	
DOC NUMBER: <b>569-DB7A-AIC-711-003</b>		CLIENT NUMBER: <b>PRD-AIC-DSH-027</b>	
CLIENT: <b>TAKEDA/BAXALTA</b>			
PROJECT: <b>BURITI EPCVM PROJECT</b>			

## DRUG PRODUCT -PCS - DATA SHEET TEMPERATURE GAUGE

2	26JAN2022	ISSUED FOR CONSTRUCTION UPDATED AS PER NOTES	MAB	MAF	RSP
1	17NOV2021	ISSUED FOR CONSTRUCTION UPDATED AS PER NOTES	MAB	MAF	RSP
0	13SEP2021	ISSUED FOR CONSTRUCTION	JHA	MAF	RSP
A	31MAR2021	60% DD ISSUE	JHA	MAF	RSP
REV	DATE	DESCRIPTION	EXEC	CHECK	APPROV

NUMBER: **569-DB7A-AIC-711-003**

CLIENT NR: **PRD-AIC-DSH-027**

TITLE





SHEET:  
2 de 37

**TEMPERATURE GAUGE**

REV.:  
**2**

**DOCUMENT REVIEW CONTROL**

Revision	A	0	1	2	3	4	Revision	A	0	1	2	3	4	Revision	A	B	0	1	2	3
Page							Page							Page						
1	X	X	X	X			26	X	X	X	X			51						
2	X	X	X	X			27	X	X	X	X			52						
3	X	X	X	X			28	X	X	X	X			53						
4	X	X	X	X			29	X	X	X	X			54						
5	X	X	X	X			30	X	X	X	X			55						
6	X	X	X	X			31	X	X	X	X			56						
7	X	X	X	X			32	X	X	X	X			57						
8	X	X	X	X			33	X	X	X	X			58						
9	X	X	X	X			34	X	X	X	X			59						
10	X	X	X	X			35	X	X	X	X			60						
11	X	X	X	X			36	X	X	X	X			61						
12	X	X	X	X			37	X	X	X	X			62						
13	X	X	X	X			38	X	X	X				63						
14	X	X	X	X			39	X	X					64						
15	X	X	X	X			40							65						
16	X	X	X	X			41							66						
17	X	X	X	X			42							67						
18	X	X	X	X			43							68						
19	X	X	X	X			44							69						
20	X	X	X	X			45							70						
21	X	X	X	X			46							71						
22	X	X	X	X			47							72						
23	X	X	X	X			48							73						
24	X	X	X	X			49							74						
25	X	X	X	X			50							75						





 		 	
NUMBER: <b>569-DB7A-AIC-711-003</b>		CLIENT NR: <b>PRD-AIC-DSH-027</b>	
TITLE			SHEET:
<b>TEMPERATURE GAUGE</b>			3 de 37
			REV.: <b>2</b>
<b>REFERENCE DOCUMENTS</b>			

7A-Z-0-2-01	P&I DIAGRAM - DRUG PRODUCT - BUFFER PREP
7A-Z-0-2-02	P&I DIAGRAM - DRUG PRODUCT - FORMULATION
7A-Z-0-2-04	P&I DIAGRAM - DRUG PRODUCT - FILLING LINE, LE-1100 - (WASH, DEPY, FILL, LYO, CAP)
7A-Z-0-2-05	P&I DIAGRAM - DRUG PRODUCT - DECONTAMINATION - AUTOCLAVE, AT-9002
7A-Z-0-2-06	P&I DIAGRAM - DRUG PRODUCT - AUTOCLAVE, AT-9001
7A-Z-0-2-08	P&I DIAGRAM - DRUG PRODUCT - LYOPHILIZER Nº1, LYO-1105
7A-Z-0-2-09	P&I DIAGRAM - DRUG PRODUCT - LYOPHILIZER Nº2, LYO-1106
7A-Z-0-2-24	P&I DIAGRAM - DRUG PRODUCT - WFI STILL - MES-6401
7A-Z-0-2-27	P&I DIAGRAM - DRUG PRODUCT - CLEAN STEAM GENERATOR - CSG-6501
PRD-AIC-LIS-009	DRUG PRODUCT - PCS - INSTRUMENT INDEX
PRD-PIP-TSP-501	PIPE CLASS AND SPECIFICATION - TECHNICAL SPECIFICATION
PRD-AIC-LIS-046	INTEGRATED PROJECT SERVICES - INSTRUMENT SUGGESTED SUPPLIER LIST

<b>GENERAL NOTES</b>
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- 1- Provide calibration certificate issued by INMETRO or by organ accredited by it.
- 2- The manufacturer shall provide "Calculation Memorial" of the resonance frequency according to "ASME PTC19.3 Part 3".
- 3- The identification plates must be made of AISI 304 stainless steel permanently attached to the instruments with a tag and serial number. The serial number of the instrument, when possible, can be recorded on the body itself.
- 4- A revision of this document should be provided upon receipt of certified documents from suppliers.

REVISION 0 - NOTES
1- REVISED AS PER INSTRUMENT LIST NUMBER PRD-AIC-LIS-010_B_PCS_INSTRUMENT_INDEX AND BACKLOG NUMBER 99000-184.0 2021.03.30 - A&IC DOCUMENTS - COMMENTS_REV.01
REVISION 1 - NOTES
1 - ACCORDING NEW ARQUITECTURE UPDATED
REVISION 2 - NOTES
1 - ACCORDING TO LINE SPECIFICATION - SS3 TO SS10 2 - CANCELED INSTRUMENT: TI-110501 3 - ADEQUATE TAG INSTRUMENT: TI-390203 TO TI-110203 / TI-640101 TO TI-640102

 				 			
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027			
TITLE						SHEET: 4 de 37	
TEMPERATURE GAUGE						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-110201			
	2	SERVICE		CHILLED WATER LOOP SUPPLY			
	3	P&ID		7A-Z-0-2-04			
	4	PIPE LINE	EQUIPMENT NUMBER	2"-GW0S-110202-CS1-CC	-		
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B			
	6	AREA CLASSIFICATION		NOT CLASSIFIED			
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529			
	8	CERTIFICATES		(SEE GENERAL NOTES 1)			
	9						
INSTRUMENT	10	TYPE		BIMETALLIC			
	11	MOUNTING		LOCAL			
	12	DIAL DIAMETER		114 mm			
	13	SCALE COLOR	BACKGROUND COLOR	BLACK	WHITE		
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"			
	15	MATERIAL CASE		304SS POLISHED			
	16	RING TYPE	RING MATERIAL	BAYONET	304SS		
	17	ROD MATERIAL	DIAMETER	316SS	6 mm		
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)	BOTTOM		
	19	MINIMUM SCALE	MAXIMUM	0 °C	300 °C		
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES			
	21	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%		
	22	ROD LENGTH "U"		BY MANUFACTURER			
	23	FILLING	FLUID	NOT REQUIRED	NOT REQUIRED		
	24						
WELL	25	SUPPLY		YES			
	26	MATERIAL		SS1016			
	27	TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR			
	28	CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5			
	29	CONNECTION TO THERMOMETER		1/2" NPT(F)			
	30	FLANGE FACE FINISH		MSS SP-6			
	31	INSERTION LENGTH "U"		212 mm			
	32	EXTENSION LENGTH "T"		35 mm			
	33						
	34						
	35						
	36						
37							
38							
39							
40							
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS		PROPYLENE GLYCOL		LIQUID
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM	,		bar-g
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C
	45	VISCOSITY @ OPERATING CONDITION		cP			
	46	DENSITY @ OPERATING CONDITION		kg/m³			
	47	SUSPENDED SOLIDS (%)		NOT			
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT			
	49	MAXIMUM FLUID SPEED		m/s			
	50	MANUFACTURER		ASHCROFT OR SIMILAR			
51	MODEL						





NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 			
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027			
TITLE						SHEET: 5 de 37	
TEMPERATURE GAUGE						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-110203			
	2	SERVICE		CHILLED WATER LOOP RETURN			
	3	P&ID		7A-Z-0-2-04			
	4	PIPE LINE	EQUIPMENT NUMBER	2"-GW0R-110203-CS1-CC	-		
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B			
	6	AREA CLASSIFICATION		NOT CLASSIFIED			
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529			
	8	CERTIFICATES		(SEE GENERAL NOTES 1)			
	9						
INSTRUMENT	10	TYPE		BIMETALLIC			
	11	MOUNTING		LOCAL			
	12	DIAL DIAMETER		114 mm			
	13	SCALE COLOR	BACKGROUND COLOR	BLACK	WHITE		
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"			
	15	MATERIAL CASE		304SS POLISHED			
	16	RING TYPE	RING MATERIAL	BAYONET	304SS		
	17	ROD MATERIAL	DIAMETER	316SS	6 mm		
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)	BOTTOM		
	19	MINIMUM SCALE	MAXIMUM	0 °C	300 °C		
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES			
	21	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%		
	22	ROD LENGTH "U"		BY MANUFACTURER			
	23	FILLING	FLUID	NOT REQUIRED	NOT REQUIRED		
	24						
WELL	25	SUPPLY		YES			
	26	MATERIAL		SS1016			
	27	TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR			
	28	CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5			
	29	CONNECTION TO THERMOMETER		1/2" NPT(F)			
	30	FLANGE FACE FINISH		MSS SP-6			
	31	INSERTION LENGTH "U"		212 mm			
	32	EXTENSION LENGTH "T"		35 mm			
	33						
	34						
	35						
	36						
37							
38							
39							
40							
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS		PROPYLENE GLYCOL		LIQUID
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM			bar-g
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C
	45	VISCOSITY @ OPERATING CONDITION		cP			
	46	DENSITY @ OPERATING CONDITION		kg/m³			
	47	SUSPENDED SOLIDS (%)		NOT			
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT			
	49	MAXIMUM FLUID SPEED		m/s			
	50	MANUFACTURER		ASHCROFT OR SIMILAR			
51	MODEL						





NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 			
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027			
TITLE						SHEET: 6 de 37	
TEMPERATURE GAUGE						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-110502			
	2	SERVICE		CHILLED WATER LOOP SUPPLY FROM FREEZE DRYER			
	3	P&ID		7A-Z-0-2-08			
	4	PIPE LINE	EQUIPMENT NUMBER	1/2"-GW0S-110518-CS1-CC	-		
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B			
	6	AREA CLASSIFICATION		NOT CLASSIFIED			
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529			
	8	CERTIFICATES		(SEE GENERAL NOTES 1)			
	9						
INSTRUMENT	10	TYPE		BIMETALLIC			
	11	MOUNTING		LOCAL			
	12	DIAL DIAMETER		114 mm			
	13	SCALE COLOR	BACKGROUND COLOR	BLACK	WHITE		
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"			
	15	MATERIAL CASE		304SS POLISHED			
	16	RING TYPE	RING MATERIAL	BAYONET	304SS		
	17	ROD MATERIAL	DIAMETER	316SS	6 mm		
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)	BOTTOM		
	19	MINIMUM SCALE	MAXIMUM	0 °C	300 °C		
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES			
	21	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%		
	22	ROD LENGTH "U"		BY MANUFACTURER			
	23	FILLING	FLUID	NOT REQUIRED	NOT REQUIRED		
	24						
WELL	25	SUPPLY		YES			
	26	MATERIAL		SS1016			
	27	TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR			
	28	CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5			
	29	CONNECTION TO THERMOMETER		1/2" NPT(F)			
	30	FLANGE FACE FINISH		MSS SP-6			
	31	INSERTION LENGTH "U"		212 mm			
	32	EXTENSION LENGTH "T"		35 mm			
	33						
	34						
	35						
	36						
37							
38							
39							
40							
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS		PROPYLENE GLYCOL		LIQUID
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM			bar-g
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C
	45	VISCOSITY @ OPERATING CONDITION		cP			
	46	DENSITY @ OPERATING CONDITION		kg/m³			
	47	SUSPENDED SOLIDS (%)		NOT			
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT			
	49	MAXIMUM FLUID SPEED		m/s			
	50	MANUFACTURER		ASHCROFT OR SIMILAR			
51	MODEL						





NOTES:

- 1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 			
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027			
TITLE						SHEET: 7 de 37	
TEMPERATURE GAUGE						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-110503			
	2	SERVICE		CHILLED WATER LOOP SUPPLY FROM FREEZE DRYER			
	3	P&ID		7A-Z-0-2-08			
	4	PIPE LINE	EQUIPMENT NUMBER	3/4"-GW0S-110519-CS1-CC	-		
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B			
	6	AREA CLASSIFICATION		NOT CLASSIFIED			
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529			
	8	CERTIFICATES		(SEE GENERAL NOTES 1)			
	9						
INSTRUMENT	10	TYPE		BIMETALLIC			
	11	MOUNTING		LOCAL			
	12	DIAL DIAMETER		114 mm			
	13	SCALE COLOR	BACKGROUND COLOR	BLACK	WHITE		
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"			
	15	MATERIAL CASE		304SS POLISHED			
	16	RING TYPE	RING MATERIAL	BAYONET	304SS		
	17	ROD MATERIAL	DIAMETER	316SS	6 mm		
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)	BOTTOM		
	19	MINIMUM SCALE	MAXIMUM	0 °C	300 °C		
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES			
	21	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%		
	22	ROD LENGTH "U"		BY MANUFACTURER			
	23	FILLING	FLUID	NOT REQUIRED	NOT REQUIRED		
	24						
WELL	25	SUPPLY		YES			
	26	MATERIAL		SS1016			
	27	TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR			
	28	CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5			
	29	CONNECTION TO THERMOMETER		1/2" NPT(F)			
	30	FLANGE FACE FINISH		MSS SP-6			
	31	INSERTION LENGTH "U"		212 mm			
	32	EXTENSION LENGTH "T"		35 mm			
	33						
	34						
	35						
	36						
37							
38							
39							
40							
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS	PROPYLENE GLYCOL	LIQUID		
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM		bar-g	
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM		°C	
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g	°C	
	45	VISCOSITY @ OPERATING CONDITION		cP			
	46	DENSITY @ OPERATING CONDITION		kg/m³			
	47	SUSPENDED SOLIDS (%)		NOT			
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT			
	49	MAXIMUM FLUID SPEED		m/s			
	50	MANUFACTURER		ASHCROFT OR SIMILAR			
51	MODEL						

NOTES:





- 1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 			
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027			
TITLE						SHEET: 8 de 37	
TEMPERATURE GAUGE						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-110504			
	2	SERVICE		CHILLED WATER LOOP RETURN			
	3	P&ID		7A-Z-0-2-08			
	4	PIPE LINE	EQUIPMENT NUMBER	2"-GW0R-110520-CS1-CC	-		
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B			
	6	AREA CLASSIFICATION		NOT CLASSIFIED			
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529			
	8	CERTIFICATES		(SEE GENERAL NOTES 1)			
	9						
INSTRUMENT	10	TYPE		BIMETALLIC			
	11	MOUNTING		LOCAL			
	12	DIAL DIAMETER		114 mm			
	13	SCALE COLOR	BACKGROUND COLOR	BLACK	WHITE		
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"			
	15	MATERIAL CASE		304SS POLISHED			
	16	RING TYPE	RING MATERIAL	BAYONET	304SS		
	17	ROD MATERIAL	DIAMETER	316SS	6 mm		
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)	BOTTOM		
	19	MINIMUM SCALE	MAXIMUM	0 °C	300 °C		
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES			
	21	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%		
	22	ROD LENGTH "U"		BY MANUFACTURER			
	23	FILLING	FLUID	NOT REQUIRED	NOT REQUIRED		
	24						
WELL	25	SUPPLY		YES			
	26	MATERIAL		SS1016			
	27	TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR			
	28	CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5			
	29	CONNECTION TO THERMOMETER		1/2" NPT(F)			
	30	FLANGE FACE FINISH		MSS SP-6			
	31	INSERTION LENGTH "U"		212 mm			
	32	EXTENSION LENGTH "T"		35 mm			
	33						
	34						
	35						
	36						
37							
38							
39							
40							
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS		PROPYLENE GLYCOL		LIQUID
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM	,		bar-g
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C
	45	VISCOSITY @ OPERATING CONDITION		cP			
	46	DENSITY @ OPERATING CONDITION		kg/m³			
	47	SUSPENDED SOLIDS (%)		NOT			
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT			
	49	MAXIMUM FLUID SPEED		m/s			
	50	MANUFACTURER		ASHCROFT OR SIMILAR			
51	MODEL						

NOTES:





1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.



 				 			
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027			
TITLE						SHEET: 9 de 37	
TEMPERATURE GAUGE						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-110507			
	2	SERVICE		CHILLED WATER LOOP RETURN BY FREEZE DRYER			
	3	P&ID		7A-Z-0-2-08			
	4	PIPE LINE	EQUIPMENT NUMBER	3/4"-GW0R-110522-CS1-CC	-		
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B			
	6	AREA CLASSIFICATION		NOT CLASSIFIED			
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529			
	8	CERTIFICATES		(SEE GENERAL NOTES 1)			
	9						
INSTRUMENT	10	TYPE		BIMETALLIC			
	11	MOUNTING		LOCAL			
	12	DIAL DIAMETER		114 mm			
	13	SCALE COLOR	BACKGROUND COLOR	BLACK	WHITE		
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"			
	15	MATERIAL CASE		304SS POLISHED			
	16	RING TYPE	RING MATERIAL	BAYONET	304SS		
	17	ROD MATERIAL	DIAMETER	316SS	6 mm		
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)	BOTTOM		
	19	MINIMUM SCALE	MAXIMUM	0 °C	300 °C		
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES			
	21	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%		
	22	ROD LENGTH "U"		BY MANUFACTURER			
	23	FILLING	FLUID	NOT REQUIRED	NOT REQUIRED		
	24						
WELL	25	SUPPLY		YES			
	26	MATERIAL		SS1016			
	27	TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR			
	28	CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5			
	29	CONNECTION TO THERMOMETER		1/2" NPT(F)			
	30	FLANGE FACE FINISH		MSS SP-6			
	31	INSERTION LENGTH "U"		212 mm			
	32	EXTENSION LENGTH "T"		35 mm			
	33						
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	36						
37							
38							
39							
40							
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS		PROPYLENE GLYCOL		LIQUID
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM			bar-g
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C
	45	VISCOSITY @ OPERATING CONDITION		cP			
	46	DENSITY @ OPERATING CONDITION		kg/m³			
	47	SUSPENDED SOLIDS (%)		NOT			
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT			
	49	MAXIMUM FLUID SPEED		m/s			
	50	MANUFACTURER		ASHCROFT OR SIMILAR			
51	MODEL						





NOTES:

- 1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 				
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027				
TITLE						SHEET: 10 de 37		
TEMPERATURE GAUGE						REV.: 2		
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-110508				
	2	SERVIÇO		CHILLED WATER LOOP SUPPLY FROM FREEZE DRYER				
	3	P&ID		7A-Z-0-2-08				
	4	PIPE LINE	EQUIPMENT NUMBER	3/4"-GW0S-110523-CS1-CC		-		
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B				
	6	AREA CLASSIFICATION		NOT CLASSIFIED				
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529				
	8	CERTIFICATES		(SEE GENERAL NOTES 1)				
	9							
INSTRUMENT	10	TYPE		BIMETALLIC				
	11	MOUNTING		LOCAL				
	12	DIAL DIAMETER		114 mm				
	13	SCALE COLOR	BACKGROUND COLOR	BLACK		WHITE		
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"				
	15	MATERIAL CASE		304SS POLISHED				
	16	RING TYPE	RING MATERIAL	BAYONET		304SS		
	17	ROD MATERIAL	DIAMETER	316SS		6 mm		
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)		BOTTOM		
	19	MINIMUM SCALE	MAXIMUM	0 °C		300 °C		
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES				
	21	FRONT TYPE	WINDOWS	SOLID		GLASS SEG. TRANSP. MIN. 75%		
	22	ROD LENGTH "U"		BY MANUFACTURER				
	23	FILLING	FLUID	NOT REQUIRED		NOT REQUIRED		
	24							
WELL	25	SUPPLY		YES				
	26	MATERIAL		SS1016				
	27	TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR				
	28	CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5				
	29	CONNECTION TO THERMOMETER		1/2" NPT(F)				
	30	FLANGE FACE FINISH		MSS SP-6				
	31	INSERTION LENGTH "U"		212 mm				
	32	EXTENSION LENGTH "T"		35 mm				
	33							
	34							
	35							
	36							
37								
38								
39								
40								
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS		PROPYLENE GLYCOL		LIQUID	
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM			bar-g	
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C	
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C	
	45	VISCOSITY @ OPERATING CONDITION		cP				
	46	DENSITY @ OPERATING CONDITION		kg/m³				
	47	SUSPENDED SOLIDS (%)		NOT				
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT				
	49	MAXIMUM FLUID SPEED		m/s				
	50	MANUFACTURER		ASCHCROFT OR SIMILAR				
51	MODEL							





NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 				
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027				
TITLE						SHEET: 11 de 37		
TEMPERATURE GAUGE						REV.: 2		
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-110509				
	2	SERVIÇO		CHILLED WATER LOOP RETURN BY FREEZE DRYER				
	3	P&ID		7A-Z-0-2-08				
	4	PIPE LINE	EQUIPMENT NUMBER	1/2"-GW0R-110521-CS1-CC		-		
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B				
	6	AREA CLASSIFICATION		NOT CLASSIFIED				
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529				
	8	CERTIFICATES		(SEE GENERAL NOTES 1)				
	9							
INSTRUMENT	10	TYPE		BIMETALLIC				
	11	MOUNTING		LOCAL				
	12	DIAL DIAMETER		114 mm				
	13	SCALE COLOR	BACKGROUND COLOR	BLACK		WHITE		
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"				
	15	MATERIAL CASE		304SS POLISHED				
	16	RING TYPE	RING MATERIAL	BAYONET		304SS		
	17	ROD MATERIAL	DIAMETER	316SS		6 mm		
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)		BOTTOM		
	19	MINIMUM SCALE	MAXIMUM	0 °C		300 °C		
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES				
	21	FRONT TYPE	WINDOWS	SOLID		GLASS SEG. TRANSP. MIN. 75%		
	22	ROD LENGTH "U"		BY MANUFACTURER				
	23	FILLING	FLUID	NOT REQUIRED		NOT REQUIRED		
	24							
WELL	25	SUPPLY		YES				
	26	MATERIAL		SS1016				
	27	TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR				
	28	CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5				
	29	CONNECTION TO THERMOMETER		1/2" NPT(F)				
	30	FLANGE FACE FINISH		MSS SP-6				
	31	INSERTION LENGTH "U"		212 mm				
	32	EXTENSION LENGTH "T"		35 mm				
	33							
	34							
	35							
	36							
37								
38								
39								
40								
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS		PROPYLENE GLYCOL		LIQUID	
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM			bar-g	
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C	
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C	
	45	VISCOSITY @ OPERATING CONDITION		cP				
	46	DENSITY @ OPERATING CONDITION		kg/m³				
	47	SUSPENDED SOLIDS (%)		NOT				
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT				
	49	MAXIMUM FLUID SPEED		m/s				
	50	MANUFACTURER		ASCHCROFT OR SIMILAR				
51	MODEL							





NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 			
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027			
TITLE						SHEET: 12 de 37	
TEMPERATURE GAUGE						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-110510			
	2	SERVIÇO		CHILLED WATER LOOP RETURN BY FREEZE DRYER			
	3	P&ID		7A-Z-0-2-08			
	4	PIPE LINE	EQUIPMENT NUMBER	3/4"-GW0R-110524-CS1-CC	-		
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B			
	6	AREA CLASSIFICATION		NOT CLASSIFIED			
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529			
	8	CERTIFICATES		(SEE GENERAL NOTES 1)			
	9						
INSTRUMENT	10	TYPE		BIMETALLIC			
	11	MOUNTING		LOCAL			
	12	DIAL DIAMETER		114 mm			
	13	SCALE COLOR	BACKGROUND COLOR	BLACK	WHITE		
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"			
	15	MATERIAL CASE		304SS POLISHED			
	16	RING TYPE	RING MATERIAL	BAYONET	304SS		
	17	ROD MATERIAL	DIAMETER	316SS	6 mm		
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)	BOTTOM		
	19	MINIMUM SCALE	MAXIMUM	0 °C	300 °C		
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES			
	21	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%		
	22	ROD LENGTH "U"		BY MANUFACTURER			
	23	FILLING	FLUID	NOT REQUIRED	NOT REQUIRED		
	WELL	25	SUPPLY		YES		
26		MATERIAL		SS1016			
27		TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR			
28		CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5			
29		CONNECTION TO THERMOMETER		1/2" NPT(F)			
30		FLANGE FACE FINISH		MSS SP-6			
31		INSERTION LENGTH "U"		212 mm			
32		EXTENSION LENGTH "T"		35 mm			
33							
34							
35							
36							
37							
38							
39							
40							
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS	PROPYLENE GLYCOL		LIQUID	
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM			bar-g
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g	°C	
	45	VISCOSITY @ OPERATING CONDITION		cP			
	46	DENSITY @ OPERATING CONDITION		kg/m³			
	47	SUSPENDED SOLIDS (%)		NOT			
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT			
	49	MAXIMUM FLUID SPEED		m/s			
	50	MANUFACTURER		ASCHCROFT OR SIMILAR			
51	MODEL						





NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 				
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027				
TITLE						SHEET: 13 de 37		
TEMPERATURE GAUGE						REV.: 2		
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-110601				
	2	SERVIÇO		CHILLED WATER LOOP SUPPLY FROM LYO FREEZE DRYER				
	3	P&ID		7A-Z-0-2-09				
	4	PIPE LINE	EQUIPMENT NUMBER	2"-GW0S-110617-CS1-CC		-		
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B				
	6	AREA CLASSIFICATION		NOT CLASSIFIED				
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529				
	8	CERTIFICATES		(SEE GENERAL NOTES 1)				
	9							
INSTRUMENT	10	TYPE		BIMETALLIC				
	11	MOUNTING		LOCAL				
	12	DIAL DIAMETER		114 mm				
	13	SCALE COLOR	BACKGROUND COLOR	BLACK		WHITE		
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"				
	15	MATERIAL CASE		304SS POLISHED				
	16	RING TYPE	RING MATERIAL	BAYONET		304SS		
	17	ROD MATERIAL	DIAMETER	316SS		6 mm		
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)		BOTTOM		
	19	MINIMUM SCALE	MAXIMUM	0 °C		300 °C		
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES				
	21	FRONT TYPE	WINDOWS	SOLID		GLASS SEG. TRANSP. MIN. 75%		
	22	ROD LENGTH "U"		BY MANUFACTURER				
	23	FILLING	FLUID	NOT REQUIRED		NOT REQUIRED		
24								
WELL	25	SUPPLY		YES				
	26	MATERIAL		SS1016				
	27	TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR				
	28	CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5				
	29	CONNECTION TO THERMOMETER		1/2" NPT(F)				
	30	FLANGE FACE FINISH		MSS SP-6				
	31	INSERTION LENGTH "U"		212 mm				
	32	EXTENSION LENGTH "T"		35 mm				
	33							
	34							
	35							
	36							
37								
38								
39								
40								
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS		PROPYLENE GLYCOL		LIQUID	
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM			bar-g	
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C	
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C	
	45	VISCOSITY @ OPERATING CONDITION		cP				
	46	DENSITY @ OPERATING CONDITION		kg/m³				
	47	SUSPENDED SOLIDS (%)		NOT				
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT				
	49	MAXIMUM FLUID SPEED		m/s				
	50	MANUFACTURER		ASCHCROFT OR SIMILAR				
51	MODEL							





NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 				
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027				
TITLE						SHEET: 14 de 37		
TEMPERATURE GAUGE						REV.: 2		
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-110602				
	2	SERVIÇO		CHILLED WATER LOOP SUPPLY FROM LYO FREEZE DRYER				
	3	P&ID		7A-Z-0-2-09				
	4	PIPE LINE	EQUIPMENT NUMBER	1/2"-GW0S-110618-CS1-CC		-		
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B				
	6	AREA CLASSIFICATION		NOT CLASSIFIED				
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529				
	8	CERTIFICATES		(SEE GENERAL NOTES 1)				
	9							
INSTRUMENT	10	TYPE		BIMETALLIC				
	11	MOUNTING		LOCAL				
	12	DIAL DIAMETER		114 mm				
	13	SCALE COLOR	BACKGROUND COLOR	BLACK		WHITE		
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"				
	15	MATERIAL CASE		304SS POLISHED				
	16	RING TYPE	RING MATERIAL	BAYONET		304SS		
	17	ROD MATERIAL	DIAMETER	316SS		6 mm		
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)		BOTTOM		
	19	MINIMUM SCALE	MAXIMUM	0 °C		300 °C		
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES				
	21	FRONT TYPE	WINDOWS	SOLID		GLASS SEG. TRANSP. MIN. 75%		
	22	ROD LENGTH "U"		BY MANUFACTURER				
	23	FILLING	FLUID	NOT REQUIRED		NOT REQUIRED		
	24							
WELL	25	SUPPLY		YES				
	26	MATERIAL		SS1016				
	27	TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR				
	28	CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5				
	29	CONNECTION TO THERMOMETER		1/2" NPT(F)				
	30	FLANGE FACE FINISH		MSS SP-6				
	31	INSERTION LENGTH "U"		212 mm				
	32	EXTENSION LENGTH "T"		35 mm				
	33							
	34							
	35							
	36							
37								
38								
39								
40								
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS		PROPYLENE GLYCOL		LIQUID	
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM			bar-g	
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C	
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C	
	45	VISCOSITY @ OPERATING CONDITION		cP				
	46	DENSITY @ OPERATING CONDITION		kg/m³				
	47	SUSPENDED SOLIDS (%)		NOT				
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT				
	49	MAXIMUM FLUID SPEED		m/s				
	50	MANUFACTURER		ASCHCROFT OR SIMILAR				
51	MODEL							

NOTES:





1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 			
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027			
TITLE						SHEET: 15 de 37	
TEMPERATURE GAUGE						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-110603			
	2	SERVIÇO		CHILLED WATER LOOP SUPPLY FROM LYO FREEZE DRYER			
	3	P&ID		7A-Z-0-2-09			
	4	PIPE LINE	EQUIPMENT NUMBER	3/4"-GW0S-110619-CS1-CC		-	
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B			
	6	AREA CLASSIFICATION		NOT CLASSIFIED			
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529			
	8	CERTIFICATES		(SEE GENERAL NOTES 1)			
	9						
INSTRUMENT	10	TYPE		BIMETALLIC			
	11	MOUNTING		LOCAL			
	12	DIAL DIAMETER		114 mm			
	13	SCALE COLOR	BACKGROUND COLOR	BLACK		WHITE	
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"			
	15	MATERIAL CASE		304SS POLISHED			
	16	RING TYPE	RING MATERIAL	BAYONET		304SS	
	17	ROD MATERIAL	DIAMETER	316SS		6 mm	
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)		BOTTOM	
	19	MINIMUM SCALE	MAXIMUM	0 °C		300 °C	
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES			
	21	FRONT TYPE	WINDOWS	SOLID		GLASS SEG. TRANSP. MIN. 75%	
	22	ROD LENGTH "U"		BY MANUFACTURER			
	23	FILLING	FLUID	NOT REQUIRED		NOT REQUIRED	
	WELL	25	SUPPLY		YES		
26		MATERIAL		SS1016			
27		TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR			
28		CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5			
29		CONNECTION TO THERMOMETER		1/2" NPT(F)			
30		FLANGE FACE FINISH		MSS SP-6			
31		INSERTION LENGTH "U"		212 mm			
32		EXTENSION LENGTH "T"		35 mm			
33							
34							
35							
36							
37							
38							
39							
40							
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS	PROPYLENE GLYCOL		LIQUID	
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM			bar-g
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C
	45	VISCOSITY @ OPERATING CONDITION		cP			
	46	DENSITY @ OPERATING CONDITION		kg/m³			
	47	SUSPENDED SOLIDS (%)		NOT			
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT			
	49	MAXIMUM FLUID SPEED		m/s			
	50	MANUFACTURER		ASCHCROFT OR SIMILAR			
51	MODEL						

NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.







