

OWNER



**BUSHEHR PETROCHEMICAL COMPANY
MEG PLANT**

EPC CONTRACTOR:



MC :



شرکت سفت و سوی
توسعه ایرانیان

**Instrument data sheet
for reciprocating compressor**







Owner Document Number: 17811-12	Project	Area	Phase	Unit	Dis.	Doc.	Seq.	Contract No : 52-98/445	
	BU	20	VD	303	IN	DSH	0040	Rev.:	Page
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تمام صفحات مذاک
میبایست با فرمت تایتل
بلاک پروژه باشد

**Instrument Data Sheet
for reciprocating compressor**

00	19/11/2020	For approval	TvT	JR	KP		
Rev.	Date	Purpose of Issue	Prepared	Checked	Approved	AC Code	
						Class: 1	Phase: p

OWNER  شرکت پتروشیمی بوته‌ر	BUSHEHR PETROCHEMICAL COMPANY MEG PLANT						EPC CONTRACTOR: 		
	Instrument data sheet for reciprocating compressor								
MC :   شرکت سفت و سوی توسعه ایرانیان	Project	Area	Phase	Unit	Dis.	Doc.	Seq.	Contract No : 52-98/445	
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44			
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Notes:

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GENERAL	1	Tag Number		PDG-001A	
	2	Service		Differential Pressure	
	3	P&ID No.		17811-03	
	4	Location		Compressor Inlet strainer	
	5	Ingress Protection		IP65	
	6				
	7				
PROCESS CONDITIONS	8	Fluid	State	Nitrogen	Dry Gas
	9	Pressure	Norm. Max.	8 Bar(a)	9 Bar(a)
	10	Temperature	Norm. Max.	55°C	65°C
	11	Design	Press. Temp.	13.5 Bar(a)	80°C
	12	Ambient Temp.	Min. Max.	5 °C	55 °C
	13				
GAUGE	15	Type		Bourdon tube	
	16	Range	Unit	-1 - 1	bar
	17	Mounting		Remote mounted	
	18	Dial Size	Dial Color	150 mm	White. Black numbers
	19	Case Material		SS 316	
	20	Ring Construction	Ring Material	Bayonet	SS 316
	21	Blow-Out Protection		Yes @ back	
	22	Lens Material		Shatterproof laminated safety glass	
	23	Pressure Element Type		Diaphragm	
	24	Pressure Element Material		SS 316	
	25	Socket Material		SS 316	
	26	Connection Size		2 x 1/4" NPT-F	
	27	Connection Location		Bottom	
	28	Movement Material		SS 316	
	29	Nominal Accuracy		±1.0% of full scale	
	30	Gauge Filling		NGlycerine	
	31	Over Range Protection		1,3 x full scale value	
	32				
	33				
	34				
	35				
	36				
	37				
	38				
39					
40					
41					
42					
OPTIONS	43	Snubber	Material	Yes	SS316
	44	Gauge Savers	Material	N/A	N/A
	45	Manifold (Block & Bleed)		Yes, 5-way B&B manifold	SS316 (Airpack Scope)
	46	Block valve (Hand ball valve)		Yes SS316 (Airpack scope)	
	47				
CERTIFICATES	49	Calibration certificate		Yes	
	50	3.1 Material certificate		Yes	
	51	IP certificate		No	
	52				
	53				
PURCHASE	54	Manufacturer		According to aproved vendor list	
	55	Model		Supplier to advise	
	56				
	57				

NOTES :

				INSTRUMENT AND VALVE DATASHEET	
				Diff. Pressure Gauge	
					
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GENERAL	1	Tag Number		PDG-001B	
	2	Service		Differential Pressure	
	3	P&ID No.		17811-03	
	4	Location		Compressor Inlet strainer	
	5	Ingress Protection		IP65	
	6				
	7				
PROCESS CONDITIONS	8	Fluid	State	Air	Dry Gas
	9	Pressure	Norm. Max.	8 Bar(a)	8.5 Bar(a)
	10	Temperature	Norm. Max.	45°C	65°C
	11	Design	Press. Temp.	13.5 Bar(a)	80°C
	12	Ambient Temp.	Min. Max.	5 °C	55 °C
	13				
GAUGE	15	Type		Bourdon tube	
	16	Range	Unit	-1 - 1	bar
	17	Mounting		Remote mounted	
	18	Dial Size	Dial Color	150 mm	White, Black numbers
	19	Case Material		SS 316	
	20	Ring Construction	Ring Material	Bayonet	SS 316
	21	Blow-Out Protection		Yes @ back	
	22	Lens Material		Shatterproof laminated safety glass	
	23	Pressure Element Type		Diaphragm	
	24	Pressure Element Material		SS 316	
	25	Socket Material		SS 316	
	26	Connection Size		2 x 1/4" NPT-F	
	27	Connection Location		Bottom	
	28	Movement Material		SS 316	
	29	Nominal Accuracy		±1.0% of full scale	
	30	Gauge Filling		NGlycerine	
	31	Over Range Protection		1,3 x full scale value	
	32				
	33				
	34				
	35				
	36				
	37				
	38				
39					
40					
41					
42					
OPTIONS	43	Snubber	Material	Yes	SS316
	44	Gauge Savers	Material	N/A	N/A
	45	Manifold (Block & Bleed)		Yes, 5-way B&B manifold	SS316 (Airpack Scope)
	46	Block valve (Hand ball valve)		Yes SS316 (Airpack scope)	
	47				
CERTIFICATES	49	Calibration certificate		Yes	
	50	3.1 Material certificate		Yes	
	51	IP certificate		No	
	52				
	53				
PURCHASE	54	Manufacturer		According to aproved vendor list	
	55	Model		Supplier to advise	
	56				
	57				

NOTES :

				INSTRUMENT AND VALVE DATASHEET	
				Diff. Pressure Gauge	
					
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Rev	By	Date	Description		Based on P&ID Rev.00


GENERAL	1	Tag Number		PG-001A		
	2	Service		Nitrogen pressure		
	3	P&ID No.		17811-03		
	4	Location		Compressor Inlet		
	5	Ingress Protection		IP65		
	6					
	7					
	8					
PROCESS CONDITIONS	9	Fluid	State		Nitrogen	Dry Gas
	10	Pressure	Norm.	Max.	8 Bar(a)	9 Bar(a)
	11	Temperature	Norm.	Max.	55°C	65°C
	12	Design	Press.	Temp.	13.5 Bar(a)	80°C
	13	Ambient Temp.	Min.	Max.	5 °C	55 °C
	14					
	15					
	16					
	17					
	18					
GAUGE	19	Type		Bourdon tube		
	20	Range	Unit	0 ...16	bar(a)	
	21	Mounting		Remote mounted		
	22	Dial Size	Dial Color	150 mm	White. Black numbers	
	23	Case Material		SS 316		
	24	Ring Construction	Ring Material	Bayonet	SS 316	
	25	Blow-Out Protection		Yes @ Back		
	26	Lens Material		Shatterproof laminated safety glass		
	27	Pressure Element Material		SS 316		
	28	Socket Material		SS 316		
	29	Connection Size		1/2" NPT-M		
	30	ConnectionLocation		Bottom		
	31	Movement Material		SS 316		
	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	Yes	SS316	
	39	Gauge Savers	Material	N/A	N/A	
	40	Manifold (Block & Bleed)		Yes, 2-way B&B manifold	SS316 (Airpack Scope)	
	41	Block valve (Hand ball valve)		Yes	SS316 (Airpack supply)	
	42					
	43					
CERTIFICATES	44					
	45	Calibration certificate		Yes		
	46	3.1 Material certificate		Yes		
	47	IP certificate		No		
	48					
PURCHASE	49					
	50					
	51	Manufacturer		According to aproved vendor list		
	52	Model		Supplier to advise		
	53					
	54					
	55					
56						
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				INSTRUMENT AND VALVE DATASHEET	
				Pressure Gauge	
					
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GENERAL	1	Tag Number		PG-001B		
	2	Service		Air pressure		
	3	P&ID No.		17811-03		
	4	Location		Compressor Inlet		
	5	Ingress Protection		IP65		
	6					
	7					
	8					
PROCESS CONDITIONS	9	Fluid	State		Air	Dry Gas
	10	Pressure	Norm.	Max.	8 Bar(a)	8,5 Bar(a)
	11	Temperature	Norm.	Max.	5°C	65°C
	12	Design	Press.	Temp.	13.5 Bar(a)	80°C
	13	Ambient Temp.	Min.	Max.	5 °C	55 °C
	14					
	15					
	16					
	17					
	18					
GAUGE	19	Type		Bourdon tube		
	20	Range	Unit	0 ...16	bar(a)	
	21	Mounting		Remote mounted		
	22	Dial Size	Dial Color	150 mm	White. Black numbers	
	23	Case Material		SS 316		
	24	Ring Construction	Ring Material	Bayonet	SS 316	
	25	Blow-Out Protection		Yes @ Back		
	26	Lens Material		Shatterproof laminated safety glass		
	27	Pressure Element Material		SS 316		
	28	Socket Material		SS 316		
	29	Connection Size		1/2" NPT-M		
	30	ConnectionLocation		Bottom		
	31	Movement Material		SS 316		
	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	Yes	SS316	
	39	Gauge Savers	Material	N/A	N/A	
	40	Manifold (Block & Bleed)		Yes, 2-way B&B manifold	SS316 (Airpack Scope)	
	41	Block valve (Hand ball valve)		Yes	SS316 (Airpack supply)	
	42					
	43					
CERTIFICATES	44					
	45	Calibration certificate		Yes		
	46	3.1 Material certificate		Yes		
	47	IP certificate		No		
	48					
PURCHASE	49					
	50					
	51	Manufacturer		According to aproved vendor list		
	52	Model		Supplier to advise		
	53					
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				INSTRUMENT AND VALVE DATASHEET	
				Pressure Gauge	
					
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GENERAL	1	Tag Number		PG-002A		
	2	Service		Nitrogen pressure		
	3	P&ID No.		17811-03		
	4	Location		Compressor Upstream After-Cooler		
	5	Ingress Protection		IP65		
	6					
	7					
	8					
PROCESS CONDITIONS	9	Fluid	State		Nitrogen	Dry Gas
	10	Pressure	Norm.	Max.	23,5 Bar(a)	26 Bar(a)
	11	Temperature	Norm.	Max.	190°C	195°C
	12	Design	Press.	Temp.	35.25 Bar(a)	200°C
	13	Ambient Temp.	Min.	Max.	5 °C	55 °C
	14					
	15					
	16					
	17					
	18					
GAUGE	19	Type		Bourdon tube		
	20	Range	Unit	0 ...40	bar(a)	
	21	Mounting		Remote mounted		
	22	Dial Size	Dial Color	150 mm	White. Black numbers	
	23	Case Material		SS 316		
	24	Ring Construction	Ring Material	Bayonet	SS 316	
	25	Blow-Out Protection		Yes @ Back		
	26	Lens Material		Shatterproof laminated safety glass		
	27	Pressure Element Material		SS 316		
	28	Socket Material		SS 316		
	29	Connection Size		1/2" NPT-M		
	30	Connection Location		Bottom		
	31	Movement Material		SS 316		
	32	Nominal Accuracy		±1,0 % of span		
	33	Gauge Filling		No		
	34	Over Range Protection		1,3 x full scale value		
	35					
36						
37						
OPTIONS	38	Snubber	Material	Yes	SS316	
	39	Gauge Savers	Material	N/A	N/A	
	40	Manifold (Block & Bleed)		Yes, 2-way B&B manifold	SS316 (Airpack Scope)	
	41	Block valve (Hand ball valve)		Yes	SS316 (Airpack supply)	
	42					
	43					
CERTIFICATES	44					
	45	Calibration certificate		Yes		
	46	3.1 Material certificate		Yes		
	47	IP certificate		No		
	48					
PURCHASE	49					
	50					
	51	Manufacturer		According to aproved vendor list		
	52	Model		Supplier to advise		
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				INSTRUMENT AND VALVE DATASHEET	
				Pressure Gauge	
					
