







DOC NUMBER:

569-DB7A-AIC-700-001

CLIENT NUMBER:

PRD-AIC-DSH-004

CLIENT:

TAKEDA/BAXALTA

PROJECT:

BURITI EPCVM PROJECT

# DRUG PRODUCT - BMS - DATA SHEET MAGNETIC FLOW TRANSMITTER

1	20APR2022	ISSUE FOR CONSTRUCTION AS PER NOTE	ACC	MAF	RSP
0	30JUL2021	ISSUE FOR CONSTRUCTION	JHA	MAF	RSP
Α	24MAR2021	60% DD ISSUE	JHA	MAF	RSP
REV	DATE	DESCRIPTION	EXEC	CHECK	APPROV









TITLE

SHEET: 2 de 24

# **MAGNETIC FLOW TRANSMITTER**

REV.:

DOCUMENT REVIEW CONTROL
-------------------------

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

#### **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 AS PER N+1 UPDATE:**

1- INDICATED FUTURE INSTRUMENTS: FIT-960066, FIT-960077, FIT-980057, FIT-980077

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.









TITLE SHEET:

MAGNETIC FLOW TRANSMITTER

3 de 24

REV:

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-0-5-45 P&I DIAGRAM - DRUG PRODUCT - CHILLED GLYCOL GENERATION SYSTEM
7A-M-0-5-61 P&I DIAGRAM - DRUG PRODUCT - PLANT STEAM DISTRIBUTION SYSTEM (PROCESS + 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- 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.









NO

Endress + Hauser (E+H) or Similar

Proline Promag (E+H)

PRD-AIC-DSH-004 NUMBER: 569-DB7A-AIC-700-001 CLIENT NR:

TITLE

4 de 24 RFV.

#### MAGNETIC FLOW TRANSMITTER

INSTRUMENT TAG NUMBER FIT-610001 SERVICE INDUSTRIAL WATER - DISTRIBUTION SYSTEM 2 P&ID 7A-M-0-5-41 3 PIPE LINE **EQUIPMENT NUMBER** 7A-4"-DW-610001-PP1-NI EQUIPMENT MATERIAL / PIPE 5 PP-H AREA CLASSIFICATION NOT CLASSIFIED 6 ENCLOSURE CLASSIFICATION IP 65 (MÍN.) CONF. NBR IEC 60529 CERTIFICATES (SEE GENERAL NOTES 6) 8 DIAMETER OF SENSOR TUBE 4" (NOTE 4) 9 TUBE MATERIAL STAINLESS STEEL 10 COATING MATERIAL PFA ELECTRODE MATERIAL 316SS 12 GROUNDING RING MATERIAL YES (SEE GENERAL NOTES 7) 13 14 CONNECTIONS **FLANGED** 15 CLASS AND FACE 150# ASME B16.5 / ISO15494 FLANGE FACE FINISH MSS SP-6 **ELECTRICAL CONNECTION** MOUNTING INTEGRAL TO SENSOR 18 POWER SUPPLY 24 Vcc - 2 FIOS 19 **OUTPUT SIGNAL** 4 - 20 mA (500 ohms @ 24 Vcc) 20 CONVERTER / TRANSMITTER COMMUNICATION PROTOCOL HART 21 22 **PRECISION** ± 0.15% F.E. REPEATABILITY BY MANUFACTURER 23 ELECTRICAL CONNECTION 24 1/2" NPT (F) 25 LOCAL INDICATION SIM, TIPO LCD (VER NOTAS GERAIS 11) CALIBRATION RANGE 26 BY MANUFACTURER CALIBRATED RANGE 27 0 @ 50 m<sup>3</sup>/h KEYBOARD FOR LOCAL CONFIGURATION YES METER CASING ALUMINIO (COPPER FREE) 29 PULSE OUTPUT 30 YES TAGGING YES (SEE GENERAL NOTES 3) 31 **ACCESSORIES** SURGE PROTECTOR YES 32 33 34 35 PHYSICAL STATE 36 FI UID INDUSTRIAL WATER LIQUID MINIMUM FLOW NORMAL MAXIMUM 1.8 .37 50 m³/h MINIMUM PRESSURE NORMAL ΜΑΧΙΜΙΙΜ 38 4 bar-g OPERATING CONDITIONS MINIMUM TEMPERATURE NORMAL MAXIMUM 25 °C 39 40 DESIGN FLOWRATE 50 m³/h DESIGN PRESSURE DESIGN TEMPERATURE 55 ℃ 41 4.5 bar-g DENSITY @ OPERATING CONDITION 997.2 kg/m<sup>3</sup> 43 VISCOSITY @ OPERATING CONDITION 0.9 cP FLUID CONDUCTIVITY 44 200 ~ 800 μS/cm (estimated) **SCALING** NO 45

#### NOTES

46 47

48

49

SUSPENDED SOLIDS (%)

MANUFACTURER

MODEL

AVAILABLE PRESSURE DROP









TITLE

5 de 24 REV.:

# MAGNETIC FLOW TRANSMITTER

	D WATER GEN. (F	-IVAC)				
3 P&ID 7A-M-0-5		HVAC)				
	i-42					
4 PIPE LINE FOLLIPMENT NUMBER 74-14"-TWS-040052-CS1-NU	7A-M-0-5-42					
[ 7   1   2   2   1   2   2   2   2   2   2	7A-14"-TWS-940053-CS1-NI -					
4 PIPE LINE EQUIPMENT NUMBER 7A-14"-TWS-940053-CS1-NI 5 EQUIPMENT MATERIAL / PIPE CARBON STEEL AS 6 AREA CLASSIFICATION NOT CLASS	CARBON STEEL ASTM-A106 Gr.B					
6 AREA CLASSIFICATION NOT CLASS	SIFIED					
7 ENCLOSURE CLASSIFICATION IP 65 (MÍN.) CONF. I	VBR IEC 60529					
8 CERTIFICATES (SEE GENERAL	NOTES 6)					
9						
9 DIAMETER OF SENSOR TUBE 14" (NOT	14" (NOTE 4)					
10 TUBE MATERIAL STAINLESS	STAINLESS STEEL					
11 COATING MATERIAL PFA						
12 ELECTRODE MATERIAL 316SS	3					
13 GROUNDING RING MATERIAL  YES (SEE GENER.  14 CONNECTIONS	AL NOTES 7)					
14 CONNECTIONS FLANGE	ED					
15 CLASS AND FACE 150# FR, ASM	1E B16.5					
16 FLANGE FACE FINISH MSS SF	P-6					
17 ELECTRICAL CONNECTION NOT APPLIC	CABLE	-				
18 MOUNTING INTEGRAL TO	SENSOR					
19 POWER SUPPLY 24 Vcc - 2	FIOS					
20 OUTPUT SIGNAL 4 - 20 mA (500 ohn	4 - 20 mA (500 ohms @ 24 Vcc)					
20   OOTPOT SIGNAL	HART					
22 PRECISION ± 0.15% I	F.E.					
23 REPEATABILITY BY MANUFAC	CTURER					
24 ELECTRICAL CONNECTION 1/2" NPT	(F)					
25 LOCAL INDICATION SIM, TIPO LCD (VER N	OTAS GERAIS 11	)				
26 CALIBRATION RANGE BY MANUFAC	CTURER					
27 CALIBRATED RANGE 0 @ 750 i	m³/h					
28 KEYBOARD FOR LOCAL CONFIGURATION YES						
29 METER CASING ALUMINIO (COP.	ALUMINIO (COPPER FREE)					
30 PULSE OUTPUT YES	YES					
31 TAGGING YES (SEE GENER.	YES (SEE GENERAL NOTES 3)					
31   TAGGING   TES (SEE GENER)   32   SURGE PROTECTOR   YES   33   34   35	·					
33						
34						
35						
36 FLUID PHYSICAL STATE COOLING WATER SUPPLY	LIQUID	)				
37 MINIMUM FLOW NORMAL MAXIMUM 730 730	730	m³∕h				
38 MINIMUM PRESSURE NORMAL MAXIMUM 2.009 2.044	2.048	bar-g				
39 MINIMUM TEMPERATURE NORMAL MAXIMUM 31.5 31.5	31.5	°C				
40 DESIGN FLOWRATE 730 m³/h						
41 DESIGN PRESSURE DESIGN TEMPERATURE 4.6 bar-g	67 °C					
42 DENSITY @ OPERATING CONDITION 995.3 kg/m	3					
43 VISCOSITY @ OPERATING CONDITION 0.766 Cp						
44 FLUID CONDUCTIVITY μS/cm	12					
39 MINIMUM TEMPERATURE   NORMAL   MAXIMUM   31.5   31.5						
46 SUSPENDED SOLIDS (%) NO	NO - bar					
46 SUSPENDED SOLIDS (%) NO  47 AVAILABLE PRESSURE DROP - bar		- vai				
47 AVAILABLE PRESSURE DROP - bar	E+H) or Similar					









TITLE

6 de 24 REV.:

# MAGNETIC FLOW TRANSMITTER

								1		
	1	INSTRUMENT TAG NUMBE	R			FIT	-940054			
	2	SERVICE			COOLING WATER - CHILLED WATER GEN. (PROC)					
	3	P&ID			7A-M-0-5-42					
ΑΓ	4	PIPE LINE	EQUIPMENT NUN	MBER	7A-6"-TWS-940054-CS1-NI -					
IER	5	EQUIPMENT MATERIAL / P	IPE			CARBON STEE	L ASTM-A106 Gr.B			
GENERAL	6	AREA CLASSIFICATION				NOT C	LASSIFIED			
٦	7	ENCLOSURE CLASSIFICAT	TON			IP 65 (MÍN.) CO	NF. NBR IEC 60529			
	8	CERTIFICATES			(SEE GENERAL NOTES 6)					
	9				·					
	9	DIAMETER OF SENSOR TU	IRF		6" (NOTE 4)					
		TUBE MATERIAL				·	ESS STEEL			
	_	COATING MATERIAL					PFA			
		ELECTRODE MATERIAL					16SS			
K L	_	GROUNDING RING MATER	IAI				NERAL NOTES 7)			
MEIER		CONNECTIONS	IAL			-	ANGED			
-		CLASS AND FACE					E B16.5 / NBR 7669			
	-	FLANGE FACE FINISH	1				S SP-6			
_		ELECTRICAL CONNECTION	V				PPLICABLE			
		MOUNTING					L TO SENSOR			
		POWER SUPPLY					- 2 WIRES			
5	-				4 - 20 mA (500 ohms @ 24 Vcc)					
		COMMUNICATION PROTOC	COL				HART			
		PRECISION					15% F.E.			
3		REPEATABILITY			UFACTURER					
		ELECTRICAL CONNECTION			NPT (F)					
1		LOCAL INDICATION	YES	•	E GENERAL NOTES	S 11)				
CONVERTER/TRANSMITTER		CALIBRATION RANGE		BY MAN	UFACTURER					
3		CALIBRATED RANGE			110 m³/h					
)		KEYBOARD FOR LOCAL CO	ONFIGURATION				YES			
	29	METER CASING			ALUMINIO (COPPER FREE)					
	30	PULSE OUTPUT			YES (SEE CENERAL NOTES 2)					
ខ្ម		TAGGING			YES (SEE GENERAL NOTES 3)					
	32	SURGE PROTECTOR					YES			
	33									
ACCESSONES	34									
ζ	35									
	36	FLUID	PHYSICAL STATE		COOLING WA	TER SUPPLY	LIQU	IID		
	37	MINIMUM FLOW	NORMAL	MAXIMUM	104	104	104	m³∕h		
	38	MINIMUM PRESSURE	NORMAL	MAXIMUM	1.96	1.999	1.994	bar-g		
or Ervering Continuing	39	MINIMUM TEMPERATURE	NORMAL	MAXIMUM	31.5	31.5	31.5	℃		
	40	DESIGN FLOWRATE				104	m³/h			
	41	DESIGN PRESSURE	DESIGN TEMPER	RATURE	4.0	6 bar-g	67	°C		
	42	DENSITY @ OPERATING C	ONDITION			995.3	kg/m³			
	43	VISCOSITY @ OPERATING	CONDITION			0.766	Ср			
{	44	FLUID CONDUCTIVITY				μ	S/cm²			
3	45	SCALING					NO			
	46	SUSPENDED SOLIDS (%)					NO			
	47	AVAILABLE PRESSURE DR	OP		-	bar				
	48									
	49	MANUFACTURER				Endress + Hau	ser (E+H) or Similar			
	50	MODEL				Proline P	Promag (E+H)			
		•			-					









TITLE

7 de 24 REV.:

