Sizing - Flow

Project : TATU

Customer:		C.Project No.:
Contact person:	Phone:	Fax:
	eMail:	

TAG : ---

Timestamp:	---	Review number:	---

Sizing Sheet

General Parameters

Fluid	Oxygen (Gas)	Ref. Temperature	0°C
State	Gas	Ref. Pressure	1.013bar abs
Character	Clean	Atmospheric Pressure	1.0132 bar abs
Abrasivity	Not abrasive	Standard	EN/DIN (circular)
Fluid Group (PED)	Dangerous Fluid		

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	50	50	50	Nm3/h
Pressure		19		bar abs
Temperature		-40		°C
Density		32.431		kg/m3
Viscosity		0.0171		cP
Z-factor		0.9671		
Sound Velocity		286.4		m/s
Pressure (min/max)	19		19	bar abs
Temp. (min/max)	-40		-40	°C

Flowmeter : 65F - t-mass (TMF)

Meter Size	DN 15
Minimum Flow	0.406 Nm3/h
Calibrated Flow	40.557 Nm3/h
Maximum Flow	311.299 Nm3/h
Inner Diameter (Sensor)	13.9 mm
Material (sensor) *	SS 1.4404 / 316L
Process connection*	PN 40 EN 1092-1 B1 / 1.4404/316L flange
PED category ** :	Application meets PED (Art.3.3)

Order Code

Qty	Item	Description	Order Code
1	Flowmeter	65F - t-mass (TMF)	65F15-AE***1

*The user is responsible for the selection of process-wetted materials in view of their corrosion resistance. Endress+Hauser Flowtec AG 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 E+H 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.

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Sizing Sheet

Sizing and Calculated Results

	minimum	nominal	maximum	
Requested Flow	50	50	50	Nm3/h
Pressure loss	0.002	0.002	0.002	bar
Velocity (meas. tube)	4.033	4.033	4.033	m/s
Measured error Vol.***	n.a.	n.a.	n.a.	%
Measured error Mass***	1.5	n.a.	n.a.	%
Reynolds No.	106 342	106 342	106 342	

***For error calculation, the specified reference conditions for the calibration of the flowmeter according to ISO/IEC 17025 apply.

Warnings / Messages

1. Requested nom. Flow is in the extended flow range. (i.e. > calibrated range < max. operating range). Measured error statement is not possible in this range, because of the limitation of the calibration rigs. Please select next bigger diameter, if available. 2. Requested max. flow is in the extended flow range. (i.e. > calibrated range < max. operating range). Measured error statement is not possible in this range, because of the limitation of the calibration rigs. Please select next bigger diameter, if available.

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Tri-size Sheet

General Parameters

Fluid	Oxygen (Gas)	Ref. Temperature	0°C
State	Gas	Ref. Pressure	1.013bar abs
Character	Clean	Atmospheric Pressure	1.0132 bar abs
Abrasivity	Not abrasive	Standard	EN/DIN (circular)
Fluid Group (PED)	Dangerous Fluid		

Sizing and Calculated Results

	Next Smaller Size	Current Size	Next Bigger Size	
Inner Diameter (Sensor)		13.9	24.3	mm
Meter Size		DN 15	DN 25	
Process connection*		PN 40 EN 1092-1 B1 / 1.4404/316L	PN 40 EN 1092-1 B1 / 1.4404/316L	
Minimum Flow		0.406	1.24	Nm3/h
Calibrated Flow		40.557	123.951	Nm3/h
Maximum Flow		311.299	951.395	Nm3/h
Pressure loss at req. Flow min.		0.002	9.205E-5	bar
Pressure loss at req. Flow nom.		0.002	9.205E-5	bar
Pressure loss at req. Flow max.		0.002	9.205E-5	bar
Velocity (meas. tube) at req. Flow min.		4.033	1.32	m/s
Velocity (meas. tube) at req. Flow nom.		4.033	1.32	m/s
Velocity (meas. tube) at req. Flow max.		4.033	1.32	m/s
Measured error Vol. at req. Flow min.***		n.a.	n.a.	%
Measured error Vol. at req. Flow nom.***		n.a.	n.a.	%
Measured error Vol. at req. Flow max.***		n.a.	n.a.	%
Measured error Mass at req. Flow min.***		1.5	1.5	%
Measured error Mass at req. Flow nom.***		n.a.	1.5	%
Measured error Mass at req. Flow max.***		n.a.	1.5	%
Reynolds No.		106 342	60 829	

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***For error calculation, the specified reference conditions for the calibration of the flowmeter according to ISO/IEC 17025 apply.

