DOC NUMBER: **569-DB7B-AIC-713-005**	CLIENT NUMBER: **PRD-AIC-DSH-005**
CLIENT: **TAKEDA/BAXALTA**	
PROJECT: **BURITI EPCVM PROJECT**	

DRUG SUBSTANCE - BMS – DATA SHEET
MAGNETIC FLOW TRANSMITTER

REV	DATE	DESCRIPTION	EXEC	CHECK	APPROV
2	20APR2022	ISSUE FOR CONSTRUCTION AS PER NOTE	ACC	MAF	RSP
1	27JAN2022	ISSUE FOR CONSTRUCTION CONSIDERING COMMENTS	MAV	MAF	RSP
0	27AUG2021	ISSUE FOR CONSTRUCTION	JHA	MAF	RSP
A	24MAR2021	60% DD ISSUE	JHA	MAF	RSP

NUMBER:	569-DB7B-AIC-713-005	CLIENT NR:	PRD-AIC-DSH-005

TITLE

MAGNETIC FLOW TRANSMITTER

SHEET: 2 de 16

REV.: **2**

DOCUMENT REVIEW CONTROL

Revision	A	0	1	2	3	4	Revision	A	0	1	2	3	4	Revision	A	0	1	2	3	4
Page							Page							Page						
1	X	X	X	X			26							51						
2	X	X	X	X			27							52						
3	X	X	X	X			28							53						
4	X	X	X	X			29							54						
5	X	X	X	X			30							55						
6	X	X	X	X			31							56						
7	X	X	X	X			32							57						
8	X	X	X	X			33							58						
9	X	X	X	X			34							59						
10	X	X	X	X			35							60						
11	X	X	X	X			36							61						
12	X	X	X	X			37							62						
13	X	X	X	X			38							63						
14	X	X	X	X			39							64						
15	/	X	X	X			40							65						
16	/	X	X	X			41							66						
17	/	X	/	/			42							67						
18	/	/					43							68						
19							44							69						
20							45							70						
21							46							71						
22							47							72						
23							48							73						
24							49							74						
25							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 FIT-980005.

REVISION 2 NOTES AS PER N+1 UPDATE:

1- INDICATED FUTURE INSTRUMENTS: FIT-980016, FIT-980030

REFERENCE DOCUMENTS

7B-M-0-5-41	P&I DIAGRAM - DRUG SUBSTANCE - INDUSTRIAL WATER DISTRIBUTION SYSTEM
7B-M-0-5-42	P&I DIAGRAM - DRUG SUBSTANCE - COOLING WATER SYSTEM
7B-M-0-5-44	P&I DIAGRAM - DRUG SUBSTANCE - CHILLED GLYCOL GENERATION SYSTEM
7B-M-0-5-45	P&I DIAGRAM - DRUG SUBSTANCE - CHILLED GLYCOL DISTRIBUTION SYSTEM
7B-M-0-5-53	P&I DIAGRAM - DRUG SUBSTANCE - CHILLED WATER DISTRIBUTION SYSTEM LOOP 2 PROCESS
PRD-AIC-LIS-015	DRUG SUBSTANCE - 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- The transmitters must have the following characteristics:
a) They must be electronic, intelligent and programmable, with the transmission of the signal in the same physical medium as the power supply;
b) Support the respective maximum static design pressures;
c) They must be capable of identifying internal failures;
d) Be capable of setting the value of the output signal, programmable in 0% or 100% of the range, in case of sensor element failure;

2- All transmitters must have enclosures, whose parts exposed to the atmosphere are resistant to environmental conditions, including those generated by the process condition.

3- The identification plates must be manufactured in stainless steel AISI 304, permanently attached to the instruments with tag and serial number. The serial number of the instrument, when possible, can be engraved on the body itself.

4- The manufacturer must confirm the nominal diameter of the meter.

5- The instrument display must have at least 2 lines with 16 characters on each line.

6- All transmitters must be provided with protection type certificates compatible with the respective area classification. If the enclosure requires certificates regarding type and degree of protection, both proofs must be explicit in the same certificate. The certificates must be issued by INMETRO or an accredited body.

7- Grounding rings in material compatible with the process fluid must be provided, being at least AISI 316.

NUMBER:	569-DB7B-AIC-713-005	CLIENT NR:	PRD-AIC-DSH-005

TITLE

MAGNETIC FLOW TRANSMITTER

SHEET: 4 de 16

REV.: 2

GENERAL	1	INSTRUMENT TAG NUMBER				FIT-070001			
	2	SERVIÇE				CHILLED WATER - LOOP 1 - EXIT FROM HX-7B-2			
	3	P&ID				7B-M-0-5-53			
	4	PIPE LINE	EQUIPMENT NUMBER			6"-CW1S-0700001-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								
METER	9	DIAMETER OF SENSOR TUBE				6" (NOTE 1)			
	10	TUBE MATERIAL				STAINLESS STEEL			
	11	COATING MATERIAL				PFA			
	12	ELECTRODE MATERIAL				316SS			
	13	GROUNDING RING MATERIAL				YES (SEE GENERAL NOTES 7)			
	14	CONNECTIONS				FLANGED			
	15	CLASS AND FACE				150# FR, ASME B16.5 / NBR 7669			
	16	FLANGE FACE FINISH				MSS SP-6			
	17	ELECTRICAL CONNECTION				NOT APPLICABLE			
CONVERTER / TRANSMITTER	18	MOUNTING				INTEGRAL TO SENSOR			
	19	POWER SUPPLY				24 Vcc - 2 WIRES			
	20	OUTPUT SIGNAL				4 - 20 mA (500 ohms @ 24 Vcc)			
	21	COMMUNICATION PROTOCOL				HART			
	22	PRECISION				± 0.15% F.E.			
	23	REPEATABILITY				BY MANUFACTURER			
	24	ELECTRICAL CONNECTION				1/2" NPT (F)			
	25	LOCAL INDICATION				YES, LCD TYPE (SEE GENERAL NOTES 11)			
	26	CALIBRATION RANGE				BY MANUFACTURER			
	27	CALIBRATED RANGE				0 @ 150 m³/h			
	28	KEYBOARD FOR LOCAL CONFIGURATION				YES			
	29	METER CASING				ALUMINIO (COPPER FREE)			
	30	PULSE OUTPUT				YES			
ACCESSORIES	31	TAGGING				YES (SEE GENERAL NOTES 3)			
	32	SURGE PROTECTOR				YES			
	33								
	34								
	35								
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATUS			CHILLED WATER		LIQUID	
	37	MINIMUM FLOW	NORMAL		MAXIMUM	32	121	121	m³/h
	38	MINIMUM PRESSURE	NORMAL		MAXIMUM	1.6	1.7	1.7	bar-g
	39	MINIMUM TEMPERATURE	NORMAL		MAXIMUM	6.0	6.0	6.0	°C
	40	PROJECT FLOW				121 m³/h			
	41	DESIGN PRESSURE	DESIGN TEMPERATURE			4.6 bar-g		36 ºC	
	42	DENSITY @ OPERATING CONDITION				1000.1 kg/m³			
	43	VISCOSITY @ OPERATING CONDITION				1.57 Cp			
	44	FLUID CONDUCTIVITY				µS/cm²			
	45	INCRUSTATION				NO			
	46	SUSPENDED SOLIDS (%)				NO			
	47	MAXIMUM LOSS OF LOAD ALLOWED				- bar			
	48								
	49	MANUFACTURER				Endress + Hauser (E+H) or Similar			
	50	MODEL				Proline Promag (E+H)			