# MAGNETIC FLOW TRANSMITTER

								1		
	1	INSTRUMENT TAG NUMBE	R			FI	T-940075			
	2	SERVICE			INDUSTRIAL WATER - MAKE UP					
	3	P&ID			7A-M-0-5-42					
AL	4	PIPE LINE	EQUIPMENT NUM	MBER	7A-21/2"-DW-	940075-PP1-N	-			
GENERAL	5	EQUIPMENT MATERIAL / P.	IPE		POLIPROPII	LENO HOMOF	POLÍMERO CONF. NBR	EN 15494		
D L	6	AREA CLASSIFICATION			NOT CLASSIFIED					
	7	ENCLOSURE CLASSIFICAT	TON			IP 65 (MÍN.) C	ONF. NBR IEC 60529			
	8	CERTIFICATES				(SEE GEN	NERAL NOTES 6)			
	9									
	9	DIAMETER OF SENSOR TU	IBE			21/2	?" (NOTE 4)			
	10	TUBE MATERIAL			STAINLESS STEEL					
	11	COATING MATERIAL			PFA					
,	12	ELECTRODE MATERIAL			316SS					
ויורו		GROUNDING RING MATER	IAL			YES (SEE G	ENERAL NOTES 7)			
1	14	CONNECTIONS					LANGED			
	15	CLASS AND FACE				150# ASME	B16.5 / ISO15494			
	16	FLANGE FACE FINISH				N	ISS SP-6			
	17	ELECTRICAL CONNECTION	V							
7	18	MOUNTING				INTEGR	AL TO SENSOR			
		POWER SUPPLY				24 V	/cc - 2 FIOS			
	20	OUTPUT SIGNAL			24 Vcc - 2 FIOS 4 - 20 mA (500 ohms @ 24 Vcc)					
ì		COMMUNICATION PROTOC	HART							
		PRECISION			± (	).15% F.E.				
?		REPEATABILITY		1	BY MAI	NUFACTURER				
:		ELECTRICAL CONNECTION		1/2	2" NPT (F)					
		LOCAL INDICATION	SIN		VER NOTAS GERAIS 11	')				
CONVERNITY IN THE STATE OF THE		CALIBRATION RANGE	<u> </u>	•	NUFACTURER	<u> </u>				
7		CALIBRATED RANGE			0 @ m³/h					
8		KEYBOARD FOR LOCAL CO	ONFIGURATION				YES			
		METER CASING				ALUMINIO	(COPPER FREE)			
	30	PULSE OUTPUT			YES					
$\overline{}$	31	TAGGING			YES (SEE GENERAL NOTES 3)					
Ĺ		SURGE PROTECTOR			YES					
	33									
ACCESSONES	34									
	35									
	36	FLUID	PHYSICAL STATE		INDUSTRIAL	WATER	LIQUIE	)		
	37	MINIMUM FLOW	NORMAL	MAXIMUM				m³/h		
	38	MINIMUM PRESSURE	NORMAL	MAXIMUM		2.8		bar-g		
	39	MINIMUM TEMPERATURE	NORMAL	MAXIMUM		25		℃		
	40	DESIGN FLOWRATE		•		1	m³/h			
	41	DESIGN PRESSURE	DESIGN TEMPER	RATURE	4.5	bar-g	55 ℃	;		
	42	DENSITY @ OPERATING C	ONDITION			997.2	kg/m³			
	43	VISCOSITY @ OPERATING	CONDITION				Ср			
	44	FLUID CONDUCTIVITY					μS/cm²			
	45	SCALING					NO			
	46	SUSPENDED SOLIDS (%)					NO			
	47	AVAILABLE PRESSURE DR	POP		-	bar				
	48									
	49	MANUFACTURER				Endress + Ha	user (E+H) or Similar			
	50	MODEL				Proline	Promag (E+H)			









TITLE

8 de 24 REV.:

# MAGNETIC FLOW TRANSMITTER

			·····					1		
	1	INSTRUMENT TAG NUMBE	R			FIT-	940090	· ·		
ľ	2	SERVICE			COOLING WATER -PROC. WASTE - LIFT STATION					
ı	3	P&ID				7A-N	Л-0-5-42			
ΑL	4	PIPE LINE	EQUIPMENT NUN	MBER	7A-6"-TWS-9	940090-CS1-NI		-		
GENERAL	5	EQUIPMENT MATERIAL / PI	IPE			CARBON STEE	L ASTM-A106 Gr.B			
D E	6	AREA CLASSIFICATION			NOT CLASSIFIED					
	7	ENCLOSURE CLASSIFICAT	TON		IP 65 (MÍN.) CONF. NBR IEC 60529					
ı	8	CERTIFICATES				(SEE GENE	RAL NOTES 6)			
ı	9									
	9	DIAMETER OF SENSOR TU	'BE		6" (NOTE 4)					
ı	10	TUBE MATERIAL				STAINL	ESS STEEL			
Ī	11	COATING MATERIAL					PFA			
-	12	ELECTRODE MATERIAL				3	16SS			
	13	GROUNDING RING MATER	IAL			YES (SEE GE	NERAL NOTES 7)			
	14	CONNECTIONS				FLA	ANGED			
Ì	15	CLASS AND FACE				150# FR, ASME	B16.5 / NBR 7669			
ı	16	FLANGE FACE FINISH				MS	S SP-6			
ı	17	ELECTRICAL CONNECTION	V			NOT AF	PPLICABLE			
1	18	MOUNTING				INTEGRAL	TO SENSOR			
ı	19	POWER SUPPLY				24 Vcc	- 2 WIRES			
:	20	OUTPUT SIGNAL			4 - 20 mA (500 ohms @ 24 Vcc)					
<u> </u>	21	COMMUNICATION PROTOC	COL			F	IART			
l	22	PRECISION		± 0.1	15% F.E.					
ı	23	REPEATABILITY				BY MAN	JFACTURER			
	24	ELECTRICAL CONNECTION		1/2"	NPT (F)					
i	25	LOCAL INDICATION	YES	G, LCD TYPE (SE	E GENERAL NOTE	S 11)				
	26	CALIBRATION RANGE		BY MANU	JFACTURER					
	27	CALIBRATED RANGE		0 @	120 m³/h					
3	28	KEYBOARD FOR LOCAL CO	ONFIGURATION				YES			
Ī	29	METER CASING	ALUMINIO (COPPER FREE)							
ı	30	PULSE OUTPUT			YES					
,	31	TAGGING			YES (SEE GENERAL NOTES 3)					
	32	SURGE PROTECTOR			YES					
	33									
4CCESSONIES	34									
ξ	35									
	36	FLUID	PHYSICAL STATE		COOLING WAT	TER SUPPLY	LIQI	JID		
	37	MINIMUM FLOW	NORMAL	MAXIMUM	114.6	114.6	114.6	m³/h		
	38	MINIMUM PRESSURE	NORMAL	MAXIMUM	3.138	3.173	3.177	bar-g		
	39	MINIMUM TEMPERATURE	NORMAL	MAXIMUM	31.5	31.5	31.5	°C		
	40	DESIGN FLOWRATE				114.6	m³/h			
	41	DESIGN PRESSURE	DESIGN TEMPER	RATURE	4.6	6 bar-g	67	°C		
	42	DENSITY @ OPERATING C	ONDITION			995.3	kg/m³			
	43	VISCOSITY @ OPERATING	CONDITION			0.766	Ср			
	44	FLUID CONDUCTIVITY					S/cm²			
	45	SCALING					NO			
	46	SUSPENDED SOLIDS (%)					NO			
	47	AVAILABLE PRESSURE DR	POP		-	bar				
⇃	48									
	49	MANUFACTURER					ser (E+H) or Similar			
	50	MODEL				Proline P	romag (E+H)			









Proline Promag (E+H)

NUMBER: 569-DB7A-AIC-700-001 CLIENT NR: PRD-AIC-DSH-004

TITLE

SHEET:

9 de 24 REV.:

# MAGNETIC FLOW TRANSMITTER

							1		
1	INSTRUMENT TAG NUMBE	R			FIT-	-940092			
2	SERVICE			COOLING	WATER - COM	PRESSED AIR GEI	NERATION		
3	P&ID				7A-N	Л-0-5-42			
₹ 4	PIPE LINE	EQUIPMENT I	NUMBER	7A-2"-TWS-9	940092-CS1-NI		-		
5 6	EQUIPMENT MATERIAL / P	IPE			CARBON STEE	L ASTM-A106 Gr.E	3		
1 6	AREA CLASSIFICATION			NOT CLASSIFIED					
7	7 ENCLOSURE CLASSIFICAT	ΓΙΟΝ		IP 65 (MÍN.) CONF. NBR IEC 60529					
8	B CERTIFICATES				(SEE GENE	RAL NOTES 6)			
-	9				<u> </u>				
9	DIAMETER OF SENSOR TU	JBE			2" (1	VOTE 4)			
1	0 TUBE MATERIAL				STAINL	ESS STEEL			
1	1 COATING MATERIAL					PFA			
_	2 ELECTRODE MATERIAL				3	16SS			
_	3 GROUNDING RING MATER	ZIAL				NERAL NOTES 7)			
_	4 CONNECTIONS					ANGED			
-	5 CLASS AND FACE				150# FR. ASME	E B16.5 / NBR 7669	1		
H	6 FLANGE FACE FINISH					S SP-6			
	7 ELECTRICAL CONNECTION	V				PPLICABLE			
_	8 MOUNTING	<u> </u>				L TO SENSOR			
-	9 POWER SUPPLY					- 2 WIRES			
	0 OUTPUT SIGNAL					0 ohms @ 24 Vcc)			
_	1 COMMUNICATION PROTO	COL			•	HART			
_	2 PRECISION	<del></del>				15% F.E.			
	3 REPEATABILITY					UFACTURER			
_	4 ELECTRICAL CONNECTION	N/				NPT (F)			
-	5 LOCAL INDICATION	•		VES		E GENERAL NOTE	S 11)		
2	6 CALIBRATION RANGE			723		UFACTURER	.3 11)		
'	7 CALIBRATED RANGE					12 m³/h			
2	8 KEYBOARD FOR LOCAL CO	ONEICUBATION				YES			
-	9 METER CASING	JNFIGURATION				COPPER FREE)			
$\vdash$	0 PULSE OUTPUT					YES			
<del> </del>	1 TAGGING					NERAL NOTES 3)			
	2 SURGE PROTECTOR				•	YES			
-						163			
3	3								
3 3									
Ť		DUVEICAL STATE		COOLING WAT	ED CURRIN	110	LIID		
_	6 FLUID 7 MINIMUM FLOW	PHYSICAL STATE NORMAL	MAXIMUM	COOLING WAT		10.8	m³/h		
-	8 MINIMUM PRESSURE	NORMAL	MAXIMUM	3.127	10.8 3.162	3.166			
H			MAXIMUM		31.5	31.5	bar-g ℃		
$\vdash$		NORIVIAL	IVIAAIIVIUIVI	31.5	10.8				
-	·	DESIGN TEMI	DEDATIDE	4.0	10.8 i 6 bar-g		°C		
$\vdash$	_		LIMIUNE	4.0	995.3 i				
-									
$\vdash$	<u> </u>	CONDITION		_	0.766	·			
1	4 FLUID CONDUCTIVITY 5 SCALING				· · · · · · · · · · · · · · · · · · ·	S/cm²			
, —	6 SUSPENDED SOLIDS (%)			_		NO			
$\vdash$	* /			_		NO			
-	7 AVAILABLE PRESSURE DR	IOF		-	bar				
	8 MANUEACTURER				Foodrog - : !!	20 (F. H) = 2 (in: "			
4	9 MANUFACTURER				∟naress + Haus	ser (E+H) or Similar			

NOTES:

MODEL

<sup>1-</sup> THE MANUFACTURER MUST CONFIRM THE NOMINAL DIAMETER OF THE METER.









