



LIDCO, Pars SEE Zone, Assaluyeh,  
Integrated Methanol and Ammonia  
Plant 3000 MTPD MeOH / 900 MTPD NH3 PROJECT



PSV Data Sheets

Document No. 17735-46

Page

Project No.	Vendor Doc.	P.O. No.	Department	Document Type	Serial No	Revision
N278	VD	6019	IN	DS	0039	01

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**Airpack B.V. - Air Compressor –  
Integrated Methanol and Ammonia Plant  
17735-COM PSV Data Sheets (K020)**

**General Comment:**

- 1- Any changes in next revision to be marked with revision mark.
- 2- If any comments is not applicable please send reply sheet.
- 3- Compatibility with project requirement is vendor responsibility and scope, and next comments are just for hint.
- 4- Compatibility with other vendor documents including PID and purchased instrument is vendor responsibility and scope.
- 5- Tag plate supply is scope of vendor and should added to data sheet as one of items.
- 6- all Tag name in all document should be same format. no needs "-" after prefix 320. example correct format is 320PSV-8201, ... .
- 7- For all instrument and accessories, catalogue(including order code) should be submitted .
- 8- all "VTA" status on document shall be finalized and specified .
- 9- This document will be checked after finalizing PID document.

code-2  
M. Vakili

REV.	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
01	08-11-2023	Issued for Approval	S.K.	J.J.	S.K.

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PSV Data Sheets

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**Note**

				<b>INSTRUMENT AND VALVE DATASHEET Index</b>			
							
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						Based on P&ID	Rev.00

according spec of project should be full nozzle

GENERAL	1	Tag Number	320-PSV-8201		
	2	Service	Pressure Safety Valve		
	3	P&ID No.	N278-VD-6019-PR-PID-0002		
	4	Location	Package inlet		
	5	Nozzle	semi nozzle		
	6	Design type	Safety		
	7	Conv., Bellows, Pilot op.	Conventional type		
	8	Bonnet Type	Closed		
	9	Bonnet connection	Screwed / Bolted		
PROCESS CONDITIONS	10	Fluid	State	Air	Vapor
	11	Pressure	Inlet Max.	9,5 bar(g)	12,5 bar(g)
	12	Temperature	Norm. Max.	46 °C	-
	13	Design	Press. Temp.	12,5	75 °C
	14	Ambient Temp.	Min. Max.	-	-
	15	Flow			35 Nm³/hr
BASIS AND SELECTION	16	Set Pressure		12,5 bar(g)	
	17	Molecular Weight	Oper. Sp. Gr.	-	-
	18	Back Pres. (bar(g))			ATM
	19	Allowable Overpressure			-
	20	Compressibility Factor (Z)			1
	21	Ratio of Specific Heat (Cp/Cv)			-
	22	Operating Viscosity (cP)			-
	23	Barometric Pressure			1,013
	24	Max. Allowable Relief Pressure			14,763
	25	Design Code			API 520 / 521
	26	Size Basis			Blocked discharge
CONNECTIONS	27	Required discharge Area		VTA	
	28	Selected Area (sq.mm)		VTA	
	29	Orifice Designation		VTA	
	30				
MATERIAL	31	Inlet Size	Outlet Size	3/4"	VTA
	32	Inlet Connection	Outlet Conn.	RF	RF
	33	Inlet Rating	Outlet Rating	300#	VTA
MATERIAL	34				
	35				
	36	Body and Bonnet			CS
	37	Seat and Disc			VTA
MATERIAL	38	Guide and Rings			CS
	39	Spring			CS
	40	Nozzle			VTA
	41				
OPTIONS	42				
	43				
	44				
	45				
CERTIFICATES	46				
	47				
	48	3.1 Material certificate			Yes
CERTIFICATES	49	Calibration certificate			Yes
	50	Leakage test acc to API STD 527			Yes
	51	Functional test			No
CALCULATIONS	52	Sizing calculation			No
	53				
	54				
PURCHASE	55	Manufacturer	According to approved vendor list		
	56	Model	VTA		
57					

Line Number should be added

Area Classification should be added

shall normally be flanged with facing and rating in accordance with the Piping Specification

Blow-Down should be mentioned.

specify the pressure unit.

Units should be mentioned

shall be finalized and specified.


