

Control Valve Specification  
Prepared By :

Customer : SADIQ SONS  
PO # :  
Quote # : 1904485-HK  
Rev/By : 2.0 / mselvakumar  
Application : REACTOR FEED

Project : SABIC- KAYAN  
Proj Num :  
Quote ID : hkifaya\_MFEV  
Alternate :

Valve Tag #: 530-FV-002  
Page #: 2

Quote ID : hkifaya\_MFEW6336PNXT\_125P&ID :

Alternate :

Line :

Date / Ver : 17-Sep-2019 / 12.7261

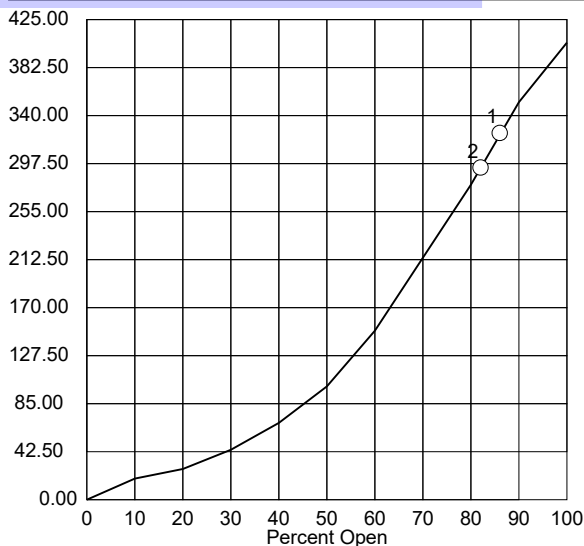
Process Data For Control Valve Selection	1	Pipe Size, Up/Down	8.000 / 8.000				
	2	Pipe Sch, Up/Down	10S / 10S				
	3	Allow Noise/Add Attn/Type	85 / 0 /				
	4	Process Fluid	DMK/MeSH/Phenol				
	5	Design Press./Temp.	0.00 / 27.00 bar (g) / 21.11 / 155.00 °C				
	6	Driving Cond.	MAX	NORMAL	Cond3	Cond4	
	7	Temperature (°C)	62.000	84.000			
	8	Inlet Press (bar (g))	12.790	12.790			
	9	Outlet Press (bar (g))	12.600	12.600			
	10	Liq Flow Rate (m³/h)	118.100	107.400			
	11	Gas Flow Rate (1000 SCFH)	0	0			
	12	Viscosity (cP)	2.000	2.000			
	13	Vapor Press (bar (a))	0.000	0.000			
	14	SG-MW	1.052	1.052			
Calculated Data	15	Max Shutoff / Shutoff Class	23.450 kg/cm² / Class V				
	16	Min Supply Pressure	60.000 psi (g)				
	17	Valve Function	Throttling				
	18	Driving Cond.	MAX	NORMAL	Cond3	Cond4	
	19	Flow Coeff. (Cv)	326.483	296.062			
	20	Est Stroke (% Lift)	86.000	82.000			
	21	Pressure Drop (bar)	0.190	0.190			
	22	Choke Drop (bar)	0.190	0.190			
	23	Noise [IEC] (dBA)	<70	<70			
	24	Valve Vel (ft/s)	5.904	5.369			
	25	Pipe Vel (ft/s)	3.064	2.786			
	Valve Body Assembly	26	Model / Body Type / Trim Type	Mark One / Globe / Standard			
		27	Size/Pressure Class/Body Form	6.00 / CL 300 / Cast			
		28	Trim # - Cv / Characteristic	5.00 Cv:405 / Equal Percent			
29		Stages / Design	/ / /				
30		Flow Direction	Flow Under				
31		Body Matl / Bonnet Matl	316L SS / 316 SS				
32		End Conn/Sch/Face to Face	Integral Flange / / ISA S75.08.01				
33		Flange Finish	125 - 250 Ra				
34		Bonnet / Drip Plate / Cryo Type	Bellows / /				
35		Balance Type / P/B Seal Matl.	Unbalanced /				
36		Plug Mtl/ Facing Treatment /Stem Cvr	316L SS / / Yes				
37		Stem Mtl/ Facing Treatment /Pilot Spr	316L SS / /				
38		Seat Ring Mtl/ Facing Treatment	316L SS /				
39		Seat Style / Soft Material	/ /				
40		Seat Retainer Mtl/ Facing Treatment	316 SS				
41		Sleeve Mtl/ Facing Treatment					
42		Guides Upper/Lower	316L SS & GL PTFE / 316L SS & GL PTFE				
43		Packing Matl / Style / Vac / Fire / Cert	Sureguard XT / Single / / /				
44		Packing - Live-Loaded					
45		Bonnet Port / Body Drain	/				
46		Bellows Type / Material	Shroudless design / 316L w/ SS Housing				
47		Body Bolting/Bonnet Flange Matl	B8-8 (304 SS) / 316 SS				
48		Gaskets	Spiral Graphite				
49		Gland Flange Material	Stainless Steel				
