length of 42" or less are machined from SOLID BAR STOCK. Thermowells with an overall length greater than 42" are constructed using a welded design and are available in straight, stepped or tapered design. However, for tapered only the last 16" are tapered.

# **BAR STOCK, NPT CONNECTION WITH LAG**

# How to build a part number:

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PROCESS CONNECTION	STYLE	BORE	WELL LENGTH	LAG EXTENSION	WELL MATERIAL	OPTIONS

#### **PROCESS CONNECTION (P)**

1 - 1/2" NPT

2 - 3/4" NPT

**3** - 1" NPT

5 - 1-1/2" NPT

#### STYLE

SL - NPT connection, stepped stem with lag extension (for straight stem, see Options)

**HL** - NPT connection, tapered stem, with lag extension

#### **BORE**

260 - 0.260" bore

385 - 0.385" bore

#### WELL LENGTH (in inches)\*

**L#** – Specify length of thermowell (e.g., L9=9") Standard lengths:

		U =		
	Length (L) =	If T = 2"	If T = 3"	
L6	6"	2.5"	1.5"	
L9	9"	5.5"	4.5"	
L12	12"	8.5"	7.5"	
L15	15"	11.5"	10.5"	
L18	18"	14.5"	13.5"	
L24	24"	20.5"	19.5"	

Specify other (L = U+T+1.5")

#### LAG EXTENSION (in inches)

T# - Specify length of lagging (e.g., T2 = 2" lag)

**T2** – 2" **T3** – 3" Specify other

# WELL MATERIAL

**---** 304 stainless steel **316L** − 316L stainless steel

**310** − 310 stainless steel **400** − Monel 400® **316** − 316 stainless steel **CS** − Carbon steel

INC – Inconel 600®F11 – F11 carbon steel (forged)321 – 321 stainless steelF22 – F22 carbon steel (forged)ALUM – AluminumF91 – F91 carbon steel (forged)

**HAST** – Hastelloy C<sup>®</sup> **A20** – Alloy 20 **TTNM** – Titanium **BRASS** – Brass

## **OPTIONS**

**TW01** – Stainless steel cap and chain assembly **TW02** – Brass cap and chain assembly **TAG2** –

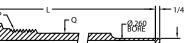
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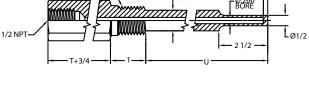
STRT - Straight stem

MTR1 - Material Test Report

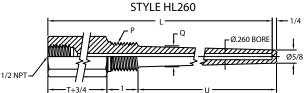
### Root Diameter (Q)

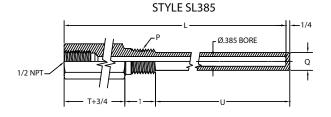
Process Connection =	1/2" NPT	3/4" NPT	1" NPT	1-1/2" NPT
SL260 and SL385	.63"	.75"	.88"	.88"
HL260 and HL385	.68"	.88"	1.06"	1.63"

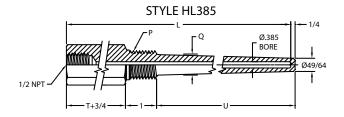




STYLE SL260







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# **BAR STOCK, NPT CONNECTION, LIMITED SPACE**

# How to build a part number:

To order an Applied Sensor Technologies thermowell, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

PROCESS CONNECTION	STYLE	BORE	WELL MATERIAL	OPTIONS

## **PROCESS CONNECTION (P)**

1 - 1/2" NPT

**2** – 3/4" NPT

**3** - 1" NPT

#### **STYLE**

LS - Limited space, straight stem

#### **BORE**

**260** – 0.260" bore

385 - 0.385" bore

#### **WELL MATERIAL**

**316L** − 316L stainless steel **310** − 310 stainless steel **400** − Monel 400® **316** − 316 stainless steel **CS** − Carbon steel

