

# Applicator Sizing - Flow

## Project : Saturated Steam

Customer: Stockpot  
Contact person: Andreas Duerig

Phone: (559) 300 7039  
eMail: andreas.duerig@processtec.com

C.Project No.:  
Fax:

## TAG : ---

Timestamp: ---

Review number: ---

Sales order number:

## Sizing Sheet

### General Parameters

Fluid	Steam, saturated		
State	Steam Saturated		
Character	Clean	Atmospheric Pressure	14.696 psi_a
Abrasivity	Not abrasive	Standard	ANSI (circular)
Fluid Group (PED)	Normal Fluid (Fluid group 2)		

### Operating Conditions

	minimum	nominal	maximum	
Requested Flow	2 000	7 500	16 000	lb/h
Pressure		110		psi_g
Temperature		344.1		°F
Density		0.2782		lb/ft3
Viscosity		3.32141		cSt
Sound Velocity		1 639		ft/s
Pressure (min/max)	110		110	psi_g
Temp. (min/max)	344.1		344.1	°F

### Flowmeter : Prowirl 73F

Flow Principle	Vortex (Prowirl)
Meter Size	4"
Minimum Flow	866.612 lb/h
Maximum Flow	31 359.2 lb/h
Material (sensor) *	SS CF3M / 316L
Process connection*	CI 150 ANSI / 316L/1.4404 ASME B16.5 flange
PED category** ** :	Application is Cat. I

### Order Code

Qty	Item	Description	Order Code
1	Flowmeter	Prowirl 73F	73F1H-SK***1

\*The user is responsible for the selection of process-wetted materials in view of their corrosion resistance. Endress + Hauser makes no guarantees and assumes no liability for the corrosion resistance of the materials selected here for the application described above.

\*\* The PED category is an Endress+Hauser recommendation and depends on the fluid category, process data as well from the max. permissible pressure of the selected pressure rating. The fluids of the Applicator data base are classified to 67/548/EWG.

Print date : 04.12.12 06:47 PM

- 1 / 4 -

Applicator®: 10.11.01 / 112

Under no circumstances is Endress + Hauser liable for errors, neither in the Software and in its documentation, nor for any errors and consequential damage which may arise out of their use. The results in Applicator apply to parameters entered by the user. A change in these parameters could lead to different results. Mandatory data are in the according technical information (TI).

# Applicator Sizing - Flow

## Project : Saturated Steam

Customer: Stockpot  
Contact person: Andreas Duerig

Phone: (559) 300 7039  
eMail: andreas.duerig@processtec.com

C.Project No.:  
Fax:

## TAG : ---

Timestamp: ---

Review number: ---

Sales order number:

## Sizing Sheet

### Sizing and Calculated Results

	minimum	nominal	maximum	
Requested Flow	2 000	7 500	16 000	lb/h
Pressure loss	0.025	0.358	1.629	psi
Velocity (meas. tube)	25.11	94.16	200.9	ft/s
Measured error Vol.***	1	1	1	%
Measured error Mass***	2.5	1.7	2	%
Reynolds No.		838 159		
Frequency		270.2		Hz

\*\*\*For error calculation, the specified reference conditions for the calibration of the flowmeter according to ISO/IEC 17025 apply. Further information in technical documentation.

### Warnings / Messages

Print date : 04.12.12 06:47 PM

- 2 / 4 -

Applicator®: 10.11.01 / 112

Under no circumstances is Endress + Hauser liable for errors, neither in the Software and in its documentation, nor for any errors and consequential damage which may arise out of their use. The results in Applicator apply to parameters entered by the user. A change in these parameters could lead to different results. Mandatory data are in the according technical information (TI).

# Applicator Sizing - Flow

## Project : Saturated Steam

Customer: Stockpot  
Contact person: Andreas Duerig

Phone: (559) 300 7039  
eMail: andreas.duerig@processtec.com

C.Project No.:  
Fax:

## TAG : ---

Timestamp: ---

Review number: ---

Sales order number:

## Fluid properties sheet

### Fluid

Fluid name	Steam, saturated	State	Steam Saturated
		Calculation standard	IAPWS

### Fluid description

Medium character	Clean		
Fluid group (PED)	Normal Fluid (Fluid group 2)		
Fluid stability	Stable		
Tc (Critical temperature)	754.1 °F	Tm (Melting point)	32.07 °F
Pc (Critical pressure)	332.137 psi	Tb (Boiling point)	212.1 °F
		kappa	1.29

### Calculated results

Density nominal	0.2782 lb/ft3	Pressure nominal	110 psi_g
Viscosity nom.	3.32141 cSt	Temperature nom.	344.1 °F
Sound velocity nom.	1 639 ft/s		
Vapor pressure nom.	124.7 psi_a		

### Reference values: Normal conditions (SI):

Atmospheric pressure 14.696 psi\_a

### Standard conditions (US):

Atmospheric pressure 14.696 psi\_a

# Applicator Sizing - Flow

## Project : Saturated Steam

Customer: Stockpot  
Contact person: Andreas Duerig

Phone: (559) 300 7039  
eMail: andreas.duerig@processtec.com

C.Project No.:

Fax:

TAG : ---

Timestamp: ---

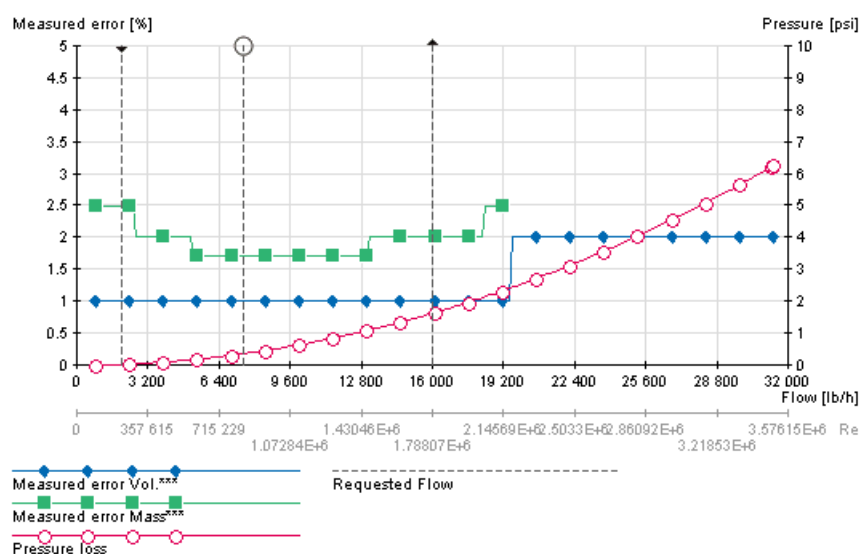
Review number: ---

Sales order number:

## Chart Sheet

### Flowmeter : Prowirl 73F

Flow Principle: Vortex (Prowirl)  
Meter Size: 4"  
Minimum Flow: 866.612 lb/h  
Maximum Flow: 31 359.2 lb/h



\*\*\*For error calculation, the specified reference conditions for the calibration of the flowmeter according to ISO/IEC 17025 apply. Further information in technical documentation.

Print date : 04.12.12 06:47 PM

- 4 / 4 -

Applicator®: 10.11.01 / 112

Under no circumstances is Endress + Hauser liable for errors, neither in the Software and in its documentation, nor for any errors and consequential damage which may arise out of their use. The results in Applicator apply to parameters entered by the user. A change in these parameters could lead to different results. Mandatory data are in the according technical information (TI).