NOTES:

1- THE MANUFACTURER MUST CONFIRM THE NOMINAL DIAMETER OF THE METER.

NUMBER:	569-DB7B-AIC-713-005	CLIENT NR:	PRD-AIC-DSH-005

TITLE

MAGNETIC FLOW TRANSMITTER

SHEET: 5 de 16

REV.: 2

GENERAL	1	INSTRUMENT TAG NUMBER			FIT-070002			
	2	SERVIÇE			CHILLED WATER FOR P-PCH-7B-5 AND 7B-6			
	3	P&ID			7B-M-0-5-53			
	4	PIPE LINE	EQUIPMENT NUMBER		8"-CW1R-070002-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							
METER	9	DIAMETER OF SENSOR TUBE			8" (NOTE 1)			
	10	TUBE MATERIAL			STAINLESS STEEL			
	11	COATING MATERIAL			PFA			
	12	ELECTRODE MATERIAL			316SS			
	13	GROUNDING RING MATERIAL			YES (SEE GENERAL NOTES 7)			
	14	CONNECTIONS			FLANGED			
	15	CLASS AND FACE			150# FR, ASME B16.5 / NBR 7669			
	16	FLANGE FACE FINISH			MSS SP-6			
	17	ELECTRICAL CONNECTION			NOT APPLICABLE			
CONVERTER / TRANSMITTER	18	MOUNTING			INTEGRAL TO SENSOR			
	19	POWER SUPPLY			24 Vcc - 2 WIRES			
	20	OUTPUT SIGNAL			4 - 20 mA (500 ohms @ 24 Vcc)			
	21	COMMUNICATION PROTOCOL			HART			
	22	PRECISION			± 0.15% F.E.			
	23	REPEATABILITY			BY MANUFACTURER			
	24	ELECTRICAL CONNECTION			1/2" NPT (F)			
	25	LOCAL INDICATION			YES, LCD TYPE (SEE GENERAL NOTES 11)			
	26	CALIBRATION RANGE			BY MANUFACTURER			
	27	CALIBRATED RANGE			0 @ 200 m³/h			
	28	KEYBOARD FOR LOCAL CONFIGURATION			YES			
	29	METER CASING			ALUMINIO (COPPER FREE)			
	30	PULSE OUTPUT			YES			
ACCESSORIES	31	TAGGING			YES (SEE GENERAL NOTES 3)			
	32	SURGE PROTECTOR			YES			
	33							
	34							
	35							
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATUS		CHILLED WATER RETURN		LIQUID	
	37	MINIMUM FLOW	NORMAL	MAXIMUM	32.0	121.0	168.0	m³/h
	38	MINIMUM PRESSURE	NORMAL	MAXIMUM	0.25	0.26	0.26	bar-g
	39	MINIMUM TEMPERATURE	NORMAL	MAXIMUM	6.0	11.0	11.0	°C
	40	PROJECT FLOW			168.0 m³/h			
	41	DESIGN PRESSURE	DESIGN TEMPERATURE		4.6 bar-g		40.7 ºC	
	42	DENSITY @ OPERATING CONDITION			999.9 kg/m³			
	43	VISCOSITY @ OPERATING CONDITION			1.47 Cp			
	44	FLUID CONDUCTIVITY			µS/cm²			
	45	INCRUSTATION			NO			
	46	SUSPENDED SOLIDS (%)			NO			
	47	MAXIMUM LOSS OF LOAD ALLOWED			- bar			
	48							
	49	MANUFACTURER			Endress + Hauser (E+H) or Similar			
	50	MODEL			Proline Promag (E+H)			

NOTES:

1- THE MANUFACTURER MUST CONFIRM THE NOMINAL DIAMETER OF THE METER.

