

 <p>شرکت توسعه صنایع لوان Lavan Industry Development Company</p>	<p><b>LIDCO, Pars SEE Zone, Assaluyeh, Integrated Methanol and Ammonia Plant 3000 MTPD MeOH / 900 MTPD NH3 PROJECT</b></p>						
	<p><b>Instrument Data Sheets</b></p>						
<p>Document No. 17735-12</p>			<p>Page</p>				
<p>Project No.</p>	<p>Vendor Doc.</p>	<p>P.O. No.</p>	<p>Department</p>	<p>Document Type</p>	<p>Serial No</p>	<p>Revision</p>	<p>Page</p>
<p>N278</p>	<p>VD</p>	<p>6019</p>	<p>IN</p>	<p>DS</p>	<p>0013</p>	<p>03</p>	<p>Page 1 of 31</p>

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

code-2  
M. Vakili

03	11-03-2024	Issued for Approval	L.K.	S.K.	J.J.
02	15-12-2023	Issued for Approval	L.K.	S.K.	J.J.
01	09-11-2023	Issued for Approval	T.T.	S.K.	J.J.
<b>REV.</b>	<b>DATE</b>	<b>DESCRIPTION</b>	<b>DRAWN</b>	<b>CHECKED</b>	<b>APPROVED</b>

This document has been produced by Contractor for LIDCO. It is confidential and cannot be disclosed to or used by any third party for any purpose without prior written consent.

Instrument Data Sheets

Document No. 17735-12

Page

Project No.	Vendor Doc.	P.O. No.	Department	Document Type	Serial No	Revision	Page
N278	VD	6019	IN	DS	0013	03	Page 2 of 31

LIST OF REVISED PAGES

Rev. Page	01	02	03	04	05	Rev. Page	01	02	03	04	05	Rev. Page	01	02	03	04	05	Rev. Page	01	02	03	04	05
1	X	X	X			26	X	X	X			51						76					
2	X	X	X			27		X	X			52						77					
3	X	X	X			28		X	X			53						78					
4	X	X	X			29		X	X			54						79					
5	X	X	X			30		X	X			55						80					
6	X	X	X			31		X	X			56						81					
7	X	X	X			32						57						82					
8	X	X	X			33						58						83					
9	X	X	X			34						59						84					
10	X	X	X			35						60						85					
11	X	X	X			36						61						86					
12	X	X	X			37						62						87					
13	X	X	X			38						63						88					
14	X	X	X			39						64						89					
15	X	X	X			40						65						90					
16	X	X	X			41						66						91					
17	X	X	X			42						67						92					
18	X	X	X			43						68						ATTACHMENT					
19	X	X	X			44						69						1					
20	X	X	X			45						70						2					
21	X	X	X			46						71						3					
22	X	X	X			47						72						4					
23	X	X	X			48						73						5					
24	X	X	X			49						74						6					
25	X	X	X			50						75						7					

INDEX			
No.	Device	Tag Number	Page
1	Pressure Gauge	320PG-8201	4
2	Pressure Gauge	320PG-8202	5
3	Pressure Gauge	320PG-8203	6
4	Pressure Gauge	320PG-8204	7
5	Pressure Transmitter	320PT-8201	8
6	Pressure Transmitter	320PT-8202	9
7	Pressure Transmitter	320PT-8203	10
8	Pressure Transmitter	320PT-8204	11
9	Temperature Transmitter	320TT-8201	12
10	Thermowell + Element	320TW-8201	13
11	Temperature Transmitter	320TT-8202	14
12	Thermowell + Element	320TW-8202	15
13	Temperature Transmitter	320TT-8203	16
14	Thermowell + Element	320TW-8203	17
15	Temperature Transmitter	320TT-8204	18
16	Thermowell + Element	320TW-8204	19
17	Temperature Transmitter	320TT-8205	20
18	Thermowell + Element	320TW-8205	21
19	Temperature Gauge	320TG-8206	22
20	Thermowell	320TW-8206	23
21	Temperature Gauge	320TG-8207	24
22	Thermowell	320TW-8207	25
23	Temperature Gauge	320TG-8208	26
24	Thermowell	320TW-8208	27
25	Temperature Gauge	320TG-8209	28
26	Thermowell	320TW-8209	29
27	Temperature Gauge	320TG-8210, 320TG-8211	30
28	Thermowell	320TW-8210, 320TW-8206	31
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			
43			
44			
45			
46			
47			
48			
49			
50			
51			
52			
53			
54			
55			



**Notes:**

				<b>INSTRUMENT DATASHEET</b> Index	
03	LK	11-3-2024	For Approval		
02	LK	15-12-2023	For Approval		Sheet 3 of 31 Based on P&ID Rev.06
01	TT	9-11-2023	For Approval		
Rev	By	Date	Description		

GENERAL	1	Tag Number		320PG-8201	
	2	Service		Air pressure	
	3	P&ID No.		N278-VD-6019-PR-PID-0002	
	4	Location		Package inlet	
	5	Ingress Protection		IP65	
	6	Line number		1"-IA-320-01-D42-N	
	7	Area classification		Safe area	
	8				
PROCESS CONDITIONS	9	Fluid	State	Air	Vapor
	10	Pressure	Norm. Max.	9,5 bar(g)	
	11	Temperature	Norm. Max.	46 °C	
	12	Design	Press. Temp.	12,5 bar(g)	75 °C
	13	Ambient Temp.	Min. Max.	0 °C	49 °C
	14				
	15				
	16				
	17				
	18				
GAUGE	19	Type		Bourdon tube	
	20	Range	Unit	0...16	bar(g)
	21	Mounting		Panel mounted, with front flange	
	22	Dial Size	Dial Color	100 mm	White surface, black numbers
	23	Case Material		SS316L	
	24	Ring Construction	Ring Material	Bayonet	SS316L
	25	Blow-Out Protection		Yes @ Back, including baffle wall	
	26	Lens Material		Shatterproof laminated safety glass	
	27	Pressure Element Material		SS316L	
	28	Socket Material		SS316L	
	29	Connection Size		1/2" NPT-M	
	30	Connection Location		Back-bottom	
	31	Movement Material		SS316L	
	32	Nominal Accuracy		±1,0 % of span	
	33	Gauge Filling		Glycerin	
	34	Over Range Protection		1,3 x full scale value	
	35				
	36				
	37				
OPTIONS	38	Snubber	Material	N/A	N/A
	39	Gauge Savers	Material	N/A	N/A
	40	Manifold (Block & Bleed)		Yes (2-way manifolds)	
	41	Block valve (Hand ball valve)		Yes (3/4")	
	42	Tag plate		SS316, Plate with steel wire	
	43				
	44				
CERTIFICATES	45	Calibration certificate		Yes	
	46	3.1 Material certificate		Yes	
	47				
	48	Order code to be specified and submitted after finalizing purchased instrument by sub-vendor. this comment to be consider for all applicable per case			
	49				
	50				
PURCHASE	51	Manufacturer		According to approved vendor list	
	52	Model		VTA	
	53				
	54				
	55				
	56				
	57				

**NOTES :**



The manifold material should be 316 Stainless Steel 2-valve complete of oval flanges with mounting bolts, gasket, etc

				<b>INSTRUMENT DATASHEET</b>		 شرکت توسعه صنایع لوان Lavan Industry Development Company
				Pressure Gauge		
03	LK	11-3-2024	For Approval	 Airpack Netherlands		
02	LK	15-12-2023	For Approval			
01	IT	9-11-2023	For Approval			
Rev	By	Date	Description	Sheet 4 of 31 Based on P&ID Rev.06		