PRD-AIC-DSH-004 NUMBER: 569-DB7A-AIC-700-001 CLIENT NR:

TITLE

10 de 24 REV.:

#### MAGNETIC FLOW TRANSMITTER

INSTRUMENT TAG NUMBER FIT-960001 SERVICE CHILLED WATER - SUPPLY BUILDING 7A 2 P&ID 7A-M-0-5-43 3 PIPE LINE **EQUIPMENT NUMBER** 7A-10"-CW1R-960001-CS1-CC 4 GENERAL EQUIPMENT MATERIAL / PIPE 5 CARBON STEEL ASTM-A106 Gr.B AREA CLASSIFICATION 6 NOT CLASSIFIED ENCLOSURE CLASSIFICATION IP 65 (MÍN.) CONF. NBR IEC 60529 CERTIFICATES (SEE GENERAL NOTES 6) 8 DIAMETER OF SENSOR TUBE 10" (NOTE 4) 9 TUBE MATERIAL STAINLESS STEEL 10 COATING MATERIAL PFA 316SS 12 ELECTRODE MATERIAL GROUNDING RING MATERIAL YES (SEE GENERAL NOTES 7) 13 14 CONNECTIONS **FLANGED** 15 CLASS AND FACE 150# FR, ASME B16.5 / NBR 7669 FLANGE FACE FINISH MSS SP-6 **ELECTRICAL CONNECTION** NOT APPLICABLE MOUNTING INTEGRAL TO SENSOR 18 POWER SUPPLY 24 Vcc - 2 WIRES 19 **OUTPUT SIGNAL** 4 - 20 mA (500 ohms @ 24 Vcc) 20 CONVERTER / TRANSMITTER COMMUNICATION PROTOCOL HART 21 22 **PRECISION** ± 0.15% F.E. REPEATABILITY BY MANUFACTURER 23 ELECTRICAL CONNECTION 24 1/2" NPT (F) 25 LOCAL INDICATION YES, LCD TYPE (SEE GENERAL NOTES 11) CALIBRATION RANGE BY MANUFACTURER 26 CALIBRATED RANGE 0 @ 250 m³/h 27 KEYBOARD FOR LOCAL CONFIGURATION YES METER CASING ALUMINIO (COPPER FREE) 29 PULSE OUTPUT 30 YES 31 TAGGING YES (SEE GENERAL NOTES 3) **ACCESSORIES** SURGE PROTECTOR YES 32 33 34 35 PHYSICAL STATE 36 FI UID CHILLED WATER RETURN LIQUID MINIMUM FLOW NORMAL MAXIMUM 146.0 203.0 224.0 .37 m³/h MINIMUM PRESSURE NORMAL ΜΑΧΙΜΙΙΜ 38 0.45 0.41 0.4 bar-q OPERATING CONDITIONS MINIMUM TEMPERATURE NORMAL MAXIMUM 5.5 °C 39 40 DESIGN FLOWRATE 203.0 m³/h DESIGN PRESSURE DESIGN TEMPERATURE 42.5 °C 41 2.7 bar-g DENSITY @ OPERATING CONDITION 999.99 kg/m³ 43 VISCOSITY @ OPERATING CONDITION 1.497 Cp FLUID CONDUCTIVITY 44 µS/cm<sup>2</sup> **SCALING** NO 45 SUSPENDED SOLIDS (%) NO 46 47 AVAILABLE PRESSURE DROP 48 MANUFACTURER Endress + Hauser (E+H) or Similar 49 MODEL Proline Promag (E+H)

THE MANUFACTURER MUST CONFIRM THE NOMINAL DIAMETER OF THE METER.









TITLE

SHEET:

11 de 24 REV.:

# MAGNETIC FLOW TRANSMITTER

1   INSTRUMENT TAG NUMBER	PLY BUILDING 7B 43 - 7M-A106 Gr.B FIED BR IEC 60529 NOTES 6) 4) FIEEL L NOTES 7) D 5 / NBR 7669 6 ABLE FENSOR
3   P&ID   7A-M-0-5-4   PIPE LINE   EQUIPMENT NUMBER   7A-10"-CW1R-960006-CS1-CC   5   EQUIPMENT MATERIAL / PIPE   CARBON STEEL AST   CARBON STEEL AST   CARBON STEEL AST   (SEE GENERAL IN	
A	- TM-A106 Gr.B FIED BR IEC 60529 NOTES 6) 4) TTEEL L NOTES 7) D 5 / NBR 7669 6 ABLE ENSOR
S	FIED BR IEC 60529 NOTES 6)  4) TEEL L NOTES 7) D 5 / NBR 7669 6 ABLE ENSOR
7   ENCLOSURE CLASSIFICATION   IP 65 (MIN.) CONF. NOT 8   CERTIFICATES   (SEE GENERAL IN 9 )	FIED BR IEC 60529 NOTES 6)  4) TEEL L NOTES 7) D 5 / NBR 7669 6 ABLE ENSOR
7   ENCLOSURE CLASSIFICATION   IP 65 (MIN.) CONF. NOT 8   CERTIFICATES   (SEE GENERAL IN 9 )	BR IEC 60529 NOTES 6)  4) TTEEL L NOTES 7) D 5 / NBR 7669 6 ABLE ENSOR
7   ENCLOSURE CLASSIFICATION   IP 65 (MIN.) CONF. NOT 8   CERTIFICATES   (SEE GENERAL IN 9 )	BR IEC 60529 NOTES 6)  4) TTEEL L NOTES 7) D 5 / NBR 7669 6 ABLE ENSOR
### 8   CERTIFICATES   (SEE GENERAL N. 9    9   DIAMETER OF SENSOR TUBE   10" (NOTE    10   TUBE MATERIAL   STAINLESS S.    11   COATING MATERIAL   PFA    12   ELECTRODE MATERIAL   316SS    13   GROUNDING RING MATERIAL   YES (SEE GENERAL N. 14    14   CONNECTIONS   FLANGEL    15   CLASS AND FACE   150# FR, ASME B16.3    16   FLANGE FACE FINISH   MSS SP4    17   ELECTRICAL CONNECTION   NOT APPLICATION    18   MOUNTING   INTEGRAL TO S.    19   POWER SUPPLY   24 Vcc - 2 W.    20   OUTPUT SIGNAL   4 - 20 mA (500 ohms    21   COMMUNICATION PROTOCOL   HART    22   PRECISION   ± 0.15% F.    23   REPEATABILITY   BY MANUFACT    24   ELECTRICAL CONNECTION   YES, LCD TYPE (SEE GENERAL N. 12" NPT (CONNECTION    25   LOCAL INDICATION PANGE   BY MANUFACT    26   CALIBRATED RANGE   BY MANUFACT    27   CALIBRATED RANGE   BY MANUFACT    28   KEYBOARD FOR LOCAL CONFIGURATION   YES    29   METER CASING   ALUMINIO (COPP. 10.15    20   AU metal series   Aluminio (COPP. 10.15    20   AU metal series   Aluminio (COPP. 10.15    21   CALIBRATED RANGE   ALUMINIO (COPP. 10.15    29   METER CASING   ALUMINIO (COPP. 10.15    20   AU metal series   Aluminio (COPP. 10.15    20   AU metal series   Aluminio (COPP. 10.15    20   AU metal series   Aluminio (COPP. 10.15    21   CALIBRATED RANGE   ALUMINIO (COPP. 10.15    22   METER CASING   ALUMINIO (COPP. 10.15    24   ALUMINIO (COPP. 10.15    25   ALUMINIO (COPP. 10.15    26   ALUMINIO (COPP. 10.15    27   ALUMINIO (COPP. 10.15    28   ALUMINIO (COPP. 10.15    29   ALUMINIO (COPP. 10.15    20   ALUMINIO (COPP. 10.15    20   ALUMINIO (COPP. 10.15    20   AU metal series   Aluminio (COPP. 10.15    20   ALUMINIO (COPP. 10.15    21   ALUMINIO (COPP. 10.15    22   ALUMINIO (COPP. 10.15    24   ALUMINIO (COPP. 10.15    25   ALUMINIO (COPP. 10.15    26   ALUMINIO (COPP. 10.15    27   ALUMINIO (COPP. 10.15    28   ALUMINIO (COPP. 10.15    29   ALUMINIO (COPP. 10.15    20   ALUMINIO (COPP. 10.15    20   ALUMINIO (COPP. 10.15    20   ALUMINIO (COPP. 10.15    21   ALUMINIO (COPP. 10.15    21   ALUMINIO (C	A) TEEL  L NOTES 7) D 5 / NBR 7669 6 ABLE ENSOR
9 DIAMETER OF SENSOR TUBE 10 TUBE MATERIAL 11 COATING MATERIAL 12 ELECTRODE MATERIAL 13 GROUNDING RING MATERIAL 14 CONNECTIONS 15 CLASS AND FACE 16 FLANGE FACE FINISH 17 ELECTRICAL CONNECTION 18 MOUNTING 19 POWER SUPPLY 20 OUTPUT SIGNAL 21 COMMUNICATION PROTOCOL 22 REPEATABILITY 23 REPEATABILITY 36 CALIBRATED RANGE 26 CALIBRATION RANGE 27 CALIBRATED RANGE 28 KEYBOARD FOR LOCAL CONFIGURATION 29 METER CASING 10 (NOTE 10 (NOTE 10 (NOTE 11 (NOTE 11 (STAINLESS SI 10 (NOTE 11 (STAINLESS SI 11 (COATING MATERIAL 12 (SEE GENERAL 13 (SEE GENERAL 14 (CONNECTIONS 15 (SEE GENERAL 15 (SEE GENERAL 16 (FLANGE FACE FINISH 17 (SEE GENERAL 17 (SEE GENERAL 18 (SEE GENERAL 19 (SEE GENERAL 19 (SEE GENERAL 19 (SEE GENERAL 10 (SEE GENERAL 11 (SEE GENERAL 11 (SEE GENERAL 12 (SEE GENERAL 13 (SEE GENERAL 14 (CONNECTIONS 10 (SEE GENERAL 15 (SEE GENERAL 16 (FLANGE 16 FLANGE 17 (SEE GENERAL 17 (SEE GENERAL 18 (SEE GENERAL 19 (SEE GENERAL 19 (SEE GENERAL 19 (SEE GENERAL 10 (SEE GENERAL 10 (SEE GENERAL 10 (SEE GENERAL 11 (SEE GENERAL 11 (SEE GENERAL 12 (SEE GENERAL 13 (SEE GENERAL 14 (SEE GENERAL 14 (SEE GENERAL 15 (SEE GENERAL 16 (SEE GENERAL 16 (SEE GENERAL 16 (SEE GENERAL 16 (SEE GENERAL 17 (SEE GENERAL 17 (SEE GENERAL 18 (SEE GENERAL 19 (SEE GENERAL 19 (SEE GENERAL 10 (SEE GENERAL 10 (SEE GENERAL 10 (SEE GENERAL 11 (	L NOTES 7) D 5 / NBR 7669 6 ABLE ENSOR
9   DIAMETER OF SENSOR TUBE   10" (NOTE   10) TUBE MATERIAL   STAINLESS S	L NOTES 7) D 5 / NBR 7669 6 ABLE ENSOR
10   TUBE MATERIAL   STAINLESS S     11   COATING MATERIAL   PFA     12   ELECTRODE MATERIAL   316SS     13   GROUNDING RING MATERIAL   YES (SEE GENERAL     14   CONNECTIONS   FLANGEL     15   CLASS AND FACE   150# FR, ASME B16.5     16   FLANGE FACE FINISH   MSS SPA     17   ELECTRICAL CONNECTION   INTEGRAL TO S     18   MOUNTING   INTEGRAL TO S     19   POWER SUPPLY   24 Vcc - 2 WI     20   OUTPUT SIGNAL   4 - 20 mA (500 ohms     21   COMMUNICATION PROTOCOL   HART     22   PRECISION   £ 0.15% F.     23   REPEATABILITY   BY MANUFACT     24   ELECTRICAL CONNECTION   1/2" NPT (     25   LOCAL INDICATION   YES, LCD TYPE (SEE GEN     26   CALIBRATION RANGE   BY MANUFACT     27   CALIBRATED RANGE   BY MANUFACT     28   KEYBOARD FOR LOCAL CONFIGURATION   YES     29   METER CASING   ALUMINIO (COPP.	L NOTES 7) D 5 / NBR 7669 6 ABLE ENSOR
11   COATING MATERIAL   PFA     12   ELECTRODE MATERIAL   316SS     13   GROUNDING RING MATERIAL   YES (SEE GENERAL     14   CONNECTIONS   FLANGEL     15   CLASS AND FACE   150# FR, ASME B16.3     16   FLANGE FACE FINISH   MSS SP-     17   ELECTRICAL CONNECTION   NOT APPLICATION     18   MOUNTING   INTEGRAL TO S     19   POWER SUPPLY   24 Vcc - 2 WI     20   OUTPUT SIGNAL   4 - 20 mA (500 ohms     21   COMMUNICATION PROTOCOL   HART     22   PRECISION   ± 0.15% F.     23   REPEATABILITY   BY MANUFACT     24   ELECTRICAL CONNECTION   1/2" NPT (1/2" N	L NOTES 7) D 5 / NBR 7669 6 ABLE ENSOR
12   ELECTRODE MATERIAL   316SS     13   GROUNDING RING MATERIAL   YES (SEE GENERAL     14   CONNECTIONS   FLANGEL     15   CLASS AND FACE   150# FR, ASME B16.3     16   FLANGE FACE FINISH   MSS SP-1     17   ELECTRICAL CONNECTION   NOT APPLICATION     19   POWER SUPPLY   24 Vcc - 2 WI     20   OUTPUT SIGNAL   4 - 20 mA (500 ohms     21   COMMUNICATION PROTOCOL   HART     22   PRECISION   ± 0.15% F.     23   REPEATABILITY   BY MANUFACT     24   ELECTRICAL CONNECTION   YES, LCD TYPE (SEE GENERAL     25   LOCAL INDICATION RANGE   BY MANUFACT     26   CALIBRATED RANGE   0 @ 40 m²     27   CALIBRATED RANGE   0 @ 40 m²     28   KEYBOARD FOR LOCAL CONFIGURATION   YES     29   METER CASING   ALUMINIO (COPPLETED     10   CONNECTION   COPPLETED     12   COPPLETED   COPPLETED   COPPLETED     13   GROUNDING RING MATERIAL   YES (SEE GENERAL     15   CLASS AND FACE   150# FR, ASME B16.3     15   CLASS AND FACE   150# FR, ASME B16.3     16   FLANGE   150# FR, ASME B16.3     17   CLASS AND FACE   150# FR, ASME B16.3     18   MOUNTING   INTEGRAL TO SITURD     19   POWER SUPPLY   24 Vcc - 2 WI     20   OUTPUT SIGNAL   4 - 20 mA (500 ohms     21   COMMUNICATION PROTOCOL   HART     22   PRECISION   ± 0.15% FR.     23   REPEATABILITY   BY MANUFACT     24   ELECTRICAL CONNECTION   YES, LCD TYPE (SEE GENERAL     25   LOCAL INDICATION   YES, LCD TYPE (SEE GENERAL     26   CALIBRATION RANGE   BY MANUFACT     27   CALIBRATED RANGE   0 @ 40 m²     28   KEYBOARD FOR LOCAL CONFIGURATION   YES     29   METER CASING   ALUMINIO (COPPLETED     17   CALIBRATE   CONNECTION   ALUMINIO (COPPLETED     18   CALIBRATICAL   CONNECTION   ALUMINIO (COPPLETED     19   CALIBRATICAL   CONNECTION   ALUMINIO (COPPLETED     10   CALIBRATICAL   CONNECTION   ALUMINIO (COPPLETED	D 5 / NBR 7669 6 ABLE EENSOR
13   GROUNDING RING MATERIAL   YES (SEE GENERAL   14   CONNECTIONS   FLANGEL   150# FR, ASME B16.3   15   CLASS AND FACE   150# FR, ASME B16.3   16   FLANGE FACE FINISH   MSS SP-4   17   ELECTRICAL CONNECTION   NOT APPLICATION   NOT APPLICATION   18   MOUNTING   INTEGRAL TO S   19   POWER SUPPLY   24 Vcc - 2 WI   20   OUTPUT SIGNAL   4 - 20 mA (500 ohms   21   COMMUNICATION PROTOCOL   HART   22   PRECISION   ± 0.15% F.   23   REPEATABILITY   BY MANUFACT   24   ELECTRICAL CONNECTION   1/2" NPT (6   25   LOCAL INDICATION   YES, LCD TYPE (SEE GENERAL   150# FR. ASME B16.3   150# FR. ASME	D 5 / NBR 7669 6 ABLE EENSOR
15   CLASS AND FACE   150# FR, ASME B16.3     16   FLANGE FACE FINISH   MSS SP-1     17   ELECTRICAL CONNECTION   NOT APPLICATION     18   MOUNTING   INTEGRAL TO S     19   POWER SUPPLY   24 Vcc - 2 WI     20   OUTPUT SIGNAL   4 - 20 mA (500 ohms     21   COMMUNICATION PROTOCOL   HART     22   PRECISION   ± 0.15% F.     23   REPEATABILITY   BY MANUFACT     24   ELECTRICAL CONNECTION   1/2" NPT (1/2" N	D 5 / NBR 7669 6 ABLE EENSOR
15   CLASS AND FACE   150# FR, ASME B16.3     16   FLANGE FACE FINISH   MSS SP-1     17   ELECTRICAL CONNECTION   NOT APPLICATION     18   MOUNTING   INTEGRAL TO S     19   POWER SUPPLY   24 Vcc - 2 WI     20   OUTPUT SIGNAL   4 - 20 mA (500 ohms     21   COMMUNICATION PROTOCOL   HART     22   PRECISION   ± 0.15% F.     23   REPEATABILITY   BY MANUFACT     24   ELECTRICAL CONNECTION   1/2" NPT (1/2" N	5 / NBR 7669 6 ABLE EENSOR
16   FLANGE FACE FINISH   MSS SP-0     17   ELECTRICAL CONNECTION   NOT APPLICATION     18   MOUNTING   INTEGRAL TO SION     19   POWER SUPPLY   24 Vcc - 2 WI	6 ABLE ENSOR
17   ELECTRICAL CONNECTION	ABLE ENSOR
18   MOUNTING	ENSOR
19   POWER SUPPLY   24 Vcc - 2 WI   20   OUTPUT SIGNAL   4 - 20 mA (500 ohms   21   COMMUNICATION PROTOCOL   HART   22   PRECISION   ± 0.15% F.   23   REPEATABILITY   BY MANUFACT   24   ELECTRICAL CONNECTION   1/2" NPT (1/2"	
20   OUTPUT SIGNAL   4 - 20 mA (500 ohms	RES
21   COMMUNICATION PROTOCOL	
29 METER CASING ALUMINIO (COPPI	@ 24 Vcc)
29 METER CASING ALUMINIO (COPPI	
29 METER CASING ALUMINIO (COPPI	E.
29 METER CASING ALUMINIO (COPPI	URER
29 METER CASING ALUMINIO (COPPI	 F)
29 METER CASING ALUMINIO (COPPI	IERAL NOTES 11)
29 METER CASING ALUMINIO (COPPL	URER
29 METER CASING ALUMINIO (COPPL	/h
29 METER CASING ALUMINIO (COPPI	
	ER FREE)
1 00 1 00 1 00 00 00 00 00 00 00 00 00 0	
	I NOTES 3)
32 SURGE PROTECTOR 33 34 34 35	
9 33 33 12 12 12 12 12 12 12 12 12 12 12 12 12	
6) 34 34	
8 35 35 35 35 35 35 35 35 35 35 35 35 35	
	LIOUID
	LIQUID m3/h
37         MINIMUM FLOW         NORMAL         MAXIMUM         171.0         234.0           38         MINIMUM PRESSURE         NORMAL         MAXIMUM         0.44         0.4	257.0 m³/h
	0.38 bar-g 5.5 °C
39 MINIMUM TEMPERATURE   NORMAL   MAXIMUM   5.5   5.5     40 DESIGN FLOWRATE   234.0 m³/h     41 DESIGN PRESSURE   DESIGN TEMPERATURE   2.7 bar-g     42 DENSITY @ OPERATING CONDITION   999.99 kg/m³     43 VISCOSITY @ OPERATING CONDITION   1.497 Cp     44 FLUID CONDUCTIVITY   µS/cm²     45 SCALING   NO	5.5 °C
E 40 DESIGN FLOWRATE 234.0 m³/h	40.5.00
41 DESIGN PRESSURE DESIGN TEMPERATURE 2.7 bar-g	42.5 ℃
Update of the control	
43 VISCOSITY @ OPERATING CONDITION 1.497 Cp	
ψ 44 FLUID CONDUCTIVITY μS/cm²	
46 SUSPENDED SOLIDS (%) NO	
47 AVAILABLE PRESSURE DROP - bar	
48	
49 MANUFACTURER Endress + Hauser (E+	
50 MODEL Proline Promag	·H) or Similar









