

Applicator Sizing - Condensed (Flow)

Project

Project	10016679 / Oil Metering (Coriolis)
C.Project No.	0
Customer:	CONPET
TAG	Baicoi Centru
Timestamp	07.12.2016 01:42 PM
Review number	2
Sales order number	
Contact person	---
eMail:	---
Phone	---
Fax	---



General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-
State	Liquid
Character	Suspension
Abrasivity	Not abrasive
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)
Fluid Type	Newtonian
Atmospheric Pressure	1,0132 bar_a
Standard	EN/DIN/ISO

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	18	55	60	m3/h
Pressure		5		bar_g
Temperature		16		°C
Density		830		kg/m3
Viscosity		20		cSt
Sound velocity	1 681	1 681	1 681	m/s
Pressure (min/max)	2		6	bar_g
Temp. (min/max)	16		16	°C
Vapor Pressure	0,0156	0,0156	0,0156	bar_a

Flowmeter

Flowmeter	Promass F 300 / DM: 1
Flow Principle	Coriolis (Promass)
Extended order code	8F3B80-*****SAD2S*A1+DCLK
Meter Size	DN 80
Operating range min.	0 m3/h
Operating range max.	216,867 m3/h
Material (sensor) *	SS 1.4539 / 904L
Process connection*	PN 40 EN 1092-1 B1, 1.4404/316L Flange
PED category ** :	The Flowmeter is classified in Category II. Devices in this category need to be approved and tested to PED requirements.

*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.

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

Sizing and Calculated Results

	minimum	nominal	maximum	
Requested Flow	18	55	60	m3/h
Velocity	0,995	3,039	3,316	m/s
Velocity Max.	1,941	5,93	6,469	m/s
Pressure loss	29,31	192,65	223,99	mbar
Measured error Vol.***	0,1	0,1	0,1	%
Measured error Mass***	0,1	0,1	0,1	%
Meas. error Mass-PremiumCal***	0,06	0,05	0,05	%
Reynolds No.	3 930	12 008	13 099	

Warnings

Messages

Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

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C.Project No.: 0

Fax: ---

TAG : Baicoi Centru

Timestamp: 07.12.2016 01:42 PM

Review number: 2

Sales order number:

Tri-Size Sheet

General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-		
State	Liquid		
Character	Suspension	Atmospheric Pressure	1,0132 bar_a
Abrasivity	Not abrasive	Standard	EN/DIN/ISO
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)		
Fluid Type	Newtonian		

Sizing and Calculated Results

	Next Smaller Size	Current Size	Next Bigger Size	
Flow meter	Promass F 300 / DM: 1	Promass F 300 / DM: 1	Promass F 300 / DM: 1	
Flow Principle	Coriolis (Promass)	Coriolis (Promass)	Coriolis (Promass)	
Meter Size	DN 50	DN 80	DN 100	
Process connection*	PN 40 EN 1092-1 B1, 1.4404/316L	PN 40 EN 1092-1 B1, 1.4404/316L	PN 16 EN 1092-1 B1, 1.4404/316L	
Operating range min.	0	0	0	m3/h
Operating range max.	84,337	216,867	421,687	m3/h
Velocity at req. Flow min.	2,546	0,995	0,637	m/s
Velocity at req. Flow nom.	7,781	3,039	1,945	m/s
Velocity at req. Flow max.	8,488	3,316	2,122	m/s
Velocity max. at req. Flow min.	4,709	1,941	1,214	m/s
Velocity max. at req. Flow nom.	14,39	5,93	3,71	m/s
Velocity max. at req. Flow max.	15,7	6,469	4,048	m/s
Pressure loss at req. Flow min.	158,07	29,31	12,42	mbar
Pressure loss at req. Flow nom.	1 103,8	192,65	75,03	mbar
Pressure loss at req. Flow max.	1 289,21	223,99	86,69	mbar
Meas. error Vol. at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Spec. Mass at req. Flow min.***	0,05	0,06	0,09	%
Meas. error Spec. Mass at req. Flow nom.***	0,05	0,05	0,05	%
Meas. error Spec. Mass at req. Flow max.***	0,05	0,05	0,05	%
Reynolds No.	18 704	12 008	9 498	
Warnings				

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Baicoi Centru

Timestamp: 07.12.2016 01:42 PM

Review number: 2

Sales order number:

Chart Sheet

Flowmeter: Promass F 300 / DM: 1

Flow Principle Coriolis (Promass)

Meter Size DN 80

Operating range min. 0 m3/h

Operating range max. 216,867 m3/h

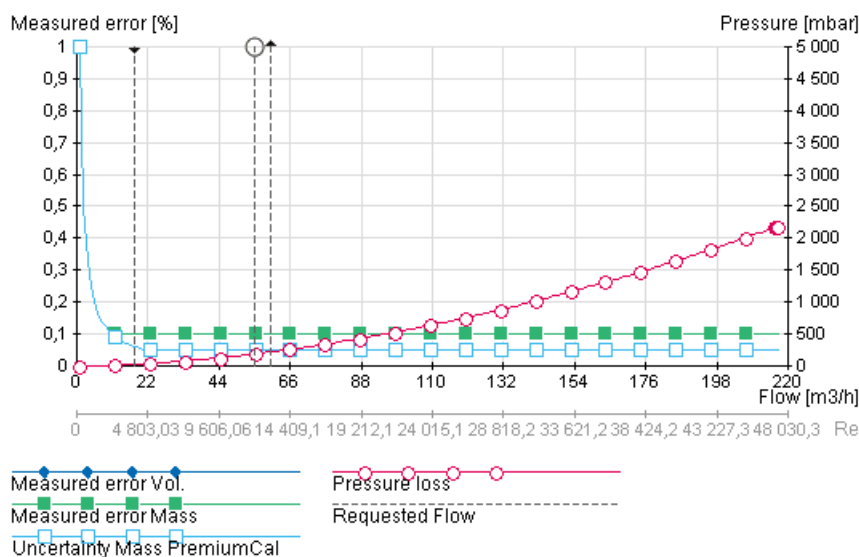
Fluid Oil, Crude (Mexico) -MODIFIED-

Pressure 5 bar_g

Temperature 16 °C

Density 830 kg/m3

Viscosity 20 cSt



Flow rate(%)	Flow rate (m3/h)	Pressure loss (mbar)	Measured error Volume(%)	Measured error Mass(%)	Measured error spec. Mass(%)
10	21,687	39,841	0,1	0,1	0,05
20	43,373	128,038	0,1	0,1	0,05
30	65,06	257,844	0,1	0,1	0,05
40	86,747	426,653	0,1	0,1	0,05
50	108,434	632,9	0,1	0,1	0,05
60	130,12	875,497	0,1	0,1	0,05
70	151,807	1 153,626	0,1	0,1	0,05
80	173,494	1 466,641	0,1	0,1	0,05
90	195,181	1 814,014	0,1	0,1	0,05
100	216,867	2 195,299	0,1	0,1	0,05

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Applicator Sizing - Condensed (Flow)

Project

Project	10016679 / Oil Metering (Coriolis)
C.Project No.	0
Customer:	CONPET
TAG	Baicoi Vest
Timestamp	25.10.2016 02:02 PM
Review number	1
Sales order number	
Contact person	---
eMail:	---
Phone	---
Fax	---



General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-
State	Liquid
Character	Suspension
Abrasivity	Not abrasive
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)
Fluid Type	Newtonian
Atmospheric Pressure	1,0132 bar_a
Standard	ASME/(ANSI)

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	18	50	60	m3/h
Pressure		6		bar_g
Temperature		44		°C
Density		844		kg/m3
Viscosity		6,5		cSt
Sound velocity	1 681	1 681	1 681	m/s
Pressure (min/max)	6		6	bar_g
Temp. (min/max)	44		44	°C
Vapor Pressure	0,0835	0,0835	0,0835	bar_a

Flowmeter

Flowmeter	Promass F 300 / DM: 1
Flow Principle	Coriolis (Promass)
Extended order code	8F3B80-*****SAAAS*A1+DC
Meter Size	3"
Operating range min.	0 m3/h
Operating range max.	213,27 m3/h
Material (sensor) *	SS 1.4539 / 904L
Process connection*	Cl.150 ASME B16.5, F316/F316L/1.4404 Flange
PED category ** :	In observance of the selected process conditions and medium, Applicator categorizes this application as PED Art.4.3. Applicator suggests an instrument without PED option.

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	18	50	60	m3/h
Velocity	0,995	2,763	3,316	m/s
Velocity Max.	1,941	5,391	6,469	m/s
Pressure loss	20,94	126,9	176,2	mbar
Measured error Vol.***	0,1	0,1	0,1	%
Measured error Mass***	0,1	0,1	0,1	%
Meas. error Mass-PremiumCal***	0,06	0,05	0,05	%
Reynolds No.	12 092	33 588	40 305	

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***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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Baicoi Vest

Timestamp: 25.10.2016 02:02 PM

Review number: 1

Sales order number:

Tri-Size Sheet

General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-		
State	Liquid		
Character	Suspension	Atmospheric Pressure	1,0132 bar_a
Abrasivity	Not abrasive	Standard	ASME/(ANSI)
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)		
Fluid Type	Newtonian		

Sizing and Calculated Results

	Next Smaller Size	Current Size	Next Bigger Size	
Flow meter	Promass F 300 / DM: 1	Promass F 300 / DM: 1	Promass F 300 / DM: 1	
Flow Principle	Coriolis (Promass)	Coriolis (Promass)	Coriolis (Promass)	
Meter Size	2"	3"	4"	
Process connection*	Cl.150 ASME B16.5, F316/F316L/1.4404	Cl.150 ASME B16.5, F316/F316L/1.4404	Cl.150 ASME B16.5, F316/F316L/1.4404	
Operating range min.	0	0	0	m3/h
Operating range max.	82,938	213,27	414,692	m3/h
Velocity at req. Flow min.	2,546	0,995	0,637	m/s
Velocity at req. Flow nom.	7,074	2,763	1,768	m/s
Velocity at req. Flow max.	8,488	3,316	2,122	m/s
Velocity max. at req. Flow min.	4,709	1,941	1,214	m/s
Velocity max. at req. Flow nom.	13,08	5,391	3,373	m/s
Velocity max. at req. Flow max.	15,7	6,469	4,048	m/s
Pressure loss at req. Flow min.	120,03	20,94	8,15	mbar
Pressure loss at req. Flow nom.	765,56	126,9	46,14	mbar
Pressure loss at req. Flow max.	1 072,03	176,2	63,36	mbar
Meas. error Vol. at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Spec. Mass at req. Flow min.***	0,05	0,06	0,09	%
Meas. error Spec. Mass at req. Flow nom.***	0,05	0,05	0,05	%
Meas. error Spec. Mass at req. Flow max.***	0,05	0,05	0,05	%
Reynolds No.	52 319	33 588	26 568	
Warnings				

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Baicoi Vest

Timestamp: 25.10.2016 02:02 PM

Review number: 1

Sales order number:

Chart Sheet

Flowmeter: Promass F 300 / DM: 1

Flow Principle Coriolis (Promass)

Meter Size 3"

Operating range min. 0 m3/h

Operating range max. 213,27 m3/h

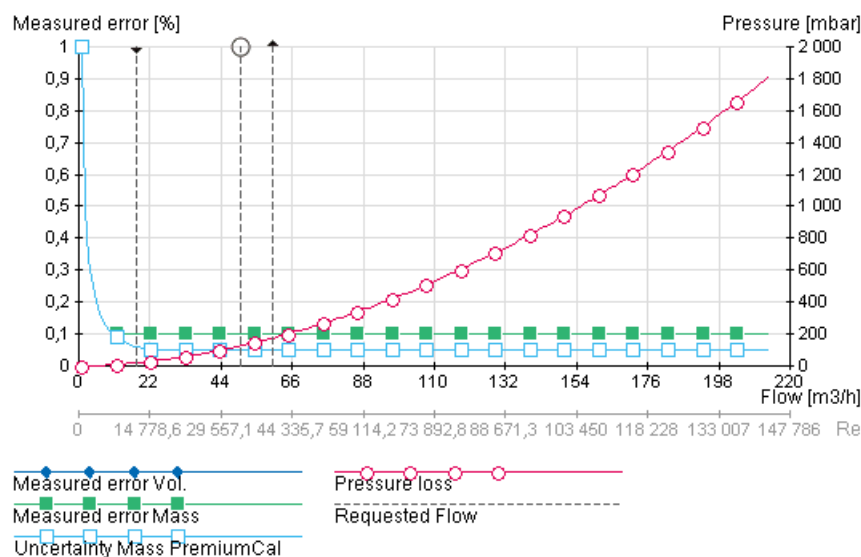
Fluid Oil, Crude (Mexico) -MODIFIED-

Pressure 6 bar_g

Temperature 44 °C

Density 844 kg/m3

Viscosity 6,5 cSt



Flow rate(%)	Flow rate (m3/h)	Pressure loss (mbar)	Measured error Volume(%)	Measured error Mass(%)	Measured error spec. Mass(%)
10	21,327	28,112	0,1	0,1	0,05
20	42,654	95,488	0,1	0,1	0,05
30	63,981	197,887	0,1	0,1	0,05
40	85,308	333,648	0,1	0,1	0,05
50	106,635	501,764	0,1	0,1	0,05
60	127,962	701,531	0,1	0,1	0,05
70	149,289	932,419	0,1	0,1	0,05
80	170,616	1 194,009	0,1	0,1	0,05
90	191,943	1 485,955	0,1	0,1	0,05
100	213,27	1 807,966	0,1	0,1	0,05

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Applicator Sizing - Condensed (Flow)

Project

Project	10016679 / Oil Metering (Coriolis)
C.Project No.	0
Customer:	CONPET
TAG	Padure II
Timestamp	25.10.2016 02:04 PM
Review number	1
Sales order number	
Contact person	---
eMail:	---
Phone	---
Fax	---



General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-
State	Liquid
Character	Suspension
Abrasivity	Not abrasive
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)
Fluid Type	Newtonian
Atmospheric Pressure	1,0132 bar_a
Standard	ASME/(ANSI)

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	18	65	70	m3/h
Pressure		10		bar_g
Temperature		43		°C
Density		850		kg/m3
Viscosity		9,7		cSt
Sound velocity	1 681	1 681	1 681	m/s
Pressure (min/max)	10		10	bar_g
Temp. (min/max)	43		43	°C
Vapor Pressure	0,0791	0,0791	0,0791	bar_a

Flowmeter

Flowmeter	Promass F 300 / DM: 1
Flow Principle	Coriolis (Promass)
Extended order code	8F3B80-*****SAAAS*A1+DC
Meter Size	3"
Operating range min.	0 m3/h
Operating range max.	211,765 m3/h
Material (sensor) *	SS 1.4539 / 904L
Process connection*	Cl.150 ASME B16.5, F316/F316L/1.4404 Flange
PED category ** :	In observance of the selected process conditions and medium, Applicator categorizes this application as PED Art.4.3. Applicator suggests an instrument without PED option.

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	18	65	70	m3/h
Velocity	0,995	3,592	3,868	m/s
Velocity Max.	1,941	7,008	7,547	m/s
Pressure loss	23,64	222,32	253,84	mbar
Measured error Vol.***	0,1	0,1	0,1	%
Measured error Mass***	0,1	0,1	0,1	%
Meas. error Mass-PremiumCal***	0,06	0,05	0,05	%
Reynolds No.	8 103	29 259	31 510	

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***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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Padure II

Timestamp: 25.10.2016 02:04 PM

Review number: 1

Sales order number:

Tri-Size Sheet

General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-		
State	Liquid		
Character	Suspension	Atmospheric Pressure	1,0132 bar_a
Abrasivity	Not abrasive	Standard	ASME/(ANSI)
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)		
Fluid Type	Newtonian		

Sizing and Calculated Results

	Next Smaller Size	Current Size	Next Bigger Size	
Flow meter	Promass F 300 / DM: 1	Promass F 300 / DM: 1	Promass F 300 / DM: 1	
Flow Principle	Coriolis (Promass)	Coriolis (Promass)	Coriolis (Promass)	
Meter Size	2"	3"	4"	
Process connection*	Cl.150 ASME B16.5, F316/F316L/1.4404	Cl.150 ASME B16.5, F316/F316L/1.4404	Cl.150 ASME B16.5, F316/F316L/1.4404	
Operating range min.	0	0	0	m3/h
Operating range max.	82,353	211,765	411,765	m3/h
Velocity at req. Flow min.	2,546	0,995	0,637	m/s
Velocity at req. Flow nom.	9,196	3,592	2,299	m/s
Velocity at req. Flow max.	9,903	3,868	2,476	m/s
Velocity max. at req. Flow min.	4,709	1,941	1,214	m/s
Velocity max. at req. Flow nom.	17	7,008	4,385	m/s
Velocity max. at req. Flow max.	18,31	7,547	4,722	m/s
Pressure loss at req. Flow min.	132,65	23,64	9,47	mbar
Pressure loss at req. Flow nom.	1 332,32	222,32	81,53	mbar
Pressure loss at req. Flow max.	1 526,63	253,84	92,66	mbar
Meas. error Vol. at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Spec. Mass at req. Flow min.***	0,05	0,06	0,09	%
Meas. error Spec. Mass at req. Flow nom.***	0,05	0,05	0,05	%
Meas. error Spec. Mass at req. Flow max.***	0,05	0,05	0,05	%
Reynolds No.	45 577	29 259	23 145	
Warnings				

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Padure II

Timestamp: 25.10.2016 02:04 PM

Review number: 1

Sales order number:

Chart Sheet

Flowmeter: Promass F 300 / DM: 1

Flow Principle Coriolis (Promass)

Meter Size 3"

Operating range min. 0 m3/h

Operating range max. 211,765 m3/h

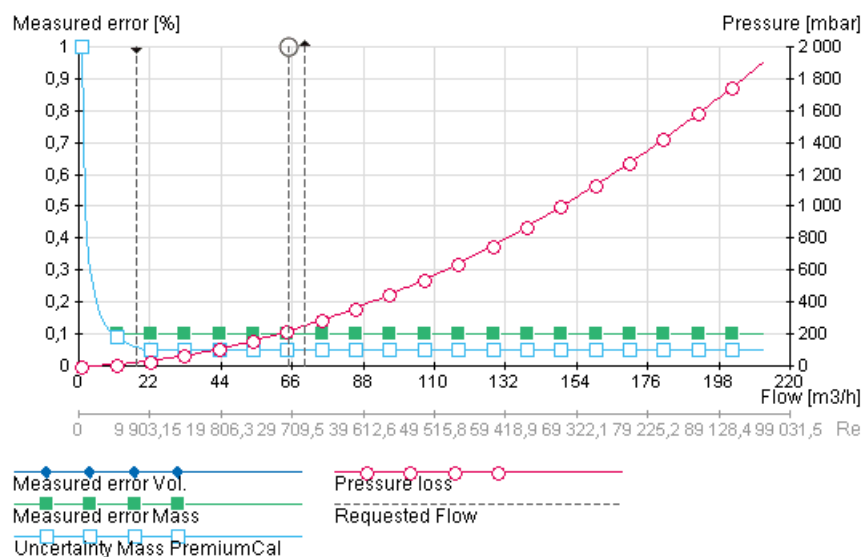
Fluid Oil, Crude (Mexico) -MODIFIED-

Pressure 10 bar_g

Temperature 43 °C

Density 850 kg/m3

Viscosity 9,7 cSt



Flow rate(%)	Flow rate (m3/h)	Pressure loss (mbar)	Measured error Volume(%)	Measured error Mass(%)	Measured error spec. Mass(%)
10	21,176	31,197	0,1	0,1	0,05
20	42,353	103,988	0,1	0,1	0,05
30	63,529	213,419	0,1	0,1	0,05
40	84,706	357,561	0,1	0,1	0,05
50	105,882	535,248	0,1	0,1	0,05
60	127,059	745,666	0,1	0,1	0,05
70	148,235	988,203	0,1	0,1	0,05
80	169,412	1 262,374	0,1	0,1	0,05
90	190,588	1 567,783	0,1	0,1	0,05
100	211,765	1 904,093	0,1	0,1	0,05

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Applicator Sizing - Condensed (Flow)

Project

Project	10016679 / Oil Metering (Coriolis)
C.Project No.	0
Customer:	CONPET
TAG	Mislea
Timestamp	25.10.2016 02:06 PM
Review number	1
Sales order number	
Contact person	---
eMail:	---
Phone	---
Fax	---



General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-
State	Liquid
Character	Suspension
Abrasivity	Not abrasive
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)
Fluid Type	Newtonian
Atmospheric Pressure	1,0132 bar_a
Standard	ASME/(ANSI)

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	18	55	60	m3/h
Pressure		15		bar_g
Temperature		35		°C
Density		846		kg/m3
Viscosity		5		cSt
Sound velocity	1 681	1 681	1 681	m/s
Pressure (min/max)	15		15	bar_g
Temp. (min/max)	35		35	°C
Vapor Pressure	0,0506	0,0506	0,0506	bar_a

Flowmeter

Flowmeter	Promass F 300 / DM: 1
Flow Principle	Coriolis (Promass)
Extended order code	8F3B50-*****SAAAS*A1+DC
Meter Size	2"
Operating range min.	0 m3/h
Operating range max.	82,742 m3/h
Material (sensor) *	SS 1.4539 / 904L
Process connection*	Cl.150 ASME B16.5, F316/F316L/1.4404 Flange
PED category ** :	In observance of the selected process conditions and medium, Applicator categorizes this application as PED Art.4.3. Applicator suggests an instrument without PED option.