GENERAL	1	Tag Number		320PG-8202	
	2	Service		Air pressure	
	3	P&ID No.		N278-VD-6019-PR-PID-0002	
	4	Location		Suction 2nd stage	
	5	Ingress Protection		IP65	
	6	Line number		3/4"-IA-320-05-D42-H	
	7	Area classification		Safe area	
	8				
PROCESS CONDITIONS	9	Fluid	State	Air	Vapor
	10	Pressure	Norm. Max.	22,1 bar(g)	
	11	Temperature	Norm. Max.	60 °C	
	12	Design	Press. Temp.	39 bar(g)	157 °C
	13	Ambient Temp.	Min. Max.	0 °C	49 °C
	14				
	15				
	16				
	17				
	18				
GAUGE	19	Type		Bourdon tube	
	20	Range	Unit	0...40	bar(g)
	21	Mounting		Panel mounted, with front flange	
	22	Dial Size	Dial Color	100 mm	White surface, black numbers
	23	Case Material		SS316L	
	24	Ring Construction	Ring Material	Bayonet	SS316L
	25	Blow-Out Protection		Yes @ Back, including baffle wall	
	26	Lens Material		Shatterproof laminated safety glass	
	27	Pressure Element Material		SS316L	
	28	Socket Material		SS316L	
	29	Connection Size		1/2" NPT-M	
	30	Connection Location		Back-bottom	
	31	Movement Material		SS316L	
	32	Nominal Accuracy		±1,0 % of span	
	33	Gauge Filling		Silicone	
	34	Over Range Protection		1,3 x full scale value	
	35				
	36				
	37				
OPTIONS	38	Snubber	Material	N/A	N/A
	39	Gauge Savers	Material	N/A	N/A
	40	Manifold (Block & Bleed)		Yes (2-way manifolds)	
	41	Block valve (Hand ball valve)		Yes (3/4")	
	42	Tag plate		SS316, Plate with steel wire	
	43				
	44				
CERTIFICATES	45	Calibration certificate		Yes	
	46	3.1 Material certificate		Yes	
	47				
	48				
	49				
	50				
PURCHASE	51	Manufacturer		According to approved vendor list	
	52	Model		VTA	
	53				
	54				
	55				
	56				
	57				

**NOTES :**



The manifold material should be 316 Stainless Steel 2-valve complete of oval flanges with mounting bolts, gasket, etc

				<b>INSTRUMENT DATASHEET</b>		 شركة لوان للصناعة والتطوير لavan Industry Development Company
				Pressure Gauge		
03	LK	11-3-2024	For Approval	 Airpack Netherlands		
02	LK	15-12-2023	For Approval			
01	IT	9-11-2023	For Approval			
Rev	By	Date	Description	Sheet 5 of 31 Based on P&ID Rev.06		

GENERAL	1	Tag Number		320PG-8203	
	2	Service		Gas pressure	
	3	P&ID No.		N278-VD-6019-PR-PID-0002	
	4	Location		Outlet package	
	5	Ingress Protection		IP65	
	6	Line number		3/4"-IA-320-09-D42-N	
	7	Area classification		Safe area	
	8				
PROCESS CONDITIONS	9	Fluid	State	Air	Vapor
	10	Pressure	Norm. Max.	30 bar(g)	
	11	Temperature	Norm. Max.	60 °C	
	12	Design	Press. Temp.	39 bar(g)	75 °C
	13	Ambient Temp.	Min. Max.	0 °C	49 °C
	14				
	15				
	16				
	17				
	18				
GAUGE	19	Type		Bourdon tube	
	20	Range	Unit	0...60	bar(g)
	21	Mounting		Panel mounted, with front flange	
	22	Dial Size	Dial Color	100 mm	White surface, black numbers
	23	Case Material		SS316L	
	24	Ring Construction	Ring Material	Bayonet	SS316L
	25	Blow-Out Protection		Yes @ Back, including baffle wall	
	26	Lens Material		Shatterproof laminated safety glass	
	27	Pressure Element Material		SS316L	
	28	Socket Material		SS316L	
	29	Connection Size		1/2" NPT-M	
	30	Connection Location		Back-bottom	
	31	Movement Material		SS316L	
	32	Nominal Accuracy		±1,0 % of span	
	33	Gauge Filling		Silicone	
	34	Over Range Protection		1,3 x full scale value	
	35				
	36				
	37				
OPTIONS	38	Snubber	Material	N/A	N/A
	39	Gauge Savers	Material	N/A	N/A
	40	Manifold (Block & Bleed)		Yes (2-way manifolds)	
	41	Block valve (Hand ball valve)		Yes (3/4")	
	42	Tag plate		SS316, Plate with steel wire	
	43				
	44				
CERTIFICATES	45	Calibration certificate		Yes	
	46	3.1 Material certificate		Yes	
	47				
	48				
	49				
	50				
PURCHASE	51	Manufacturer		According to approved vendor list	
	52	Model		VTA	
	53				
	54				
	55				
	56				
	57				

**NOTES :**



The manifold material should be 316 Stainless Steel 2-valve complete of oval flanges with mounting bolts, gasket, etc

				<b>INSTRUMENT DATASHEET</b>		
				Pressure Gauge		
						Sheet 6 of 31 Based on P&ID Rev.06
03	LK	11-3-2024	For Approval			
02	LK	15-12-2023	For Approval			
01	IT	9-11-2023	For Approval			
Rev	By	Date	Description			

GENERAL	1	Tag Number		320PG-8204	
	2	Service		Liquid pressure	
	3	P&ID No.		N278-VD-6019-PR-PID-0002	
	4	Location		Cooling water inlet	
	5	Ingress Protection		IP65	
	6	Line number		3/4"-CWS-320-20-B24C-N	
	7	Area classification		Safe area	
	8				
PROCESS CONDITIONS	9	Fluid	State	Water	Liquid
	10	Pressure	Norm. Max.	4,5 bar(g)	
	11	Temperature	Norm. Max.	36 °C	
	12	Design	Press. Temp.	7 bar(g)	75 °C
	13	Ambient Temp.	Min. Max.	0 °C	49 °C
	14				
	15				
	16				
	17				
	18				
GAUGE	19	Type		Bourdon tube	
	20	Range	Unit	0...10	bar(g)
	21	Mounting		Panel mounted, with front flange	
	22	Dial Size	Dial Color	100 mm	White surface, black numbers
	23	Case Material		SS316L	
	24	Ring Construction	Ring Material	Bayonet	SS316L
	25	Blow-Out Protection		Yes @ Back, including baffle wall	
	26	Lens Material		Shatterproof laminated safety glass	
	27	Pressure Element Material		SS316L	
	28	Socket Material		SS316L	
	29	Connection Size		1/2" NPT-M	
	30	Connection Location		Back-bottom	
	31	Movement Material		SS316L	
	32	Nominal Accuracy		±1,0 % of span	
	33	Gauge Filling		Glycerine	
	34	Over Range Protection		1,3 x full scale value	
	35				
	36				
	37				
OPTIONS	38	Snubber	Material	N/A	N/A
	39	Gauge Savers	Material	N/A	N/A
	40	Manifold (Block & Bleed)		Yes (2-way manifolds)	
	41	Block valve (Hand ball valve)		Yes (3/4")	
	42	Tag plate		SS316, Plate with steel wire	
	43				
	44				
CERTIFICATES	45	Calibration certificate		Yes	
	46	3.1 Material certificate		Yes	
	47				
	48				
	49				
	50				
PURCHASE	51	Manufacturer		According to approved vendor list	
	52	Model		VTA	
	53				
	54				
	55				
	56				
	57				

**NOTES :**

The manifold material should be 316 Stainless Steel 2-valve complete of oval flanges with mounting bolts, gasket, etc



				<b>INSTRUMENT DATASHEET</b>		 شرکت توسعه صنایع لوانت <b>Lavan Industry Development Company</b>
				Pressure Gauge		
				 Airpack <small>Netherlands</small>		
03	LK	11-3-2024	For Approval			
02	LK	15-12-2023	For Approval			
01	IT	9-11-2023	For Approval			
Rev	By	Date	Description			
				Sheet 7 of 31 Based on P&ID Rev.06		

GENERAL	1	Tag Number	320PT-8201		
	2	Service	Air pressure		
	3	P&ID No.	N278-VD-6019-PR-PID-0002		
	4	Location	Package inlet		
	5	Ingress Protection	IP65		
	6	Line number	1"-IA-320-01-D42-N		
	7	Area classification	Safe area		
	8				
PROCESS CONDITIONS	9	Fluid	State	Air Vapor	
	10	Pressure	Norm. Max.	9,5 bar(g)	
	11	Temperature	Norm. Max.	46 °C	
	12	Design	Press. Temp.	12,5 bar(g) 75 °C	
	13	Ambient Temp.	Min. Max.	0 °C 49 °C	
	14	Setpoint	LL	L	7,5 bar(g)
	15		U	HH	12 bar(g)
	16				
	17				
18					
TRANSMITTER	19			Field mounted	
	20	Element Type	Diaphragm		
	21	Element Material	SS316L		
	22	Housing Material	SS316L		
	23	Power Supply	24 VDC, 2-wire, loop powered		
	24	Process Conn.	Electric Conn.	½" NPTM	ISO M20 x 1,5
	25	Accuracy	± 0.1% of span		
	26	Calibrated Range	Unit	320	bar(g)
	27	Adjustable Range	Unit	VTA	bar(g)
	28	Allow. Press.	Allow. Temp.		
	29	Communication Protocol	Smart , HART		
	30	Output Signal	4 - 20 mA		
	31	Sensor Fill Fluid	Glycerine		
	32				
	OPTIONS	34			
35					
36					
37		Inte	Yes, LCD	bar(g)	
38		Ligh	N/A		
39		Mounting facilities	Bracket		
40		Manifold (Block & Bleed)	Yes (2-way manifolds)		
41		Housing ground connection	Yes, external (tightened with screws)		
42	Cable Gland	Yes			
43	Block valve (Hand ball valve)	Yes (3/4")			
44	Tag plate	SS316, Plate with steel wire			
CERTIFICATES	45	Calibration certificate	Yes		
	46	3.1 Material certificate	Yes		
	47				
	48				
	49				
PURCHASE	50				
	51	Manufacturer	According to approved vendor list		
	52	Model	VTA		
	53				
	54				
	55				
	56				
	57				

Considering the normal pressure value, the calibration range should be recheck and modified.



plz clarify why block valve is mentioned in this document, instrument items should be mentioned in this document only.