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GENERAL	1	Tag Number		PG-002B	
	2	Service		Nitrogen pressure	
	3	P&ID No.		17811-03	
	4	Location		Compressor Upstream After-Cooler	
	5	Ingress Protection		IP65	
	6				
	7				
	8				
PROCESS CONDITIONS	9	Fluid	State	Air	Dry Gas
	10	Pressure	Norm. Max.	21 Bar(a)	26 Bar(a)
	11	Temperature	Norm. Max.	190°C	195°C
	12	Design	Press. Temp.	35.25 Bar(a)	200°C
	13	Ambient Temp.	Min. Max.	5 °C	55 °C
	14				
	15				
	16				
	17				
	18				
GAUGE	19	Type		Bourdon tube	
	20	Range	Unit	0 ...40	bar(a)
	21	Mounting		Remote mounted	
	22	Dial Size	Dial Color	150 mm	White. Black numbers
	23	Case Material		SS 316	
	24	Ring Construction	Ring Material	Bayonet	SS 316
	25	Blow-Out Protection		Yes @ Back	
	26	Lens Material		Shatterproof laminated safety glass	
	27	Pressure Element Material		SS 316	
	28	Socket Material		SS 316	
	29	Connection Size		1/2" NPT-M	
	30	Connection Location		Bottom	
	31	Movement Material		SS 316	
	32	Nominal Accuracy		±1,0 % of span	
	33	Gauge Filling		No	
	34	Over Range Protection		1,3 x full scale value	
	35				
36					
37					
OPTIONS	38	Snubber	Material	Yes	SS316
	39	Gauge Savers	Material	N/A	N/A
	40	Manifold (Block & Bleed)		Yes, 2-way B&B manifold	SS316 (Airpack Scope)
	41	Block valve (Hand ball valve)		Yes	SS316 (Airpack supply)
	42				
	43				
CERTIFICATES	44				
	45	Calibration certificate		Yes	
	46	3.1 Material certificate		Yes	
	47	IP certificate		No	
	48				
PURCHASE	49				
	50				
	51	Manufacturer		According to aproved vendor list	
	52	Model		Supplier to advise	
	53				
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				INSTRUMENT AND VALVE DATASHEET	
				Pressure Gauge	
					
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GENERAL	1	Tag Number		PG-003A, PG-003B	
	2	Service		Water pressure	
	3	P&ID No.		17811-03	
	4	Location		Compressor Cooling water Inlet	
	5	Ingress Protection		IP65	
	6				
	7				
	8				
PROCESS CONDITIONS	9	Fluid	State		Water Liquid
	10	Pressure	Norm.	Max.	3 Bar(a) 4 Bar(a)
	11	Temperature	Norm.	Max.	25°C 35°C
	12	Design	Press.	Temp.	5 Bar(a) 40°C
	13	Ambient Temp.	Min.	Max.	5 °C 55 °C
	14				
	15				
	16				
	17				
	18				
GAUGE	19	Type		Bourdon tube	
	20	Range	Unit	0 ...6	bar(a)
	21	Mounting		Remote mounted	
	22	Dial Size	Dial Color	150 mm	White. Black numbers
	23	Case Material		SS 316	
	24	Ring Construction	Ring Material	Bayonet	SS 316
	25	Blow-Out Protection		Yes @ Back	
	26	Lens Material		Shatterproof laminated safety glass	
	27	Pressure Element Material		SS 316	
	28	Socket Material		SS 316	
	29	Connection Size		1/2" NPT-M	
	30	Connection Location		Bottom	
	31	Movement Material		SS 316	
	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	No	N/A
	39	Gauge Savers	Material	N/A	N/A
	40	Manifold (Block & Bleed)		Yes, 2-way B&B manifold	SS316 (Airpack Scope)
	41	Block valve (Hand ball valve)		Yes	SS316 (Airpack supply)
	42				
	43				
CERTIFICATES	44				
	45	Calibration certificate		Yes	
	46	3.1 Material certificate		Yes	
	47	IP certificate		No	
	48				
PURCHASE	49				
	50				
	51	Manufacturer		According to aproved vendor list	
	52	Model		Supplier to advise	
	53				
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				INSTRUMENT AND VALVE DATASHEET	
				Pressure Gauge	
					
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Rev	By	Date	Description		Based on P&ID Rev.00


GENERAL	1	Tag Number		TG-001A, TG-001B		
	2	Service		Water temperature		
	3	P&ID No.		17811-03		
	4	Location		Compressor Cooling water Inlet		
	5	Ingress Protection		IP65		
	6					
	7					
	8					
PROCESS CONDITIONS	9	Fluid	State		Water	Liquid
	10	Pressure	Norm.	Max.	3 Bar(a)	4 Bar(a)
	11	Temperature	Norm.	Max.	25°C	35°C
	12	Design	Press.	Temp.	5 Bar(a)	60°C
	13	Ambient Temp.	Min.	Max.	5 °C	55 °C
	14					
	15					
	16					
	17					
	18					
GAUGE	19	Type		Bi-metal		
	20	Range	Unit	0...60	°C	
	21	Dial Size	Dial Color	150 mm	White. Black numbers	
	22	Case material		SS 316		
	23	Stem Material		SS 316		
	24	Mounting		Remote		
	25	Lens Material		Shatterproof laminated safety glass		
	26	Stem length	Stem Diameter	To fit in TW	6 mm	
	27	External Calibrator		Yes		
	28	Nominal Accuracy		±1.0% of full scale		
	29	Connection		1/2" NPT-M x 6 mm OD compression fitting, sliding on stem		
	30	Liquid filling		Glycerine		
	31					
	32					
	33	FILLED SYSTEM	Compensation		-	
	34		Capillary Length		5 meter	
	35		Capillary Material		SS 316	
	36		Armor Material		SS 316	
	37					
	38					
	39					
	40					
	41					
	42					
43						
44						
CERTIFICATES	45	Calibration certificate		Yes		
	46	3.1 Material certificate		Yes		
	47	IP certificate		No		
	48					
	49					
	50					
PURCHASE	51	Manufacturer		According to aproved vendor list		
	52	Model		Supplier to advise		
	53					
	54					
	55					
	56					
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NOTES :

				INSTRUMENT AND VALVE DATASHEET	
				Temperature Gauge	
					
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Rev	By	Date	Description		Based on P&ID Rev.00


GENERAL	1	Tag Number			TW-001A, TW-001B	
	2	Service			Water temperature	
	3	P&ID No.			17811-03	
	4	Location			TG-001A, TG-001B	
	5					
	6					
	7					
	8					
PROCESS CONDITIONS	9	Fluid	State		Water	Liquid
	10	Pressure	Norm.	Max.	3 Bar(a)	4 Bar(a)
	11	Temperature	Norm.	Max.	25°C	35°C
	12	Design	Press.	Temp.	5 Bar(a)	60°C
	13	Ambient Temp.	Min.	Max.	5 °C	55 °C
	14					
	15					
	16					
THERMOWELL	19	Material			SS 316	
	20	Construction			Solid bar stock	
	21	Process Connection			1 1/2" ANSI RF #300	
	22	Instrument Connection			1/2" NPT-F	
	23	Tip Diameter			To be advised by supplier	
	24	Bore Diameter			To house a 6 mm OD element	
	25	U-length			Check with Engineering Department	
	26					
	27					
	28					
	29					
	30					
	31					
	32					
	33					
	34					
	35					
	36					
	37					
	38					
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41						
42						
43						
44						
45						
46						
47						
48						
CERTIFICATES	49	3.1 Material certificate			Yes	
	50					
	51					
	52					
CALCULATIONS	53	Wake frequency calculation			No	
	54					
	55					
	56					
	57					

NOTES :

				INSTRUMENT AND VALVE DATASHEET		
				Thermowell		
						
00	TT	19-11-2020	For Approval			
Rev	By	Date	Description			
				Sheet	11 of 45	
				Based on P&ID	Rev.00	


GENERAL	1	Tag Number		TG-002A, TG-002B		
	2	Service		Water temperature		
	3	P&ID No.		17811-03		
	4	Location		Compressor Cooling water Outlet		
	5	Ingress Protection		IP65		
	6					
	7					
	8					
PROCESS CONDITIONS	9	Fluid	State		Water	Liquid
	10	Pressure	Norm.	Max.	2 Bar(a)	3 Bar(a)
	11	Temperature	Norm.	Max.	40°C	55°C
	12	Design	Press.	Temp.	5 Bar(a)	60°C
	13	Ambient Temp.	Min.	Max.	5 °C	55 °C
	14					
	15					
	16					
	17					
	18					
GAUGE	19	Type		Bi-metal		
	20	Range	Unit	0...60	°C	
	21	Dial Size	Dial Color	150 mm	White. Black numbers	
	22	Case material		SS 316		
	23	Stem Material		SS 316		
	24	Mounting		Remote		
	25	Lens Material		Shatterproof laminated safety glass		
	26	Stem length	Stem Diameter	To fit in TW	6 mm	
	27	External Calibrator		Yes		
	28	Nominal Accuracy		±1.0% of full scale		
	29	Connection		1/2" NPT-M x 6 mm OD compression fitting, sliding on stem		
	30	Liquid filling		Glycerine		
	31					
	32					
	33	FILLED SYSTEM	Compensation		-	
	34		Capillary Length		5 meter	
	35		Capillary Material		SS 316	
	36		Armor Material		SS 316	
	37					
	38					
39						
40						
41						
42						
43						
44						
CERTIFICATES	45	Calibration certificate		Yes		
	46	3.1 Material certificate		Yes		
	47	IP certificate		No		
	48					
	49					
PURCHASE	51	Manufacturer		According to aproved vendor list		
	52	Model		Supplier to advise		
	53					
	54					
	55					
	56					
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NOTES :

				INSTRUMENT AND VALVE DATASHEET	
				Temperature Gauge	
					
00	TT	19-11-2020	For Approval		Sheet 12 of 45
Rev	By	Date	Description		Based on P&ID Rev.00


GENERAL	1	Tag Number			TW-002A, TW-002B	
	2	Service			Water temperature	
	3	P&ID No.			17811-03	
	4	Location			TG-002A, TG-002B	
	5					
	6					
	7					
	8					
PROCESS CONDITIONS	9	Fluid	State		Water	Liquid
	10	Pressure	Norm.	Max.	2 Bar(a)	3 Bar(a)
	11	Temperature	Norm.	Max.	40°C	55°C
	12	Design	Press.	Temp.	5 Bar(a)	60°C
	13	Ambient Temp.	Min.	Max.	5 °C	55 °C
	14					
	15					
	16					
THERMOWELL	19	Material			SS 316	
	20	Construction			Solid bar stock	
	21	Process Connection			1 1/2" ANSI RF #300	
	22	Instrument Connection			1/2" NPT-F	
	23	Tip Diameter			To be advised by supplier	
	24	Bore Diameter			To house a 6 mm OD element	
	25	U-length			Check with Engineering Department	
	26					
	27					
	28					
	29					
	30					
	31					
	32					
	33					
	34					
	35					
	36					
	37					
	38					
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41						
42						
43						
44						
45						
46						
47						
48						
CERTIFICATES	49	3.1 Material certificate			Yes	
	50					
	51					
	52					
CALCULATIONS	53	Wake frequency calculation			No	
	54					
	55					
	56					
	57					