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	18	55	60	m3/h
Velocity	2,546	7,781	8,488	m/s
Velocity Max.	4,709	14,39	15,7	m/s
Pressure loss	113,89	880,33	1 035,12	mbar
Measured error Vol.***	0,1	0,1	0,1	%
Measured error Mass***	0,1	0,1	0,1	%
Meas. error Mass-PremiumCal***	0,05	0,05	0,05	%
Reynolds No.	24 485	74 816	81 618	

*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.

***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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Mislea

Timestamp: 25.10.2016 02:06 PM

Review number: 1

Sales order number:

Tri-Size Sheet

General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-		
State	Liquid		
Character	Suspension	Atmospheric Pressure	1,0132 bar_a
Abrasivity	Not abrasive	Standard	ASME/(ANSI)
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)		
Fluid Type	Newtonian		

Sizing and Calculated Results

	Next Smaller Size	Current Size	Next Bigger Size	
Flow meter	Promass F 300 / DM: 1	Promass F 300 / DM: 1	Promass F 300 / DM: 1	
Flow Principle	Coriolis (Promass)	Coriolis (Promass)	Coriolis (Promass)	
Meter Size	1 1/2"	2"	3"	
Process connection*	Cl.150 ASME B16.5, F316/F316L/1.4404	Cl.150 ASME B16.5, F316/F316L/1.4404	Cl.150 ASME B16.5, F316/F316L/1.4404	
Operating range min.	0	0	0	m3/h
Operating range max.	53,191	82,742	212,766	m3/h
Velocity at req. Flow min.	3,979	2,546	0,995	m/s
Velocity at req. Flow nom.	12,16	7,781	3,039	m/s
Velocity at req. Flow max.	13,26	8,488	3,316	m/s
Velocity max. at req. Flow min.	10,28	4,709	1,941	m/s
Velocity max. at req. Flow nom.	31,4	14,39	5,93	m/s
Velocity max. at req. Flow max.	34,25	15,7	6,469	m/s
Pressure loss at req. Flow min.	598,28	113,89	19,6	mbar
Pressure loss at req. Flow nom.	4 908,65	880,33	143,53	mbar
Pressure loss at req. Flow max.	5 794,83	1 035,12	168,11	mbar
Meas. error Vol. at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow nom.***	n.a.	0,1	0,1	%
Meas. error Vol. at req. Flow max.***	n.a.	0,1	0,1	%
Meas. error Mass at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow nom.***	n.a.	0,1	0,1	%
Meas. error Mass at req. Flow max.***	n.a.	0,1	0,1	%
Meas. error Spec. Mass at req. Flow min.***	0,05	0,05	0,06	%
Meas. error Spec. Mass at req. Flow nom.***	n.a.	0,05	0,05	%
Meas. error Spec. Mass at req. Flow max.***	n.a.	0,05	0,05	%
Reynolds No.	110 524	74 816	48 030	
Warnings	1. Requested max. flow too big for flowmeter range. Please adapt the max. flow or select a bigger size (if available) or select another flowmeter.			

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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Mislea

Timestamp: 25.10.2016 02:06 PM

Review number: 1

Sales order number:

Chart Sheet

Flowmeter: Promass F 300 / DM: 1

Flow Principle Coriolis (Promass)

Meter Size 2"

Operating range min. 0 m3/h

Operating range max. 82,742 m3/h

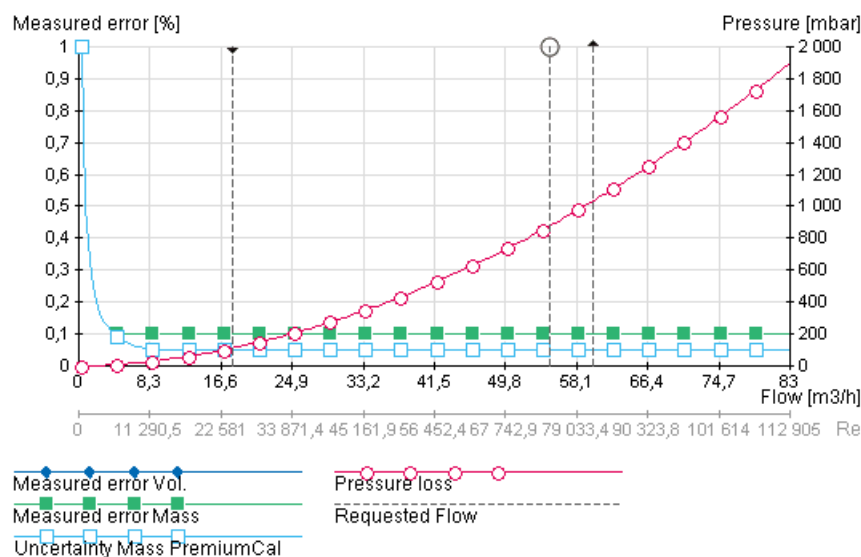
Fluid Oil, Crude (Mexico) -MODIFIED-

Pressure 15 bar_g

Temperature 35 °C

Density 846 kg/m3

Viscosity 5 cSt



Flow rate(%)	Flow rate (m3/h)	Pressure loss (mbar)	Measured error Volume(%)	Measured error Mass(%)	Measured error spec. Mass(%)
10	8,274	28,711	0,1	0,1	0,05
20	16,548	97,926	0,1	0,1	0,05
30	24,823	203,696	0,1	0,1	0,05
40	33,097	344,501	0,1	0,1	0,05
50	41,371	519,428	0,1	0,1	0,05
60	49,645	727,844	0,1	0,1	0,05
70	57,92	969,273	0,1	0,1	0,05
80	66,194	1 243,34	0,1	0,1	0,05
90	74,468	1 549,739	0,1	0,1	0,05
100	82,742	1 888,213	0,1	0,1	0,05

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

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Applicator Sizing - Condensed (Flow)

Project

Project	10016679 / Oil Metering (Coriolis)
C.Project No.	0
Customer:	CONPET
TAG	Recea
Timestamp	25.10.2016 02:08 PM
Review number	1
Sales order number	
Contact person	---
eMail:	---
Phone	---
Fax	---



General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-
State	Liquid
Character	Suspension
Abrasivity	Not abrasive
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)
Fluid Type	Newtonian
Atmospheric Pressure	1,0132 bar_a
Standard	ASME/(ANSI)

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	18	50	60	m3/h
Pressure		45		bar_g
Temperature		36,5		°C
Density		836		kg/m3
Viscosity		4,7		cSt
Sound velocity	1 681	1 681	1 681	m/s
Pressure (min/max)	45		45	bar_g
Temp. (min/max)	36,5		36,5	°C
Vapor Pressure	0,0551	0,0551	0,0551	bar_a

Flowmeter

Flowmeter	Promass F 300 / DM: 1
Flow Principle	Coriolis (Promass)
Extended order code	8F3B50-*****SAABS*A1+DCLK
Meter Size	2"
Operating range min.	0 m3/h
Operating range max.	83,732 m3/h
Material (sensor) *	SS 1.4539 / 904L
Process connection*	CI 300 ASME B16.5, F316/F316L/1.4404 Flange
PED category ** :	The Flowmeter is classified in Category II. Devices in this category need to be approved and tested to PED requirements.

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	18	50	60	m3/h
Velocity	2,546	7,074	8,488	m/s
Velocity Max.	4,709	13,08	15,7	m/s
Pressure loss	111,16	722,35	1 014,36	mbar
Measured error Vol.***	0,1	0,1	0,1	%
Measured error Mass***	0,1	0,1	0,1	%
Meas. error Mass- PremiumCal***	0,05	0,05	0,05	%
Reynolds No.	26 048	72 356	86 828	

*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.

***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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Recea

Timestamp: 25.10.2016 02:08 PM

Review number: 1

Sales order number:

Tri-Size Sheet

General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-		
State	Liquid		
Character	Suspension	Atmospheric Pressure	1,0132 bar_a
Abrasivity	Not abrasive	Standard	ASME/(ANSI)
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)		
Fluid Type	Newtonian		

Sizing and Calculated Results

	Next Smaller Size	Current Size	Next Bigger Size	
Flow meter	Promass F 300 / DM: 1	Promass F 300 / DM: 1	Promass F 300 / DM: 1	
Flow Principle	Coriolis (Promass)	Coriolis (Promass)	Coriolis (Promass)	
Meter Size	1 1/2"	2"	3"	
Process connection*	CI 300 ASME B16.5, F316/F316L/1.4404	CI 300 ASME B16.5, F316/F316L/1.4404	CI 300 ASME B16.5, F316/F316L/1.4404	
Operating range min.	0	0	0	m3/h
Operating range max.	53,828	83,732	215,311	m3/h
Velocity at req. Flow min.	3,979	2,546	0,995	m/s
Velocity at req. Flow nom.	11,05	7,074	2,763	m/s
Velocity at req. Flow max.	13,26	8,488	3,316	m/s
Velocity max. at req. Flow min.	10,28	4,709	1,941	m/s
Velocity max. at req. Flow nom.	28,54	13,08	5,391	m/s
Velocity max. at req. Flow max.	34,25	15,7	6,469	m/s
Pressure loss at req. Flow min.	586,15	111,16	19,07	mbar
Pressure loss at req. Flow nom.	4 021,49	722,35	117,95	mbar
Pressure loss at req. Flow max.	5 694,48	1 014,36	164,28	mbar
Meas. error Vol. at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow max.***	n.a.	0,1	0,1	%
Meas. error Mass at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow max.***	n.a.	0,1	0,1	%
Meas. error Spec. Mass at req. Flow min.***	0,05	0,05	0,06	%
Meas. error Spec. Mass at req. Flow nom.***	0,05	0,05	0,05	%
Meas. error Spec. Mass at req. Flow max.***	n.a.	0,05	0,05	%
Reynolds No.	106 890	72 356	46 451	
Warnings	1. Requested max. flow too big for flowmeter range. Please adapt the max. flow or select a bigger size (if available) or select another flowmeter.			

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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Recea

Timestamp: 25.10.2016 02:08 PM

Review number: 1

Sales order number:

Chart Sheet

Flowmeter: Promass F 300 / DM: 1

Flow Principle Coriolis (Promass)

Meter Size 2"

Operating range min. 0 m3/h

Operating range max. 83,732 m3/h

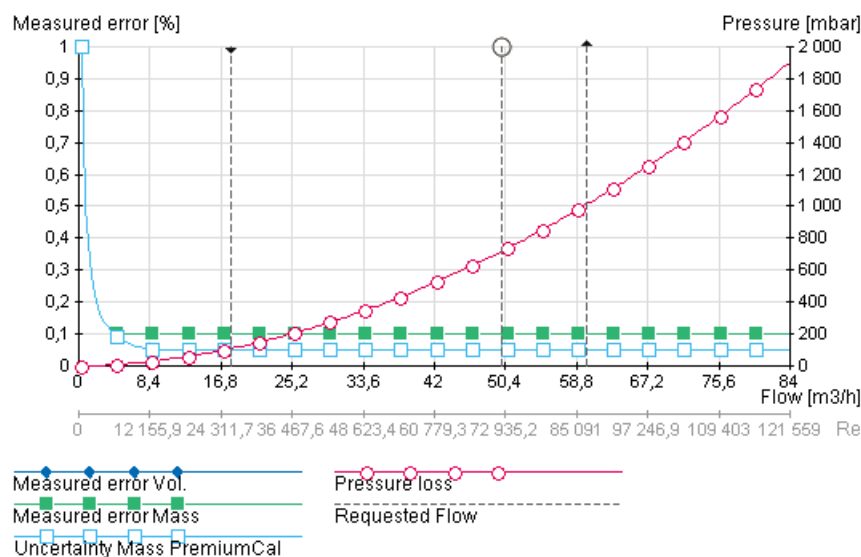
Fluid Oil, Crude (Mexico) -MODIFIED-

Pressure 45 bar_g

Temperature 36,5 °C

Density 836 kg/m3

Viscosity 4,7 cSt



Flow rate(%)	Flow rate (m3/h)	Pressure loss (mbar)	Measured error Volume(%)	Measured error Mass(%)	Measured error spec. Mass(%)
10	8,373	28,519	0,1	0,1	0,05
20	16,746	97,618	0,1	0,1	0,05
30	25,12	203,423	0,1	0,1	0,05
40	33,493	344,439	0,1	0,1	0,05
50	41,866	519,77	0,1	0,1	0,05
60	50,239	728,792	0,1	0,1	0,05
70	58,612	971,039	0,1	0,1	0,05
80	66,986	1 246,143	0,1	0,1	0,05
90	75,359	1 553,801	0,1	0,1	0,05
100	83,732	1 893,761	0,1	0,1	0,05

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

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Applicator Sizing - Condensed (Flow)

Project

Project	10016679 / Oil Metering (Coriolis)
C.Project No.	0
Customer:	CONPET
TAG	Slobozia
Timestamp	25.10.2016 02:10 PM
Review number	1
Sales order number	
Contact person	---
eMail:	---
Phone	---
Fax	---



General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-
State	Liquid
Character	Suspension
Abrasivity	Not abrasive
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)
Fluid Type	Newtonian
Atmospheric Pressure	1,0132 bar_a
Standard	ASME/(ANSI)

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	18	32	40	m3/h
Pressure		5		bar_g
Temperature		47		°C
Density		843		kg/m3
Viscosity		16		cSt
Sound velocity	1 681	1 681	1 681	m/s
Pressure (min/max)	5		30	bar_g
Temp. (min/max)	47		47	°C
Vapor Pressure	0,0981	0,0981	0,0981	bar_a

Flowmeter

Flowmeter	Promass F 300 / DM: 1
Flow Principle	Coriolis (Promass)
Extended order code	8F3B50-*****SAABS*A1+DCLK
Meter Size	2"
Operating range min.	0 m3/h
Operating range max.	83,037 m3/h
Material (sensor) *	SS 1.4539 / 904L
Process connection*	CI 300 ASME B16.5, F316/F316L/1.4404 Flange
PED category ** :	The Flowmeter is classified in Category II. Devices in this category need to be approved and tested to PED requirements.

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	18	32	40	m3/h
Velocity	2,546	4,527	5,659	m/s
Velocity Max.	4,709	8,371	10,46	m/s
Pressure loss	150,29	408,27	605,63	mbar
Measured error Vol.***	0,1	0,1	0,1	%
Measured error Mass***	0,1	0,1	0,1	%
Meas. error Mass- PremiumCal***	0,05	0,05	0,05	%
Reynolds No.	7 652	13 603	17 004	

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** 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.

***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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Slobozia

Timestamp: 25.10.2016 02:10 PM

Review number: 1

Sales order number:

Tri-Size Sheet

General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-		
State	Liquid		
Character	Suspension	Atmospheric Pressure	1,0132 bar_a
Abrasivity	Not abrasive	Standard	ASME/(ANSI)
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)		
Fluid Type	Newtonian		

Sizing and Calculated Results

	Next Smaller Size	Current Size	Next Bigger Size	
Flow meter	Promass F 300 / DM: 1	Promass F 300 / DM: 1	Promass F 300 / DM: 1	
Flow Principle	Coriolis (Promass)	Coriolis (Promass)	Coriolis (Promass)	
Meter Size	1 1/2"	2"	3"	
Process connection*	CI 300 ASME B16.5, F316/F316L/1.4404	CI 300 ASME B16.5, F316/F316L/1.4404	CI 300 ASME B16.5, F316/F316L/1.4404	
Operating range min.	0	0	0	m3/h
Operating range max.	53,381	83,037	213,523	m3/h
Velocity at req. Flow min.	3,979	2,546	0,995	m/s
Velocity at req. Flow nom.	7,074	4,527	1,768	m/s
Velocity at req. Flow max.	8,842	5,659	2,21	m/s
Velocity max. at req. Flow min.	10,28	4,709	1,941	m/s
Velocity max. at req. Flow nom.	18,27	8,371	3,45	m/s
Velocity max. at req. Flow max.	22,84	10,46	4,312	m/s
Pressure loss at req. Flow min.	728,99	150,29	27,52	mbar
Pressure loss at req. Flow nom.	2 064,77	408,27	72,47	mbar
Pressure loss at req. Flow max.	3 109,06	605,63	106,23	mbar
Meas. error Vol. at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Spec. Mass at req. Flow min.***	0,05	0,05	0,06	%
Meas. error Spec. Mass at req. Flow nom.***	0,05	0,05	0,05	%
Meas. error Spec. Mass at req. Flow max.***	0,05	0,05	0,05	%
Reynolds No.	20 095	13 603	8 733	
Warnings	1. Cavitation may occur at max. process conditions and nom. pressure 2. Cavitation may occur at the following process conditions(worst case): max. process conditions and min. pressure			

*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.