**NOTES :**  
 The manifold material should be 316 Stainless Steel 2-valve complete of oval flanges with mounting bolts, gasket, etc

				<b>INSTRUMENT DATASHEET</b> <b>Pressure Transmitter</b>	 <b>شرکت توسعه صنایع لافات</b> <b>Lavan Industry Development Company</b>
03	LK	11-3-2024	For Approval		
02	LK	15-12-2023	For Approval		
01	TT	9-11-2023	For Approval		
Rev	By	Date	Description		Sheet 8 of 31 Based on P&ID Rev.06



GENERAL	1	Tag Number		320PT-8202		
	2	Service		Air pressure		
	3	P&ID No.		N278-VD-6019-PR-PID-0002		
	4	Location		2nd stage suction		
	5	Ingress Protection		IP65		
	6	Line number		3/4"-IA-320-05-D42-H		
	7	Area classification		Safe area		
	8					
PROCESS CONDITIONS	9	Fluid	State	Air	Vapor	
	10	Pressure	Norm. Max.	22,1 bar(g)		
	11	Temperature	Norm. Max.	60 °C		
	12	Design	Press. Temp.	39 bar(g)	157 °C	
	13	Ambient Temp.	Min. Max.	0 °C	49 °C	
	14	Setpoint	LL	L	15,5 bar(g)	19 bar(g)
	15		H	HH		
	16					
	17					
18						
TRANSMITTER	19	Function		Field mounted		
	20	Element Type		Diaphragm		
	21	Element Material		SS316L		
	22	Housing Material		SS316L		
	23	Power Supply		24 VDC, 2-wire, loop powered		
	24	Process Conn.	Electric Conn.	½" NPTM	ISO M20 x 1,5	
	25	Accuracy		± 0.1% of span		
	26	Calibrated Range	Unit	0...60	bar(g)	
	27	Adjustable Range	Unit	VTA	bar(g)	
	28	Allow. Press.	Allow. Temp.			
	29	Communication Protocol		Smart , HART		
	30	Output Signal		4 - 20 mA		
	31	Sensor Fill Fluid		Silicone oil		
	32					
33						
34						
35						
36						
OPTIONS	37	Integral Meter	Scale	Yes, LCD	bar(g)	
	38	Lightning And Surge Protection		N/A		
	39	Mounting facilities		Bracket		
	40	Manifold (Block & Bleed)		Yes (2-way manifolds)		
	41	Housing ground connection		Yes, external (tightened with screws)		
	42	Cable Gland		Yes		
	43	Block valve (Hand ball valve)		Yes (3/4")		
	44	Tag plate		SS316, Plate with steel wire		
CERTIFICATES	45	Calibration certificate		Yes		
	46	3.1 Material certificate		Yes		
	47					
	48					
	49					
PURCHASE	50					
	51	Manufacturer		According to approved vendor list		
	52	Model		VTA		
	53					
	54					
	55					
	56					
57						

**NOTES :**  
 The manifold material should be 316 Stainless Steel 2-valve complete of oval flanges with mounting bolts, gasket, etc

				<b>INSTRUMENT DATASHEET</b>		
				Pressure Transmitter		
03	LK	11-3-2024	For Approval			Sheet 9 of 31
02	LK	15-12-2023	For Approval			
01	TT	9-11-2023	For Approval			
Rev	By	Date	Description			Based on P&ID Rev.06



GENERAL	1	Tag Number		320PT-8203	
	2	Service		Air pressure	
	3	P&ID No.		N278-VD-6019-PR-PID-0002	
	4	Location		Package outlet	
	5	Ingress Protection		IP65	
	6	Line number		3/4"-IA-320-10-D42-N	
	7	Area classification		Safe area	
	8				
PROCESS CONDITIONS	9	Fluid	State	Air	Vapor
	10	Pressure	Norm. Max.	30 bar(g)	
	11	Temperature	Norm. Max.		60 °C
	12	Design	Press. Temp.	39 bar(g)	116 °C
	13	Ambient Temp.	Min. Max.	0 °C	49 °C
	14	Setpoint	LL	L	25 bar(g)
	15		H	HH	34 bar(g)
	16				
	17				
	18				
TRANSMITTER	19	Function		Field mounted	
	20	Element Type		Diaphragm	
	21	Element Material		SS316L	
	22	Housing Material		SS316L	
	23	Power Supply		24 VDC, 2-wire, loop powered	
	24	Process Conn.	Electric Conn.	½" NPTM	ISO M20 x 1,5
	25	Accuracy		± 0.1% of span	
	26	Calibrated Range	Unit	0...60	bar(g)
	27	Adjustable Range	Unit	VTA	bar(g)
	28	Allow. Press.	Allow. Temp.		
	29	Communication Protocol		Smart , HART	
	30	Output Signal		4 - 20 mA	
	31	Sensor Fill Fluid		Silicone oil	
	32				
	33				
34					
35					
36					
OPTIONS	37	Integral Meter	Scale	Yes, LCD	bar(g)
	38	Lightning And Surge Protection		N/A	
	39	Mounting facilities		Bracket	
	40	Manifold (Block & Bleed)		Yes (2-way manifolds)	
	41	Housing ground connection		Yes, external (tightened with screws)	
	42	Cable Gland		Yes	
	43	Block valve (Hand ball valve)		Yes (3/4")	
	44	Tag plate		SS316, Plate with steel wire	
CERTIFICATES	45	Calibration certificate		Yes	
	46	3.1 Material certificate		Yes	
	47				
	48				
	49				
PURCHASE	50				
	51	Manufacturer		According to approved vendor list	
	52	Model		VTA	
	53				
	54				
	55				
	56				
	57				

**NOTES :**  
 The manifold material should be 316 Stainless Steel 2-valve complete of oval flanges with mounting bolts, gasket, etc

				<b>INSTRUMENT DATASHEET</b>		
				Pressure Transmitter		
03	LK	11-3-2024	For Approval			Sheet 10 of 31
02	LK	15-12-2023	For Approval			
01	TT	9-11-2023	For Approval			
Rev	By	Date	Description			Based on P&ID Rev.06



GENERAL	1	Tag Number	320PT-8204		
	2	Service	Liquid Pressure		
	3	P&ID No.	N278-VD-6019-PR-PID-0002		
	4	Location	Oil system		
	5	Ingress Protection	IP65		
	6	Line number	Oil pump		
	7	Area classification	Safe area		
	8				
PROCESS CONDITIONS	9	Fluid	State	Oil	Liquid
	10	Pressure	Norm.	Max.	1,7 bar(g) 2 bar(g)
	11	Temperature	Norm.	Max.	70 °C
	12	Design	Press.	Temp.	2,5 bar(g) 85 °C
	13	Ambient Temp.	Min.	Max.	0 °C 49 °C
	14	Setpoint	LL	L	1 bar(g)
	15		H	HH	
plz clarify why negative range is considered for PT-8204					
TRANSMITTER	19	Function	Field mounted		
	20	Element Type	Diaphragm		
	21	Element Material	SS316L		
	22	Housing Material	SS316L		
	23	Power Supply	24 VDC, 2-wire, loop powered		
	24	Process Conn.	Electric Conn.	½" NPTM	ISO M20 x 1,5
	25	Accuracy	± 0.1% of span		
	26	Calibrated Range	Unit	-1...5	bar(g)
	27	Adjustable Range	Unit	VTA	bar(g)
	28	Allow. Press.	Allow. Temp.		
	29	Communication Protocol	Smart , HART		
	30	Output Signal	4 - 20 mA		
	31	Sensor Fill Fluid	Glycerin		
	32				
	33				
34					
35					
36					
OPTIONS	37	Integral Meter	Scale	Yes, LCD	bar(g)
	38	Lightning And Surge Protection	N/A		
	39	Mounting facilities	Bracket		
	40	Manifold (Block & Bleed)	Yes (2-way manifolds lockable)		
	41	Housing ground connection	Yes, external (tightened with screws)		
	42	Cable Gland	Yes		
	43	Block valve (Hand ball valve)	Yes (3/4")		
	44	Tag plate	SS316, Plate with steel wire		
CERTIFICATES	45	Calibration certificate	Yes		
	46	3.1 Material certificate	Yes		
	47				
	48				
	49				
PURCHASE	51	Manufacturer	According to approved vendor list		
	52	Model	VTA		
	53				
	54				
	55				
	56				
	57				