NOTES :

				INSTRUMENT AND VALVE DATASHEET Thermowell 		
00	TT	19-11-2020	For Approval			
Rev	By	Date	Description	Sheet 13 of 45 Based on P&ID Rev.00		


GENERAL	1	Tag Number			LG-001A, LG-001B	
	2	Service			Oil level	
	3	P&ID No.			17811-03	
	4	Location			Compressor oil sump	
	5	Ingress Protection			IP65	
	6					
	7					
	8					
PROCESS CONDITIONS	9	Fluid	State		Oil	Liquid
	10	Pressure	Norm.	Max.	Ambient	-
	11	Temperature	Norm.	Max.	45°C	65°C
	12	Design	Press.	Temp.	5 Bar(a)	80°C
	13	Ambient Temp.	Min.	Max.	5 °C	55 °C
	14					
	15					
	16					
GAUGE	19	Type		Displacer / Magnetic		
	20	Range	Unit	Will be stated later	mm	
	21	Mounting		Locally		
	22	Case Material / Indicator Tube		Aluminium / Pyrex glass		
	23	Body Material / Chamber Material		SS 316		
	24	Lens Material / Scale		Shatterproof laminated safety glass / SS 316		
	25	Displacement rod / Float		SS 316		
	26	Spring / Heater casing		SS 316		
	27	Connection Size		1/2" NPT		
	28	Connection Location		Bottom back-Top back		
	29	Center to Center Length		Will be stated later		
	30	Nominal Accuracy		±1,5 % of span		
	31					
	32					
OPTIONS	38	Level Transducer		N/A		
	39	Drain		N/A		
	40	Limit Switches		N/A		
	41					
	42					
	43					
CERTIFICATES	45	3.1 Material certificate		Yes,		
	46	Calibration certificate		Yes		
	47					
	48					
	49					
PURCHASE	51	Manufacturer		According to approved vendor list		
	52	Model No.		Supplier to advise		
	53					
	54					
	55					
	56					
	57					

NOTES :

				INSTRUMENT AND VALVE DATASHEET	
				Level Gauge	
					
00	TT	19-11-2020	For Approval		Sheet 14 of 45
Rev	By	Date	Description		Based on P&ID Rev.00


GENERAL	1	Tag Number		PIT-001A		
	2	Service		Nitrogen Pressure		
	3	P&ID No.		17811-03		
	4	Location		Compressor Inlet		
	5	Ingress Protection		IP65		
	6					
	7					
	8					
PROCESS CONDITIONS	9	Fluid	State	Nitrogen	Dry Gas	
	10	Pressure	Norm. Max.	8 Bar(a)	9 Bar(a)	
	11	Temperature	Norm. Max.	55°C	65°C	
	12	Design	Press. Temp.	13.5 Bar(a)	80°C	
	13	Ambient Temp.	Min. Max.	5 °C	55 °C	
	14	Setpoint	LL	L	6,9 Bar(a)	
	15		H	HH		9,1 Bar(a)
	16					
	17					
18						
TRANSMITTER	19	Function		Field mounted Transmitter		
	20	Element Type		Diaphragm		
	21	Element Material		SS 316L		
	22	Housing Material		Aluminium, epoxy coated		
	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...13,5	bar(a)	
	27	Adjustable Range	Unit	VTA	bar(a)	
	28	Allow. Press.	Allow. Temp.	To be informed by supplier	To be informed by supplier	
	29	Area Classification		Zone 2, Eex'ia		
	30	Communication Protocol		Smart , HART 5		
	31	Output Signal		4 - 20 mA		
	32	Sensor Fill Fluid		To be informed by supplier		
	33					
	34					
35						
36						
OPTIONS	37	Integral Meter	Scale	Yes, LCD	bar(a)	
	38	Lightning And Surge Protection		N/A		
	39	Mounting facilities		Bracket		
	40	Manifold (Block & Bleed)		Yes, 3-way B&B manifold	SS316 (Airpack Scope)	
	41	Housing ground connection		Yes, external (tightened with screws)		
	42	Cable Gland		Yes, Eex 'd' certified (Airpack scope)		
	43	Block valve (Hand ball valve)		Yes SS316 (Airpack supply)		
CERTIFICATES	44	Calibration certificate		Yes		
	45	3.1 Material certificate		Yes		
	46	ATEX		No		
	47	SIL certificate		No		
	48	IP certificate		No		
	49					
PURCHASE	51	Manufacturer		According to aproved vendor list		
	52	Model		Supplier to advise		
	53					
	54					
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NOTES :

				INSTRUMENT AND VALVE DATASHEET	
				Pressure Transmitter	
					
00	TT	19-11-2020	For Approval		Sheet 15 of 45
Rev	By	Date	Description		Based on P&ID Rev.00


GENERAL	1	Tag Number		PIT-001B		
	2	Service		Air Pressure		
	3	P&ID No.		17811-03		
	4	Location		Compressor Inlet		
	5	Ingress Protection		IP65		
	6					
	7					
	8					
PROCESS CONDITIONS	9	Fluid	State	Air	Dry Gas	
	10	Pressure	Norm. Max.	8 Bar(a)	8,5 Bar(a)	
	11	Temperature	Norm. Max.	45°C	65°C	
	12	Design	Press. Temp.	13.5 Bar(a)	80°C	
	13	Ambient Temp.	Min. Max.	5 °C	55 °C	
	14	Setpoint	LL	L	6,9 Bar(a)	
	15		H	HH		8,6 Bar(a)
	16					
	17					
18						
TRANSMITTER	19	Function		Field mounted Transmitter		
	20	Element Type		Diaphragm		
	21	Element Material		SS 316L		
	22	Housing Material		Aluminium, epoxy coated		
	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...13,5	bar(a)	
	27	Adjustable Range	Unit	VTA	bar(a)	
	28	Allow. Press.	Allow. Temp.	To be informed by supplier	To be informed by supplier	
	29	Area Classification		Zone 2, Eex'ia		
	30	Communication Protocol		Smart , HART 5		
	31	Output Signal		4 - 20 mA		
	32	Sensor Fill Fluid		To be informed by supplier		
	33					
	34					
35						
36						
OPTIONS	37	Integral Meter	Scale	Yes, LCD	bar(a)	
	38	Lightning And Surge Protection		N/A		
	39	Mounting facilities		Bracket		
	40	Manifold (Block & Bleed)		Yes, 3-way B&B manifold	SS316 (Airpack Scope)	
	41	Housing ground connection		Yes, external (tightened with screws)		
	42	Cable Gland		Yes, Eex 'd' certified (Airpack scope)		
	43	Block valve (Hand ball valve)		Yes SS316 (Airpack supply)		
CERTIFICATES	44	Calibration certificate		Yes		
	45	3.1 Material certificate		Yes		
	46	ATEX		No		
	47	SIL certificate		No		
	48	IP certificate		No		
	49					
PURCHASE	51	Manufacturer		According to aproved vendor list		
	52	Model		Supplier to advise		
	53					
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NOTES :

				INSTRUMENT AND VALVE DATASHEET	
				Pressure Transmitter	
					
00	TT	19-11-2020	For Approval		Sheet 16 of 45
Rev	By	Date	Description		Based on P&ID Rev.00


GENERAL	1	Tag Number		PIT-003A, PIT-003B		
	2	Service		Oil Pressure		
	3	P&ID No.		17811-03		
	4	Location		Compressor Oil system		
	5	Ingress Protection		IP65		
	6					
	7					
	8					
PROCESS CONDITIONS	9	Fluid	State		Oil	Liquid
	10	Pressure	Norm.	Max.	3 Bar(a)	3,5 Bar(a)
	11	Temperature	Norm.	Max.	45°C	65°C
	12	Design	Press.	Temp.	5 Bar(a)	80°C
	13	Ambient Temp.	Min.	Max.	5 °C	55 °C
	14	Setpoint	LL	L	1,5 Bar(a)	
	15		H	HH		
	16					
	17					
	18					
TRANSMITTER	19	Function		Field mounted Transmitter		
	20	Element Type		Diaphragm		
	21	Element Material		SS 316L		
	22	Housing Material		Aluminium, epoxy coated		
	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(a)
	27	Adjustable Range	Unit		VTA	bar(a)
	28	Allow. Press.	Allow. Temp.		To be informed by supplier	To be informed by supplier
	29	Area Classification		Zone 2, Eex'ia		
	30	Communication Protocol		Smart , HART 5		
	31	Output Signal		4 - 20 mA		
	32	Sensor Fill Fluid		To be informed by supplier		
	33					
	34					
35						
36						
OPTIONS	37	Integral Meter	Scale		Yes, LCD	bar(a)
	38	Lightning And Surge Protection		N/A		
	39	Mounting facilities		Bracket		
	40	Manifold (Block & Bleed)		Yes, 3-way B&B manifold, lockable SS316 (Airpack Scope)		
	41	Housing ground connection		Yes, external (tightened with screws)		
	42	Cable Gland		Yes, Eex 'd' certified (Airpack scope)		
	43	Block valve (Hand ball valve)		Yes SS316 (Airpack supply)		
CERTIFICATES	44	Calibration certificate		Yes		
	45	3.1 Material certificate		Yes		
	46	ATEX		No		
	47	SIL certificate		No		
	48	IP certificate		No		
	49					
PURCHASE	51	Manufacturer		According to aproved vendor list		
	52	Model		Supplier to advise		
	53					
	54					
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NOTES :

				INSTRUMENT AND VALVE DATASHEET	
				Pressure Transmitter	
					
00	TT	19-11-2020	For Approval		Sheet 17 of 45
Rev	By	Date	Description		Based on P&ID Rev.00


GENERAL	1	Tag Number		PIT-002A		
	2	Service		Nitrogen Pressure		
	3	P&ID No.		17811-03		
	4	Location		Compressor Outlet		
	5	Ingress Protection		IP65		
	6					
	7					
	8					
PROCESS CONDITIONS	9	Fluid	State	Nitrogen	Dry Gas	
	10	Pressure	Norm. Max.	23,5 Bar(a)	26 Bar(a)	
	11	Temperature	Norm. Max.	40°C	55°C	
	12	Design	Press. Temp.	35.25 Bar(a)	60°C	
	13	Ambient Temp.	Min. Max.	5 °C	55 °C	
	14	Setpoint	LL	L	21 Bar(a)	
	15		H	HH	23 Bar(a)	23,5 Bar(a)
	16					
	17					
18						
TRANSMITTER	19	Function		Field mounted Transmitter		
	20	Element Type		Diaphragm		
	21	Element Material		SS 316L		
	22	Housing Material		Aluminium, epoxy coated		
	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...36	bar(a)	
	27	Adjustable Range	Unit	VTA	bar(a)	
	28	Allow. Press.	Allow. Temp.	To be informed by supplier	To be informed by supplier	
	29	Area Classification		Zone 2, Eex'ia		
	30	Communication Protocol		Smart , HART 5		
	31	Output Signal		4 - 20 mA		
	32	Sensor Fill Fluid		To be informed by supplier		
	33					
	34					
35						
36						
OPTIONS	37	Integral Meter	Scale	Yes, LCD	bar(a)	
	38	Lightning And Surge Protection		N/A		
	39	Mounting facilities		Bracket		
	40	Manifold (Block & Bleed)		Yes, 3-way B&B manifold	SS316 (Airpack Scope)	
	41	Housing ground connection		Yes, external (tightened with screws)		
	42	Cable Gland		Yes, Eex 'd' certified (Airpack scope)		
	43	Block valve (Hand ball valve)		Yes SS316 (Airpack supply)		
CERTIFICATES	44	Calibration certificate		Yes		
	45	3.1 Material certificate		Yes		
	46	ATEX		No		
	47	SIL certificate		No		
	48	IP certificate		No		
	49					
PURCHASE	51	Manufacturer		According to aproved vendor list		
	52	Model		Supplier to advise		
	53					
	54					
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NOTES :