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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Slobozia

Timestamp: 25.10.2016 02:10 PM

Review number: 1

Sales order number:

Chart Sheet

Flowmeter: Promass F 300 / DM: 1

Flow Principle Coriolis (Promass)

Meter Size 2"

Operating range min. 0 m3/h

Operating range max. 83,037 m3/h

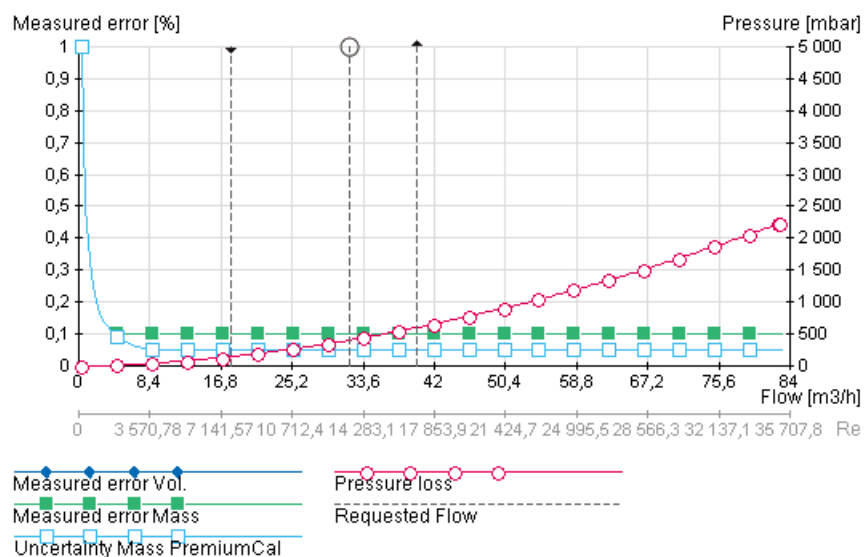
Fluid Oil, Crude (Mexico) -MODIFIED-

Pressure 5 bar_g

Temperature 47 °C

Density 843 kg/m3

Viscosity 16 cSt



Flow rate(%)	Flow rate (m3/h)	Pressure loss (mbar)	Measured error Volume(%)	Measured error Mass(%)	Measured error spec. Mass(%)
10	8,304	40,999	0,1	0,1	0,05
20	16,607	130,954	0,1	0,1	0,05
30	24,911	263,426	0,1	0,1	0,05
40	33,215	435,956	0,1	0,1	0,05
50	41,518	647,075	0,1	0,1	0,05
60	49,822	895,769	0,1	0,1	0,05
70	58,126	1 181,279	0,1	0,1	0,05
80	66,429	1 503,008	0,1	0,1	0,05
90	74,733	1 860,469	0,1	0,1	0,05
100	83,037	2 253,253	0,1	0,1	0,05

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

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Applicator Sizing - Condensed (Flow)

Project

Project	10016679 / Oil Metering (Coriolis)
C.Project No.	0
Customer:	CONPET
TAG	Aricesti
Timestamp	25.10.2016 02:11 PM
Review number	1
Sales order number	
Contact person	---
eMail:	---
Phone	---
Fax	---



General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-
State	Liquid
Character	Suspension
Abrasivity	Not abrasive
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)
Fluid Type	Newtonian
Atmospheric Pressure	1,0132 bar_a
Standard	ASME/(ANSI)

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	5	15	20	m3/h
Pressure		9		bar_g
Temperature		49		°C
Density		850		kg/m3
Viscosity		14,25		cSt
Sound velocity	1 681	1 681	1 681	m/s
Pressure (min/max)	9		9	bar_g
Temp. (min/max)	49		49	°C
Vapor Pressure	0,1089	0,1089	0,1089	bar_a

Flowmeter

Flowmeter	Promass F 300 / DM: 1
Flow Principle	Coriolis (Promass)
Extended order code	8F3B40-*****SAAAS*A1+DC
Meter Size	1 1/2"
Operating range min.	0 m3/h
Operating range max.	52,941 m3/h
Material (sensor) *	SS 1.4539 / 904L
Process connection*	Cl.150 ASME B16.5, F316/F316L/1.4404 Flange
PED category ** :	In observance of the selected process conditions and medium, Applicator categorizes this application as PED Art.4.3. Applicator suggests an instrument without PED option.

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	5	15	20	m3/h
Velocity	1,105	3,316	4,421	m/s
Velocity Max.	2,854	8,563	11,42	m/s
Pressure loss	76,48	517,7	867,77	mbar
Measured error Vol.***	0,1	0,1	0,1	%
Measured error Mass***	0,1	0,1	0,1	%
Meas. error Mass-PremiumCal***	0,05	0,05	0,05	%
Reynolds No.	3 525	10 576	14 102	

*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.

***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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Aricesti

Timestamp: 25.10.2016 02:11 PM

Review number: 1

Sales order number:

Tri-Size Sheet

General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-		
State	Liquid		
Character	Suspension	Atmospheric Pressure	1,0132 bar_a
Abrasivity	Not abrasive	Standard	ASME/(ANSI)
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)		
Fluid Type	Newtonian		

Sizing and Calculated Results

	Next Smaller Size	Current Size	Next Bigger Size	
Flow meter	Promass F 300 / DM: 1	Promass F 300 / DM: 1	Promass F 300 / DM: 1	
Flow Principle	Coriolis (Promass)	Coriolis (Promass)	Coriolis (Promass)	
Meter Size	1"	1 1/2"	2"	
Process connection*	Cl.150 ASME B16.5, F316/F316L/1.4404	Cl.150 ASME B16.5, F316/F316L/1.4404	Cl.150 ASME B16.5, F316/F316L/1.4404	
Operating range min.	0	0	0	m3/h
Operating range max.	21,176	52,941	82,353	m3/h
Velocity at req. Flow min.	2,829	1,105	0,707	m/s
Velocity at req. Flow nom.	8,488	3,316	2,122	m/s
Velocity at req. Flow max.	11,32	4,421	2,829	m/s
Velocity max. at req. Flow min.	6,14	2,854	1,308	m/s
Velocity max. at req. Flow nom.	18,42	8,563	3,924	m/s
Velocity max. at req. Flow max.	24,56	11,42	5,232	m/s
Pressure loss at req. Flow min.	337,38	76,48	17,37	mbar
Pressure loss at req. Flow nom.	2 370,74	517,7	107,27	mbar
Pressure loss at req. Flow max.	4 011,09	867,77	175,96	mbar
Meas. error Vol. at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Spec. Mass at req. Flow min.***	0,05	0,05	0,08	%
Meas. error Spec. Mass at req. Flow nom.***	0,05	0,05	0,05	%
Meas. error Spec. Mass at req. Flow max.***	0,05	0,05	0,05	%
Reynolds No.	15 512	10 576	7 159	
Warnings				

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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Aricesti

Timestamp: 25.10.2016 02:11 PM

Review number: 1

Sales order number:

Chart Sheet

Flowmeter: Promass F 300 / DM: 1

Flow Principle Coriolis (Promass)

Meter Size 1 1/2"

Operating range min. 0 m3/h

Operating range max. 52,941 m3/h

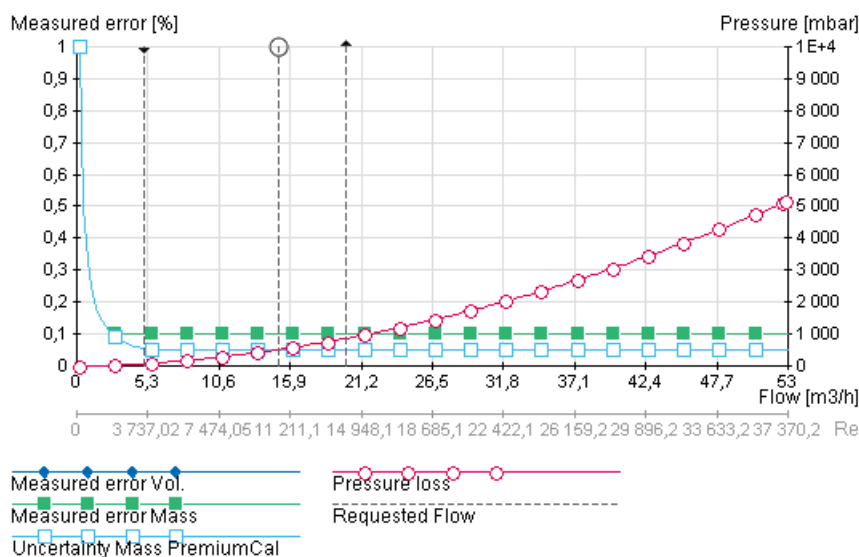
Fluid Oil, Crude (Mexico) -MODIFIED-

Pressure 9 bar_g

Temperature 49 °C

Density 850 kg/m3

Viscosity 14,25 cSt



Flow rate(%)	Flow rate (m3/h)	Pressure loss (mbar)	Measured error Volume(%)	Measured error Mass(%)	Measured error spec. Mass(%)
10	5,294	84,257	0,1	0,1	0,05
20	10,588	279,259	0,1	0,1	0,05
30	15,882	573,391	0,1	0,1	0,05
40	21,176	962,211	0,1	0,1	0,05
50	26,471	1 443,071	0,1	0,1	0,05
60	31,765	2 014,146	0,1	0,1	0,05
70	37,059	2 674,069	0,1	0,1	0,05
80	42,353	3 421,769	0,1	0,1	0,05
90	47,647	4 256,369	0,1	0,1	0,05
100	52,941	5 177,139	0,1	0,1	0,05

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

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Applicator Sizing - Condensed (Flow)

Project

Project	10016679 / Oil Metering (Coriolis)
C.Project No.	0
Customer:	CONPET
TAG	Madulari
Timestamp	25.10.2016 02:13 PM
Review number	1
Sales order number	
Contact person	---
eMail:	---
Phone	---
Fax	---



General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-
State	Liquid
Character	Suspension
Abrasivity	Not abrasive
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)
Fluid Type	Newtonian
Atmospheric Pressure	1,0132 bar_a
Standard	ASME/(ANSI)

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	20	110	120	m3/h
Pressure		8		bar_g
Temperature		36		°C
Density		760		kg/m3
Viscosity		1,3		cSt
Sound velocity	1 681	1 681	1 681	m/s
Pressure (min/max)	8		8	bar_g
Temp. (min/max)	36		36	°C
Vapor Pressure	0,0536	0,0536	0,0536	bar_a

Flowmeter

Flowmeter	Promass F 300 / DM: 1
Flow Principle	Coriolis (Promass)
Extended order code	8F3B80-*****THADC*A1+DC
Meter Size	3"
Operating range min.	0 m3/h
Operating range max.	236,842 m3/h
Material (sensor) *	Alloy C22/2.4602, ext.temp
Process connection*	CI 150 ASME B 16.5, 1.4301/304 lap joint flange
PED category ** :	In observance of the selected process conditions and medium, Applicator categorizes this application as PED Art.4.3. Applicator suggests an instrument without PED option.

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	20	110	120	m3/h
Velocity	1,105	6,079	6,631	m/s
Velocity Max.	2,156	11,86	12,94	m/s
Pressure loss	16,06	386,86	456,33	mbar
Measured error Vol.***	0,1	0,1	0,1	%
Measured error Mass***	0,1	0,1	0,1	%
Meas. error Mass-PremiumCal***	0,06	0,05	0,05	%
Reynolds No.	67 175	369 464	403 051	

*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.

***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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Madulari

Timestamp: 25.10.2016 02:13 PM

Review number: 1

Sales order number:

Tri-Size Sheet

General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-		
State	Liquid		
Character	Suspension	Atmospheric Pressure	1,0132 bar_a
Abrasivity	Not abrasive	Standard	ASME/(ANSI)
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)		
Fluid Type	Newtonian		

Sizing and Calculated Results

	Next Smaller Size	Current Size	Next Bigger Size	
Flow meter	Promass F 300 / DM: 1	Promass F 300 / DM: 1	Promass F 300 / DM: 1	
Flow Principle	Coriolis (Promass)	Coriolis (Promass)	Coriolis (Promass)	
Meter Size	2"	3"	4"	
Process connection*	CI 150 ASME B 16.5, 1.4301/304	CI 150 ASME B 16.5, 1.4301/304	CI 150 ASME B 16.5, 1.4301/304	
Operating range min.	0	0	0	m3/h
Operating range max.	92,105	236,842	460,526	m3/h
Velocity at req. Flow min.	2,829	1,105	0,707	m/s
Velocity at req. Flow nom.	15,56	6,079	3,89	m/s
Velocity at req. Flow max.	16,98	6,631	4,244	m/s
Velocity max. at req. Flow min.	5,232	2,156	1,349	m/s
Velocity max. at req. Flow nom.	28,78	11,86	7,42	m/s
Velocity max. at req. Flow max.	31,39	12,94	8,095	m/s
Pressure loss at req. Flow min.	100	16,06	5,61	mbar
Pressure loss at req. Flow nom.	2 568,33	386,86	124,88	mbar
Pressure loss at req. Flow max.	3 037,96	456,33	146,82	mbar
Meas. error Vol. at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow nom.***	n.a.	0,1	0,1	%
Meas. error Vol. at req. Flow max.***	n.a.	0,1	0,1	%
Meas. error Mass at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow nom.***	n.a.	0,1	0,1	%
Meas. error Mass at req. Flow max.***	n.a.	0,1	0,1	%
Meas. error Spec. Mass at req. Flow min.***	0,05	0,06	0,09	%
Meas. error Spec. Mass at req. Flow nom.***	n.a.	0,05	0,05	%
Meas. error Spec. Mass at req. Flow max.***	n.a.	0,05	0,05	%
Reynolds No.	575 511	369 464	292 252	
Warnings	1. Requested max. flow too big for flowmeter range. Please adapt the max. flow or select a bigger size (if available) or select another flowmeter.			

*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.

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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Madulari

Timestamp: 25.10.2016 02:13 PM

Review number: 1

Sales order number:

Chart Sheet

Flowmeter: Promass F 300 / DM: 1

Flow Principle Coriolis (Promass)

Meter Size 3"

Operating range min. 0 m3/h

Operating range max. 236,842 m3/h

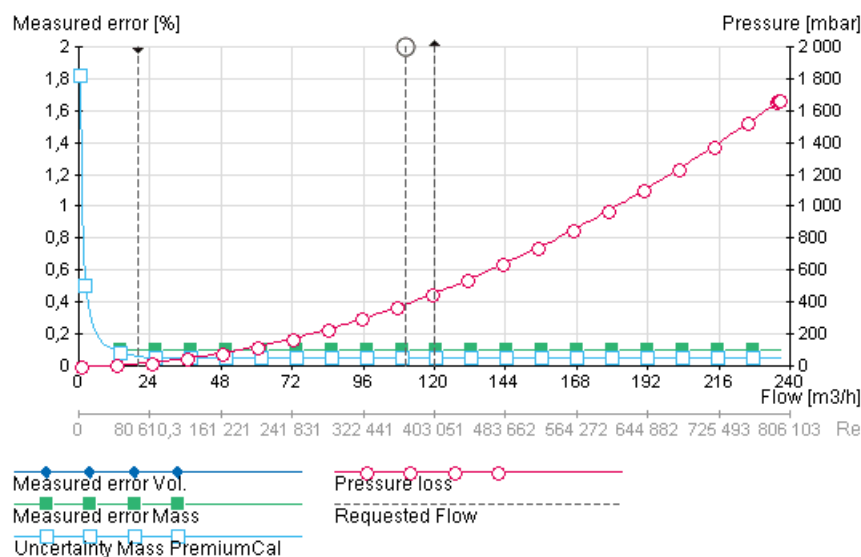
Fluid Oil, Crude (Mexico) -MODIFIED-

Pressure 8 bar_g

Temperature 36 °C

Density 760 kg/m3

Viscosity 1,3 cSt



Flow rate(%)	Flow rate (m3/h)	Pressure loss (mbar)	Measured error Volume(%)	Measured error Mass(%)	Measured error spec. Mass(%)
10	23,684	21,91	0,1	0,1	0,05
20	47,368	79,19	0,1	0,1	0,05
30	71,053	169,389	0,1	0,1	0,05
40	94,737	291,525	0,1	0,1	0,05
50	118,421	444,997	0,1	0,1	0,05
60	142,105	629,384	0,1	0,1	0,05
70	165,789	844,365	0,1	0,1	0,05
80	189,474	1 089,687	0,1	0,1	0,05
90	213,158	1 365,141	0,1	0,1	0,05
100	236,842	1 670,548	0,1	0,1	0,05

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

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Applicator Sizing - Condensed (Flow)

Project

Project	10016679 / Oil Metering (Coriolis)
C.Project No.	0
Customer:	CONPET
TAG	Varteju
Timestamp	25.10.2016 02:15 PM
Review number	1
Sales order number	
Contact person	---
eMail:	---
Phone	---
Fax	---



General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-
State	Liquid
Character	Suspension
Abrasivity	Not abrasive
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)
Fluid Type	Newtonian
Atmospheric Pressure	1,0132 bar_a
Standard	ASME/(ANSI)

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	20	90	120	m3/h
Pressure		25		bar_g
Temperature		42		°C
Density		832		kg/m3
Viscosity		5,5		cSt
Sound velocity	1 681	1 681	1 681	m/s
Pressure (min/max)	25		25	bar_g
Temp. (min/max)	42		42	°C
Vapor Pressure	0,0749	0,0749	0,0749	bar_a

Flowmeter

Flowmeter	Promass F 300 / DM: 1
Flow Principle	Coriolis (Promass)
Extended order code	8F3B80-*****SAABS*A1+DCLK
Meter Size	3"
Operating range min.	0 m3/h
Operating range max.	216,346 m3/h
Material (sensor) *	SS 1.4539 / 904L
Process connection*	CI 300 ASME B16.5, F316/F316L/1.4404 Flange
PED category ** :	The Flowmeter is classified in Category II. Devices in this category need to be approved and tested to PED requirements.

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	20	90	120	m3/h
Velocity	1,105	4,974	6,631	m/s
Velocity Max.	2,156	9,703	12,94	m/s
Pressure loss	23,73	352,49	598,53	mbar
Measured error Vol.***	0,1	0,1	0,1	%
Measured error Mass***	0,1	0,1	0,1	%
Meas. error Mass- PremiumCal***	0,05	0,05	0,05	%
Reynolds No.	15 878	71 450	95 267	

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** 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.

***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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Varteju

Timestamp: 25.10.2016 02:15 PM

Review number: 1

Sales order number:

Tri-Size Sheet

General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-		
State	Liquid		
Character	Suspension	Atmospheric Pressure	1,0132 bar_a
Abrasivity	Not abrasive	Standard	ASME/(ANSI)
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)		
Fluid Type	Newtonian		

Sizing and Calculated Results

	Next Smaller Size	Current Size	Next Bigger Size	
Flow meter	Promass F 300 / DM: 1	Promass F 300 / DM: 1	Promass F 300 / DM: 1	
Flow Principle	Coriolis (Promass)	Coriolis (Promass)	Coriolis (Promass)	
Meter Size	2"	3"	4"	
Process connection*	CI 300 ASME B16.5, F316/F316L/1.4404	CI 300 ASME B16.5, F316/F316L/1.4404	CI 300 ASME B16.5, F316/F316L/1.4404	
Operating range min.	0	0	0	m3/h
Operating range max.	84,135	216,346	420,673	m3/h
Velocity at req. Flow min.	2,829	1,105	0,707	m/s
Velocity at req. Flow nom.	12,73	4,974	3,183	m/s
Velocity at req. Flow max.	16,98	6,631	4,244	m/s
Velocity max. at req. Flow min.	5,232	2,156	1,349	m/s
Velocity max. at req. Flow nom.	23,54	9,703	6,071	m/s
Velocity max. at req. Flow max.	31,39	12,94	8,095	m/s
Pressure loss at req. Flow min.	138	23,73	9,06	mbar
Pressure loss at req. Flow nom.	2 200,05	352,49	122,69	mbar
Pressure loss at req. Flow max.	3 781,01	598,53	205,22	mbar
Meas. error Vol. at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow nom.***	n.a.	0,1	0,1	%
Meas. error Vol. at req. Flow max.***	n.a.	0,1	0,1	%
Meas. error Mass at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow nom.***	n.a.	0,1	0,1	%
Meas. error Mass at req. Flow max.***	n.a.	0,1	0,1	%
Meas. error Spec. Mass at req. Flow min.***	0,05	0,05	0,08	%
Meas. error Spec. Mass at req. Flow nom.***	n.a.	0,05	0,05	%
Meas. error Spec. Mass at req. Flow max.***	n.a.	0,05	0,05	%
Reynolds No.	111 297	71 450	56 518	
Warnings	1. Requested max. flow too big for flowmeter range. Please adapt the max. flow or select a bigger size (if available) or select another flowmeter.			