**NOTES :**  
 The manifold material should be 316 Stainless Steel 2-valve complete of oval flanges with mounting bolts, gasket, etc

				<b>INSTRUMENT DATASHEET</b> <b>Pressure Transmitter</b>	 شرکت توسعه صنایع لایان <b>Lavan Industry Development Company</b>
03	LK	11-3-2024	For Approval		
02	LK	15-12-2023	For Approval		
01	TT	9-11-2023	For Approval		
Rev	By	Date	Description		Sheet 11 of 31 Based on P&ID Rev.06

GENERAL	1	Tag Number		320TT-8201	
	2	Service		Air temperature	
	3	P&ID No.		N278-VD-6019-PR-PID-0002	
	4	Location		1st stage suction	
	5	Ingress Protection		IP65	
	6	Line number		Dampener KV-020-001	
	7	Area classification		Safe area	
	8				
PROCESS CONDITIONS	9	Fluid	State	Air	Vapor
	10	Pressure	Norm. Max.	9,5 bar(g)	
	11	Temperature	Norm. Max.	46 °C	
	12	Design	Press. Temp.	12,5 bar(g)	75 °C
	13	Ambient Temp.	Min. Max.	0 °C	49 °C
	14	Setpoint	LL L		40 °C
	15		H HH	50 °C	
16					
TRANSMITTER	17	Function		Field mounted with remote element	
	18	Transmitter Type		Temperature	
	19	RTD Types Supported		N/A	
	20	Thermocouples Types Supported		Yes, TC type 'K'	
	21	MV Type Supported		N/A	
	22	Cold Junction Compensation		Internal compensation	
	23	Housing Material		SS 316	
	24	Power supply		24 VDC, 2 wire, loop powered	
	25	Electric Conn.		ISO M20 x 1,5	
	26	Accuracy		± 0.1% of span	
	27	Calibrated Range	Unit	0...100	°C
	28	Burn-out Protection/Loss of Input		Overrange	
	29	Communication Protocol		Smart , HART	
	30	Output Signal		4-20 mA	
	31	Adjustable Range		Yes	
	32				
	33				
	34				
	35				
	36				
37					
38					
39					
40					
41					
OPTIONS	42	Integral Meter	Scale	Yes, LCD	°C
	43	Lightning And Surge Protection		N/A	
	44	Mounting facilities		Bracket	
	45	Housing ground connection		Yes, external (tightened with screws)	
	46	Cable Gland		Yes	
47	Tag plate		SS316, Plate with steel wire		
CERTIFICATES	48	Calibration certificate		Yes	
	49				
	50				
	51				
PURCHASE	52				
	53	Manufacturer		According to approved vendor list	
	54	Model		VTA	
	55				
	56				
57					

**Notes:**


				<b>INSTRUMENT DATASHEET</b> Temperature Transmitter		 لوان صنعت توسعه شرکت Lavan Industry Development Company
03	LK	11-3-2024	For Approval			
02	LK	15-12-2023	For Approval			
01	TT	9-11-2023	For Approval			
Rev	By	Date	Description	Sheet 12 of 31 Based on P&ID Rev.06		

GENERAL	1	Thermowell Tag Number		320TW-8201	
	2	Service		Air temperature	
	3	P&ID No.		N278-VD-6019-PR-PID-0002	
	4	Location		Air inlet	
	5	Line number		Dampener KV-020-001	
	6	Area classification		Safe area	
	7				
	8				
PROCESS CONDITIONS	9	Fluid	State	Air	Vapor
	10	Pressure	Norm. Max.	9,5 bar(g)	
	11	Temperature	Norm. Max.	46 °C	
	12	Design	Press. Temp.	12,5 bar(g)	75 °C
	13	Ambient Temp.	Min. Max.	0 °C	49 °C
	14				
	15				
	16				
	17				
THERMOWELL	21	Process Connection		SS 316	
	22	Instrument Connection		Solid bar stock	
	23	Stem Diameter		1 1/2" flange	
	24	Bore Diameter		3/4" NPT	
	25	U-length		VTA	
	26			VTA	
	27			200 mm	
	28				
	29				
	30	Element Tag Number		320TE-8201	
ELEMENT	31	Construction		Sensor with lead wire, transition and relief spring	
	32	Type Of Element		Type 'K'	
	33	Accuracy Class		Class 1	
	34	Outside Diameter Sensor		6 mm	
	35	Connection		3/4" NPT	
	36	Element Length		To fit in Thermowell	
	37	Type Of Cable		Armoured	
	38	Cable Length		5 m	
	39	Sheat Material		SS 316	
	40				
OPTIONS	46				
	47				
	48				
CERTIFICATES	49	3.1 Material certificate		Yes	
	50	Calibration certificate		Yes	
	51				
	52				
CALCULATIONS	53	Wake frequency calculation		Yes	
	54				
	55				
	56				
	57				

"Flange rating/Facing/Type/Flange Face finish" should be mentioned for all thermowells. this comment to be consider for all applicable per case



considering proper U- length thermowell is vendor responsibility and scope. this comment to be consider for all applicable per case

**NOTES :**

				INSTRUMENT DATASHEET		شرکت توسعه صنایع لوانت Lavan Industry Development Company	
				Thermowell + Element			
03	LK	11-3-2024	For Approval			Sheet 13 of 31	
02	LK	15-12-2023	For Approval			Based on P&ID Rev.06	
01	TT	9-11-2023	For Approval				
Rev	By	Date	Description				



GENERAL	1	Tag Number		320TT-8202		
	2	Service		Air temperature		
	3	P&ID No.		N278-VD-6019-PR-PID-0002		
	4	Location		1st stage discharge		
	5	Ingress Protection		IP65		
	6	Line number		Dampener KV-020-002		
	7	Area classification		Safe area		
	8					
PROCESS CONDITIONS	9	Fluid	State	Air	Vapor	
	10	Pressure	Norm. Max.	23,3 bar(g)		
	11	Temperature	Norm. Max.	157 °C		
	12	Design	Press. Temp.	30,5 bar(g)	175 °C	
	13	Ambient Temp.	Min. Max.	0 °C	49 °C	
	14	Setpoint	LL	L		145 °C
	15		H	HH	165 °C	
TRANSMITTER	16					
	17	Function		Field mounted with remote element		
	18	Transmitter Type		Temperature		
	19	RTD Types Supported		N/A		
	20	Thermocouples Types Supported		Yes, TC type 'K'		
	21	MV Type Supported		N/A		
	22	Cold Junction Compensation		Internal compensation		
	23	Housing Material		SS 316		
	24	Power supply		24 VDC, 2 wire, loop powered		
	25	Electric Conn.		ISO M20 x 1,5		
	26	Accuracy		± 0.1% of span		
	27	Calibrated Range	Unit	0...250		°C
	28	Burn-out Protection/Loss of Input		Overrange		
	29	Communication Protocol		Smart , HART		
	30	Output Signal		4-20 mA		
	31	Adjustable Range		Yes		
OPTIONS	32					
	33					
	34					
	35					
	36					
	37					
	38					
CERTIFICATES	39					
	40					
	41					
	42	Integral Meter	Scale	Yes, LCD		°C
PURCHASE	43	Lightning And Surge Protection		N/A		
	44	Mounting facilities		Bracket		
	45	Housing ground connection		Yes, external (tightened with screws)		
	46	Cable Gland		Yes		
	47	Tag plate		SS316, Plate with steel wire		
PURCHASE	48	Calibration certificate		Yes		
	49					
	50					
	51					
PURCHASE	52					
	53	Manufacturer		According to approved vendor list		
	54	Model		VTA		
	55					
56						
57						

**Notes:**

				INSTRUMENT DATASHEET		شرکت توسعه فناوریات Lavan Industry Development Company	
				Temperature Transmitter			
03	LK	11-3-2024	For Approval			Sheet 14 of 31	
02	LK	15-12-2023	For Approval				
01	TT	9-11-2023	For Approval				
Rev	By	Date	Description			Based on P&ID Rev.06	