				INSTRUMENT AND VALVE DATASHEET	
				Pressure Transmitter	
					
00	TT	19-11-2020	For Approval		Sheet 18 of 45
Rev	By	Date	Description		Based on P&ID Rev.00


GENERAL	1	Tag Number		PIT-002B	
	2	Service		Air Pressure	
	3	P&ID No.		17811-03	
	4	Location		Compressor Outlet	
	5	Ingress Protection		IP65	
	6				
	7				
	8				
PROCESS CONDITIONS	9	Fluid	State	Air Pressure	Dry Gas
	10	Pressure	Norm. Max.	21 Bar(a)	26 Bar(a)
	11	Temperature	Norm. Max.	40°C	55°C
	12	Design	Press. Temp.	35.25 Bar(a)	60°C
	13	Ambient Temp.	Min. Max.	5 °C	55 °C
	14	Setpoint	LL L	20 Bar(a)	
	15		H HH	20,5 Bar(a)	21 Bar(a)
	16				
	17				
18					
TRANSMITTER	19	Function		Field mounted Transmitter	
	20	Element Type		Diaphragm	
	21	Element Material		SS 316L	
	22	Housing Material		Aluminium, epoxy coated	
	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...36	bar(a)
	27	Adjustable Range	Unit	VTA	bar(a)
	28	Allow. Press.	Allow. Temp.	To be informed by supplier	To be informed by supplier
	29	Area Classification		Zone 2, Eex'ia	
	30	Communication Protocol		Smart , HART 5	
	31	Output Signal		4 - 20 mA	
	32	Sensor Fill Fluid		To be informed by supplier	
	33				
	34				
35					
36					
OPTIONS	37	Integral Meter	Scale	Yes, LCD	bar(a)
	38	Lightning And Surge Protection		N/A	
	39	Mounting facilities		Bracket	
	40	Manifold (Block & Bleed)		Yes, 3-way B&B manifold	SS316 (Airpack Scope)
	41	Housing ground connection		Yes, external (tightened with screws)	
	42	Cable Gland		Yes, Eex 'd' certified (Airpack scope)	
	43	Block valve (Hand ball valve)		Yes SS316 (Airpack supply)	
CERTIFICATES	44	Calibration certificate		Yes	
	45	3.1 Material certificate		Yes	
	46	ATEX		No	
	47	SIL certificate		No	
	48	IP certificate		No	
	49				
PURCHASE	51	Manufacturer		According to aproved vendor list	
	52	Model		Supplier to advise	
	53				
	54				
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NOTES :

				INSTRUMENT AND VALVE DATASHEET	
				Pressure Transmitter	
					
00	TT	19-11-2020	For Approval		Sheet 19 of 45
Rev	By	Date	Description		Based on P&ID Rev.00


GENERAL	1	Tag Number		TIT-001A		
	2	Service		Nitrogen Temperature		
	3	P&ID No.		17811-03		
	4	Location		Compressor Inlet		
	5	Ingress Protection		IP65		
	6					
	7					
	8					
PROCESS CONDITIONS	9	Fluid	State		Nitrogen	Dry Gas
	10	Pressure	Norm.	Max.	8 Bar(a)	9 Bar(a)
	11	Temperature	Norm.	Max.	55°C	65°C
	12	Design	Press.	Temp.	13.5 Bar(a)	80°C
	13	Ambient Temp.	Min.	Max.	5 °C	55 °C
	14	Setpoint	LL	L		
	15		H	HH	56 °C	
	16					
TRANSMITTER	17	Function		Field mounted Transmitter		
	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		Aluminium, epoxy coated		
	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...80	°C
	28	Burn-out Protection/Loss of Input		Overrange		
	29	Area Classification		Zone 2, Eex'ia		
	30	Communication Protocol		Smart , HART 5		
	31	Output Signal		4-20 mA		
	32	Adjustable Range		Yes		
	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, Eex 'd' certified (Airpack scope)		
CERTIFICATES	47	Calibration certificate		Yes		
	48	ATEX		No		
	49	IP certificate		No		
	50	SIL certificate	Level		No	
	51					
	52					
PURCHASE	53	Manufacturer		According to aproved vendor list		
	54	Model		Supplier to advise		
	55					
	56					
	57					

Notes:

				INSTRUMENT AND VALVE DATASHEET	
				Temperature Transmitter	
					
00	TT	19-11-2020	For Approval	Sheet	20 of 45
Rev	By	Date	Description	Based on P&ID	Rev.00


GENERAL	1	ThermowellTag Number			TW-001A	
	2	Service			Temperature Transmitter	
	3	P&ID No.			17811-03	
	4	Location			TIT-001A	
	5					
	6					
	7					
	8					
PROCESS CONDITIONS	9	Fluid	State		Nitrogen	Dry Gas
	10	Pressure	Norm.	Max.	8 Bar(a)	9 Bar(a)
	11	Temperature	Norm.	Max.	55°C	65°C
	12	Design	Press.	Temp.	13.5 Bar(a)	80°C
	13	Ambient Temp.	Min.	Max.	5 °C	55 °C
	14					
	15					
	16					
THERMOWELL	19	Material			SS 316	
	20	Construction			Solid bar stock	
	21	Process Connection			1 1/2" ANSI RF #300	
	22	Instrument Connection			1/2" NPT-F	
	23	Stem Diameter			To be advised by supplier	
	24	Bore Diameter			To house a 6 mm OD element	
	25	U-length			Check with Engineering Department	
	26					
ELEMENT	30	ElementTag Number			TE-001A	
	31	Construction			Sensor with lead wire, transition and relief spring	
	32	Type Of Element			TC type 'K / Simplex	
	33	Accuracy Class			DIN - IEC-EN 60584 Class 1	
	34	Outside Diameter Sensor			6 mm	
	35	Connection			1/2" NPT-M x 6,0 mm OD coupling sliding on stem	
	36	Element Length			To fit in Thermowell	
	37	Type Of Cable			Armoured	
	38	Cable Length			5 m	
	39	Special construction			No	
	40	Sheat Material			SS 316	
	41					
OPTIONS	46					
	47					
	48					
CERTIFICATES	49	3.1 Material certificate			Yes	
	50	Functional test report (up-down) for elem			Yes	
	51	Calibration certificate			Yes	
CALCULATIONS	52					
	53	Wake frequency calculation			No	
	54					
	55					
	56					

NOTES :

				INSTRUMENT AND VALVE DATASHEET	
				Thermowell + Element	
					
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Rev	By	Date	Description	Based on P&ID	Rev.00


GENERAL	1	Tag Number		TIT-001B		
	2	Service		Nitrogen Temperature		
	3	P&ID No.		17811-03		
	4	Location		Compressor Inlet		
	5	Ingress Protection		IP65		
	6					
	7					
	8					
PROCESS CONDITIONS	9	Fluid	State		Air	Dry Gas
	10	Pressure	Norm.	Max.	8 Bar(a)	8.5 Bar(a)
	11	Temperature	Norm.	Max.	45°C	65°C
	12	Design	Press.	Temp.	13.5 Bar(a)	80°C
	13	Ambient Temp.	Min.	Max.	5 °C	55 °C
	14	Setpoint	LL	L		
	15		H	HH	56 °C	
	16					
TRANSMITTER	17	Function		Field mounted Transmitter		
	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		Aluminium, epoxy coated		
	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...80	°C
	28	Burn-out Protection/Loss of Input		Overrange		
	29	Area Classification		Zone 2, Eex'ia		
	30	Communication Protocol		Smart , HART 5		
	31	Output Signal		4-20 mA		
	32	Adjustable Range		Yes		
	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, Eex 'd' certified (Airpack scope)		
CERTIFICATES	47	Calibration certificate		Yes		
	48	ATEX		No		
	49	IP certificate		No		
	50	SIL certificate	Level		No	
	51					
52						
PURCHASE	53	Manufacturer		According to aproved vendor list		
	54	Model		Supplier to advise		
	55					
	56					
	57					

Notes:

				INSTRUMENT AND VALVE DATASHEET	
				Temperature Transmitter	
					
00	TT	19-11-2020	For Approval	Sheet	22 of 45
Rev	By	Date	Description	Based on P&ID	Rev.00


GENERAL	1	ThermowellTag Number			TW-001B	
	2	Service			Temperature Transmitter	
	3	P&ID No.			17811-03	
	4	Location			TIT-001A	
	5					
	6					
	7					
	8					
PROCESS CONDITIONS	9	Fluid	State		Air	Dry Gas
	10	Pressure	Norm.	Max.	8 Bar(a)	8.5 Bar(a)
	11	Temperature	Norm.	Max.	45°C	65°C
	12	Design	Press.	Temp.	13.5 Bar(a)	80°C
	13	Ambient Temp.	Min.	Max.	5 °C	55 °C
	14					
	15					
	16					
	17					
	18					
THERMOWELL	19	Material			SS 316	
	20	Construction			Solid bar stock	
	21	Process Connection			1 1/2" ANSI RF #300	
	22	Instrument Connection			1/2" NPT-F	
	23	Stem Diameter			To be advised by supplier	
	24	Bore Diameter			To house a 6 mm OD element	
	25	U-length			Check with Engineering Department	
	26					
	27					
	28					
ELEMENT	30	ElementTag Number			TE-001B	
	31	Construction			Sensor with lead wire, transition and relief spring	
	32	Type Of Element			TC type 'K / Simplex	
	33	Accuracy Class			DIN - IEC-EN 60584 Class 1	
	34	Outside Diameter Sensor			6 mm	
	35	Connection			1/2" NPT-M x 6,0 mm OD coupling sliding on stem	
	36	Element Length			To fit in Thermowell	
	37	Type Of Cable			Armoured	
	38	Cable Length			5 m	
	39	Special construction			No	
	40	Sheat Material			SS 316	
	41					
	42					
	43					
OPTIONS	46					
	47					
	48					
CERTIFICATES	49	3.1 Material certificate			Yes	
	50	Functional test report (up-down) for elem			Yes	
	51	Calibration certificate			Yes	
	52					
CALCULATIONS	53	Wake frequency calculation			No	
	54					
	55					
	56					
	57					

NOTES :

				INSTRUMENT AND VALVE DATASHEET	
				Thermowell + Element	
					
00	TT	19-11-2020	For Approval		Sheet 23 of 45
Rev	By	Date	Description		Based on P&ID Rev.00


GENERAL	1	Tag Number		TIT-002A		
	2	Service		Nitrogen Temperature		
	3	P&ID No.		17811-03		
	4	Location		Compressor upstream after cooler		
	5	Ingress Protection		IP65		
	6					
	7					
	8					
PROCESS CONDITIONS	9	Fluid	State		Nitrogen	Dry Gas
	10	Pressure	Norm.	Max.	23,5 Bar(a)	26 Bar(a)
	11	Temperature	Norm.	Max.	190°C	195°C
	12	Design	Press.	Temp.	35.25 Bar(a)	200°C
	13	Ambient Temp.	Min.	Max.	5 °C	55 °C
	14	Setpoint	LL	L		
	15		H	HH		195 °C
	16					
TRANSMITTER	17	Function		Field mounted Transmitter		
	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		Aluminium, epoxy coated		
	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...200	°C
	28	Burn-out Protection/Loss of Input		Overrange		
	29	Area Classification		Zone 2, Eex'ia		
	30	Communication Protocol		Smart , HART 5		
	31	Output Signal		4-20 mA		
	32	Adjustable Range		Yes		
	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, Eex 'd' certified (Airpack scope)		
CERTIFICATES	47	Calibration certificate		Yes		
	48	ATEX		No		
	49	IP certificate		No		
	50	SIL certificate	Level		No	
	51					
	52					
PURCHASE	53	Manufacturer		According to aproved vendor list		
	54	Model		Supplier to advise		
	55					
	56					
	57					

