	
DOC NUMBER: 569-DB7A-AIC-712-006		CLIENT NUMBER: PRD-AIC-DSH-0052	
CLIENT: TAKEDA/BAXALTA			
PROJECT: BURITI EPCVM PROJECT			

DRUG PRODUCT - BMS - DATA SHEET PRESSURE GAUGE

2	28APR2022	ISSUE FOR CONSTRUCTION AS PER NOTE	ACC	MAF	RSP
1	26JAN2022	ISSUE FOR CONSTRUCTION CONSIDERING COMMENTS	MAV	MAF	RSP
0	29JUL2021	ISSUE FOR CONSTRUCTION	JHA	MAF	RSP
A	24MAR2021	60% DD ISSUE	JHA	MAF	RSP
REV	DATE	DESCRIPTION	EXEC	CHECK	APPROV

NUMBER: 569-DB7A-AIC-712-006

CLIENT NR: PRD-AIC-DSH-0052

TITLE

MANOMETER

SHEET:
2 de 30

REV.:
2

DOCUMENT REVIEW CONTROL

Revision	A	B	0	1	2	3	Revision	A	B	0	1	2	3	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	/	/		56						
7	X		X	X	X		32	X		X				57						
8	X		X	X	X		33	X		X				58						
9	X		X	X	X		34	X		X				59						
10	X		X	X	X		35	X		X				60						
11	X		X	X	X		36	X		X				61						
12	X		X	X	X		37	X		X				62						
13	X		X	X	X		38	X		X				63						
14	X		X	X	X		39	/		/				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						

REVISION 0 NOTES:

- 1- UPDATE ACCORDING TO P&ID (HVAC AND PROCESS).
- 2- INSERTION OF PROCESS DATA.
- 3- INSERTION OF INSTRUMENT REFERENCE MODELS.





REVISION 1 NOTES:

- 1- CANCELLED PDI-AHU-7A-1-001-HVAC, PDI-AHU-7A-2-001-HVAC, PDI-AHU-7A-3-001-HVAC, PDI-AHU-7A-4-001-HVAC, PDI-AHU-7A-4-002-HVAC, PDI-AHU-7A-5-001-HVAC, PDI-AHU-7A-6-001-HVAC, PDI-DOAS-7A-1-001-HVAC.

REVISION 2 NOTES AS PER N+1 UPDATE:

- 1- INDICATED FUTURE INSTRUMENTS: PI-960001, PI-960002, PI-960006, PI-960007, PI-980064, PI-980071, PI-940049, PI-960058, PI-960052, PI-9800161, PI-9800162

The information contained in this document is the property of TESSLER Engenharia and is provided to the customer under the condition that they are not used for other purposes other than those contractually established.

   	
NUMBER: 569-DB7A-AIC-712-006	CLIENT NR: PRD-AIC-DSH-0052
TITLE	
MANOMETER	
SHEET: 3 de 30	
REV.: 2	
REFERENCE DOCUMENTS	

7A-M-0-5-41	P&I DIAGRAM - DRUG PRODUCT - INDUSTRIAL WATER DISTRIBUTION SYSTEM
7A-M-0-5-42	P&I DIAGRAM - DRUG PRODUCT - COOLING WATER SYSTEM
7A-M-0-5-43	P&I DIAGRAM - DRUG PRODUCT - CHILLED WATER GENERATION SYSTEM (HVAC)
7A-M-0-5-44	P&I DIAGRAM - DRUG PRODUCT - CHILLED WATER DISTRIBUTION SYSTEM
7A-M-0-5-45	P&I DIAGRAM - DRUG PRODUCT - CHILLED GLYCOL GENERATION SYSTEM
7A-M-0-5-46	P&I DIAGRAM - DRUG PRODUCT - CHILLED GLYCOL DISTRIBUTION SYSTEM
7A-M-0-5-47	P&I DIAGRAM - DRUG PRODUCT - HEATING HOT WATER SYSTEM (HVAC)
PRD-AIC-LIS-014	DRUG PRODUCT - BMS - INSTRUMENT INDEX
PRD-PIP-TSP-501	PIPE CLASS AND SPECIFICATION - TECHNICAL SPECIFICATION
PRD-AIC-LIS-046	INTEGRATED PROJECT SERVICES - INSTRUMENT SUGGESTED SUPPLIER LIST

GENERAL NOTES

- 1- Provide calibration certificate issued by INMETRO or by organ accredited by it.
- 2- 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.
- 3- The manufacturer must provide rear protection disc.
- 4- HVAC Reported that the HVAC'S deferences will be provided by the HVAC package manufacturer. (CANCELLED)

NUMBER: **569-DB7A-AIC-712-006**

CLIENT NR: **PRD-AIC-DSH-0052**

TITLE

SHEET:

4 de 30
MANOMETER

REV.:

2

GENERAL	1	INSTRUMENT TAG NUMBER		PI-610001	
	2	SERVICE		INDUSTRIAL WATER - DISTRIBUTION SYSTEM	
	3	P&ID		7A-M-0-5-41	
	4	PIPE LINE	EQUIPMENT NUMBER	7A-4"-DW-610001-PP1-N	-
	5	EQUIPMENT MATERIAL / PIPE		PP-H	
	6	AREA CLASSIFICATION		NOT CLASSIFIED	
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529	
	8	CERTIFICATES		(SEE GENERAL NOTES 6)	
	9				
INSTRUMENT	10	TYPE OF MEASUREMENT		DIRECT	
	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	RANGE	RESOLUTION	0 @ 6 bar-g	0.1
	17	RING TYPE	RING MATERIAL	BAYONET	304SS
	18	CONEX. PROCES. / ACESS.	CONNECTION POSITION	1/2" NPT (M)	BOTTOM
	19	SENSOR TYPE	MATERIAL SENSOR	BOURDON	316SS
	20	MATERIAL SOQUETE	MECHANISM MATERIAL	316SS	316SS
	21	BALANCED POINTER		YES	
	22	MICROMETRIC ADJUSTMENT OF ZERO		YES	
	23	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%
	24	FILLING	FLUID	YES	GLYCERIN
ACCESSORIES	25	SEAL DIAPHRAGM		NOT REQUIRED	
	26	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	27	SEAL FILLING FLUID		NOT REQUIRED	
	28	WET PART MATERIAL		NOT REQUIRED	
	29	CAPILLARY LENGTH		NOT REQUIRED	
	30	CAPILLARY MATERIAL		NOT REQUIRED	
	31	PULSATION DAMPER		NOT REQUIRED	
	32	MATERIAL		NOT REQUIRED	
	33	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	34	SIPHON TUBE		NOT REQUIRED	
	35	MATERIAL		NOT REQUIRED	
	36	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	37	OVERPRESSURE PROTECTOR		NOT REQUIRED	
	38	MATERIAL		NOT REQUIRED	
	39	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	46	TAGGING		YES (SEE GENERAL NOTES 2)	
	40				
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATE	INDUSTRIAL WATER	LIQUID
	37	MINIMUM TEMPERATURE	NORMAL MAXIMUM	- 25	- °C
	38	MINIMUM PRESSURE	NORMAL MAXIMUM	0 4	bar-g
	39	DESIGN PRESSURE	DESIGN TEMPERATURE	4.5 bar-g	55 °C
	40	VISCOSITY @ OPERATING CONDITION		0.89 cP	
	41	DENSITY @ OPERATING CONDITION		997.2 kg/m³	
	42	SUSPENDED SOLIDS (%)		NOT	
	43	SOLIDIFIES AT ROOM TEMPERATURE		NOT	
	44	M.M. / Z / Cp/Cv	 / /	
	49	MANUFACTURER		WIKA	
	50	MODEL		232.5 (WIKA)	

NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

NUMBER: **569-DB7A-AIC-712-006**

CLIENT NR: **PRD-AIC-DSH-0052**

TITLE

SHEET:

5 de 30
MANOMETER

REV.:

2

GENERAL	1	INSTRUMENT TAG NUMBER		PI-610002	
	2	SERVICE		INDUSTRIAL WATER - DISTRIBUTION SYSTEM DOWNSTREAM PCV-610001	
	3	P&ID		7A-M-0-5-41	
	4	PIPE LINE	EQUIPMENT NUMBER	7A-4"-DW-610001-PP1-N	-
	5	EQUIPMENT MATERIAL / PIPE		PP-H	
	6	AREA CLASSIFICATION		NOT CLASSIFIED	
	7	ENCLOSURE CLASSIFICATION		IP 65 (MÍN.) CONF. NBR IEC 60529	
	8	CERTIFICATES		(SEE GENERAL NOTES 6)	
	9				
INSTRUMENT	10	TYPE OF MEASUREMENT		DIRECT	
	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	RANGE	RESOLUTION	0 @ 6 bar-g	0.1
	17	RING TYPE	RING MATERIAL	BAYONET	304SS
	18	CONEX. PROCES. / ACESS.	CONNECTION POSITION	1/2" NPT (M)	BOTTOM
	19	SENSOR TYPE	MATERIAL SENSOR	BOURDON	316SS
	20	MATERIAL SOQUETE	MECHANISM MATERIAL	316SS	316SS
	21	BALANCED POINTER		YES	
	22	MICROMETRIC ADJUSTMENT OF ZERO		YES	
	23	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%
	24	FILLING	FLUID	YES	GLYCERIN
ACCESSORIES	25	SEAL DIAPHRAGM		NOT REQUIRED	
	26	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	27	SEAL FILLING FLUID		NOT REQUIRED	
	28	WET PART MATERIAL		NOT REQUIRED	
	29	CAPILLARY LENGTH		NOT REQUIRED	
	30	CAPILLARY MATERIAL		NOT REQUIRED	
	31	PULSATION DAMPER		NOT REQUIRED	
	32	MATERIAL		NOT REQUIRED	
	33	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	34	SIPHON TUBE		NOT REQUIRED	
	35	MATERIAL		NOT REQUIRED	
	36	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	37	OVERPRESSURE PROTECTOR		YES	
	38	MATERIAL		316SS	
	39	CONNECTION INSTRUMENT	PROCESS CONNECTION	1/2" NPT (F)	1/2" NPT (M)
	46	TAGGING		YES (SEE GENERAL NOTES 2)	
	40				
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATE	INDUSTRIAL WATER	LIQUID
	37	MINIMUM TEMPERATURE	NORMAL MAXIMUM	- 25	- °C
	38	MINIMUM PRESSURE	NORMAL MAXIMUM	0 2.8	- bar-g
	39	DESIGN PRESSURE	DESIGN TEMPERATURE	4.5 bar-g	55 °C
	40	VISCOSITY @ OPERATING CONDITION		0.89 cP	
	41	DENSITY @ OPERATING CONDITION		997.17 kg/m³	
	42	SUSPENDED SOLIDS (%)		NOT	
	43	SOLIDIFIES AT ROOM TEMPERATURE		NOT	
	44	M.M. / Z / Cp/Cv	 / /	
	49	MANUFACTURER		WIKA	
	50	MODEL		232.5 (WIKA)	

NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

NUMBER: 569-DB7A-AIC-712-006

CLIENT NR: PRD-AIC-DSH-0052

TITLE

MANOMETER

SHEET:
6 de 30

REV.:
2

GENERAL	1	INSTRUMENT TAG NUMBER		PI-940049	
	2	SERVICE		P-C-7A-3 COOLING WATER	
	3	P&ID		7A-M-0-5-42	
	4	PIPE LINE	EQUIPMENT NUMBER	7A-12"-TWS-940049-CS1-NI	-
	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 6)	
	9				
INSTRUMENT	10	TYPE OF MEASUREMENT		DIRECT	
	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	RANGE	RESOLUTION	0 @ 6 bar-g	0.1
	17	RING TYPE	RING MATERIAL	BAYONET	304SS
	18	CONEX. PROCES. / ACESS.	CONNECTION POSITION	1/2" NPT (M)	BOTTOM
	19	SENSOR TYPE	MATERIAL SENSOR	BOURDON	316SS
	20	MATERIAL SOQUETE	MECHANISM MATERIAL	316SS	316SS
	21	BALANCED POINTER		YES	
	22	MICROMETRIC ADJUSTMENT OF ZERO		YES	
	23	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%
	24	FILLING	FLUID	YES	GLYCERIN
ACCESSORIES	25	SEAL DIAPHRAGM		NOT REQUIRED	
	26	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	27	SEAL FILLING FLUID		NOT REQUIRED	
	28	WET PART MATERIAL		NOT REQUIRED	
	29	CAPILLARY LENGTH		NOT REQUIRED	
	30	CAPILLARY MATERIAL		NOT REQUIRED	
	31	PULSATION DAMPER		NOT REQUIRED	
	32	MATERIAL		NOT REQUIRED	
	33	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	34	SIPHON TUBE		NOT REQUIRED	
	35	MATERIAL		NOT REQUIRED	
	36	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	37	OVERPRESSURE PROTECTOR		NOT REQUIRED	
	38	MATERIAL		NOT REQUIRED	
	39	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	46	TAGGING		YES (SEE GENERAL NOTES 2)	
	40				
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATE	INDUSTRIAL WATER	LIQUID
	37	MINIMUM TEMPERATURE	NORMAL MAXIMUM	, 31.5	°C
	38	MINIMUM PRESSURE	NORMAL MAXIMUM	2.5	bar-g
	39	DESIGN PRESSURE	DESIGN TEMPERATURE	4.6 bar-g	67 °C
	40	VISCOSITY @ OPERATING CONDITION		cP	
	41	DENSITY @ OPERATING CONDITION		995.3 kg/m³	
	42	SUSPENDED SOLIDS (%)		NOT	
	43	SOLIDIFIES AT ROOM TEMPERATURE		NOT	
44	M.M. / Z / Cp/Cv	 / /		
	49	MANUFACTURER		WIKA	
	50	MODEL		232.5 (WIKA)	

NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

NUMBER: **569-DB7A-AIC-712-006**

CLIENT NR: **PRD-AIC-DSH-0052**

TITLE

SHEET:
7 de 30





MANOMETER

REV.:
2

GENERAL	1	INSTRUMENT TAG NUMBER		PI-940050	
	2	SERVICE		P-C-7A-2 COOLING WATER	
	3	P&ID		7A-M-0-5-42	
	4	PIPE LINE	EQUIPMENT NUMBER	7A-12"-TWS-940050-CS1-NI	-
	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 6)	
	9				
INSTRUMENT	10	TYPE OF MEASUREMENT		DIRECT	
	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	RANGE	RESOLUTION	0 @ 6 bar-g	0.1
	17	RING TYPE	RING MATERIAL	BAYONET	304SS
	18	CONEX. PROCES. / ACESS.	CONNECTION POSITION	1/2" NPT (M)	BOTTOM
	19	SENSOR TYPE	MATERIAL SENSOR	BOURDON	316SS
	20	MATERIAL SOQUETE	MECHANISM MATERIAL	316SS	316SS
	21	BALANCED POINTER		YES	
	22	MICROMETRIC ADJUSTMENT OF ZERO		YES	
	23	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%
	24	FILLING	FLUID	YES	GLYCERIN
ACCESSORIES	25	SEAL DIAPHRAGM		NOT REQUIRED	
	26	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	27	SEAL FILLING FLUID		NOT REQUIRED	
	28	WET PART MATERIAL		NOT REQUIRED	
	29	CAPILLARY LENGTH		NOT REQUIRED	
	30	CAPILLARY MATERIAL		NOT REQUIRED	
	31	PULSATION DAMPER		NOT REQUIRED	
	32	MATERIAL		NOT REQUIRED	
	33	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	34	SIPHON TUBE		NOT REQUIRED	
	35	MATERIAL		NOT REQUIRED	
	36	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	37	OVERPRESSURE PROTECTOR		NOT REQUIRED	
	38	MATERIAL		NOT REQUIRED	
	39	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	40	TAGGING		YES (SEE GENERAL NOTES 2)	
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATE	INDUSTRIAL WATER	LIQUID
	37	MINIMUM TEMPERATURE	NORMAL MAXIMUM	, 31.5	°C
	38	MINIMUM PRESSURE	NORMAL MAXIMUM	2.5	bar-g
	39	DESIGN PRESSURE	DESIGN TEMPERATURE	4.6 bar-g	67 °C
	40	VISCOSITY @ OPERATING CONDITION		cP	
	41	DENSITY @ OPERATING CONDITION		995.3 kg/m³	
	42	SUSPENDED SOLIDS (%)		NOT	
	43	SOLIDIFIES AT ROOM TEMPERATURE		NOT	
	44	M.M. / Z / Cp/Cv		... / ... / ...	
	49	MANUFACTURER		WIKA	
	50	MODEL		232.5 (WIKA)	


NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 			
NUMBER: 569-DB7A-AIC-712-006				CLIENT NR: PRD-AIC-DSH-0052			
TITLE						SHEET: 8 de 30	
MANOMETER						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER			PI-940051		
	2	SERVICE			P-C-7A-1 COOLING WATER		
	3	P&ID			7A-M-0-5-42		
	4	PIPE LINE	EQUIPMENT NUMBER		7A-12"-TWS-940051-CS1-NI	-	
	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 6)		
	9						
INSTRUMENT	10	TYPE OF MEASUREMENT			DIRECT		
	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	RANGE	RESOLUTION		0 @ 6 bar-g	0.1	
	17	RING TYPE	RING MATERIAL		BAYONET	304SS	
	18	CONEX. PROCES. / ACESS.	CONNECTION POSITION		1/2" NPT (M)	BOTTOM	
	19	SENSOR TYPE	MATERIAL SENSOR		BOURDON	316SS	
	20	MATERIAL SOQUETE	MECHANISM MATERIAL		316SS	316SS	
	21	BALANCED POINTER			YES		
	22	MICROMETRIC ADJUSTMENT OF ZERO			YES		
	23	FRONT TYPE	WINDOWS		SOLID	GLASS SEG. TRANSP. MIN. 75%	
24	FILLING	FLUID		YES	GLYCERIN		
ACCESSORIES	25	SEAL DIAPHRAGM			NOT REQUIRED		
	26	CONNECTION INSTRUMENT	PROCESS CONNECTION		NOT REQUIRED	NOT REQUIRED	
	27	SEAL FILLING FLUID			NOT REQUIRED		
	28	WET PART MATERIAL			NOT REQUIRED		
	29	CAPILLARY LENGTH			NOT REQUIRED		
	30	CAPILLARY MATERIAL			NOT REQUIRED		
	31	PULSATION DAMPER			NOT REQUIRED		
	32	MATERIAL			NOT REQUIRED		
	33	CONNECTION INSTRUMENT	PROCESS CONNECTION		NOT REQUIRED	NOT REQUIRED	
	34	SIPHON TUBE			NOT REQUIRED		
	35	MATERIAL			NOT REQUIRED		
	36	CONNECTION INSTRUMENT	PROCESS CONNECTION		NOT REQUIRED	NOT REQUIRED	
	37	OVERPRESSURE PROTECTOR			NOT REQUIRED		
	38	MATERIAL			NOT REQUIRED		
	39	CONNECTION INSTRUMENT	PROCESS CONNECTION		NOT REQUIRED	NOT REQUIRED	
	40	TAGGING			YES (SEE GENERAL NOTES 2)		
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATE		INDUSTRIAL WATER		LIQUID
	37	MINIMUM TEMPERATURE	NORMAL	MAXIMUM		31.5	°C
	38	MINIMUM PRESSURE	NORMAL	MAXIMUM		2.5	bar-g
	39	DESIGN PRESSURE	DESIGN TEMPERATURE		4.6 bar-g		67 °C
	40	VISCOSITY @ OPERATING CONDITION			cP		
	41	DENSITY @ OPERATING CONDITION			995.3 kg/m³		
	42	SUSPENDED SOLIDS (%)			NOT		
	43	SOLIDIFIES AT ROOM TEMPERATURE			NOT		
	44	M.M. / Z / Cp/Cv			... / ... / ...		
	49	MANUFACTURER			WIKA		
50	MODEL			232.5 (WIKA)			

NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

   					
NUMBER: 569-DB7A-AIC-712-006			CLIENT NR: PRD-AIC-DSH-0052		
TITLE				SHEET: 9 de 30	
MANOMETER				REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER		PI-960001	
	2	SERVICE		CHILLED WATER - SUPPLY BUILDING 7A MAMOUNT P-CH-7A-4	
	3	P&ID		7A-M-0-5-44	
	4	PIPE LINE	EQUIPMENT NUMBER	7A-10"-CW1S-960001-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 6)	
	9				
INSTRUMENT	10	TYPE OF MEASUREMENT		DIRECT	
	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	RANGE	RESOLUTION	0 @ 1 bar-g	0.01
	17	RING TYPE	RING MATERIAL	BAYONET	304SS
	18	CONEX. PROCES. / ACESS.	CONNECTION POSITION	1/2" NPT (M)	BOTTOM
	19	SENSOR TYPE	MATERIAL SENSOR	BOURDON	316SS
	20	MATERIAL SOQUETE	MECHANISM MATERIAL	316SS	316SS
	21	BALANCED POINTER		YES	
	22	MICROMETRIC ADJUSTMENT OF ZERO		YES	
	23	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%
ACCESSORIES	24	FILLING	FLUID	YES	GLYCERIN
	25	SEAL DIAPHRAGM		NOT REQUIRED	
	26	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	27	SEAL FILLING FLUID		NOT REQUIRED	
	28	WET PART MATERIAL		NOT REQUIRED	
	29	CAPILLARY LENGTH		NOT REQUIRED	
	30	CAPILLARY MATERIAL		NOT REQUIRED	
	31	PULSATION DAMPER		NOT REQUIRED	
	32	MATERIAL		NOT REQUIRED	
	33	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	34	SIPHON TUBE		NOT REQUIRED	
	35	MATERIAL		NOT REQUIRED	
	36	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	37	OVERPRESSURE PROTECTOR		YES	
	38	MATERIAL		316SS	
	39	CONNECTION INSTRUMENT	PROCESS CONNECTION	1/2"NPT (F)	1/2"NPT (M)
	40	TAGGING		YES (SEE GENERAL NOTES 2)	
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATE	INDUSTRIAL WATER	LIQUID
	37	MINIMUM TEMPERATURE	NORMAL	MAXIMUM	°C
	38	MINIMUM PRESSURE	NORMAL	MAXIMUM	bar-g
	39	DESIGN PRESSURE	DESIGN TEMPERATURE	2.7 bar-g	42.5 °C
	40	VISCOSITY @ OPERATING CONDITION		cP	
	41	DENSITY @ OPERATING CONDITION		999.99 kg/m³	
	42	SUSPENDED SOLIDS (%)		NOT	
	43	SOLIDIFIES AT ROOM TEMPERATURE		NOT	
	44	M.M. / Z / Cp/Cv		... / ... / ...	
	49	MANUFACTURER		WIKA	
50	MODEL		232.5 (WIKA)		

NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

NUMBER: **569-DB7A-AIC-712-006**

CLIENT NR: **PRD-AIC-DSH-0052**

TITLE

SHEET:
10 de 30
MANOMETER

REV.:
2

GENERAL	1	INSTRUMENT TAG NUMBER		PI-960002	
	2	SERVICE		CHILLED WATER - SUPPLY BUILDING 7A DOWNSTREAM P-CH-7A-4	
	3	P&ID		7A-M-0-5-44	
	4	PIPE LINE	EQUIPMENT NUMBER	7A-8"-CW1S-960004-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 6)	
	9				
INSTRUMENT	10	TYPE OF MEASUREMENT		DIRECT	
	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	RANGE	RESOLUTION	0 @ 4 bar-g	0.05
	17	RING TYPE	RING MATERIAL	BAYONET	304SS
	18	CONEX. PROCES. / ACESS.	CONNECTION POSITION	1/2" NPT (M)	BOTTOM
	19	SENSOR TYPE	MATERIAL SENSOR	BOURDON	316SS
	20	MATERIAL SOQUETE	MECHANISM MATERIAL	316SS	316SS
	21	BALANCED POINTER		YES	
	22	MICROMETRIC ADJUSTMENT OF ZERO		YES	
	23	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%
	24	FILLING	FLUID	YES	GLYCERIN
ACCESSORIES	25	SEAL DIAPHRAGM		NOT REQUIRED	
	26	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	27	SEAL FILLING FLUID		NOT REQUIRED	
	28	WET PART MATERIAL		NOT REQUIRED	
	29	CAPILLARY LENGTH		NOT REQUIRED	
	30	CAPILLARY MATERIAL		NOT REQUIRED	
	31	PULSATION DAMPER		NOT REQUIRED	
	32	MATERIAL		NOT REQUIRED	
	33	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	34	SIPHON TUBE		NOT REQUIRED	
	35	MATERIAL		NOT REQUIRED	
	36	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	37	OVERPRESSURE PROTECTOR		NOT REQUIRED	
	38	MATERIAL		NOT REQUIRED	
	39	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	46	TAGGING		YES (SEE GENERAL NOTES 2)	
	40				
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATE	INDUSTRIAL WATER	LIQUID
	37	MINIMUM TEMPERATURE	NORMAL MAXIMUM	, 5.5	°C
	38	MINIMUM PRESSURE	NORMAL MAXIMUM	2	bar-g
	39	DESIGN PRESSURE	DESIGN TEMPERATURE	2.7 bar-g	42.5 °C
	40	VISCOSITY @ OPERATING CONDITION		cP	
	41	DENSITY @ OPERATING CONDITION		999.99 kg/m³	
	42	SUSPENDED SOLIDS (%)		NOT	
	43	SOLIDIFIES AT ROOM TEMPERATURE		NOT	
	44	M.M. / Z / Cp/Cv	 / /	
	49	MANUFACTURER		WIKA	
	50	MODEL		232.5 (WIKA)	

NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

NUMBER: 569-DB7A-AIC-712-006

CLIENT NR: PRD-AIC-DSH-0052

TITLE

SHEET: 11 de 30

MANOMETER

REV.: 2

GENERAL	1	INSTRUMENT TAG NUMBER		PI-960006	
	2	SERVICE		CHILLED WATER - SUPPLY BUILDING 7B MAMOUNT P-CH-7B-6	
	3	P&ID		7A-M-0-5-44	
	4	PIPE LINE	EQUIPMENT NUMBER	7A-10"-CW1S-960006-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 6)	
	9				
INSTRUMENT	10	TYPE OF MEASUREMENT		DIRECT	
	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	RANGE	RESOLUTION	0 @ 6 bar-g	0.1
	17	RING TYPE	RING MATERIAL	BAYONET	304SS
	18	CONEX. PROCES. / ACESS.	CONNECTION POSITION	1/2" NPT (M)	BOTTOM
	19	SENSOR TYPE	MATERIAL SENSOR	BOURDON	316SS
	20	MATERIAL SOQUETE	MECHANISM MATERIAL	316SS	316SS
	21	BALANCED POINTER		YES	
	22	MICROMETRIC ADJUSTMENT OF ZERO		YES	
	23	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%
	24	FILLING	FLUID	YES	GLYCERIN
ACCESSORIES	25	SEAL DIAPHRAGM		NOT REQUIRED	
	26	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	27	SEAL FILLING FLUID		NOT REQUIRED	
	28	WET PART MATERIAL		NOT REQUIRED	
	29	CAPILLARY LENGTH		NOT REQUIRED	
	30	CAPILLARY MATERIAL		NOT REQUIRED	
	31	PULSATION DAMPER		NOT REQUIRED	
	32	MATERIAL		NOT REQUIRED	
	33	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	34	SIPHON TUBE		NOT REQUIRED	
	35	MATERIAL		NOT REQUIRED	
	36	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	37	OVERPRESSURE PROTECTOR		NOT REQUIRED	
	38	MATERIAL		NOT REQUIRED	
	39	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	46	TAGGING		YES (SEE GENERAL NOTES 2)	
	40				
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATE	INDUSTRIAL WATER	LIQUID
	37	MINIMUM TEMPERATURE	NORMAL MAXIMUM	, 5.5	°C
	38	MINIMUM PRESSURE	NORMAL MAXIMUM	2	bar-g
	39	DESIGN PRESSURE	DESIGN TEMPERATURE	2.7 bar-g	42.5 °C
	40	VISCOSITY @ OPERATING CONDITION		cP	
	41	DENSITY @ OPERATING CONDITION		999.99 kg/m³	
	42	SUSPENDED SOLIDS (%)		NOT	
	43	SOLIDIFIES AT ROOM TEMPERATURE		NOT	
	44	M.M. / Z / Cp/Cv		... / ... / ...	
	49	MANUFACTURER		WIKA	
	50	MODEL		232.5 (WIKA)	





NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 			
NUMBER: 569-DB7A-AIC-712-006				CLIENT NR: PRD-AIC-DSH-0052			
TITLE						SHEET: 12 de 30	
MANOMETER						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER			PI-960007		
	2	SERVICE			CHILLED WATER - SUPPLY BUILDING 7B DOWNSTREAM P-CH-7B-6		
	3	P&ID			7A-M-0-5-44		
	4	PIPE LINE	EQUIPMENT NUMBER		7A-10"-CW1S-960007-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 6)		
	9						
INSTRUMENT	10	TYPE OF MEASUREMENT			DIRECT		
	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	RANGE	RESOLUTION		0 @ 6 bar-g	0.1	
	17	RING TYPE	RING MATERIAL		BAYONET	304SS	
	18	CONEX. PROCES. / ACESS.	CONNECTION POSITION		1/2" NPT (M)	BOTTOM	
	19	SENSOR TYPE	MATERIAL SENSOR		BOURDON	316SS	
	20	MATERIAL SOQUETE	MECHANISM MATERIAL		316SS	316SS	
	21	BALANCED POINTER			YES		
	22	MICROMETRIC ADJUSTMENT OF ZERO			YES		
	23	FRONT TYPE	WINDOWS		SOLID	GLASS SEG. TRANSP. MIN. 75%	
24	FILLING	FLUID		YES	GLYCERIN		
ACCESSORIES	25	SEAL DIAPHRAGM			NOT REQUIRED		
	26	CONNECTION INSTRUMENT	PROCESS CONNECTION		NOT REQUIRED	NOT REQUIRED	
	27	SEAL FILLING FLUID			NOT REQUIRED		
	28	WET PART MATERIAL			NOT REQUIRED		
	29	CAPILLARY LENGTH			NOT REQUIRED		
	30	CAPILLARY MATERIAL			NOT REQUIRED		
	31	PULSATION DAMPER			NOT REQUIRED		
	32	MATERIAL			NOT REQUIRED		
	33	CONNECTION INSTRUMENT	PROCESS CONNECTION		NOT REQUIRED	NOT REQUIRED	
	34	SIPHON TUBE			NOT REQUIRED		
	35	MATERIAL			NOT REQUIRED		
	36	CONNECTION INSTRUMENT	PROCESS CONNECTION		NOT REQUIRED	NOT REQUIRED	
	37	OVERPRESSURE PROTECTOR			NOT REQUIRED		
	38	MATERIAL			NOT REQUIRED		
	39	CONNECTION INSTRUMENT	PROCESS CONNECTION		NOT REQUIRED	NOT REQUIRED	
	46	TAGGING			YES (SEE GENERAL NOTES 2)		
40							
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATE		INDUSTRIAL WATER		LIQUID
	37	MINIMUM TEMPERATURE	NORMAL	MAXIMUM	,	5.5	°C
	38	MINIMUM PRESSURE	NORMAL	MAXIMUM		2	bar-g
	39	DESIGN PRESSURE	DESIGN TEMPERATURE		2.7 bar-g		42.5 °C
	40	VISCOSITY @ OPERATING CONDITION			cP		
	41	DENSITY @ OPERATING CONDITION			999.99 kg/m³		
	42	SUSPENDED SOLIDS (%)			NOT		
	43	SOLIDIFIES AT ROOM TEMPERATURE			NOT		
44	M.M. / Z / Cp/Cv			... / ... / ...			
49	MANUFACTURER			WIKA			
50	MODEL			232.5 (WIKA)			





NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 			
NUMBER: 569-DB7A-AIC-712-006				CLIENT NR: PRD-AIC-DSH-0052			
TITLE						SHEET: 13 de 30	
MANOMETER						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER			PI-960030		
	2	SERVICE			CHILLED WATER - RETURN BUILDING 7A/B MAMOUNT P-CH-7A-1		
	3	P&ID			7A-M-0-5-43		
	4	PIPE LINE	EQUIPMENT NUMBER		7A-10"-CW1R-960030-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 6)		
	9						
INSTRUMENT	10	TYPE OF MEASUREMENT			DIRECT		
	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	RANGE	RESOLUTION		0 @ 1 bar-g	0.01	
	17	RING TYPE	RING MATERIAL		BAYONET	304SS	
	18	CONEX. PROCES. / ACESS.	CONNECTION POSITION		1/2" NPT (M)	BOTTOM	
	19	SENSOR TYPE	MATERIAL SENSOR		BOURDON	316SS	
	20	MATERIAL SOQUETE	MECHANISM MATERIAL		316SS	316SS	
	21	BALANCED POINTER			YES		
	22	MICROMETRIC ADJUSTMENT OF ZERO			YES		
	23	FRONT TYPE	WINDOWS		SOLID	GLASS SEG. TRANSP. MIN. 75%	
24	FILLING	FLUID		YES	GLYCERIN		
ACCESSORIES	25	SEAL DIAPHRAGM			NOT REQUIRED		
	26	CONNECTION INSTRUMENT	PROCESS CONNECTION		NOT REQUIRED	NOT REQUIRED	
	27	SEAL FILLING FLUID			NOT REQUIRED		
	28	WET PART MATERIAL			NOT REQUIRED		
	29	CAPILLARY LENGTH			NOT REQUIRED		
	30	CAPILLARY MATERIAL			NOT REQUIRED		
	31	PULSATION DAMPER			NOT REQUIRED		
	32	MATERIAL			NOT REQUIRED		
	33	CONNECTION INSTRUMENT	PROCESS CONNECTION		NOT REQUIRED	NOT REQUIRED	
	34	SIPHON TUBE			NOT REQUIRED		
	35	MATERIAL			NOT REQUIRED		
	36	CONNECTION INSTRUMENT	PROCESS CONNECTION		NOT REQUIRED	NOT REQUIRED	
	37	OVERPRESSURE PROTECTOR			YES		
	38	MATERIAL			316SS		
	39	CONNECTION INSTRUMENT	PROCESS CONNECTION		1/2"NPT (F)	1/2"NPT (M)	
	46	TAGGING			YES (SEE GENERAL NOTES 2)		
40							
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATE		INDUSTRIAL WATER		LIQUID
	37	MINIMUM TEMPERATURE	NORMAL	MAXIMUM	,	12.5	°C
	38	MINIMUM PRESSURE	NORMAL	MAXIMUM		0.4	bar-g
	39	DESIGN PRESSURE	DESIGN TEMPERATURE		4.2 bar-g		42.5 °C
	40	VISCOSITY @ OPERATING CONDITION			cP		
	41	DENSITY @ OPERATING CONDITION			999.99 kg/m³		
	42	SUSPENDED SOLIDS (%)			NOT		
	43	SOLIDIFIES AT ROOM TEMPERATURE			NOT		
	44	M.M. / Z / Cp/Cv		 / /		
49	MANUFACTURER			WIKA			
50	MODEL			232.5 (WIKA)			

NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

   					
NUMBER: 569-DB7A-AIC-712-006			CLIENT NR: PRD-AIC-DSH-0052		
TITLE				SHEET: 14 de 30	
MANOMETER				REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER		PI-960040	
	2	SERVICE		CHILLED WATER - RETURN BUILDING 7A/B MAMOUNT P-CH-7A-2	
	3	P&ID		7A-M-0-5-43	
	4	PIPE LINE	EQUIPMENT NUMBER	7A-10"-CW1R-960040-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 6)	
	9				
INSTRUMENT	10	TYPE OF MEASUREMENT		DIRECT	
	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	RANGE	RESOLUTION	0 @ 1 bar-g	0.01
	17	RING TYPE	RING MATERIAL	BAYONET	304SS
	18	CONEX. PROCES. / ACESS.	CONNECTION POSITION	1/2" NPT (M)	BOTTOM
	19	SENSOR TYPE	MATERIAL SENSOR	BOURDON	316SS
	20	MATERIAL SOQUETE	MECHANISM MATERIAL	316SS	316SS
	21	BALANCED POINTER		YES	
	22	MICROMETRIC ADJUSTMENT OF ZERO		YES	
	23	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%
ACCESSORIES	24	FILLING	FLUID	YES	GLYCERIN
	25	SEAL DIAPHRAGM		NOT REQUIRED	
	26	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	27	SEAL FILLING FLUID		NOT REQUIRED	
	28	WET PART MATERIAL		NOT REQUIRED	
	29	CAPILLARY LENGTH		NOT REQUIRED	
	30	CAPILLARY MATERIAL		NOT REQUIRED	
	31	PULSATION DAMPER		NOT REQUIRED	
	32	MATERIAL		NOT REQUIRED	
	33	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	34	SIPHON TUBE		NOT REQUIRED	
	35	MATERIAL		NOT REQUIRED	
	36	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	37	OVERPRESSURE PROTECTOR		YES	
	38	MATERIAL		316SS	
	OPERATING CONDITIONS	39	CONNECTION INSTRUMENT	PROCESS CONNECTION	1/2"NPT (F)
40		TAGGING		YES (SEE GENERAL NOTES 2)	
41					
36		FLUID	PHYSICAL STATE	INDUSTRIAL WATER	LIQUID
37		MINIMUM TEMPERATURE	NORMAL	MAXIMUM	°C
38		MINIMUM PRESSURE	NORMAL	MAXIMUM	bar-g
39		DESIGN PRESSURE	DESIGN TEMPERATURE	4.2 bar-g	42.5 °C
40		VISCOSITY @ OPERATING CONDITION		cP	
41		DENSITY @ OPERATING CONDITION		999.99 kg/m³	
42		SUSPENDED SOLIDS (%)		NOT	
43		SOLIDIFIES AT ROOM TEMPERATURE		NOT	
44		M.M. / Z / Cp/Cv		... / ... / ...	
49	MANUFACTURER		WIKA		
50	MODEL		232.5 (WIKA)		

NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

NUMBER: **569-DB7A-AIC-712-006**

CLIENT NR: **PRD-AIC-DSH-0052**

TITLE

SHEET:

15 de 30

MANOMETER





REV.:

2

GENERAL	1	INSTRUMENT TAG NUMBER		PI-960050	
	2	SERVICE		CHILLED WATER - RETURN BUILDING 7A/B DOWNSTREAM P-CH-7A-1	
	3	P&ID		7A-M-0-5-43	
	4	PIPE LINE	EQUIPMENT NUMBER	7A-10"-CW1R-960050-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 6)	
	9				
INSTRUMENT	10	TYPE OF MEASUREMENT		DIRECT	
	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	RANGE	RESOLUTION	0 @ 4 bar-g	0.05
	17	RING TYPE	RING MATERIAL	BAYONET	304SS
	18	CONEX. PROCES. / ACESS.	CONNECTION POSITION	1/2" NPT (M)	BOTTOM
	19	SENSOR TYPE	MATERIAL SENSOR	BOURDON	316SS
	20	MATERIAL SOQUETE	MECHANISM MATERIAL	316SS	316SS
	21	BALANCED POINTER		YES	
	22	MICROMETRIC ADJUSTMENT OF ZERO		YES	
	23	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%
	24	FILLING	FLUID	YES	GLYCERIN
ACCESSORIES	25	SEAL DIAPHRAGM		NOT REQUIRED	
	26	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	27	SEAL FILLING FLUID		NOT REQUIRED	
	28	WET PART MATERIAL		NOT REQUIRED	
	29	CAPILLARY LENGTH		NOT REQUIRED	
	30	CAPILLARY MATERIAL		NOT REQUIRED	
	31	PULSATION DAMPER		NOT REQUIRED	
	32	MATERIAL		NOT REQUIRED	
	33	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	34	SIPHON TUBE		NOT REQUIRED	
	35	MATERIAL		NOT REQUIRED	
	36	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	37	OVERPRESSURE PROTECTOR		NOT REQUIRED	
	38	MATERIAL		NOT REQUIRED	
	39	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	40	TAGGING		YES (SEE GENERAL NOTES 2)	
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATE	INDUSTRIAL WATER	LIQUID
	37	MINIMUM TEMPERATURE	NORMAL MAXIMUM	, 12.5	°C
	38	MINIMUM PRESSURE	NORMAL MAXIMUM	2.1	bar-g
	39	DESIGN PRESSURE	DESIGN TEMPERATURE	2.7 bar-g	42.5 °C
	40	VISCOSITY @ OPERATING CONDITION		cP	
	41	DENSITY @ OPERATING CONDITION		999.99 kg/m³	
	42	SUSPENDED SOLIDS (%)		NOT	
	43	SOLIDIFIES AT ROOM TEMPERATURE		NOT	
	44	M.M. / Z / Cp/Cv		... / ... / ...	
	49	MANUFACTURER		WIKA	
	50	MODEL		232.5 (WIKA)	

NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 			
NUMBER: 569-DB7A-AIC-712-006				CLIENT NR: PRD-AIC-DSH-0052			
TITLE						SHEET: 16 de 30	
MANOMETER						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER			PI-960051		
	2	SERVICE			CHILLED WATER - RETURN BUILDING 7A/B DOWNSTREAM P-CH-7A-2		
	3	P&ID			7A-M-0-5-43		
	4	PIPE LINE	EQUIPMENT NUMBER		7A-10"-CW1R-960051-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 6)		
	9						
INSTRUMENT	10	TYPE OF MEASUREMENT			DIRECT		
	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	RANGE	RESOLUTION		0 @ 4 bar-g	0.05	
	17	RING TYPE	RING MATERIAL		BAYONET	304SS	
	18	CONEX. PROCES. / ACESS.	CONNECTION POSITION		1/2" NPT (M)	BOTTOM	
	19	SENSOR TYPE	MATERIAL SENSOR		BOURDON	316SS	
	20	MATERIAL SOQUETE	MECHANISM MATERIAL		316SS	316SS	
	21	BALANCED POINTER			YES		
	22	MICROMETRIC ADJUSTMENT OF ZERO			YES		
	23	FRONT TYPE	WINDOWS		SOLID	GLASS SEG. TRANSP. MIN. 75%	
24	FILLING	FLUID		YES	GLYCERIN		
ACCESSORIES	25	SEAL DIAPHRAGM			NOT REQUIRED		
	26	CONNECTION INSTRUMENT	PROCESS CONNECTION		NOT REQUIRED	NOT REQUIRED	
	27	SEAL FILLING FLUID			NOT REQUIRED		
	28	WET PART MATERIAL			NOT REQUIRED		
	29	CAPILLARY LENGTH			NOT REQUIRED		
	30	CAPILLARY MATERIAL			NOT REQUIRED		
	31	PULSATION DAMPER			NOT REQUIRED		
	32	MATERIAL			NOT REQUIRED		
	33	CONNECTION INSTRUMENT	PROCESS CONNECTION		NOT REQUIRED	NOT REQUIRED	
	34	SIPHON TUBE			NOT REQUIRED		
	35	MATERIAL			NOT REQUIRED		
	36	CONNECTION INSTRUMENT	PROCESS CONNECTION		NOT REQUIRED	NOT REQUIRED	
	37	OVERPRESSURE PROTECTOR			NOT REQUIRED		
	38	MATERIAL			NOT REQUIRED		
	39	CONNECTION INSTRUMENT	PROCESS CONNECTION		NOT REQUIRED	NOT REQUIRED	
	46	TAGGING			YES (SEE GENERAL NOTES 2)		
40							
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATE		INDUSTRIAL WATER		LIQUID
	37	MINIMUM TEMPERATURE	NORMAL	MAXIMUM	,	12.5	°C
	38	MINIMUM PRESSURE	NORMAL	MAXIMUM		2.1	bar-g
	39	DESIGN PRESSURE	DESIGN TEMPERATURE		2.7 bar-g		42.5 °C
	40	VISCOSITY @ OPERATING CONDITION			cP		
	41	DENSITY @ OPERATING CONDITION			999.99 kg/m³		
	42	SUSPENDED SOLIDS (%)			NOT		
	43	SOLIDIFIES AT ROOM TEMPERATURE			NOT		
	44	M.M. / Z / Cp/Cv			... / ... / ...		
	49	MANUFACTURER			WIKA		
50	MODEL			232.5 (WIKA)			

NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

NUMBER: 569-DB7A-AIC-712-006

CLIENT NR: PRD-AIC-DSH-0052

TITLE

SHEET: 17 de 30

MANOMETER

REV.: 2

GENERAL	1	INSTRUMENT TAG NUMBER		PI-960052	
	2	SERVICE		CHILLED WATER - RETURN BUILDING 7A/B DOWNSTREAM P-CH-7A-3	
	3	P&ID		7A-M-0-5-43	
	4	PIPE LINE	EQUIPMENT NUMBER	7A-10"-CW1R-960052-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 6)	
	9				
INSTRUMENT	10	TYPE OF MEASUREMENT		DIRECT	
	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	RANGE	RESOLUTION	0 @ 4 bar-g	0.05
	17	RING TYPE	RING MATERIAL	BAYONET	304SS
	18	CONEX. PROCES. / ACESS.	CONNECTION POSITION	1/2" NPT (M)	BOTTOM
	19	SENSOR TYPE	MATERIAL SENSOR	BOURDON	316SS
	20	MATERIAL SOQUETE	MECHANISM MATERIAL	316SS	316SS
	21	BALANCED POINTER		YES	
	22	MICROMETRIC ADJUSTMENT OF ZERO		YES	
	23	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%
	24	FILLING	FLUID	YES	GLYCERIN
ACCESSORIES	25	SEAL DIAPHRAGM		NOT REQUIRED	
	26	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	27	SEAL FILLING FLUID		NOT REQUIRED	
	28	WET PART MATERIAL		NOT REQUIRED	
	29	CAPILLARY LENGTH		NOT REQUIRED	
	30	CAPILLARY MATERIAL		NOT REQUIRED	
	31	PULSATION DAMPER		NOT REQUIRED	
	32	MATERIAL		NOT REQUIRED	
	33	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	34	SIPHON TUBE		NOT REQUIRED	
	35	MATERIAL		NOT REQUIRED	
	36	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	37	OVERPRESSURE PROTECTOR		NOT REQUIRED	
	38	MATERIAL		NOT REQUIRED	
	39	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	46	TAGGING		YES (SEE GENERAL NOTES 2)	
	40				
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATE	INDUSTRIAL WATER	LIQUID
	37	MINIMUM TEMPERATURE	NORMAL MAXIMUM	, 12.5	°C
	38	MINIMUM PRESSURE	NORMAL MAXIMUM	2.1	bar-g
	39	DESIGN PRESSURE	DESIGN TEMPERATURE	2.7 bar-g	42.5 °C
	40	VISCOSITY @ OPERATING CONDITION		cP	
	41	DENSITY @ OPERATING CONDITION		999.99 kg/m³	
	42	SUSPENDED SOLIDS (%)		NOT	
	43	SOLIDIFIES AT ROOM TEMPERATURE		NOT	
	44	M.M. / Z / Cp/Cv		... / ... / ...	
	49	MANUFACTURER		WIKA	
	50	MODEL		232.5 (WIKA)	

NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

NUMBER: **569-DB7A-AIC-712-006**

CLIENT NR: **PRD-AIC-DSH-0052**

TITLE

SHEET:

18 de 30
MANOMETER





REV.:

2

GENERAL	1	INSTRUMENT TAG NUMBER		PI-960053	
	2	SERVICE		CHILLED WATER - SUPPLY BUILDING 7A MAMOUNT P-CH-7A-5	
	3	P&ID		7A-M-0-5-44	
	4	PIPE LINE	EQUIPMENT NUMBER	7A-10"-CW1S-960053-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 6)	
	9				
INSTRUMENT	10	TYPE OF MEASUREMENT		DIRECT	
	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	RANGE	RESOLUTION	0 @ 1 bar-g	0.01
	17	RING TYPE	RING MATERIAL	BAYONET	304SS
	18	CONEX. PROCES. / ACESS.	CONNECTION POSITION	1/2" NPT (M)	BOTTOM
	19	SENSOR TYPE	MATERIAL SENSOR	BOURDON	316SS
	20	MATERIAL SOQUETE	MECHANISM MATERIAL	316SS	316SS
	21	BALANCED POINTER		YES	
	22	MICROMETRIC ADJUSTMENT OF ZERO		YES	
	23	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%
	24	FILLING	FLUID	YES	GLYCERIN
ACCESSORIES	25	SEAL DIAPHRAGM		NOT REQUIRED	
	26	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	27	SEAL FILLING FLUID		NOT REQUIRED	
	28	WET PART MATERIAL		NOT REQUIRED	
	29	CAPILLARY LENGTH		NOT REQUIRED	
	30	CAPILLARY MATERIAL		NOT REQUIRED	
	31	PULSATION DAMPER		NOT REQUIRED	
	32	MATERIAL		NOT REQUIRED	
	33	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	34	SIPHON TUBE		NOT REQUIRED	
	35	MATERIAL		NOT REQUIRED	
	36	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	37	OVERPRESSURE PROTECTOR		YES	
	38	MATERIAL		316SS	
	39	CONNECTION INSTRUMENT	PROCESS CONNECTION	1/2"NPT (F)	1/2"NPT (M)
	46	TAGGING		YES (SEE GENERAL NOTES 2)	
	40				
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATE	INDUSTRIAL WATER	LIQUID
	37	MINIMUM TEMPERATURE	NORMAL MAXIMUM	, 5.5	°C
	38	MINIMUM PRESSURE	NORMAL MAXIMUM	0.4	bar-g
	39	DESIGN PRESSURE	DESIGN TEMPERATURE	2.7 bar-g	42.5 °C
	40	VISCOSITY @ OPERATING CONDITION		cP	
	41	DENSITY @ OPERATING CONDITION		999.99 kg/m³	
	42	SUSPENDED SOLIDS (%)		NOT	
	43	SOLIDIFIES AT ROOM TEMPERATURE		NOT	
	44	M.M. / Z / Cp/Cv		... / ... / ...	
	49	MANUFACTURER		WIKA	
	50	MODEL		232.5 (WIKA)	





NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 			
NUMBER: 569-DB7A-AIC-712-006				CLIENT NR: PRD-AIC-DSH-0052			
TITLE						SHEET: 19 de 30	
MANOMETER						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER			PI-960054		
	2	SERVICE			CHILLED WATER - SUPPLY BUILDING 7A DOWNSTREAM P-CH-7A-5		
	3	P&ID			7A-M-0-5-44		
	4	PIPE LINE	EQUIPMENT NUMBER		7A-8"-CW1S-960054-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 6)		
	9						
INSTRUMENT	10	TYPE OF MEASUREMENT			DIRECT		
	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	RANGE	RESOLUTION		0 @ 6 bar-g	0.1	
	17	RING TYPE	RING MATERIAL		BAYONET	304SS	
	18	CONEX. PROCES. / ACESS.	CONNECTION POSITION		1/2" NPT (M)	BOTTOM	
	19	SENSOR TYPE	MATERIAL SENSOR		BOURDON	316SS	
	20	MATERIAL SOQUETE	MECHANISM MATERIAL		316SS	316SS	
	21	BALANCED POINTER			YES		
	22	MICROMETRIC ADJUSTMENT OF ZERO			YES		
	23	FRONT TYPE	WINDOWS		SOLID	GLASS SEG. TRANSP. MIN. 75%	
24	FILLING	FLUID		YES	GLYCERIN		
ACCESSORIES	25	SEAL DIAPHRAGM			NOT REQUIRED		
	26	CONNECTION INSTRUMENT	PROCESS CONNECTION		NOT REQUIRED	NOT REQUIRED	
	27	SEAL FILLING FLUID			NOT REQUIRED		
	28	WET PART MATERIAL			NOT REQUIRED		
	29	CAPILLARY LENGTH			NOT REQUIRED		
	30	CAPILLARY MATERIAL			NOT REQUIRED		
	31	PULSATION DAMPER			NOT REQUIRED		
	32	MATERIAL			NOT REQUIRED		
	33	CONNECTION INSTRUMENT	PROCESS CONNECTION		NOT REQUIRED	NOT REQUIRED	
	34	SIPHON TUBE			NOT REQUIRED		
	35	MATERIAL			NOT REQUIRED		
	36	CONNECTION INSTRUMENT	PROCESS CONNECTION		NOT REQUIRED	NOT REQUIRED	
	37	OVERPRESSURE PROTECTOR			NOT REQUIRED		
	38	MATERIAL			NOT REQUIRED		
	39	CONNECTION INSTRUMENT	PROCESS CONNECTION		NOT REQUIRED	NOT REQUIRED	
	46	TAGGING			YES (SEE GENERAL NOTES 2)		
40							
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATE		INDUSTRIAL WATER		LIQUID
	37	MINIMUM TEMPERATURE	NORMAL	MAXIMUM	,	5.5	°C
	38	MINIMUM PRESSURE	NORMAL	MAXIMUM		2.4	bar-g
	39	DESIGN PRESSURE	DESIGN TEMPERATURE		4.2 bar-g		42.5 °C
	40	VISCOSITY @ OPERATING CONDITION			cP		
	41	DENSITY @ OPERATING CONDITION			999.99 kg/m³		
	42	SUSPENDED SOLIDS (%)			NOT		
	43	SOLIDIFIES AT ROOM TEMPERATURE			NOT		
44	M.M. / Z / Cp/Cv		 / /			
49	MANUFACTURER			WIKA			
50	MODEL			232.5 (WIKA)			

NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

 				 			
NUMBER: 569-DB7A-AIC-712-006				CLIENT NR: PRD-AIC-DSH-0052			
TITLE						SHEET: 20 de 30	
MANOMETER						REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER			PI-960055		
	2	SERVICE			CHILLED WATER - SUPPLY BUILDING 7B MAMOUNT P-CH-7B-7		
	3	P&ID			7A-M-0-5-44		
	4	PIPE LINE	EQUIPMENT NUMBER		7A-10"-CW1S-960055-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 6)		
	9						
INSTRUMENT	10	TYPE OF MEASUREMENT			DIRECT		
	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	RANGE	RESOLUTION		0 @ 6 bar-g	0.1	
	17	RING TYPE	RING MATERIAL		BAYONET	304SS	
	18	CONEX. PROCES. / ACESS.	CONNECTION POSITION		1/2" NPT (M)	BOTTOM	
	19	SENSOR TYPE	MATERIAL SENSOR		BOURDON	316SS	
	20	MATERIAL SOQUETE	MECHANISM MATERIAL		316SS	316SS	
	21	BALANCED POINTER			YES		
	22	MICROMETRIC ADJUSTMENT OF ZERO			YES		
	23	FRONT TYPE	WINDOWS		SOLID	GLASS SEG. TRANSP. MIN. 75%	
24	FILLING	FLUID		YES	GLYCERIN		
ACCESSORIES	25	SEAL DIAPHRAGM			NOT REQUIRED		
	26	CONNECTION INSTRUMENT	PROCESS CONNECTION		NOT REQUIRED	NOT REQUIRED	
	27	SEAL FILLING FLUID			NOT REQUIRED		
	28	WET PART MATERIAL			NOT REQUIRED		
	29	CAPILLARY LENGTH			NOT REQUIRED		
	30	CAPILLARY MATERIAL			NOT REQUIRED		
	31	PULSATION DAMPER			NOT REQUIRED		
	32	MATERIAL			NOT REQUIRED		
	33	CONNECTION INSTRUMENT	PROCESS CONNECTION		NOT REQUIRED	NOT REQUIRED	
	34	SIPHON TUBE			NOT REQUIRED		
	35	MATERIAL			NOT REQUIRED		
	36	CONNECTION INSTRUMENT	PROCESS CONNECTION		NOT REQUIRED	NOT REQUIRED	
	37	OVERPRESSURE PROTECTOR			NOT REQUIRED		
	38	MATERIAL			NOT REQUIRED		
	39	CONNECTION INSTRUMENT	PROCESS CONNECTION		NOT REQUIRED	NOT REQUIRED	
	40	TAGGING			YES (SEE GENERAL NOTES 2)		
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATE		INDUSTRIAL WATER		LIQUID
	37	MINIMUM TEMPERATURE	NORMAL	MAXIMUM	,	5.5	°C
	38	MINIMUM PRESSURE	NORMAL	MAXIMUM		2.4	bar-g
	39	DESIGN PRESSURE	DESIGN TEMPERATURE		4.2 bar-g		42.5 °C
	40	VISCOSITY @ OPERATING CONDITION			cP		
	41	DENSITY @ OPERATING CONDITION			999.99 kg/m³		
	42	SUSPENDED SOLIDS (%)			NOT		
	43	SOLIDIFIES AT ROOM TEMPERATURE			NOT		
	44	M.M. / Z / Cp/Cv			... / ... / ...		
	49	MANUFACTURER			WIKA		
50	MODEL			232.5 (WIKA)			

NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

NUMBER: **569-DB7A-AIC-712-006**

CLIENT NR: **PRD-AIC-DSH-0052**

TITLE



SHEET:
21 de 30
MANOMETER

REV.:
2

GENERAL	1	INSTRUMENT TAG NUMBER		PI-960056	
	2	SERVICE		CHILLED WATER - SUPPLY BUILDING 7B DOWNSTREAM P-CH-7B-7	
	3	P&ID		7A-M-0-5-44	
	4	PIPE LINE	EQUIPMENT NUMBER	7A-10"-CW1S-960056-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 6)	
	9				
INSTRUMENT	10	TYPE OF MEASUREMENT		DIRECT	
	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	RANGE	RESOLUTION	0 @ 6 bar-g	0.1
	17	RING TYPE	RING MATERIAL	BAYONET	304SS
	18	CONEX. PROCES. / ACESS.	CONNECTION POSITION	1/2" NPT (M)	BOTTOM
	19	SENSOR TYPE	MATERIAL SENSOR	BOURDON	316SS
	20	MATERIAL SOQUETE	MECHANISM MATERIAL	316SS	316SS
	21	BALANCED POINTER		YES	
	22	MICROMETRIC ADJUSTMENT OF ZERO		YES	
	23	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%
	24	FILLING	FLUID	YES	GLYCERIN
ACCESSORIES	25	SEAL DIAPHRAGM		NOT REQUIRED	
	26	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	27	SEAL FILLING FLUID		NOT REQUIRED	
	28	WET PART MATERIAL		NOT REQUIRED	
	29	CAPILLARY LENGTH		NOT REQUIRED	
	30	CAPILLARY MATERIAL		NOT REQUIRED	
	31	PULSATION DAMPER		NOT REQUIRED	
	32	MATERIAL		NOT REQUIRED	
	33	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	34	SIPHON TUBE		NOT REQUIRED	
	35	MATERIAL		NOT REQUIRED	
	36	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	37	OVERPRESSURE PROTECTOR		NOT REQUIRED	
	38	MATERIAL		NOT REQUIRED	
	39	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	46	TAGGING		YES (SEE GENERAL NOTES 2)	
	40				
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATE	INDUSTRIAL WATER	LIQUID
	37	MINIMUM TEMPERATURE	NORMAL MAXIMUM	, 5.5	°C
	38	MINIMUM PRESSURE	NORMAL MAXIMUM	2.4	bar-g
	39	DESIGN PRESSURE	DESIGN TEMPERATURE	4.2 bar-g	42.5 °C
	40	VISCOSITY @ OPERATING CONDITION		cP	
	41	DENSITY @ OPERATING CONDITION		999.99 kg/m³	
	42	SUSPENDED SOLIDS (%)		NOT	
	43	SOLIDIFIES AT ROOM TEMPERATURE		NOT	
	44	M.M. / Z / Cp/Cv		... / ... / ...	
	49	MANUFACTURER		WIKA	
	50	MODEL		232.5 (WIKA)	

NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

   					
NUMBER: 569-DB7A-AIC-712-006			CLIENT NR: PRD-AIC-DSH-0052		
TITLE				SHEET: 22 de 30	
MANOMETER				REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER		PI-960058	
	2	SERVICE		CHILLED WATER - RETURN BUILDING 7A/B MAMOUNT P-CH-7A-3	
	3	P&ID		7A-M-0-5-43	
	4	PIPE LINE	EQUIPMENT NUMBER	7A-10"-CW1R-960057-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 6)	
	9				
INSTRUMENT	10	TYPE OF MEASUREMENT		DIRECT	
	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	RANGE	RESOLUTION	0 @ 1 bar-g	0.01
	17	RING TYPE	RING MATERIAL	BAYONET	304SS
	18	CONEX. PROCES. / ACESS.	CONNECTION POSITION	1/2" NPT (M)	BOTTOM
	19	SENSOR TYPE	MATERIAL SENSOR	BOURDON	316SS
	20	MATERIAL SOQUETE	MECHANISM MATERIAL	316SS	316SS
	21	BALANCED POINTER		YES	
	22	MICROMETRIC ADJUSTMENT OF ZERO		YES	
	23	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%
ACCESSORIES	24	FILLING	FLUID	YES	GLYCERIN
	25	SEAL DIAPHRAGM		NOT REQUIRED	
	26	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	27	SEAL FILLING FLUID		NOT REQUIRED	
	28	WET PART MATERIAL		NOT REQUIRED	
	29	CAPILLARY LENGTH		NOT REQUIRED	
	30	CAPILLARY MATERIAL		NOT REQUIRED	
	31	PULSATION DAMPER		NOT REQUIRED	
	32	MATERIAL		NOT REQUIRED	
	33	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	34	SIPHON TUBE		NOT REQUIRED	
	35	MATERIAL		NOT REQUIRED	
	36	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	37	OVERPRESSURE PROTECTOR		YES	
	38	MATERIAL		316SS	
	OPERATING CONDITIONS	39	CONNECTION INSTRUMENT	PROCESS CONNECTION	1/2"NPT (F)
40		TAGGING		YES (SEE GENERAL NOTES 2)	
41					
36		FLUID	PHYSICAL STATE	INDUSTRIAL WATER	LIQUID
37		MINIMUM TEMPERATURE	NORMAL	MAXIMUM	°C
38		MINIMUM PRESSURE	NORMAL	MAXIMUM	bar-g
39		DESIGN PRESSURE	DESIGN TEMPERATURE	4.2 bar-g	42.5 °C
40		VISCOSITY @ OPERATING CONDITION		cP	
41		DENSITY @ OPERATING CONDITION		999.99 kg/m³	
42		SUSPENDED SOLIDS (%)		NOT	
43		SOLIDIFIES AT ROOM TEMPERATURE		NOT	
44		M.M. / Z / Cp/Cv		... / ... / ...	
49	MANUFACTURER		WIKA		
50	MODEL		232.5 (WIKA)		

NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

NUMBER: **569-DB7A-AIC-712-006**

CLIENT NR: **PRD-AIC-DSH-0052**

TITLE

SHEET:
23 de 30

MANOMETER

REV.:
2

GENERAL	1	INSTRUMENT TAG NUMBER		PI-980063	
	2	SERVICE		PRESSURE AT PRIMARY PUMP INLET	
	3	P&ID		7A-M-0-5-45	
	4	PIPE LINE	EQUIPMENT NUMBER	7A-6"-GW0R-980063-CS1-CC	P-PCH-7A-1
	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 6)	
	9				
INSTRUMENT	10	TYPE OF MEASUREMENT		DIRECT	
	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	RANGE	RESOLUTION	-0.6 @ 1 bar-g	0.02
	17	RING TYPE	RING MATERIAL	BAYONET	304SS
	18	CONEX. PROCES. / ACESS.	CONNECTION POSITION	1/2" NPT (M)	BOTTOM
	19	SENSOR TYPE	MATERIAL SENSOR	BOURDON	316SS
	20	MATERIAL SOQUETE	MECHANISM MATERIAL	316SS	316SS
	21	BALANCED POINTER		YES	
	22	MICROMETRIC ADJUSTMENT OF ZERO		YES	
	23	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%
	24	FILLING	FLUID	YES	GLYCERIN
ACCESSORIES	25	SEAL DIAPHRAGM		NOT REQUIRED	
	26	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	27	SEAL FILLING FLUID		NOT REQUIRED	
	28	WET PART MATERIAL		NOT REQUIRED	
	29	CAPILLARY LENGTH		NOT REQUIRED	
	30	CAPILLARY MATERIAL		NOT REQUIRED	
	31	PULSATION DAMPER		NOT REQUIRED	
	32	MATERIAL		NOT REQUIRED	
	33	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	34	SIPHON TUBE		NOT REQUIRED	
	35	MATERIAL		NOT REQUIRED	
	36	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	37	OVERPRESSURE PROTECTOR		YES	
	38	MATERIAL		316SS	
	39	CONNECTION INSTRUMENT	PROCESS CONNECTION	1/2" NPT (F)	1/2" NPT (M)
	46	TAGGING		YES (SEE GENERAL NOTES 2)	
	40				
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATE	CHILLED WATER (NOTE 2)	LIQUID
	37	MINIMUM TEMPERATURE	NORMAL MAXIMUM	- 5.1	9.1 °C
	38	MINIMUM PRESSURE	NORMAL MAXIMUM	0 0.1	bar-g
	39	DESIGN PRESSURE	DESIGN TEMPERATURE	2.0 bar-g	39.1 °C
	40	VISCOSITY @ OPERATING CONDITION		cP	
	41	DENSITY @ OPERATING CONDITION		1000 kg/m³	
	42	SUSPENDED SOLIDS (%)		-	
	43	SOLIDIFIES AT ROOM TEMPERATURE		-	
	44	M.M. / Z / Cp/Cv	 / /	
	49	MANUFACTURER		WIKA	
	50	MODEL		232.5 (WIKA)	

NOTES:

- 1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.
- 2- THE INSTRUMENT SHALL BE PREPARED TO OPERATE WITH PROPYLENE GLICOL 10% IF REQUIRED.