GENERAL	1	ThermowellTag Number		320TW-8202	
	2	Service		Air temperature	
	3	P&ID No.		N278-VD-6019-PR-PID-0002	
	4	Location		1st stage discharge	
	5	Line number		Dampener KV-020-002	
	6	Area classification		Safe area	
	7				
	8				
PROCESS CONDITIONS	9	Fluid	State	Air	Vapor
	10	Pressure	Norm. Max.	23,3 bar(g)	
	11	Temperature	Norm. Max.	157 °C	
	12	Design	Press. Temp.	30,5 bar(g)	175 °C
	13	Ambient Temp.	Min. Max.	0 °C	49 °C
	14				
	15				
	16				
THERMOWELL	19	Material		SS 316	
	20	Construction		Solid bar stock	
	21	Process Connection		1 1/2 flange	
	22	Instrument Connection		3/4" NPT	
	23	Stem Diameter		VTA	
	24	Bore Diameter		VTA	
	25	U-length		240 mm	
	26				
ELEMENT	30	ElementTag Number		320TE-8202	
	31	Construction		Sensor with lead wire, transition and relief spring	
	32	Type Of Element		Type 'K'	
	33	Accuracy Class		Class 1	
	34	Outside Diameter Sensor		6 mm	
	35	Connection		3/4" NPT	
	36	Element Length		To fit in Thermowell	
	37	Type Of Cable		Armoured	
	38	Cable Length		5 m	
	39	Sheat Material		SS 316	
	40				
	41				
OPTIONS	46				
	47				
	48				
CERTIFICATES	49	3.1 Material certificate		Yes	
	50	Calibration certificate		Yes	
	51				
	52				
CALCULATIONS	53	Wake frequency calculation		Yes	
	54				
	55				
	56				
	57				

**NOTES :**

				INSTRUMENT DATASHEET		
				Thermowell + Element		
03	LK	11-3-2024	For Approval			Sheet 15 of 31 Based on P&ID Rev.06
02	LK	15-12-2023	For Approval			
01	TT	9-11-2023	For Approval			
Rev	By	Date	Description			



GENERAL	1	Tag Number		320TT-8203	
	2	Service		Air temperature	
	3	P&ID No.		N278-VD-6019-PR-PID-0002	
	4	Location		2nd stage suction	
	5	Ingress Protection		IP65	
	6	Line number		Dampener KV-020-003	
	7	Area classification		Safe area	
	8				
PROCESS CONDITIONS	9	Fluid	State	Air	Vapor
	10	Pressure	Norm. Max.	22,1 bar(g)	
	11	Temperature	Norm. Max.	60 °C	
	12	Design	Press. Temp.	39,0 bar(g)	157 °C
	13	Ambient Temp.	Min. Max.	0 °C	49 °C
	14	Setpoint	LL L		
	15		H HH	65 °C	70 °C
16					
TRANSMITTER	17	Function		Field mounted with remote element	
	18	Transmitter Type		Temperature	
	19	RTD Types Supported		N/A	
	20	Thermocouples Types Supported		Yes, TC type 'K'	
	21	MV Type Supported		N/A	
	22	Cold Junction Compensation		Internal compensation	
	23	Housing Material		SS 316	
	24	Power supply		24 VDC, 2 wire, loop powered	
	25	Electric Conn.		ISO M20 x 1,5	
	26	Accuracy		± 0.1% of span	
	27	Calibrated Range	Unit	0...250	°C
	28	Burn-out Protection/Loss of Input		Overrange	
	29	Communication Protocol		Smart , HART	
	30	Output Signal		4-20 mA	
	31	Adjustable Range		Yes	
	32				
	33				
	34				
35					
36					
37					
38					
39					
40					
41					
OPTIONS	42	Integral Meter	Scale	Yes, LCD	°C
	43	Lightning And Surge Protection		N/A	
	44	Mounting facilities		Bracket	
	45	Housing ground connection		Yes, external (tightened with screws)	
	46	Cable Gland		Yes	
47	Tag plate		SS316, Plate with steel wire		
CERTIFICATES	48	Calibration certificate		Yes	
	49				
	50				
	51				
52					
PURCHASE	53	Manufacturer		According to approved vendor list	
	54	Model		VTA	
	55				
	56				
	57				

**Notes:**

				INSTRUMENT DATASHEET Temperature Transmitter		 شرکت توسعه صنایع لوات Lavan Industry Development Company
03	LK	11-3-2024	For Approval			
02	LK	15-12-2023	For Approval			
01	TT	9-11-2023	For Approval	Sheet 16 of 31		
Rev	By	Date	Description	Based on P&ID Rev.06		



GENERAL	1	ThermowellTag Number		320TW-8203	
	2	Service		Air temperature	
	3	P&ID No.		N278-VD-6019-PR-PID-0002	
	4	Location		2nd stage suction	
	5	Line number		Dampener KV-020-003	
	6	Area classification		Safe area	
	7				
	8				
PROCESS CONDITIONS	9	Fluid	State	Air	Vapor
	10	Pressure	Norm. Max.	22,1 bar(g)	
	11	Temperature	Norm. Max.	60 °C	
	12	Design	Press. Temp.	39,0 bar(g)	157 °C
	13	Ambient Temp.	Min. Max.	0 °C	49 °C
	14				
	15				
	16				
THERMOWELL	19	Material		SS 316	
	20	Construction		Solid bar stock	
	21	Process Connection		1 1/2 flange	
	22	Instrument Connection		3/4" NPT	
	23	Stem Diameter		VTA	
	24	Bore Diameter		VTA	
	25	U-length		240 mm	
	26				
ELEMENT	30	ElementTag Number		320TE-8203	
	31	Construction		Sensor with lead wire, transition and relief spring	
	32	Type Of Element		Type 'K'	
	33	Accuracy Class		Class 1	
	34	Outside Diameter Sensor		6 mm	
	35	Connection		3/4" NPT	
	36	Element Length		To fit in Thermowell	
	37	Type Of Cable		Armoured	
	38	Cable Length		5m	
	39	Sheat Material		SS 316	
	40				
	41				
OPTIONS	46				
	47				
	48				
CERTIFICATES	49	3.1 Material certificate		Yes	
	50	Calibration certificate		Yes	
	51				
	52				
CALCULATIONS	53	Wake frequency calculation		Yes	
	54				
	55				
	56				
	57				

**NOTES :**

				INSTRUMENT DATASHEET		 شرکت توسعه صنایع لوان Lavan Industry Development Company
				Thermowell + Element		
03	LK	11-3-2024	For Approval	 Sheet 17 of 31 Based on P&ID Rev.06		
02	LK	15-12-2023	For Approval			
01	TT	9-11-2023	For Approval			
Rev	By	Date	Description			



GENERAL	1	Tag Number		320TT-8204		
	2	Service		Air temperature		
	3	P&ID No.		N278-VD-6019-PR-PID-0002		
	4	Location		Second stage discharge		
	5	Ingress Protection		IP65		
	6	Line number		Dampener KV-020-004		
	7	Area classification		Safe area		
	8					
PROCESS CONDITIONS	9	Fluid	State	Air	Vapor	
	10	Pressure	Norm. Max.	30 bar(g)		
	11	Temperature	Norm. Max.	116 °C		
	12	Design	Press. Temp.	39 bar(g)	135 °C	
	13	Ambient Temp.	Min. Max.	0 °C	49 °C	
	14	Setpoint	LL	L		105 °C
	15		H	HH	125 °C	
16						
TRANSMITTER	17	Function		Field mounted with remote element		
	18	Transmitter Type		Temperature		
	19	RTD Types Supported		N/A		
	20	Thermocouples Types Supported		Yes, TC type 'K'		
	21	MV Type Supported		N/A		
	22	Cold Junction Compensation		Internal compensation		
	23	Housing Material		SS 316		
	24	Power supply		24 VDC, 2 wire, loop powered		
	25	Electric Conn.		ISO M20 x 1,5		
	26	Accuracy		± 0.1% of span		
	27	Calibrated Range	Unit	0...160		°C
	28	Burn-out Protection/Loss of Input		Overrange		
	29	Communication Protocol		Smart , HART		
	30	Output Signal		4-20 mA		
	31	Adjustable Range		Yes		
	32					
	33					
	34					
	35					
	36					
37						
38						
39						
40						
41						
OPTIONS	42	Integral Meter	Scale	Yes, LCD	°C	
	43	Lightning And Surge Protection		N/A		
	44	Mounting facilities		Bracket		
	45	Housing ground connection		Yes, external (tightened with screws)		
	46	Cable Gland		Yes		
47	Tag plate		SS316, Plate with steel wire			
CERTIFICATES	48	Calibration certificate		Yes		
	49					
	50					
	51					
52						
PURCHASE	53	Manufacturer		According to approved vendor list		
	54	Model		VTA		
	55					
	56					
57						