NUMBER:	569-DB7B-AIC-713-005	CLIENT NR:	PRD-AIC-DSH-005

TITLE

MAGNETIC FLOW TRANSMITTER

SHEET: 6 de 16

REV.: **2**

GENERAL	1	INSTRUMENT TAG NUMBER			FIT-070065			
	2	SERVIÇE			CHILLED WATER - LOOP 1 - DISTRIBUTION FOR HX-7B-2			
	3	P&ID			7B-M-0-5-53			
	4	PIPE LINE	EQUIPMENT NUMBER		6"-GW0S-070065-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							
METER	9	DIAMETER OF SENSOR TUBE			6" (NOTE 1)			
	10	TUBE MATERIAL			STAINLESS STEEL			
	11	COATING MATERIAL			PFA			
	12	ELECTRODE MATERIAL			316SS			
	13	GROUNDING RING MATERIAL			YES (SEE GENERAL NOTES 7)			
	14	CONNECTIONS			FLANGED			
	15	CLASS AND FACE			150# FR, ASME B16.5 / NBR 7669			
	16	FLANGE FACE FINISH			MSS SP-6			
	17	ELECTRICAL CONNECTION			NOT APPLICABLE			
CONVERTER / TRANSMITTER	18	MOUNTING			INTEGRAL TO SENSOR			
	19	POWER SUPPLY			24 Vcc - 2 WIRES			
	20	OUTPUT SIGNAL			4 - 20 mA (500 ohms @ 24 Vcc)			
	21	COMMUNICATION PROTOCOL			HART			
	22	PRECISION			± 0.15% F.E.			
	23	REPEATABILITY			BY MANUFACTURER			
	24	ELECTRICAL CONNECTION			1/2" NPT (F)			
	25	LOCAL INDICATION			YES, LCD TYPE (SEE GENERAL NOTES 11)			
	26	CALIBRATION RANGE			BY MANUFACTURER			
	27	CALIBRATED RANGE			0 @ 100 m³/h			
	28	KEYBOARD FOR LOCAL CONFIGURATION			YES			
	29	METER CASING			ALUMINIO (COPPER FREE)			
	30	PULSE OUTPUT			YES			
ACCESSORIES	31	TAGGING			YES (SEE GENERAL NOTES 3)			
	32	SURGE PROTECTOR			YES			
	33							
	34							
	35							
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATUS		PROPYLENE GLYCOL		LIQUID	
	37	MINIMUM FLOW	NORMAL	MAXIMUM	0.0	81.0	81.0	m³/h
	38	MINIMUM PRESSURE	NORMAL	MAXIMUM	1.9	1.9	2.0	bar-g
	39	MINIMUM TEMPERATURE	NORMAL	MAXIMUM	4.0	4.0	4.0	°C
	40	PROJECT FLOW			81.0 m³/h			
	41	DESIGN PRESSURE	DESIGN TEMPERATURE		3.4 bar-g		34 ºC	
	42	DENSITY @ OPERATING CONDITION			1000.1 kg/m³			
	43	VISCOSITY @ OPERATING CONDITION			1.57 Cp			
	44	FLUID CONDUCTIVITY			µS/cm²			
	45	INCRUSTATION			NO			
	46	SUSPENDED SOLIDS (%)			NO			
	47	MAXIMUM LOSS OF LOAD ALLOWED			- bar			
	48							
	49	MANUFACTURER			Endress + Hauser (E+H) or Similar			
	50	MODEL			Proline Promag (E+H)			

NOTES:

1- THE MANUFACTURER MUST CONFIRM THE NOMINAL DIAMETER OF THE METER.

NUMBER:	569-DB7B-AIC-713-005	CLIENT NR:	PRD-AIC-DSH-005

TITLE

MAGNETIC FLOW TRANSMITTER

SHEET: 7 de 16

REV.: **2**

GENERAL	1	INSTRUMENT TAG NUMBER			FIT-610050			
	2	SERVIÇE			INDUSTRIAL WATER - DISTRIBUTION SYSTEM			
	3	P&ID			7B-M-0-5-41			
	4	PIPE LINE	EQUIPMENT NUMBER		4"-DW-610049-PP1-N		-	
	5	EQUIPMENT MATERIAL / PIPE			POLIPROPILENO HOMOPOLÍMERO CONF. NBR EN 15494			
	6	AREA CLASSIFICATION			NOT CLASSIFIED			
	7	ENCLOSURE CLASSIFICATION			IP 65 (MÍN.) CONF. NBR IEC 60529			
	8	CERTIFICATES			(SEE GENERAL NOTES 6)			
	9							
METER	9	DIAMETER OF SENSOR TUBE			110mm (NOTE 1)			
	10	TUBE MATERIAL			STAINLESS STEEL			
	11	COATING MATERIAL			PFA			
	12	ELECTRODE MATERIAL			316SS			
	13	GROUNDING RING MATERIAL			YES (SEE GENERAL NOTES 7)			
	14	CONNECTIONS			FLANGED			
	15	CLASS AND FACE			ASME B16.5 / FLANGE 750 kPa			
	16	FLANGE FACE FINISH			-			
	17	ELECTRICAL CONNECTION			NOT APPLICABLE			
CONVERTER / TRANSMITTER	18	MOUNTING			INTEGRAL TO SENSOR			
	19	POWER SUPPLY			24 Vcc - 2 FIOS			
	20	OUTPUT SIGNAL			4 - 20 mA (500 ohms @ 24 Vcc)			
	21	COMMUNICATION PROTOCOL			HART			
	22	PRECISION			± 0.15% F.E.			
	23	REPEATABILITY			BY MANUFACTURER			
	24	ELECTRICAL CONNECTION			1/2" NPT (F)			
	25	LOCAL INDICATION			SIM, TIPO LCD (VER NOTAS GERAIS 11)			
	26	CALIBRATION RANGE			BY MANUFACTURER			
	27	CALIBRATED RANGE			0 @ 40 m³/h			
	28	KEYBOARD FOR LOCAL CONFIGURATION			YES			
	29	METER CASING			ALUMINIO (COPPER FREE)			
	30	PULSE OUTPUT			YES			
ACCESSORIES	31	TAGGING			YES (SEE GENERAL NOTES 3)			
	32	SURGE PROTECTOR			YES			
	33							
	34							
	35							
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATUS		INDUSTRIAL WATER		LIQUID	
	37	MINIMUM FLOW	NORMAL	MAXIMUM	4.7	34.3	40.4	m³/h
	38	MINIMUM PRESSURE	NORMAL	MAXIMUM	2.0	2.0	2.0	bar-g
	39	MINIMUM TEMPERATURE	NORMAL	MAXIMUM	25.0	25.0	25.0	°C
	40	PROJECT FLOW			40.4 m³/h			
	41	DESIGN PRESSURE	DESIGN TEMPERATURE		5.3 bar-g		55.0 ºC	
	42	DENSITY @ OPERATING CONDITION			997.2 kg/m³			
	43	VISCOSITY @ OPERATING CONDITION			0.89 Cp			
	44	FLUID CONDUCTIVITY			µS/cm²			
	45	INCRUSTATION			NO			
	46	SUSPENDED SOLIDS (%)			NO			
	47	MAXIMUM LOSS OF LOAD ALLOWED			- bar			
	48							
	49	MANUFACTURER			Endress + Hauser (E+H) or Similar			
	50	MODEL			Proline Promag (E+H)			

NOTES:

1- THE MANUFACTURER MUST CONFIRM THE NOMINAL DIAMETER OF THE METER.