INC – Inconel 600®F11 – F11 carbon steel (forged)321 – 321 stainless steelF22 – F22 carbon steel (forged)ALUM – AluminumF91 – F91 carbon steel (forged)

**HAST** − Hastelloy C® **A20** − Alloy 20 **TTNM** − Titanium **BRASS** − Brass

#### **OPTIONS**

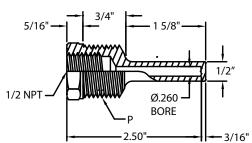
TW01 - Stainless steel cap and chain assembly

TWO2 - Brass cap and chain assembly

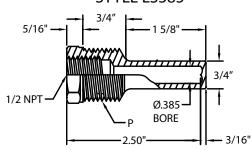
TAG2 - Stamped tag #

MTR1 - Material Test Report

# STYLE LS260



# STYLE LS385



<u>Wake Frequency Calculations</u> are available on all thermowell designs. Contact AST.



# **BAR STOCK, FLANGE CONNECTION**

# How to build a part number:

To order an Applied Sensor Technologies thermowell, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

STYLE	BORE	INSERTION LENGTH	WELL & FLANGE MATERIAL	FLANGE SIZE	FLANGE RATING	FLANGE TYPE	OPTIONS

#### <u>STYLE</u>

F - Flanged connection, stepped stem (for straight stem, see Options)

FH-Flanged connection, tapered stem

#### **BORE**

**260** - 0.260" bore

**385** - 0.385" bore

#### **INSERTION LENGTH** (in inches)\*

**U#** – Specify length below the flange (e.g., U4 = 4")

Standard lengths:

**U4** - U=4"; L=6" **U7** - U=7"; L=9" **U10** - U=10"; L=12" **U13** - U=13"; L=15" **U16** - U=16"; L=18" **U22** - U=22"; L=24"

Specify other (L = U + 2")

#### **WELL AND FLANGE MATERIAL**

**316** − 316 stainless steel **316** − 310 stainless steel **316** − 316 stainless steel

INC - Inconel 600®F11 - F11 carbon steel (forged)321 - 321 stainless steelF22 - F22 carbon steel (forged)ALUM - AluminumF91 - F91 carbon steel (forged)

**HAST** – Hastelloy C<sup>®</sup> **A20** – Alloy 20 **TTNM** – Titanium **BRASS** – Brass

# **FLANGE SIZE**

**1** – 1" flange **1.5** – 1.5" flange **2** – 2" flange **3** – 3" flange

**4** – 4" flange

#### **FLANGE RATING**

**150** – 150# rating **300** – 300# rating

**600** – 600# rating **900/1500** – 900/1500# rating

# **FLANGE TYPE**

RF - Welded, raised face (standard)

FF - Welded, flat face

RTJ - Ring type joint

#### **OPTIONS**

TW01 - Stainless steel cap and chain assembly

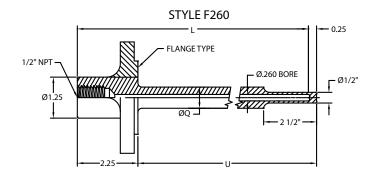
TWO2 - Brass cap and chain assembly

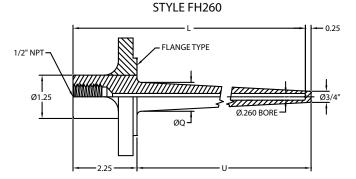
TAG2 - Stamped tag #

**STRT** – Straight stem

MTR1 - Material Test Report

TFLN - Teflon sleeve or coating





	Root Diameter (Q)
F260	0.75"
F385	0.75"
FH260 & 385	1" flange = .88" 1.5" flange = 1.06" All others = 1.25"

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# BAR STOCK, SOCKET-WELD CONNECTION, NO LAG

# How to build a part number:

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PROCESS CONNECTION	STYLE	BORE	WELL LENGTH	WELL MATERIAL	OPTIONS

## **PROCESS CONNECTION (P)**

2 - 3/4" pipe (OD = 1.05")

3 - 1" pipe (OD = 1.315")