TITLE

# SHEET:

# MAGNETIC FLOW TRANSMITTER

12 de 24 REV.:

*i/\	. UIV	IETIC FLOW TRAN						1		
	1	INSTRUMENT TAG NUMBE	ER .			FIT-	960062			
ŀ	2	SERVICE			COOLING WATER - COOLING TOWERS - CH-7A-1					
l	3	P&ID				7A-N	Л-0-5-43			
4	4	PIPE LINE	EQUIPMENT NU	JMBER	7A-12"-TWR-960062-CS1-NI -					
SENERAL	5	EQUIPMENT MATERIAL / F	PIPE		CARBON STEEL ASTM-A106 Gr.B					
3 <u>E</u> V	6	AREA CLASSIFICATION			NOT CLASSIFIED					
ĭŀ		ENCLOSURE CLASSIFICA	TION		IP 65 (MÍN.) CONF. NBR IEC 60529					
ŀ	8	CERTIFICATES					RAL NOTES 6)			
ŀ	9				12" (NOTE 4)					
7	9	DIAMETER OF SENSOR TO	JBE							
ŀ	10	TUBE MATERIAL			STAINLESS STEEL					
ŀ	11	COATING MATERIAL			PFA					
ړ <del>ا</del>		ELECTRODE MATERIAL			216SS					
אחו הא		GROUNDING RING MATER	RIAL			YES (SEE GE	NERAL NOTES 7)			
M -		CONNECTIONS				•	ANGED			
ŀ	15	CLASS AND FACE				150# FR, ASME	B16.5 / NBR 7669	)		
ŀ	-	FLANGE FACE FINISH					S SP-6			
ŀ	17	ELECTRICAL CONNECTION	N			NOT AF	PPLICABLE			
1	18	MOUNTING				INTEGRAL	TO SENSOR			
ŀ	19	POWER SUPPLY				24 Vcc	- 2 WIRES			
╷┠	20	OUTPUT SIGNAL			24 Vcc - 2 WIRES 4 - 20 mA (500 ohms @ 24 Vcc)					
<u> </u>		COMMUNICATION PROTO	COL		HART					
		PRECISION				± 0.1	15% F.E.			
}		REPEATABILITY				BY MANU	JFACTURER			
}		ELECTRICAL CONNECTIO			NPT (F)					
<u>۲</u>		LOCAL INDICATION	YES		E GENERAL NOTE	S 11)				
<u> </u>		CALIBRATION RANGE		•	JFACTURER	- /				
> F		CALIBRATED RANGE		0 @	400 m³/h					
3		KEYBOARD FOR LOCAL C			YES					
- 1-	_	METER CASING			ALUMINIO (COPPER FREE)					
ŀ		PULSE OUTPUT			YES					
$\frac{1}{2}$		TAGGING			YES (SEE GENERAL NOTES 3)					
ý F		SURGE PROTECTOR			YES					
5	33									
CCESSORIES	34									
Ž  -	35									
7	_	FLUID	PHYSICAL STATE		COOLING WAT	TER RETURN	LIQ	UID		
ŀ	37	MINIMUM FLOW	NORMAL	MAXIMUM	365.0	365.0	365.0	m³/h		
ŀ	38	MINIMUM PRESSURE	NORMAL	MAXIMUM	1.125	1.164	1.16	bar-g		
<u></u>	39	MINIMUM TEMPERATURE		MAXIMUM	37.0	37.0	37.0	∞		
2	40	DESIGN FLOWRATE	1			365.0 1	m³/h	1		
		DESIGN PRESSURE	DESIGN TEMPE	ERATURE	4.	6 bar-g	67.0	℃		
3	42	DENSITY @ OPERATING (				993 /				
}	43	VISCOSITY @ OPERATING				0.691				
<u> </u>	44	FLUID CONDUCTIVITY					S/cm²			
<u> </u>	45	SCALING				<u>.</u>	NO			
<b>'</b>		SUSPENDED SOLIDS (%)					NO			
ŀ	47	AVAILABLE PRESSURE DE	ROP		-	bar				
ŀ	48									
7		MANUFACTURER				Endress + Haus	ser (E+H) or Similar	•		
L		MODEL			Endress + Hauser (E+H) or Similar  Proline Promag (E+H)					

<sup>1-</sup> THE MANUFACTURER MUST CONFIRM THE NOMINAL DIAMETER OF THE METER.