NUMBER:	569-DB7B-AIC-713-005	CLIENT NR:	PRD-AIC-DSH-005

TITLE

MAGNETIC FLOW TRANSMITTER

SHEET: 8 de 16

REV.: **2**

GENERAL	1	INSTRUMENT TAG NUMBER				FIT-940009			
	2	SERVIÇE				COOLING WATER - GLYCOL GENERATION			
	3	P&ID				7B-M-0-5-42			
	4	PIPE LINE	EQUIPMENT NUMBER			8"-TWS-940009-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								
METER	9	DIAMETER OF SENSOR TUBE				8" (NOTE 1)			
	10	TUBE MATERIAL				STAINLESS STEEL			
	11	COATING MATERIAL				PFA			
	12	ELECTRODE MATERIAL				316SS			
	13	GROUNDING RING MATERIAL				YES (SEE GENERAL NOTES 7)			
	14	CONNECTIONS				FLANGED			
	15	CLASS AND FACE				150# FR, ASME B16.5 / NBR 7669			
	16	FLANGE FACE FINISH				-			
	17	ELECTRICAL CONNECTION				NOT APPLICABLE			
CONVERTER / TRANSMITTER	18	MOUNTING				INTEGRAL TO SENSOR			
	19	POWER SUPPLY				24 Vcc - 2 FIOS			
	20	OUTPUT SIGNAL				4 - 20 mA (500 ohms @ 24 Vcc)			
	21	COMMUNICATION PROTOCOL				HART			
	22	PRECISION				± 0.15% F.E.			
	23	REPEATABILITY				BY MANUFACTURER			
	24	ELECTRICAL CONNECTION				1/2" NPT (F)			
	25	LOCAL INDICATION				SIM, TIPO LCD (VER NOTAS GERAIS 11)			
	26	CALIBRATION RANGE				BY MANUFACTURER			
	27	CALIBRATED RANGE				0 @ 250 m³/h			
	28	KEYBOARD FOR LOCAL CONFIGURATION				YES			
	29	METER CASING				ALUMINIO (COPPER FREE)			
	30	PULSE OUTPUT				YES			
ACCESSORIES	31	TAGGING				YES (SEE GENERAL NOTES 3)			
	32	SURGE PROTECTOR				YES			
	33								
	34								
	35								
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATUS			INDUSTRIAL WATER		LIQUID	
	37	MINIMUM FLOW	NORMAL		MAXIMUM	202.2	202.2	202.2	m³/h
	38	MINIMUM PRESSURE	NORMAL		MAXIMUM	2.496	2.494	2.519	bar-g
	39	MINIMUM TEMPERATURE	NORMAL		MAXIMUM	31.5	31.5	31.5	°C
	40	PROJECT FLOW				202.2 m³/h			
	41	DESIGN PRESSURE	DESIGN TEMPERATURE			4.6 bar-g		67.0 ºC	
	42	DENSITY @ OPERATING CONDITION				995.3 kg/m³			
	43	VISCOSITY @ OPERATING CONDITION				0.77 Cp			
	44	FLUID CONDUCTIVITY				µS/cm²			
	45	INCRUSTATION				NO			
	46	SUSPENDED SOLIDS (%)				NO			
	47	MAXIMUM LOSS OF LOAD ALLOWED				- bar			
	48								
	49	MANUFACTURER				Endress + Hauser (E+H) or Similar			
	50	MODEL				Proline Promag (E+H)			

NOTES:

1- THE MANUFACTURER MUST CONFIRM THE NOMINAL DIAMETER OF THE METER.

NUMBER:	569-DB7B-AIC-713-005	CLIENT NR:	PRD-AIC-DSH-005

TITLE

MAGNETIC FLOW TRANSMITTER

SHEET: 9 de 16

REV.: **2**

GENERAL	1	INSTRUMENT TAG NUMBER			FIT-940015			
	2	SERVIÇE			COOLING WATER - BIO-KILL SYSTEM			
	3	P&ID			7B-M-0-5-42			
	4	PIPE LINE	EQUIPMENT NUMBER		2"-TWS-940015-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							
METER	9	DIAMETER OF SENSOR TUBE			2" (NOTE 1)			
	10	TUBE MATERIAL			STAINLESS STEEL			
	11	COATING MATERIAL			PFA			
	12	ELECTRODE MATERIAL			316SS			
	13	GROUNDING RING MATERIAL			YES (SEE GENERAL NOTES 7)			
	14	CONNECTIONS			FLANGED			
	15	CLASS AND FACE			150# FR, ASME B16.5 / NBR 7669			
	16	FLANGE FACE FINISH			-			
	17	ELECTRICAL CONNECTION			NOT APPLICABLE			
CONVERTER / TRANSMITTER	18	MOUNTING			INTEGRAL TO SENSOR			
	19	POWER SUPPLY			24 Vcc - 2 FIOS			
	20	OUTPUT SIGNAL			4 - 20 mA (500 ohms @ 24 Vcc)			
	21	COMMUNICATION PROTOCOL			HART			
	22	PRECISION			± 0.15% F.E.			
	23	REPEATABILITY			BY MANUFACTURER			
	24	ELECTRICAL CONNECTION			1/2" NPT (F)			
	25	LOCAL INDICATION			SIM, TIPO LCD (VER NOTAS GERAIS 11)			
	26	CALIBRATION RANGE			BY MANUFACTURER			
	27	CALIBRATED RANGE			0 @ 15 m³/h			
	28	KEYBOARD FOR LOCAL CONFIGURATION			YES			
	29	METER CASING			ALUMINIO (COPPER FREE)			
	30	PULSE OUTPUT			YES			
ACCESSORIES	31	TAGGING			YES (SEE GENERAL NOTES 3)			
	32	SURGE PROTECTOR			YES			
	33							
	34							
	35							
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATUS		INDUSTRIAL WATER		LIQUID	
	37	MINIMUM FLOW	NORMAL	MAXIMUM	12.3	12.3	12.3	m³/h
	38	MINIMUM PRESSURE	NORMAL	MAXIMUM	3.833	3.831	3.857	bar-g
	39	MINIMUM TEMPERATURE	NORMAL	MAXIMUM	31.5	31.5	31.5	°C
	40	PROJECT FLOW			12.3 m³/h			
	41	DESIGN PRESSURE	DESIGN TEMPERATURE		4.6 bar-g		67.0 ºC	
	42	DENSITY @ OPERATING CONDITION			995.3 kg/m³			
	43	VISCOSITY @ OPERATING CONDITION			0.77 Cp			
	44	FLUID CONDUCTIVITY			µS/cm²			
	45	INCRUSTATION			NO			
	46	SUSPENDED SOLIDS (%)			NO			
	47	MAXIMUM LOSS OF LOAD ALLOWED			- bar			
	48							
	49	MANUFACTURER			Endress + Hauser (E+H) or Similar			
	50	MODEL			Proline Promag (E+H)			

NOTES:

1- THE MANUFACTURER MUST CONFIRM THE NOMINAL DIAMETER OF THE METER.