Notes:

				INSTRUMENT AND VALVE DATASHEET	
				Temperature Transmitter	
					
00	TT	19-11-2020	For Approval		Sheet 24 of 45
Rev	By	Date	Description		Based on P&ID Rev.00


GENERAL	1	ThermowellTag Number		TW-002A	
	2	Service		Temperature Transmitter	
	3	P&ID No.		17811-03	
	4	Location		TIT-002A	
	5				
	6				
	7				
	8				
PROCESS CONDITIONS	9	Fluid	State	Nitrogen	Dry Gas
	10	Pressure	Norm. Max.	23,5 Bar(a)	26 Bar(a)
	11	Temperature	Norm. Max.	190°C	195°C
	12	Design	Press. Temp.	35.25 Bar(a)	200°C
	13	Ambient Temp.	Min. Max.	5 °C	55 °C
	14				
	15				
	16				
	17				
	18				
THERMOWELL	19	Material		SS 316	
	20	Construction		Solid bar stock	
	21	Process Connection		1 1/2" ANSI RF #300	
	22	Instrument Connection		1/2" NPT-F	
	23	Stem Diameter		To be advised by supplier	
	24	Bore Diameter		To house a 6 mm OD element	
	25	U-length		Check with Engineering Department	
	26				
	27				
	28				
ELEMENT	30	ElementTag Number		TE-002A	
	31	Construction		Sensor with lead wire, transition and relief spring	
	32	Type Of Element		TC type 'K / Simplex	
	33	Accuracy Class		DIN - IEC-EN 60584 Class 1	
	34	Outside Diameter Sensor		6 mm	
	35	Connection		1/2" NPT-M x 6,0 mm OD coupling sliding on stem	
	36	Element Length		To fit in Thermowell	
	37	Type Of Cable		Armoured	
	38	Cable Length		5 m	
	39	Special construction		No	
	40	Sheat Material		SS 316	
	41				
	42				
	43				
OPTIONS	46				
	47				
	48				
CERTIFICATES	49	3.1 Material certificate		Yes	
	50	Functional test report (up-down) for elem		Yes	
	51	Calibration certificate		Yes	
	52				
CALCULATIONS	53	Wake frequency calculation		No	
	54				
	55				
	56				
	57				

NOTES :

				INSTRUMENT AND VALVE DATASHEET	
				Thermowell + Element	
					
00	TT	19-11-2020	For Approval		Sheet 25 of 45
Rev	By	Date	Description		Based on P&ID Rev.00


GENERAL	1	Tag Number		TIT-002B		
	2	Service		Air Temperature		
	3	P&ID No.		17811-03		
	4	Location		Compressor upstream after cooler		
	5	Ingress Protection		IP65		
	6					
	7					
	8					
PROCESS CONDITIONS	9	Fluid	State		Air	Dry Gas
	10	Pressure	Norm.	Max.	21 Bar(a)	26 Bar(a)
	11	Temperature	Norm.	Max.	190°C	195°C
	12	Design	Press.	Temp.	35.25 Bar(a)	200°C
	13	Ambient Temp.	Min.	Max.	5 °C	55 °C
	14	Setpoint	LL	L		
	15		H	HH		195 °C
	16					
TRANSMITTER	17	Function		Field mounted Transmitter		
	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		Aluminium, epoxy coated		
	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...200	°C
	28	Burn-out Protection/Loss of Input		Overrange		
	29	Area Classification		Zone 2, Eex'ia		
	30	Communication Protocol		Smart , HART 5		
	31	Output Signal		4-20 mA		
	32	Adjustable Range		Yes		
	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, Eex 'd' certified (Airpack scope)		
CERTIFICATES	47	Calibration certificate		Yes		
	48	ATEX		No		
	49	IP certificate		No		
	50	SIL certificate	Level		No	
	51					
	52					
PURCHASE	53	Manufacturer		According to aproved vendor list		
	54	Model		Supplier to advise		
	55					
	56					
	57					

Notes:

				INSTRUMENT AND VALVE DATASHEET	
				Temperature Transmitter	
					
00	TT	19-11-2020	For Approval		Sheet 26 of 45
Rev	By	Date	Description		Based on P&ID Rev.00

GENERAL	1	ThermowellTag Number		TW-002B	
	2	Service		Temperature Transmitter	
	3	P&ID No.		17811-03	
	4	Location		TIT-002B	
	5				
	6				
	7				
	8				
PROCESS CONDITIONS	9	Fluid	State	Air	Dry Gas
	10	Pressure	Norm. Max.	21 Bar(a)	26 Bar(a)
	11	Temperature	Norm. Max.	190°C	195°C
	12	Design	Press. Temp.	35.25 Bar(a)	200°C
	13	Ambient Temp.	Min. Max.	5 °C	55 °C
	14				
	15				
	16				
THERMOWELL	19	Material		SS 316	
	20	Construction		Solid bar stock	
	21	Process Connection		1 1/2" ANSI RF #300	
	22	Instrument Connection		1/2" NPT-F	
	23	Stem Diameter		To be advised by supplier	
	24	Bore Diameter		To house a 6 mm OD element	
	25	U-length		Check with Engineering Department	
	26				
ELEMENT	30	ElementTag Number		TE-002B	
	31	Construction		Sensor with lead wire, transition and relief spring	
	32	Type Of Element		TC type 'K / Simplex	
	33	Accuracy Class		DIN - IEC-EN 60584 Class 1	
	34	Outside Diameter Sensor		6 mm	
	35	Connection		1/2" NPT-M x 6,0 mm OD coupling sliding on stem	
	36	Element Length		To fit in Thermowell	
	37	Type Of Cable		Armoured	
	38	Cable Length		5 m	
	39	Special construction		No	
	40	Sheat Material		SS 316	
	OPTIONS	46			
47					
48					
CERTIFICATES	49	3.1 Material certificate		Yes	
	50	Functional test report (up-down) for elem		Yes	
	51	Calibration certificate		Yes	
CALCULATIONS	52				
	53	Wake frequency calculation		No	
	54				
	55				
56					
57					


NOTES :

				INSTRUMENT AND VALVE DATASHEET	
				Thermowell + Element	
					
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Rev	By	Date	Description		Based on P&ID Rev.00

GENERAL	1	Tag Number		XY-001A, XY-001B	
	2	Service		Solenoid Valve	
	3	P&ID No.		17811-03	
	4	Location		Compressor inlet	
	5	Ingress Protection		IP65	
	6				
	7				
	8				
	9				
PROCESS CONDITIONS	10	Fluid	State	Air/ Nitrogen	Dry Gas
	11	Pressure	Norm. Max.	8 Bar(a)	9 Bar(a)
	12	Temperature	Norm. Max.	55°C	65°C
	13	Design	Press. Temp.	13,5 Bar(a)	80°C
	14	Ambient Temp.	Min. Max.	5 °C	55 °C
	15				
	16				
VALVE BODY	18	Type		Direct acting	
	19	Configuration		3 way 2 position	
	20	Fail position		To be used as FO (Fail open)	
	21	Ports		1/4" NPT-F	
	22	Body Material		SS316	
	23	Seat Sealing Material		To be advised by the manufacturer	
	24				
	25				
	26				
	27				
	28				
	29				
ELECTRICAL	33	Voltage		24 VDC	
	34	Power consumption		< 3W	
	35	Class of Coil Insulation		H	
	36	Connection		ISO M20 x 1.5	
	37	Lightning and Surge Protection		No	
	38	Cable Gland		Yes, Eex 'de' certified (Airpack scope)	
	39	Housing material		SS316	
	40	Area Classification		Zone 2, Exd	
	41				
	42				
	43				
CERTIFICATES	44	3.1 Material certificate		Yes	
	45	ATEX		No	
	46	SIL certificate	Level	No	
	47	IP certificate		No	
	48				
PURCHASE	50	Manufacturer		According to aproved vendor list	
	51	Model		Supplier to advise	
	52				
	53				
	54				

NOTES:


1. This solenoid valve is an universal 3/2 way, direct operated valve, also suitable for 2/2 way operation.

				INSTRUMENT AND VALVE DATASHEET		
				Solenoid Valve		
						
00	TT	19-11-2020	For Approval			
Rev	By	Date	Description	Sheet 28 of 45 Based on P&ID Rev.00		

GENERAL	1	Tag Number		XY-002A, XY-002B	
	2	Service		Solenoid Valve	
	3	P&ID No.		17811-03	
	4	Location		Compressor cooling water inlet valve	
	5	Ingress Protection		IP65	
	6				
	7				
	8				
	9				
PROCESS CONDITIONS	10	Fluid	State	Air	Dry Gas
	11	Pressure	Norm. Max.	6 Bar(a)	7 Bar(a)
	12	Temperature	Norm. Max.	45°C	65°C
	13	Design	Press. Temp.	10 Bar(a)	80°C
	14	Ambient Temp.	Min. Max.	5 °C	55 °C
	15				
	16				
VALVE BODY	18	Type		Direct acting	
	19	Configuration		3 way 2 position	
	20	Fail position		To be used as FO (Fail open)	
	21	Ports		1/4" NPT-F	
	22	Body Material		SS316	
	23	Seat Sealing Material		To be advised by the manufacturer	
	24				
	25				
	26				
	27				
	28				
	29				
ELECTRICAL	33	Voltage		24 VDC	
	34	Power consumption		< 3W	
	35	Class of Coil Insulation		H	
	36	Connection		ISO M20 x 1.5	
	37	Lightning and Surge Protection		No	
	38	Cable Gland		Yes, Eex 'de' certified (Airpack scope)	
	39	Housing material		SS316	
	40	Area Classification		Zone 2, Exd	
	41				
	42				
	43				
CERTIFICATES	44	3.1 Material certificate		Yes	
	45	ATEX		No	
	46	SIL certificate	Level	No	
	47	IP certificate		No	
	48				
PURCHASE	50	Manufacturer		According to aproved vendor list	
	51	Model		Supplier to advise	
	52				
	53				
	54				


NOTES:

1. This solenoid valve is an universal 3/2 way, direct operated valve, also suitable for 2/2 way operation.

				INSTRUMENT AND VALVE DATASHEET		
				Solenoid Valve		
						
00	TT	19-11-2020	For Approval			
Rev	By	Date	Description	Sheet 29 of 45 Based on P&ID Rev.00		


GENERAL	1	Tag Number		No Tag.no.: Qty 2 pcs		
	2	Service		Hand Ball valve		
	3	P&ID No.		17811-03		
	4	Location		Compressor Inlet		
	5					
	6					
	7					
PROCESS CONDITIONS	8	Fluid	State	Air / Nitrogen	Dry Gas	
	9	Pressure	Norm. Max.	8 Bar(a)	9 Bar(a)	
	10	Temperature	Norm. Max.	55°C	65°C	
	11	Design	Press. Temp.	13.5 Bar(a)	80°C	
	12	Ambient Temp.	Min. Max.	5 °C	55 °C	
	13	Oper. Flow		90 Nm3/hr		
	14					
BODY	16	Body Type		Ball valve, bolted type		
	17	Body Size	Bore	2"	Full bore	
	18	Guiding	No. Of Ports	-	2	
	19	Conn. Type	End Conn. Rat.	RF	150#	
	20	Body Material		Carbon steel ASTM A 216 Gr. WCB / A105		
	21	Packing Material		PTFE / Graphite		
	22	Bonnet Type		Screwed		
	23		Form	Floating ball		
	24	Trim	Seat Mat.		PTFE / Graphite	
	25		Ball Mat.	Shaft Mat.	SS 316	SS316
	26	Actuation	Material	Lever handle	CS	
	27					
	28					
	29					
	30					
	31					
	32					
	33					
	34					
	35					
	36					
	37					
	38					
39						
40						
41						
42						
43						
OPTIONS	44					
	45					
	46					
CERTIFICATES	47	3.1 Material certificate		Yes		
	48	Hydrotest certificate		Yes		
	49					
	50					
	51					
PURCHASE	52	Manufacturer		According to aproved vendor list		
	53	Model		Supplier to advise		
	54					
	55					
	56					
	57					