5 - 1.1/2" pipe (OD = 1.90")

#### STYLE

**SW** – Socket-weld connection, stepped stem, no lag (for straight stem, see Options)

SWH - Socket-weld connection, tapered stem, no lag

#### **BORE**

260 - 0.260" bore

385 - 0.385" bore

#### WELL LENGTH (in inches)\*

L# - Specify length of thermowell (e.g., L4 = 4")

Standard lengths:

**L4** – L=4"; U=2.5" **L9** – L=9"; U=7.5" **L6** – L=6"; U=4.5" **L12** – L=12"; U=10.5"

**L15** – L=15"; U=13.5"

**L18** - L=18"; U=16.5"

**L24** - L=24"; U=22.5"

Specify other (L = U+1.5")

# **WELL MATERIAL**

**316L** – 316L stainless steel **310** – 310 stainless steel **400** – Monel 400®

**316** – 316 stainless steel **CS** – Carbon steel

INC - Inconel 600®F11 - F11 carbon steel (forged)321 - 321 stainless steelF22 - F22 carbon steel (forged)ALUM - AluminumF91 - F91 carbon steel (forged)

**HAST** – Hastelloy C<sup>®</sup> **A20** – Alloy 20 **TTNM** – Titanium **BRASS** – Brass

### **OPTIONS**

TW01 - Stainless steel cap and chain assembly

TWO2 - Brass cap and chain assembly

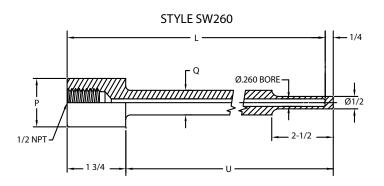
TAG2 - Stamped tag #

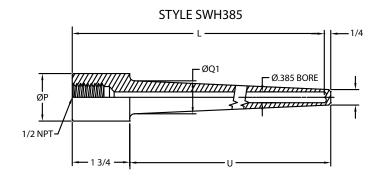
STRT - Straight stem

MTR1 - Material Test Report

### Root Diameter (Q)

Process Connection =	3/4" pipe	1" pipe	1.5" pipe
SW260 & 385	.75"	.88"	1.13"
SWH260 & 385	.75"	1.00"	1.25"
SWH Tip Diameter	.63"	.75"	.75"





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# **BAR STOCK, SOCKET-WELD CONNECTION WITH LAG**

# How to build a part number:

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PROCESS CONNECTION	STYLE	BORE	WELL LENGTH	LAG EXTENSION	WELL MATERIAL	OPTIONS

#### **PROCESS CONNECTION (P)**

2 - 3/4" pipe (OD = 1.05")

3 - 1" pipe (OD = 1.315")

5 - 1 - 1/2" pipe (OD = 1.90")

#### STYLE

SWL - Socket-weld connection, stepped stem, no lag (for straight stem, see Options)

**SWLH** – Socket-weld connection, tapered stem, no lag

#### **BORE**

260 - 0.260" bore

385 - 0.385" bore

#### WELL LENGTH (in inches)\*

**L#** – Specify length of thermowell (e.g., L9 = 9") Standard lengths:

		U =		
	Length (L) =	If T = 2"	If T = 3"	
L6	6"	2.5"	1.5"	
L9	9"	5.5"	4.5"	
L12	12"	8.5"	7.5"	
L15	15"	11.5"	10.5"	
L18	18"	14.5"	13.5"	
L24	24"	20.5"	19.5"	

Specify other (L = U+T+1.5")

# LAG EXTENSION (in inches)

**T#** – Specify length of lagging (e.g., T2=2" lag)

**T2** – 2" **T3** – 3" Specify other

#### **WELL MATERIAL**

**316L** − 316L stainless steel **316L** − 316L stainless steel **310** − 310 stainless steel **400** − Monel 400®

**316** – 316 stainless steel **CS** – Carbon steel

INC – Inconel 600®F11 – F11 carbon steel (forged)321 – 321 stainless steelF22 – F22 carbon steel (forged)ALUM – AluminumF91 – F91 carbon steel (forged)