NUMBER:	569-DB7B-AIC-713-005	CLIENT NR:	PRD-AIC-DSH-005

TITLE

MAGNETIC FLOW TRANSMITTER

SHEET: 10 de 16

REV.: 2

GENERAL	1	INSTRUMENT TAG NUMBER			FIT-940023				
	2	SERVIÇE			COOLING WATER - COMPRESSED AIR GENERATION				
	3	P&ID			7B-M-0-5-42				
	4	PIPE LINE	EQUIPMENT NUMBER		2"-TWS-940023-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								
METER	9	DIAMETER OF SENSOR TUBE			2" (NOTE 1)				
	10	TUBE MATERIAL			STAINLESS STEEL				
	11	COATING MATERIAL			PFA				
	12	ELECTRODE MATERIAL			316SS				
	13	GROUNDING RING MATERIAL			YES (SEE GENERAL NOTES 7)				
	14	CONNECTIONS			FLANGED				
	15	CLASS AND FACE			150# FR, ASME B16.5 / NBR 7669				
	16	FLANGE FACE FINISH			-				
	17	ELECTRICAL CONNECTION			NOT APPLICABLE				
CONVERTER / TRANSMITTER	18	MOUNTING			INTEGRAL TO SENSOR				
	19	POWER SUPPLY			24 Vcc - 2 FIOS				
	20	OUTPUT SIGNAL			4 - 20 mA (500 ohms @ 24 Vcc)				
	21	COMMUNICATION PROTOCOL			HART				
	22	PRECISION			± 0.15% F.E.				
	23	REPEATABILITY			BY MANUFACTURER				
	24	ELECTRICAL CONNECTION			1/2" NPT (F)				
	25	LOCAL INDICATION			SIM, TIPO LCD (VER NOTAS GERAIS 11)				
	26	CALIBRATION RANGE			BY MANUFACTURER				
	27	CALIBRATED RANGE			0 @ 20 m³/h				
	28	KEYBOARD FOR LOCAL CONFIGURATION			YES				
	29	METER CASING			ALUMINIO (COPPER FREE)				
	30	PULSE OUTPUT			YES				
ACCESSORIES	31	TAGGING			YES (SEE GENERAL NOTES 3)				
	32	SURGE PROTECTOR			YES				
	33								
	34								
	35								
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATUS		INDUSTRIAL WATER		LIQUID		
	37	MINIMUM FLOW	NORMAL	MAXIMUM	14.4	14.4	14.4	m³/h	
	38	MINIMUM PRESSURE	NORMAL	MAXIMUM	3.41	3.41	3.43	bar-g	
	39	MINIMUM TEMPERATURE	NORMAL	MAXIMUM	31.5	31.5	31.5	°C	
	40	PROJECT FLOW			14.4 m³/h				
	41	DESIGN PRESSURE	DESIGN TEMPERATURE		4.6 bar-g		67.0 ºC		
	42	DENSITY @ OPERATING CONDITION			995.3 kg/m³				
	43	VISCOSITY @ OPERATING CONDITION			0.77 Cp				
	44	FLUID CONDUCTIVITY			µS/cm²				
	45	INCRUSTATION			NO				
	46	SUSPENDED SOLIDS (%)			NO				
	47	MAXIMUM LOSS OF LOAD ALLOWED			- bar				
	48								
	49	MANUFACTURER			Endress + Hauser (E+H) or Similar				
	50	MODEL			Proline Promag (E+H)				

NOTES:

1- THE MANUFACTURER MUST CONFIRM THE NOMINAL DIAMETER OF THE METER.

NUMBER:	569-DB7B-AIC-713-005	CLIENT NR:	PRD-AIC-DSH-005

TITLE

MAGNETIC FLOW TRANSMITTER

SHEET: 11 de 16

REV.: **2**

GENERAL	1	INSTRUMENT TAG NUMBER				FIT-940035			
	2	SERVIÇE				INDUSTRIAL WATER - MAKE UP			
	3	P&ID				7B-M-0-5-42			
	4	PIPE LINE	EQUIPMENT NUMBER			11/2"-DW-940035-PP1-N	-		
	5	EQUIPMENT MATERIAL / PIPE				POLIPROPILENO HOMOPOLÍMERO CONF. NBR EN 15494			
	6	AREA CLASSIFICATION				NOT CLASSIFIED			
	7	ENCLOSURE CLASSIFICATION				IP 65 (MÍN.) CONF. NBR IEC 60529			
	8	CERTIFICATES				(SEE GENERAL NOTES 6)			
	9								
METER	9	DIAMETER OF SENSOR TUBE				50mm (NOTE 1)			
	10	TUBE MATERIAL				STAINLESS STEEL			
	11	COATING MATERIAL				PFA			
	12	ELECTRODE MATERIAL				316SS			
	13	GROUNDING RING MATERIAL				YES (SEE GENERAL NOTES 7)			
	14	CONNECTIONS				FLANGED			
	15	CLASS AND FACE				150# FR, ASME B16.5 / NBR 7669			
	16	FLANGE FACE FINISH				-			
	17	ELECTRICAL CONNECTION				NOT APPLICABLE			
CONVERTER / TRANSMITTER	18	MOUNTING				INTEGRAL TO SENSOR			
	19	POWER SUPPLY				24 Vcc - 2 FIOS			
	20	OUTPUT SIGNAL				4 - 20 mA (500 ohms @ 24 Vcc)			
	21	COMMUNICATION PROTOCOL				HART			
	22	PRECISION				± 0.15% F.E.			
	23	REPEATABILITY				BY MANUFACTURER			
	24	ELECTRICAL CONNECTION				1/2" NPT (F)			
	25	LOCAL INDICATION				SIM, TIPO LCD (VER NOTAS GERAIS 11)			
	26	CALIBRATION RANGE				BY MANUFACTURER			
	27	CALIBRATED RANGE				0 @ 10 m³/h			
	28	KEYBOARD FOR LOCAL CONFIGURATION				YES			
	29	METER CASING				ALUMINIO (COPPER FREE)			
	30	PULSE OUTPUT				YES			
ACCESSORIES	31	TAGGING				YES (SEE GENERAL NOTES 3)			
	32	SURGE PROTECTOR				YES			
	33								
	34								
	35								
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATUS			INDUSTRIAL WATER		LIQUID	
	37	MINIMUM FLOW	NORMAL	MAXIMUM		0	0	4.11	m³/h
	38	MINIMUM PRESSURE	NORMAL	MAXIMUM		1.99	1.87	1.48	bar-g
	39	MINIMUM TEMPERATURE	NORMAL	MAXIMUM		25.0	25.0	25.0	°C
	40	PROJECT FLOW				4.11 m³/h			
	41	DESIGN PRESSURE	DESIGN TEMPERATURE			5.3 bar-g		55.0 ºC	
	42	DENSITY @ OPERATING CONDITION				997.2 kg/m³			
	43	VISCOSITY @ OPERATING CONDITION				0.89 Cp			
	44	FLUID CONDUCTIVITY				µS/cm²			
	45	INCRUSTATION				NO			
	46	SUSPENDED SOLIDS (%)				NO			
	47	MAXIMUM LOSS OF LOAD ALLOWED				- bar			
	48								
	49	MANUFACTURER				Endress + Hauser (E+H) or Similar			
	50	MODEL				Proline Promag (E+H)			