TITLE

# ISHEF

13 de 24 REV.:

# MAGNETIC FLOW TRANSMITTER

								1		
	1	INSTRUMENT TAG NUMBE	R			FIT-9	960064			
	2	SERVICE			COOLII	NG WATER - CO	DLING TOWERS -	CH-7A-2		
	3	P&ID				7A-M	-0-5-43			
AL	4	PIPE LINE	EQUIPMENT N	UMBER	7A-12"-TWR	-960064-CS1-N		=		
GENERAL	5	EQUIPMENT MATERIAL / P	IPE			CARBON STEEL	ASTM-A106 Gr.B			
GE	6	AREA CLASSIFICATION				NOT CL	ASSIFIED			
	7	ENCLOSURE CLASSIFICAT	TION			IP 65 (MÍN.) CON	IF. NBR IEC 60529	)		
ŀ	8	CERTIFICATES				(SEE GENEI	RAL NOTES 6)			
ŀ	9						<u> </u>			
$\neg$	9	DIAMETER OF SENSOR TU	IBE			12" (N	IOTE 4)			
ŀ	10	TUBE MATERIAL			STAINLESS STEEL					
ŀ	11	COATING MATERIAL			PFA					
~	12	ELECTRODE MATERIAL				31	6SS			
METER	13	GROUNDING RING MATER	MAL			YES (SEE GEN	IERAL NOTES 7)			
ME		CONNECTIONS			FLANGED					
ŀ	15	CLASS AND FACE			150# FR, ASME B16.5 / NBR 7669					
ŀ	16	FLANGE FACE FINISH				MSS	S SP-6			
ŀ	17	ELECTRICAL CONNECTION	V			NOT AP	PLICABLE			
$\dashv$	18	MOUNTING				INTEGRAL	TO SENSOR			
ŀ	19	POWER SUPPLY				24 Vcc -	2 WIRES			
~	20	OUTPUT SIGNAL				4 - 20 mA (500	ohms @ 24 Vcc)			
CONVERTER / TRANSMITTER	-	COMMUNICATION PROTO	COL			H	ART			
LIMS	22	PRECISION				± 0.18	5% F.E.			
ANS	23	REPEATABILITY				BY MANU	FACTURER			
TR.		ELECTRICAL CONNECTION	V			1/2" [	NPT (F)			
ER,	25	LOCAL INDICATION			YES	S, LCD TYPE (SEE	GENERAL NOTE	S 11)		
ERT	26	CALIBRATION RANGE				BY MANU	FACTURER	·		
N		CALIBRATED RANGE				0 @	40 m³/h			
ပ္ပ	28	KEYBOARD FOR LOCAL C	ONFIGURATION			Y	ES			
ľ	29	METER CASING				ALUMINIO (C	OPPER FREE)			
ŀ		PULSE OUTPUT				Y	ES			
S	31	TAGGING				YES (SEE GEN	IERAL NOTES 3)			
ACCESSORIES	32	SURGE PROTECTOR				Υ	ES			
SSO	33									
CES	34									
AC	35									
$\neg$	36	FLUID	PHYSICAL STATE		COOLING WAT	ER RETURN	LIQI	JID		
ľ	37	MINIMUM FLOW	NORMAL	MAXIMUM	365.0	365.0	365.0	m³/h		
ŀ	38	MINIMUM PRESSURE	NORMAL	MAXIMUM	1.125	1.164	1.16	bar-g		
SV	39	MINIMUM TEMPERATURE	NORMAL	MAXIMUM	37.0	37.0	37.0	°C		
0E/	40	DESIGN FLOWRATE				365.0 n	ı³∕h			
ND	41	DESIGN PRESSURE	DESIGN TEMP	ERATURE	4.6	6 bar-g	67.0	°C		
S	42	DENSITY @ OPERATING C	CONDITION			993 k	g/m³			
NG.	43	VISCOSITY @ OPERATING	CONDITION			0.691 C	Σp			
OPERATING CONDITIONS		FLUID CONDUCTIVITY				μS	S/cm²			
PE		SCALING				1	VO			
$\circ$		SUSPENDED SOLIDS (%)				I	VO			
		l	ROP		-	bar				
	47	7 AVAILABLE PRESSURE DROP - bar								
		AVAILABLE PRESSURE DR								
	47 48	AVAILABLE PRESSURE DE				Endress + Haus	er (E+H) or Similar			









TITLE

SHEET:

14 de 24

ΙAG	ENETIC FLOW TRA	NSMITTER					REV.:			
Τ.	1 INSTRUMENT TAG NUM	BER			FIT-	960066	<u> </u>			
	2 SERVICE			COOL	NG WATER - CO	OLING TOWERS	- CH-7A-3			
+	3 P&ID			7A-M-0-5-43						
$\vdash$	4 PIPE LINE	EQUIPMEN	T NUMBER	7A-12"-TWR	7A-12"-TWR-960066-CS1-NI -					
$\vdash$	5 EQUIPMENT MATERIAL	<b>I</b>			CARBON STEE	L ASTM-A106 Gr.	B			
-	6 AREA CLASSIFICATION				NOT C	LASSIFIED				
$\vdash$	7 ENCLOSURE CLASSIFIC	CATION				NF. NBR IEC 6052	29			
$\vdash$	8 CERTIFICATES	-				RAL NOTES 6)				
$\vdash$	9				1					
9	9 DIAMETER OF SENSOR	TUBE			12" (	NOTE 4)				
1	0 TUBE MATERIAL					ESS STEEL				
1	1 COATING MATERIAL			RE		PFA				
1	2 ELECTRODE MATERIAL			K	3	16SS				
1	3 GROUNDING RING MAT	ERIAL			YES (SEE GE	NERAL NOTES 7)				
_	4 CONNECTIONS		1115			ANGED				
1	5 CLASS AND FACE				150# FR, ASME	B16.5 / NBR 766	9			
1	6 FLANGE FACE FINISH				MS	S SP-6				
1	7 ELECTRICAL CONNECT	ION			NOT AF	PPLICABLE				
1	8 MOUNTING				INTEGRAL	TO SENSOR				
1	9 POWER SUPPLY				24 Vcc	- 2 WIRES				
2	0 OUTPUT SIGNAL				4 - 20 mA (500	ohms @ 24 Vcc)				
2	1 COMMUNICATION PRO	TOCOL			F	IART				
2	2 PRECISION				± 0.1	5% F.E.				
2	REPEATABILITY				BY MANU	JFACTURER				
-	4 ELECTRICAL CONNECT	ION			1/2"	NPT (F)				
2	5 LOCAL INDICATION			YES	S, LCD TYPE (SE	E GENERAL NOT	NOTES 11)			
	6 CALIBRATION RANGE				BY MANU	JFACTURER	·			
$\vdash$	7 CALIBRATED RANGE				0 @	400 m³/h				
2	8 KEYBOARD FOR LOCAL	CONFIGURATION				YES				
2	9 METER CASING				ALUMINIO (	COPPER FREE)				
3	0 PULSE OUTPUT					YES				
3	1 TAGGING				YES (SEE GE	NERAL NOTES 3)				
3	2 SURGE PROTECTOR					YES				
3	33									
3	34									
3	35									
3	86 FLUID	PHYSICAL STAT	TE .	COOLING WAT	TER RETURN	LIC	QUID			
3	7 MINIMUM FLOW	NORMAL	MAXIMUM	365.0	365.0	365.0	m³/h			
3	88 MINIMUM PRESSURE	NORMAL	MAXIMUM	1.096	1.135	1.131	bar-g			
3	9 MINIMUM TEMPERATUR	RE NORMAL	MAXIMUM	37.0	37.0	37.0	℃			
4	10 DESIGN FLOWRATE				365.0	m³/h				
4	11 DESIGN PRESSURE	DESIGN TE	MPERATURE	4.	6 bar-g	67.0	0 ℃			
4	DENSITY @ OPERATING	CONDITION			993 /	kg/m³				
4	3 VISCOSITY @ OPERATI	NG CONDITION			0.691	Ср				
4	4 FLUID CONDUCTIVITY				μ	S/cm²				
4	5 SCALING					NO				
4	6 SUSPENDED SOLIDS (%	5)				NO				
4	7 AVAILABLE PRESSURE	DROP		-	bar					
4	18									
4	9 MANUFACTURER				Endress + Haus	ser (E+H) or Simila	r			
5	MODEL				Proline P	romag (E+H)				

<sup>1-</sup> THE MANUFACTURER MUST CONFIRM THE NOMINAL DIAMETER OF THE METER.









TITLE

# MAGNETIC FLOW TRANSMITTER

SHEET: 15 de 24 REV.:

	SNETIC FLC	W IIIAI	OWNTTER					1		
1	1 INSTRUMENT	TAG NUMBE	R			FIT-	960075			
2	2 SERVICE				COOL	ING WATER - CO	OLING TOWERS -	CH-7A-1		
3	3 P&ID					7A-N	1-0-5-43			
Į 4	4 PIPE LINE		EQUIPMENT	TNUMBER	7A-10"-CW1R	?-960075-CS1-CC		-		
	5 EQUIPMENT	MATERIAL / P	IPE		CARBON STEEL ASTM-A106 Gr.B					
6	6 AREA CLASS	IFICATION			NOT CLASSIFIED					
7	7 ENCLOSURE	CLASSIFICAT	TON			IP 65 (MÍN.) COI	NF. NBR IEC 60529	)		
8	B CERTIFICATE	S				(SEE GENE	RAL NOTES 6)			
g	9									
g	9 DIAMETER O	F SENSOR TU	IBE		10" (NOTE 4)					
1	0 TUBE MATER	IAL				STAINLE	ESS STEEL			
1	1 COATING MA	TERIAL				ŀ	PFA			
1:	2 ELECTRODE	MATERIAL				3.	16SS			
1.	3 GROUNDING	RING MATER	IAL			YES (SEE GEI	NERAL NOTES 7)			
1.	4 CONNECTION	IS				FLA	NGED			
1:	5 CLASS AND F	ACE				150# FR, ASME	B16.5 / NBR 7669			
1	6 FLANGE FAC	E FINISH				MS	S SP-6			
1	7 ELECTRICAL	CONNECTIO	V			NOT AF	PPLICABLE			
10	8 MOUNTING					INTEGRAL	TO SENSOR			
1:	9 POWER SUPI	PLY				24 Vcc	- 2 WIRES			
2	0 OUTPUT SIGI	VAL				4 - 20 mA (500	ohms @ 24 Vcc)			
2	1 COMMUNICA	TION PROTO	COL			HART				
2	2 PRECISION					± 0.1	5% F.E.			
2.	3 REPEATABILI	REPEATABILITY				BY MANU	IFACTURER			
2	4 ELECTRICAL	ELECTRICAL CONNECTION				1/2"	NPT (F)			
	LOCAL INDICATION				YES	S, LCD TYPE (SE	E GENERAL NOTE	S 11)		
2	6 CALIBRATION	CALIBRATION RANGE				BY MANU	IFACTURER			
2	7 CALIBRATED	CALIBRATED RANGE				0 @ 40 m³/h				
2	8 KEYBOARD F	OR LOCAL C	ONFIGURATION		YES ALUMINIO (COPPER FREE)					
2	9 METER CASII	VG								
3	0 PULSE OUTP	UT				Y	YES .			
3	1 TAGGING					YES (SEE GEI	NERAL NOTES 3)			
3.	SURGE PROT	ECTOR				Y	YES			
3.	3									
3 3 3	34									
3	25									
3	6 FLUID		PHYSICAL STAT	E	CHILLED WAT	ER RETURN	LIQ	UID		
3			NORMAL	MAXIMUM	242.0	242.0	242.0	m³/h		
3			NORMAL	MAXIMUM	1.9	1.9	1.9	bar-g		
3: 4: 4: 4: 4: 4: 4:			NORMAL	MAXIMUM	12.5	12.5	12.5	°C		
4	-		1-		_	242.0 r				
4				MPERATURE	2.	7 bar-g	42.5	°C		
4.					1	999.99 k				
4.			CONDITION			0.009 (	·			
-	4 FLUID CONDU	JCTIVITY					S/cm²			
	5 SCALING						NO			
$\vdash$	6 SUSPENDED						NO			
4		RESSURE DR	ROP		-	bar				
4	_									
-	9 MANUFACTU	RER					ser (E+H) or Similar			
5	MODEL					Proline P	romag (E+H)			

<sup>1-</sup> THE MANUFACTURER MUST CONFIRM THE NOMINAL DIAMETER OF THE METER.