 				 				
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027				
TITLE						SHEET: 16 de 37		
TEMPERATURE GAUGE						REV.: 2		
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-110604				
	2	SERVIÇO		CHILLED WATER LOOP RETURN BY LYO FREEZE DRYER				
	3	P&ID		7A-Z-0-2-09				
	4	PIPE LINE	EQUIPMENT NUMBER	2"-GW0R-110620-CS1-CC		-		
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B				
	6	AREA CLASSIFICATION		NOT CLASSIFIED				
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529				
	8	CERTIFICATES		(SEE GENERAL NOTES 1)				
	9							
INSTRUMENT	10	TYPE		BIMETALLIC				
	11	MOUNTING		LOCAL				
	12	DIAL DIAMETER		114 mm				
	13	SCALE COLOR	BACKGROUND COLOR	BLACK		WHITE		
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"				
	15	MATERIAL CASE		304SS POLISHED				
	16	RING TYPE	RING MATERIAL	BAYONET		304SS		
	17	ROD MATERIAL	DIAMETER	316SS		6 mm		
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)		BOTTOM		
	19	MINIMUM SCALE	MAXIMUM	0 °C		300 °C		
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES				
	21	FRONT TYPE	WINDOWS	SOLID		GLASS SEG. TRANSP. MIN. 75%		
	22	ROD LENGTH "U"		BY MANUFACTURER				
	23	FILLING	FLUID	NOT REQUIRED		NOT REQUIRED		
	24							
WELL	25	SUPPLY		YES				
	26	MATERIAL		SS1016				
	27	TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR				
	28	CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5				
	29	CONNECTION TO THERMOMETER		1/2" NPT(F)				
	30	FLANGE FACE FINISH		MSS SP-6				
	31	INSERTION LENGTH "U"		212 mm				
	32	EXTENSION LENGTH "T"		35 mm				
	33							
	34							
	35							
	36							
37								
38								
39								
40								
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS		PROPYLENE GLYCOL		LIQUID	
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM			bar-g	
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C	
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C	
	45	VISCOSITY @ OPERATING CONDITION		cP				
	46	DENSITY @ OPERATING CONDITION		kg/m³				
	47	SUSPENDED SOLIDS (%)		NOT				
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT				
	49	MAXIMUM FLUID SPEED		m/s				
	50	MANUFACTURER		ASCHCROFT OR SIMILAR				
51	MODEL							

NOTES:





1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.



 				 			
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027			
TITLE						SHEET: 17 de 37	
TEMPERATURE GAUGE						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-110607			
	2	SERVIÇO		CHILLED WATER LOOP RETURN BY LYO FREEZE DRYER			
	3	P&ID		7A-Z-0-2-09			
	4	PIPE LINE	EQUIPMENT NUMBER	3/4"-GW0R-110622-CS1-CC		-	
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B			
	6	AREA CLASSIFICATION		NOT CLASSIFIED			
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529			
	8	CERTIFICATES		(SEE GENERAL NOTES 1)			
	9						
INSTRUMENT	10	TYPE		BIMETALLIC			
	11	MOUNTING		LOCAL			
	12	DIAL DIAMETER		114 mm			
	13	SCALE COLOR	BACKGROUND COLOR	BLACK		WHITE	
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"			
	15	MATERIAL CASE		304SS POLISHED			
	16	RING TYPE	RING MATERIAL	BAYONET		304SS	
	17	ROD MATERIAL	DIAMETER	316SS		6 mm	
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)		BOTTOM	
	19	MINIMUM SCALE	MAXIMUM	0 °C		300 °C	
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES			
	21	FRONT TYPE	WINDOWS	SOLID		GLASS SEG. TRANSP. MIN. 75%	
	22	ROD LENGTH "U"		BY MANUFACTURER			
	23	FILLING	FLUID	NOT REQUIRED		NOT REQUIRED	
	WELL	25	SUPPLY		YES		
26		MATERIAL		SS1016			
27		TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR			
28		CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5			
29		CONNECTION TO THERMOMETER		1/2" NPT(F)			
30		FLANGE FACE FINISH		MSS SP-6			
31		INSERTION LENGTH "U"		212 mm			
32		EXTENSION LENGTH "T"		35 mm			
33							
34							
35							
36							
37							
38							
39							
40							
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS	PROPYLENE GLYCOL		LIQUID	
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM			bar-g
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C
	45	VISCOSITY @ OPERATING CONDITION		cP			
	46	DENSITY @ OPERATING CONDITION		kg/m³			
	47	SUSPENDED SOLIDS (%)		NOT			
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT			
	49	MAXIMUM FLUID SPEED		m/s			
	50	MANUFACTURER		ASCHCROFT OR SIMILAR			
51	MODEL						





NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 			
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027			
TITLE						SHEET: 18 de 37	
TEMPERATURE GAUGE						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-110608			
	2	SERVIÇO		CHILLED WATER LOOP SUPPLY FROM LYO FREEZE DRYER			
	3	P&ID		7A-Z-0-2-09			
	4	PIPE LINE	EQUIPMENT NUMBER	3/4"-GW0S-110623-CS1-CC		-	
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B			
	6	AREA CLASSIFICATION		NOT CLASSIFIED			
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529			
	8	CERTIFICATES		(SEE GENERAL NOTES 1)			
	9						
INSTRUMENT	10	TYPE		BIMETALLIC			
	11	MOUNTING		LOCAL			
	12	DIAL DIAMETER		114 mm			
	13	SCALE COLOR	BACKGROUND COLOR	BLACK		WHITE	
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"			
	15	MATERIAL CASE		304SS POLISHED			
	16	RING TYPE	RING MATERIAL	BAYONET		304SS	
	17	ROD MATERIAL	DIAMETER	316SS		6 mm	
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)		BOTTOM	
	19	MINIMUM SCALE	MAXIMUM	0 °C		300 °C	
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES			
	21	FRONT TYPE	WINDOWS	SOLID		GLASS SEG. TRANSP. MIN. 75%	
	22	ROD LENGTH "U"		BY MANUFACTURER			
	23	FILLING	FLUID	NOT REQUIRED		NOT REQUIRED	
	WELL	25	SUPPLY		YES		
26		MATERIAL		SS1016			
27		TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR			
28		CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5			
29		CONNECTION TO THERMOMETER		1/2" NPT(F)			
30		FLANGE FACE FINISH		MSS SP-6			
31		INSERTION LENGTH "U"		212 mm			
32		EXTENSION LENGTH "T"		35 mm			
33							
34							
35							
36							
37							
38							
39							
40							
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS	PROPYLENE GLYCOL		LIQUID	
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM			bar-g
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C
	45	VISCOSITY @ OPERATING CONDITION		cP			
	46	DENSITY @ OPERATING CONDITION		kg/m³			
	47	SUSPENDED SOLIDS (%)		NOT			
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT			
	49	MAXIMUM FLUID SPEED		m/s			
	50	MANUFACTURER		ASCHCROFT OR SIMILAR			
51	MODEL						





NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 			
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027			
TITLE						SHEET: 19 de 37	
TEMPERATURE GAUGE						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-110609			
	2	SERVIÇO		CHILLED WATER LOOP RETURN BY LYO FREEZE DRYER			
	3	P&ID		7A-Z-0-2-09			
	4	PIPE LINE	EQUIPMENT NUMBER	1/2"-GW0R-110621-CS1-CC		-	
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B			
	6	AREA CLASSIFICATION		NOT CLASSIFIED			
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529			
	8	CERTIFICATES		(SEE GENERAL NOTES 1)			
	9						
INSTRUMENT	10	TYPE		BIMETALLIC			
	11	MOUNTING		LOCAL			
	12	DIAL DIAMETER		114 mm			
	13	SCALE COLOR	BACKGROUND COLOR	BLACK		WHITE	
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"			
	15	MATERIAL CASE		304SS POLISHED			
	16	RING TYPE	RING MATERIAL	BAYONET		304SS	
	17	ROD MATERIAL	DIAMETER	316SS		6 mm	
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)		BOTTOM	
	19	MINIMUM SCALE	MAXIMUM	0 °C		300 °C	
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES			
	21	FRONT TYPE	WINDOWS	SOLID		GLASS SEG. TRANSP. MIN. 75%	
	22	ROD LENGTH "U"		BY MANUFACTURER			
	23	FILLING	FLUID	NOT REQUIRED		NOT REQUIRED	
	24						
WELL	25	SUPPLY		YES			
	26	MATERIAL		SS1016			
	27	TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR			
	28	CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5			
	29	CONNECTION TO THERMOMETER		1/2" NPT(F)			
	30	FLANGE FACE FINISH		MSS SP-6			
	31	INSERTION LENGTH "U"		212 mm			
	32	EXTENSION LENGTH "T"		35 mm			
	33						
	34						
	35						
	36						
37							
38							
39							
40							
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS	PROPYLENE GLYCOL		LIQUID	
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM			bar-g
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C
	45	VISCOSITY @ OPERATING CONDITION		cP			
	46	DENSITY @ OPERATING CONDITION		kg/m³			
	47	SUSPENDED SOLIDS (%)		NOT			
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT			
	49	MAXIMUM FLUID SPEED		m/s			
	50	MANUFACTURER		ASCHCROFT OR SIMILAR			
51	MODEL						





## NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 				
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027				
TITLE						SHEET: 20 de 37		
TEMPERATURE GAUGE						REV.: 2		
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-110610				
	2	SERVIÇO		CHILLED WATER LOOP RETURN BY LYO FREEZE DRYER				
	3	P&ID		7A-Z-0-2-09				
	4	PIPE LINE	EQUIPMENT NUMBER	3/4"-GW0R-110624-CS1-CC		-		
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B				
	6	AREA CLASSIFICATION		NOT CLASSIFIED				
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529				
	8	CERTIFICATES		(SEE GENERAL NOTES 1)				
	9							
INSTRUMENT	10	TYPE		BIMETALLIC				
	11	MOUNTING		LOCAL				
	12	DIAL DIAMETER		114 mm				
	13	SCALE COLOR	BACKGROUND COLOR	BLACK		WHITE		
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"				
	15	MATERIAL CASE		304SS POLISHED				
	16	RING TYPE	RING MATERIAL	BAYONET		304SS		
	17	ROD MATERIAL	DIAMETER	316SS		6 mm		
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)		BOTTOM		
	19	MINIMUM SCALE	MAXIMUM	0 °C		300 °C		
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES				
	21	FRONT TYPE	WINDOWS	SOLID		GLASS SEG. TRANSP. MIN. 75%		
	22	ROD LENGTH "U"		BY MANUFACTURER				
	23	FILLING	FLUID	NOT REQUIRED		NOT REQUIRED		
	24							
WELL	25	SUPPLY		YES				
	26	MATERIAL		SS1016				
	27	TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR				
	28	CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5				
	29	CONNECTION TO THERMOMETER		1/2" NPT(F)				
	30	FLANGE FACE FINISH		MSS SP-6				
	31	INSERTION LENGTH "U"		212 mm				
	32	EXTENSION LENGTH "T"		35 mm				
	33							
	34							
	35							
	36							
37								
38								
39								
40								
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS		PROPYLENE GLYCOL		LIQUID	
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM			bar-g	
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C	
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C	
	45	VISCOSITY @ OPERATING CONDITION		cP				
	46	DENSITY @ OPERATING CONDITION		kg/m³				
	47	SUSPENDED SOLIDS (%)		NOT				
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT				
	49	MAXIMUM FLUID SPEED		m/s				
	50	MANUFACTURER		ASCHCROFT OR SIMILAR				
51	MODEL							





NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 			
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027			
TITLE						SHEET: 21 de 37	
TEMPERATURE GAUGE						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-380202			
	2	SERVIÇO		CHILLED WATER LOOP SUPPLY			
	3	P&ID		7A-Z-0-2-01			
	4	PIPE LINE	EQUIPMENT NUMBER	1"-GW0S-9800188-CS1-CC		-	
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B			
	6	AREA CLASSIFICATION		NOT CLASSIFIED			
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529			
	8	CERTIFICATES		(SEE GENERAL NOTES 1)			
	9						
INSTRUMENT	10	TYPE		BIMETALLIC			
	11	MOUNTING		LOCAL			
	12	DIAL DIAMETER		114 mm			
	13	SCALE COLOR	BACKGROUND COLOR	BLACK		WHITE	
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"			
	15	MATERIAL CASE		304SS POLISHED			
	16	RING TYPE	RING MATERIAL	BAYONET		304SS	
	17	ROD MATERIAL	DIAMETER	316SS		6 mm	
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)		BOTTOM	
	19	MINIMUM SCALE	MAXIMUM	0 °C		300 °C	
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES			
	21	FRONT TYPE	WINDOWS	SOLID		GLASS SEG. TRANSP. MIN. 75%	
	22	ROD LENGTH "U"		BY MANUFACTURER			
	23	FILLING	FLUID	NOT REQUIRED		NOT REQUIRED	
	24						
WELL	25	SUPPLY		YES			
	26	MATERIAL		SS1016			
	27	TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR			
	28	CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5			
	29	CONNECTION TO THERMOMETER		1/2" NPT(F)			
	30	FLANGE FACE FINISH		MSS SP-6			
	31	INSERTION LENGTH "U"		212 mm			
	32	EXTENSION LENGTH "T"		35 mm			
	33						
	34						
	35						
	36						
37							
38							
39							
40							
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS	PROPYLENE GLYCOL		LIQUID	
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM			bar-g
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C
	45	VISCOSITY @ OPERATING CONDITION		cP			
	46	DENSITY @ OPERATING CONDITION		kg/m³			
	47	SUSPENDED SOLIDS (%)		NOT			
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT			
	49	MAXIMUM FLUID SPEED		m/s			
	50	MANUFACTURER		ASHCROFT OR SIMILAR			
51	MODEL						





NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 			
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027			
TITLE						SHEET: 22 de 37	
TEMPERATURE GAUGE						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-380203			
	2	SERVIÇO		CHILLED WATER LOOP RETURN			
	3	P&ID		7A-Z-0-2-01			
	4	PIPE LINE	EQUIPMENT NUMBER	1"-GW0R-9800189-CS1-CC		-	
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B			
	6	AREA CLASSIFICATION		NOT CLASSIFIED			
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529			
	8	CERTIFICATES		(SEE GENERAL NOTES 1)			
	9						
INSTRUMENT	10	TYPE		BIMETALLIC			
	11	MOUNTING		LOCAL			
	12	DIAL DIAMETER		114 mm			
	13	SCALE COLOR	BACKGROUND COLOR	BLACK		WHITE	
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"			
	15	MATERIAL CASE		304SS POLISHED			
	16	RING TYPE	RING MATERIAL	BAYONET		304SS	
	17	ROD MATERIAL	DIAMETER	316SS		6 mm	
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)		BOTTOM	
	19	MINIMUM SCALE	MAXIMUM	0 °C		300 °C	
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES			
	21	FRONT TYPE	WINDOWS	SOLID		GLASS SEG. TRANSP. MIN. 75%	
	22	ROD LENGTH "U"		BY MANUFACTURER			
	23	FILLING	FLUID	NOT REQUIRED		NOT REQUIRED	
	24						
WELL	25	SUPPLY		YES			
	26	MATERIAL		SS1016			
	27	TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR			
	28	CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5			
	29	CONNECTION TO THERMOMETER		1/2" NPT(F)			
	30	FLANGE FACE FINISH		MSS SP-6			
	31	INSERTION LENGTH "U"		212 mm			
	32	EXTENSION LENGTH "T"		35 mm			
	33						
	34						
	35						
	36						
37							
38							
39							
40							
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS	PROPYLENE GLYCOL		LIQUID	
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM			bar-g
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C
	45	VISCOSITY @ OPERATING CONDITION		cP			
	46	DENSITY @ OPERATING CONDITION		kg/m³			
	47	SUSPENDED SOLIDS (%)		NOT			
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT			
	49	MAXIMUM FLUID SPEED		m/s			
	50	MANUFACTURER		ASCHCROFT OR SIMILAR			
51	MODEL						

NOTES:





1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 			
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027			
TITLE						SHEET: 23 de 37	
TEMPERATURE GAUGE						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER			7A-TI-380302		
	2	SERVIÇO			CHILLED WATER LOOP SUPPLY		
	3	P&ID			7A-Z-0-2-01		
	4	PIPE LINE	EQUIPMENT NUMBER		1"-GW0S-9800225-CS1-CC	-	
	5	EQUIPMENT MATERIAL / PIPE			CARBON STEEL ASTM-A106 Gr.B		
	6	AREA CLASSIFICATION			NOT CLASSIFIED		
	7	ENCLOSURE CLASSIFICATION			IP 65 (MÍN.) CONF. NBR IEC 60529		
	8	CERTIFICATES			(SEE GENERAL NOTES 1)		
	9						
INSTRUMENT	10	TYPE			BIMETALLIC		
	11	MOUNTING			LOCAL		
	12	DIAL DIAMETER			114 mm		
	13	SCALE COLOR	BACKGROUND COLOR		BLACK	WHITE	
	14	PRECISION			1% OF THE FINAL VALUE "RANGE"		
	15	MATERIAL CASE			304SS POLISHED		
	16	RING TYPE	RING MATERIAL		BAYONET	304SS	
	17	ROD MATERIAL	DIAMETER		316SS	6 mm	
	18	STEM CONNECTION TO WELL	CONNECTION POSITION		1/2" NPT (M)	BOTTOM	
	19	MINIMUM SCALE	MAXIMUM		0 °C	300 °C	
	20	MICROMETRIC ADJUSTMENT OF ZERO			YES		
	21	FRONT TYPE	WINDOWS		SOLID	GLASS SEG. TRANSP. MIN. 75%	
	22	ROD LENGTH "U"			BY MANUFACTURER		
	23	FILLING	FLUID		NOT REQUIRED	NOT REQUIRED	
	24						
WELL	25	SUPPLY			YES		
	26	MATERIAL			SS1016		
	27	TYPE OF CONSTRUCTION			CONICAL MACHINED FROM A BAR		
	28	CONNECTION TO THE PROCESS			1.1/2", 150#, FR, ASME B16.5		
	29	CONNECTION TO THERMOMETER			1/2" NPT(F)		
	30	FLANGE FACE FINISH			MSS SP-6		
	31	INSERTION LENGTH "U"			212 mm		
	32	EXTENSION LENGTH "T"			35 mm		
	33						
	34						
	35						
	36						
37							
38							
39							
40							
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS		PROPYLENE GLYCOL		LIQUID
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM	,		bar-g
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C
	45	VISCOSITY @ OPERATING CONDITION			cP		
	46	DENSITY @ OPERATING CONDITION			kg/m³		
	47	SUSPENDED SOLIDS (%)			NOT		
	48	SOLIDIFIES AT ROOM TEMPERATURE			NOT		
	49	MAXIMUM FLUID SPEED			m/s		
	50	MANUFACTURER			ASCHCROFT OR SIMILAR		
51	MODEL						

NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.







 				 			
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027			
TITLE						SHEET: 24 de 37	
TEMPERATURE GAUGE						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-380303			
	2	SERVIÇO		CHILLED WATER LOOP RETURN			
	3	P&ID		7A-Z-0-2-01			
	4	PIPE LINE	EQUIPMENT NUMBER	1"-GW0R-9800226-CS1-CC		-	
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B			
	6	AREA CLASSIFICATION		NOT CLASSIFIED			
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529			
	8	CERTIFICATES		(SEE GENERAL NOTES 1)			
	9						
INSTRUMENT	10	TYPE		BIMETALLIC			
	11	MOUNTING		LOCAL			
	12	DIAL DIAMETER		114 mm			
	13	SCALE COLOR	BACKGROUND COLOR	BLACK		WHITE	
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"			
	15	MATERIAL CASE		304SS POLISHED			
	16	RING TYPE	RING MATERIAL	BAYONET		304SS	
	17	ROD MATERIAL	DIAMETER	316SS		6 mm	
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)		BOTTOM	
	19	MINIMUM SCALE	MAXIMUM	0 °C		300 °C	
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES			
	21	FRONT TYPE	WINDOWS	SOLID		GLASS SEG. TRANSP. MIN. 75%	
	22	ROD LENGTH "U"		BY MANUFACTURER			
	23	FILLING	FLUID	NOT REQUIRED		NOT REQUIRED	
	24						
WELL	25	SUPPLY		YES			
	26	MATERIAL		SS1016			
	27	TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR			
	28	CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5			
	29	CONNECTION TO THERMOMETER		1/2" NPT(F)			
	30	FLANGE FACE FINISH		MSS SP-6			
	31	INSERTION LENGTH "U"		212 mm			
	32	EXTENSION LENGTH "T"		35 mm			
	33						
	34						
	35						
	36						
37							
38							
39							
40							
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS	PROPYLENE GLYCOL		LIQUID	
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM			bar-g
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C
	45	VISCOSITY @ OPERATING CONDITION		cP			
	46	DENSITY @ OPERATING CONDITION		kg/m³			
	47	SUSPENDED SOLIDS (%)		NOT			
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT			
	49	MAXIMUM FLUID SPEED		m/s			
	50	MANUFACTURER		ASCHCROFT OR SIMILAR			
51	MODEL						

NOTES:





1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.