NOTES:

1- THE MANUFACTURER MUST CONFIRM THE NOMINAL DIAMETER OF THE METER.

NUMBER:	569-DB7B-AIC-713-005	CLIENT NR:	PRD-AIC-DSH-005

TITLE

MAGNETIC FLOW TRANSMITTER

SHEET: 12 de 16

REV.: **2**

GENERAL	1	INSTRUMENT TAG NUMBER				FIT-980021			
	2	SERVIÇE				DISTRIBUTION SYSTEM - CHILLED GLYCOL FOR BT-7B-1			
	3	P&ID				7B-M-0-5-44			
	4	PIPE LINE	EQUIPMENT NUMBER			10"-GW0R-980021-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								
METER	9	DIAMETER OF SENSOR TUBE				10" (NOTE 1)			
	10	TUBE MATERIAL				STAINLESS STEEL			
	11	COATING MATERIAL				PFA			
	12	ELECTRODE MATERIAL				316SS			
	13	GROUNDING RING MATERIAL				YES (SEE GENERAL NOTES 7)			
	14	CONNECTIONS				FLANGED			
	15	CLASS AND FACE				150# FR, ASME B16.5 / NBR 7669			
	16	FLANGE FACE FINISH				MSS SP-6			
	17	ELECTRICAL CONNECTION				NOT APPLICABLE			
CONVERTER / TRANSMITTER	18	MOUNTING				INTEGRAL TO SENSOR			
	19	POWER SUPPLY				24 Vcc - 2 WIRES			
	20	OUTPUT SIGNAL				4 - 20 mA (500 ohms @ 24 Vcc)			
	21	COMMUNICATION PROTOCOL				HART			
	22	PRECISION				± 0.15% F.E.			
	23	REPEATABILITY				BY MANUFACTURER			
	24	ELECTRICAL CONNECTION				1/2" NPT (F)			
	25	LOCAL INDICATION				YES, LCD TYPE (SEE GENERAL NOTES 11)			
	26	CALIBRATION RANGE				BY MANUFACTURER			
	27	CALIBRATED RANGE				0 @ 320 m³/h			
	28	KEYBOARD FOR LOCAL CONFIGURATION				YES			
	29	METER CASING				ALUMINIO (COPPER FREE)			
	30	PULSE OUTPUT				YES			
ACCESSORIES	31	TAGGING				YES (SEE GENERAL NOTES 3)			
	32	SURGE PROTECTOR				YES			
	33								
	34								
	35								
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATUS			CHILLED WATER		LIQUID	
	37	MINIMUM FLOW	NORMAL		MAXIMUM	48.0	215.0	283.0	m³/h
	38	MINIMUM PRESSURE	NORMAL		MAXIMUM	0.23	0.24	0.25	bar-g
	39	MINIMUM TEMPERATURE	NORMAL		MAXIMUM	4.0	7.2	7.2	°C
	40	PROJECT FLOW				283.0 m³/h			
	41	DESIGN PRESSURE	DESIGN TEMPERATURE			3.4 bar-g		37.4 ºC	
	42	DENSITY @ OPERATING CONDITION				1000.1 kg/m³			
	43	VISCOSITY @ OPERATING CONDITION				1.57 Cp			
	44	FLUID CONDUCTIVITY				µS/cm²			
	45	INCRUSTATION				NO			
	46	SUSPENDED SOLIDS (%)				NO			
	47	MAXIMUM LOSS OF LOAD ALLOWED				- bar			
	48								
	49	MANUFACTURER				Endress + Hauser (E+H) or Similar			
	50	MODEL				Proline Promag (E+H)			

NOTES:

1- THE MANUFACTURER MUST CONFIRM THE NOMINAL DIAMETER OF THE METER.