NUMBER: 569-DB7A-AIC-712-006

CLIENT NR: PRD-AIC-DSH-0052

TITLE

SHEET:
24 de 30

MANOMETER

REV.:
2

GENERAL	1	INSTRUMENT TAG NUMBER		PI-980064	
	2	SERVICE		PRESSURE AT PRIMARY PUMP INLET	
	3	P&ID		7A-M-0-5-45	
	4	PIPE LINE	EQUIPMENT NUMBER	7A-6"-GW0R-980064-CS1-CC	P-PCH-7A-2
	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 6)	
	9				
INSTRUMENT	10	TYPE OF MEASUREMENT		DIRECT	
	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	RANGE	RESOLUTION	-0.6 @ 1 bar-g	0.02
	17	RING TYPE	RING MATERIAL	BAYONET	304SS
	18	CONEX. PROCES. / ACESS.	CONNECTION POSITION	1/2" NPT (M)	BOTTOM
	19	SENSOR TYPE	MATERIAL SENSOR	BOURDON	316SS
	20	MATERIAL SOQUETE	MECHANISM MATERIAL	316SS	316SS
	21	BALANCED POINTER		YES	
	22	MICROMETRIC ADJUSTMENT OF ZERO		YES	
	23	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%
	24	FILLING	FLUID	YES	GLYCERIN
ACCESSORIES	25	SEAL DIAPHRAGM		NOT REQUIRED	
	26	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	27	SEAL FILLING FLUID		NOT REQUIRED	
	28	WET PART MATERIAL		NOT REQUIRED	
	29	CAPILLARY LENGTH		NOT REQUIRED	
	30	CAPILLARY MATERIAL		NOT REQUIRED	
	31	PULSATION DAMPER		NOT REQUIRED	
	32	MATERIAL		NOT REQUIRED	
	33	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	34	SIPHON TUBE		NOT REQUIRED	
	35	MATERIAL		NOT REQUIRED	
	36	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	37	OVERPRESSURE PROTECTOR		YES	
	38	MATERIAL		316SS	
	39	CONNECTION INSTRUMENT	PROCESS CONNECTION	1/2" NPT (F)	1/2" NPT (M)
	46	TAGGING		YES (SEE GENERAL NOTES 2)	
	40				
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATE	CHILLED WATER (NOTE 2)	LIQUID
	37	MINIMUM TEMPERATURE	NORMAL MAXIMUM	- 5.1	9.1 °C
	38	MINIMUM PRESSURE	NORMAL MAXIMUM	0 0.1	bar-g
	39	DESIGN PRESSURE	DESIGN TEMPERATURE	2.0 bar-g	39.1 °C
	40	VISCOSITY @ OPERATING CONDITION		cP	
	41	DENSITY @ OPERATING CONDITION		1000 kg/m³	
	42	SUSPENDED SOLIDS (%)		-	
	43	SOLIDIFIES AT ROOM TEMPERATURE		-	
	44	M.M. / Z / Cp/Cv	 / /	
	49	MANUFACTURER		WIKA	
	50	MODEL		232.5 (WIKA)	

NOTES:

- PROVIDE REAR PROTECTION DISC IN NEOPRENE.
- THE INSTRUMENT SHALL BE PREPARED TO OPERATE WITH PROPYLENE GLICOL 10% IF REQUIRED.

NUMBER: **569-DB7A-AIC-712-006**

CLIENT NR: **PRD-AIC-DSH-0052**

TITLE

SHEET:
25 de 30

MANOMETER



REV.:
2

GENERAL	1	INSTRUMENT TAG NUMBER		PI-980068	
	2	SERVICE		PRESSURE AT PRIMARY PUMP DISCHARGE	
	3	P&ID		7A-M-0-5-45	
	4	PIPE LINE	EQUIPMENT NUMBER	7A-6"-GW0R-980068-CS1-CC	P-PCH-7A-1
	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 6)	
	9				
INSTRUMENT	10	TYPE OF MEASUREMENT		DIRECT	
	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	RANGE	RESOLUTION	0 @ 4 bar-g	0.05
	17	RING TYPE	RING MATERIAL	BAYONET	304SS
	18	CONEX. PROCES. / ACESS.	CONNECTION POSITION	1/2" NPT (M)	BOTTOM
	19	SENSOR TYPE	MATERIAL SENSOR	BOURDON	316SS
	20	MATERIAL SOQUETE	MECHANISM MATERIAL	316SS	316SS
	21	BALANCED POINTER		YES	
	22	MICROMETRIC ADJUSTMENT OF ZERO		YES	
	23	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%
	24	FILLING	FLUID	YES	GLYCERIN
ACCESSORIES	25	SEAL DIAPHRAGM		NOT REQUIRED	
	26	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	27	SEAL FILLING FLUID		NOT REQUIRED	
	28	WET PART MATERIAL		NOT REQUIRED	
	29	CAPILLARY LENGTH		NOT REQUIRED	
	30	CAPILLARY MATERIAL		NOT REQUIRED	
	31	PULSATION DAMPER		NOT REQUIRED	
	32	MATERIAL		NOT REQUIRED	
	33	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	34	SIPHON TUBE		NOT REQUIRED	
	35	MATERIAL		NOT REQUIRED	
	36	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	37	OVERPRESSURE PROTECTOR		NOT REQUIRED	
	38	MATERIAL		NOT REQUIRED	
	39	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	40	TAGGING		YES (SEE GENERAL NOTES 2)	
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATE	CHILLED WATER (NOTE 2)	LIQUID
	37	MINIMUM TEMPERATURE	NORMAL MAXIMUM	- 5.1	9.1 °C
	38	MINIMUM PRESSURE	NORMAL MAXIMUM	0 1.7	- bar-g
	39	DESIGN PRESSURE	DESIGN TEMPERATURE	2.2 bar-g	39.1 °C
	40	VISCOSITY @ OPERATING CONDITION		1.3 cP	
	41	DENSITY @ OPERATING CONDITION		1000 kg/m³	
	42	SUSPENDED SOLIDS (%)		-	
	43	SOLIDIFIES AT ROOM TEMPERATURE		-	
	44	M.M. / Z / Cp/Cv	 / /	
	49	MANUFACTURER		WIKA	
	50	MODEL		232.5 (WIKA)	

NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

2- THE INSTRUMENT SHALL BE PREPARED TO OPERATE WITH PROPYLENE GLICOL 10% IF REQUIRED.

   					
NUMBER: 569-DB7A-AIC-712-006			CLIENT NR: PRD-AIC-DSH-0052		
TITLE				SHEET: 26 de 30	
MANOMETER				REV.: 2	
GENERAL	1	INSTRUMENT TAG NUMBER		PI-980071	
	2	SERVICE		PRESSURE AT PRIMARY PUMP DISCHARGE	
	3	P&ID		7A-M-0-5-45	
	4	PIPE LINE	EQUIPMENT NUMBER	7A-6"-GW0R-980071-CS1-CC	P-PCH-7A-2
	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 6)	
	9				
INSTRUMENT	10	TYPE OF MEASUREMENT		DIRECT	
	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	RANGE	RESOLUTION	0 @ 4 bar-g	0.05
	17	RING TYPE	RING MATERIAL	BAYONET	304SS
	18	CONEX. PROCES. / ACESS.	CONNECTION POSITION	1/2" NPT (M)	BOTTOM
	19	SENSOR TYPE	MATERIAL SENSOR	BOURDON	316SS
	20	MATERIAL SOQUETE	MECHANISM MATERIAL	316SS	316SS
	21	BALANCED POINTER		YES	
	22	MICROMETRIC ADJUSTMENT OF ZERO		YES	
	23	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%
ACCESSORIES	24	FILLING	FLUID	YES	GLYCERIN
	25	SEAL DIAPHRAGM		NOT REQUIRED	
	26	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	27	SEAL FILLING FLUID		NOT REQUIRED	
	28	WET PART MATERIAL		NOT REQUIRED	
	29	CAPILLARY LENGTH		NOT REQUIRED	
	30	CAPILLARY MATERIAL		NOT REQUIRED	
	31	PULSATION DAMPER		NOT REQUIRED	
	32	MATERIAL		NOT REQUIRED	
	33	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	34	SIPHON TUBE		NOT REQUIRED	
	35	MATERIAL		NOT REQUIRED	
	36	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	37	OVERPRESSURE PROTECTOR		NOT REQUIRED	
	38	MATERIAL		NOT REQUIRED	
	OPERATING CONDITIONS	39	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED
40		TAGGING		YES (SEE GENERAL NOTES 2)	
41					
36		FLUID	PHYSICAL STATE	CHILLED WATER (NOTE 2)	LIQUID
37		MINIMUM TEMPERATURE	NORMAL	MAXIMUM	- 5.1 9.1 °C
38		MINIMUM PRESSURE	NORMAL	MAXIMUM	0 1.7 - bar-g
39		DESIGN PRESSURE	DESIGN TEMPERATURE	2.2 bar-g	39.1 °C
40		VISCOSITY @ OPERATING CONDITION		1.3 cP	
41		DENSITY @ OPERATING CONDITION		1000 kg/m³	
42		SUSPENDED SOLIDS (%)		-	
43		SOLIDIFIES AT ROOM TEMPERATURE		-	
44		M.M. / Z / Cp/Cv	 / /	
49	MANUFACTURER		WIKA		
50	MODEL		232.5 (WIKA)		

NOTES:

- 1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.
- 2- THE INSTRUMENT SHALL BE PREPARED TO OPERATE WITH PROPYLENE GLICOL 10% IF REQUIRED.

NUMBER: 569-DB7A-AIC-712-006

CLIENT NR: PRD-AIC-DSH-0052

TITLE

SHEET:
27 de 30

MANOMETER

REV.:
2

GENERAL	1	INSTRUMENT TAG NUMBER		PI-9800160	
	2	SERVICE		PRESSURE AT PRIMARY PUMP INLET	
	3	P&ID		7A-M-0-5-46	
	4	PIPE LINE	EQUIPMENT NUMBER	7A-6"-GW0S-980086-CS1-CC	P-PCH-7A-3
	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 6)	
	9				
INSTRUMENT	10	TYPE OF MEASUREMENT		DIRECT	
	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	RANGE	RESOLUTION	0 @ 4 bar-g	0.05
	17	RING TYPE	RING MATERIAL	BAYONET	304SS
	18	CONEX. PROCES. / ACESS.	CONNECTION POSITION	1/2" NPT (M)	BOTTOM
	19	SENSOR TYPE	MATERIAL SENSOR	BOURDON	316SS
	20	MATERIAL SOQUETE	MECHANISM MATERIAL	316SS	316SS
	21	BALANCED POINTER		YES	
	22	MICROMETRIC ADJUSTMENT OF ZERO		YES	
	23	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%
	24	FILLING	FLUID	YES	GLYCERIN
ACCESSORIES	25	SEAL DIAPHRAGM		NOT REQUIRED	
	26	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	27	SEAL FILLING FLUID		NOT REQUIRED	
	28	WET PART MATERIAL		NOT REQUIRED	
	29	CAPILLARY LENGTH		NOT REQUIRED	
	30	CAPILLARY MATERIAL		NOT REQUIRED	
	31	PULSATION DAMPER		NOT REQUIRED	
	32	MATERIAL		NOT REQUIRED	
	33	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	34	SIPHON TUBE		NOT REQUIRED	
	35	MATERIAL		NOT REQUIRED	
	36	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	37	OVERPRESSURE PROTECTOR		NOT REQUIRED	
	38	MATERIAL		NOT REQUIRED	
	39	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	46	TAGGING		YES (SEE GENERAL NOTES 2)	
	40				
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATE	CHILLED WATER (NOTE 2)	LIQUID
	37	MINIMUM TEMPERATURE	NORMAL MAXIMUM	- 1	5 °C
	38	MINIMUM PRESSURE	NORMAL MAXIMUM	0 2	- bar-g
	39	DESIGN PRESSURE	DESIGN TEMPERATURE	2.5 bar-g	35 °C
	40	VISCOSITY @ OPERATING CONDITION		cP	
	41	DENSITY @ OPERATING CONDITION		1000 kg/m³	
	42	SUSPENDED SOLIDS (%)		-	
	43	SOLIDIFIES AT ROOM TEMPERATURE		-	
	44	M.M. / Z / Cp/Cv	 / /	
	49	MANUFACTURER		WIKA	
	50	MODEL		232.5 (WIKA)	

NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

2- THE INSTRUMENT SHALL BE PREPARED TO OPERATE WITH PROPYLENE GLICOL 10% IF REQUIRED.