**Notes:**

				INSTRUMENT DATASHEET Temperature Transmitter		 شرکت توسعه صنایع لوان Lavan Industry Development Company
03	LK	11-3-2024	For Approval			
02	LK	15-12-2023	For Approval			
01	TT	9-11-2023	For Approval			
Rev	By	Date	Description			
				Sheet 18 of 31 Based on P&ID Rev.06		



GENERAL	1	ThermowellTag Number		320TW-8204	
	2	Service		Air temperature	
	3	P&ID No.		N278-VD-6019-PR-PID-0002	
	4	Location		Second stage discharge	
	5	Line number		Dampener KV-020-004	
	6	Area classification		Safe area	
	7				
	8				
PROCESS CONDITIONS	9	Fluid	State	Air	Vapor
	10	Pressure	Norm. Max.	30 bar(g)	
	11	Temperature	Norm. Max.	116 °C	
	12	Design	Press. Temp.	39 bar(g)	135 °C
	13	Ambient Temp.	Min. Max.	0 °C	49 °C
	14				
	15				
	16				
THERMOWELL	19	Material		SS 316	
	20	Construction		Solid bar stock	
	21	Process Connection		1 1/2 flange	
	22	Instrument Connection		3/4" NPT	
	23	Stem Diameter		VTA	
	24	Bore Diameter		VTA	
	25	U-length		240 mm	
	26				
ELEMENT	30	ElementTag Number		320TE-8204	
	31	Construction		Sensor with lead wire, transition and relief spring	
	32	Type Of Element		Type 'K'	
	33	Accuracy Class		Class 1	
	34	Outside Diameter Sensor		6 mm	
	35	Connection		3/4" NPT	
	36	Element Length		To fit in Thermowell	
	37	Type Of Cable		Armoured	
	38	Cable Length		5m	
	39	Sheat Material		SS 316	
	40				
	OPTIONS	46			
47					
48					
CERTIFICATES	49	3.1 Material certificate		Yes	
	50	Calibration certificate		Yes	
	51				
	52				
CALCULATIONS	53	Wake frequency calculation		Yes	
	54				
	55				
	56				
	57				

**NOTES :**

				INSTRUMENT DATASHEET		 شرکت توسعه صنایع لایان
				Thermowell + Element		
03	LK	11-3-2024	For Approval			Lavan Industry Development Company Sheet 19 of 31 Based on P&ID Rev.06
02	LK	15-12-2023	For Approval			
01	TT	9-11-2023	For Approval			
Rev	By	Date	Description			



GENERAL	1	Tag Number		320TT-8205	
	2	Service		Air temperature	
	3	P&ID No.		N278-VD-6019-PR-PID-0002	
	4	Location		Package outlet	
	5	Ingress Protection		IP65	
	6	Line number		4"-IA-320-08-D42-N	
	7	Area classification		Safe area	
	8				
PROCESS CONDITIONS	9	Fluid	State	Air	Vapor
	10	Pressure	Norm. Max.	30 bar(g)	
	11	Temperature	Norm. Max.	60°C	
	12	Design	Press. Temp.	39 bar(g)	116 °C
	13	Ambient Temp.	Min. Max.	0 °C	49 °C
	14	Setpoint	LL L		
	15		H HH	65	70
16					
TRANSMITTER	17	Function		Field mounted with remote element	
	18	Transmitter Type		Temperature	
	19	RTD Types Supported		N/A	
	20	Thermocouples Types Supported		Yes, TC type 'K'	
	21	MV Type Supported		N/A	
	22	Cold Junction Compensation		Internal compensation	
	23	Housing Material		SS 316	
	24	Power supply		24 VDC, 2 wire, loop powered	
	25	Electric Conn.		ISO M20 x 1,5	
	26	Accuracy		± 0.1% of span	
	27	Calibrated Range	Unit	0...160	°C
	28	Burn-out Protection/Loss of Input		Overrange	
	29	Communication Protocol		Smart , HART	
	30	Output Signal		4-20 mA	
	31	Adjustable Range		Yes	
	32				
	33				
34					
35					
36					
37					
38					
39					
40					
41					
OPTIONS	42	Integral Meter	Scale	Yes, LCD	°C
	43	Lightning And Surge Protection		N/A	
	44	Mounting facilities		Bracket	
	45	Housing ground connection		Yes, external (tightened with screws)	
	46	Cable Gland		Yes	
47	Tag plate		SS316, Plate with steel wire		
CERTIFICATES	48	Calibration certificate		Yes	
	49				
	50				
	51				
PURCHASE	52				
	53	Manufacturer		According to approved vendor list	
	54	Model		VTA	
	55				
	56				
57					

**Notes:**

				INSTRUMENT DATASHEET Temperature Transmitter		 شرکت توسعه صنایع لوات Lavan Industry Development Company
03	LK	11-3-2024	For Approval			
02	LK	15-12-2023	For Approval			
01	TT	9-11-2023	For Approval			
Rev	By	Date	Description	Sheet 20 of 31 Based on P&ID Rev.06		



GENERAL	1	ThermowellTag Number		320TW-8205	
	2	Service		Air temperature	
	3	P&ID No.		N278-VD-6019-PR-PID-0002	
	4	Location		Package outlet	
	5	Line number		4"-IA-320-08-D42-N	
	6	Area classification		Safe area	
	7				
	8				
PROCESS CONDITIONS	9	Fluid	State	Air	Vapour
	10	Pressure	Norm. Max.	30 bar(g)	
	11	Temperature	Norm. Max.	60 °C	
	12	Design	Press. Temp.	39 bar(g)	116 °C
	13	Ambient Temp.	Min. Max.	0 °C	49 °C
	14				
	15				
	16				
THERMOWELL	19	Material		SS 316	
	20	Construction		Solid bar stock	
	21	Process Connection		1 1/2 flange	
	22	Instrument Connection		3/4" NPT	
	23	Stem Diameter		VTA	
	24	Bore Diameter		VTA	
	25	U-length		90 mm	
	26				
ELEMENT	30	ElementTag Number		320TE-8205	
	31	Construction		Sensor with lead wire, transition and relief spring	
	32	Type Of Element		Type 'K'	
	33	Accuracy Class		Class 1	
	34	Outside Diameter Sensor		6 mm	
	35	Connection		3/4" NPT	
	36	Element Length		To fit in Thermowell	
	37	Type Of Cable		Armoured	
	38	Cable Length		5m	
	39	Sheat Material		SS 316	
	40				
	OPTIONS	46			
47					
48					
CERTIFICATES	49	3.1 Material certificate		Yes	
	50	Calibration certificate		Yes	
	51				
	52				
CALCULATIONS	53	Wake frequency calculation		Yes	
	54				
	55				
	56				
	57				

**NOTES :**

				INSTRUMENT DATASHEET		
				Thermowell + Element		
03	LK	11-3-2024	For Approval			Sheet 21 of 31 Based on P&ID Rev.06
02	LK	15-12-2023	For Approval			
01	TT	9-11-2023	For Approval			
Rev	By	Date	Description			



GENERAL	1	Tag Number		320TG-8206		
	2	Service		Air temperature		
	3	P&ID No.		N278-VD-6019-PR-PID-0002		
	4	Location		1st stage suction		
	5	Ingress Protection		IP65		
	6	Line number		Dampener KV-020-001		
	7	Area classification		Safe area		
	8					
PROCESS CONDITIONS	9	Fluid	State	Air	Vapor	
	10	Pressure	Norm. Max.	9,5 bar(g)		
	11	Temperature	Norm. Max.	46 °C		
	12	Design	Press. Temp.	12,5 bar(g)	75 °C	
	13	Ambient Temp.	Min. Max.	0 °C	49 °C	
	14					
	15					
	16					
	17					
	18					
GAUGE	19	Type		Bi-metallic		
	20	Range	Unit	0...100	°C	
	21	Dial Size	Dial Color	100 mm	White surface, black numbers	
	22	Case Material		SS316L		
	23	Stem Material		SS316L		
	24	Mounting		Locally mounted		
	25	Lens Material		Shatterproof laminated safety glass		
	26	Stem length	Stem Diameter	To fit in thermowell	6 mm	
	27	External calibrator		No		
	28	Nominal Accuracy		±1.0% of full scale		
	29	Connection		3/4" NPT, to fit in thermowell		
	30	Liquid filling		Glycerin		
	31	Tag plate		SS316, Plate with steel wire		
	32					
	33	FILLED SYSTEM	Compensation		-	
	34		Capillary Length		N/A	
	35		Capillary Material		N/A	
	36		Armor Material		N/A	
	37					
	38					
	39					
	40					
	41					
	42					
43						
44						
CERTIFICATES	45	Calibration certificate		Yes		
	46	3.1 Material certificate		Yes		
	47					
	48					
	49					
	50					
PURCHASE	51	Manufacturer		According to approved vendor list		
	52	Model		VTA		
	53					
	54					
	55					
	56					
	57					