TITLE

# MAGNETIC FLOW TRANSMITTER

SHEET: 16 de 24 REV.:

viAC	)  <b>\</b> L	IIC FLOW TRAN	OMITTER					1		
1	1 IN	NSTRUMENT TAG NUMBE	R			FIT-	960076	1		
2	2 SI	ERVICE			COOL	ING WATER - CO	OLING TOWERS -	CH-7A-2		
3	3 P	%ID				7A-N	<i>1</i> -0-5-43			
į   4	4 PI	PIPE LINE	EQUIPMENT N	IUMBER	7A-10"-CW1R	?-960076-CS1-CC		-		
	5 E	QUIPMENT MATERIAL / P.	IPE .		CARBON STEEL ASTM-A106 Gr.B					
1 6	6 Al	REA CLASSIFICATION			NOT CLASSIFIED					
7	7 EI	NCLOSURE CLASSIFICAT	TON			IP 65 (MÍN.) CO	NF. NBR IEC 60529	)		
8	8 CI	ERTIFICATES				(SEE GENE	RAL NOTES 6)			
9	9									
ç	9 DI	NAMETER OF SENSOR TU	IBE			10" (	NOTE 4)			
1	0 TL	UBE MATERIAL				STAINL	ESS STEEL			
1	1 C	COATING MATERIAL				ı	PFA			
1.	2 EI	LECTRODE MATERIAL				3	16SS			
1.	3 G	ROUNDING RING MATER	IAL			YES (SEE GE	NERAL NOTES 7)			
1.	4 C	CONNECTIONS				FLA	NGED			
1.	5 CI	CLASS AND FACE				150# FR, ASME	B16.5 / NBR 7669			
1	6 FL	LANGE FACE FINISH				MS	S SP-6			
1	7 El	LECTRICAL CONNECTION	V			NOT AF	PPLICABLE			
1	8 M	10UNTING				INTEGRAL	. TO SENSOR			
1.	9 P	OWER SUPPLY				24 Vcc	- 2 WIRES			
2	0 0	OUTPUT SIGNAL				4 - 20 mA (500	ohms @ 24 Vcc)			
2	21 C	COMMUNICATION PROTOC	COL			HART				
2.	2 PI	RECISION		± 0.1	5% F.E.					
2	23 RI	REPEATABILITY				BY MANU	JFACTURER			
2	24 EL	LECTRICAL CONNECTION		1/2"	NPT (F)					
	25 LC	OCAL INDICATION	YES	S, LCD TYPE (SE	E GENERAL NOTE	S 11)				
2	6 C/	CALIBRATION RANGE		BY MANU	JFACTURER					
2	7 C/	CALIBRATED RANGE	0 @ 250 m³/h							
2	8 KI	EYBOARD FOR LOCAL CO	ONFIGURATION		YES ALUMINIO (COPPER FREE)					
2	9 M	IETER CASING								
3	80 Pl	PULSE OUTPUT				,	YES			
3	31 TA	AGGING				YES (SEE GE	NERAL NOTES 3)			
3.	32 St	URGE PROTECTOR				,	YES			
3	33									
3 3 3	34									
	35									
3	86 FL	LUID	PHYSICAL STATE		CHILLED WAT	ER RETURN	LIQ	UID		
3	_	IINIMUM FLOW	NORMAL	MAXIMUM	242.0	242.0	242.0	m³/h		
3	_	IINIMUM PRESSURE	NORMAL	MAXIMUM	1.9	1.9	1.9	bar-g		
3 4 4 4 4 4	_	IINIMUM TEMPERATURE	NORMAL	MAXIMUM	12.5	12.5	12.5	℃		
4	_	ESIGN FLOWRATE				242.0 1				
-	_	ESIGN PRESSURE	DESIGN TEMP	PERATURE	2.	7 bar-g	42.5	℃		
$\vdash$	_	DENSITY @ OPERATING C				999.99				
$\vdash$	_	ISCOSITY @ OPERATING	CONDITION			0.009	•			
-		LUID CONDUCTIVITY				<u>.</u>	S/cm²			
_	_	CALING					NO			
$\vdash$	_	SUSPENDED SOLIDS (%)					NO			
$\vdash$	_	VAILABLE PRESSURE DR	ROP		-	bar				
_	18									
-	_	MANUFACTURER					ser (E+H) or Similar			
5	60 M	10DEL				Proline P	romag (E+H)			

<sup>1-</sup> THE MANUFACTURER MUST CONFIRM THE NOMINAL DIAMETER OF THE METER.









TITLE

17 de 24 REV.:

# MAGNETIC FLOW TRANSMITTER

								1		
1	1 INSTRUMENT TAG I	NUMBER			FIT-960077					
2	2 SERVICE				COOLI	NG WATER - CO	OLING TOWERS -	CH-7A-3		
3	3 P&ID					7A-M	1-0-5-43			
Į [	4 PIPE LINE		EQUIPMENT NU	MBER	7A-10"-CW1R	-960077-CS1-CC		-		
	5 EQUIPMENT MATER	RIAL / PIP	<b>_</b>		CARBON STEEL ASTM-A106 Gr.B					
1 6	6 AREA CLASSIFICAT	ION			NOT CLASSIFIED					
·	7 ENCLOSURE CLASS	SIFICATIO	DN			IP 65 (MÍN.) COI	NF. NBR IEC 60529	)		
-	8 CERTIFICATES						RAL NOTES 6)			
	9					1				
,	DIAMETER OF SENS	SOR TUB	E			10" (/	VOTE 4)			
1	0 TUBE MATERIAL					<u></u>	ESS STEEL			
1	1 COATING MATERIAL				OK	<u> </u>	PFA			
Η.	2 ELECTRODE MATER			JTU			16SS			
1	3 GROUNDING RING		1	170			NERAL NOTES 7)			
_	4 CONNECTIONS				<del></del>	· · · · · · · · · · · · · · · · · · ·	NGED			
$\vdash$	5 CLASS AND FACE				+		B16.5 / NBR 7669			
-	6 FLANGE FACE FINIS	SH			1		S SP-6			
_	7 ELECTRICAL CONN				1		PPLICABLE			
_	8 MOUNTING	2011011			+		TO SENSOR			
-	9 POWER SUPPLY				+		- 2 WIRES			
H	O OUTPUT SIGNAL				+		ohms @ 24 Vcc)			
i I—	1 COMMUNICATION F	POTOCO	V		+					
2	2 PRECISION	KOTOCC	<i>,</i> L		HART ± 0.15% F.E.					
1	REPEATABILITY									
2	ELECTRICAL CONNECTION					IFACTURER				
					\/50		NPT (F)	0.44)		
2	LOCAL INDICATION  CALIBRATION PANCE			YES	•	GENERAL NOTE	S 11)			
: -	CALIBRATION RANGE						IFACTURER			
2	7 CALIBRATED RANG		IEIO IE ATION		1		250 m³/h			
	8 KEYBOARD FOR LO	CAL COI	NFIGURATION		YES  ALUMINIO (COPPER FREE)  YES					
	9 METER CASING									
_	0 PULSE OUTPUT									
3	1 TAGGING				-		NERAL NOTES 3)			
3.	2 SURGE PROTECTO	K			1	)	/ES			
₁ ⊢	3									
$\frac{3}{2}$	34									
`   3					0.00.50.00.50			"5		
-	6 FLUID		PHYSICAL STATE	TAAN/WALLA	CHILLED WAT	1	LIQU			
-	7 MINIMUM FLOW		IORMAL	MAXIMUM	242.0	242.0	242.0	m³/h		
	8 MINIMUM PRESSUR		IORMAL	MAXIMUM	1.9	1.9	1.9	bar-g		
3	9 MINIMUM TEMPERA		IORMAL	MAXIMUM	12.5	12.5	12.5	℃		
4	DESIGN FLOWRATE		DEGICAL TELES	DATUDE	1	242.0 n		00		
4	DESIGN PRESSURE		DESIGN TEMPE	KATUKE	2.7	7 bar-g	42.5	<del>ال</del>		
)	DENSITY @ OPERA					999.99 k				
4	3 VISCOSITY @ OPER		ONDITION		+	0.009 (	·			
4		FLUID CONDUCTIVITY					S/cm²			
	5 SCALING	0 (0)			1		NO			
-	6 SUSPENDED SOLID				<del> </del>		NO			
4		JRE DRO	P		-	bar				
4	8				<b></b>					
-	9 MANUFACTURER				1		er (E+H) or Similar			
5	MODEL					Proline Pr	romag (E+H)			









TITLE

# MAGNETIC FLOW TRANSMITTER

18 de 24 REV.:

								1		
	1	INSTRUMENT TAG NUMBE	R		FIT-960085					
ĺ	2	SERVICE			CH	ILLED WATER -	RETURN BUILDING	G 7A		
	3	P&ID				7A-N	Л-0-5-43			
AL	4	PIPE LINE	EQUIPMENT NU	JMBER	7A-8"-CW1R-	960005-CS1-CC		-		
SENERAL	5	EQUIPMENT MATERIAL / P	IPE		CARBON STEEL ASTM-A106 Gr.B					
GE	6	AREA CLASSIFICATION				NOT CLASSIFIED				
	7	ENCLOSURE CLASSIFICAT	TION		IP 65 (MÍN.) CONF. NBR IEC 60529					
	8	CERTIFICATES				(SEE GENE	RAL NOTES 6)			
	9									
	9	DIAMETER OF SENSOR TU	JBE			8" (N	NOTE 4)			
	10	TUBE MATERIAL				STAINL	ESS STEEL			
li	11	COATING MATERIAL				-	PFA			
or I	12	ELECTRODE MATERIAL				3	16SS			
METER	13	GROUNDING RING MATER	MAL			YES (SEE GE	NERAL NOTES 7)			
ME	14	CONNECTIONS				FLA	ANGED			
	15	CLASS AND FACE				150# FR, ASME	B16.5 / NBR 7669			
	16	FLANGE FACE FINISH				MS	S SP-6			
	17	ELECTRICAL CONNECTION	V			NOT AF	PPLICABLE			
	18	MOUNTING				INTEGRAL	TO SENSOR			
	19	POWER SUPPLY				24 Vcc	- 2 WIRES			
ω,	20	OUTPUT SIGNAL				4 - 20 mA (500	0 ohms @ 24 Vcc)			
IJE	21	COMMUNICATION PROTO	COL			H	<i>IART</i>			
IMS	22	PRECISION			± 0.15% F.E.					
ANS	23	REPEATABILITY				BY MANU	JFACTURER			
CONVERTER / TRANSMITTER	24	ELECTRICAL CONNECTION	V			1/2"	NPT (F)			
ER	25	LOCAL INDICATION			YES	, LCD TYPE (SE	E GENERAL NOTE	S 11)		
ER1	26	CALIBRATION RANGE				BY MANU	JFACTURER			
M	27	CALIBRATED RANGE			0 @ 230 m³/h					
$\mathcal{S}$	28	KEYBOARD FOR LOCAL C	ONFIGURATION		YES ALUMINIO (COPPER FREE)					
	29	METER CASING								
	30	PULSE OUTPUT				,	YES			
S	31	TAGGING				YES (SEE GE	NERAL NOTES 3)			
ACCESSORIES	32	SURGE PROTECTOR				,	YES			
sso	33									
CE	34									
AC	35									
П	36	FLUID	PHYSICAL STATE		CHILLED WAT	ER RETURN	LIQ	UID		
	37	MINIMUM FLOW	NORMAL	MAXIMUM	146.0	203	224	m³/h		
	38	MINIMUM PRESSURE	NORMAL	MAXIMUM	0.26	0.28	0.28	bar-g		
SNC	39	MINIMUM TEMPERATURE	NORMAL	MAXIMUM	12.5	12.5	12.5	°C		
JITIC	40	DESIGN FLOWRATE	-			203.0 1	m³/h			
) NC	41	DESIGN PRESSURE	DESIGN TEMPE	RATURE	3.9	) bar-g	42.5	°C		
300	42	DENSITY @ OPERATING C	CONDITION			999.99 I	kg/m³			
JUL	43	VISCOSITY @ OPERATING	CONDITION			0.009 (	Ср			
OPERATING CONDITIONS	44	FLUID CONDUCTIVITY				μ	S/cm²			
3PE	45	SCALING					NO			
	46	SUSPENDED SOLIDS (%)					NO			
	47	AVAILABLE PRESSURE DE	ROP		-	bar				
╚	48									
П	49	MANUFACTURER				Endress + Haus	ser (E+H) or Similar			
ı	50	MODEL				Proline P	romag (E+H)			

<sup>1-</sup> THE MANUFACTURER MUST CONFIRM THE NOMINAL DIAMETER OF THE METER.