*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.

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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Varteju

Timestamp: 25.10.2016 02:15 PM

Review number: 1

Sales order number:

Chart Sheet

Flowmeter: Promass F 300 / DM: 1

Flow Principle Coriolis (Promass)

Meter Size 3"

Operating range min. 0 m3/h

Operating range max. 216,346 m3/h

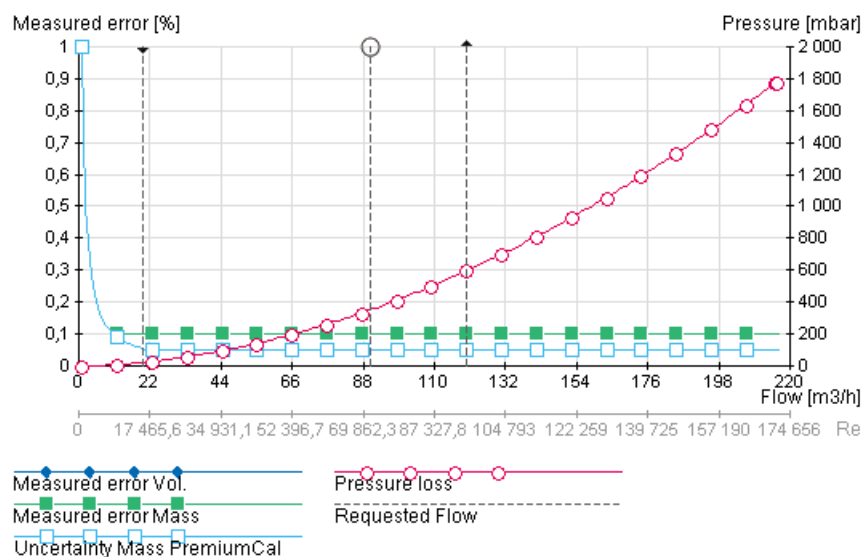
Fluid Oil, Crude (Mexico) -MODIFIED-

Pressure 25 bar_g

Temperature 42 °C

Density 832 kg/m3

Viscosity 5,5 cSt



Flow rate(%)	Flow rate (m3/h)	Pressure loss (mbar)	Measured error Volume(%)	Measured error Mass(%)	Measured error spec. Mass(%)
10	21,635	27,241	0,1	0,1	0,05
20	43,269	93,26	0,1	0,1	0,05
30	64,904	194,052	0,1	0,1	0,05
40	86,538	328,041	0,1	0,1	0,05
50	108,173	494,275	0,1	0,1	0,05
60	129,808	692,085	0,1	0,1	0,05
70	151,442	920,969	0,1	0,1	0,05
80	173,077	1 180,527	0,1	0,1	0,05
90	194,712	1 470,432	0,1	0,1	0,05
100	216,346	1 790,408	0,1	0,1	0,05

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

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Applicator Sizing - Condensed (Flow)

Project

Project	10016679 / Oil Metering (Coriolis)
C.Project No.	0
Customer:	CONPET
TAG	Bucsani
Timestamp	25.10.2016 02:22 PM
Review number	1
Sales order number	
Contact person	---
eMail:	---
Phone	---
Fax	---



General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-
State	Liquid
Character	Suspension
Abrasivity	Not abrasive
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)
Fluid Type	Newtonian
Atmospheric Pressure	1,0132 bar_a
Standard	ASME/(ANSI)

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	8	31	40	m3/h
Pressure		10		bar_g
Temperature		50		°C
Density		825		kg/m3
Viscosity		20		cSt
Sound velocity	1 681	1 681	1 681	m/s
Pressure (min/max)	10		10	bar_g
Temp. (min/max)	50		50	°C
Vapor Pressure	0,1147	0,1147	0,1147	bar_a

Flowmeter

Flowmeter	Promass F 300 / DM: 1
Flow Principle	Coriolis (Promass)
Extended order code	8F3B50-*****SAAAS*A1+DC
Meter Size	2"
Operating range min.	0 m3/h
Operating range max.	84,848 m3/h
Material (sensor) *	SS 1.4539 / 904L
Process connection*	Cl.150 ASME B16.5, F316/F316L/1.4404 Flange
PED category ** :	In observance of the selected process conditions and medium, Applicator categorizes this application as PED Art.4.3. Applicator suggests an instrument without PED option.

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	8	31	40	m3/h
Velocity	1,132	4,386	5,659	m/s
Velocity Max.	2,093	8,109	10,46	m/s
Pressure loss	41,01	399,69	624,31	mbar
Measured error Vol.***	0,1	0,1	0,1	%
Measured error Mass***	0,1	0,1	0,1	%
Meas. error Mass-PremiumCal***	0,05	0,05	0,05	%
Reynolds No.	2 721	10 542	13 603	

*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.

***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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Bucsani

Timestamp: 25.10.2016 02:22 PM

Review number: 1

Sales order number:

Tri-Size Sheet

General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-		
State	Liquid		
Character	Suspension	Atmospheric Pressure	1,0132 bar_a
Abrasivity	Not abrasive	Standard	ASME/(ANSI)
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)		
Fluid Type	Newtonian		

Sizing and Calculated Results

	Next Smaller Size	Current Size	Next Bigger Size	
Flow meter	Promass F 300 / DM: 1	Promass F 300 / DM: 1	Promass F 300 / DM: 1	
Flow Principle	Coriolis (Promass)	Coriolis (Promass)	Coriolis (Promass)	
Meter Size	1 1/2"	2"	3"	
Process connection*	Cl.150 ASME B16.5, F316/F316L/1.4404	Cl.150 ASME B16.5, F316/F316L/1.4404	Cl.150 ASME B16.5, F316/F316L/1.4404	
Operating range min.	0	0	0	m3/h
Operating range max.	54,545	84,848	218,182	m3/h
Velocity at req. Flow min.	1,768	1,132	0,442	m/s
Velocity at req. Flow nom.	6,853	4,386	1,713	m/s
Velocity at req. Flow max.	8,842	5,659	2,21	m/s
Velocity max. at req. Flow min.	4,567	2,093	0,862	m/s
Velocity max. at req. Flow nom.	17,7	8,109	3,342	m/s
Velocity max. at req. Flow max.	22,84	10,46	4,312	m/s
Pressure loss at req. Flow min.	182,65	41,01	7,95	mbar
Pressure loss at req. Flow nom.	1 985,43	399,69	71,93	mbar
Pressure loss at req. Flow max.	3 157,31	624,31	110,82	mbar
Meas. error Vol. at req. Flow min.***	0,1	0,1	0,14	%
Meas. error Vol. at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow min.***	0,1	0,1	0,14	%
Meas. error Mass at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Spec. Mass at req. Flow min.***	0,05	0,05	0,14	%
Meas. error Spec. Mass at req. Flow nom.***	0,05	0,05	0,05	%
Meas. error Spec. Mass at req. Flow max.***	0,05	0,05	0,05	%
Reynolds No.	15 574	10 542	6 768	
Warnings				

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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Bucsan

Timestamp: 25.10.2016 02:22 PM

Review number: 1

Sales order number:

Chart Sheet

Flowmeter: Promass F 300 / DM: 1

Flow Principle Coriolis (Promass)

Meter Size 2"

Operating range min. 0 m3/h

Operating range max. 84,848 m3/h

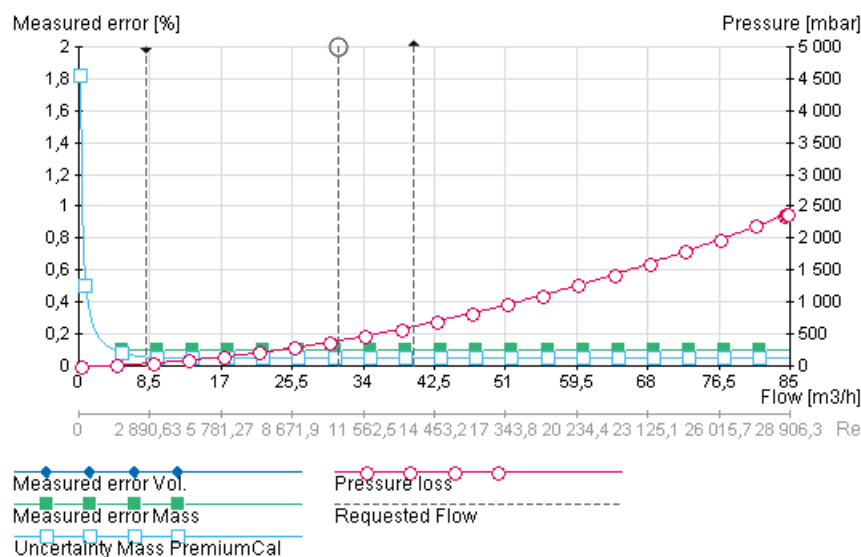
Fluid Oil, Crude (Mexico) -MODIFIED-

Pressure 10 bar_g

Temperature 50 °C

Density 825 kg/m3

Viscosity 20 cSt



Flow rate(%)	Flow rate (m3/h)	Pressure loss (mbar)	Measured error Volume(%)	Measured error Mass(%)	Measured error spec. Mass(%)
10	8,485	45,119	0,1	0,1	0,05
20	16,97	142,208	0,1	0,1	0,05
30	25,455	284,106	0,1	0,1	0,05
40	33,939	468,076	0,1	0,1	0,05
50	42,424	692,486	0,1	0,1	0,05
60	50,909	956,212	0,1	0,1	0,05
70	59,394	1 258,411	0,1	0,1	0,05
80	67,879	1 598,42	0,1	0,1	0,05
90	76,364	1 975,699	0,1	0,1	0,05
100	84,848	2 389,796	0,1	0,1	0,05

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

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Applicator Sizing - Condensed (Flow)

Project

Project	10016679 / Oil Metering (Coriolis)
C.Project No.	0
Customer:	CONPET
TAG	Ochiuri
Timestamp	25.10.2016 02:26 PM
Review number	1
Sales order number	
Contact person	---
eMail:	---
Phone	---
Fax	---



General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-
State	Liquid
Character	Suspension
Abrasivity	Not abrasive
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)
Fluid Type	Newtonian
Atmospheric Pressure	1,0132 bar_a
Standard	ASME/(ANSI)

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	17	65	70	m3/h
Pressure		17		bar_g
Temperature		47		°C
Density		895		kg/m3
Viscosity		45		cSt
Sound velocity	1 681	1 681	1 681	m/s
Pressure (min/max)	17		17	bar_g
Temp. (min/max)	47		47	°C
Vapor Pressure	0,0981	0,0981	0,0981	bar_a

Flowmeter

Flowmeter	Promass F 300 / DM: 1
Flow Principle	Coriolis (Promass)
Extended order code	8F3B80-*****SAAAS*A1+DC
Meter Size	3"
Operating range min.	0 m3/h
Operating range max.	201,117 m3/h
Material (sensor) *	SS 1.4539 / 904L
Process connection*	Cl.150 ASME B16.5, F316/F316L/1.4404 Flange
PED category ** :	In observance of the selected process conditions and medium, Applicator categorizes this application as PED Art.4.3. Applicator suggests an instrument without PED option.

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	17	65	70	m3/h
Velocity	0,939	3,592	3,868	m/s
Velocity Max.	1,833	7,008	7,547	m/s
Pressure loss	39,96	350,86	397,46	mbar
Measured error Vol.***	0,1	0,1	0,1	%
Measured error Mass***	0,1	0,1	0,1	%
Meas. error Mass-PremiumCal***	0,06	0,05	0,05	%
Reynolds No.	1 650	6 307	6 792	

*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.

***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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Ochiuri

Timestamp: 25.10.2016 02:26 PM

Review number: 1

Sales order number:

Tri-Size Sheet

General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-		
State	Liquid		
Character	Suspension	Atmospheric Pressure	1,0132 bar_a
Abrasivity	Not abrasive	Standard	ASME/(ANSI)
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)		
Fluid Type	Newtonian		

Sizing and Calculated Results

	Next Smaller Size	Current Size	Next Bigger Size	
Flow meter	Promass F 300 / DM: 1	Promass F 300 / DM: 1	Promass F 300 / DM: 1	
Flow Principle	Coriolis (Promass)	Coriolis (Promass)	Coriolis (Promass)	
Meter Size	2"	3"	4"	
Process connection*	Cl.150 ASME B16.5, F316/F316L/1.4404	Cl.150 ASME B16.5, F316/F316L/1.4404	Cl.150 ASME B16.5, F316/F316L/1.4404	
Operating range min.	0	0	0	m3/h
Operating range max.	78,212	201,117	391,061	m3/h
Velocity at req. Flow min.	2,405	0,939	0,601	m/s
Velocity at req. Flow nom.	9,196	3,592	2,299	m/s
Velocity at req. Flow max.	9,903	3,868	2,476	m/s
Velocity max. at req. Flow min.	4,447	1,833	1,147	m/s
Velocity max. at req. Flow nom.	17	7,008	4,385	m/s
Velocity max. at req. Flow max.	18,31	7,547	4,722	m/s
Pressure loss at req. Flow min.	205,44	39,96	18,19	mbar
Pressure loss at req. Flow nom.	1 942,03	350,86	143,35	mbar
Pressure loss at req. Flow max.	2 208,85	397,46	161,47	mbar
Meas. error Vol. at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Spec. Mass at req. Flow min.***	0,05	0,06	0,09	%
Meas. error Spec. Mass at req. Flow nom.***	0,05	0,05	0,05	%
Meas. error Spec. Mass at req. Flow max.***	0,05	0,05	0,05	%
Reynolds No.	9 824	6 307	4 989	
Warnings				

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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Ochiuri

Timestamp: 25.10.2016 02:26 PM

Review number: 1

Sales order number:

Chart Sheet

Flowmeter: Promass F 300 / DM: 1

Flow Principle Coriolis (Promass)

Meter Size 3"

Operating range min. 0 m3/h

Operating range max. 201,117 m3/h

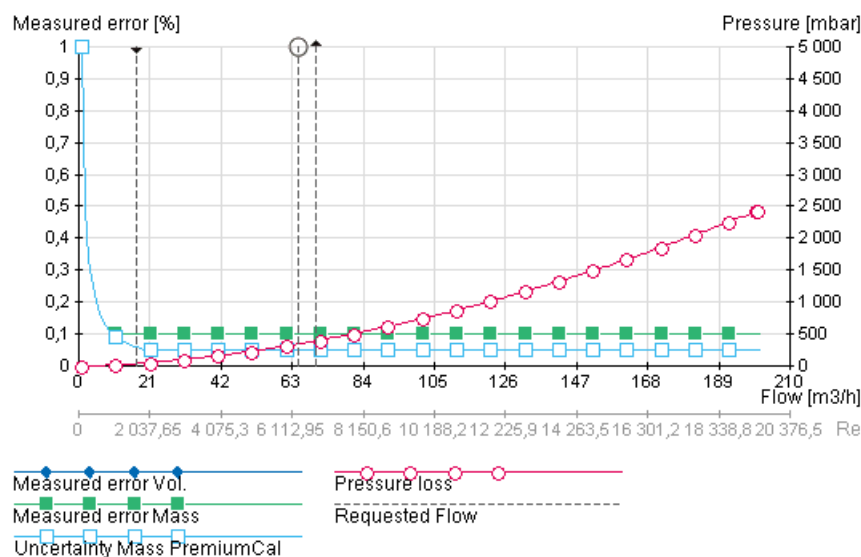
Fluid Oil, Crude (Mexico) -MODIFIED-

Pressure 17 bar_g

Temperature 47 °C

Density 895 kg/m3

Viscosity 45 cSt



Flow rate(%)	Flow rate (m3/h)	Pressure loss (mbar)	Measured error Volume(%)	Measured error Mass(%)	Measured error spec. Mass(%)
10	20,112	51,974	0,1	0,1	0,05
20	40,223	158,219	0,1	0,1	0,05
30	60,335	309,679	0,1	0,1	0,05
40	80,447	502,884	0,1	0,1	0,05
50	100,559	735,763	0,1	0,1	0,05
60	120,67	1 006,881	0,1	0,1	0,05
70	140,782	1 315,166	0,1	0,1	0,05
80	160,894	1 659,769	0,1	0,1	0,05
90	181,006	2 040	0,1	0,1	0,05
100	201,117	2 455,278	n.a.	n.a.	n.a.

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

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Applicator Sizing - Condensed (Flow)

Project

Project	10016679 / Oil Metering (Coriolis)
C.Project No.	0
Customer:	CONPET
TAG	Teis
Timestamp	25.10.2016 02:28 PM
Review number	1
Sales order number	
Contact person	---
eMail:	---
Phone	---
Fax	---



General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-
State	Liquid
Character	Suspension
Abrasivity	Not abrasive
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)
Fluid Type	Newtonian
Atmospheric Pressure	1,0132 bar_a
Standard	ASME/(ANSI)

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	17	65	70	m3/h
Pressure		25		bar_g
Temperature		36		°C
Density		860		kg/m3
Viscosity		16		cSt
Sound velocity	1 681	1 681	1 681	m/s
Pressure (min/max)	25		25	bar_g
Temp. (min/max)	36		36	°C
Vapor Pressure	0,0536	0,0536	0,0536	bar_a

Flowmeter

Flowmeter	Promass F 300 / DM: 1
Flow Principle	Coriolis (Promass)
Extended order code	8F3B80-*****SAABS*A1+DCLK
Meter Size	3"
Operating range min.	0 m3/h
Operating range max.	209,302 m3/h
Material (sensor) *	SS 1.4539 / 904L
Process connection*	CI 300 ASME B16.5, F316/F316L/1.4404 Flange
PED category ** :	The Flowmeter is classified in Category II. Devices in this category need to be approved and tested to PED requirements.

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	17	65	70	m3/h
Velocity	0,939	3,592	3,868	m/s
Velocity Max.	1,833	7,008	7,547	m/s
Pressure loss	25,54	252,17	287,26	mbar
Measured error Vol.***	0,1	0,1	0,1	%
Measured error Mass***	0,1	0,1	0,1	%
Meas. error Mass- PremiumCal***	0,06	0,05	0,05	%
Reynolds No.	4 639	17 738	19 103	

*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.

***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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Teis

Timestamp: 25.10.2016 02:28 PM

Review number: 1

Sales order number:

Tri-Size Sheet

General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-		
State	Liquid		
Character	Suspension	Atmospheric Pressure	1,0132 bar_a
Abrasivity	Not abrasive	Standard	ASME/(ANSI)
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)		
Fluid Type	Newtonian		

Sizing and Calculated Results

	Next Smaller Size	Current Size	Next Bigger Size	
Flow meter	Promass F 300 / DM: 1	Promass F 300 / DM: 1	Promass F 300 / DM: 1	
Flow Principle	Coriolis (Promass)	Coriolis (Promass)	Coriolis (Promass)	
Meter Size	2"	3"	4"	
Process connection*	CI 300 ASME B16.5, F316/F316L/1.4404	CI 300 ASME B16.5, F316/F316L/1.4404	CI 300 ASME B16.5, F316/F316L/1.4404	
Operating range min.	0	0	0	m3/h
Operating range max.	81,395	209,302	406,977	m3/h
Velocity at req. Flow min.	2,405	0,939	0,601	m/s
Velocity at req. Flow nom.	9,196	3,592	2,299	m/s
Velocity at req. Flow max.	9,903	3,868	2,476	m/s
Velocity max. at req. Flow min.	4,447	1,833	1,147	m/s
Velocity max. at req. Flow nom.	17	7,008	4,385	m/s
Velocity max. at req. Flow max.	18,31	7,547	4,722	m/s
Pressure loss at req. Flow min.	139,03	25,54	10,69	mbar
Pressure loss at req. Flow nom.	1 474,2	252,17	95,56	mbar
Pressure loss at req. Flow max.	1 685,68	287,26	108,32	mbar
Meas. error Vol. at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Spec. Mass at req. Flow min.***	0,05	0,06	0,1	%
Meas. error Spec. Mass at req. Flow nom.***	0,05	0,05	0,05	%
Meas. error Spec. Mass at req. Flow max.***	0,05	0,05	0,05	%
Reynolds No.	27 631	17 738	14 031	
Warnings				

*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.