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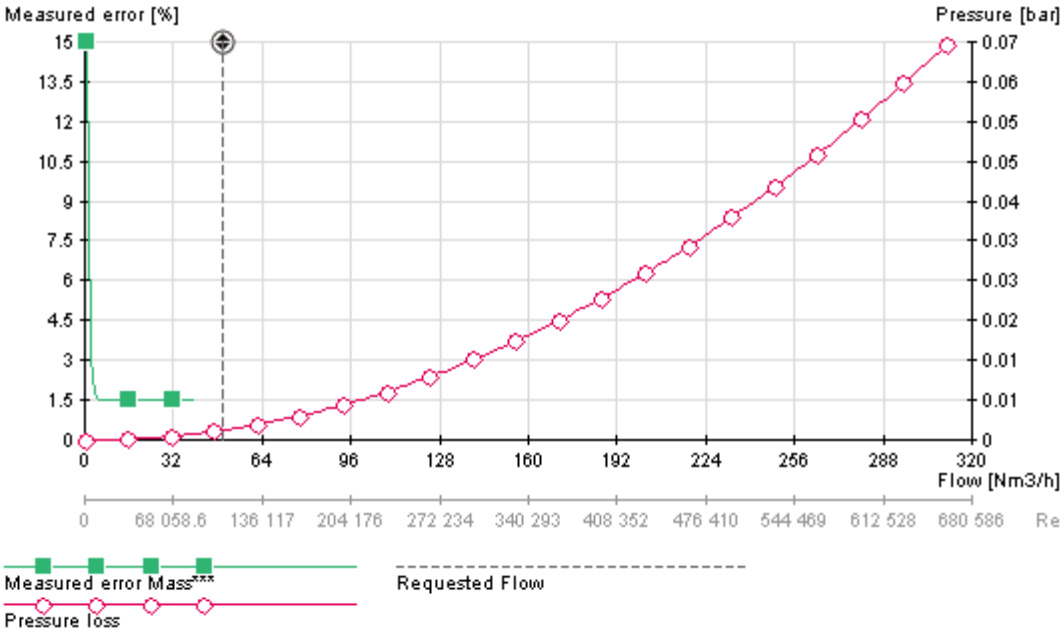
Chart Sheet

Flowmeter : 65F - t-mass (TMF)

Meter Size	DN 15
Minimum Flow	0.406 Nm3/h
Calibrated Flow	40.557 Nm3/h
Maximum Flow	311.299 Nm3/h
Inner Diameter (Sensor)	13.9 mm



***For error calculation, the specified reference conditions for the calibration of the flowmeter according to ISO/IEC 17025 apply.

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Corrosion Information

General Parameters

Fluid	Oxygen (Gas)	Abrasivity	Not abrasive
State	Gas		
Character	Clean		

Interpretation of Data, (M) Material:

A:	resistant,	0.05 mm/y (0.002 inches/y)
B:	unsufficent resistant,	0.5 mm/y (0.02 inches/y)
C:	not resistant,	1.3 mm/y (0.05 inches/y)
NR:	not recommended	
U:	unknown	

Interpretation of Data, (P) Plastics:

A:	resistant,	15% vol. Swelling/y;	15% Loss of Tensile Strength/y
B:	unsufficent resistant,	30% vol. Swelling/y;	30% Loss of Tensile Strength/y
C:	not resistant,	50% vol. Swelling/y;	60% Loss of Tensile Strength/y
NR:	not recommended		
U:	unknown		

	Temperature		
Material *	minimum-40°C	nominal : -40°C	maximum : -40°C
(P) EPDM	U	U	U
(M) Hastalloy C Alloy C-22/2.4602	A	A	A
(P) Kalrez	A	A	A
(P) PEEK	A	A	A
(M) Stainless steel 316L/1.4404	A	A	A
(P) Viton	A	A	A

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