**HAST** – Hastelloy C® **A20** – Alloy 20 **TTNM** – Titanium **BRASS** – Brass

#### **OPTIONS**

TW01 - Stainless steel cap and chain assembly

TWO2 - Brass cap and chain assembly

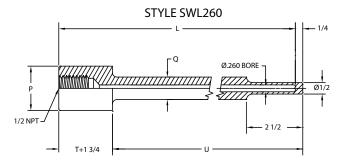
MTR1 - Material Test Report

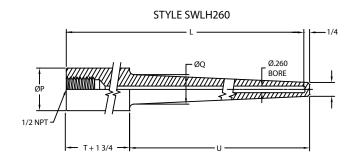
TAG2 - Stamped tag #

**STRT** – Straight stem

### Root Diameter (Q)

Process Connection =	3/4" pipe	1" pipe	1.5" pipe
SWL260 & 385	.75"	.88"	1.25"
SWLH260 & 385	.75"	1.00"	1.25"
SWLH Tip Diameter	.63"	.75"	.75"





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# **BAR STOCK, WELD-IN CONNECTION, NO LAG**

# How to build a part number:

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PROCESS CONNECTION	STYLE	BORE	WELL LENGTH	WELL MATERIAL	OPTIONS

### **PROCESS CONNECTION (P)**

2 - 3/4" pipe (OD = 1.05")

3 - 1" pipe (OD = 1.315")

5 - 1.1/2" pipe (OD = 1.90")

#### **STYLE**

WIH - Weld-in, tapered stem, no lag

### **BORE**

260 - 0.260" bore

385 - 0.385" bore

#### WELL LENGTH (in inches)\*

**L#** – Specify length of thermowell (e.g., L4 = 4'')

Standard lengths:

**L4** – L=4"; U=2.5"

**L6** - L=6"; U=4.5"

**L9** – L=9"; U=7.5"

**L12** – L=12"; U=10.5"

**L15** – L=15"; U=13.5"

**L18** - L18"; U16.5"

**L24** – L=24"; U=22.5"

Specify other (L = U+1.5")

#### **WELL MATERIAL**

**316L** − 316L stainless steel **316L** − 316L stainless steel **400** − Monel 400®

**310** – 310 stainless steel **400** – Monel 400 **316** – 316 stainless steel **CS** – Carbon steel

INC - Inconel 600®F11 - F11 carbon steel (forged)321 - 321 stainless steelF22 - F22 carbon steel (forged)ALUM - AluminumF91 - F91 carbon steel (forged)

**HAST** – Hastelloy C<sup>®</sup> **A20** – Alloy 20 **TTNM** – Titanium **BRASS** – Brass

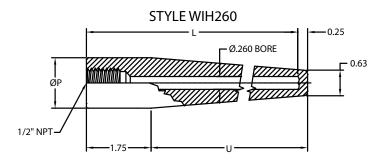
#### **OPTIONS**

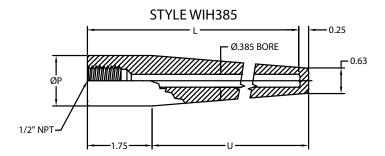
**TW01** – Stainless steel cap and chain assembly

TWO2 - Brass cap and chain assembly

TAG2 - Stamped tag #

MTR1 - Material Test Report





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# BAR STOCK, WELD-IN CONNECTION WITH LAG

## How to build a part number:

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PROCESS CONNECTION	STYLE	BORE	WELL LENGTH	LAG EXTENSION	WELL MATERIAL	OPTIONS

### **PROCESS CONNECTION (P)**

2 - 3/4" pipe (OD = 1.05")

3 - 1" pipe (OD = 1.315")

5 - 1.1/2" pipe (OD = 1.90")