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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Teis

Timestamp: 25.10.2016 02:28 PM

Review number: 1

Sales order number:

Chart Sheet

Flowmeter: Promass F 300 / DM: 1

Flow Principle Coriolis (Promass)

Meter Size 3"

Operating range min. 0 m3/h

Operating range max. 209,302 m3/h

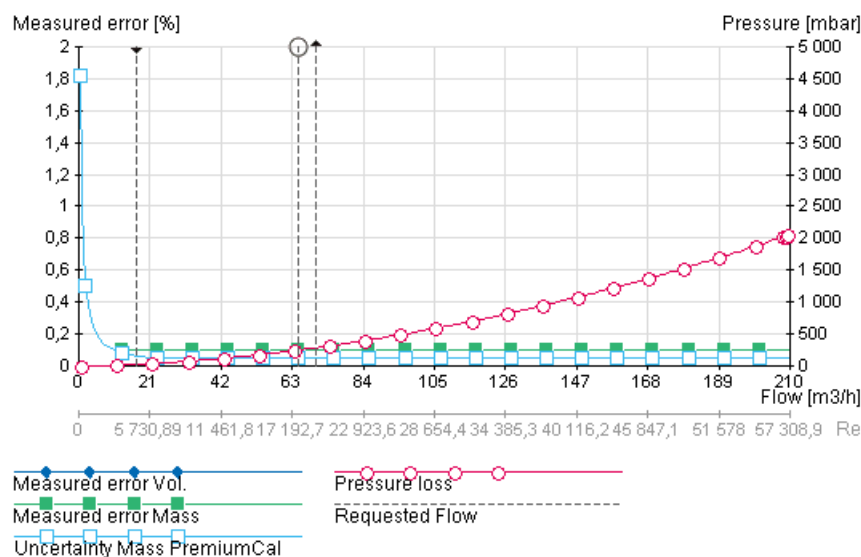
Fluid Oil, Crude (Mexico) -MODIFIED-

Pressure 25 bar_g

Temperature 36 °C

Density 860 kg/m3

Viscosity 16 cSt



Flow rate(%)	Flow rate (m3/h)	Pressure loss (mbar)	Measured error Volume(%)	Measured error Mass(%)	Measured error spec. Mass(%)
10	20,93	36,099	0,1	0,1	0,05
20	41,86	117,217	0,1	0,1	0,05
30	62,791	237,324	0,1	0,1	0,05
40	83,721	394,088	0,1	0,1	0,05
50	104,651	586,106	0,1	0,1	0,05
60	125,581	812,4	0,1	0,1	0,05
70	146,512	1 072,237	0,1	0,1	0,05
80	167,442	1 365,036	0,1	0,1	0,05
90	188,372	1 690,32	0,1	0,1	0,05
100	209,302	2 047,691	0,1	0,1	0,05

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

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Applicator Sizing - Condensed (Flow)

Project

Project	10016679 / Oil Metering (Coriolis)
C.Project No.	0
Customer:	CONPET
TAG	Izvoru
Timestamp	25.10.2016 02:30 PM
Review number	1
Sales order number	
Contact person	---
eMail:	---
Phone	---
Fax	---



General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-
State	Liquid
Character	Suspension
Abrasivity	Not abrasive
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)
Fluid Type	Newtonian
Atmospheric Pressure	1,0132 bar_a
Standard	ASME/(ANSI)

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	7	33	40	m3/h
Pressure		12		bar_g
Temperature		36		°C
Density		854		kg/m3
Viscosity		4,5		cSt
Sound velocity	1 681	1 681	1 681	m/s
Pressure (min/max)	12		12	bar_g
Temp. (min/max)	36		36	°C
Vapor Pressure	0,0536	0,0536	0,0536	bar_a

Flowmeter

Flowmeter	Promass F 300 / DM: 1
Flow Principle	Coriolis (Promass)
Extended order code	8F3B50-*****SAAAS*A1+DC
Meter Size	2"
Operating range min.	0 m3/h
Operating range max.	81,967 m3/h
Material (sensor) *	SS 1.4539 / 904L
Process connection*	Cl.150 ASME B16.5, F316/F316L/1.4404 Flange
PED category ** :	In observance of the selected process conditions and medium, Applicator categorizes this application as PED Art.4.3. Applicator suggests an instrument without PED option.

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	7	33	40	m3/h
Velocity	0,99	4,669	5,659	m/s
Velocity Max.	1,831	8,633	10,46	m/s
Pressure loss	21,07	340	484,83	mbar
Measured error Vol.***	0,1	0,1	0,1	%
Measured error Mass***	0,1	0,1	0,1	%
Meas. error Mass-PremiumCal***	0,06	0,05	0,05	%
Reynolds No.	10 580	49 878	60 458	

*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.

***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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Izvoru

Timestamp: 25.10.2016 02:30 PM

Review number: 1

Sales order number:

Tri-Size Sheet

General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-		
State	Liquid		
Character	Suspension	Atmospheric Pressure	1,0132 bar_a
Abrasivity	Not abrasive	Standard	ASME/(ANSI)
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)		
Fluid Type	Newtonian		

Sizing and Calculated Results

	Next Smaller Size	Current Size	Next Bigger Size	
Flow meter	Promass F 300 / DM: 1	Promass F 300 / DM: 1	Promass F 300 / DM: 1	
Flow Principle	Coriolis (Promass)	Coriolis (Promass)	Coriolis (Promass)	
Meter Size	1 1/2"	2"	3"	
Process connection*	Cl.150 ASME B16.5, F316/F316L/1.4404	Cl.150 ASME B16.5, F316/F316L/1.4404	Cl.150 ASME B16.5, F316/F316L/1.4404	
Operating range min.	0	0	0	m3/h
Operating range max.	52,693	81,967	210,773	m3/h
Velocity at req. Flow min.	1,547	0,99	0,387	m/s
Velocity at req. Flow nom.	7,295	4,669	1,824	m/s
Velocity at req. Flow max.	8,842	5,659	2,21	m/s
Velocity max. at req. Flow min.	3,996	1,831	0,755	m/s
Velocity max. at req. Flow nom.	18,84	8,633	3,558	m/s
Velocity max. at req. Flow max.	22,84	10,46	4,312	m/s
Pressure loss at req. Flow min.	104,72	21,07	3,79	mbar
Pressure loss at req. Flow nom.	1 858,6	340	56,49	mbar
Pressure loss at req. Flow max.	2 676,04	484,83	79,82	mbar
Meas. error Vol. at req. Flow min.***	0,1	0,1	0,15	%
Meas. error Vol. at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow min.***	0,1	0,1	0,15	%
Meas. error Mass at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Spec. Mass at req. Flow min.***	0,05	0,06	0,15	%
Meas. error Spec. Mass at req. Flow nom.***	0,05	0,05	0,05	%
Meas. error Spec. Mass at req. Flow max.***	0,05	0,05	0,05	%
Reynolds No.	73 683	49 878	32 020	
Warnings				

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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Izvoru

Timestamp: 25.10.2016 02:30 PM

Review number: 1

Sales order number:

Chart Sheet

Flowmeter: Promass F 300 / DM: 1

Flow Principle Coriolis (Promass)

Meter Size 2"

Operating range min. 0 m3/h

Operating range max. 81,967 m3/h

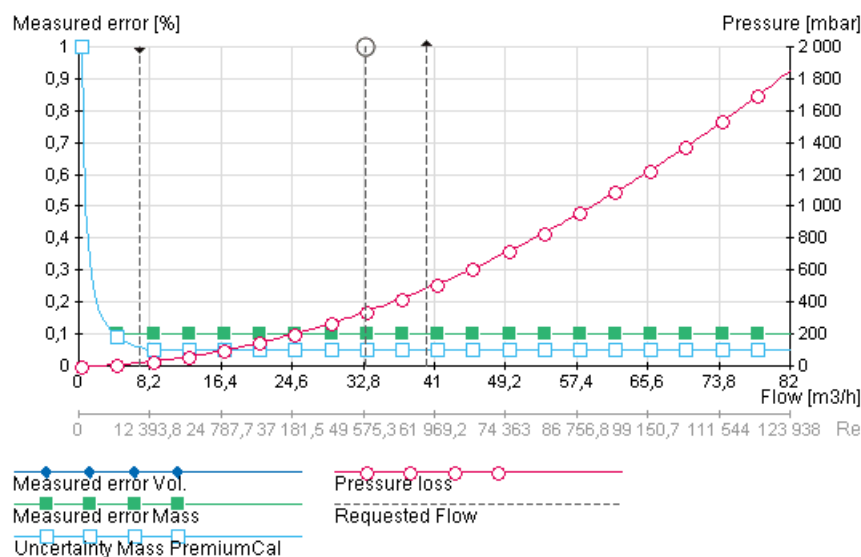
Fluid Oil, Crude (Mexico) -MODIFIED-

Pressure 12 bar_g

Temperature 36 °C

Density 854 kg/m3

Viscosity 4,5 cSt



Flow rate(%)	Flow rate (m3/h)	Pressure loss (mbar)	Measured error Volume(%)	Measured error Mass(%)	Measured error spec. Mass(%)
10	8,197	27,764	0,1	0,1	0,05
20	16,393	95,136	0,1	0,1	0,05
30	24,59	198,356	0,1	0,1	0,05
40	32,787	335,976	0,1	0,1	0,05
50	40,984	507,125	0,1	0,1	0,05
60	49,18	711,198	0,1	0,1	0,05
70	57,377	947,743	0,1	0,1	0,05
80	65,574	1 216,402	0,1	0,1	0,05
90	73,77	1 516,881	0,1	0,1	0,05
100	81,967	1 848,937	n.a.	n.a.	n.a.

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

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Applicator Sizing - Condensed (Flow)

Project

Project	10016679 / Oil Metering (Coriolis)
C.Project No.	0
Customer:	CONPET
TAG	Oarja
Timestamp	25.10.2016 02:31 PM
Review number	1
Sales order number	
Contact person	---
eMail:	---
Phone	---
Fax	---



General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-
State	Liquid
Character	Suspension
Abrasivity	Not abrasive
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)
Fluid Type	Newtonian
Atmospheric Pressure	1,0132 bar_a
Standard	ASME/(ANSI)

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	17	65	70	m3/h
Pressure		9		bar_g
Temperature		44		°C
Density		893		kg/m3
Viscosity		35		cSt
Sound velocity	1 681	1 681	1 681	m/s
Pressure (min/max)	9		9	bar_g
Temp. (min/max)	44		44	°C
Vapor Pressure	0,0835	0,0835	0,0835	bar_a

Flowmeter

Flowmeter	Promass F 300 / DM: 1
Flow Principle	Coriolis (Promass)
Extended order code	8F3B80-*****SAAAS*A1+DC
Meter Size	3"
Operating range min.	0 m3/h
Operating range max.	201,568 m3/h
Material (sensor) *	SS 1.4539 / 904L
Process connection*	Cl.150 ASME B16.5, F316/F316L/1.4404 Flange
PED category ** :	In observance of the selected process conditions and medium, Applicator categorizes this application as PED Art.4.3. Applicator suggests an instrument without PED option.

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	17	65	70	m3/h
Velocity	0,939	3,592	3,868	m/s
Velocity Max.	1,833	7,008	7,547	m/s
Pressure loss	35,76	323,82	367,37	mbar
Measured error Vol.***	0,1	0,1	0,1	%
Measured error Mass***	0,1	0,1	0,1	%
Meas. error Mass-PremiumCal***	0,06	0,05	0,05	%
Reynolds No.	2 121	8 109	8 733	

*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.

***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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Oarja

Timestamp: 25.10.2016 02:31 PM

Review number: 1

Sales order number:

Tri-Size Sheet

General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-		
State	Liquid		
Character	Suspension	Atmospheric Pressure	1,0132 bar_a
Abrasivity	Not abrasive	Standard	ASME/(ANSI)
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)		
Fluid Type	Newtonian		

Sizing and Calculated Results

	Next Smaller Size	Current Size	Next Bigger Size	
Flow meter	Promass F 300 / DM: 1	Promass F 300 / DM: 1	Promass F 300 / DM: 1	
Flow Principle	Coriolis (Promass)	Coriolis (Promass)	Coriolis (Promass)	
Meter Size	2"	3"	4"	
Process connection*	Cl.150 ASME B16.5, F316/F316L/1.4404	Cl.150 ASME B16.5, F316/F316L/1.4404	Cl.150 ASME B16.5, F316/F316L/1.4404	
Operating range min.	0	0	0	m3/h
Operating range max.	78,387	201,568	391,937	m3/h
Velocity at req. Flow min.	2,405	0,939	0,601	m/s
Velocity at req. Flow nom.	9,196	3,592	2,299	m/s
Velocity at req. Flow max.	9,903	3,868	2,476	m/s
Velocity max. at req. Flow min.	4,447	1,833	1,147	m/s
Velocity max. at req. Flow nom.	17	7,008	4,385	m/s
Velocity max. at req. Flow max.	18,31	7,547	4,722	m/s
Pressure loss at req. Flow min.	186,44	35,76	15,94	mbar
Pressure loss at req. Flow nom.	1 816,97	323,82	129,8	mbar
Pressure loss at req. Flow max.	2 069,55	367,37	146,45	mbar
Meas. error Vol. at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Spec. Mass at req. Flow min.***	0,05	0,06	0,09	%
Meas. error Spec. Mass at req. Flow nom.***	0,05	0,05	0,05	%
Meas. error Spec. Mass at req. Flow max.***	0,05	0,05	0,05	%
Reynolds No.	12 631	8 109	6 414	
Warnings				

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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Oarja

Timestamp: 25.10.2016 02:31 PM

Review number: 1

Sales order number:

Chart Sheet

Flowmeter: Promass F 300 / DM: 1

Flow Principle Coriolis (Promass)

Meter Size 3"

Operating range min. 0 m3/h

Operating range max. 201,568 m3/h

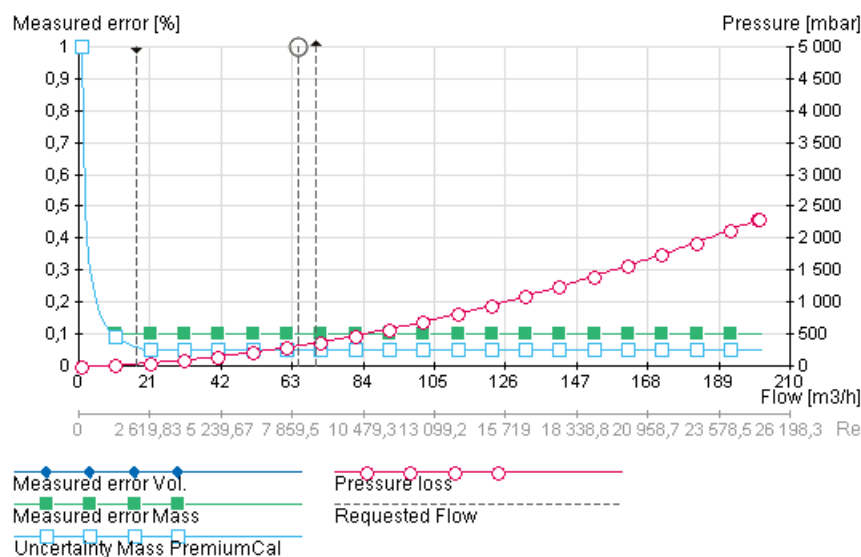
Fluid Oil, Crude (Mexico) -MODIFIED-

Pressure 9 bar_g

Temperature 44 °C

Density 893 kg/m3

Viscosity 35 cSt



Flow rate(%)	Flow rate (m3/h)	Pressure loss (mbar)	Measured error Volume(%)	Measured error Mass(%)	Measured error spec. Mass(%)
10	20,157	46,887	0,1	0,1	0,05
20	40,314	145,097	0,1	0,1	0,05
30	60,47	286,468	0,1	0,1	0,05
40	80,627	467,871	0,1	0,1	0,05
50	100,784	687,431	0,1	0,1	0,05
60	120,941	943,852	0,1	0,1	0,05
70	141,097	1 236,161	0,1	0,1	0,05
80	161,254	1 563,589	0,1	0,1	0,05
90	181,411	1 925,51	0,1	0,1	0,05
100	201,568	2 321,397	0,1	0,1	0,05

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

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Applicator Sizing - Condensed (Flow)

Project

Project	10016679 / Oil Metering (Coriolis)
C.Project No.	0
Customer:	CONPET
TAG	Boldesti
Timestamp	25.10.2016 02:33 PM
Review number	1
Sales order number	
Contact person	---
eMail:	---
Phone	---
Fax	---



General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-
State	Liquid
Character	Suspension
Abrasivity	Not abrasive
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)
Fluid Type	Newtonian
Atmospheric Pressure	1,0132 bar_a
Standard	ASME/(ANSI)

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	46	60	65	m3/h
Pressure		3		bar_g
Temperature		44		°C
Density		840		kg/m3
Viscosity		20		cSt
Sound velocity	1 681	1 681	1 681	m/s
Pressure (min/max)	3		3	bar_g
Temp. (min/max)	44		44	°C
Vapor Pressure	0,0835	0,0835	0,0835	bar_a

Flowmeter

Flowmeter	Promass F 300 / DM: 1
Flow Principle	Coriolis (Promass)
Extended order code	8F3B80-*****SAAAS*A1+DC
Meter Size	3"
Operating range min.	0 m3/h
Operating range max.	214,286 m3/h
Material (sensor) *	SS 1.4539 / 904L
Process connection*	Cl.150 ASME B16.5, F316/F316L/1.4404 Flange
PED category ** :	In observance of the selected process conditions and medium, Applicator categorizes this application as PED Art.4.3. Applicator suggests an instrument without PED option.

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	46	60	65	m3/h
Velocity	2,542	3,316	3,592	m/s
Velocity Max.	4,959	6,469	7,008	m/s
Pressure loss	143,31	226,69	260,52	mbar
Measured error Vol.***	0,1	0,1	0,1	%
Measured error Mass***	0,1	0,1	0,1	%
Meas. error Mass-PremiumCal***	0,05	0,05	0,05	%
Reynolds No.	10 043	13 099	14 191	

*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.