50		Gland Flange Bolting	Stainless Steel				
		T1					
		T2					
		T3					
		T4					
Customer Spec		01	Certification/Approval Type	FM / Expl Proof /			
	02	Class or Gas Group	I				
	03	Division or Zone	1				
	04	Group	B				
	05	Ingress / Temperature	NEMA 4,4X / T6				
	06	NACE / Nuclear	NA / NA				
	07	SIL Viv-Act / Pos	NA / NA				
	08	Oxygen Service/Assy. Lubricant	NA				
Actuator	51	Act. Type/Matl	VL Cylinder / Aluminum				
	52	Act. Size/Instr. Sup.	300 / Air				
	53	Stroke/Spring	2.50 / Standard				
	54	Fail/Air-To	Open / Close				
	55	Vol Tank/Orient/Mtg	/ /				
	56	Tubing Size/Mtl	3/8" / 316 SS				
	57	Fitting Mfg/Mtl	Swagelok / 316 SS				
	58	Handwheel					
	59	Actuator O-Rings	Buna-N				
	60	Spud	3.38 / 1.50 - 12 UNF				
	61						
	Positioner	62	Model	Logix 3800 Series			
		63	Model #	3821-34EA-D43L-1110-00			
		64	Comm/Sig/Diag	HART / 4 - 20 mA / Pro			
65		Housing/Shaft	Aluminum - Ex d / D - 316 SS Shaft (Valtek S				
66		Connections	M:5/16;P:1/4N;C:1/2N;V:1/4N				
67		Action	4-way double acting poppet relay				
68		Display/Mounting	LCD / Standard Mounting				
69		Act Med/Relay Typ	Air / Double Acting Standard				
70		Gage Orie/Pos Opt	Gauge Oriented Left Side / None				
71		Feedback/Tag	4-20 mA Feedback /				
72		Gauges	SS : Brass psi (bar/kPa)				
73		Model					
Pos Ind Sw	74						
	75						
	76						
	77						
	78						
	79						
	80						
	81						
	Solenoid	82	Model/Qty	/			
		83	Cv-Kv/De-en	/			
		84	Volt/Watt	/			
		85	Body/Housing Mtl	/			
86		Body/Elect Conn	/				
87		Port Size/Mtg	/				
88		Tag/Reset-Override	/ / /				
Others		89	Air Filter/Mnting	/			
	90	Filter-Reg/Mnting	Fairchild- 63252NSSGS-Z22228 / Nipple Mtr				
	91	Flow Booster / Mtg.	/				
	92	Booster Config					
	93	Quick Exhaust	/				
	94	SupTube/Jctn Box	/				
	95	Lockup/Mnting	/				
	96	Plate ID					
	97	Plate Type					
	98	Packaging	Standard				
	99	Pwr. Sup.					
	00	Wiring Conn. Type					
Special Req	01	Rad. Exm/Mat Regu	/				
	02	Drawings	Type I - CAD				
	03	Assem Hydro	ISA-S75.19				
	04	Seat leak test/ Final test cert	ANSI/FCI 70-2 (Air)				
	05	PMI Test/Weld Req.	Body & Bonnet w/CC / ASME BPVC Se				
	06	Cert of Conf.					
	07	Cln/Bld/Doc/Act Cln	/ Final Insp /				
	08	CMTR/Mat Cert.	Body & Bonnet / EN 10204 3.1				
	09	Special Paint/Test	Flowserve Standards /				
	10	Diag Test/FM	HDRL 5 Point (HDRL) /				
	11	Cust. Insp/Witn.	Yes / Yes				
	12	Material Req					
	13	Cust Furnish	None				
		S1					
	S2						
	S3						

Line # :      Remarks :

C	32	Rised Face Flange
CE	90	AFR, SIZE 1/4" NPT, WITH SS GAUGE, LOWCOPPER ALUMINUM EPOXY PAINT, 5 MICRON FILTER ELEMENT
CE	108	EN 10204 3.1 Certification for Body, Bonnet and EN 10204 2.2 Certification for Trim Parts.