NOTES :

				INSTRUMENT AND VALVE DATASHEET	
				Hand Ball Valve	
					
00	TT	19-11-2020	For Approval		Sheet 30 of 45
Rev	By	Date	Description		Based on P&ID Rev.00


GENERAL	1	Tag Number		No Tag.no.: Qty 2 pcs	
	2	Service		Hand Ball valve	
	3	P&ID No.		17811-03	
	4	Location		Compressor Outlet	
	5				
	6				
	7				
PROCESS CONDITIONS	8	Fluid	State	Air / Nitrogen	Dry Gas
	9	Pressure	Norm. Max.	23,5 Bar(a)	26 Bar(a)
	10	Temperature	Norm. Max.	40°C	55°C
	11	Design	Press. Temp.	35.25 Bar(a)	60°C
	12	Ambient Temp.	Min. Max.	5 °C	55 °C
	13	Oper. Flow		90 Nm3/hr	
	14				
BODY	16	Body Type		Ball valve, bolted type	
	17	Body Size	Bore	2"	Full bore
	18	Guiding	No. Of Ports	-	2
	19	Conn. Type	End Conn. Rat.	RF	300#
	20	Body Material		Carbon steel ASTM A 216 Gr. WCB / A105	
	21	Packing Material		PTFE / Graphite	
	22	Bonnet Type		Screwed	
	23		Form	Floating ball	
	24	Trim	Seat Mat.		PTFE / Graphite
	25		Ball Mat.	Shaft Mat.	SS 316 SS316
	26	Actuation	Material	Lever handle	CS
	27				
	28				
	29				
	30				
	31				
	32				
	33				
	34				
	35				
36					
37					
38					
39					
40					
41					
42					
43					
OPTIONS	44				
	45				
	46				
CERTIFICATES	47	3.1 Material certificate		Yes	
	48	Hydrotest certificate		Yes	
	49				
	50				
	51				
PURCHASE	52	Manufacturer		According to aproved vendor list	
	53	Model		Supplier to advise	
	54				
	55				
	56				
	57				

NOTES :

				INSTRUMENT AND VALVE DATASHEET	
				Hand Ball Valve	
					
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Rev	By	Date	Description		Based on P&ID Rev.00


GENERAL	1	Tag Number		No Tag.no.: Qty 4 pcs	
	2	Service		Hand Ball valve	
	3	P&ID No.		17811-03	
	4	Location		Compressor Cooling water	
	5				
	6				
	7				
PROCESS CONDITIONS	8	Fluid	State	Water	Liquid
	9	Pressure	Norm. Max.	3 Bar(a)	4 Bar(a)
	10	Temperature	Norm. Max.	25°C	35°C
	11	Design	Press. Temp.	5 Bar(a)	60°C
	12	Ambient Temp.	Min. Max.	5 °C	55 °C
	13	Oper. Flow	m3/hr	
	14				
BODY	16	Body Type		Ball valve, bolted type	
	17	Body Size	Bore	1 1/2"	Full bore
	18	Guiding	No. Of Ports	-	2
	19	Conn. Type	End Conn. Rat.	RF	150#
	20	Body Material		Carbon steel ASTM A 216 Gr. WCB / A105	
	21	Packing Material		PTFE / Graphite	
	22	Bonnet Type		Screwed	
	23		Form	Floating ball	
	24	Trim	Seat Mat.		PTFE / Graphite
	25		Ball Mat.	Shaft Mat.	SS 316 SS316
	26	Actuation	Material	Lever handle	CS
	27				
	28				
	29				
	30				
	31				
	32				
	33				
	34				
	35				
36					
37					
38					
39					
40					
41					
42					
43					
OPTIONS	44				
	45				
	46				
CERTIFICATES	47	3.1 Material certificate		Yes	
	48	Hydrotest certificate		Yes	
	49				
	50				
	51				
PURCHASE	52	Manufacturer		According to aproved vendor list	
	53	Model		Supplier to advise	
	54				
	55				
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NOTES :

				INSTRUMENT AND VALVE DATASHEET	
				Hand Ball Valve	
					
00	TT	19-11-2020	For Approval		Sheet 32 of 45
Rev	By	Date	Description		Based on P&ID Rev.00


GENERAL	1	Tag Number		No Tag.no.: Qty 2 pcs	
	2	Service		Hand Ball valve	
	3	P&ID No.		17811-03	
	4	Location		Compressor Oil sump drain	
	5				
	6				
	7				
PROCESS CONDITIONS	8	Fluid	State	Oil	Liquid
	9	Pressure	Norm. Max.	3 Bar(a)	3,5 Bar(a)
	10	Temperature	Norm. Max.	45°C	65°C
	11	Design	Press. Temp.	5 Bar(a)	80°C
	12	Ambient Temp.	Min. Max.	5 °C	55 °C
	13	Oper. Flow			
	14				
BODY	16	Body Type		Ball valve, screwed type	
	17	Body Size	Bore	1/2"	Full bore
	18	Guiding	No. Of Ports	-	2
	19	Conn. Type	End Conn. Rat.	NPT-F	800#
	20	Body Material		SS316	
	21	Packing Material		PTFE / Graphite	
	22	Bonnet Type		Screwed	
	23		Form	Floating ball	
	24	Trim	Seat Mat.		PTFE / Graphite
	25		Ball Mat.	Shaft Mat.	SS 316 SS316
	26	Actuation	Material	Lever handle	CS
	27				
	28				
	29				
	30				
	31				
	32				
	33				
	34				
	35				
	36				
	37				
	38				
	39				
	40				
	41				
	42				
43					
OPTIONS	44				
	45				
	46				
CERTIFICATES	47	3.1 Material certificate		No	
	48	Hydrotest certificate		No	
	49				
	50				
	51				
PURCHASE	52	Manufacturer		According to aproved vendor list	
	53	Model		Supplier to advise	
	54				
	55				
	56				
	57				

NOTES :

				INSTRUMENT AND VALVE DATASHEET	
				Hand Ball Valve	
					
00	TT	19-11-2020	For Approval		Sheet 33 of 45
Rev	By	Date	Description		Based on P&ID Rev.00


GENERAL	1	Tag Number		XV-002A, XV-002B	
	2	Service		Ball valve	
	3	P&ID No.		17811-03	
	4	Location		Compressor Cooling water Inlet	
	5				
	6				
	7				
PROCESS CONDITIONS	8	Fluid	State	Water	Liquid
	9	Pressure	Norm. Max.	3 Bar(a)	4 Bar(a)
	10	Temperature	Norm. Max.	25°C	35°C
	11	Design	Press. Temp.	5 Bar(a)	60°C
	12	Ambient Temp.	Min. Max.	5 °C	55 °C
	13	Oper. Flow	m3/hr	
BODY	15	Body Type		Ball valve, bolted type	
	16	Body Size	Bore	1 1/2"	Full bore
	17	Guiding	No. Of Ports	-	2
	18	Conn. Type	End Conn. Rat.	RF	150#
	19	Body Material		Carbon steel ASTM A 216 Gr. WCB/ A105	
	20	Packing Material		PTFE / Graphite	
	21	Bonnet Type		Screwed	
	22	Trim	Form	Floating ball	
	23		Seat Mat.	PTFE / Graphite	
	24		Ball Mat. Shaft Mat.	SS 316	SS316
25					
ACTUATOR	27	Type		Rack & Pinion, single acting	
	28	Close At	Open At	Spring return	Air supply
	29	Flow Action To		FTC	
	30	Fail Position		FC	
	31	Pneumatic connection		2 x 1/4" NPT-F	
	32	Instrument Supply Fluid		Instrument Air / Nitrogen	
	33	Instrument Supply Fluid pressure		6.0 bar(g)	
	34	Brackets	Coupling	SS316	SS316
	35	Housing material		Aluminium, epoxy coated	
	36				
POSITION MONITOR	38	Type		N/A	
	39	Power supply		N/A	
	40	Type of switch/transmitter		N/A	
	41	Area Classification		N/A	
	42	Cable Gland		N/A	
OPTIONS	43				
	44				
	45				
CERTIFICATES	46				
	47	3.1 Material certificate		Yes	
	48	Hydrotest certificate		Yes	
	49	ATEX		No	
	50	SIL certificate	Level	No	
PURCHASE	51	IP certificate		No	
	52	Valve Manufacturer		According to aproved vendor list	
	53	Valve Model		Supplier to advise	
	54	Actuator Manufacturer		According to aproved vendor list	
	55	Actuator Model		Supplier to advise	
56	Position Monitor Manufacturer		According to aproved vendor list		
57	Position Monitor Model		Supplier to advise		

NOTES :

				INSTRUMENT AND VALVE DATASHEET	
				Pneumatic Actuated Valve	
					
00	TT	19-11-2020	For Approval	Sheet	34 of 45
Rev	By	Date	Description	Based on P&ID	Rev.00


GENERAL	1	Tag Number		No Tag.no: Qty 2 pcs		
	2	Service		Globe valve		
	3	P&ID No.		17811-03		
	4	Location		Compressor Cooling water		
	5					
	6					
	7					
PROCESS CONDITIONS	8	Fluid	State	Water	Liquid	
	9	Pressure	Norm. Max.	3 Bar(a)	4 Bar(a)	
	10	Temperature	Norm. Max.	25°C	35°C	
	11	Design	Press. Temp.	5 Bar(a)	60°C	
	12	Ambient Temp.	Min. Max.	5 °C	55 °C	
	13	Oper. Flow	m3/hr		
	14					
BODY	15	Body Type		Globe valve type, OS&Y		
	16	Body Size		1 1/2"		
	17	Guiding	No. Of Ports	-	2	
	18	Conn. Type	End Conn. Rat.	RF	150#	
	19	Body Material		Carbon steel ASTM A 216 Gr. WCB/WCC / A105		
	20	Packing Material		PTFE / Graphite		
	21	Bonnet Type		Bolted		
	22	Trim	Form		Disc	
	23		Seat Mat.		PTFE / Graphite	
	24		Disc Mat.	Shaft Mat.	SS 316	SS316
	25					
	26					
	27					
	28					
	29					
	30					
	31					
	32					
	33					
	34					
	35					
	36					
37						
38						
39						
40						
41						
42						
43						
OPTIONS	44					
	45					
	46					
CERTIFICATES	47	3.1 Material certificate		Yes		
	48	Hydrotest certificate		Yes		
	49					
	50					
	51					
PURCHASE	52	Manufacturer		According to aproved vendor list		
	53	Model		Supplier to advise		
	54					
	55					
	56					
	57					

NOTES :