***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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Boldesti

Timestamp: 25.10.2016 02:33 PM

Review number: 1

Sales order number:

Tri-Size Sheet

General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-		
State	Liquid		
Character	Suspension	Atmospheric Pressure	1,0132 bar_a
Abrasivity	Not abrasive	Standard	ASME/(ANSI)
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)		
Fluid Type	Newtonian		

Sizing and Calculated Results

	Next Smaller Size	Current Size	Next Bigger Size	
Flow meter	Promass F 300 / DM: 1	Promass F 300 / DM: 1	Promass F 300 / DM: 1	
Flow Principle	Coriolis (Promass)	Coriolis (Promass)	Coriolis (Promass)	
Meter Size	2"	3"	4"	
Process connection*	Cl.150 ASME B16.5, F316/F316L/1.4404	Cl.150 ASME B16.5, F316/F316L/1.4404	Cl.150 ASME B16.5, F316/F316L/1.4404	
Operating range min.	0	0	0	m3/h
Operating range max.	83,333	214,286	416,667	m3/h
Velocity at req. Flow min.	6,508	2,542	1,627	m/s
Velocity at req. Flow nom.	8,488	3,316	2,122	m/s
Velocity at req. Flow max.	9,196	3,592	2,299	m/s
Velocity max. at req. Flow min.	12,03	4,959	3,103	m/s
Velocity max. at req. Flow nom.	15,7	6,469	4,048	m/s
Velocity max. at req. Flow max.	17	7,008	4,385	m/s
Pressure loss at req. Flow min.	813,41	143,31	56,54	mbar
Pressure loss at req. Flow nom.	1 304,74	226,69	87,74	mbar
Pressure loss at req. Flow max.	1 505,74	260,52	100,27	mbar
Meas. error Vol. at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Spec. Mass at req. Flow min.***	0,05	0,05	0,05	%
Meas. error Spec. Mass at req. Flow nom.***	0,05	0,05	0,05	%
Meas. error Spec. Mass at req. Flow max.***	0,05	0,05	0,05	%
Reynolds No.	20 404	13 099	10 362	
Warnings				

*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.

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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Boldesti

Timestamp: 25.10.2016 02:33 PM

Review number: 1

Sales order number:

Chart Sheet

Flowmeter: Promass F 300 / DM: 1

Flow Principle Coriolis (Promass)

Meter Size 3"

Operating range min. 0 m3/h

Operating range max. 214,286 m3/h

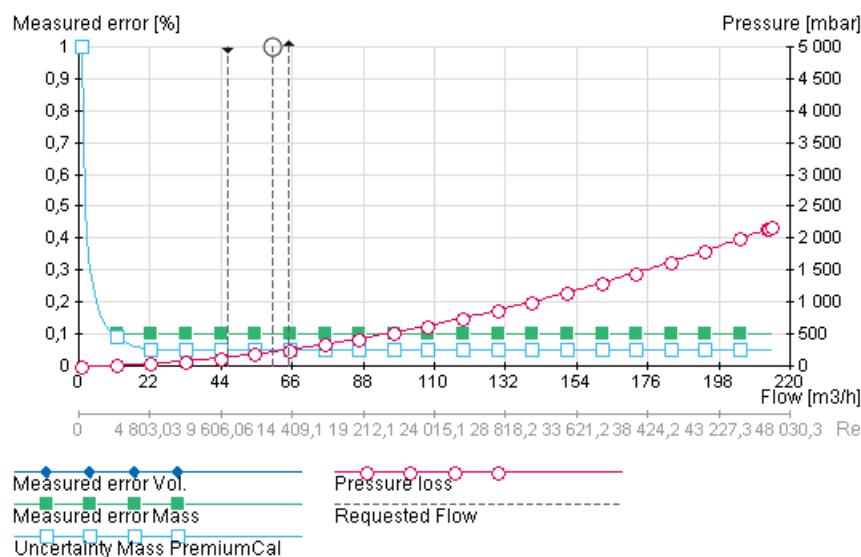
Fluid Oil, Crude (Mexico) -MODIFIED-

Pressure 3 bar_g

Temperature 44 °C

Density 840 kg/m3

Viscosity 20 cSt



Flow rate(%)	Flow rate (m3/h)	Pressure loss (mbar)	Measured error Volume(%)	Measured error Mass(%)	Measured error spec. Mass(%)
10	21,429	39,53	0,1	0,1	0,05
20	42,857	126,953	0,1	0,1	0,05
30	64,286	255,567	0,1	0,1	0,05
40	85,714	422,788	0,1	0,1	0,05
50	107,143	627,061	0,1	0,1	0,05
60	128,571	867,306	0,1	0,1	0,05
70	150	1 142,712	0,1	0,1	0,05
80	171,429	1 452,636	0,1	0,1	0,05
90	192,857	1 796,554	0,1	0,1	0,05
100	214,286	2 174,024	0,1	0,1	0,05

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

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Applicator Sizing - Condensed (Flow)

Project

Project	10016679 / Oil Metering (Coriolis)
C.Project No.	0
Customer:	CONPET
TAG	Surani
Timestamp	25.10.2016 02:35 PM
Review number	1
Sales order number	
Contact person	---
eMail:	---
Phone	---
Fax	---



General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-
State	Liquid
Character	Suspension
Abrasivity	Not abrasive
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)
Fluid Type	Newtonian
Atmospheric Pressure	1,0132 bar_a
Standard	ASME/(ANSI)

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	6	28	30	m3/h
Pressure		28		bar_g
Temperature		50		°C
Density		880		kg/m3
Viscosity		13		cSt
Sound velocity	1 681	1 681	1 681	m/s
Pressure (min/max)	28		28	bar_g
Temp. (min/max)	50		50	°C
Vapor Pressure	0,1147	0,1147	0,1147	bar_a

Flowmeter

Flowmeter	Promass F 300 / DM: 1
Flow Principle	Coriolis (Promass)
Extended order code	8F3B50-*****SAABS*A1+DCLK
Meter Size	2"
Operating range min.	0 m3/h
Operating range max.	79,545 m3/h
Material (sensor) *	SS 1.4539 / 904L
Process connection*	CI 300 ASME B16.5, F316/F316L/1.4404 Flange
PED category ** :	The Flowmeter is classified in Category II. Devices in this category need to be approved and tested to PED requirements.

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	6	28	30	m3/h
Velocity	0,849	3,961	4,244	m/s
Velocity Max.	1,57	7,325	7,848	m/s
Pressure loss	23,31	320,59	362,16	mbar
Measured error Vol.***	0,1	0,1	0,1	%
Measured error Mass***	0,1	0,1	0,1	%
Meas. error Mass- PremiumCal***	0,07	0,05	0,05	%
Reynolds No.	3 139	14 649	15 696	

*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.

***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

Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Surani

Timestamp: 25.10.2016 02:35 PM

Review number: 1

Sales order number:

Tri-Size Sheet

General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-		
State	Liquid		
Character	Suspension	Atmospheric Pressure	1,0132 bar_a
Abrasivity	Not abrasive	Standard	ASME/(ANSI)
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)		
Fluid Type	Newtonian		

Sizing and Calculated Results

	Next Smaller Size	Current Size	Next Bigger Size	
Flow meter	Promass F 300 / DM: 1	Promass F 300 / DM: 1	Promass F 300 / DM: 1	
Flow Principle	Coriolis (Promass)	Coriolis (Promass)	Coriolis (Promass)	
Meter Size	1 1/2"	2"	3"	
Process connection*	CI 300 ASME B16.5, F316/F316L/1.4404	CI 300 ASME B16.5, F316/F316L/1.4404	CI 300 ASME B16.5, F316/F316L/1.4404	
Operating range min.	0	0	0	m3/h
Operating range max.	51,136	79,545	204,545	m3/h
Velocity at req. Flow min.	1,326	0,849	0,332	m/s
Velocity at req. Flow nom.	6,189	3,961	1,547	m/s
Velocity at req. Flow max.	6,631	4,244	1,658	m/s
Velocity max. at req. Flow min.	3,425	1,57	0,647	m/s
Velocity max. at req. Flow nom.	15,98	7,325	3,019	m/s
Velocity max. at req. Flow max.	17,13	7,848	3,234	m/s
Pressure loss at req. Flow min.	105,14	23,31	4,48	mbar
Pressure loss at req. Flow nom.	1 629,55	320,59	56,68	mbar
Pressure loss at req. Flow max.	1 849,38	362,16	63,79	mbar
Meas. error Vol. at req. Flow min.***	0,1	0,1	0,17	%
Meas. error Vol. at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow min.***	0,1	0,1	0,17	%
Meas. error Mass at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Spec. Mass at req. Flow min.***	0,05	0,07	0,17	%
Meas. error Spec. Mass at req. Flow nom.***	0,05	0,05	0,05	%
Meas. error Spec. Mass at req. Flow max.***	0,05	0,05	0,05	%
Reynolds No.	21 641	14 649	9 405	
Warnings				

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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Surani

Timestamp: 25.10.2016 02:35 PM

Review number: 1

Sales order number:

Chart Sheet

Flowmeter: Promass F 300 / DM: 1

Flow Principle Coriolis (Promass)

Meter Size 2"

Operating range min. 0 m3/h

Operating range max. 79,545 m3/h

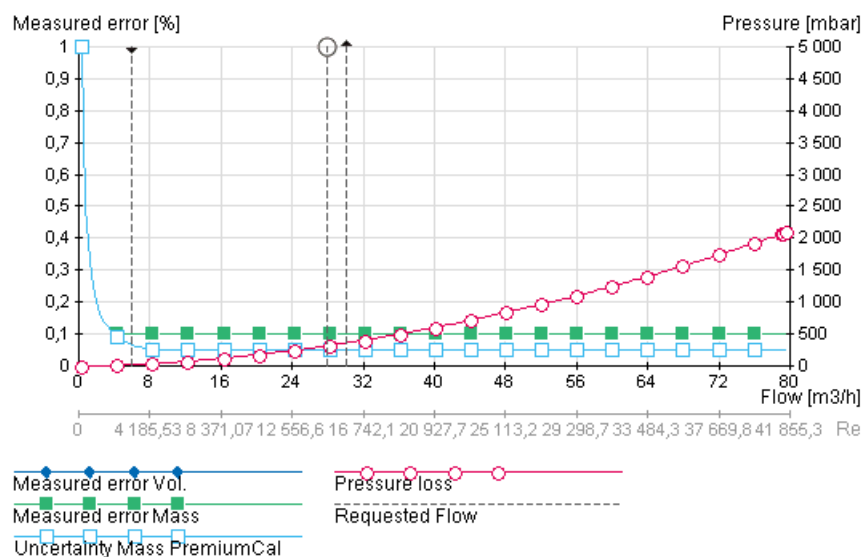
Fluid Oil, Crude (Mexico) -MODIFIED-

Pressure 28 bar_g

Temperature 50 °C

Density 880 kg/m3

Viscosity 13 cSt



Flow rate(%)	Flow rate (m3/h)	Pressure loss (mbar)	Measured error Volume(%)	Measured error Mass(%)	Measured error spec. Mass(%)
10	7,955	37,078	0,1	0,1	0,05
20	15,909	119,673	0,1	0,1	0,05
30	23,864	242,032	0,1	0,1	0,05
40	31,818	401,954	0,1	0,1	0,05
50	39,773	598,126	0,1	0,1	0,05
60	47,727	829,639	0,1	0,1	0,05
70	55,682	1 095,813	0,1	0,1	0,05
80	63,636	1 396,114	0,1	0,1	0,05
90	71,591	1 730,104	0,1	0,1	0,05
100	79,545	2 097,417	0,1	0,1	0,05

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

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Applicator Sizing - Condensed (Flow)

Project

Project	10016679 / Oil Metering (Coriolis)
C.Project No.	0
Customer:	CONPET
TAG	Predeal Sarari
Timestamp	25.10.2016 02:36 PM
Review number	1
Sales order number	
Contact person	---
eMail:	---
Phone	---
Fax	---

General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-
State	Liquid
Character	Suspension
Abrasivity	Not abrasive
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)
Fluid Type	Newtonian
Atmospheric Pressure	1,0132 bar_a
Standard	ASME/(ANSI)

Flowmeter

Flowmeter	Promass F 300 / DM: 1
Flow Principle	Coriolis (Promass)
Extended order code	8F3B50-*****SAABS*A1+DCLK
Meter Size	2"
Operating range min.	0 m3/h
Operating range max.	81,395 m3/h
Material (sensor) *	SS 1.4539 / 904L
Process connection*	CI 300 ASME B16.5, F316/F316L/1.4404 Flange
PED category ** :	The Flowmeter is classified in Category II. Devices in this category need to be approved and tested to PED requirements.

*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.

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



Operating Conditions

	minimum	nominal	maximum	
Requested Flow	6	28	30	m3/h
Pressure		30		bar_g
Temperature		46		°C
Density		860		kg/m3
Viscosity		10		cSt
Sound velocity	1 681	1 681	1 681	m/s
Pressure (min/max)	30		30	bar_g
Temp. (min/max)	46		46	°C
Vapor Pressure	0,093	0,093	0,093	bar_a

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	6	28	30	m3/h
Velocity	0,849	3,961	4,244	m/s
Velocity Max.	1,57	7,325	7,848	m/s
Pressure loss	20,75	295,25	333,95	mbar
Measured error Vol.***	0,1	0,1	0,1	%
Measured error Mass***	0,1	0,1	0,1	%
Meas. error Mass-PremiumCal***	0,07	0,05	0,05	%
Reynolds No.	4 081	19 044	20 404	

Warnings

Messages

Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Predeal Sarari

Timestamp: 25.10.2016 02:36 PM

Review number: 1

Sales order number:

Tri-Size Sheet

General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-		
State	Liquid		
Character	Suspension	Atmospheric Pressure	1,0132 bar_a
Abrasivity	Not abrasive	Standard	ASME/(ANSI)
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)		
Fluid Type	Newtonian		

Sizing and Calculated Results

	Next Smaller Size	Current Size	Next Bigger Size	
Flow meter	Promass F 300 / DM: 1	Promass F 300 / DM: 1	Promass F 300 / DM: 1	
Flow Principle	Coriolis (Promass)	Coriolis (Promass)	Coriolis (Promass)	
Meter Size	1 1/2"	2"	3"	
Process connection*	CI 300 ASME B16.5, F316/F316L/1.4404	CI 300 ASME B16.5, F316/F316L/1.4404	CI 300 ASME B16.5, F316/F316L/1.4404	
Operating range min.	0	0	0	m3/h
Operating range max.	52,326	81,395	209,302	m3/h
Velocity at req. Flow min.	1,326	0,849	0,332	m/s
Velocity at req. Flow nom.	6,189	3,961	1,547	m/s
Velocity at req. Flow max.	6,631	4,244	1,658	m/s
Velocity max. at req. Flow min.	3,425	1,57	0,647	m/s
Velocity max. at req. Flow nom.	15,98	7,325	3,019	m/s
Velocity max. at req. Flow max.	17,13	7,848	3,234	m/s
Pressure loss at req. Flow min.	95,71	20,75	3,93	mbar
Pressure loss at req. Flow nom.	1 526,88	295,25	51,48	mbar
Pressure loss at req. Flow max.	1 734,59	333,95	58,02	mbar
Meas. error Vol. at req. Flow min.***	0,1	0,1	0,17	%
Meas. error Vol. at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow min.***	0,1	0,1	0,17	%
Meas. error Mass at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Spec. Mass at req. Flow min.***	0,05	0,07	0,17	%
Meas. error Spec. Mass at req. Flow nom.***	0,05	0,05	0,05	%
Meas. error Spec. Mass at req. Flow max.***	0,05	0,05	0,05	%
Reynolds No.	28 133	19 044	12 226	
Warnings				

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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---
eMail: ---

C.Project No.: 0

Fax: ---

TAG : Predeal Sarari

Timestamp: 25.10.2016 02:36 PM

Review number: 1

Sales order number:

Chart Sheet

Flowmeter: Promass F 300 / DM: 1

Flow Principle Coriolis (Promass)

Meter Size 2"

Operating range min. 0 m3/h

Operating range max. 81,395 m3/h

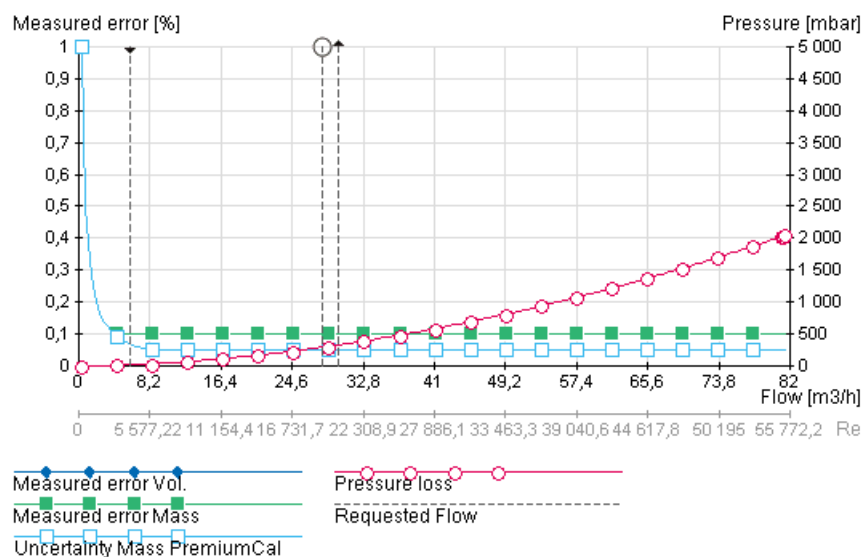
Fluid Oil, Crude (Mexico) -MODIFIED-

Pressure 30 bar_g

Temperature 46 °C

Density 860 kg/m3

Viscosity 10 cSt



Flow rate(%)	Flow rate (m3/h)	Pressure loss (mbar)	Measured error Volume(%)	Measured error Mass(%)	Measured error spec. Mass(%)
10	8,14	34,551	0,1	0,1	0,05
20	16,279	113,451	0,1	0,1	0,05
30	24,419	231,479	0,1	0,1	0,05
40	32,558	386,636	0,1	0,1	0,05
50	40,698	577,725	0,1	0,1	0,05
60	48,837	803,919	0,1	0,1	0,05
70	56,977	1 064,597	0,1	0,1	0,05
80	65,116	1 359,272	0,1	0,1	0,05
90	73,256	1 687,545	0,1	0,1	0,05
100	81,395	2 049,081	0,1	0,1	0,05

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

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Applicator Sizing - Condensed (Flow)

Project

Project	10016679 / Oil Metering (Coriolis)
C.Project No.	0
Customer:	CONPET
TAG	Gura Vitioarei
Timestamp	25.10.2016 02:37 PM
Review number	1
Sales order number	
Contact person	---
eMail:	---
Phone	---
Fax	---



General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-
State	Liquid
Character	Suspension
Abrasivity	Not abrasive
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)
Fluid Type	Newtonian
Atmospheric Pressure	1,0132 bar_a
Standard	ASME/(ANSI)

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	9	26	30	m3/h
Pressure		1		bar_g
Temperature		38		°C
Density		866		kg/m3
Viscosity		9		cSt
Sound velocity	1 681	1 681	1 681	m/s
Pressure (min/max)	1		1	bar_g
Temp. (min/max)	38		38	°C
Vapor Pressure	0,06	0,06	0,06	bar_a

Flowmeter

Flowmeter	Promass F 300 / DM: 1
Flow Principle	Coriolis (Promass)
Extended order code	8F3B80-*****SAAAS*A1+DC
Meter Size	3"
Operating range min.	0 m3/h
Operating range max.	207,852 m3/h
Material (sensor) *	SS 1.4539 / 904L
Process connection*	Cl.150 ASME B16.5, F316/F316L/1.4404 Flange
PED category ** :	In observance of the selected process conditions and medium, Applicator categorizes this application as PED Art.4.3. Applicator suggests an instrument without PED option.

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	9	26	30	m3/h
Velocity	0,497	1,437	1,658	m/s
Velocity Max.	0,97	2,803	3,234	m/s
Pressure loss	7,36	44,32	56,84	mbar
Measured error Vol.***	0,12	0,1	0,1	%
Measured error Mass***	0,12	0,1	0,1	%
Meas. error Mass-PremiumCal***	0,12	0,05	0,05	%
Reynolds No.	4 366	12 614	14 555	

*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.