 				 			
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027			
TITLE						SHEET: 25 de 37	
TEMPERATURE GAUGE						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-390102			
	2	SERVIÇO		CHILLED WATER LOOP SUPPLY			
	3	P&ID		7A-Z-0-2-02			
	4	PIPE LINE	EQUIPMENT NUMBER	1"-GW0S-9800184-CS1-CC		-	
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B			
	6	AREA CLASSIFICATION		NOT CLASSIFIED			
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529			
	8	CERTIFICATES		(SEE GENERAL NOTES 1)			
	9						
INSTRUMENT	10	TYPE		BIMETALLIC			
	11	MOUNTING		LOCAL			
	12	DIAL DIAMETER		114 mm			
	13	SCALE COLOR	BACKGROUND COLOR	BLACK		WHITE	
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"			
	15	MATERIAL CASE		304SS POLISHED			
	16	RING TYPE	RING MATERIAL	BAYONET		304SS	
	17	ROD MATERIAL	DIAMETER	316SS		6 mm	
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)		BOTTOM	
	19	MINIMUM SCALE	MAXIMUM	0 °C		300 °C	
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES			
	21	FRONT TYPE	WINDOWS	SOLID		GLASS SEG. TRANSP. MIN. 75%	
	22	ROD LENGTH "U"		BY MANUFACTURER			
	23	FILLING	FLUID	NOT REQUIRED		NOT REQUIRED	
	WELL	25	SUPPLY		YES		
26		MATERIAL		SS1016			
27		TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR			
28		CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5			
29		CONNECTION TO THERMOMETER		1/2" NPT(F)			
30		FLANGE FACE FINISH		MSS SP-6			
31		INSERTION LENGTH "U"		212 mm			
32		EXTENSION LENGTH "T"		35 mm			
33							
34							
35							
36							
37							
38							
39							
40							
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS	PROPYLENE GLYCOL		LIQUID	
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM			bar-g
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C
	45	VISCOSITY @ OPERATING CONDITION		cP			
	46	DENSITY @ OPERATING CONDITION		kg/m³			
	47	SUSPENDED SOLIDS (%)		NOT			
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT			
	49	MAXIMUM FLUID SPEED		m/s			
	50	MANUFACTURER		ASCHCROFT OR SIMILAR			
51	MODEL						





NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 			
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027			
TITLE						SHEET: 26 de 37	
TEMPERATURE GAUGE						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-390103			
	2	SERVIÇO		CHILLED WATER LOOP RETURN			
	3	P&ID		7A-Z-0-2-02			
	4	PIPE LINE	EQUIPMENT NUMBER	1"-GW0S-9800185-CS1-CC		-	
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B			
	6	AREA CLASSIFICATION		NOT CLASSIFIED			
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529			
	8	CERTIFICATES		(SEE GENERAL NOTES 1)			
	9						
INSTRUMENT	10	TYPE		BIMETALLIC			
	11	MOUNTING		LOCAL			
	12	DIAL DIAMETER		114 mm			
	13	SCALE COLOR	BACKGROUND COLOR	BLACK		WHITE	
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"			
	15	MATERIAL CASE		304SS POLISHED			
	16	RING TYPE	RING MATERIAL	BAYONET		304SS	
	17	ROD MATERIAL	DIAMETER	316SS		6 mm	
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)		BOTTOM	
	19	MINIMUM SCALE	MAXIMUM	0 °C		300 °C	
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES			
	21	FRONT TYPE	WINDOWS	SOLID		GLASS SEG. TRANSP. MIN. 75%	
	22	ROD LENGTH "U"		BY MANUFACTURER			
	23	FILLING	FLUID	NOT REQUIRED		NOT REQUIRED	
	24						
WELL	25	SUPPLY		YES			
	26	MATERIAL		SS1016			
	27	TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR			
	28	CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5			
	29	CONNECTION TO THERMOMETER		1/2" NPT(F)			
	30	FLANGE FACE FINISH		MSS SP-6			
	31	INSERTION LENGTH "U"		212 mm			
	32	EXTENSION LENGTH "T"		35 mm			
	33						
	34						
	35						
	36						
37							
38							
39							
40							
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS	PROPYLENE GLYCOL		LIQUID	
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM			bar-g
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C
	45	VISCOSITY @ OPERATING CONDITION		cP			
	46	DENSITY @ OPERATING CONDITION		kg/m³			
	47	SUSPENDED SOLIDS (%)		NOT			
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT			
	49	MAXIMUM FLUID SPEED		m/s			
	50	MANUFACTURER		ASCHCROFT OR SIMILAR			
51	MODEL						





NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 			
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027			
TITLE						SHEET: 27 de 37	
TEMPERATURE GAUGE						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER			7A-TI-390202		
	2	SERVIÇO			CHILLED WATER LOOP SUPPLY		
	3	P&ID			7A-Z-0-2-02		
	4	PIPE LINE	EQUIPMENT NUMBER		1"-GW0S-9800186-CS1-CC	-	
	5	EQUIPMENT MATERIAL / PIPE			CARBON STEEL ASTM-A106 Gr.B		
	6	AREA CLASSIFICATION			NOT CLASSIFIED		
	7	ENCLOSURE CLASSIFICATION			IP 65 (MÍN.) CONF. NBR IEC 60529		
	8	CERTIFICATES			(SEE GENERAL NOTES 1)		
	9						
INSTRUMENT	10	TYPE			BIMETALLIC		
	11	MOUNTING			LOCAL		
	12	DIAL DIAMETER			114 mm		
	13	SCALE COLOR	BACKGROUND COLOR		BLACK	WHITE	
	14	PRECISION			1% OF THE FINAL VALUE "RANGE"		
	15	MATERIAL CASE			304SS POLISHED		
	16	RING TYPE	RING MATERIAL		BAYONET	304SS	
	17	ROD MATERIAL	DIAMETER		316SS	6 mm	
	18	STEM CONNECTION TO WELL	CONNECTION POSITION		1/2" NPT (M)	BOTTOM	
	19	MINIMUM SCALE	MAXIMUM		0 °C	300 °C	
	20	MICROMETRIC ADJUSTMENT OF ZERO			YES		
	21	FRONT TYPE	WINDOWS		SOLID	GLASS SEG. TRANSP. MIN. 75%	
	22	ROD LENGTH "U"			BY MANUFACTURER		
	23	FILLING	FLUID		NOT REQUIRED	NOT REQUIRED	
	WELL	25	SUPPLY			YES	
26		MATERIAL			SS1016		
27		TYPE OF CONSTRUCTION			CONICAL MACHINED FROM A BAR		
28		CONNECTION TO THE PROCESS			1.1/2", 150#, FR, ASME B16.5		
29		CONNECTION TO THERMOMETER			1/2" NPT(F)		
30		FLANGE FACE FINISH			MSS SP-6		
31		INSERTION LENGTH "U"			212 mm		
32		EXTENSION LENGTH "T"			35 mm		
33							
34							
35							
36							
37							
38							
39							
40							
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS		PROPYLENE GLYCOL		LIQUID
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM	,		bar-g
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C
	45	VISCOSITY @ OPERATING CONDITION			cP		
	46	DENSITY @ OPERATING CONDITION			kg/m³		
	47	SUSPENDED SOLIDS (%)			NOT		
	48	SOLIDIFIES AT ROOM TEMPERATURE			NOT		
	49	MAXIMUM FLUID SPEED			m/s		
	50	MANUFACTURER			ASCHCROFT OR SIMILAR		
51	MODEL						





NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 			
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027			
TITLE						SHEET: 28 de 37	
TEMPERATURE GAUGE						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-390203			
	2	SERVIÇO		CHILLED WATER LOOP RETURN			
	3	P&ID		7A-Z-0-2-02			
	4	PIPE LINE	EQUIPMENT NUMBER	1"-GW0R-9800183-CS1-CC		-	
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B			
	6	AREA CLASSIFICATION		NOT CLASSIFIED			
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529			
	8	CERTIFICATES		(SEE GENERAL NOTES 1)			
	9						
INSTRUMENT	10	TYPE		BIMETALLIC			
	11	MOUNTING		LOCAL			
	12	DIAL DIAMETER		114 mm			
	13	SCALE COLOR	BACKGROUND COLOR	BLACK		WHITE	
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"			
	15	MATERIAL CASE		304SS POLISHED			
	16	RING TYPE	RING MATERIAL	BAYONET		304SS	
	17	ROD MATERIAL	DIAMETER	316SS		6 mm	
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)		BOTTOM	
	19	MINIMUM SCALE	MAXIMUM	0 °C		300 °C	
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES			
	21	FRONT TYPE	WINDOWS	SOLID		GLASS SEG. TRANSP. MIN. 75%	
	22	ROD LENGTH "U"		BY MANUFACTURER			
	23	FILLING	FLUID	NOT REQUIRED		NOT REQUIRED	
	24						
WELL	25	SUPPLY		YES			
	26	MATERIAL		SS1016			
	27	TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR			
	28	CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5			
	29	CONNECTION TO THERMOMETER		1/2" NPT(F)			
	30	FLANGE FACE FINISH		MSS SP-6			
	31	INSERTION LENGTH "U"		212 mm			
	32	EXTENSION LENGTH "T"		35 mm			
	33						
	34						
	35						
	36						
37							
38							
39							
40							
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS	PROPYLENE GLYCOL		LIQUID	
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM			bar-g
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C
	45	VISCOSITY @ OPERATING CONDITION		cP			
	46	DENSITY @ OPERATING CONDITION		kg/m³			
	47	SUSPENDED SOLIDS (%)		NOT			
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT			
	49	MAXIMUM FLUID SPEED		m/s			
	50	MANUFACTURER		ASCHCROFT OR SIMILAR			
51	MODEL						





NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 			
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027			
TITLE						SHEET: 29 de 37	
TEMPERATURE GAUGE						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER			7A-TI-390302		
	2	SERVIÇO			TEMPERED WATER SUPPLY		
	3	P&ID			7A-Z-0-2-02		
	4	PIPE LINE	EQUIPMENT NUMBER		1"-TEWS-390301-SS10-CC	-	
	5	EQUIPMENT MATERIAL / PIPE			CARBON STEEL ASTM-A106 Gr.B		
	6	AREA CLASSIFICATION			NOT CLASSIFIED		
	7	ENCLOSURE CLASSIFICATION			IP 65 (MÍN.) CONF. NBR IEC 60529		
	8	CERTIFICATES			(SEE GENERAL NOTES 1)		
	9						
INSTRUMENT	10	TYPE			BIMETALLIC		
	11	MOUNTING			LOCAL		
	12	DIAL DIAMETER			114 mm		
	13	SCALE COLOR	BACKGROUND COLOR		BLACK	WHITE	
	14	PRECISION			1% OF THE FINAL VALUE "RANGE"		
	15	MATERIAL CASE			304SS POLISHED		
	16	RING TYPE	RING MATERIAL		BAYONET	304SS	
	17	ROD MATERIAL	DIAMETER		316SS	6 mm	
	18	STEM CONNECTION TO WELL	CONNECTION POSITION		1/2" NPT (M)	BOTTOM	
	19	MINIMUM SCALE	MAXIMUM		0 °C	300 °C	
	20	MICROMETRIC ADJUSTMENT OF ZERO			YES		
	21	FRONT TYPE	WINDOWS		SOLID	GLASS SEG. TRANSP. MIN. 75%	
	22	ROD LENGTH "U"			BY MANUFACTURER		
	23	FILLING	FLUID		NOT REQUIRED	NOT REQUIRED	
	WELL	25	SUPPLY			YES	
26		MATERIAL			SS1016		
27		TYPE OF CONSTRUCTION			CONICAL MACHINED FROM A BAR		
28		CONNECTION TO THE PROCESS			1.1/2", 150#, FR, ASME B16.5		
29		CONNECTION TO THERMOMETER			1/2" NPT(F)		
30		FLANGE FACE FINISH			MSS SP-6		
31		INSERTION LENGTH "U"			212 mm		
32		EXTENSION LENGTH "T"			35 mm		
33							
34							
35							
36							
37							
38							
39							
40							
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS		PROPYLENE GLYCOL		LIQUID
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM	,		bar-g
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C
	45	VISCOSITY @ OPERATING CONDITION			cP		
	46	DENSITY @ OPERATING CONDITION			kg/m³		
	47	SUSPENDED SOLIDS (%)			NOT		
	48	SOLIDIFIES AT ROOM TEMPERATURE			NOT		
	49	MAXIMUM FLUID SPEED			m/s		
	50	MANUFACTURER			ASCHCROFT OR SIMILAR		
51	MODEL						





NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 			
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027			
TITLE						SHEET: 30 de 37	
TEMPERATURE GAUGE						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER			7A-TI-390303		
	2	SERVIÇO			CHILLED WATER LOOP RETURN		
	3	P&ID			7A-Z-0-2-02		
	4	PIPE LINE	EQUIPMENT NUMBER		1"-TEWR-390302-SS10-CC	-	
	5	EQUIPMENT MATERIAL / PIPE			CARBON STEEL ASTM-A106 Gr.B		
	6	AREA CLASSIFICATION			NOT CLASSIFIED		
	7	ENCLOSURE CLASSIFICATION			IP 65 (MÍN.) CONF. NBR IEC 60529		
	8	CERTIFICATES			(SEE GENERAL NOTES 1)		
	9						
INSTRUMENT	10	TYPE			BIMETALLIC		
	11	MOUNTING			LOCAL		
	12	DIAL DIAMETER			114 mm		
	13	SCALE COLOR	BACKGROUND COLOR		BLACK	WHITE	
	14	PRECISION			1% OF THE FINAL VALUE "RANGE"		
	15	MATERIAL CASE			304SS POLISHED		
	16	RING TYPE	RING MATERIAL		BAYONET	304SS	
	17	ROD MATERIAL	DIAMETER		316SS	6 mm	
	18	STEM CONNECTION TO WELL	CONNECTION POSITION		1/2" NPT (M)	BOTTOM	
	19	MINIMUM SCALE	MAXIMUM		0 °C	300 °C	
	20	MICROMETRIC ADJUSTMENT OF ZERO			YES		
	21	FRONT TYPE	WINDOWS		SOLID	GLASS SEG. TRANSP. MIN. 75%	
	22	ROD LENGTH "U"			BY MANUFACTURER		
	23	FILLING	FLUID		NOT REQUIRED	NOT REQUIRED	
	WELL	25	SUPPLY			YES	
26		MATERIAL			SS1016		
27		TYPE OF CONSTRUCTION			CONICAL MACHINED FROM A BAR		
28		CONNECTION TO THE PROCESS			1.1/2", 150#, FR, ASME B16.5		
29		CONNECTION TO THERMOMETER			1/2" NPT(F)		
30		FLANGE FACE FINISH			MSS SP-6		
31		INSERTION LENGTH "U"			212 mm		
32		EXTENSION LENGTH "T"			35 mm		
33							
34							
35							
36							
37							
38							
39							
40							
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS		PROPYLENE GLYCOL		LIQUID
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM	,		bar-g
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C
	45	VISCOSITY @ OPERATING CONDITION			cP		
	46	DENSITY @ OPERATING CONDITION			kg/m³		
	47	SUSPENDED SOLIDS (%)			NOT		
	48	SOLIDIFIES AT ROOM TEMPERATURE			NOT		
	49	MAXIMUM FLUID SPEED			m/s		
	50	MANUFACTURER			ASHCROFT OR SIMILAR		
51	MODEL						

NOTES:





1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 			
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027			
TITLE						SHEET: 31 de 37	
TEMPERATURE GAUGE						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-640101			
	2	SERVIÇO		CHILLED WATER LOOP RETURN			
	3	P&ID		7A-Z-0-2-24			
	4	PIPE LINE	EQUIPMENT NUMBER	1"-GW0R-640121-CS1-CC		-	
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B			
	6	AREA CLASSIFICATION		NOT CLASSIFIED			
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529			
	8	CERTIFICATES		(SEE GENERAL NOTES 1)			
	9						
INSTRUMENT	10	TYPE		BIMETALLIC			
	11	MOUNTING		LOCAL			
	12	DIAL DIAMETER		114 mm			
	13	SCALE COLOR	BACKGROUND COLOR	BLACK		WHITE	
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"			
	15	MATERIAL CASE		304SS POLISHED			
	16	RING TYPE	RING MATERIAL	BAYONET		304SS	
	17	ROD MATERIAL	DIAMETER	316SS		6 mm	
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)		BOTTOM	
	19	MINIMUM SCALE	MAXIMUM	0 °C		300 °C	
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES			
	21	FRONT TYPE	WINDOWS	SOLID		GLASS SEG. TRANSP. MIN. 75%	
	22	ROD LENGTH "U"		BY MANUFACTURER			
	23	FILLING	FLUID	NOT REQUIRED		NOT REQUIRED	
	24						
WELL	25	SUPPLY		YES			
	26	MATERIAL		SS1016			
	27	TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR			
	28	CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5			
	29	CONNECTION TO THERMOMETER		1/2" NPT(F)			
	30	FLANGE FACE FINISH		MSS SP-6			
	31	INSERTION LENGTH "U"		212 mm			
	32	EXTENSION LENGTH "T"		35 mm			
	33						
	34						
	35						
	36						
37							
38							
39							
40							
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS	PROPYLENE GLYCOL		LIQUID	
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM			bar-g
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C
	45	VISCOSITY @ OPERATING CONDITION		cP			
	46	DENSITY @ OPERATING CONDITION		kg/m³			
	47	SUSPENDED SOLIDS (%)		NOT			
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT			
	49	MAXIMUM FLUID SPEED		m/s			
	50	MANUFACTURER		ASCHCROFT OR SIMILAR			
51	MODEL						

NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.







 				 			
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027			
TITLE						SHEET: 32 de 37	
TEMPERATURE GAUGE						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-640102			
	2	SERVIÇO		CHILLED WATER LOOP SUPPLY			
	3	P&ID		7A-Z-0-2-24			
	4	PIPE LINE	EQUIPMENT NUMBER	1"-GW0S-640120-CS1-CC		-	
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B			
	6	AREA CLASSIFICATION		NOT CLASSIFIED			
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529			
	8	CERTIFICATES		(SEE GENERAL NOTES 1)			
	9						
INSTRUMENT	10	TYPE		BIMETALLIC			
	11	MOUNTING		LOCAL			
	12	DIAL DIAMETER		114 mm			
	13	SCALE COLOR	BACKGROUND COLOR	BLACK		WHITE	
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"			
	15	MATERIAL CASE		304SS POLISHED			
	16	RING TYPE	RING MATERIAL	BAYONET		304SS	
	17	ROD MATERIAL	DIAMETER	316SS		6 mm	
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)		BOTTOM	
	19	MINIMUM SCALE	MAXIMUM	0 °C		300 °C	
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES			
	21	FRONT TYPE	WINDOWS	SOLID		GLASS SEG. TRANSP. MIN. 75%	
	22	ROD LENGTH "U"		BY MANUFACTURER			
	23	FILLING	FLUID	NOT REQUIRED		NOT REQUIRED	
	WELL	25	SUPPLY		YES		
26		MATERIAL		SS1016			
27		TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR			
28		CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5			
29		CONNECTION TO THERMOMETER		1/2" NPT(F)			
30		FLANGE FACE FINISH		MSS SP-6			
31		INSERTION LENGTH "U"		212 mm			
32		EXTENSION LENGTH "T"		35 mm			
33							
34							
35							
36							
37							
38							
39							
40							
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS	PROPYLENE GLYCOL		LIQUID	
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM			bar-g
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C
	45	VISCOSITY @ OPERATING CONDITION		cP			
	46	DENSITY @ OPERATING CONDITION		kg/m³			
	47	SUSPENDED SOLIDS (%)		NOT			
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT			
	49	MAXIMUM FLUID SPEED		m/s			
	50	MANUFACTURER		ASCHCROFT OR SIMILAR			
51	MODEL						

NOTES:





1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.



 				 				
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027				
TITLE						SHEET: 33 de 37		
TEMPERATURE GAUGE						REV.: 2		
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-650106				
	2	SERVIÇO		CHILLED WATER LOOP RETURN				
	3	P&ID		7A-Z-0-2-27				
	4	PIPE LINE	EQUIPMENT NUMBER	3/4"-GW0S-650105-CS1-CC	-			
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B				
	6	AREA CLASSIFICATION		NOT CLASSIFIED				
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529				
	8	CERTIFICATES		(SEE GENERAL NOTES 1)				
	9							
INSTRUMENT	10	TYPE		BIMETALLIC				
	11	MOUNTING		LOCAL				
	12	DIAL DIAMETER		114 mm				
	13	SCALE COLOR	BACKGROUND COLOR	BLACK	WHITE			
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"				
	15	MATERIAL CASE		304SS POLISHED				
	16	RING TYPE	RING MATERIAL	BAYONET	304SS			
	17	ROD MATERIAL	DIAMETER	316SS	6 mm			
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)	BOTTOM			
	19	MINIMUM SCALE	MAXIMUM	0 °C	300 °C			
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES				
	21	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%			
	22	ROD LENGTH "U"		BY MANUFACTURER				
	23	FILLING	FLUID	NOT REQUIRED	NOT REQUIRED			
	24							
	WELL	25	SUPPLY		YES			
26		MATERIAL		SS1016				
27		TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR				
28		CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5				
29		CONNECTION TO THERMOMETER		1/2" NPT(F)				
30		FLANGE FACE FINISH		MSS SP-6				
31		INSERTION LENGTH "U"		212 mm				
32		EXTENSION LENGTH "T"		35 mm				
33								
34								
35								
36								
37								
38								
39								
40								
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS		PROPYLENE GLYCOL		LIQUID	
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM	,			bar-g
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM				°C
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C	
	45	VISCOSITY @ OPERATING CONDITION		cP				
	46	DENSITY @ OPERATING CONDITION		kg/m³				
	47	SUSPENDED SOLIDS (%)		NOT				
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT				
	49	MAXIMUM FLUID SPEED		m/s				
	50	MANUFACTURER		ASCHCROFT OR SIMILAR				
51	MODEL							





NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 			
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027			
TITLE						SHEET: 34 de 37	
TEMPERATURE GAUGE						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER			7A-TI-900104		
	2	SERVIÇO			CHILLED WATER LOOP RETURN BY STERILIZER		
	3	P&ID			7A-Z-0-2-06		
	4	PIPE LINE	EQUIPMENT NUMBER		2"-GW0S-900104-CS1-CC	-	
	5	EQUIPMENT MATERIAL / PIPE			CARBON STEEL ASTM-A106 Gr.B		
	6	AREA CLASSIFICATION			NOT CLASSIFIED		
	7	ENCLOSURE CLASSIFICATION			IP 65 (MÍN.) CONF. NBR IEC 60529		
	8	CERTIFICATES			(SEE GENERAL NOTES 1)		
	9						
INSTRUMENT	10	TYPE			BIMETALLIC		
	11	MOUNTING			LOCAL		
	12	DIAL DIAMETER			114 mm		
	13	SCALE COLOR	BACKGROUND COLOR		BLACK	WHITE	
	14	PRECISION			1% OF THE FINAL VALUE "RANGE"		
	15	MATERIAL CASE			304SS POLISHED		
	16	RING TYPE	RING MATERIAL		BAYONET	304SS	
	17	ROD MATERIAL	DIAMETER		316SS	6 mm	
	18	STEM CONNECTION TO WELL	CONNECTION POSITION		1/2" NPT (M)	BOTTOM	
	19	MINIMUM SCALE	MAXIMUM		0 °C	300 °C	
	20	MICROMETRIC ADJUSTMENT OF ZERO			YES		
	21	FRONT TYPE	WINDOWS		SOLID	GLASS SEG. TRANSP. MIN. 75%	
	22	ROD LENGTH "U"			BY MANUFACTURER		
	23	FILLING	FLUID		NOT REQUIRED	NOT REQUIRED	
	WELL	25	SUPPLY			YES	
26		MATERIAL			SS1016		
27		TYPE OF CONSTRUCTION			CONICAL MACHINED FROM A BAR		
28		CONNECTION TO THE PROCESS			1.1/2", 150#, FR, ASME B16.5		
29		CONNECTION TO THERMOMETER			1/2" NPT(F)		
30		FLANGE FACE FINISH			MSS SP-6		
31		INSERTION LENGTH "U"			212 mm		
32		EXTENSION LENGTH "T"			35 mm		
33							
34							
35							
36							
37							
38							
39							
40							
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS		PROPYLENE GLYCOL		LIQUID
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM	,		bar-g
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C
	45	VISCOSITY @ OPERATING CONDITION			cP		
	46	DENSITY @ OPERATING CONDITION			kg/m³		
	47	SUSPENDED SOLIDS (%)			NOT		
	48	SOLIDIFIES AT ROOM TEMPERATURE			NOT		
	49	MAXIMUM FLUID SPEED			m/s		
	50	MANUFACTURER			ASCHCROFT OR SIMILAR		
51	MODEL						





NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 				
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027				
TITLE						SHEET: 35 de 37		
TEMPERATURE GAUGE						REV.: 2		
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-900106				
	2	SERVIÇO		TEMPERED WATER SUPPLY FOR STERILIZER				
	3	P&ID		7A-Z-0-2-06				
	4	PIPE LINE	EQUIPMENT NUMBER	2"-GW0S-900105-CS1-CC		-		
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B				
	6	AREA CLASSIFICATION		NOT CLASSIFIED				
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529				
	8	CERTIFICATES		(SEE GENERAL NOTES 1)				
	9							
INSTRUMENT	10	TYPE		BIMETALLIC				
	11	MOUNTING		LOCAL				
	12	DIAL DIAMETER		114 mm				
	13	SCALE COLOR	BACKGROUND COLOR	BLACK		WHITE		
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"				
	15	MATERIAL CASE		304SS POLISHED				
	16	RING TYPE	RING MATERIAL	BAYONET		304SS		
	17	ROD MATERIAL	DIAMETER	316SS		6 mm		
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)		BOTTOM		
	19	MINIMUM SCALE	MAXIMUM	0 °C		300 °C		
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES				
	21	FRONT TYPE	WINDOWS	SOLID		GLASS SEG. TRANSP. MIN. 75%		
	22	ROD LENGTH "U"		BY MANUFACTURER				
	23	FILLING	FLUID	NOT REQUIRED		NOT REQUIRED		
	24							
WELL	25	SUPPLY		YES				
	26	MATERIAL		SS1016				
	27	TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR				
	28	CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5				
	29	CONNECTION TO THERMOMETER		1/2" NPT(F)				
	30	FLANGE FACE FINISH		MSS SP-6				
	31	INSERTION LENGTH "U"		212 mm				
	32	EXTENSION LENGTH "T"		35 mm				
	33							
	34							
	35							
	36							
37								
38								
39								
40								
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS		PROPYLENE GLYCOL		LIQUID	
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM			bar-g	
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C	
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C	
	45	VISCOSITY @ OPERATING CONDITION		cP				
	46	DENSITY @ OPERATING CONDITION		kg/m³				
	47	SUSPENDED SOLIDS (%)		NOT				
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT				
	49	MAXIMUM FLUID SPEED		m/s				
	50	MANUFACTURER		ASCHCROFT OR SIMILAR				
51	MODEL							





## NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 			
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027			
TITLE						SHEET: 36 de 37	
TEMPERATURE GAUGE						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER			7A-TI-900204		
	2	SERVIÇO			CHILLED WATER LOOP RETURN BY STERILIZER		
	3	P&ID			7A-Z-0-2-05		
	4	PIPE LINE	EQUIPMENT NUMBER		2"-GW0S-900204-CS1-CC	-	
	5	EQUIPMENT MATERIAL / PIPE			CARBON STEEL ASTM-A106 Gr.B		
	6	AREA CLASSIFICATION			NOT CLASSIFIED		
	7	ENCLOSURE CLASSIFICATION			IP 65 (MÍN.) CONF. NBR IEC 60529		
	8	CERTIFICATES			(SEE GENERAL NOTES 1)		
	9						
INSTRUMENT	10	TYPE			BIMETALLIC		
	11	MOUNTING			LOCAL		
	12	DIAL DIAMETER			114 mm		
	13	SCALE COLOR	BACKGROUND COLOR		BLACK	WHITE	
	14	PRECISION			1% OF THE FINAL VALUE "RANGE"		
	15	MATERIAL CASE			304SS POLISHED		
	16	RING TYPE	RING MATERIAL		BAYONET	304SS	
	17	ROD MATERIAL	DIAMETER		316SS	6 mm	
	18	STEM CONNECTION TO WELL	CONNECTION POSITION		1/2" NPT (M)	BOTTOM	
	19	MINIMUM SCALE	MAXIMUM		0 °C	300 °C	
	20	MICROMETRIC ADJUSTMENT OF ZERO			YES		
	21	FRONT TYPE	WINDOWS		SOLID	GLASS SEG. TRANSP. MIN. 75%	
	22	ROD LENGTH "U"			BY MANUFACTURER		
	23	FILLING	FLUID		NOT REQUIRED	NOT REQUIRED	
	WELL	25	SUPPLY			YES	
26		MATERIAL			SS1016		
27		TYPE OF CONSTRUCTION			CONICAL MACHINED FROM A BAR		
28		CONNECTION TO THE PROCESS			1.1/2", 150#, FR, ASME B16.5		
29		CONNECTION TO THERMOMETER			1/2" NPT(F)		
30		FLANGE FACE FINISH			MSS SP-6		
31		INSERTION LENGTH "U"			212 mm		
32		EXTENSION LENGTH "T"			35 mm		
33							
34							
35							
36							
37							
38							
39							
40							
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS		PROPYLENE GLYCOL		LIQUID
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM	,		bar-g
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C
	45	VISCOSITY @ OPERATING CONDITION			cP		
	46	DENSITY @ OPERATING CONDITION			kg/m³		
	47	SUSPENDED SOLIDS (%)			NOT		
	48	SOLIDIFIES AT ROOM TEMPERATURE			NOT		
	49	MAXIMUM FLUID SPEED			m/s		
	50	MANUFACTURER			ASCHCROFT OR SIMILAR		
51	MODEL						

## NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 				
NUMBER: 569-DB7A-AIC-711-003				CLIENT NR: PRD-AIC-DSH-027				
TITLE						SHEET: 37 de 37		
TEMPERATURE GAUGE						REV.: 2		
GENERAL	1	INSTRUMENT TAG NUMBER		7A-TI-900206				
	2	SERVIÇO		TEMPERED WATER SUPPLY FOR STERILIZER				
	3	P&ID		7A-Z-0-2-05				
	4	PIPE LINE	EQUIPMENT NUMBER	2"-GW0S-900205-CS1-CC		-		
	5	EQUIPMENT MATERIAL / PIPE		CARBON STEEL ASTM-A106 Gr.B				
	6	AREA CLASSIFICATION		NOT CLASSIFIED				
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529				
	8	CERTIFICATES		(SEE GENERAL NOTES 1)				
	9							
INSTRUMENT	10	TYPE		BIMETALLIC				
	11	MOUNTING		LOCAL				
	12	DIAL DIAMETER		114 mm				
	13	SCALE COLOR	BACKGROUND COLOR	BLACK		WHITE		
	14	PRECISION		1% OF THE FINAL VALUE "RANGE"				
	15	MATERIAL CASE		304SS POLISHED				
	16	RING TYPE	RING MATERIAL	BAYONET		304SS		
	17	ROD MATERIAL	DIAMETER	316SS		6 mm		
	18	STEM CONNECTION TO WELL	CONNECTION POSITION	1/2" NPT (M)		BOTTOM		
	19	MINIMUM SCALE	MAXIMUM	0 °C		300 °C		
	20	MICROMETRIC ADJUSTMENT OF ZERO		YES				
	21	FRONT TYPE	WINDOWS	SOLID		GLASS SEG. TRANSP. MIN. 75%		
	22	ROD LENGTH "U"		BY MANUFACTURER				
	23	FILLING	FLUID	NOT REQUIRED		NOT REQUIRED		
	24							
WELL	25	SUPPLY		YES				
	26	MATERIAL		SS1016				
	27	TYPE OF CONSTRUCTION		CONICAL MACHINED FROM A BAR				
	28	CONNECTION TO THE PROCESS		1.1/2", 150#, FR, ASME B16.5				
	29	CONNECTION TO THERMOMETER		1/2" NPT(F)				
	30	FLANGE FACE FINISH		MSS SP-6				
	31	INSERTION LENGTH "U"		212 mm				
	32	EXTENSION LENGTH "T"		35 mm				
	33							
	34							
	35							
	36							
37								
38								
39								
40								
OPERATING CONDITIONS	41	FLUID	PHYSICAL STATUS		PROPYLENE GLYCOL		LIQUID	
	42	MINIMUM PRESSURE	NORMAL	MAXIMUM			bar-g	
	43	MINIMUM TEMPERATURE	NORMAL	MAXIMUM			°C	
	44	DESIGN PRESSURE	DESIGN TEMPERATURE		bar-g		°C	
	45	VISCOSITY @ OPERATING CONDITION		cP				
	46	DENSITY @ OPERATING CONDITION		kg/m³				
	47	SUSPENDED SOLIDS (%)		NOT				
	48	SOLIDIFIES AT ROOM TEMPERATURE		NOT				
	49	MAXIMUM FLUID SPEED		m/s				
	50	MANUFACTURER		ASCHCROFT OR SIMILAR				
51	MODEL							

NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.