				INSTRUMENT AND VALVE DATASHEET	
				Hand Globe Valve	
					
00	TT	19-11-2020	For Approval	Sheet 35 of 45 Based on P&ID Rev.00	
Rev	By	Date	Description		

GENERAL	1	Tag Number		No Tag.no: Qty 2 pcs	
	2	Service		Pressure Control Valve	
	3	P&ID No.		17811-03	
	4	Location		Compressor Inlet & actuator cooling inlet	
	5				
	6				
	7				
PROCESS CONDITIONS	8	Fluid	State	Air / Nitrogen	Dry Gas
	9	Pressure	Norm. Max.	8 Bar(a)	9 Bar(a)
	10	Temperature	Norm. Max.	55°C	65°C
	11	Design	Press. Temp.	13.5 Bar(a)	80°C
	12	Ambient Temp.	Min. Max.	5 °C	55 °C
BODY	13	Valve Type		90 Nm3/hr	
	14	Body Material		Aluminium	
	15	Diaphragm Material		Will be informed later	
	16	Trim	Form	Disc / Plug / Globe	
	17		Seat Mat.	Will be informed later	
	18		Spring Mat. Disc Mat.	Will be informed later	Will be informed later
	19				
	20				
	21				
	22				
23					
24					
ACTUATOR	25	Type		Mechanical, spring type	
	26	Fail Position		FC	
	27				
	28				
	29				
	30				
CONNECTIONS	31	Inlet Size	Outlet Size	1/4"	1/4"
	32	Inlet Connection	Outlet Conn.	Threaded NPT-F	Threaded NPT-F
	33	Inlet Rating	Outlet Rating	800#	800#
	34				
SIZING CONDITIONS	35	Flow Rate		10 Nm ³ /hr	
	36	Pressure drop		To be advised by the manufacturer	
	37	Pressure setpoint		6,0 bar(g)	
	38				
	39				
OPTIONS	41	Pressure Gauge		Yes	
	42	Material		Aluminium	
	43	Range		0...11 bar(g)	
	44	Filter Regulator and drip well		Yes(Mesh 40)	
CERTIFICATES	45	3.1 Material certificate for body		No	
	46	3.1 Material certificate for stem		No	
	47				
	48				
CALCULATIONS	49	Sizing calculation		No	
	50				
	51				
	52				
	53				
PURCHASE	54	Manufacturer		According to aproved vendor list	
	55	Model		Supplier to advise	
	56				
	57				


NOTES :

				INSTRUMENT AND VALVE DATASHEET	
				Pressure Reducing Valve	
					
00	TT	19-11-2020	For Approval	Sheet	36 of 45
Rev	By	Date	Description	Based on P&ID Rev.00	

GENERAL	1	Tag Number			PCV-001A	
	2	Service			Pressure control valve	
	3	P&ID No.			17811-03	
	4	Location			Compressor bypass (recycle) valve	
	5					
	6					
	7					
PROCESS CONDITIONS	8	Fluid	State		Nitrogen	Dry Gas
	9	Pressure	Norm.	Max.	23,5 Bar(a)	26 Bar(a)
	10	Temperature	Norm.	Max.	40°C	55°C
	11	Design	Press.	Temp.	35.25 Bar(a)	60°C
	12	Ambient Temp.	Min.	Max.	5 °C	55 °C
BODY	13	Type Of Body			Globe valve	
	14	Body Size			(1"/VTA) ANSI	
	15	Conn. Type	End Conn. Rat.		RF	300#
	16	Body Material			Carbon steel	
	17	Packing Material			PTFE / Graphite	
	18	Bonnet Type			Integral	
	19	Trim	Form		Disc	
	20		Seat Mat.		PTFE / Graphite	
	21		Disc Mat.	Shaft Mat.	SS 316	SS316
	22	Required Seat Tightness			IV	
	23	Max. Allow. Sound Level (dBa)			-	
	24					
	25					
26						
ACTUATOR	27	Positioner controller			Electro-pneumatic (I/P)	
	28	Interface			4 -20 mA , HART	
	29	Fail Position			FC	
	30	Pneumatic Conn.			1/4" NPT-F	
	31	Instrument Supply Fluid			Nitrogen	
	32	Instrument Supply Fluid pressure			6,0 bar(g)	
	33	Position Monitor			No,	
	34	Area Classification			Zone 2, Eex'ia	
	35	Electric Connection			ISO M20 x 1,5	
	36	Cable Gland			Yes, Eex 'de' certified (Airpack scope)	
	37					
ACCESSORIES	38	Filter Regulator			Yes	
	39	Gauges			Yes	
	40					
SERVICE	41	Flow Rate			90 Nm³/hr	
	42	Pressure	Inlet	outlet	23,5 bar(a)	8 bar(a)
	43	Pressure drop			To be advised by the manufacturer	
	44	Cv Selected			To be advised by the manufacturer	
	45					
	46					
	47					
	48					
CERTIFICATES	49	3.1 Material certificate			Yes	
	50	ATEX			No	
	51	SIL certificate	Level		No	
	52					
PURCHASE	53	Valve Manufacturer			According to aproved vendor list	
	54	Valve Model			Supplier to advise	
	55	Actuator Manufacturer			According to aproved vendor list	
	56	Actuator Model			Supplier to advise	
	57					


				INSTRUMENT AND VALVE DATASHEET	
				Pressure Control Valve	
					
00	TT	19-11-2020	For Approval	Sheet	37 of 45
Rev	By	Date	Description	Based on P&ID	Rev.00

GENERAL	1	Tag Number			PCV-001B	
	2	Service			Pressure control valve	
	3	P&ID No.			17811-03	
	4	Location			Compressor bypass (recycle) valve	
	5					
	6					
	7					
PROCESS CONDITIONS	8	Fluid	State		Air	Dry Gas
	9	Pressure	Norm.	Max.	21 Bar(a)	26 Bar(a)
	10	Temperature	Norm.	Max.	40°C	55°C
	11	Design	Press.	Temp.	35.25 Bar(a)	60°C
	12	Ambient Temp.	Min.	Max.	5 °C	55 °C
BODY	13	Type Of Body			Globe valve	
	14	Body Size			(1"/VTA) ANSI	
	15	Conn. Type	End Conn. Rat.		RF	300#
	16	Body Material			Carbon steel	
	17	Packing Material			PTFE / Graphite	
	18	Bonnet Type			Integral	
	19	Trim	Form		Disc	
	20		Seat Mat.		PTFE / Graphite	
	21		Disc Mat.	Shaft Mat.	SS 316	SS316
	22	Required Seat Tightness			IV	
	23	Max. Allow. Sound Level (dBa)			-	
	24					
25						
26						
ACTUATOR	27	Positioner controller			Electro-pneumatic (I/P)	
	28	Interface			4 -20 mA , HART	
	29	Fail Position			FC	
	30	Pneumatic Conn.			1/4" NPT-F	
	31	Instrument Supply Fluid			Nitrogen	
	32	Instrument Supply Fluid pressure			6.0 bar(g)	
	33	Position Monitor			No,	
	34	Area Classification			Zone 2, Eex'ia	
	35	Electric Connection			ISO M20 x 1,5	
	36	Cable Gland			Yes, Eex 'de' certified (Airpack scope)	
	37					
ACCESSORIES	38	Filter Regulator			Yes	
	39	Gauges			Yes	
	40					
SERVICE	41	Flow Rate			43 Nm³/hr	
	42	Pressure	Inlet	outlet	21 bar(a)	8 bar(a)
	43	Pressure drop			To be advised by the manufacturer	
	44	Cv Selected			To be advised by the manufacturer	
	45					
	46					
	47					
	48					
CERTIFICATES	49	3.1 Material certificate			Yes	
	50	ATEX			No	
	51	SIL certificate	Level		No	
	52					
PURCHASE	53	Valve Manufacturer			According to aproved vendor list	
	54	Valve Model			Supplier to advise	
	55	Actuator Manufacturer			According to aproved vendor list	
	56	Actuator Model			Supplier to advise	
	57					

				INSTRUMENT AND VALVE DATASHEET	
				Pressure Control Valve	
					
00	TT	19-11-2020	For Approval	Sheet	38 of 45
Rev	By	Date	Description	Based on P&ID	Rev.00


GENERAL	1	Tag Number			PSV-001A	
	2	Service			Pressure Safety Valve	
	3	P&ID No.			17811-03	
	4	Location			Compressor upstream After-cooler	
	5	Nozzle			Full nozzle	
	6	Design type			Safety	
	7	Conv., Bellows, Pilot op.			Conventional type	
	8	Bonnet Type			Open	
	9	Bonnet connection			Bolted	
PROCESS CONDITIONS	10	Fluid	State		Nitrogen	Dry Gas
	11	Pressure	Inlet	Max.	23,5 Bar(a)	26 Bar(a)
	12	Temperature	Norm.	Max.	190°C	195°C
	13	Design	Press.	Temp.	35.25 Bar(a)	200°C
	14	Ambient Temp.	Min.	Max.	5 °C	55 °C
BASIS AND SELECTION	15	Flow			90 Nm³/hr	
	16	Set Pressure			26 bar(g)	
	17	Molecular Weight	Oper. Sp. Gr.		28,97 kg/mol	1
	18	Back Pres. (bar(g))			0 bar(g)	
	19	Allowable Overpressure (%)			10 %	
	20	Compressibility Factor (Z)			1	
	21	Ratio of Specific Heat (Cp/Cv)			1.4	
	22	Operating Viscosity (cP)			-	
	23	Barometric Pressure			1,013	
	24	Max. Allowable Relief Pressure			29,613	
	25	Design Code			API 520, API 521, API 526	
	26	Size Basis			Blocked discharge	
	27	Calculated Area (sq.mm)			To be advised by supplier	
	28	Selected Area (sq.mm)			To be advised by supplier	
	29	Orifice Designation			To be advised by supplier	
CONNECTIONS	30					
	31	Inlet Size	Outlet Size		1"	VTA
	32	Inlet Connection	Outlet Conn.		RF	RF
	33	Inlet Rating	Outlet Rating		300#	150#
	34					
MATERIAL	35					
	36	Body and Bonnet			Carbon steel (SA-216 Gr. WCB)	
	37	Seat and Disc			To be advised by supplier	
	38	Guide and Rings			SS 316	
	39	Spring			Chrome Alloy / SS 316	
	40	Nozzle			To be advised by supplier	
	41					
OPTIONS	42					
	43	Lever: Plain or Packed			N/A	
	44	Test Gag			N/A	
	45					
	46					
CERTIFICATES	47					
	48	3.1 Material certificate			Yes	
	49	Calibration certificate			Yes	
	50	Leakage test acc to API STD 527			Yes	
CALCULATIONS	51	Functional test			Yes	
	52	Sizing calculation			Yes	
	53					
	54					
PURCHASE	55	Manufacturer			According to aproved vendor list	
	56	Model			Supplier to advise	
	57					

NOTES :