#### STYLE

WIHL - Weld-in, tapered stem with lag extension

#### **BORE**

260 - 0.260" bore

385 - 0.385" bore

#### WELL LENGTH (in inches)\*

**L#** – Specify length of thermowell (e.g., L9 = 9") Standard lengths:

		U =		
	Length (L) =	If T = 2"	If T = 3"	
L6	6"	2.5"	1.5"	
L9	9"	5.5"	4.5"	
L12	12"	8.5"	7.5"	
L15	15"	11.5"	10.5"	
L18	18"	14.5"	13.5"	
L24	24"	20.5"	19.5"	

Specify other (L = U+T+1.5")

## **LAG EXTENSION (in inches)**

T# - Specify length of lagging (e.g., T2=2" lag)

**T2** – 2" **T3** – 3" **Specify other** 

# **WELL MATERIAL**

---- 304 stainless steel 316 L − 316L stainless steel 400 − Monel 400® 316 − 316 stainless steel CS − Carbon steel

INC - Inconel 600®F11 - F11 carbon steel (forged)321 - 321 stainless steelF22 - F22 carbon steel (forged)ALUM - AluminumF91 - F91 carbon steel (forged)

**HAST** – Hastelloy C<sup>®</sup> **A20** – Alloy 20 **TTNM** – Titanium **BRASS** – Brass

# **OPTIONS**

**TW01** – Stainless steel cap and chain assembly

TWO2 - Brass cap and chain assembly

TAG2 – Stamped tag #
MTR1 – Material Test Report

0.250 ØP 1/2" NPT

STYLE WIHL260

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# **BAR STOCK, VAN STONE FLANGE CONNECTION**

## How to build a part number:

To order an Applied Sensor Technologies thermowell, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

PROCESS CONNECTION	STYLE	BORE	INSERTION LENGTH	WELL MATERIAL	FLANGE MATERIAL	FLANGE RATING	OPTIONS

### **PROCESS CONNECTION (P)**

3 - 1" pipe (OD = 1.315", R = 2")

**5** – 1-1/2" pipe (OD = 1.90", R = 2-7/8")

#### **STYLE**

**VS** – Van Stone Flange, straight stem with step

#### **BORE**

**260** -0.260" bore (Q = 3/4")

**385** -0.385" bore (Q = 7/8")

#### **INSERTION LENGTH** (in inches)\*

**U#** – Specify length below the flange (e.g., U4 = 4")

Standard lengths:

**U2** - U=2"; L=4" **U4** - U=4"; L=6" **U7** - U=7"; L=9" **U10** - U=10"; L=12" **U13** - U=13"; L=14" **U16** - U=16"; L=18"

**U13** – U=13"; L=14" **U22** – U=22"; L=24"

Specify other (U = L-2")

# WELL MATERIAL

**316L** − 316L stainless steel **310** − 310 stainless steel **400** − Monel 400®

**316** – 316 stainless steel **CS** – Carbon steel **INC** – Inconel 600® **F11** – F11 carbon steel (forged)

**321** – 321 stainless steel **F22** – F22 carbon steel (forged) **ALUM** – Aluminum **F91** – F91 carbon steel (forged)

**HAST** − Hastelloy C® **A20** − Alloy 20 **TTNM** − Titanium **BRASS** − Brass

# **FLANGE MATERIAL**

**304** – 304 stainless steel **316** – 316 stainless steel

### **FLANGE RATING**

**150** – 150# rating

**300** - 300# rating

**600** – 600# rating

**900/1500** - 900/1500# rating

### **OPTIONS**

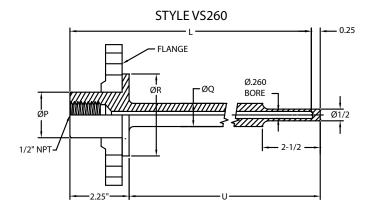
TW01 - Stainless steel cap and chain assembly

TWO2 - Brass cap and chain assembly

TAG2 - Stamped tag #

MTR1 - Material Test Report

TFLN - Teflon coating



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