All PSV Sizes will be finalized after the approval Instrument calculation sheet document.

Valve body's material and connections shall be in accordance with Piping Class specifications

as per spec of project should be SS316


Should be finalized and specified (For all PSV) and relevant catalogs and order code should be submitted.

NOTES :

				<b>INSTRUMENT AND VALVE DATASHEET</b>	
				Pressure Safety Valve	
					
01	SK	8-11-2023	Issue for Approval		Sheet 2 of 7
Rev	By	Date	Description		Based on P&ID Rev.00


GENERAL	1	Tag Number		320-PSV-8202	
	2	Service		Pressure Safety Valve	
	3	P&ID No.		17735-03	
	4	Location		1st stage discharge	
	5	Nozzle		semi nozzle	
	6	Design type		Safety	
	7	Conv., Bellows, Pilot op.		Conventional type	
	8	Bonnet Type		Closed	
	9	Bonnet connection		Screwed / Bolted	
PROCESS CONDITIONS	10	Fluid	State	Air	Vapor
	11	Pressure	Inlet Max.	23,3	30,5 bar(g)
	12	Temperature	Norm. Max.	157 °C	-
	13	Design	Press. Temp.	30,5	175 °C
	14	Ambient Temp.	Min. Max.	-	-
	15	Flow			
BASIS AND SELECTION	16	Set Pressure		30,5 bar(g)	
	17	Molecular Weight	Oper. Sp. Gr.	-	-
	18	Back Allow	$30.5 \times 1.1 + 1.013 = 34.56 \text{ bara}$		ATM
	19	Compressibility Factor (Z)		1	
	20	Ratio of Specific Heat (Cp/Cv)		-	
	21	Operating Viscosity (cP)		-	
	22	Barometric Pressure		1,013	
	23	Max. Allowable Relief Pressure		28,513	
	24	Design Code		API 520 / 521	
	25	Size Basis		Blocked discharge	
	26	Required discharge Area (sq.mm)		VTA	
	27	Selected Area (sq.mm)		VTA	
	28	Orifice Designation		VTA	
	CONNECTIONS	31	Inlet Size	Outlet Size	3/4"
32		Inlet Connection	Outlet Conn.	RF	RF
33		Inlet Rating	Outlet Rating	300#	VTA
34					
35					
MATERIAL	36	Body and Bonnet		CS	
	37	Seat and Disc		VTA	
	38	Guide and Rings		CS	
	39	Spring		CS	
	40	Nozzle		VTA	
OPTIONS	41				
	42				
	43				
	44				
	45				
CERTIFICATES	46				
	47				
	48	3.1 Material certificate		Yes	
CALCULATIONS	49	Calibration certificate		Yes	
	50	Leakage test acc to API STD 527		Yes	
	51	Functional test		No	
PURCHASE	52	Sizing calculation		No	
	53				
PURCHASE	54				
	55	Manufacturer		According to approved vendor list	
	56	Model		VTA	
	57				