NUMBER: 569-DB7A-AIC-712-006

CLIENT NR: PRD-AIC-DSH-0052

TITLE

SHEET:
28 de 30

MANOMETER

REV.:
2

GENERAL	1	INSTRUMENT TAG NUMBER		PI-9800161	
	2	SERVICE		PRESSURE AT PRIMARY PUMP INLET	
	3	P&ID		7A-M-0-5-46	
	4	PIPE LINE	EQUIPMENT NUMBER	7A-6"-GW0S-980161-CS1-CC	P-PCH-7A-4
	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 6)	
	9				
INSTRUMENT	10	TYPE OF MEASUREMENT		DIRECT	
	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	RANGE	RESOLUTION	-0.6 @ 1 bar-g	0.02
	17	RING TYPE	RING MATERIAL	BAYONET	304SS
	18	CONEX. PROCES. / ACESS.	CONNECTION POSITION	1/2" NPT (M)	BOTTOM
	19	SENSOR TYPE	MATERIAL SENSOR	BOURDON	316SS
	20	MATERIAL SOQUETE	MECHANISM MATERIAL	316SS	316SS
	21	BALANCED POINTER		YES	
	22	MICROMETRIC ADJUSTMENT OF ZERO		YES	
	23	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%
	24	FILLING	FLUID	YES	GLYCERIN
ACCESSORIES	25	SEAL DIAPHRAGM		NOT REQUIRED	
	26	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	27	SEAL FILLING FLUID		NOT REQUIRED	
	28	WET PART MATERIAL		NOT REQUIRED	
	29	CAPILLARY LENGTH		NOT REQUIRED	
	30	CAPILLARY MATERIAL		NOT REQUIRED	
	31	PULSATION DAMPER		NOT REQUIRED	
	32	MATERIAL		NOT REQUIRED	
	33	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	34	SIPHON TUBE		NOT REQUIRED	
	35	MATERIAL		NOT REQUIRED	
	36	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	37	OVERPRESSURE PROTECTOR		YES	
	38	MATERIAL		316SS	
	39	CONNECTION INSTRUMENT	PROCESS CONNECTION	1/2" NPT (F)	1/2" NPT (M)
	46	TAGGING		YES (SEE GENERAL NOTES 2)	
	40				
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATE	CHILLED WATER (NOTE 2)	LIQUID
	37	MINIMUM TEMPERATURE	NORMAL MAXIMUM	- 1	5 °C
	38	MINIMUM PRESSURE	NORMAL MAXIMUM	0 0.1	- bar-g
	39	DESIGN PRESSURE	DESIGN TEMPERATURE	2.0 bar-g	35 °C
	40	VISCOSITY @ OPERATING CONDITION		1.5 cP	
	41	DENSITY @ OPERATING CONDITION		1000 kg/m³	
	42	SUSPENDED SOLIDS (%)		-	
	43	SOLIDIFIES AT ROOM TEMPERATURE		-	
	44	M.M. / Z / Cp/Cv	 / /	
	49	MANUFACTURER		WIKA	
	50	MODEL		232.5 (WIKA)	

NOTES:

- PROVIDE REAR PROTECTION DISC IN NEOPRENE.
- THE INSTRUMENT SHALL BE PREPARED TO OPERATE WITH PROPYLENE GLICOL 10% IF REQUIRED.

NUMBER: **569-DB7A-AIC-712-006**

CLIENT NR: **PRD-AIC-DSH-0052**

TITLE

SHEET:

29 de 30

MANOMETER

REV.:

2

GENERAL	1	INSTRUMENT TAG NUMBER		PI-9800162	
	2	SERVICE		PRESSURE AT SECONDARY PUMP DISCHARGE	
	3	P&ID		7A-M-0-5-46	
	4	PIPE LINE	EQUIPMENT NUMBER	7A-6"-GW0S-980162-CS1-CC	P-PCH-7A-4
	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 6)	
	9				
INSTRUMENT	10	TYPE OF MEASUREMENT		DIRECT	
	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	RANGE	RESOLUTION	0 @ 6 bar-g	0.1
	17	RING TYPE	RING MATERIAL	BAYONET	304SS
	18	CONEX. PROCES. / ACESS.	CONNECTION POSITION	1/2" NPT (M)	BOTTOM
	19	SENSOR TYPE	MATERIAL SENSOR	BOURDON	316SS
	20	MATERIAL SOQUETE	MECHANISM MATERIAL	316SS	316SS
	21	BALANCED POINTER		YES	
	22	MICROMETRIC ADJUSTMENT OF ZERO		YES	
	23	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%
	24	FILLING	FLUID	YES	GLYCERIN
ACCESSORIES	25	SEAL DIAPHRAGM		NOT REQUIRED	
	26	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	27	SEAL FILLING FLUID		NOT REQUIRED	
	28	WET PART MATERIAL		NOT REQUIRED	
	29	CAPILLARY LENGTH		NOT REQUIRED	
	30	CAPILLARY MATERIAL		NOT REQUIRED	
	31	PULSATION DAMPER		NOT REQUIRED	
	32	MATERIAL		NOT REQUIRED	
	33	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	34	SIPHON TUBE		NOT REQUIRED	
	35	MATERIAL		NOT REQUIRED	
	36	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	37	OVERPRESSURE PROTECTOR		NOT REQUIRED	
	38	MATERIAL		NOT REQUIRED	
	39	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	46	TAGGING		YES (SEE GENERAL NOTES 2)	
	40				
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATE	CHILLED WATER (NOTE 2)	LIQUID
	37	MINIMUM TEMPERATURE	NORMAL MAXIMUM	- 1	5 °C
	38	MINIMUM PRESSURE	NORMAL MAXIMUM	0 2.2	bar-g
	39	DESIGN PRESSURE	DESIGN TEMPERATURE	4.1 bar-g	35 °C
	40	VISCOSITY @ OPERATING CONDITION		cP	
	41	DENSITY @ OPERATING CONDITION		1000 kg/m³	
	42	SUSPENDED SOLIDS (%)		-	
	43	SOLIDIFIES AT ROOM TEMPERATURE		-	
	44	M.M. / Z / Cp/Cv	 / /	
	49	MANUFACTURER		WIKA	
	50	MODEL		232.5 (WIKA)	

NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

2- THE INSTRUMENT SHALL BE PREPARED TO OPERATE WITH PROPYLENE GLICOL 10% IF REQUIRED.

NUMBER: **569-DB7A-AIC-712-006**

CLIENT NR: **PRD-AIC-DSH-0052**

TITLE

SHEET:
30 de 30
MANOMETER

REV.:
2

GENERAL	1	INSTRUMENT TAG NUMBER		PI-9800163	
	2	SERVICE		PRESSURE AT SECONDARY PUMP DISCHARGE	
	3	P&ID		7A-M-0-5-46	
	4	PIPE LINE	EQUIPMENT NUMBER	7A-6"-GW0S-9800163-CS1-CC	P-PCH-7A-3
	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 6)	
	9				
INSTRUMENT	10	TYPE OF MEASUREMENT		DIRECT	
	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	RANGE	RESOLUTION	0 @ 6 bar-g	0.1
	17	RING TYPE	RING MATERIAL	BAYONET	304SS
	18	CONEX. PROCES. / ACESS.	CONNECTION POSITION	1/2" NPT (M)	BOTTOM
	19	SENSOR TYPE	MATERIAL SENSOR	BOURDON	316SS
	20	MATERIAL SOQUETE	MECHANISM MATERIAL	316SS	316SS
	21	BALANCED POINTER		YES	
	22	MICROMETRIC ADJUSTMENT OF ZERO		YES	
	23	FRONT TYPE	WINDOWS	SOLID	GLASS SEG. TRANSP. MIN. 75%
	24	FILLING	FLUID	YES	GLYCERIN
ACCESSORIES	25	SEAL DIAPHRAGM		NOT REQUIRED	
	26	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	27	SEAL FILLING FLUID		NOT REQUIRED	
	28	WET PART MATERIAL		NOT REQUIRED	
	29	CAPILLARY LENGTH		NOT REQUIRED	
	30	CAPILLARY MATERIAL		NOT REQUIRED	
	31	PULSATION DAMPER		NOT REQUIRED	
	32	MATERIAL		NOT REQUIRED	
	33	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	34	SIPHON TUBE		NOT REQUIRED	
	35	MATERIAL		NOT REQUIRED	
	36	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	37	OVERPRESSURE PROTECTOR		NOT REQUIRED	
	38	MATERIAL		NOT REQUIRED	
	39	CONNECTION INSTRUMENT	PROCESS CONNECTION	NOT REQUIRED	NOT REQUIRED
	46	TAGGING		YES (SEE GENERAL NOTES 2)	
	40				
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATE	CHILLED WATER (NOTE 2)	LIQUID
	37	MINIMUM TEMPERATURE	NORMAL MAXIMUM	- 1	5 °C
	38	MINIMUM PRESSURE	NORMAL MAXIMUM	0 3	bar-g
	39	DESIGN PRESSURE	DESIGN TEMPERATURE	4.1 bar-g	35 °C
	40	VISCOSITY @ OPERATING CONDITION		cP	
	41	DENSITY @ OPERATING CONDITION		1000 kg/m³	
	42	SUSPENDED SOLIDS (%)		-	
	43	SOLIDIFIES AT ROOM TEMPERATURE		-	
	44	M.M. / Z / Cp/Cv	 / /	
	49	MANUFACTURER		WIKA	
	50	MODEL		232.5 (WIKA)	

NOTES:

1- PROVIDE REAR PROTECTION DISC IN NEOPRENE.

2- THE INSTRUMENT SHALL BE PREPARED TO OPERATE WITH PROPYLENE GLICOL 10% IF REQUIRED.