6.00 in (Trim: 5.00 Cv:405) CL 300 Mark One Standard Globe

	MAX	NORMAL									
<b>Process Data</b>											
Temp (°C)	62.000	84.000	---	---	---	---	---	---	---	---	---
P1 (bar (g))	12.790	12.790	---	---	---	---	---	---	---	---	---
P2 (bar (g))	12.600	12.600	---	---	---	---	---	---	---	---	---
Liq Flow (m³/h)	118.100	107.400	---	---	---	---	---	---	---	---	---
Gas Flow (1000 SCFH)	---	---	---	---	---	---	---	---	---	---	---
Visc (cP)	2.000	2.000	---	---	---	---	---	---	---	---	---
VP (bar (a))	0.000	0.000	---	---	---	---	---	---	---	---	---
DP (bar)	0.190	0.190	---	---	---	---	---	---	---	---	---
DpC (bar)	0.190	0.190	---	---	---	---	---	---	---	---	---
Vel (ft/s)	5.904	5.369	---	---	---	---	---	---	---	---	---
Pipe Vel (ft/s)	3.064	2.786	---	---	---	---	---	---	---	---	---
Noise (dBA)	< 70.0	< 70.0	---	---	---	---	---	---	---	---	---
Flow Cap (Cv)	326.483	296.062	---	---	---	---	---	---	---	---	---
Stroke (% Lift)	86	82	---	---	---	---	---	---	---	---	---
Info (l)	---	---	---	---	---	---	---	---	---	---	---
<b>Detailed Miscellaneous Information</b>											
FP	0.984	0.987	---	---	---	---	---	---	---	---	---
FL	0.905	0.909	---	---	---	---	---	---	---	---	---
FR	1.000	1.000	---	---	---	---	---	---	---	---	---
Sg	1.052	1.052	---	---	---	---	---	---	---	---	---
K	---	---	---	---	---	---	---	---	---	---	---
Xt	---	---	---	---	---	---	---	---	---	---	---
Z	---	---	---	---	---	---	---	---	---	---	---
FD	---	---	---	---	---	---	---	---	---	---	---
MWT	---	---	---	---	---	---	---	---	---	---	---
<b>Detailed Cavitation (Sigma) Information</b>											
Sigma	72.652	72.652	---	---	---	---	---	---	---	---	---
Sigma MR	2.002	1.914	---	---	---	---	---	---	---	---	---
PSE	1.079	1.079	---	---	---	---	---	---	---	---	---
SSE	1.085	1.083	---	---	---	---	---	---	---	---	---
Sigma V	2.266	2.158	---	---	---	---	---	---	---	---	---
Sigma P	2.206	2.111	---	---	---	---	---	---	---	---	---



Flow Direction : Flow Under  
Trim Characteristic : Equal Percent  
Balance Type: Unbalanced  
Trim Type : Standard

DB Rev - 555 : 16-Sep-2019

Fluid: DMK/MeSH/Phenol  
Type: Simple  
Owner: EVERYONE Fluid List: RECORD

Specific Gravity:: 1.052

**Detailed Actuator Information**

VL Cylinder		Actuator : 300	Spring : Standard			
Seatload Required(Class V)		72 Kg/Cm (27948 N)				
Actual :79 Kg/Cm		Failed :-125 Kg/Cm				
		Units of the grid are : N	Max Shutoff : 23.45 kg/cm <sup>2</sup>			
Fluid + Friction	Throttling Stiffness	Open to 30%	30% to Close and Shut Off	Off seat	Close to 30%	30% to Open
Cond1	-5987	746	7214	---	505	123
Cond2	-5987	746	7214	---	505	123
Cond3	---	---	---	---	---	---
Cond4	---	---	---	---	---	---
Shutoff	---	---	69388	-34061	---	---
P1=P2=0	-5482	746	34921	746	746	123
Act+Spr	52775	73147	72147	85660	84659	82324
Spring	---	---	---	7544	6543	4208