**NOTES :**

				<b>INSTRUMENT DATASHEET</b>		 شرکت توسعه صنایع لوان Lavan Industry Development Company	
				Temperature Gauge			
03	LK	11-3-2024	For Approval	 Netherlands		Sheet	22 of 31
02	LK	15-12-2023	For Approval			Based on P&ID	Rev.06
01	IT	9-11-2023	For Approval				
Rev	By	Date	Description				



GENERAL	1	Thermowell Tag Number		320TW-8206	
	2	Service		Air temperature	
	3	P&ID No.		N278-VD-6019-PR-PID-0002	
	4	Location		1st stage suction	
	5	Line number		Dampener KV-020-001	
	6	Area classification		Safe area	
	7				
	8				
PROCESS CONDITIONS	9	Fluid	State	Air	Vapor
	10	Pressure	Norm. Max.	9,5 bar(g)	
	11	Temperature	Norm. Max.	46 °C	
	12	Design	Press. Temp.	12,5 bar(g)	75 °C
	13	Ambient Temp.	Min. Max.	0 °C	49 °C
	14				
	15				
	16				
THERMOWELL	19	Material		SS 316	
	20	Construction		Solid bar stock	
	21	Process Connection		1 1/2" flange	
	22	Instrument Connection		3/4" NPT	
	23	Stem Diameter		VTA	
	24	Bore Diameter		VTA	
	25	U-length		200 mm	
	26				
	27				
	28				
	29				
	30				
	31				
	32				
	33				
	34				
	35				
	36				
37					
38					
39					
40					
41					
42					
43					
44					
45					
OPTIONS	46				
	47				
	48				
CERTIFICATES	49	3.1 Material certificate		Yes	
	50				
	51				
	52				
CALCULATIONS	53	Wake frequency calculation		Yes	
	54				
	55				
	56				
	57				

**NOTES :**

				INSTRUMENT DATASHEET		 <p>شرکت توسعه صنایع لوان Lavan Industry Development Company</p>
				Thermowell		
03	LK	11-3-2024	For Approval			Sheet 23 of 31
02	LK	15-12-2023	For Approval			
01	TT	9-11-2023	For Approval			
Rev	By	Date	Description	Based on P&ID		Rev.06



GENERAL	1	Tag Number		320TG-8207		
	2	Service		Air temperature		
	3	P&ID No.		N278-VD-6019-PR-PID-0002		
	4	Location		1st stage discharge		
	5	Ingress Protection		IP65		
	6	Line number		Dampener KV-020-002		
	7	Area classification		Safe area		
	8					
PROCESS CONDITIONS	9	Fluid	State	Air	Vapor	
	10	Pressure	Norm. Max.	23,3 bar(g)		
	11	Temperature	Norm. Max.	157 °C		
	12	Design	Press. Temp.	30,5 bar(g)	175 °C	
	13	Ambient Temp.	Min. Max.	0 °C	49 °C	
	14					
	15					
	16					
GAUGE	19	Type		Bi-metallic		
	20	Range	Unit	0...300	°C	
	21	Dial Size	Dial Color	100 mm	White surface, black numbers	
	22	Case Material		SS316L		
	23	Stem Material		SS316L		
	24	Mounting		Locally mounted		
	25	Lens Material		Shatterproof laminated safety glass		
	26	Stem length	Stem Diameter	To fit in thermowell	6 mm	
	27	External Calibrator		No		
	28	Nominal Accuracy		±1.0% of full scale		
	29	Connection		3/4" NPT, to fit in thermowell		
	30	Liquid Filling		Glycerin		
	31	Tag plate		SS316, Plate with steel wire		
	32					
	33	FILLED SYSTEM	Compensation		-	
	34		Capillary Length		N/A	
	35		Capillary Material		N/A	
	36		Armor Material		N/A	
	37					
	38					
	39					
	40					
	41					
42						
43						
44						
CERTIFICATES	45	Calibration certificate		Yes		
	46	3.1 Material certificate		Yes		
	47					
	48					
	49					
PURCHASE	51	Manufacturer		According to approved vendor list		
	52	Model		VTA		
	53					
	54					
	55					
	56					
	57					

**NOTES :**

				<b>INSTRUMENT DATASHEET</b>		 شرکت توسعه صنایع لوان <b>Lavan Industry Development Company</b>
				Temperature Gauge		
03	LK	11-3-2024	For Approval	 <b>Airpack</b> Netherlands	Sheet	24 of 31
02	LK	15-12-2023	For Approval		Based on P&ID	Rev.06
01	IT	9-11-2023	For Approval			
Rev	By	Date	Description			

GENERAL	1	Thermowell Tag Number		320TW-8207	
	2	Service		Air temperature	
	3	P&ID No.		N278-VD-6019-PR-PID-0002	
	4	Location		1st stage discharge	
	5	Line number		Dampener KV-020-002	
	6	Area classification		Safe area	
	7				
	8				
PROCESS CONDITIONS	9	Fluid	State	Air	Vapor
	10	Pressure	Norm. Max.	23,3 bar(g)	
	11	Temperature	Norm. Max.	157 °C	
	12	Design	Press. Temp.	30,5 bar(g)	175 °C
	13	Ambient Temp.	Min. Max.	0 °C	49 °C
	14				
	15				
	16				
THERMOWELL	19	Material		SS 316	
	20	Construction		Solid bar stock	
	21	Process Connection		1 1/2" flange	
	22	Instrument Connection		3/4" NPT	
	23	Stem Diameter		VTA	
	24	Bore Diameter		VTA	
	25	U-length		240 mm	
	26				
	27				
	28				
	29				
	30				
	31				
	32				
	33				
	34				
	35				
	36				
	37				
	38				
39					
40					
41					
42					
43					
44					
45					
OPTIONS	46				
	47				
	48				
CERTIFICATES	49	3.1 Material certificate		Yes	
	50				
	51				
	52				
CALCULATIONS	53	Wake frequency calculation		Yes	
	54				
	55				
	56				
	57				



**NOTES :**

				INSTRUMENT DATASHEET		
				Thermowell		
03	LK	11-3-2024	For Approval			Sheet 25 of 31 Based on P&ID Rev.06
02	LK	15-12-2023	For Approval			
01	TT	9-11-2023	For Approval			
Rev	By	Date	Description			





GENERAL	1	Thermowell Tag Number			320TW-8208	
	2	Service			Air temperature	
	3	P&ID No.			N278-VD-6019-PR-PID-0002	
	4	Location			2nd stage discharge	
	5	Line number			Dampener KV-020-004	
	6	Area classification			Safe area	
	7					
	8					
PROCESS CONDITIONS	9	Fluid	State		Air	Vapor
	10	Pressure	Norm.	Max.	30 bar(g)	
	11	Temperature	Norm.	Max.	116 °C	
	12	Design	Press.	Temp.	39 bar(g)	135 °C
	13	Ambient Temp.	Min.	Max.	0 °C	49 °C
	14					
	15					
	16					
THERMOWELL	19	Material			SS 316	
	20	Construction			Solid bar stock	
	21	Process Connection			1 1/2" flange	
	22	Instrument Connection			3/4" NPT	
	23	Stem Diameter			VTA	
	24	Bore Diameter			VTA	
	25	U-length			240 mm	
	26					
	27					
	28					
	29					
	30					
	31					
	32					
	33					
	34					
	35					
	36					
37						
38						
39						
40						
41						
42						
43						
44						
45						
OPTIONS	46					
	47					
	48					
CERTIFICATES	49	3.1 Material certificate			Yes	
	50					
	51					
	52					
CALCULATIONS	53	Wake frequency calculation			Yes	
	54					
	55					
	56					
	57					

**NOTES :**

				INSTRUMENT DATASHEET		 شرکت توسعه صنایع لوان Lavan Industry Development Company
				Thermowell		
03	LK	11-3-2024	For Approval	 Airpack <small>Netherlands</small>		
02	LK	15-12-2023	For Approval			
01	TT	9-11-2023	For Approval			
Rev	By	Date	Description	Sheet 27 of 31 Based on P&ID Rev.06		