**NOTES :**

				<b>INSTRUMENT AND VALVE DATASHEET</b>	
				Pressure Safety Valve	
					
01	SK	8-11-2023	Issue for Approval	Sheet	3 of 7
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GENERAL	1	Tag Number		320-PSV-8203	
	2	Service		Pressure Safety Valve	
	3	P&ID No.		17735-03	
	4	Location		2nd stage discharge	
	5	Nozzle		semi nozzle	
	6	Design type		Safety	
	7	Conv., Bellows, Pilot op.		Conventional type	
	8	Bonnet Type		Closed	
	9	Bonnet connection		Screwed / Bolted	
PROCESS CONDITIONS	10	Fluid	State	Air	Vapor
	11	Pressure	Inlet Max.	30 bar (g)	39,0 bar(g)
	12	Temperature	Norm. Max.	116°C	-
	13	Design	Press. Temp.	39 bar (g)	135 °C
	14	Ambient Temp.	Min. Max.	-	-
	15	Flow			
BASIS AND SELECTION	16	Set Pressure		39,0 bar(g)	
	17	Molecular Weight	Oper. Sp. Gr.	-	-
	18	Back Pres. (bar(g))		ATM	
	19	Allowable Overpressure (%)		-	
	20	Compressibility Factor (Z)		1	
	21	Operating Pressure (bara)		39 x 1.1 + 1.013 = 43.91 bara	
	22	Operating Viscosity (cP)		-	
	23	Barometric Pressure		1,013	
	24	Max. Allowable Relief Pressure		38,413	
	25	Design Code		API 520 / 521	
	26	Size Basis		Blocked discharge	
27	Required discharge Area (sq.mm)		VTA		
28	Selected Area (sq.mm)		VTA		
29	Orifice Designation		VTA		
30					
CONNECTIONS	31	Inlet Size	Outlet Size	3/4"	VTA
	32	Inlet Connection	Outlet Conn.	RF	RF
	33	Inlet Rating	Outlet Rating	300#	VTA
	34				
	35				
MATERIAL	36	Body and Bonnet		CS	
	37	Seat and Disc		VTA	
	38	Guide and Rings		CS	
	39	Spring		CS	
	40	Nozzle		VTA	
	41				
OPTIONS	42				
	43				
	44				
	45				
	46				
	47				
CERTIFICATES	48	3.1 Material certificate		Yes	
	49	Calibration certificate		Yes	
	50	Leakage test acc to API STD 527		Yes	
	51	Functional test		No	
CALCULATIONS	52	Sizing calculation		No	
	53				
	54				
PURCHASE	55	Manufacturer		According to approved vendor list	
	56	Model		VTA	
	57				

**NOTES :**

				<b>INSTRUMENT AND VALVE DATASHEET</b>	
				Pressure Safety Valve	
					
01	SK	8-11-2023	Issue for Approval	Sheet	4 of 7
Rev	By	Date	Description	Based on P&ID	Rev.00

GENERAL	1	Tag Number		320-PSV-8204	
	2	Service		Pressure Safety Valve	
	3	P&ID No.		17735-03	
	4	Location		Water system <b>2.5 bar(g)</b>	
	5	Nozzle		semi nozzle	
	6	Design type		Safety	
	7	Conv., Bellows, Pilot op.		Conventional type	
	8	Bonnet Type		Closed	
	9	Bonnet connection		Screwed / Bolted	
PROCESS CONDITIONS	10	Fluid	State	Water	Liquid
	11	Pressure	Inlet Max.	4,5 bar(g)	4,5 bar(g)
	12	Temperature	Norm. Max.	36°C	<del>46 °C</del>
	13	Design	Press. Temp.	4,5	125 °C
	14	Ambient Temp.	Min. Max.	-	-
	15	Flow			
BASIS AND SELECTION	16	Set Pressure		7,0 bar(g)	
	17	Molecular Weight	Oper. Sp. Gr.	-	-
	18	Back Pres. (bar(g))		7 bar(g)	
	19	Allowable Overpressure (%)		-	
	20	Compressibility Factor (Z)		1	
	21	Ratio of Specific Heat (Cp/Cv)		-	
	22	Operating Viscosity (cP)		-	
	23	Barometric Pressure		1,013	
	24	Max. Allowable Relief Pressure		8,713	
	25	Design Code		API 520 / 521	
	26	Size Basis		Blocked discharge	
	27	Required discharge Area (sq.mm)		VTA	
	28	Selected Area (sq.mm)		VTA	
	29	Orifice Designation		VTA	
CONNECTIONS	31	Inlet Size	Outlet Size	3/4"	VTA
	32	Inlet Connection	Outlet Conn.	RF	RF
	33	Inlet Rating	Outlet Rating	150#	VTA
	34				
	35				
MATERIAL	36	Body and Bonnet		CS	
	37	Seat and Disc		VTA	
	38	Guide and Rings		CS	
	39	Spring		CS	
	40	Nozzle		VTA	
	41				
OPTIONS	43				
	44				
	45				
	46				
	47				
	CERTIFICATES	48	3.1 Material certificate		Yes
49		Calibration certificate		Yes	
50		Leakage test acc to API STD 527		Yes	
51		Functional test		No	
CALCULATIONS	52	Sizing calculation		No	
	53				
	54				
PURCHASE	55	Manufacturer		According to approved vendor list	
	56	Model		VTA	
	57				

**NOTES :**

				<b>INSTRUMENT AND VALVE DATASHEET</b>	
				Pressure Safety Valve	
					
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