NUMBER:	569-DB7B-AIC-713-005	CLIENT NR:	PRD-AIC-DSH-005

TITLE

MAGNETIC FLOW TRANSMITTER

SHEET: 13 de 16

REV.: 2

GENERAL	1	INSTRUMENT TAG NUMBER				FIT-980014			
	2	SERVIÇE				COOLING WATER - COOLING TOWERS PCH-7B-1			
	3	P&ID				7B-M-0-5-44			
	4	PIPE LINE	EQUIPMENT NUMBER			8"-TWR-980014-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								
METER	9	DIAMETER OF SENSOR TUBE				8" (NOTE 1)			
	10	TUBE MATERIAL				STAINLESS STEEL			
	11	COATING MATERIAL				PFA			
	12	ELECTRODE MATERIAL				316SS			
	13	GROUNDING RING MATERIAL				YES (SEE GENERAL NOTES 7)			
	14	CONNECTIONS				FLANGED			
	15	CLASS AND FACE				150# FR, ASME B16.5 / NBR 7669			
	16	FLANGE FACE FINISH				MSS SP-6			
	17	ELECTRICAL CONNECTION				NOT APPLICABLE			
CONVERTER / TRANSMITTER	18	MOUNTING				INTEGRAL TO SENSOR			
	19	POWER SUPPLY				24 Vcc - 2 WIRES			
	20	OUTPUT SIGNAL				4 - 20 mA (500 ohms @ 24 Vcc)			
	21	COMMUNICATION PROTOCOL				HART			
	22	PRECISION				± 0.15% F.E.			
	23	REPEATABILITY				BY MANUFACTURER			
	24	ELECTRICAL CONNECTION				1/2" NPT (F)			
	25	LOCAL INDICATION				YES, LCD TYPE (SEE GENERAL NOTES 11)			
	26	CALIBRATION RANGE				BY MANUFACTURER			
	27	CALIBRATED RANGE				0 @ 230 m³/h			
	28	KEYBOARD FOR LOCAL CONFIGURATION				YES			
	29	METER CASING				ALUMINIO (COPPER FREE)			
	30	PULSE OUTPUT				YES			
ACCESSORIES	31	TAGGING				YES (SEE GENERAL NOTES 3)			
	32	SURGE PROTECTOR				YES			
	33								
	34								
	35								
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATUS			CHILLED WATER RETURN		LIQUID	
	37	MINIMUM FLOW	NORMAL		MAXIMUM	202.6	202.6	202.6	m³/h
	38	MINIMUM PRESSURE	NORMAL		MAXIMUM	0.97	0.97	0.99	bar-g
	39	MINIMUM TEMPERATURE	NORMAL		MAXIMUM	37.0	37.0	37.0	°C
	40	PROJECT FLOW				202.6 m³/h			
	41	DESIGN PRESSURE	DESIGN TEMPERATURE			4.6 bar-g		67.0 ºC	
	42	DENSITY @ OPERATING CONDITION				993 kg/m³			
	43	VISCOSITY @ OPERATING CONDITION				0.69 Cp			
	44	FLUID CONDUCTIVITY				µS/cm²			
	45	INCRUSTATION				NO			
	46	SUSPENDED SOLIDS (%)				NO			
	47	MAXIMUM LOSS OF LOAD ALLOWED				- bar			
	48								
	49	MANUFACTURER				Endress + Hauser (E+H) or Similar			
	50	MODEL				Proline Promag (E+H)			

NOTES:

1- THE MANUFACTURER MUST CONFIRM THE NOMINAL DIAMETER OF THE METER.

NUMBER:	569-DB7B-AIC-713-005	CLIENT NR:	PRD-AIC-DSH-005

TITLE

MAGNETIC FLOW TRANSMITTER

SHEET: 14 de 16

REV.: 2

GENERAL	1	INSTRUMENT TAG NUMBER			FIT-980016			
	2	SERVIÇE			COOLING WATER - COOLING TOWERS PCH-7B-2			
	3	P&ID			7B-M-0-5-44			
	4	PIPE LINE	EQUIPMENT NUMBER		8"-TWR-980016-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							
METER	9	DIAMETER OF SENSOR TUBE			8" (NOTE 1)			
	10	TUBE MATERIAL			STAINLESS STEEL			
	11	COATING MATERIAL			PFA			
	12	ELECTRODE MATERIAL			316SS			
	13	GROUNDING RING MATERIAL			YES (SEE GENERAL NOTES 7)			
	14	CONNECTIONS			FLANGED			
	15	CLASS AND FACE			150# FR, ASME B16.5 / NBR 7669			
	16	FLANGE FACE FINISH			MSS SP-6			
	17	ELECTRICAL CONNECTION			NOT APPLICABLE			
CONVERTER / TRANSMITTER	18	MOUNTING			INTEGRAL TO SENSOR			
	19	POWER SUPPLY			24 Vcc - 2 WIRES			
	20	OUTPUT SIGNAL			4 - 20 mA (500 ohms @ 24 Vcc)			
	21	COMMUNICATION PROTOCOL			HART			
	22	PRECISION			± 0.15% F.E.			
	23	REPEATABILITY			BY MANUFACTURER			
	24	ELECTRICAL CONNECTION			1/2" NPT (F)			
	25	LOCAL INDICATION			YES, LCD TYPE (SEE GENERAL NOTES 11)			
	26	CALIBRATION RANGE			BY MANUFACTURER			
	27	CALIBRATED RANGE			0 @ 230 m³/h			
	28	KEYBOARD FOR LOCAL CONFIGURATION			YES			
	29	METER CASING			ALUMINIO (COPPER FREE)			
	30	PULSE OUTPUT			YES			
ACCESSORIES	31	TAGGING			YES (SEE GENERAL NOTES 3)			
	32	SURGE PROTECTOR			YES			
	33							
	34							
	35							
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATUS		CHILLED WATER RETURN		LIQUID	
	37	MINIMUM FLOW	NORMAL	MAXIMUM	202.6	202.6	202.6	m³/h
	38	MINIMUM PRESSURE	NORMAL	MAXIMUM	0.97	0.97	0.99	bar-g
	39	MINIMUM TEMPERATURE	NORMAL	MAXIMUM	37.0	37.0	37.0	°C
	40	PROJECT FLOW			202.6 m³/h			
	41	DESIGN PRESSURE	DESIGN TEMPERATURE		4.6 bar-g		67.0 ºC	
	42	DENSITY @ OPERATING CONDITION			993 kg/m³			
	43	VISCOSITY @ OPERATING CONDITION			0.69 Cp			
	44	FLUID CONDUCTIVITY			µS/cm²			
	45	INCRUSTATION			NO			
	46	SUSPENDED SOLIDS (%)			NO			
	47	MAXIMUM LOSS OF LOAD ALLOWED			- bar			
	48							
	49	MANUFACTURER			Endress + Hauser (E+H) or Similar			
	50	MODEL			Proline Promag (E+H)			

FUTURE

NOTES:

1- THE MANUFACTURER MUST CONFIRM THE NOMINAL DIAMETER OF THE METER.