TITLE

SHEET:

# MAGNETIC FLOW TRANSMITTER

19 de 24 REV.: **1** 

								1		
	1	INSTRUMENT TAG NUMBE	īR			FIT	-960088			
	2	SERVICE			CF	HILLED WATER -	RETURN BUILDING	7B		
	3	P&ID				7A-I	M-0-5-43	-		
ΑL	4	PIPE LINE	EQUIPMENT N	UMBER	7A-10"-CW1R-960008-CS1-CC -					
GENERAL	5	EQUIPMENT MATERIAL / P	IPE		CARBON STEEL ASTM-A106 Gr.B					
GE	6	AREA CLASSIFICATION			NOT CLASSIFIED					
	7	ENCLOSURE CLASSIFICAT	TION			IP 65 (MÍN.) CO	NF. NBR IEC 60529			
ı	8	CERTIFICATES				(SEE GENE	ERAL NOTES 6)			
ľ	9									
	9	DIAMETER OF SENSOR TU	JBE			10" (	NOTE 4)			
ľ	10	TUBE MATERIAL				STAINL	ESS STEEL			
ľ	11	COATING MATERIAL					PFA			
۱	12	ELECTRODE MATERIAL				3	16SS			
METER	13	GROUNDING RING MATER	RIAL			YES (SEE GE	NERAL NOTES 7)			
ME	14	CONNECTIONS				FL	ANGED			
ŀ	15	CLASS AND FACE				150# FR, ASMI	E B16.5 / NBR 7669			
ľ	16	FLANGE FACE FINISH				MS	S SP-6			
ŀ	17	ELECTRICAL CONNECTION	V			NOTA	PPLICABLE			
	18	MOUNTING				INTEGRA	L TO SENSOR			
ŀ	19	POWER SUPPLY				24 Vcc	- 2 WIRES			
ا ۲		OUTPUT SIGNAL					0 ohms @ 24 Vcc)			
1		COMMUNICATION PROTO	COL		HART					
IM		PRECISION					15% F.E.			
2		REPEATABILITY		BY MAN	UFACTURER					
<u> </u>		ELECTRICAL CONNECTION			NPT (F)					
בר וו		LOCAL INDICATION	YES		E GENERAL NOTES	 S 11)				
CONVERTER/TRANSMITTER		CALIBRATION RANGE				•	UFACTURER			
N/E		CALIBRATED RANGE				0 @ 260 m³/h				
3		KEYBOARD FOR LOCAL C	ONFIGURATION		YES ALUMINIO (COPPER FREE)					
ŀ		METER CASING								
ŀ	30	PULSE OUTPUT				<u>_</u>	YES			
·^	31	TAGGING				YES (SEE GE	NERAL NOTES 3)			
ACCESSORIES	32	SURGE PROTECTOR				·	YES			
000	33									
	34									
AC	35									
	36	FLUID	PHYSICAL STATE		CHILLED WAT	ER RETURN	LIQU	IID		
ı	37	MINIMUM FLOW	NORMAL	MAXIMUM	172.0	234.0	257.0	m³/h		
ı	38	MINIMUM PRESSURE	NORMAL	MAXIMUM	0.25	0.26	0.26	bar-g		
8	39	MINIMUM TEMPERATURE	NORMAL	MAXIMUM	12.5	12.5	12.5	°C		
2	40	DESIGN FLOWRATE				234	m³/h			
3	41	DESIGN PRESSURE	DESIGN TEMPL	ERATURE	4.	3 bar-g	42.5	<b>℃</b>		
3	42	DENSITY @ OPERATING C	CONDITION			999.99	kg/m³			
	43	VISCOSITY @ OPERATING	CONDITION			0.009	Ср			
¥ I	44	FLUID CONDUCTIVITY				μ	S/cm²			
OPERATING CONDITIONS	45	SCALING					NO			
ا ۲	46	SUSPENDED SOLIDS (%)					NO			
ľ	47	AVAILABLE PRESSURE DE	ROP		-	bar				
İ	48									
ヿ	49	MANUFACTURER				Endress + Hau	ser (E+H) or Similar			
ľ	50	MODEL				Proline P	Promag (E+H)			
_		•			_					









TITLE

SHEET:

20 de 24

# MAGNETIC FLOW TRANSMITTER

REV.:

ı								1	
	1	INSTRUMENT TAG NUMBE	R			FIT-9	980056		
	2	SERVICE			COOLI	NG WATER - CO	LING TOWERS P	CH-7A-1	
	3	P&ID			7A-M-0-5-45				
AL.	4	PIPE LINE	EQUIPMENT	NUMBER	7A-6"-TWR-980056-CS1-NI -				
ER.	5	EQUIPMENT MATERIAL / P	PIPE		CARBON STEEL ASTM-A106 Gr.B				
GENERAL	6	AREA CLASSIFICATION			NOT CLASSIFIED				
٦		ENCLOSURE CLASSIFICA	TION		IP 65 (MÍN.) CONF. NBR IEC 60529				
ŀ		CERTIFICATES					RAL NOTES 6)		
ŀ	9	OLIVIII 10/11/20				(022 02/12/	0127707200)		
$\dashv$	_	DIAMETER OF SENSOR TU	IDE		6" (NOTF 4)				
ŀ		TUBE MATERIAL	JDL		6" (NOTE 4)  STAINLESS STEEL				
-									
ŀ		COATING MATERIAL					PFA		
ER		ELECTRODE MATERIAL					6SS		
METER		GROUNDING RING MATER	RIAL				IERAL NOTES 7)		
<	_	CONNECTIONS					NGED		
	15	CLASS AND FACE				150# FR, ASME	B16.5 / NBR 7669		
		FLANGE FACE FINISH				MSS	S SP-6		
	17	ELECTRICAL CONNECTION	N			NOT AP	PLICABLE		
	18	MOUNTING				INTEGRAL	TO SENSOR		
		POWER SUPPLY				24 Vcc -	2 WIRES		
ĸ	20	OUTPUT SIGNAL				4 - 20 mA (500	ohms @ 24 Vcc)		
= [	21	COMMUNICATION PROTO	COL			Н	ART		
IWS	22	PRECISION			± 0.15% F.E.				
ZA N	23	REPEATABILITY		BY MANU	FACTURER				
7	24	ELECTRICAL CONNECTION		1/2" /	NPT (F)				
ER	25	LOCAL INDICATION	YES	S, LCD TYPE (SEE	GENERAL NOTE	S 11)			
ERT.	26	CALIBRATION RANGE				BY MANU	FACTURER		
CONVERTER / TRANSMITTER	27	CALIBRATED RANGE				0 @ 1	20 m³/h		
ဗ	28	KEYBOARD FOR LOCAL C	ONFIGURATION		YES				
ŀ	29	METER CASING			ALUMINIO (COPPER FREE)				
ŀ		PULSE OUTPUT					ES		
<u>,,</u>		TAGGING				YES (SEE GEN	IERAL NOTES 3)		
ACCESSORIES		SURGE PROTECTOR					ES		
SO!	33	00/102/1/10/20/011				<u> </u>			
ES	34								
40	35								
Ì		FLUID	PHYSICAL STATE		COOLING WAT	TED DETI IDNI	LIQI	UID	
ŀ		MINIMUM FLOW	NORMAL	MAXIMUM					
ŀ		MINIMUM PRESSURE	NORMAL	MAXIMUM	104.0	104.0	104.0	m³/h	
δ					1.07	1.109	1.104	bar-g °C	
0	_	MINIMUM TEMPERATURE	NORMAL	MAXIMUM	37.0	37.0	37.0	٠	
<u>[</u> ]		DESIGN FLOWRATE	DE0/04/ ==:	ADEDATUS.		104.0 n		00	
် ဂျ		DESIGN PRESSURE		MPERATURE	4.6	6 bar-g	67.0	~	
၁ စွ	_	DENSITY @ OPERATING O				993 k			
۲ ۲	43	VISCOSITY @ OPERATING	G CONDITION			0.691 C	·		
OPERATING CONDITIONS		FLUID CONDUCTIVITY					C/cm²		
ا ي		SCALING					VO .		
0	46	SUSPENDED SOLIDS (%)				ı	VO .		
٥		47 AVAILABLE PRESSURE DROP - bar							
0	47	AVAILABLE FRESSORE DI	18						
0	47 48	AVAILABLE FRESSORE DI							
0	48	MANUFACTURER				Endress + Haus	er (E+H) or Similar		

<sup>1-</sup> THE MANUFACTURER MUST CONFIRM THE NOMINAL DIAMETER OF THE METER.









TITLE

21 de 24 REV.:

## MAGNETIC FLOW TRANSMITTER

VIAC	SNETIC FLOW	IKAN	SIVIIIIER					REV.: <b>1</b>	
T.	1 INSTRUMENT TAG	NUMBE	R		FIT-980057				
	2 SERVICE				COOLIN	G WATER - CO	OOLING TOWERS P	CH-7A-2	
	3 P&ID					7A-	M-0-5-45		
_	4 PIPE LINE		EQUIPMENT NUM	MBER	7A-6"-TWR-980057-CS1-NI -				
> ⊢	5 EQUIPMENT MATE	RIAL / PI	<b>I</b>		CARBON STEEL ASTM-A106 Gr.B				
	6 AREA CLASSIFICA	TION			NOT CLASSIFIED				
_	7 ENCLOSURE CLAS		TON		IP 65 (MÍN.) CONF. NBR IEC 60529				
-	8 CERTIFICATES				(SEE GENERAL NOTES 6)				
-	9				(OLE GENERAL NOTES O)				
+	9 DIAMETER OF SEN	SOR TU	BE			6" (	NOTE 4)		
1	10 TUBE MATERIAL						ESS STEEL		
1	11 COATING MATERIA	L					PFA		
. 1	12 ELECTRODE MATE	RIAL			26		316SS		
1	13 GROUNDING RING		IAL			YES (SEE GE	NERAL NOTES 7)		
	14 CONNECTIONS			110	/		ANGED		
1	15 CLASS AND FACE					150# FR, ASM	E B16.5 / NBR 7669		
1	16 FLANGE FACE FINI	SH				MS	SS SP-6		
1	17 ELECTRICAL CONN	IECTION				NOTA	PPLICABLE		
1	18 MOUNTING					INTEGRA	L TO SENSOR		
1	19 POWER SUPPLY					24 Vcc	: - 2 WIRES		
2	0 OUTPUT SIGNAL				24 VCC - 2 WIRES 4 - 20 mA (500 ohms @ 24 Vcc)				
-	21 COMMUNICATION	PROTOC	COL		HART				
2	22 PRECISION	PRECISION				± 0.	15% F.E.		
	REPEATABILITY				<u> </u>	BY MAN	UFACTURER		
2		ELECTRICAL CONNECTION				1/2'	' NPT (F)		
2	5 LOCAL INDICATION	LOCAL INDICATION					E GENERAL NOTE	S 11)	
	CALIBRATION RANGE					BY MAN	UFACTURER	<u> </u>	
2							2 40 m³/h		
2	8 KEYBOARD FOR LO	OCAL CO	ONFIGURATION				YES		
2	9 METER CASING					ALUMINIO (	COPPER FREE)		
3	30 PULSE OUTPUT				YES				
3	31 TAGGING				YES (SEE GENERAL NOTES 3)				
3	32 SURGE PROTECTO	)R			YES				
3	33								
$\begin{bmatrix} 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 $	34								
3	35								
3	36 FLUID		PHYSICAL STATE		COOLING WATE	R RETURN	LIQ	UID	
3	37 MINIMUM FLOW		NORMAL	MAXIMUM	104.0	104.0	104.0	m³/h	
3	88 MINIMUM PRESSU	RE	NORMAL	MAXIMUM	1.07	1.109	1.104	bar-g	
3	39 MINIMUM TEMPER	ATURE	NORMAL	MAXIMUM	37.0	37.0	37.0	°C	
4	DESIGN FLOWRAT	E				104.0	m³/h		
4	DESIGN PRESSUR	E	DESIGN TEMPER	ATURE	4.6	bar-g	67.0	°C	
4	12 DENSITY @ OPERA	ATING C	ONDITION			993	kg/m³		
4	VISCOSITY @ OPE	VISCOSITY @ OPERATING CONDITION				0.691	Ср		
3 4 4 4 4 4	14 FLUID CONDUCTIV	FLUID CONDUCTIVITY				ŀ	ıS/cm²		
4	5 SCALING						NO		
4	46 SUSPENDED SOLI	OS (%)					NO		
4	47 AVAILABLE PRESS	URE DR	OP		-	bar			
4	18								
4	19 MANUFACTURER						ser (E+H) or Similar		
5	50 MODEL					Proline F	Promag (E+H)		

<sup>1-</sup> THE MANUFACTURER MUST CONFIRM THE NOMINAL DIAMETER OF THE METER.