***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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Gura Vitioarei

Timestamp: 25.10.2016 02:37 PM

Review number: 1

Sales order number:

Tri-Size Sheet

General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-		
State	Liquid		
Character	Suspension	Atmospheric Pressure	1,0132 bar_a
Abrasivity	Not abrasive	Standard	ASME/(ANSI)
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)		
Fluid Type	Newtonian		

Sizing and Calculated Results

	Next Smaller Size	Current Size	Next Bigger Size	
Flow meter	Promass F 300 / DM: 1	Promass F 300 / DM: 1	Promass F 300 / DM: 1	
Flow Principle	Coriolis (Promass)	Coriolis (Promass)	Coriolis (Promass)	
Meter Size	2"	3"	4"	
Process connection*	Cl.150 ASME B16.5, F316/F316L/1.4404	Cl.150 ASME B16.5, F316/F316L/1.4404	Cl.150 ASME B16.5, F316/F316L/1.4404	
Operating range min.	0	0	0	m3/h
Operating range max.	80,831	207,852	404,157	m3/h
Velocity at req. Flow min.	1,273	0,497	0,318	m/s
Velocity at req. Flow nom.	3,678	1,437	0,92	m/s
Velocity at req. Flow max.	4,244	1,658	1,061	m/s
Velocity max. at req. Flow min.	2,354	0,97	0,607	m/s
Velocity max. at req. Flow nom.	6,801	2,803	1,754	m/s
Velocity max. at req. Flow max.	7,848	3,234	2,024	m/s
Pressure loss at req. Flow min.	39,94	7,36	3,09	mbar
Pressure loss at req. Flow nom.	254,63	44,32	17,2	mbar
Pressure loss at req. Flow max.	328,95	56,84	21,83	mbar
Meas. error Vol. at req. Flow min.***	0,1	0,12	0,18	%
Meas. error Vol. at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow min.***	0,1	0,12	0,18	%
Meas. error Mass at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Spec. Mass at req. Flow min.***	0,05	0,12	0,18	%
Meas. error Spec. Mass at req. Flow nom.***	0,05	0,05	0,06	%
Meas. error Spec. Mass at req. Flow max.***	0,05	0,05	0,05	%
Reynolds No.	19 649	12 614	9 978	
Warnings				

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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Gura Vitioarei

Timestamp: 25.10.2016 02:37 PM

Review number: 1

Sales order number:

Chart Sheet

Flowmeter: Promass F 300 / DM: 1

Flow Principle Coriolis (Promass)

Meter Size 3"

Operating range min. 0 m3/h

Operating range max. 207,852 m3/h

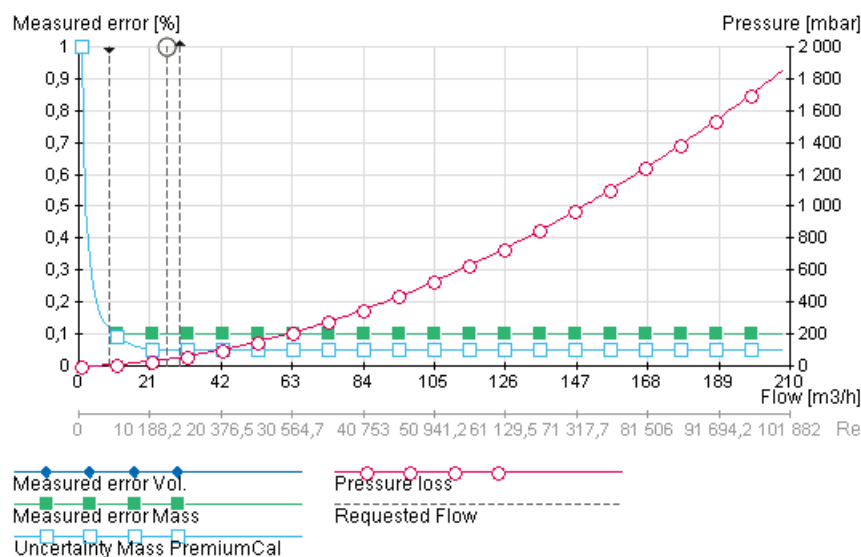
Fluid Oil, Crude (Mexico) -MODIFIED-

Pressure 1 bar_g

Temperature 38 °C

Density 866 kg/m3

Viscosity 9 cSt



Flow rate(%)	Flow rate (m3/h)	Pressure loss (mbar)	Measured error Volume(%)	Measured error Mass(%)	Measured error spec. Mass(%)
10	20,785	30,132	0,1	0,1	0,05
20	41,57	100,711	0,1	0,1	0,05
30	62,356	206,984	0,1	0,1	0,05
40	83,141	347,096	0,1	0,1	0,05
50	103,926	519,927	0,1	0,1	0,05
60	124,711	724,697	0,1	0,1	0,05
70	145,497	960,818	0,1	0,1	0,05
80	166,282	1 227,821	0,1	0,1	0,05
90	187,067	1 525,327	0,1	0,1	0,05
100	207,852	1 853,012	0,1	0,1	0,05

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

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Applicator Sizing - Condensed (Flow)

Project

Project	10016679 / Oil Metering (Coriolis)
C.Project No.	0
Customer:	CONPET
TAG	Pacureti
Timestamp	25.10.2016 02:41 PM
Review number	1
Sales order number	
Contact person	---
eMail:	---
Phone	---
Fax	---



General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-
State	Liquid
Character	Suspension
Abrasivity	Not abrasive
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)
Fluid Type	Newtonian
Atmospheric Pressure	1,0132 bar_a
Standard	ASME/(ANSI)

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	4	14	20	m3/h
Pressure		18		bar_g
Temperature		24		°C
Density		803		kg/m3
Viscosity		2,8		cSt
Sound velocity	1 681	1 681	1 681	m/s
Pressure (min/max)	18		18	bar_g
Temp. (min/max)	24		24	°C
Vapor Pressure	0,0261	0,0261	0,0261	bar_a

Flowmeter

Flowmeter	Promass F 300 / DM: 1
Flow Principle	Coriolis (Promass)
Extended order code	8F3B40-*****SAAAS*A1+DC
Meter Size	1 1/2"
Operating range min.	0 m3/h
Operating range max.	56,04 m3/h
Material (sensor) *	SS 1.4539 / 904L
Process connection*	Cl.150 ASME B16.5, F316/F316L/1.4404 Flange
PED category ** :	In observance of the selected process conditions and medium, Applicator categorizes this application as PED Art.4.3. Applicator suggests an instrument without PED option.

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	4	14	20	m3/h
Velocity	0,884	3,095	4,421	m/s
Velocity Max.	2,284	7,992	11,42	m/s
Pressure loss	32,67	328,9	643,76	mbar
Measured error Vol.***	0,1	0,1	0,1	%
Measured error Mass***	0,1	0,1	0,1	%
Meas. error Mass-PremiumCal***	0,07	0,05	0,05	%
Reynolds No.	14 354	50 238	71 769	

*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.

***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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Pacureti

Timestamp: 25.10.2016 02:41 PM

Review number: 1

Sales order number:

Tri-Size Sheet

General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-		
State	Liquid		
Character	Suspension	Atmospheric Pressure	1,0132 bar_a
Abrasivity	Not abrasive	Standard	ASME/(ANSI)
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)		
Fluid Type	Newtonian		

Sizing and Calculated Results

	Next Smaller Size	Current Size	Next Bigger Size	
Flow meter	Promass F 300 / DM: 1	Promass F 300 / DM: 1	Promass F 300 / DM: 1	
Flow Principle	Coriolis (Promass)	Coriolis (Promass)	Coriolis (Promass)	
Meter Size	1"	1 1/2"	2"	
Process connection*	Cl.150 ASME B16.5, F316/F316L/1.4404	Cl.150 ASME B16.5, F316/F316L/1.4404	Cl.150 ASME B16.5, F316/F316L/1.4404	
Operating range min.	0	0	0	m3/h
Operating range max.	22,416	56,04	87,173	m3/h
Velocity at req. Flow min.	2,264	0,884	0,566	m/s
Velocity at req. Flow nom.	7,922	3,095	1,981	m/s
Velocity at req. Flow max.	11,32	4,421	2,829	m/s
Velocity max. at req. Flow min.	4,912	2,284	1,046	m/s
Velocity max. at req. Flow nom.	17,19	7,992	3,662	m/s
Velocity max. at req. Flow max.	24,56	11,42	5,232	m/s
Pressure loss at req. Flow min.	151,13	32,67	6,61	mbar
Pressure loss at req. Flow nom.	1 577,87	328,9	61,42	mbar
Pressure loss at req. Flow max.	3 116,47	643,76	117,92	mbar
Meas. error Vol. at req. Flow min.***	0,1	0,1	0,11	%
Meas. error Vol. at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow min.***	0,1	0,1	0,11	%
Meas. error Mass at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Spec. Mass at req. Flow min.***	0,05	0,07	0,11	%
Meas. error Spec. Mass at req. Flow nom.***	0,05	0,05	0,05	%
Meas. error Spec. Mass at req. Flow max.***	0,05	0,05	0,05	%
Reynolds No.	73 683	50 238	34 007	
Warnings				

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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Pacureti

Timestamp: 25.10.2016 02:41 PM

Review number: 1

Sales order number:

Chart Sheet

Flowmeter: Promass F 300 / DM: 1

Flow Principle Coriolis (Promass)

Meter Size 1 1/2"

Operating range min. 0 m3/h

Operating range max. 56,04 m3/h

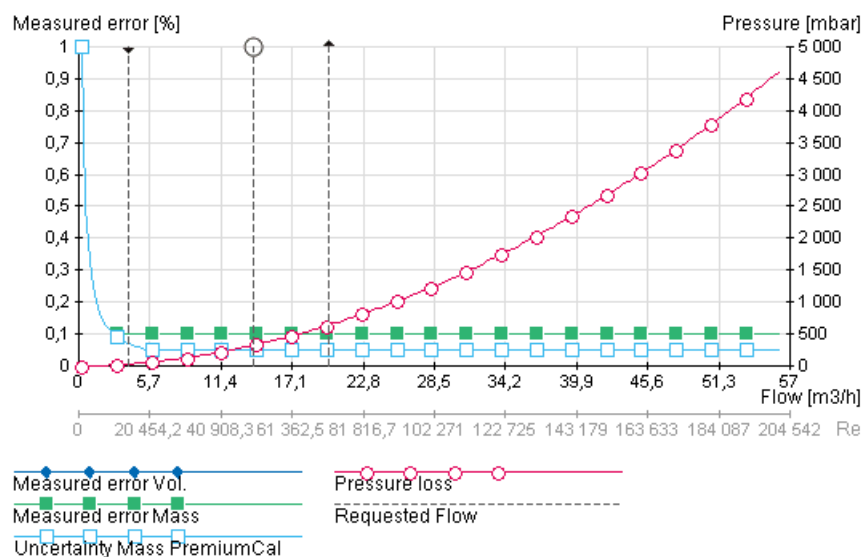
Fluid Oil, Crude (Mexico) -MODIFIED-

Pressure 18 bar_g

Temperature 24 °C

Density 803 kg/m3

Viscosity 2,8 cSt



Flow rate(%)	Flow rate (m3/h)	Pressure loss (mbar)	Measured error Volume(%)	Measured error Mass(%)	Measured error spec. Mass(%)
10	5,604	60,312	0,1	0,1	0,05
20	11,208	216,98	0,1	0,1	0,05
30	16,812	463,93	0,1	0,1	0,05
40	22,416	798,82	0,1	0,1	0,05
50	28,02	1 220,246	0,1	0,1	0,05
60	33,624	1 727,236	0,1	0,1	0,05
70	39,228	2 319,063	0,1	0,1	0,05
80	44,832	2 995,151	0,1	0,1	0,05
90	50,436	3 755,031	0,1	0,1	0,05
100	56,04	4 598,311	0,1	0,1	0,05

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

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Applicator Sizing - Condensed (Flow)

Project

Project	10016679 / Oil Metering (Coriolis)
C.Project No.	0
Customer:	CONPET
TAG	Uralti
Timestamp	25.10.2016 02:42 PM
Review number	1
Sales order number	
Contact person	---
eMail:	---
Phone	---
Fax	---



General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-
State	Liquid
Character	Suspension
Abrasivity	Not abrasive
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)
Fluid Type	Newtonian
Atmospheric Pressure	1,0132 bar_a
Standard	ASME/(ANSI)

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	10	30	35	m3/h
Pressure		10		bar_g
Temperature		46		°C
Density		865		kg/m3
Viscosity		22		cSt
Sound velocity	1 681	1 681	1 681	m/s
Pressure (min/max)	10		10	bar_g
Temp. (min/max)	46		46	°C
Vapor Pressure	0,093	0,093	0,093	bar_a

Flowmeter

Flowmeter	Promass F 300 / DM: 1
Flow Principle	Coriolis (Promass)
Extended order code	8F3B50-*****SAAAS*A1+DC
Meter Size	2"
Operating range min.	0 m3/h
Operating range max.	80,925 m3/h
Material (sensor) *	SS 1.4539 / 904L
Process connection*	Cl.150 ASME B16.5, F316/F316L/1.4404 Flange
PED category ** :	In observance of the selected process conditions and medium, Applicator categorizes this application as PED Art.4.3. Applicator suggests an instrument without PED option.

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	10	30	35	m3/h
Velocity	1,415	4,244	4,951	m/s
Velocity Max.	2,616	7,848	9,156	m/s
Pressure loss	64,03	406,03	530,6	mbar
Measured error Vol.***	0,1	0,1	0,1	%
Measured error Mass***	0,1	0,1	0,1	%
Meas. error Mass-PremiumCal***	0,05	0,05	0,05	%
Reynolds No.	3 092	9 275	10 821	

*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.

***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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Urlati

Timestamp: 25.10.2016 02:42 PM

Review number: 1

Sales order number:

Tri-Size Sheet

General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-		
State	Liquid		
Character	Suspension	Atmospheric Pressure	1,0132 bar_a
Abrasivity	Not abrasive	Standard	ASME/(ANSI)
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)		
Fluid Type	Newtonian		

Sizing and Calculated Results

	Next Smaller Size	Current Size	Next Bigger Size	
Flow meter	Promass F 300 / DM: 1	Promass F 300 / DM: 1	Promass F 300 / DM: 1	
Flow Principle	Coriolis (Promass)	Coriolis (Promass)	Coriolis (Promass)	
Meter Size	1 1/2"	2"	3"	
Process connection*	Cl.150 ASME B16.5, F316/F316L/1.4404	Cl.150 ASME B16.5, F316/F316L/1.4404	Cl.150 ASME B16.5, F316/F316L/1.4404	
Operating range min.	0	0	0	m3/h
Operating range max.	52,023	80,925	208,092	m3/h
Velocity at req. Flow min.	2,21	1,415	0,553	m/s
Velocity at req. Flow nom.	6,631	4,244	1,658	m/s
Velocity at req. Flow max.	7,737	4,951	1,934	m/s
Velocity max. at req. Flow min.	5,709	2,616	1,078	m/s
Velocity max. at req. Flow nom.	17,13	7,848	3,234	m/s
Velocity max. at req. Flow max.	19,98	9,156	3,773	m/s
Pressure loss at req. Flow min.	288,34	64,03	12,32	mbar
Pressure loss at req. Flow nom.	1 998,18	406,03	73,58	mbar
Pressure loss at req. Flow max.	2 640,65	530,6	95,36	mbar
Meas. error Vol. at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Spec. Mass at req. Flow min.***	0,05	0,05	0,1	%
Meas. error Spec. Mass at req. Flow nom.***	0,05	0,05	0,05	%
Meas. error Spec. Mass at req. Flow max.***	0,05	0,05	0,05	%
Reynolds No.	13 701	9 275	5 954	
Warnings				

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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Uralti

Timestamp: 25.10.2016 02:42 PM

Review number: 1

Sales order number:

Chart Sheet

Flowmeter: Promass F 300 / DM: 1

Flow Principle Coriolis (Promass)

Meter Size 2"

Operating range min. 0 m3/h

Operating range max. 80,925 m3/h

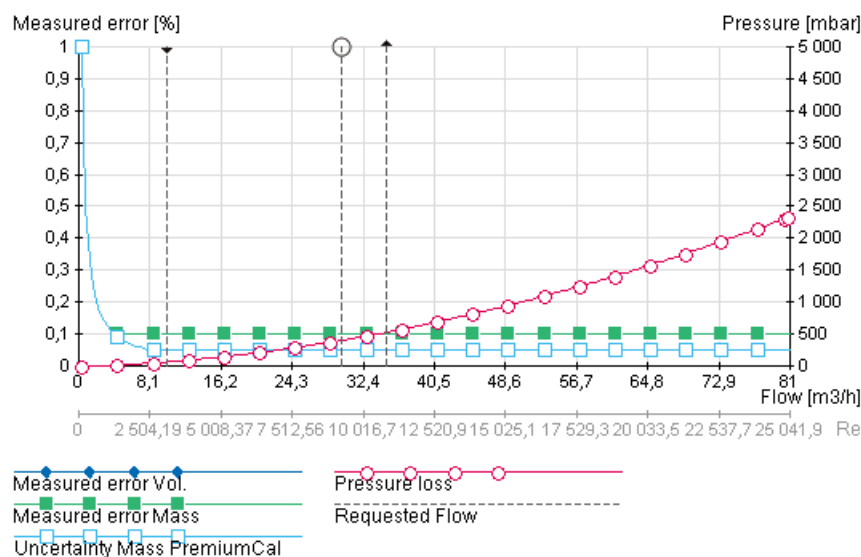
Fluid Oil, Crude (Mexico) -MODIFIED-

Pressure 10 bar_g

Temperature 46 °C

Density 865 kg/m3

Viscosity 22 cSt



Flow rate(%)	Flow rate (m3/h)	Pressure loss (mbar)	Measured error Volume(%)	Measured error Mass(%)	Measured error spec. Mass(%)
10	8,092	45,467	0,1	0,1	0,05
20	16,185	141,915	0,1	0,1	0,05
30	24,277	282,088	0,1	0,1	0,05
40	32,37	463,215	0,1	0,1	0,05
50	40,462	683,645	0,1	0,1	0,05
60	48,555	942,238	0,1	0,1	0,05
70	56,647	1 238,143	0,1	0,1	0,05
80	64,74	1 570,69	0,1	0,1	0,05
90	72,832	1 939,333	0,1	0,1	0,05
100	80,925	2 343,615	0,1	0,1	0,05

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

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Applicator Sizing - Condensed (Flow)

Project

Project	10016679 / Oil Metering (Coriolis)
C.Project No.	0
Customer:	CONPET
TAG	Urziceni
Timestamp	25.10.2016 02:43 PM
Review number	1
Sales order number	
Contact person	---
eMail:	---
Phone	---
Fax	---



General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-
State	Liquid
Character	Suspension
Abrasivity	Not abrasive
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)
Fluid Type	Newtonian
Atmospheric Pressure	1,0132 bar_a
Standard	ASME/(ANSI)

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	25	30	36	m3/h
Pressure		30		bar_g
Temperature		50		°C
Density		913		kg/m3
Viscosity		45		cSt
Sound velocity	1 681	1 681	1 681	m/s
Pressure (min/max)	30		30	bar_g
Temp. (min/max)	50		50	°C
Vapor Pressure	0,1147	0,1147	0,1147	bar_a

Flowmeter

Flowmeter	Promass F 300 / DM: 1
Flow Principle	Coriolis (Promass)
Extended order code	8F3B50-*****SAABS*A1+DCLK
Meter Size	2"
Operating range min.	0 m3/h
Operating range max.	76,67 m3/h
Material (sensor) *	SS 1.4539 / 904L
Process connection*	CI 300 ASME B16.5, F316/F316L/1.4404 Flange
PED category ** :	The Flowmeter is classified in Category II. Devices in this category need to be approved and tested to PED requirements.