NUMBER:	569-DB7B-AIC-713-005	CLIENT NR:	PRD-AIC-DSH-005

TITLE

MAGNETIC FLOW TRANSMITTER

SHEET: 15 de 16

REV.: **2**

GENERAL	1	INSTRUMENT TAG NUMBER				FIT-980029			
	2	SERVIÇE				GLYCOL FOR PCH-7B-1			
	3	P&ID				7B-M-0-5-44			
	4	PIPE LINE	EQUIPMENT NUMBER			10"-GW0R-980029-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								
METER	9	DIAMETER OF SENSOR TUBE				10" (NOTE 1)			
	10	TUBE MATERIAL				STAINLESS STEEL			
	11	COATING MATERIAL				PFA			
	12	ELECTRODE MATERIAL				316SS			
	13	GROUNDING RING MATERIAL				YES (SEE GENERAL NOTES 7)			
	14	CONNECTIONS				FLANGED			
	15	CLASS AND FACE				150# FR, ASME B16.5 / NBR 7669			
	16	FLANGE FACE FINISH				MSS SP-6			
	17	ELECTRICAL CONNECTION				NOT APPLICABLE			
CONVERTER / TRANSMITTER	18	MOUNTING				INTEGRAL TO SENSOR			
	19	POWER SUPPLY				24 Vcc - 2 WIRES			
	20	OUTPUT SIGNAL				4 - 20 mA (500 ohms @ 24 Vcc)			
	21	COMMUNICATION PROTOCOL				HART			
	22	PRECISION				± 0.15% F.E.			
	23	REPEATABILITY				BY MANUFACTURER			
	24	ELECTRICAL CONNECTION				1/2" NPT (F)			
	25	LOCAL INDICATION				YES, LCD TYPE (SEE GENERAL NOTES 11)			
	26	CALIBRATION RANGE				BY MANUFACTURER			
	27	CALIBRATED RANGE				0 @ 330 m³/h			
	28	KEYBOARD FOR LOCAL CONFIGURATION				YES			
	29	METER CASING				ALUMINIO (COPPER FREE)			
	30	PULSE OUTPUT				YES			
ACCESSORIES	31	TAGGING				YES (SEE GENERAL NOTES 3)			
	32	SURGE PROTECTOR				YES			
	33								
	34								
	35								
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATUS			CHILLED WATER		LIQUID	
	37	MINIMUM FLOW	NORMAL		MAXIMUM	287	287	287	m³/h
	38	MINIMUM PRESSURE	NORMAL		MAXIMUM	1.8	1.8	1.8	bar-g
	39	MINIMUM TEMPERATURE	NORMAL		MAXIMUM	4.0	7.2	7.2	°C
	40	PROJECT FLOW				287 m³/h			
	41	DESIGN PRESSURE	DESIGN TEMPERATURE			2.7 bar-g		37.2 ºC	
	42	DENSITY @ OPERATING CONDITION				1000.1 kg/m³			
	43	VISCOSITY @ OPERATING CONDITION				1.57 Cp			
	44	FLUID CONDUCTIVITY				µS/cm²			
	45	INCRUSTATION				NO			
	46	SUSPENDED SOLIDS (%)				NO			
	47	MAXIMUM LOSS OF LOAD ALLOWED				- bar			
	48								
	49	MANUFACTURER				Endress + Hauser (E+H) or Similar			
	50	MODEL				Proline Promag (E+H)			

NOTES:

1- THE MANUFACTURER MUST CONFIRM THE NOMINAL DIAMETER OF THE METER.

NUMBER:	569-DB7B-AIC-713-005	CLIENT NR:	PRD-AIC-DSH-005

TITLE

MAGNETIC FLOW TRANSMITTER

SHEET: 16 de 16

REV.: 2

GENERAL	1	INSTRUMENT TAG NUMBER				FIT-980030			
	2	SERVIÇE				GLYCOL FOR PCH-7B-2			
	3	P&ID				7B-M-0-5-44			
	4	PIPE LINE	EQUIPMENT NUMBER			10"-GW0R-980030-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								
METER	9	DIAMETER OF SENSOR TUBE				10" (NOTE 1)			
	10	TUBE MATERIAL				STAINLESS STEEL			
	11	COATING MATERIAL				PFA			
	12	ELECTRODE MATERIAL				316SS			
	13	GROUNDING RING MATERIAL				YES (SEE GENERAL NOTES 7)			
	14	CONNECTIONS				FLANGED			
	15	CLASS AND FACE				150# FR, ASME B16.5 / NBR 7669			
	16	FLANGE FACE FINISH				MSS SP-6			
	17	ELECTRICAL CONNECTION				NOT APPLICABLE			
CONVERTER / TRANSMITTER	18	MOUNTING				INTEGRAL TO SENSOR			
	19	POWER SUPPLY				24 Vcc - 2 WIRES			
	20	OUTPUT SIGNAL				4 - 20 mA (500 ohms @ 24 Vcc)			
	21	COMMUNICATION PROTOCOL				HART			
	22	PRECISION				± 0.15% F.E.			
	23	REPEATABILITY				BY MANUFACTURER			
	24	ELECTRICAL CONNECTION				1/2" NPT (F)			
	25	LOCAL INDICATION				YES, LCD TYPE (SEE GENERAL NOTES 11)			
	26	CALIBRATION RANGE				BY MANUFACTURER			
	27	CALIBRATED RANGE				0 @ 40 m³/h			
	28	KEYBOARD FOR LOCAL CONFIGURATION				YES			
	29	METER CASING				ALUMINIO (COPPER FREE)			
	30	PULSE OUTPUT				YES			
ACCESSORIES	31	TAGGING				YES (SEE GENERAL NOTES 3)			
	32	SURGE PROTECTOR				YES			
	33								
	34								
	35								
OPERATING CONDITIONS	36	FLUID	PHYSICAL STATUS			CHILLED WATER		LIQUID	
	37	MINIMUM FLOW	NORMAL		MAXIMUM	287	287	287	m³/h
	38	MINIMUM PRESSURE	NORMAL		MAXIMUM	1.8	1.8	1.8	bar-g
	39	MINIMUM TEMPERATURE	NORMAL		MAXIMUM	4.0	7.2	7.2	°C
	40	PROJECT FLOW				287 m³/h			
	41	DESIGN PRESSURE	DESIGN TEMPERATURE			2.7 bar-g		37.2 ºC	
	42	DENSITY @ OPERATING CONDITION				1000.1 kg/m³			
	43	VISCOSITY @ OPERATING CONDITION				Cp			
	44	FLUID CONDUCTIVITY				µS/cm²			
	45	INCRUSTATION				NO			
	46	SUSPENDED SOLIDS (%)				NO			
	47	MAXIMUM LOSS OF LOAD ALLOWED				- bar			
	48								
	49	MANUFACTURER				Endress + Hauser (E+H) or Similar			
	50	MODEL				Proline Promag (E+H)			

FUTURE

NOTES:

1- THE MANUFACTURER MUST CONFIRM THE NOMINAL DIAMETER OF THE METER.