TITLE

22 de 24 REV.:

# MAGNETIC FLOW TRANSMITTER

								1		
1	1 /	INSTRUMENT TAG NUMBE	R			FIT	-980060			
2	2 3	SERVICE			RETU	JRN CHILLED W.	ATER SYSTEM -HO	T SIDE		
3	3 /	P&ID				7A-	M-0-5-45			
₹ 4	4 l	PIPE LINE	EQUIPMENT NUN	MBER	7A-6"-GW0R-980060-CS1-CC BT-7A-1					
# E	5 1	EQUIPMENT MATERIAL / PI	IPE		CARBON STEEL ASTM-A106 Gr.B					
SENERAL 5	6 /	AREA CLASSIFICATION			NOT CLASSIFIED					
ĭ	-	ENCLOSURE CLASSIFICAT	TON		IP 65 (MÍN.) CONF. NBR IEC 60529					
-	_	CERTIFICATES					ERAL NOTES 6)			
-	9	02/11/10/11/20				(OLL OLIV	2701271072007			
+	+	DIAMETER OF SENSOR TU	DE		6" (NOTE 1)					
	-		DC			6" (NOTE 4)				
	_	TUBE MATERIAL				STAINL	ESS STEEL			
- ⊩-	_	COATING MATERIAL					PFA			
<u>ا ا</u>		ELECTRODE MATERIAL					316SS			
<u> </u>	_	GROUNDING RING MATER	IAL			YES (SEE GE	ENERAL NOTES 7)			
≥ 1.	4 (	CONNECTIONS				FL	ANGED			
1.	5 CLASS AND FACE					150# FR, ASM	E B16.5 / NBR 7669			
1	6	FLANGE FACE FINISH				MS	SS SP-6			
1	7 [	ELECTRICAL CONNECTION	I			NOTA	PPLICABLE			
1	8 /	MOUNTING				INTEGRA	L TO SENSOR			
1:	9 1	POWER SUPPLY				24 Vcc	: - 2 WIRES			
2	0	OUTPUT SIGNAL				4 - 20 mA (50	0 ohms @ 24 Vcc)			
2	_	COMMUNICATION PROTOC	COL				HART			
2	-	PRECISION			± 0.15% F.E.					
2		REPEATABILITY				BY MANUFACTURER				
2	-	ELECTRICAL CONNECTION	1			1/2" NPT (F)				
= =		LOCAL INDICATION	<b>'</b>		VE	YES, LCD TYPE (SEE GENERAL NOTES 11)				
1 2		CALIBRATION RANGE			BY MANUFACTURER					
: —	-					· · · · ·				
$\frac{1}{2}$	_	CALIBRATED RANGE			0 @ 80 m³/h YES					
	-	KEYBOARD FOR LOCAL CO	ONFIGURATION							
-	-	METER CASING				ALUMINIO (COPPER FREE)				
3	80 I	PULSE OUTPUT					YES			
3	31	TAGGING				YES (SEE GE	ENERAL NOTES 3)			
3	2 3	SURGE PROTECTOR					YES			
3.	3									
3 3 3 3	34									
3.	5									
3	6 l	FLUID	PHYSICAL STATE		PROPYLENE GL	YCOL RETORN	LIQU	JID		
3	7 /	MINIMUM FLOW	NORMAL	MAXIMUM	19	66	76	m³/h		
3	_	MINIMUM PRESSURE	NORMAL	MAXIMUM	-	0.6	-	bar-g		
3:	9 /	MINIMUM TEMPERATURE	NORMAL	MAXIMUM	-	11	-	.€		
4	_	DESIGN FLOWRATE	1	1			m³/h			
4	-	DESIGN PRESSURE	DESIGN TEMPER	PATURE	4.	5 bar-q	41	<u>~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~</u>		
4	-	DENSITY @ OPERATING C				999.64				
4	-	VISCOSITY @ OPERATING				1.3				
4	-	FLUID CONDUCTIVITY					iS/cm (estimated)			
ì						200 - 000 μ	NO			
	_	SCALING								
4	-	SUSPENDED SOLIDS (%)				,	NO			
4	-	AVAILABLE PRESSURE DR	UP		-	bar				
4	-									
4	-	MANUFACTURER					ser (E+H) or Similar			
5	io 1	MODEL				Proline F	Promag (E+H)			

- 1- THE MANUFACTURER MUST CONFIRM THE NOMINAL DIAMETER OF THE METER.
- 2- THE INSTRUMENT SHALL BE PREPARED TO OPERATE WITH PROPYLENE GLICOL 10% IF REQUIRED.









PRD-AIC-DSH-004 569-DB7A-AIC-700-001 NUMBER: CLIENT NR:

TITLE

23 de 24 REV.:

# MAGNETIC FLOW TRANSMITTER

VIZ	.0.	IETIC FLOW TRAIN	OWILL LEX					1		
	1	INSTRUMENT TAG NUMBE	ER .		FIT-980075					
	2	SERVICE				GLYCOL FOR PCH-7A-1				
ľ	3	P&ID				7A-M	1-0-5-45			
ΑŁ	4	PIPE LINE	EQUIPMENT NU	IMBER	7A-4"-GW0R	-980075-CS1-CC		-		
GENERAL	5	EQUIPMENT MATERIAL / F	PIPE		CARBON STEEL ASTM-A106 Gr.B					
3EN	6	AREA CLASSIFICATION			NOT CLASSIFIED					
Ĭ	7	ENCLOSURE CLASSIFICA	TION		IP 65 (MÍN.) CONF. NBR IEC 60529					
ŀ	8	CERTIFICATES			(SEE GENERAL NOTES 6)					
	9				,					
	9	DIAMETER OF SENSOR TO	JBE			4" (N	IOTE 4)			
ŀ	10	TUBE MATERIAL				STAINLE	SS STEEL			
ŀ	11	COATING MATERIAL				F	PFA			
~		ELECTRODE MATERIAL				31	16SS			
METER	_	GROUNDING RING MATER	RIAL			YES (SEE GEN	NERAL NOTES 7)			
ME		CONNECTIONS			1	•	NGED			
ŀ	15	CLASS AND FACE				150# FR, ASME	B16.5 / NBR 7669	)		
ŀ	16	FLANGE FACE FINISH				MSS	S SP-6			
ŀ	17	ELECTRICAL CONNECTIO	N		1	NOT AP	PLICABLE			
$\neg$	18	MOUNTING				INTEGRAL	TO SENSOR			
	19	POWER SUPPLY				24 Vcc	- 2 WIRES			
۱	20	OUTPUT SIGNAL				4 - 20 mA (500	ohms @ 24 Vcc)			
Ė		COMMUNICATION PROTO	COL		HART					
IN		PRECISION				± 0.15% F.E.				
4 V		REPEATABILITY		BY MANUFACTURER						
<u>ک</u>		ELECTRICAL CONNECTIO		1/2"	NPT (F)					
ב בו	25	LOCAL INDICATION	YE	S, LCD TYPE (SEL		ES 11)				
2		CALIBRATION RANGE		•	IFACTURER	- ,				
CONVERTER / TRANSMITTER		CALIBRATED RANGE		0 @	80 m³/h					
S S		KEYBOARD FOR LOCAL C	ONFIGURATION				/ES			
ŀ	_	METER CASING			ALUMINIO (COPPER FREE)					
ŀ		PULSE OUTPUT				YES				
·^		TAGGING			YES (SEE GENERAL NOTES 3)					
CCESSORIES		SURGE PROTECTOR				·	/ES			
SS	33				-					
CES	34				-					
AC.	35									
7	_	FLUID	PHYSICAL STATE		PROPYLENE GL	YCOL RETORN	LIQ	UID		
ŀ	37	MINIMUM FLOW	NORMAL	MAXIMUM	0	66	76	m³/h		
ľ	38	MINIMUM PRESSURE	NORMAL	MAXIMUM	-	1.1	-	bar-g		
Ş	39	MINIMUM TEMPERATURE	NORMAL	MAXIMUM	5	-	11	∞		
2	40	DESIGN FLOWRATE	<u> </u>	<b>I</b>		76 n	n³/h			
ב ב	41	DESIGN PRESSURE	DESIGN TEMPE	RATURE	4.	5 bar-g	41	°C		
3	42	DENSITY @ OPERATING (	CONDITION			999.64 k	g/m³			
٥ ا	43	VISCOSITY @ OPERATING	CONDITION		+	1.3 c	<u> </u>			
OPERATING CONDITIONS	44	FLUID CONDUCTIVITY			1		S/cm (estimated)			
Ţ		SCALING					NO			
٦		SUSPENDED SOLIDS (%)					NO			
ŀ	47	AVAILABLE PRESSURE DI	ROP		-	bar				
ŀ	48									
			Fndress + Hauser (F+H) or Similar							
7	49	MANUFACTURER			Endress + Hauser (E+H) or Similar  Proline Promag (E+H)					

- 1- THE MANUFACTURER MUST CONFIRM THE NOMINAL DIAMETER OF THE METER.
- 2- THE INSTRUMENT SHALL BE PREPARED TO OPERATE WITH PROPYLENE GLICOL 10% IF REQUIRED.









TITLE SHEE

### MAGNETIC FLOW TRANSMITTER

24 de 24

ΙAG	ENETIC FLOW TRAN	ISMITTER					REV.:	
1	INSTRUMENT TAG NUMBE	ER			FIT-980077			
2				CHILLER INLET				
3						1-0-5-45		
. —		EQUIPMENT NUN	/DED	74 6" CWOP	980077-CS1-CC		PCH-7A-2	
_	EQUIPMENT MATERIAL / F		MDLIN	774-0 -077011-		L ASTM-A106 Gi		
		IF L				ASSIFIED	.ь	
-		TION			IP 65 (MÍN.) COI		300	
7		TION			, ,		029	
8					(SEE GENE	RAL NOTES 6)		
9		IDE			4" (h	IOTE 4)		
-	O TUBE MATERIAL	)BL				ESS STEEL		
$\vdash$	1 COATING MATERIAL			OK	<u> </u>	PFA		
$\vdash$	2 ELECTRODE MATERIAL					16SS		
-	3 GROUNDING RING MATER	ΡΙΔΙ	17 U			NERAL NOTES 7	7)	
_	4 CONNECTIONS	MAL		<b>f</b>		NGED	<i>'</i>	
_	5 CLASS AND FACE					B16.5 / NBR 76	60	
$\vdash$	6 FLANGE FACE FINISH	$\rightarrow$				S SP-6		
_	7 ELECTRICAL CONNECTION	N				PPLICABLE		
H	8 MOUNTING					TO SENSOR		
Н	9 POWER SUPPLY					- 2 WIRES		
	0 OUTPUT SIGNAL					ohms @ 24 Vcc	)	
	1 COMMUNICATION PROTO	COI		HART				
$\vdash$	PRECISION			± 0.15% F.E.				
	3 REPEATABILITY			IFACTURER				
2	4 ELECTRICAL CONNECTIO			NPT (F)				
2	5 LOCAL INDICATION	YES	S, LCD TYPE (SEI		TES 11)			
	6 CALIBRATION RANGE		•	JFACTURER				
	7 CALIBRATED RANGE		0 @	80 m³/h				
$\vdash$		KEYBOARD FOR LOCAL CONFIGURATION				YES		
2	9 METER CASING				ALUMINIO (0	COPPER FREE)		
30	0 PULSE OUTPUT			YES				
3	1 TAGGING				YES (SEE GEI	NERAL NOTES 3	3)	
32	2 SURGE PROTECTOR				,	YES		
3	3							
32	4							
3	5							
30	6 FLUID	PHYSICAL STATE		PROPYLENE GL	YCOL RETORN	Li	QUID	
3	7 MINIMUM FLOW	NORMAL	MAXIMUM	0	66	76	m³/h	
38	8 MINIMUM PRESSURE	NORMAL	MAXIMUM	-	1.1	-	bar-g	
3		NORMAL	MAXIMUM	5	-	11	℃	
-	DESIGN FLOWRATE				76 r			
4	1 DESIGN PRESSURE	DESIGN TEMPER	RATURE	4.5	5 bar-g		11 °C	
42					999.64 k			
4		CONDITION			1.3 0			
4					·	S/cm (estimated)		
4						NO		
40				NO				
4		ROP		-	bar			
48								
49						er (E+H) or Simil	ar	
50	0 MODEL				Proline P	romag (E+H)		

- 1- THE MANUFACTURER MUST CONFIRM THE NOMINAL DIAMETER OF THE METER.
- 2- THE INSTRUMENT SHALL BE PREPARED TO OPERATE WITH PROPYLENE GLICOL 10% IF REQUIRED.