GENERAL	1	Tag Number		320TG-8209		
	2	Service		Air temperature		
	3	P&ID No.		N278-VD-6019-PR-PID-0002		
	4	Location		Package outlet		
	5	Ingress Protection		IP65		
	6	Line number		4"-IA-320-08-D42-N		
	7	Area classification		Safe area		
	8					
PROCESS CONDITIONS	9	Fluid	State	Air	Vapor	
	10	Pressure	Norm. Max.	30 bar(g)		
	11	Temperature	Norm. Max.	60 °C		
	12	Design	Press. Temp.	39 bar(g)	116 °C	
	13	Ambient Temp.	Min. Max.	0 °C	49 °C	
	14					
	15					
	16					
GAUGE	19	Type		Gas filled		
	20	Range	Unit	0...200	°C	
	21	Dial Size	Dial Color	100 mm	White surface, black numbers	
	22	Case Material		SS316L		
	23	Stem Material		SS316L		
	24	Mounting		Panel mounted, with front flange		
	25	Lens Material		Shatterproof laminated safety glass		
	26	Stem length	Stem Diameter	To fit in thermowell	6 mm	
	27	External Calibrator		No		
	28	Nominal Accuracy		±1.0% of full scale		
	29	Connection Size		3/4" NPT, to fit in thermowell		
	30	Gauge Filling		Glycerin		
	31	Tag plate		SS316, Plate with steel wire		
	32					
	33	FILLED SYSTEM	Compensation		-	
	34		Capillary Length		TBD	
	35		Capillary Material		SS316	
	36		Armor Material		SS316	
	37					
	38					
39						
40						
41						
42						
43						
44						
CERTIFICATES	45	Calibration certificate		Yes		
	46	3.1 Material certificate		Yes		
	47					
	48					
	49					
PURCHASE	51	Manufacturer		According to approved vendor list		
	52	Model		VTA		
	53					
	54					
	55					
	56					
	57					

**NOTES :**



				<b>INSTRUMENT DATASHEET</b>		 شرکت توسعه صنایع لایان <b>Lavan Industry Development Company</b>
				Temperature Gauge		
03	LK	11-3-2024	For Approval	 <b>Airpack</b> Netherlands	Sheet	28 of 31
02	LK	15-12-2023	For Approval		Based on P&ID	Rev.06
01	IT	9-11-2023	For Approval			
Rev	By	Date	Description			

GENERAL	1	Thermowell Tag Number		320TW-8209	
	2	Service		Air temperature	
	3	P&ID No.		N278-VD-6019-PR-PID-0002	
	4	Location		Package outlet	
	5	Line number		4"-IA-320-08-D42-N	
	6	Area classification		Safe area	
	7				
	8				
PROCESS CONDITIONS	9	Fluid	State	Air	Vapor
	10	Pressure	Norm. Max.	30 bar(g)	
	11	Temperature	Norm. Max.	60 °C	
	12	Design	Press. Temp.	39 bar(g)	116 °C
	13	Ambient Temp.	Min. Max.	0 °C	49 °C
	14				
	15				
THERMOWELL	19	Material	SS 316		
	20	Construction	Solid bar stock		
	21	Process Connection	1 1/2" flange		
	22	Instrument Connection	3/4" NPT		
	23	Stem Diameter	VTA		
	24	Bore Diameter	VTA		
	25	U-length	90 mm		
	26				
	27				
	28				
	29				
	30				
	31				
	32				
	33				
	34				
	35				
	36				
	37				
38					
39					
40					
41					
42					
43					
44					
45					
OPTIONS	46				
47					
48					
CERTIFICATES	49	3.1 Material certificate	Yes		
	50				
	51				
	52				
CALCULATIONS	53	Wake frequency calculation	Yes		
	54				
	55				
	56				
	57				

considering pipe line size (4")  
 recheck U-length and modify if  
 needed.  
 proper U- length thermowell is  
 vendor responsibility and  
 scope.



90 mm

**NOTES :**

				INSTRUMENT DATASHEET			
				Thermowell			
03	LK	11-3-2024	For Approval				
02	LK	15-12-2023	For Approval				
01	TT	9-11-2023	For Approval				
Rev	By	Date	Description				
						Sheet 29 of 31 Based on P&ID Rev.06	

GENERAL	1	Tag Number		320TG-8210, 320TG-8211	
	2	Service		Water temperature	
	3	P&ID No.		N278-VD-6019-PR-PID-0002	
	4	Location		Cooling water outlet	
	5	Ingress Protection		IP65	
	6	Line number		4"-CWR-320-24-B24C-N	4"-CWR-320-22-B24C-N
	7	Area classification		Safe area	
	8				
PROCESS CONDITIONS	9	Fluid	State	Water	Liquid
	10	Pressure	Norm. Max.	4,4 bar(g)	
	11	Temperature	Norm. Max.	36 °C	46 °C
	12	Design	Press. Temp.	7 bar(g)	75 °C
	13	Ambient Temp.	Min. Max.	0 °C	49 °C
	14				
	15				
	16				
GAUGE	19	Type		Gas filled	
	20	Range	Unit	0...100	°C
	21	Dial Size	Dial Color	100 mm	White surface, black numbers
	22	Case Material		SS316L	
	23	Stem Material		SS316L	
	24	Mounting		Panel mounted, with front flange	
	25	Lens Material		Shatterproof laminated safety glass	
	26	Stem length	Stem Diameter	To fit in thermowell	6 mm
	27	External Calibrator		No	
	28	Nominal Accuracy		±1.0% of full scale	
	29	Connection Size		3/4" NPT, to fit in thermowell	
	30	Gauge Filling		Glycerin	
	31	Tag plate		SS316, Plate with steel wire	
	32				
	33	FILLED SYSTEM	Compensation	-	
	34		Capillary Length	TBD	
	35		Capillary Material	SS316	
	36		Armor Material	SS316	
	37				
	38				
39					
40					
41					
42					
43					
44					
CERTIFICATES	45	Calibration certificate		Yes	
	46	3.1 Material certificate		Yes	
	47				
	48				
	49				
	50				
PURCHASE	51	Manufacturer		According to approved vendor list	
	52	Model		VTA	
	53				
	54				
	55				
	56				
	57				

**NOTES :**



				<b>INSTRUMENT DATASHEET</b>		 شرکت توسعه صنایع لوان Lavan Industry Development Company	
				Temperature Gauge			
03	LK	11-3-2024	For Approval	 Airpack Netherlands		Sheet	30 of 31
02	LK	15-12-2023	For Approval			Based on P&ID	Rev.06
01	IT	9-11-2023	For Approval				
Rev	By	Date	Description				

modified to 8211

GENERAL	1	Thermowell Tag Number		320TW-8210, <del>320TW-8206</del>	
	2	Service		Water temperature	
	3	P&ID No.		N278-VD-6019-PR-PID-0002	
	4	Location		Cooling water outlet	
	5	Line number		4"-CWR-320-24-B24C-N	4"-CWR-320-22-B24C-N
	6	Area classification		Safe area	
	7				
	8				
PROCESS CONDITIONS	9	Fluid	State	Water	Liquid
	10	Pressure	Norm. Max.	4,4 bar(g)	
	11	Temperature	Norm. Max.	36 °C	46 °C
	12	Design	Press. Temp.	7 bar(g)	75 °C
	13	Ambient Temp.	Min. Max.	0 °C	49 °C
	14				
	15				
	16				
THERMOWELL	19	Material		SS 316	
	20	Construction		Solid bar stock	
	21	Process		1 1/2" flange	
	22	Instrument Connection		3/4" NPT	
	23	Stem Diameter		VTA	
	24	Bore Diameter		VTA	
	25	U-length		90 mm	
	26				
	27				
	28				
	29				
	30				
	31				
	32				
	33				
	34				
	35				
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
OPTIONS	46				
	47				
	48				
CERTIFICATES	49	3.1 Material certificate		Yes	
	50				
	51				
	52				
CALCULATIONS	53	Wake frequency calculation		Yes	
	54				
	55				
	56				
	57				

considering pipe line size (4")  
 recheck U-length and modify if  
 needed.  
 proper U- length thermowell is  
 vendor responsibility and  
 scope.

NOTES :

				INSTRUMENT DATASHEET		شرکت توسعه صنایع لوات Lavan Industry Development Company	
				Thermowell		 	
03	LK	11-3-2024	For Approval			Sheet 31 of 31	
02	LK	15-12-2023	For Approval			Based on P&ID Rev.06	
01	TT	9-11-2023	For Approval				
Rev	By	Date	Description				