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	25	30	36	m3/h
Velocity	3,537	4,244	5,093	m/s
Velocity Max.	6,54	7,848	9,417	m/s
Pressure loss	392,89	531,56	721,45	mbar
Measured error Vol.***	0,1	0,1	0,1	%
Measured error Mass***	0,1	0,1	0,1	%
Meas. error Mass- PremiumCal***	0,05	0,05	0,05	%
Reynolds No.	3 779	4 534	5 441	

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** 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.

***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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Urziceni

Timestamp: 25.10.2016 02:43 PM

Review number: 1

Sales order number:

Tri-Size Sheet

General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-		
State	Liquid		
Character	Suspension	Atmospheric Pressure	1,0132 bar_a
Abrasivity	Not abrasive	Standard	ASME/(ANSI)
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)		
Fluid Type	Newtonian		

Sizing and Calculated Results

	Next Smaller Size	Current Size	Next Bigger Size	
Flow meter	Promass F 300 / DM: 1	Promass F 300 / DM: 1	Promass F 300 / DM: 1	
Flow Principle	Coriolis (Promass)	Coriolis (Promass)	Coriolis (Promass)	
Meter Size	1 1/2"	2"	3"	
Process connection*	CI 300 ASME B16.5, F316/F316L/1.4404	CI 300 ASME B16.5, F316/F316L/1.4404	CI 300 ASME B16.5, F316/F316L/1.4404	
Operating range min.	0	0	0	m3/h
Operating range max.	49,288	76,67	197,152	m3/h
Velocity at req. Flow min.	5,526	3,537	1,382	m/s
Velocity at req. Flow nom.	6,631	4,244	1,658	m/s
Velocity at req. Flow max.	7,958	5,093	1,989	m/s
Velocity max. at req. Flow min.	14,27	6,54	2,695	m/s
Velocity max. at req. Flow nom.	17,13	7,848	3,234	m/s
Velocity max. at req. Flow max.	20,55	9,417	3,881	m/s
Pressure loss at req. Flow min.	1 800,1	392,89	74,82	mbar
Pressure loss at req. Flow nom.	2 473,04	531,56	100,21	mbar
Pressure loss at req. Flow max.	3 406,96	721,45	134,65	mbar
Meas. error Vol. at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Spec. Mass at req. Flow min.***	0,05	0,05	0,05	%
Meas. error Spec. Mass at req. Flow nom.***	0,05	0,05	0,05	%
Meas. error Spec. Mass at req. Flow max.***	0,05	0,05	0,05	%
Reynolds No.	6 698	4 534	2 911	
Warnings				

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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Urziceni

Timestamp: 25.10.2016 02:43 PM

Review number: 1

Sales order number:

Chart Sheet

Flowmeter: Promass F 300 / DM: 1

Flow Principle Coriolis (Promass)

Meter Size 2"

Operating range min. 0 m3/h

Operating range max. 76,67 m3/h

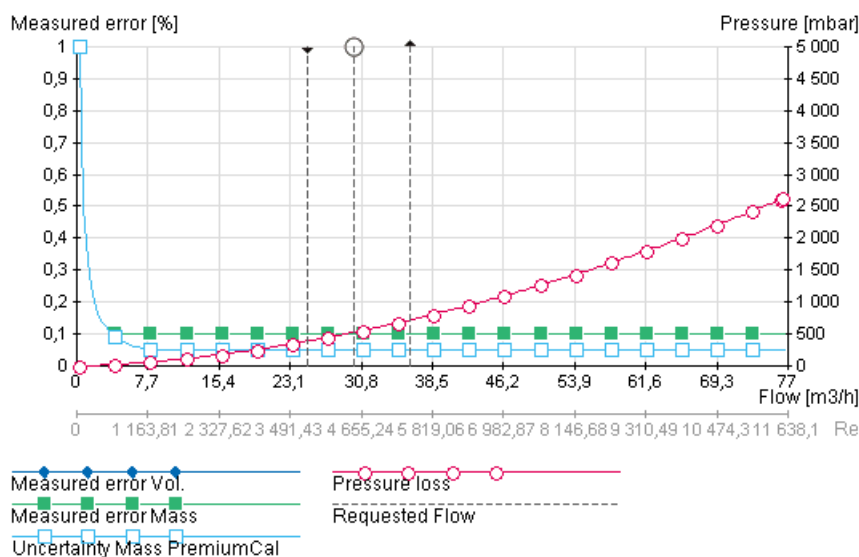
Fluid Oil, Crude (Mexico) -MODIFIED-

Pressure 30 bar_g

Temperature 50 °C

Density 913 kg/m3

Viscosity 45 cSt



Flow rate(%)	Flow rate (m3/h)	Pressure loss (mbar)	Measured error Volume(%)	Measured error Mass(%)	Measured error spec. Mass(%)
10	7,667	60,283	0,1	0,1	0,05
20	15,334	177,626	0,1	0,1	0,05
30	23,001	342,567	0,1	0,1	0,05
40	30,668	551,458	0,1	0,1	0,05
50	38,335	802,133	0,1	0,1	0,05
60	46,002	1 093,102	0,1	0,1	0,05
70	53,669	1 423,252	0,1	0,1	0,05
80	61,336	1 791,71	0,1	0,1	0,05
90	69,003	2 197,764	0,1	0,1	0,05
100	76,67	2 640,819	0,1	0,1	0,05

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

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Applicator Sizing - Condensed (Flow)

Project

Project	10016679 / Oil Metering (Coriolis)
C.Project No.	0
Customer:	CONPET
TAG	Grindu
Timestamp	07.12.2016 02:39 PM
Review number	2
Sales order number	
Contact person	---
eMail:	---
Phone	---
Fax	---



General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-
State	Liquid
Character	Suspension
Abrasivity	Not abrasive
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)
Fluid Type	Newtonian
Atmospheric Pressure	1,0132 bar_a
Standard	ASME/(ANSI)

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	20	22	24	m3/h
Pressure		30		bar_g
Temperature		61		°C
Density		911		kg/m3
Viscosity		45		cSt
Sound velocity	1 681	1 681	1 681	m/s
Pressure (min/max)	30		30	bar_g
Temp. (min/max)	61		61	°C
Vapor Pressure	0,1981	0,1981	0,1981	bar_a

Flowmeter

Flowmeter	Promass F 300 / DM: 1
Flow Principle	Coriolis (Promass)
Extended order code	8F3B50-*****SAABS*A1+DCLK
Meter Size	2"
Operating range min.	0 m3/h
Operating range max.	76,839 m3/h
Material (sensor) *	SS 1.4539 / 904L
Process connection*	CI 300 ASME B16.5, F316/F316L/1.4404 Flange
PED category ** :	The Flowmeter is classified in Category II. Devices in this category need to be approved and tested to PED requirements.

Sizing and Calculated Results

	minimum	nominal	maximum	
Requested Flow	20	22	24	m3/h
Velocity	2,829	3,112	3,395	m/s
Velocity Max.	5,232	5,755	6,278	m/s
Pressure loss	272,01	317,78	366,54	mbar
Measured error Vol.***	0,1	0,1	0,1	%
Measured error Mass***	0,1	0,1	0,1	%
Meas. error Mass- PremiumCal***	0,05	0,05	0,05	%
Reynolds No.	3 023	3 325	3 627	

*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.

***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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Grindu

Timestamp: 07.12.2016 02:39 PM

Review number: 2

Sales order number:

Tri-Size Sheet

General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-		
State	Liquid		
Character	Suspension	Atmospheric Pressure	1,0132 bar_a
Abrasivity	Not abrasive	Standard	ASME/(ANSI)
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)		
Fluid Type	Newtonian		

Sizing and Calculated Results

	Next Smaller Size	Current Size	Next Bigger Size	
Flow meter	Promass F 300 / DM: 1	Promass F 300 / DM: 1	Promass F 300 / DM: 1	
Flow Principle	Coriolis (Promass)	Coriolis (Promass)	Coriolis (Promass)	
Meter Size	1 1/2"	2"	3"	
Process connection*	CI 300 ASME B16.5, F316/F316L/1.4404	CI 300 ASME B16.5, F316/F316L/1.4404	CI 300 ASME B16.5, F316/F316L/1.4404	
Operating range min.	0	0	0	m3/h
Operating range max.	49,396	76,839	197,585	m3/h
Velocity at req. Flow min.	4,421	2,829	1,105	m/s
Velocity at req. Flow nom.	4,863	3,112	1,216	m/s
Velocity at req. Flow max.	5,305	3,395	1,326	m/s
Velocity max. at req. Flow min.	11,42	5,232	2,156	m/s
Velocity max. at req. Flow nom.	12,56	5,755	2,372	m/s
Velocity max. at req. Flow max.	13,7	6,278	2,587	m/s
Pressure loss at req. Flow min.	1 222,52	272,01	52,44	mbar
Pressure loss at req. Flow nom.	1 440,07	317,78	60,94	mbar
Pressure loss at req. Flow max.	1 673,52	366,54	69,96	mbar
Meas. error Vol. at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow min.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Spec. Mass at req. Flow min.***	0,05	0,05	0,05	%
Meas. error Spec. Mass at req. Flow nom.***	0,05	0,05	0,05	%
Meas. error Spec. Mass at req. Flow max.***	0,05	0,05	0,05	%
Reynolds No.	4 912	3 325	2 135	
Warnings				

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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Grindu

Timestamp: 07.12.2016 02:39 PM

Review number: 2

Sales order number:

Chart Sheet

Flowmeter: Promass F 300 / DM: 1

Flow Principle Coriolis (Promass)

Meter Size 2"

Operating range min. 0 m3/h

Operating range max. 76,839 m3/h

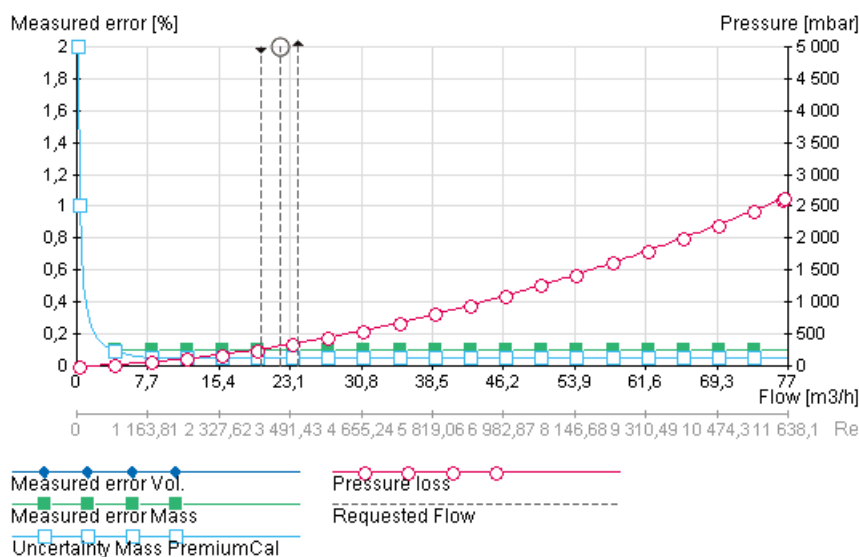
Fluid Oil, Crude (Mexico) -MODIFIED-

Pressure 30 bar_g

Temperature 61 °C

Density 911 kg/m3

Viscosity 45 cSt



Flow rate(%)	Flow rate (m3/h)	Pressure loss (mbar)	Measured error Volume(%)	Measured error Mass(%)	Measured error spec. Mass(%)
10	7,684	60,352	0,1	0,1	0,05
20	15,368	177,86	0,1	0,1	0,05
30	23,052	343,048	0,1	0,1	0,05
40	30,735	552,267	0,1	0,1	0,05
50	38,419	803,347	0,1	0,1	0,05
60	46,103	1 094,795	0,1	0,1	0,05
70	53,787	1 425,497	0,1	0,1	0,05
80	61,471	1 794,579	0,1	0,1	0,05
90	69,155	2 201,328	0,1	0,1	0,05
100	76,839	2 645,15	0,1	0,1	0,05

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

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Applicator Sizing - Condensed (Flow)

Project

Project	10016679 / Oil Metering (Coriolis)
C.Project No.	0
Customer:	CONPET
TAG	Poieni
Timestamp	07.12.2016 02:43 PM
Review number	1
Sales order number	
Contact person	---
eMail:	---
Phone	---
Fax	---



General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-
State	Liquid
Character	Suspension
Abrasivity	Not abrasive
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)
Fluid Type	Newtonian
Atmospheric Pressure	1,0132 bar_a
Standard	ASME/(ANSI)

Operating Conditions

	minimum	nominal	maximum	
Requested Flow	18	100	136	m3/h
Pressure		9		bar_g
Temperature		45		°C
Density		915		kg/m3
Viscosity		40		cSt
Sound velocity	1 681	1 681	1 681	m/s
Pressure (min/max)	9		9	bar_g
Temp. (min/max)	45		45	°C
Vapor Pressure	0,0882	0,0882	0,0882	bar_a

Flowmeter

Flowmeter	Promass F 300 / DM: 1
Flow Principle	Coriolis (Promass)
Extended order code	8F3B1H-*****SAAAS*A1+DC
Meter Size	4"
Operating range min.	0 m3/h
Operating range max.	382,514 m3/h
Material (sensor) *	SS 1.4539 / 904L
Process connection*	Cl.150 ASME B16.5, F316/F316L/1.4404 Flange
PED category ** :	In observance of the selected process conditions and medium, Applicator categorizes this application as PED Art.4.3. Applicator suggests an instrument without PED option.

Sizing and Calculated Results

	minimum	nominal	maximum	
Requested Flow	18	100	136	m3/h
Velocity	0,637	3,537	4,81	m/s
Velocity Max.	1,214	6,746	9,174	m/s
Pressure loss	19,04	282,62	471,14	mbar
Measured error Vol.***	0,1	0,1	0,1	%
Measured error Mass***	0,1	0,1	0,1	%
Meas. error Mass-PremiumCal***	0,09	0,05	0,05	%
Reynolds No.	1 554	8 635	11 743	

Warnings

Messages

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** 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.

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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Poieni

Timestamp: 07.12.2016 02:43 PM

Review number: 1

Sales order number:

Tri-Size Sheet

General Parameters

Fluid	Oil, Crude (Mexico) -MODIFIED-		
State	Liquid		
Character	Suspension	Atmospheric Pressure	1,0132 bar_a
Abrasivity	Not abrasive	Standard	ASME/(ANSI)
Fluid Group (PED)	Dangerous Fluid (Fluid group 1)		
Fluid Type	Newtonian		

Sizing and Calculated Results

	Next Smaller Size	Current Size	Next Bigger Size	
Flow meter	Promass F 300 / DM: 1	Promass F 300 / DM: 1	Promass F 300 / DM: 1	
Flow Principle	Coriolis (Promass)	Coriolis (Promass)	Coriolis (Promass)	
Meter Size	3"	4"	6"	
Process connection*	Cl.150 ASME B16.5, F316/F316L/1.4404	Cl.150 ASME B16.5, F316/F316L/1.4404	Cl.150 ASME B16.5, F316/F316L/1.4404	
Operating range min.	0	0	0	m3/h
Operating range max.	196,721	382,514	874,317	m3/h
Velocity at req. Flow min.	0,995	0,637	0,283	m/s
Velocity at req. Flow nom.	5,526	3,537	1,572	m/s
Velocity at req. Flow max.	7,516	4,81	2,138	m/s
Velocity max. at req. Flow min.	1,941	1,214	0,671	m/s
Velocity max. at req. Flow nom.	10,78	6,746	3,725	m/s
Velocity max. at req. Flow max.	14,66	9,174	5,066	m/s
Pressure loss at req. Flow min.	42,43	19,04	6,72	mbar
Pressure loss at req. Flow nom.	720,7	282,62	96,09	mbar
Pressure loss at req. Flow max.	1 228,01	471,14	158,92	mbar
Meas. error Vol. at req. Flow min.***	0,1	0,1	0,19	%
Meas. error Vol. at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Vol. at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow min.***	0,1	0,1	0,19	%
Meas. error Mass at req. Flow nom.***	0,1	0,1	0,1	%
Meas. error Mass at req. Flow max.***	0,1	0,1	0,1	%
Meas. error Spec. Mass at req. Flow min.***	0,05	0,09	0,19	%
Meas. error Spec. Mass at req. Flow nom.***	0,05	0,05	0,05	%
Meas. error Spec. Mass at req. Flow max.***	0,05	0,05	0,05	%
Reynolds No.	10 916	8 635	6 417	
Warnings				

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

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Applicator Sizing - Flow

Project : 10016679 / Oil Metering (Coriolis)

Customer: CONPET

Contact person: ---

Phone: ---

eMail: ---

C.Project No.: 0

Fax: ---

TAG : Poieni

Timestamp: 07.12.2016 02:43 PM

Review number: 1

Sales order number:

Chart Sheet

Flowmeter: Promass F 300 / DM: 1

Flow Principle Coriolis (Promass)

Meter Size 4"

Operating range min. 0 m3/h

Operating range max. 382,514 m3/h

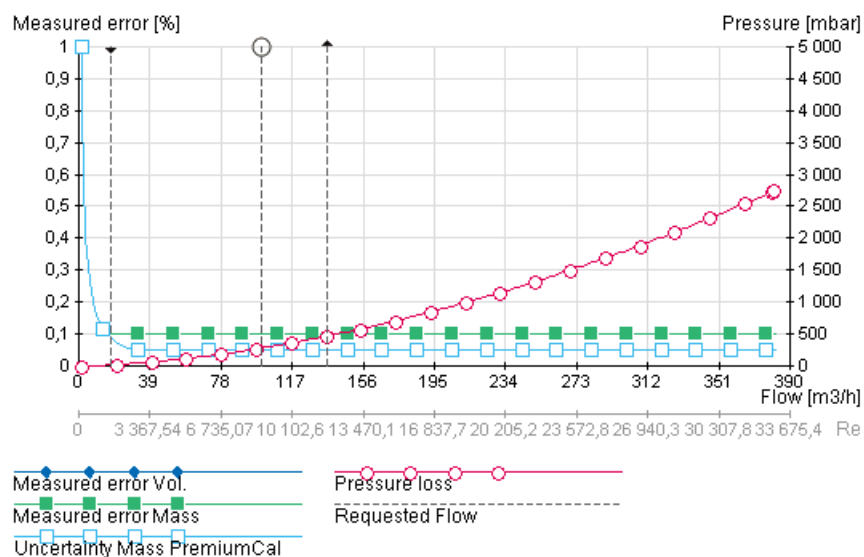
Fluid Oil, Crude (Mexico) -MODIFIED-

Pressure 9 bar_g

Temperature 45 °C

Density 915 kg/m3

Viscosity 40 cSt



Flow rate(%)	Flow rate (m3/h)	Pressure loss (mbar)	Measured error Volume(%)	Measured error Mass(%)	Measured error spec. Mass(%)
10	38,251	60,256	0,1	0,1	0,05
20	76,503	182,229	0,1	0,1	0,05
30	114,754	354,929	0,1	0,1	0,05
40	153,005	574,183	0,1	0,1	0,05
50	191,257	837,5	0,1	0,1	0,05
60	229,508	1 143,157	0,1	0,1	0,05
70	267,76	1 489,865	0,1	0,1	0,05
80	306,011	1 876,607	0,1	0,1	0,05
90	344,262	2 302,553	0,1	0,1	0,05
100	382,514	2 767,008	0,1	0,1	0,05

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

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