				INSTRUMENT AND VALVE DATASHEET			
				Pressure Safety Valve			
							
00	TT	19-11-2020		For Approval		Sheet	39 of 45
Rev	By	Date		Description		Based on P&ID Rev.00	


GENERAL	1	Tag Number		PSV-001B	
	2	Service		Pressure Safety Valve	
	3	P&ID No.		17811-03	
	4	Location		Compressor upstream After-cooler	
	5	Nozzle		Full nozzle	
	6	Design type		Safety	
	7	Conv., Bellows, Pilot op.		Conventional type	
	8	Bonnet Type		Open	
	9	Bonnet connection		Bolted	
PROCESS CONDITIONS	10	Fluid	State	Air	Dry Gas
	11	Pressure	Inlet Max.	21 Bar(a)	26 Bar(a)
	12	Temperature	Norm. Max.	190°C	195°C
	13	Design	Press. Temp.	35.25 Bar(a)	200°C
	14	Ambient Temp.	Min. Max.	5 °C	55 °C
BASIS AND SELECTION	15	Flow		43 Nm ³ /hr	
	16	Set Pressure		26 bar(g)	
	17	Molecular Weight	Oper. Sp. Gr.	28,97 kg/mol	1
	18	Back Pres. (bar(g))		0 bar(g)	
	19	Allowable Overpressure (%)		10 %	
	20	Compressibility Factor (Z)		1	
	21	Ratio of Specific Heat (Cp/Cv)		1.4	
	22	Operating Viscosity (cP)		-	
	23	Barometric Pressure		1,013	
	24	Max. Allowable Relief Pressure		29,613	
	25	Design Code		API 520, API 521, API 526	
	26	Size Basis		Blocked discharge	
	27	Calculated Area (sq.mm)		To be advised by supplier	
	28	Selected Area (sq.mm)		To be advised by supplier	
	29	Orifice Designation		To be advised by supplier	
CONNECTIONS	30				
	31	Inlet Size	Outlet Size	1"	VTA
	32	Inlet Connection	Outlet Conn.	RF	RF
	33	Inlet Rating	Outlet Rating	300#	150#
	34				
MATERIAL	35				
	36	Body and Bonnet		Carbon steel (SA-216 Gr. WCB)	
	37	Seat and Disc		To be advised by supplier	
	38	Guide and Rings		SS 316	
	39	Spring		Chrome Alloy / SS 316	
	40	Nozzle		To be advised by supplier	
	41				
OPTIONS	42				
	43	Lever: Plain or Packed		N/A	
	44	Test Gag		N/A	
	45				
	46				
CERTIFICATES	47				
	48	3.1 Material certificate		Yes	
	49	Calibration certificate		Yes	
	50	Leakage test acc to API STD 527		Yes	
CALCULATIONS	51	Functional test		Yes	
	52	Sizing calculation		Yes	
	53				
	54				
PURCHASE	55	Manufacturer		According to aproved vendor list	
	56	Model		Supplier to advise	
	57				

NOTES :

				INSTRUMENT AND VALVE DATASHEET	
				Pressure Safety Valve	
					
00	TT	19-11-2020	For Approval	Sheet	40 of 45
Rev	By	Date	Description	Based on P&ID	Rev.00


GENERAL	1	Tag Number		PSV-002A, PSV-002B	
	2	Service		Pressure Safety Valve	
	3	P&ID No.		17811-03	
	4	Location		Compressor upstream After-cooler	
	5	Nozzle		Full nozzle	
	6	Design type		Safety	
	7	Conv., Bellows, Pilot op.		Conventional type	
	8	Bonnet Type		Open	
	9	Bonnet connection		Bolted	
PROCESS CONDITIONS	10	Fluid	State	Water	Liquid
	11	Pressure	Inlet Max.	2 Bar(a)	3 Bar(a)
	12	Temperature	Norm. Max.	40°C	55°C
	13	Design	Press. Temp.	5 Bar(a)	60°C
	14	Ambient Temp.	Min. Max.	5 °C	55 °C
BASIS AND SELECTION	15	Flow		... Nm ³ /hr	
	16	Set Pressure		3,5 bar(g)	
	17	Molecular Weight	Oper. Sp. Gr.	18,015 g/mol	1
	18	Back Pres. (bar(g))		0 bar(g)	
	19	Allowable Overpressure (%)		10 %	
	20	Compressibility Factor (Z)		1	
	21	Ratio of Specific Heat (Cp/Cv)		1.4	
	22	Operating Viscosity (cP)		-	
	23	Barometric Pressure		1,013	
	24	Max. Allowable Relief Pressure		4,863	
	25	Design Code		API 520, API 521, API 526	
	26	Size Basis		Blocked discharge	
	27	Calculated Area (sq.mm)		To be advised by supplier	
	28	Selected Area (sq.mm)		To be advised by supplier	
	29	Orifice Designation		To be advised by supplier	
CONNECTIONS	30				
	31	Inlet Size	Outlet Size	VTA	VTA
	32	Inlet Connection	Outlet Conn.	RF	RF
	33	Inlet Rating	Outlet Rating	300#	150#
	34				
MATERIAL	35				
	36	Body and Bonnet		Carbon steel (SA-216 Gr. WCB)	
	37	Seat and Disc		To be advised by supplier	
	38	Guide and Rings		SS 316	
	39	Spring		Chrome Alloy / SS 316	
	40	Nozzle		To be advised by supplier	
	41				
OPTIONS	42				
	43	Lever: Plain or Packed		N/A	
	44	Test Gag		N/A	
	45				
	46				
CERTIFICATES	47				
	48	3.1 Material certificate		Yes	
	49	Calibration certificate		Yes	
	50	Leakage test acc to API STD 527		Yes	
CALCULATIONS	51	Functional test		Yes	
	52	Sizing calculation		Yes	
	53				
	54				
PURCHASE	55	Manufacturer		According to aproved vendor list	
	56	Model		Supplier to advise	
	57				

NOTES :

				INSTRUMENT AND VALVE DATASHEET	
				Pressure Safety Valve	
					
00	TT	19-11-2020	For Approval	Sheet	41 of 45
Rev	By	Date	Description	Based on P&ID	Rev.00


GENERAL	1	Tag Number		No Tag.no.: Qty 2 pcs	
	2	Service		Check Valve	
	3	P&ID No.		17811-03	
	4	Location		Compressor Outlet	
	5				
	6				
	7				
	8				
PROCESS CONDITIONS	9	Fluid	State		Nitrogen Dry Gas
	10	Pressure	Norm.	Max.	23,5 Bar(a) 26 Bar(a)
	11	Temperature	Norm.	Max.	40°C 55°C
	12	Design	Press.	Temp.	35.25 Bar(a) 60°C
	13	Ambient Temp.	Min.	Max.	5 °C 55 °C
	14	Oper. Flow		90 Nm3/hr	
	15				
	16				
	17				
	18				
BODY	20	Type Of Body		Wafer type	
	21	Type Of valve		Disc style, pulsation service	
	21	Body Size		DN 50 (Process line = 2" ANSI 300# RF)	
	22	Body Material		Carbon steel	
	23	Cracking Pressure		To be stated by supplier	
	24	Inlet Connection	Outlet Conn.		RF RF
	25	Inlet Rating	Outlet Rating		300# 300#
	26				
	27				
	28				
	29				
	30				
	31				
	32				
	33				
	34				
	35				
	36				
37					
38					
39					
40					
OPTIONS	41				
	42				
	43				
	44				
	45				
CERTIFICATES	46	3.1 Material certificate		Yes	
	47				
	48				
	49				
	50				
	51				
PURCHASE	52	Manufacturer		Hoerbigger	
	53	Model		Supplier to advise	
	54				
	55				
	56				

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			INSTRUMENT AND VALVE DATASHEET		
			Check Valve		
					
00	TT	19-11-2020	For Approval		Sheet 42 of 45
Rev	By	Date	Description		Based on P&ID Rev.00


GENERAL	1	Tag Number		No Tag.no.: Qty 2 pcs	
	2	Service		Check Valve	
	3	P&ID No.		17811-03	
	4	Location		Compressor Outlet	
	5				
	6				
	7				
	8				
PROCESS CONDITIONS	9	Fluid	State	Air	Dry Gas
	10	Pressure	Norm. Max.	21 Bar(a)	26 Bar(a)
	11	Temperature	Norm. Max.	40°C	55°C
	12	Design	Press. Temp.	35.25 Bar(a)	60°C
	13	Ambient Temp.	Min. Max.	5 °C	55 °C
	14	Oper. Flow		43 Nm3/hr	
	15				
	16				
	17				
	18				
BODY	20	Type Of Body		Wafer type	
	21	Type Of valve		Disc style, pulsation service	
	21	Body Size		DN 50 (Process line = 2" ANSI 300# RF)	
	22	Body Material		Carbon steel	
	23	Cracking Pressure		To be stated by supplier	
	24	Inlet Connection	Outlet Conn.	RF	RF
	25	Inlet Rating	Outlet Rating	300#	300#
	26				
	27				
	28				
	29				
	30				
	31				
	32				
	33				
	34				
	35				
	36				
37					
38					
39					
40					
OPTIONS	41				
	42				
	43				
	44				
	45				
CERTIFICATES	46	3.1 Material certificate		Yes	
	47				
	48				
	49				
	50				
	51				
PURCHASE	52	Manufacturer		Hoerbigger	
	53	Model		Supplier to advise	
	54				
	55				
	56				

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			INSTRUMENT AND VALVE DATASHEET		
			Check Valve		
					
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Rev	By	Date	Description		Based on P&ID Rev.00


GENERAL	1	Tag Number		No Tag.No: Qty 2 pcs		
	2	Service		Y-strainer		
	3	P&ID No.		17811-03		
	4	Location		Compressor Inlet		
	5					
	6					
	7					
	8					
PROCESS CONDITIONS	9	Fluid	State		Air / Nitrogen	Dry Gas
	10	Pressure	Norm.	Max.	8 Bar(a)	9 Bar(a)
	11	Temperature	Norm.	Max.	55°C	65°C
	12	Design	Press.	Temp.	13.5 Bar(a)	80°C
	13	Ambient Temp.	Min.	Max.	5 °C	55 °C
	14	Oper. Flow		90 Nm3/hr		
	15					
	16					
	17					
	18					
BODY	20	Type Of Body		Y-strainer		
	21	Connection		2" ANSI RF 150#		
	22	Body Material		A216 WCB		
	23	Mesh Material		SS 316		
	24	Mesh Size		0,5 mm (Supplier to advise)		
	25					
	26					
	27					
	28					
	29					
	30					
	31					
	32					
	33					
	34					
	35					
	36					
	37					
38						
39						
40						
41						
42						
43						
44						
45						
46						
CERTIFICATES	47	3.1 Material certificate		Yes		
	48					
	49					
	50					
	51					
	52					
PURCHASE	53	Manufacturer		According to aproved vendor list		
	54	Model		Supplier to advise		
	55					
	56					
	57					

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			INSTRUMENT AND VALVE DATASHEET			
			Y-Strainer			
						
00	TT	19-11-2020	For Approval		Sheet	44 of 45
Rev	By	Date	Description		Based on P&ID Rev.00	

GENERAL	1	Tag Number		No Tag.No: Qty 2 pcs	
	2	Service		Y-strainer	
	3	P&ID No.		17811-03	
	4	Location		Compressor Cooling water inlet	
	5				
	6				
	7				
	8				
PROCESS CONDITIONS	9	Fluid	State		Water Liquid
	10	Pressure	Norm.	Max.	3 Bar(a) 4 Bar(a)
	11	Temperature	Norm.	Max.	25°C 35°C
	12	Design	Press.	Temp.	5 Bar(a) 60°C
	13	Ambient Temp.	Min.	Max.	5 °C 55 °C
	14	Oper. Flow	m3/hr	
	15				
	16				
	17				
	18				
BODY	20	Type Of Body		Y-strainer	
	21	Connection		1 1/2" ANSI RF 150#	
	22	Body Material		A216 WCB	
	23	Mesh Material		SS 316	
	24	Mesh Size		0,5 mm (Supplier to advise)	
	25				
	26				
	27				
	28				
	29				
	30				
	31				
	32				
	33				
	34				
	35				
	36				
	37				
38					
39					
40					
41					
42					
43					
44					
45					
46					
CERTIFICATES	47	3.1 Material certificate		Yes	
	48				
	49				
	50				
	51				
	52				
PURCHASE	53	Manufacturer		According to approved vendor list	
	54	Model		Supplier to advise	
	55				
	56				
	57				

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			INSTRUMENT AND VALVE DATASHEET			
			Y-Strainer			
						
00	TT	19-11-2020			For Approval	Sheet
Rev	By	Date	Description	Based on P&ID		Rev.00